

Kjerstin Elisabeth Uhre

THE PERFORATED LANDSCAPE

A study on contested prospects in Sápmi

Kjerstin Elisabeth Uhre

The Perforated Landscape

A study on contested prospects in Sápmi

PhD Thesis
The Oslo School of Architecture and Design
2020

THE PERFORATED LANDSCAPE. A STUDY ON CONTESTED PROSPECTS IN SÁPMI.

© Kjerstin Elisabeth Uhre, 2020

ISSN 1502-217X

ISBN 978-82-547-0337-3

CON-TEXT 106

Academic PhD Thesis conducted at The Oslo School of Architecture and Design

PUBLISHER:

The Oslo School of Architecture and Design

COVER:

Collage: Kjerstin Elisabeth Uhre

Print:

Bodoni

DESIGN AV BASISMAL:

BMR

Acknowledgements

I am greatly indebted to the engaged and knowledgeable persons who shared their insights and gave of their time during the years it has taken to complete this thesis. Without the conversations in the field with members of the reindeer grazing district of Fiettar, Norges Naturvernforbund/ Luonddugáhttenlihttu, Nussir ASA, International Centre for Reindeer Husbandry and Bivdi, this work would not have been possible. Moreover, am I grateful for conversations with researchers across disciplines at UiT, The Arctic University of Norway, Sámi Allaskuvla and the Art and Architecture scenes in Tromsø and Alta. Thanks to Anniken Førde, Britt Kramvig, Berit Kristoffersen, Camilla Brattland, Ivar Bjørklund, Brynhild Granås, Geir Jørgensen, Svein Lund, Annie Henriksen, Marion Palmer, Øystein Rushfeldt, Anita Veiseth, Hans Ragnar Mathisen, Hanne Hammer Stien, Joar Nango, Tanya Busse, Bente Bjercke, Svein Disch Mathisen, Kathrine Ivsett Johnsen. Solveig Joks, Sunniva Skålnes, Torulf Olsen and Mikkel Nils Sara. Special thanks to Tove Agnes Utsi and Nils Utsi, Anne Berit Skum and Johan Henrik Skum, and to Eli Ristin Skum and Per Johnny Skum.

I want to thank my supervisor, Professor Andrew David Morrison, who has been supportive in writing and research. I also want to thank my co-supervisor Professor Halldis Valestrand for encouraging me in transdisciplinary work. I also will express gratitude to external reader Maria Hellström Reimer for valuable feedback. Furthermore to thank colleagues at Tromsø Academy of Landscape and Territorial Studies, UiT, the Arctic University of Norway and the Oslo School of Architecture and Design. Special thanks to Janike Kampevold Larsen who led the Future North research project to which this thesis is affiliated.

Finally, loving thanks to Knut Eirik Dahl, my inspirator and partner in life and work, to Sara Risvåg and Iver Uhre Dahl, as well to Karin Gjørund Uhre and Tor Ove Uhre for all their support.

Tromsø, 25 November 2020
Kjerstin Uhre

Abstract

Arctic landscapes are changing under a pressure of expanding extractive industries and anthropogenic climate change. Through multi-sited analysis of the ecocultural footprint of a copper mine prospect affecting both coastal and pastoral communities in Finnmark, the thesis addresses the prospects for reproductive landscapes, Sámi reindeer husbandry, coastal fishery, and outfield environments in the context of Scandinavian policies for industrial mining. Mineral prospecting perforate landscapes both physically and discursively. Bringing landscape theory in conversation with critical cartography this monograph emphasizes the landscape dimension in interrelated research fields discussing Indigenous livelihoods, land rights and environmental governance. The study works with a fourfold categorization of the term landscape into “governable landscapes”, “worlding landscapes”, “prospecting landscapes” and “migratory landscapes”.

Methodologically the thesis adapts a counter prospective approach with an iterative movement back and forth between ethnography inspired field studies and multimodal discourse analysis. It combines mapping, sketching, photography, records from qualitative interviews, participation and participatory observation with map analysis, document analysis, and media analysis to investigate and illustrate complex discourses. The thesis is a multimodal work with figures of fieldwork notes, outfield atlases, maps, diagrams and photographs.

Pursuing the landscape dimensions of environmental conflicts, the empirical part of the study follows the Nussir copper mine prospect in West Finnmark from being an anticipated showcase in the Norwegian strategy for the mining industry, via drilling campaigns in reindeer calving grounds, to the environmental controversy of using Reppafjorden/ Riehpovuotna as mining waste deposit. The author’s encounters with Sámi reindeer pastoralists in the everyday landscapes of the Fiettar reindeer grazing district, mining prospectors, environmentalists, coastal fishers and residents is described as a learning experience in the Sámi outfield – the *meahcci*. It presents the landscapes, practices, places and people living with the evolving mining prospect. Findings include that while industrial mining impact all outfield businesses, as

well as coastal fishery, wide ranges of outfield activities, impact sámi reindeer pastoralism. The critical review of the findings brings together discussions on key topics such as the rhetoric of greenwashing and territorial governance, and the loss of pastures and autonomy in Sámi reindeer husbandry. It demonstrates the hegemony of the prospector politically and in the public discourse on landscape and how Sámi landscape relations have been overlooked in the landscape assessment undertaken by consultants. Further, it reveals how the definition of landscape of the European Landscape Convention has been modified and subverted in the landscape mapping of Norwegian environmental governance.

Perforated landscapes draw attention to their own futures. Arguing for situating landscape architecture among the prospective arts, the thesis introduces counter prospecting as a tool to understand and engage with landscapes that already exhibit and are likely to continue to present contested trajectories towards the future. The thesis concludes with a call for prospective responsibility in landscape architecture to counteract the exclusion of Indigenous peoples landscape relations in landscape management and design.

Contents

PART I

CHAPTER 1 INTRODUCTION	13
1.1 ON ARCTIC LANDSCAPES	13
1.1.1 BECOMING ARCTIC	13
1.1.2 CONTESTED LANDSCAPES	14
1.1.3 EXTRACTION	16
1.2 ON THE STUDY	18
1.2.1 GAPS AND DIRECTIONS	19
1.3 RESEARCH QUESTION AND KEY THEMATICS	20
1.3.1 MINING, REINDEER HUSBANDRY AND COASTAL FISHERY	21
1.4 ON METHODS	23
1.4.1 QUALITATIVE APPROACHES	23
1.4.2 DISCURSIVE MODES IN CRITICAL CARTOGRAPHY	25
1.4.3 TRANSDISCIPLINARY READING	25
1.4.4 ENGAGING THROUGH COUNTER PROSPECTING	26
1.5 KNOWLEDGE RELATIONS	26
1.5.1 GROWTH IN LITERATURE ON ARCTIC LANDSCAPES	26
1.5.2 EMERGING INDIGENOUS APPROACHES	28
1.5.3 TRANSDISCIPLINARY APPROACHES TO CONTESTED LANDSCAPES	30
1.6 OUTLINE OF CHAPTERS	32
1.7 CONCLUSION TO CHAPTER 1	34
CHAPTER 2 MATERIAL AND DISCURSIVE LANDSCAPES	36
2.1 INTRODUCTION	36
2.2 GOVERNABLE LANDSCAPES	37
2.2.1 THE RIGHT TO LANDSCAPE	38
2.2.2 LANDSCAPE AS POLITY	41
2.2.3 CRITICAL READING OF CARTOGRAPHY	42
2.2.4 MAP: CARTA MARINA AND NORDIC LANDSCAPES	44
2.2.5 FROM EMPIRE TO STATES	45
2.2.6 ROYALTY'S MORTAL FEAR OF MONSTERS	48
2.2.7 BORDERS AND RECOGNITION	51
2.2.8 NATIONAL ROMANCE, ASSIMILATION, WAR AND MODERNISATION	52
2.2.9 THE RIGHT TO LAND AND WATER	53
2.3 WORLDING LANDSCAPES	56
2.3.1 ENCOUNTERS BETWEEN WORLDING PRACTICES	56
2.3.2 MARKING DIFFERENCE	58
2.3.3 LAYERING WORLDS IN MAP LAYERS	60
2.3.4 COUNTER MODES IN CARTOGRAPHY	61
2.3.5 MAP: SÁPMI	64
2.3.6 OUTLYING FIELDS	67
2.3.7 MEAHCIT	70
2.3.8 MATERIAL FLOWS BETWEEN LANDSCAPES	74
2.3.9 LANDSCAPES THAT YIELD WORLDS	76

2.4 PROSPECTIVE LANDSCAPES	77
2.4.1 TECHNOLOGIES OF MASTERING SPACE	77
2.4.2 PROSPECTIVE MODES IN MINERAL SPECULATION	78
2.4.3 MAP: THE FENNOSCANDIAN ORE DEPOSIT DATABASE	80
2.4.4 WITH A LICENCE TO DRILL	80
2.4.5 LANDSCAPE ASSESSMENTS	85
2.4.6 THE PROSPECTIVE ARTS	86
2.5 MIGRATORY LANDSCAPES	88
2.5.1 LEGISLATIVE AND SPATIAL FRAGMENTATION	89
2.5.2 COORDINATING MODES IN CARTOGRAPHY	90
2.5.3 MAP: A COLLAGE OF NORTH ATLANTIC WORLDS	91
2.5.4 TEMPORALITY	91
2.5.5 REINDEER HUSBANDRY AS AN AREA OF LAW	93
2.5.6 TRADITIONAL ECOLOGICAL KNOWLEDGE	98
2.5.7 SÁMI REINDEER PASTORALISM	102
2.5.8 SEASONALITY	105
2.5.9 PLANETARY MULTISPECIES MIGRATION	106
2.5.7 DECOLONISING LANDSCAPE APPROACHES	107
2.6 CONCLUSION TO CHAPTER 2	109
CHAPTER 3 A COUNTER PROSPECTIVE APPROACH	111
3.1 INTRODUCTION	111
3.1.1 CHALLENGES IN LANDSCAPE METHODOLOGIES	111
3.2 REFLEXIVE AND QUALITATIVE RESEARCH METHODS	114
3.2.1 INTERDISCIPLINARY POSITIONING	117
3.2.2 PRE-UNDERSTANDING FROM PRAXIS	119
3.3 APPROACHES	120
3.3.1 DESIGN APPROACHES	120
3.3.2 MULTIMODAL APPROACHES	122
3.3.3 MULTISITED APPROACHES	126
3.4 RESEARCH DESIGN	129
3.5 THE EMPIRICAL STUDIES	130
3.5.1 JOURNEYS	130
3.5.2 DOCUMENT AND MEDIA STUDIES	131
3.5.3 PARTICIPANT OBSERVATION	132
3.5.4 QUALITATIVE INTERVIEWS	134
3.5.5 OUTFIELD ATLAS CONVERSATIONS	135
3.5.6 ETHICAL CONSIDERATIONS	136
3.6 ASSEMBLING AND ANALYSING MULTIMODAL DISCOURSE MATERIAL	139
3.7 CONCLUSION TO CHAPTER 3	141
PART II	
CHAPTER 4 LIMITS OF EXPLOITATION	144
4.1 THE GLOBAL NORTH AND THE HIGH NORTH	144
4.1.1 A NEW GENERATION OF MINING CODES	145
4.1.2 A TREASURE HUNT IN TREASURED LANDS	146
4.1.3 PREPARATIONS FOR THE MINERAL STRATEGIES	148
4.1.4 FIELDS OF EXPLORATION, LIMITS OF EXPLOITATION	149

4.2 MINING WASTE	152
4.2.1 CARTOGRAPHIES	155
4.2.2 OBSERVING THE DIALOGUE PROCESS	157
4.2.3 JOURNEYS TO MINES AND MINING TOWNS	161
4.3.1 A SURPLUS GLOBE	168
4.3.2 THE LURE OF PERCEIVED VASTNESS	171
4.4 A WINDOW OF OPPORTUNITY	174
4.5 THE COPPER MINE PROSPECT IN KVALSUND MUNICIPALITY	177
4.5.1 THE ZONING PLAN	179
4.5.2 OVERLAPPING AREA USAGE CATEGORIES IN THE ZONING PLAN	180
4.6 THE DECISION-MAKING PROCESS	188
4.7 CONCLUSION TO CHAPTER 4	190
CHAPTER 5 THE SUMMER MOUNTAINS	191
5.1 INTRODUCTION	191
5.2 FIETTAR REINDEER GRAZING DISTRICT	193
5.2.1 LANDSCAPE ENCROACHMENTS	196
5.3 GRAZING CIRCULATION	197
5.4 CALF MARKING/ <i>MIESSEMEARKUN</i>	201
5.4.1 BY THE REINDEER FENCES	202
5.4.2 BY THE REINDEER CALF RIVER	209
5.5 NUSSIR ASA'S LANDSCAPE ASSESSMENT	213
5.5.1 THE LANDSCAPE SURVEY AREAS	216
5.5.2 SPECTACULAR VS EVERYDAY LANDSCAPES IN THE MEAHCCI	218
5.5.3 UNCERTAINTIES AND LACK OF INFORMATION	221
5.6 CHANGES IN NORWEGIAN ENVIRONMENTAL GOVERNANCE	224
5.6.1 A NEW NATIONAL TOOL FOR LANDSCAPE MAPPING	225
5.6.2 LANDSCAPE SURVEYS AS PROSPECTIVE KNOWLEDGE EXTRACTION	228
5.7 PERFORATING ÅSAVÅGGI	230
5.8 SLAUGHTER TIME	235
5.8.1 THE AUTUMN HERD	239
5.8.2 CONVERSATION BY THE HERDER COTTAGE	246
5.9 AUTUMN MIGRATION	249
5.10 RUNNING HOME TO THE SUMMER MOUNTAINS	253
5.11 CONCLUSION TO CHAPTER 5	254
CHAPTER 6 THE WINTER FJORD	256
6.1 THE REPPARFJORDEN WINDOWS	256
6.1.1 SEASONAL FOOD AND FOOD SECURITY	257
6.1.2 A GARDEN OF PEACE	259
6.2 CAUTIONARY TALES OF REPPARFJORDEN	261
6.3 FIELD TRIP IN THE WINTER FISHING SEASON	262
6.3.1 THE FISH LANDING	262
6.3.2 FISHING COD IN REPPARFJORDEN	264
6.3.3 THE EAGLE AND THE DEPOSIT SITE	268
6.3.4 THE HERRING IS BACK	271
6.3.5 IN THE HOUSE	272
6.4 DESCRIBING THE FJORD IN GOOD FAITH	276
6.4.1 THE FJORD AS A MIGRATORY LANDSCAPE	278

6.5 NUSSIR ASA GETS THE DISCHARGE PERMIT	278
6.5.1 AWAITING FORMAL GOVERNMENT RESPONSE	280
6.6 ARE THE ACTORS TALKING ABOUT THE SAME FJORD?	281
6.7 THE PROSPECTORS' APPLICATION FOR A MINING CONCESSION	283
6.8 NUSSIR PROPOSES TO MOVE THE PLANT TO A PRISTINE PROMONTORY	287
6.8.1 A LIST OF EVENTS 2017-2020	290
6.9 GREENWASHED MINING RHETORICS	291
6.10 CONCLUSION TO CHAPTER 6	292
PART III	
CHAPTER 7 COUNTER PROSPECTING	295
7.1 THE BEST LANDSCAPES	295
7.1.1 NIN-LANDSCAPE AND THE PERCEIVED ABUNDANCE OF SPACE	298
7.1.2 MINERAL PROSPECTING	300
7.2 LIVING WITH EXTRACTIVE PROSPECTS	302
7.3 SÁPMI AND FENNOSCANDIA ON AND OFF THE MAP	310
7.4 PERFORATIONS	312
7.4.1 THE OUTFIELD ATLASES	313
7.4.2 CONVERSATION I	313
7.5 COUNTER MOVES	315
7.5.2 COUNTER PROSPECTING	316
7.5.3 CONVERSATION II	320
7.5.4 CONTRAPUNTAL STORYLINES	321
7.6 CONCLUSION TO CHAPTER 7	322
CHAPTER 8 A SHAPE IN THE LANDSCAPE	324
8.1 INTRODUCTION	324
8.1.1 DISRUPTIVE FOOTPRINTS	325
8.2 WHAT IS THE PROSPECT FOR SÁMI REINDEER HUSBANDRY?	326
8.3 THE MAP IN THE TERRAIN	328
8.3.1 EARMARK EPISTEMOLOGY	337
8.3.2 CONVERSATION III	339
8.3.3 THE LOSS OF VISUAL LANGUAGE	346
8.3.4 ON CARING AND COUNTING	347
8.3.5 THE TERRITORIAL DIMENSION OF THE EAR MARK	352
8.3.6 A SHAPE IN THE LANDSCAPE	353
8.3.7 TERRITORIAL CHOREOGRAPHY	356
8.4 PERCEIVING MIGRATORY LANDSCAPES	356
8.5 HANDLING LANDSCAPE ELUSIVENESS	357
8.6 STRENGTHS AND WEAKNESSES IN THE STUDY	360
CHAPTER 9 PROSPECTIVE RESPONSIBILITY	363
9.1 INTRODUCTION	363
9.2 CONTRIBUTION	365
9.3 MAIN FINDINGS	366
9.3.1 ARCTIC LANDSCAPES IN DIFFERENT WORLDVIEWS	367
9.3.2 THE PROSPECTIVE ARTS	368
9.3.3 COUNTER PROSPECTING	368

9.4 IMPLICATIONS	370
9.4.1 PROSPECTIVE RESPONSIBILITY	370
9.4.2 IMPLICATIONS FOR LANDSCAPE STUDIES	371
9.4.3 IMPLICATIONS FOR LANDSCAPE ARCHITECTURE EDUCATION	372
9.5 FURTHER STUDIES	374
9.6 CONCLUSION	375
BIBLIOGRAPHY	378

List of Figures

Fig 2.1: Olaus Magnus, Carta Marina, a wall map of Fennoscandia convey governable landscapes. The caption reads “Marine map and Description of the Northern Lands and their Marvels, most carefully drawn up at Venice in the year 1539 through the generous assistance of the Most Honourable Lord Hieronymo Quirino”. Wikimedia Commons. URL: https://upload.wikimedia.org/wikipedia/commons/thumb/e/ea/Carta_Marina.jpeg/2916px-Carta_Marina.jpeg 46

Fig 2.2: Resistance: An iconic image of the Kautokeino-Alta protests, January 1981. Protesters block the construction of construction roads at Stilla in connection with the hydropower development in the Alta-Kautokeino waterway. Photographer: Helge Sunde. Reproduced with the photographer’s consent. 57

Fig 2.3: Worlding landscapes. Hans Ragnar Mathisen, Sápmi from 1974, reproduced with the artist’s consent. 68

Fig 2.4: Prospective landscapes: Metallic Mineral Deposit Map of the Fennoscandian Shield, Geological Survey of Finland 2013. The map is a compilation geological knowledge from the geological surveys in Norway, Sweden, Finland, and North-West Russia. It shows that Sápmi is a highly mineralised region. Reproduced with reduced size, and according to GTK’s open product license. URL: http://tupa.gtk.fi/kartta/erikoiskartta/ek_085_100dpi.pdf 82

Fig 2.5: Norway mapped the disappearance of landscapes without infrastructure from 1912 to 2014. This image is a section of the INON map from Finnmark dated January 2013. Dark green areas on this map are defined as ‘without major infrastructure development’, lying at least 5 km from the nearest infrastructure. Most of the remaining dark green areas are in the north, and they are under growing pressure. Source map: Norwegian Environment Agency. 87

Fig 2.6: The Perforated Landscape. A juxtaposition of governable, worlding, prospective and migratory landscapes in Sápmi and Fennoscandia. It is a collage of several maps of the north as a resource frontier. Oil concession maps, mineral deposits, snow cover and sea ice, ocean currents, and charismatic migratory species. Sources: Eartwind, The Fennoscandian Ore Deposit Database, The Norwegian Polar Institute, Resource cartographies from Norway, England, Iceland, and Greenland. Background map: a collage of Satellite images from Nasa and K-sat. 94

Fig 3.1: This time wheel includes diagrammatic presentation of the sequencing and overlays of the methods and means of conducting the research. This conveys both the methods selected and carried out with the means to communicate their complex relations and influences between and upon one another. In doing so, this example is indicative of how I have taken up my own design-based experience to understand how to arrange the work and how to convey its dimensions as a whole. 133

Fig 3.2: Conversations on the outfield atlas gave valuable feedback to the visual interpretations of learnings from the fieldwork. Anne Berit Skum and Johan Henrik Skum, Ásarovaivi 2015. 138

Fig 4.1: Minister of Commerce Giske with NGU Director Morten Smellror and Deputy Director Jan Cramer on the press conference of the launching of Minerals in North Norway, 2010. Giske is holding the Fennoscandian Metallic Mineral Deposit Map. Photo by Steinar Fugelsøy. 147

Fig 4.2: Mineral stakes in Finnmark surged when Norway in 2010 got a new Mineral Act. Map: Student work by Hanne Johnsrud at the master studio Fields of Exploration Limits of Exploitation, AHO 2011. Reproduced with consent. 150

Fig 4.3 A timewheel showing attendance at conferences and excursions focusing the mineral industries. 159

Fig 4.4: Travel map juxtaposed with mineral deposits in Fennoscandia extracted from the FODD map (described in chapter 2). The red lines trace my movement to places and events during the study. 160

Fig 4.5: A warning flag on a mined shelf in the Mont Wright mine. 163

Fig 4.6: The Future North research group on an excursion to Canada. 163

Fig 4.7: The view from the viewing platform for visitors to the Mont Wright mine in Fermont, Canada. Snow and rust colour the open pit. 164

Fig 4.8: The beach at Lake Kirovsk taken at the Future North excursion to the Kola Peninsula. It looks idyllic, but the lake is polluted and over fertilised from the upstream riverine mine tailings discharge pipes. 164

Fig 4.9: When we walked in the Hibini Mountains, we came over a ridge and saw waste rock deposits in the horizon raise like a vision of the imaginative castle Soria Moria. Is this the future? Naturvernforbundet and Kola Environmental Centre excursion to the Kola Peninsula. 166

Fig 4.10: The image shows the outlet of the Mine tailings disposal in Aitik. From Naturvernforbundets excursion to the North Calotte. 166

Fig 4.11: Ventilation outlet from the underground gold mine in Kitäla. From Naturvernforbundets excursion to the North Calotte. 168

Fig 4.12: The cover of the government's northern area strategy in 2014. The North Globe [Nordkloden] conveys the north as a remote and resource-rich frontier – in fact, a globe on its own. Source: Nordlys, November 10, 2014. 169

Fig 4.13: The agenda North Norway Conference made a feasibility study that claimed that 98% of the area in North Norway was unused. The President of the Sámi Parliament reminded about reindeer husbandry. Courtesy of Sparebank 1 Nord Norge. 171

Fig 4.14: The Nussir copper mine prospect in the context of reindeer husbandry, coastal fishery, and mineral prospecting. Sources to the map are retrieved at Nussir.no, 2010, Kilden.no, and the Fennoscandian Ore Deposit Database. 178

Fig 4.15: The zoning plan of the copper mine prospect of Nussir and Ulveryggen/Gumpenjuni placed in the geographical context. Source map: Didriksen et al., 2011. 182

Fig 4.16: An extract of the Municipal plan of 2004. To the left. Source map: Kvalsund Municipality, 2004. 182

Fig 4.17: The salmon steps in the Repparfjorden River. A juxtaposition of map-information showing that the mine tailings deposit area of the Nussir's zoning plan is very close to Akvaplan Niva's definition of Repparfjordelva's river mouth. 185

Fig 4.18: A section of Nussir's zoning plan showing the "Marine Recreation area", and the "fish pitches." The dotted line marks the discharge conduit from where daily 5470 tonnes of mine tailings is supposed to run downwards to the core area of the fjord deposit site (dark grey), but are allowed to spread in the defined buffer zone (light grey). Source map: Didriksen et al. 2011. 186

Fig 4.19: A fishing boat passes Fæg fjordholmen on its way to the landing in Fæg fjord. The western shore of Markop promontory is to the right in the image. The photo is from April 2015. The circle show photo-point and areas that will be smothered by mine tailings. Source map: Didriksen et al. 2011. 186

Fig 5.1: Calf marking, *miessemearkum* summons all the families in the siida. It is the main arena where the children learn to handle reindeer. The image taken early July 2014 in Kvalsunddalen shows how to walk with the ribbon to prompt the reindeer move from the large corral to the medium-sized pen. 192

Fig 5.2: The Fiettar district with infrastructure and cottages. Based on the documents of the impact assessment, the map juxtaposes the Nussir zoning plan (scaled and rotated) in the geographical context. It shows the proposed, layered combination of area usage. Red circles with a radius of 8 km designate the experience based zone that reindeer avoid around mining activity other places. Evasion zones are shown on the map in light red, inspired by the method used in Ren-Gis, which shows how the impacts on reindeer pastures have much more significant consequences than the size of the actual encroachment. Such zones give an indication, but must be further adjusted to the local condition. 194

Fig 5.3: 1: The herds arrive by the end of April, the first days of May, they are led to each siida's customary calving ground. 2: At the beginning of July, the herds are collected and led to pasture-gardens to prepare for calf marking. 3: after calf marking the herds walk big circles in the whole district, combined with daily, small circles between lower areas for food and higher areas for cooling down and get rid of insects. 4: August, the males begin to herd groups of fe-male reindeer and calves. 5: September, the reindeer start moving southwards along their migration routes. 197

Fig 5.4: Important high lying summer pastures and migration routes. The mountain pastures are covered with snow in April when the reindeer arrive and in May during the calving. Reindeer prefer to follow the terrain formations. On the migratory path along Reppar-fjorden, they need to cross the terrain formations. This section and section-perspective through a terrain model show the rifts and valleys where reindeer can get lost if they are disturbed during the migration. 198

Fig 5.5: Reindeer marks of members of the Fiettar summer grazing district by August 2014. Source diagram: The reindeer mark register. 203

Fig 5.6: Fieddarvággi/ Kvalsunddalen. The reindeer fences are in the middle ground to the right in the image. The community centre is in the middle of the image where the fjord meets the valley. The camp is sprawled along the long fence between spring and summer pastures on a shallow plain in the mountainside of the Kvalsund Valley/Fieddarvággi. 204

Fig 5.7: The fences are temporarily covered with textiles during calf marking. 204

Fig 5.8: A part of the herd have been running through the corridor. Something has spooked the first reindeer and the rest turns and move back just at the arrival of the large corral. 205

Fig 5.9: All the reindeer went through to the medium pen. 205

Fig 5.10: Per Johnny Skum and Eli Ristin Skum present a calf for their youngest son before marking it with his reindeer mark. 207

Fig 5.11: The smaller kids play on the boulders between the tents and the girdnu. 207

Fig 5.12: Conversations by the coffee fire. 208

Fig 5.13: The Reindeer Calf River and the view towards Suolovággi with the Nussir Mountain in the background. 208

Fig 5.14: During the break, the older kids roam in the small wetland by Miessejohka. 211

Fig 5.15: The children learn to respect biodiversity. When they capture frogs, they are told about the Maddu - the spiritual mother of all frogs that protect them against harm. 211

Fig 5.16: This map is a compilation I made of Frilund and Simensen's survey areas. Landscape area 2, 3 and 4 is in the summer grazing land of the Fiettar district. Fiettar emphasises that the landscape is of importance to them and that the movement between the landscape entities is crucial. 215

Fig 5.17: The Nussir Copper Ore lies beneath Ásavaggi, the Ása valley. 231

Fig 5.18: Ásavaggi is the only broad alpine valley without infrastructural encroachments in the Fiettar reindeer grazing district. 231

Fig 5.19: The Mining Director mark the locations of the planned drill holes with vertical road sticks. 233

Fig 5.20: Autumn at the summer settlement in Ásaroaivi. 237

Fig 5.21: 2015 was a good mushroom year, and the reindeer herds lingered before starting the movement southwards, on this image a part of the herd has arrived at Ásaroaivi. 237

Fig 5.22: The reindeer herd is called eallu. A diagram from the outfield atlas. Source: Notes from a lecture by Mikkel Nils Sara's, July 2013. 238

Fig 5.23: A small group of reindeer is called a Čora. A diagram from the outfield atlas. Source: Notes from a lecture by Mikkel Nils Sara's, July 2013. 238

Fig 5.24: A diagram of earmark symbols showing reindeer movement through the autumn working fences in Ásaroaivi, October 2014. 240

Fig 5.25: When the reindeer get through the opening between the corridor and the grand corral, it looks like a river of antlers. Ásaroaivi, 2016. 240

Fig 5.26: A diagram of earmark symbols representing reindeer running in a circle. 241

Fig 5.27: The damp from the animals' breathing and perspiration create a moving cloud in the cold morning hours. 241

Fig 5.28: Snowfall. 243

Fig 5.29: The reindeer ears are furrier and look different in the fall than in the spring. 243

Fig 5.30: Per Johnny Skum has slaughtered one of his reindeer and prepare the meat with salt to make smoked meat. 244

Fig 5.31: The hide from the legs is used to make traditional shoes. 244

Fig 5.32: This diagram shows the earmarks in Fieddarhasat, multiplied in a circle divided into 14 sections, one for each siida unit. 247

Fig 5.33: 40 % reduction of reindeer numbers. 247

Fig 5.34: Nuorttabealli (the Eastern zone) migratory system, contain the summer districts 19 Sállan/Sorøya; 20 Fåla/Kvaløy; 21 Gearretnjárga; 24A Oarje Sievju/ Seiland West; 24B Nuorta Sievju/ Seiland East, 22 Fiettar and 23 Seainnus/Návvgasat. The winter *siiddat* have designated migration and resting places in the autumn and winter pastures, area 30C. 248

Fig 5.35: A male reindeer (without antlers) is digging a grazing pit in the snow while the female reindeer (with antlers) stands nearby. The image is from the winter pastures at Fielmbejohka, April 2015. 251

Fig 5.36: Running northwards home to the calving grounds. 251

Fig 5.37: The GPS bracelets need to be recharged and programmed. Eli Ristin Skum is taking notes of the individual numbers. 252

Fig 5.38: Follow the herder dog, Čammo's gaze across the ridge and see the reindeer herd at the foot of the mountain on the far side of the valley. 252

Fig 6.1: The midwife participates in a protest rally against mine tailings deposits in Repparfjorden. Photo by Geir Jørgensen. Reproduced with consent. 258

Fig 6.2: Location map, Repparfjorden in the context of the Norwegian Sea, the Barents Sea, and the extent of the sea ice zone. Source (ice): The Norwegian Polar Institute. 258

Fig 6.3: A girl playing at the beach of Repparfjorden. To the right in the middle ground of the view is Klubben, the landmark hill of the Sea Sámi village Klubbukt. 260

Fig 6.4: Fish caught in Repparfjorden is registered in the Catch Area nr 14, Revsbotn. In consequence, there are no statistics of how many tonnes of fish caught in Repparfjord in the official harvesting statistics. 263

Fig 6.5: The harbour in Klubbukt with the Nussir Mountain, Nussor/Steinfjellet [The Stone Mountain] in the background. 265

Fig 6.6: Nussor/Steinfjellet seen from Klemmersteinen, a shallow field [grunne] that is a known spawning area and fishing ground in Repparfjord. 265

Fig 6.7: The Captain checks his landmarks (mea) on each coast, the echo sounder shows a shoal of fish, the GPS show yesterday's position of the boat that is the position of the gillnet. 266

Fig 6.8: The Captain checks if the newly set gillnets are all good. 266

Fig 6.9: The boat is adrift while Olsen and the Captain slaughter the cod. 269

Fig 6.10: The cod has feasted on herring. 'This is what wealth looks like!' 269

Fig 6.11: A view from the coastal fishing boat in Repparfjorden towards the planned mine tailings deposit site. 270

Fig 6.12: The gills of this cod is healthy and clean. 270

Fig 6.13: A petri dish with egg samples from Refsbotn that is a reference fjord for the samples in Repparfjord. 277

Fig 6.14: The petri dish contains fish larvae and fish eggs in different stages of development. 277

Fig 6.15: The Øyen industrial area. 289

Fig 6.16: Screenshot from *NRK Finnmark* with a rendering of the plans to appropriate Markopnes, a promontory where Repparfjorden turns. 289

Fig 6.17: One of the pits in Gumpenjuni/Ulveryggen, the abandoned open pits that have been un-remediated since Follidal Verk went bankrupt in the 1970s. 291

Fig 7.1 A timeline is providing accounts of the Repparfjorden process and related views on the case. Linear and circular (spiralling) time showing the historical context of reindeer husbandry and mining in Kvalsund Municipality 1700-2020. This section of the timeline show 1700-2004. 303

Fig 7.2: 2004-2007 304

Fig 7.3: 2008-2011 305

Fig 7.4: 2011-2014 306

Fig 7.5: 2014-2017 307

Fig 7.6: 2018-2019 308

Fig 7.7 Disruptive human, infrastructural, and industrial activity carves a void in the grazing movement of the herd. Earmark symbols used to illustrate the thinning of reindeer appearances along a line of disturbances. 315

Fig 8.1: A string of cuts from the right ear of every calf from the family's herd, documents the amounts of calves that spring. 333

Fig 8.2: A reindeer mark and unmarked ears. The earmark system is a visual language, in which notches and cuts are the words. 335

Fig 8.3: Chart of the reindeer marks registered in 2014 annotated from 5 different interviews in the Fiettar district. I have "anonymised" it by covering names, but members of the district who are skilled in recognising earmarks might remember whose marks that are missing. 339

Fig 8.4: 40% reduction of the reindeer population. 343

Fig 8.5: The earmarks as map-icons to show the flow of the herd through the autumn working fences. The diagram from the outfield atlas annotated during an interview. Corridor: *vuopman*, the big pen: *gárdi*, the small working pen: *girdnu*. 349

Fig 8.6: By the end of April, the reindeer graze on the ridges along the migration route to their calving grounds in the coastal mountains. 351

Fig 8.7: Quarterly maps show seasonal long-distance migration on land and at sea. 354

Part I

Introduction, Theory and Method

Chapter 1 Introduction

1.1 ON ARCTIC LANDSCAPES

1.1.1 Becoming Arctic

Sápmi and Fennoscandia became “Arctic” less than two decades ago. The warm embrace of the Atlantic Gulf stream has provided a mild exception with a pleasing climate at our high latitudes. Sápmi is the Indigenous homeland of the Sámi people, and it is also a multi-ethnic entity (Fennoscandia), comprised of Norway, Sweden, Finland and the Russian Kola Peninsula. Now the weather is wilder. The Arctic is heating at a rate of three times the global average. The political Arctic, reflected in the names of institutions and destinations, transcends the fluctuating climatic borders. The Norwegian government’s High North Policy, launched in 2005, framed Tromsø/Romssa as the Capital of the Arctic. This shift towards an Arctic identity was branded through new uses of maps that coincided with rapid development in mapping, monitoring and modelling technologies. Circumpolar projections of the northern hemisphere assembled the world in a new way. Becoming Arctic at the dawn of the Anthropocene is to be moved to a central theoretical site in the arts, the humanities and social sciences, bearing witness, as it were, to aggregated environmental threats and disappearing landscapes from a northern position, while being part of the northern discourse.

While the Arctic is thawing, the mountains and seabed are physically and discursively perforated and prepared for resource extraction. Oil, gas and mineral prospecting are at the very core of constructions of the Arctic as a resource frontier. Graphic and cartographic representations of mineral wealth and innovative extraction gadgets are among the drivers of the discourse in the opening processes of new extraction fields. Alongside mappings representing carbon-saturated continental shelves and mineralised plains and mountains, maps showing the demise of Arctic sea ice cover, volatilyly fluctuating sea ice covers and the decline in multispecies habitats make

scientific findings of the consequences visually present. On screen, the Arctic appears as a melting pot of images, cartographies, emerging technologies, prospects, industrial residue, tubes, sticks, dust, humiliated species, possible hazards, and echoes of violence. The verb prospecting refers most commonly to the search for metals and minerals and the making of mining prospects while the noun prospect is someones or somethings anticipated future. The term “mining prospects” conjures expectations of wealth and evokes environmental resistance. Core sampling leaves behind physical holes in the ground. These are holes through which imaginaries pour and questions ripple. Questions of trajectories entangled in places and landscapes.

This thesis is a multimodal landscape study of the decision-making process of a copper mine prospect in North Norwegian Sápmi. The ecocultural footprint of the prospect is affecting both coastal and pastoral communities. Mineral prospecting is an issue for landscape research because it makes physical marks in the landscape and constructs prospects leading to anticipated landscape transition. Landscape architecture is gravitating towards recognising gaps in the discipline’s knowledge about the northern territories. These gaps are particularly apparent in approaches to anticipated changes in Indigenous landscapes. My thesis exemplifies this in a description of the materiality of prospective landscaping practices in a situated study of the Nussir and Ulveryggen/Gumpenjuni copper mine prospect. The thesis draws contrapuntal storylines through the contiguous landscapes, stretching from the inland plains to alpine valleys and coastal waters: Landscapes that are visualised, represented and made available to politics by resource prospecting, landscape mapping and resistant imaginaries.

1.1.2 Contested Landscapes

A contested landscape is a discursive landscape, where different worlds compete to be expressed through that landscape and to have a future and a sense of community in that landscape. It is widely held among landscape theorists that “Landscape” is in itself a contested term that is notoriously difficult to define. Setten (2006) has noted how the term “landscape” is used in many different ways. Landscape has become an acute issue in Sápmi because Fennoscandian modes of landscape assessment and valuation rarely lend an ear to Sámi landscape concepts. To sort out how landscape studies may approach such questions, this thesis aims to engage analytically with a multiplicity of ways of understanding the many readings of Sámi and Fennoscandian landscapes.

The Nordic legacy in landscape research in cultural geography is suspended

between the accounts of a substantive landscape, where the term “landscape” means an area governed by law and custom (Olwig, 1996). Both approaches were close to notions of place and oppose the British concepts of landscape as “a way of seeing”. Many landscape scholars have articulated the ways in which Nordic approaches to landscape and meanings of the term differ from mainstream English landscape concepts. ‘Justice and injustice are embedded in, maintained, and contested through the landscape’ (Mels and Mitchel, 2013, 211). The nature-culture divide permeates the Norwegian environment and cultural heritage management; landscape is governed as nature, while built heritage and culture landscapes are governed as culture. In consequence, landscape is split across governance agencies. The European Landscape Convention (ELC) promote cultural diversity and actively involving civil society and citizens in landscape management. According to Michael Jones and Marie Stenseke, the ELC:

emphasizes that landscape is not an exclusive field for scientific and technical specialists but the concern of everybody, and advocates an enhanced role for public participation in landscape issues. (Jones and Stenseke, 2011, 5)

Islandic geographer, Benedictsson, calls for an idea of reintroducing aesthetics in landscape research. Those landscape studies that probably most intimately discuss the Indigenous landscapes of the European North are carried out in the research environment that is affiliated with the Sámi University of Applied Science in Kautokeino, the Arctic University of Norway. Two special editions of *Dieđut* (Andersen, 2002; Jones and Schanche, 2004) explored Sámi landscape approaches. This thread was, however, not pursued in landscape theory but in phenomenological approaches to landscape and place in anthropology and philosophy by Ingold (2011), Meløe (2006), Greve (2014), and Nergård (2006). The Sámi landscape studies from the 2000s did not gain a stronghold within landscape theory. North Norwegian, Sámi and international scholars interested in Sámi and North Norwegian land and water rights issues have articulated how Sámi, Kven, and North Norwegian landscape concepts differ from the majority Norwegian concepts (Schanche, 2002; Skålnes, 2003). Studying the literature on Sámi landscape terminologies and landscape relations is key to develop the basic understanding of landscapes in the European Arctic that is needed in order to go in dialogue on the prospects of those landscapes.

From the National Romantic period, the Sámi were externalised from and assimilated into the national identities in Fennoscandia. In order to learn

about Sámi people's perceptions of landscape, Schanche (2002) proposes that it would be appropriate to learn Sámi landscape terms. The most known of these terms is *meahcci*, in the plural: *meahcit*. It is translated into the Norwegian term *mark*, in the plural: *marker*, and *utmark*. *Utmark* has been implemented in legislation as the meaning of *meahcci*, and it translates as 'uncultivated land.' Both steps in this translation are mistranslations that are thoroughly critiqued by Sámi scholars and scholars that study Sámi landscapes. I will return to this critique shortly. For now, it is sufficient to note that that *meahcit* are significant landscapes that are connected to traditional usage, spirituality and care.

We know that industrial mining impacts all businesses in *markene*/the *meahcit*, as well as coastal fishery, and that Sámi reindeer pastoralism is impacted by wide ranges of landscaping activities: hydropower and logging, a surge in wind power licences, power lines and extended infrastructure of leisure cottages and tourist facilitation, to mention a few. Aquaculture appropriates the coast, mine tailings' disposal in fjords and deep-sea mining prospects make stakes in marine ecosystems, unseen seabed landscapes. Landscape terminologies, characterisations and debates have all these holes and openings agape to the exploitation of peoples, of environments and of histories. The perforations are also passage in time. With the present discourse on the European Landscape Convention as a point of departure, the thesis juxtaposes landscape concepts, which, due to hegemonic practices and despite the current emphasis on multidisciplinary, are kept separate in decision-making processes, with consequences for landscape.

1.1.3 Extraction

The number of different prospects and plans in rural areas in the European Arctic is surging, while, at the same time, health services, public transport, schools and police services are centralised. Extractive prospects place material and discursive claims on landscapes, while conjuring expectations of future wealth. Extractivism (Acosta, 2013) is a term that was first coined in Latin America to describe how governments and global industries work in tandem to extract resources from the peripheries without giving anything back to the communities that hosts the extractive industries on their land. In 2016, Emma Wilson and Florian Stammler edited a special issue of *The Extractive Industries and Society* about Arctic communities and extractive industries.

The prioritising of extractive modes of resource management, including oil, gas, mining, forestry and fisheries, within the political economy and development planning has been termed 'extractivism'

and is also associated with colonial and neo-colonial policies of appropriation. (Wilson and Stammler, 2016, 1)

The Extractive Industries and Society, Special Issue on the Arctic, edited by Emma Wilson and Florian Stammler (2016) has a circumpolar scope. Comparative landscape studies circling about the Arctic often do so by means of imaginary journeys along the Arctic Circle. Such transects make a cartographic cut through the territories bordering the Arctic Ocean and evoke concerns of geopolitical and national interest; Indigenous peoples' rights; opportunities for the extractive industries; new global trade routes; security; species extinction, and global warming. Such cartographies have been of vital importance to the scientific and popular understanding of the climate crisis. *The Will to Drill - Mining in Arctic Communities* (Dale et al., 2018) is a careful consideration from the social sciences about the conduct of the mining industries in the Arctic. The book chapters are ordered in three themes: landscape, legitimacy and social acceptance. The editors Dale, Bay-Larsen and Skorstad have all carried out case studies in North Norway, and the book covers a high number of mining cases and discourses in North Norway, Sweden, Finland and North-West Russia. This view of landscape includes procedural justice in landscape planning, and how the term landscape may regain relevance in discussions of extractive prospects in the Arctic, including legal texts, in order to understand legal rights and procedural justice, and policymaking. Sámi law expert, Susann Funderud Skogvang (2013), confirms that both the exploration and the extraction of minerals in indigenous areas are highly controversial issues. In her review of the new Norwegian Mineral Act, one of the problems she identifies is that:

The Sami people are not given the special right to consult in mineral matters, nor the right to benefit sharing. Likewise, the important meaning of indigenous traditional knowledge is ignored. (Skogvang, 2013, 343)

Since the start of the 19th century, national states have perforated their interior, coastal and oceanic territories to prepare them for prospecting companies that accentuate the perforating activities, which, in turn, makes for extractive activities on land and at sea. Recently, the much-needed green shift or green new deal has been co-opted by the mining industry lobby and has become a new pivot point in the mining industries' quest for social acceptance of their area's extensive and polluting activity. Dealing with how the extensive land-use changes that are planned to curb carbon emissions will affect Arctic culture landscapes is a growing issue. Climate emergencies

are paradoxically accompanied by ‘climate opportunism’ (Kristoffersen, 2016) by the Arctic states, perpetuating oil and gas exploration in the Arctic. In state and corporate attempts to organise more sustainable development, there is greenwashing of the rhetoric of industrial prospects. Prospecting companies are on a quest to obtain ‘a social licence to operate’ (Wilson and Stammler, 2016). Posing with mineral-dotted core samples in their hands, mineral prospectors claim to own the answer to the core questions of sustainable development: to mine the minerals needed for the green shift. Prospective knowledge extraction includes strategies to invoke acceptance for environmental degradation, a change in values among politicians, citizens and denizens. Echoes of such responses loom in governmental agencies and media records. The Norwegian Minister of Commerce claims that we need to open mines, in order to have minerals for the green shift. But the problem is far more complex because the climate emergency is entangled with an ongoing ecological catastrophe. The interaction with the surrounding community and environment is regarded by the mining industry as external to mining, as externalities (see Deneault and Sacher, 2012, 31). Changed uses of areas on land and in water, together with global heating and pollution, cause an unprecedented extinction of flying, running and swimming species. Loss of biodiversity is ultimately threatening human livelihoods.

The green shift is about that now, at last, we have realized that the total load on Earth’s natural systems has been so high that no one any longer can get away with isolating business from its externalities. (Lie, 2019)

Fennoscandian landscapes are put on the agenda through every development measure that requires an Environmental Impact Assessment because impact on landscape is one of the themes that are assessed.

1.2 ON THE STUDY

This thesis addresses issues of contested landscapes in the Arctic that are also sites of resistance. In focusing on the outfield and coastal seascapes, I assemble issues such as nature resource management and traditional knowledge, social-ecological systems, biodiversity loss and resource extraction. Inquiring how extractive prospects conjure contested landscapes, I have conducted a critical case study of the material and discursive conditions in power-saturated relations to landscape. I have been in the anticipated impact zone of the Nussir and Ulveryggen mine, together with reindeer pastoralists,

mineral prospectors, fishermen, environmentalists and local residents. I have travelled to mining sites in Sápmi/Fennoscandia and to the Canadian Arctic, to see how global mining operates in the Arctic. At various conferences and through media studies, I have seen how cartographies, diagrams, photos and landscape representations are employed in the extractive discourse.

The working methods are based in the arts and humanities and the discipline of Landscape Architecture. I take a transdisciplinary orientation that learns from postcolonial, feminist and Indigenous approaches in cultural geography, anthropology, critical cartography, development Studies, heritage studies and material semiotics. In conducting the study, I have employed qualitative, reflexive and design research methodologies. Methods used in the study are ethnographic fieldwork and analysis, combined with multimodal discourse analysis. I have documented and analysed the field experiences, both in text and through visual techniques, such as mapping, drawing, photography, and infographics. I have been in direct proximity to everything I write about, I have had conversations about everything, and I have kept up to date in the transdisciplinary academic written discourse.

Approaching the dynamics of the Arctic's contested landscapes includes finding ways of decolonising landscape architectural methods. This extends to a critical review of the role the built-environment professions play in the service of public land-use policy. Such enquiries include calls for speculation on how to develop tools to understand and engage with landscapes that already exhibit and are likely to continue to present contested trajectories towards the future. Pondering how landscape architecture might contribute – not only in negotiating multiple human interests and preconceptions but also in nurturing the benefits of numerous species, plants, animals and insects, sentient beings on the move with an expectation to find the land habitable – I have developed a method of Counter Prospecting. This thesis brings forward examples of how Counter Prospecting offers openings to address prospective exchanges with Sámi reindeer husbandry from a landscape perspective.

1.2.1 Gaps and Directions

The prospects of mining operations open knowledge gaps about their social, economic and environmental impacts. These are gaps, towards which research in a wide range of disciplines gravitates. I am interested in these transdisciplinary encounters in and about landscapes. The decision-making processes further generate voids, through which traditional landscape knowledge falls and disappears from the negotiations. The pastoral landscape is one of the tropes in landscape theory and landscape architecture (Geelmuyden,

2016). Landscape paintings in the 16th century celebrated the forest clearings and the emerald greens of sheep pastures, and, in the 18th century, carefully designed landscape gardens started to mimic the pastoral motifs (Giro, 2016). The agricultural landscapes are scaped by changing the terrain and intensive nurturing of species and soil. Likewise, the Southern and Central European pastoral landscapes that influenced early landscape paintings were intensively grazed. Arctic cultural landscapes are scaped by extensive nurturing of native species in ecologic niches that the terrain provides. One example is the lake-caring practices described by Law and Østmo (2017). As a result, meahcit and reindeer pastures look different and are often perceived and characterised as vast expanses of “wilderness” by the majority populations that lack knowledge of the expansive landscape-caring practices that shape Arctic landscapes. There is a gap in landscape theory that I am particularly interested in, but this gap is not empty, it is more like a perforation into the discourses of ways of knowing, regulating and relating to land, water and landscape in Sámi reindeer husbandry and Sámi meahcci practices. Recent decades have intensified pressures on outlying fields, making Sámi environmental knowledge and ways of knowing vital to the study of Arctic landscapes. Much that has been published on extraction in the Arctic does not address the kinds of work the term “landscape” does in decision-making processes in Sápmi and Fennoscandia.

1.3 RESEARCH QUESTION AND KEY THEMATICS

This thesis investigates contested landscapes in the Arctic. How can we navigate the many readings of Northern landscapes and understand how they interact? Extractive prospects concern the future of landscapes. There are many types of extractive industries that see the Arctic as a resource frontier. In assessing extractive prospects, it is reasonable to ask whose landscapes are ‘constructed’ and acknowledged at Arctic resource frontiers? Studying how the National strategies for the mining industries in Fennoscandia influenced the landscape discourse, this thesis raises concerns about how mining prospecting impacts the prospects of contemporary landscape practices in the Sámi meahcci. At a national level, the thesis looks into the resource cartographies of outlying fields, especially maps of mining and reindeer husbandry considered in the negotiations of environmental conditions and resource exploitation. What are the prospects of the landscape practices that the mining industry deals with as “externalities”? [i.e. what do the future hold for Sami reindeer husbandry, coastal fishery and other nature practices].

In order to situate this question, the thesis pursue to inquire about the

assessment and acquisition process of one a particular mining prospect. Through a multimodal inquiry of the Nussir and Ulveryggen copper mine prospect in Finnmark, the thesis unfolds three thematic studies. First Mineral prospecting and the Fennoscandian states' positioning in the context of global mining, second the prospect of Sámi reindeer husbandry in a perforated landscape and third the coastal fishers memory of last time the mining industry used Repparfjorden. The third theme is related to the present context of environmental resistance to marine mine tailing deposits in Norway and internationally. The thematic studies aim to answer how material and discursive landscapes were represented and argued for in planning assessment documents and the media during the application process of the Nussir and Ulveryggen copper mine prospect in Finnmark. Whose knowledge and what modes of knowing were taken into consideration when landscapes and meahcit were assessed, valued and mapped? How did the enactments of landscape in the Nussir case matter locally, and what can be learnt from this in the broader discourse of contested Arctic landscapes? The thesis discusses the struggle for a right to prospects and sense of community. Knowledge practices and mapping in Sámi reindeer husbandry reveals a scarcity of space in landscapes that are described as vast by developers and perceived as such by visitors.

Methodologically, the thesis then asks what critical cartography that gives accounts of Arctic landscape practices might be. Landscape architecture has an interest in making landscapes, and that leads to an additional question, which is: What can design approaches, spatial knowing and anticipatory projections from alternative prospects bring to studies of contested landscapes? How can the exchange of creativity and aesthetics protect and project ever-evolving landscapes? The thesis put forward counter prospecting as an explorative and projecting counter praxis.

1.3.1 Mining, Reindeer Husbandry and Coastal Fishery

The study examines how different concepts of landscape, outfield and meahcit were enacted during a mining case, the Nussir case in Finnmark. In the case I am studying, the prospecting company has made a claim of ownership to the future landscape, and the prospect for the company's mining operations opens knowledge gaps about its social, economic and environmental impacts. The prospects I follow in this thesis have produced two major controversies: the environmental controversy about tailings' disposal in Repparfjorden and the Indigenous rights controversy about mining in terrain that is crucial for the pastoral system to function. The development of the new mineral strategy and the decision-making process regarding the Nussir prospect have been

running in parallel with the reorganisation of reindeer management and pending demands from the Norwegian Parliament for a reduction in the number of reindeer.

The prospecting activities that prepared the grounds for the Nussir and Ulv-eryggen Copper Mine started in the 1980s, and the planning and application process began in 2008. Discursively, the prospect is a contested landscape that connects local mountains, valleys, waters and the fjords with global issues of landscape politics: extraction; colonialism; Indigenous rights; environment; governance; climate crisis; and species extinction. Materially, the prospecting activity has disrupted reindeer pastures since it started, and the mineral prospector has secured a permit to discharge mine tailings into Rep-parfjorden. The Sámi name of the fjord is Riehponvoutna. It is a fishing fjord that also has special protection as a national salmon fjord. The municipality council has been eager to approve the mine in anticipation of ripple effects that may increase economic activity in the municipality. Stakeholder interests in this contested landscape connect the Nussir prospect to policy fields, such as reindeer politics, fishery politics, Sámi politics, environmental politics, industrial politics, and development politics: in short, most domestic policy fields that are listed in the Arctic strategies of the Fennoscandian Nations. The theme of consequences of impacts of the anticipated mine on the landscape has been almost absent in the discourses on the Nussir prospect, while the theme of changed use of *meahcit* has caused considerable debate. This is something of a paradox that the landscape assessment remained largely unnoticed all those years until the prospector, finally, in 2019, was granted his mining concession.

The twofold objective of mineral prospecting—the search for minerals and the development of mining prospects—constructs cartographies that are passages—or perforations—to different ontologies. Extractive prospects, zoning plans and environmental impact assessments produce documents that assemble landscape representations, territorial representations and scientific representations to construct and mediate the worldview of global mining. Maps are legal instruments, and critical cartography has taken up such questions in regards of Indigenous cartography. Without the overview provided by a synthesis of maps, you do not have a tool to see how landscape practices are entangled and in competition. This is connected to questions about whose knowledge and whose maps that are taken into consideration in the negotiations of environmental conditions and resource exploitation. The thesis analyse how cartographies are employed in projects leading to controversial landscape transition. In connection with this, the thesis looks at how a new tool for landscape mapping, which may be characterised as a perforation

between digitally modelling the terrain and governing the landscapes, was developed in Norway to meet the requirements of the European Landscape Convention, while, at the same time, condition for a more effective industrial and infrastructural utilisation of outfield areas. In the negotiation about what counts as important landscape values it is a need to consider what counts as documentation and what counts as legitimate knowledge.

Between 2010 and 2020 the Nussir case ran in parallel to changes in policies directed towards Sámi reindeer husbandry and coastal fishery. The cartography of Sámi reindeer districts in Norway were updated, and electronic marking of all reindeer were discussed. Being in close proximity to a reindeer district in this period I learned about the cultural significance of the reindeer ear mark system. A multimodal documentation system that connects people, reindeer, landscapes and experience. Bjørklund and Eidheim (1997) has described the The Sámi reindeer earmark as a “map”. Connected to landscape, I see it as a cartography that is now under pressure. The question of whose landscapes that are ‘constructed’ and acknowledged at Arctic resource frontiers is closely connected to whose cartographies that document the landscapes.

Analysing the practices of knowledge extraction employed in constructing and assessing the impacts of extractive prospects, the thesis touches upon power relations in environmental governance in regard to the inclusion and exclusion of traditional ecological knowledge. It locates the extraction industries and environmental resistance, landscape approaches, local and Indigenous rights together in perforated landscapes and provides contextual and site-specific data from this ongoing mineral prospecting case. Addressing extraction, colonialism and the representation and politics of landscape, this thesis explores, through cartographic, perceptual, participatory and multimodally discursive methods, how environments, science and traditional knowledge are enacted in the discursive and material landscapes.

1.4 ON METHODS

1.4.1 Qualitative Approaches

With transdisciplinary linking the study identifies and discuss entanglements of the prospects of mining, Sámi reindeer husbandry and coastal fishery. Following a mixed, analytical design approach to investigate ongoing extractive prospects in Indigenous landscapes, the study combines mapping, map analysis, sketching and photography with qualitative methods from the

humanities and social sciences, including interviews, active participation and participatory observation in coastal fishery, reindeer husbandry, environmental resistance and at mining conferences.

The composite issues the thesis addresses have to motivate a transdisciplinary exploration type of study that draws on a design-oriented way of working in qualitative, situated research. Design-oriented approaches are synthesising (Morrison, 2010). I have chosen to perform fieldwork because ethnographic and place-based material studies are needed to understand landscapes. In prospective encounters, remote attendance are not sufficient. I have collected empirical material through travelling, participant observation, landscape perception, activism, photo documentation, sketching, drawing and mapping, a compilation of government- and case documents (including maps and visual representations, as well as media- and social media accounts), transdisciplinary reading and qualitative interviews. According to Kress (2011), discourse analysis that only analyses text and speech leaves multimodal messages unexplored. ‘A comprehensive account of power and meaning requires further semiotic categories’ (Kress 2011, 37). What role does for instance zoningplans, cartographies, and landscape representations play in the knowledge production that can be seen as a negotiating base for decision-making?

The way I have conducted these enquiries relies on the principle, reflection-in-action, in design research, which means that I have continually assembled, analysed and presented the material to engage in a visualised dialogue and to build relationships with the people I encountered at different sites, places and venues. Spatially, the study combines a circumpolar, multimodal discourse analysis of mineral extraction, with a situated, circannual, ethnographic approach to meahcit and landscapes. The approach is further inspired by approaches to landscape in science and technology studies (STS) that examine how landscape is done differently by different actors in environmental controversy. “Done differently” also means thought differently, mapped uniquely and made differently. Landscape theory and methodology decide which landscapes landscape scholars can sense and make sense of, perceive and represent, acknowledge and value. In a time of compartmentalisation and categorisation, Landscape studies in the arts need to be intertwined with ethnography, as was the case in the recent, and broadly inclusive, Dark Ecology project (Belina et al., 2016). Landscape analysis without ethnography leaves the researcher in sovereign isolation in the terrain, trapped in previous readings and landscape representations.

1.4.2 Discursive Modes in Critical Cartography

Cartographic and discursive studies that I mentioned as circumpolar make the connections look smooth, while, in reality, they are broken, leaking and un-continuous. Landscape studies, on the other hand, tend to be power blind, too narrowly framed by the researchers' concept of landscape and vested interest in the outcome of the study. In-depth, situated insights into Indigenous landscape practices are crucial, to respond in an informed and relevant way to contested landscapes. An established strategy is to combine critical cartography with topics such as power geometries and the relationships between migratory species, humans and their environments (Harris and Hazen, 2006).

Investigating the ways resource-prospecting cartographies set the agenda for how the landscapes are governed in the European Arctic, cartography and multimodal research are of vital importance to the understanding of the climate crisis. Sequences and animations of the demise of Arctic sea ice cover, dwindling wildlife and the decline in multispecies habitats make scientific findings of the consequences of global warming visually present, alongside cartographies representing carbon-saturated continental shelves, mineralised plains, mountains and seafloors.

1.4.3 Transdisciplinary reading

In combining and synthesising the literature study, I draw on my experience in design thinking. As an Arctic practitioner in architecture and a teacher in landscape architecture, I am already situated in a transdisciplinary position. In May 2013, the *Journal of Landscape Architecture* noticed a collapse of fixed disciplinary boundaries that 'has taken both more diverse and specific forms and modes arising from socio-economic, environmental and technical evolutions' (Blanchon-Caillot et al., JoLa ed. May 24, 2013). The 'planning and design arts' (Corner, 1999) consists of many specialisations with different jurisdictions. The architectural professions perform material, artistic and social engagement, by making architecture and shaping environments and landscapes. That implies the coupling of ethic and aesthetic sensitivity with technical and artistic skills. Architecture has, further, a 'long history of interfacing with a broad matrix of players, discourses and forces' (Scott, 2016, 442).

In order to find a useable term that covers the prospective capacity in design practices, without falling into the discussions of disciplinary differences between the architectures, I term architecture and landscape architecture "prospective arts" in the service of society. This term, the "prospective

arts”, highlights similarities with approaches in mineral prospecting. This is intended, as both mineral prospects and architectural and landscape architectural projects are processed through The Planning and Building Act.

1.4.4 Engaging through Counter Prospecting

In landscapes represented through extractive prospects while shaped by outfield practices, the thesis explores how the prospective capacities of landscape architecture can be employed in dialogue with traditional Indigenous ecological knowledge. Conceptualising prospects as future landscapes opens up the possibility to introduce practices of counter prospecting, through which the prospective arts may learn the *Arts of Living on a Damaged Planet* (Tsing et al., 2017). How can the prospective capacities of the architectural professions be put to work in engaging different ways of knowing? Moving beyond extraction allows me to look forward with the verb “prospecting”. Since the architectural arts are arts proposing designs for the environment, I argue that this design thinking is a mode of prospecting. I suggest that such a perforated and indeed cultural landscape may be read through what I term “counter prospecting”.

Counter Prospecting is an experimental and interpretative praxis-based method that operates on two intersecting planes: It resists dominant and already given prospects, while on a plane of anticipation it reaches beyond these in a pro-spective exchange towards possible alternate futures. (Uhre, 2018)

The thesis elaborates on this approach that provides an opening for landscape architecture to find a voice among the forces that resist capitalist growth visions. Practices of creating futures may be characterised as prospecting in their own right, such as coastal fishery, reindeer husbandry, Arctic food production, art and culture.

1.5 KNOWLEDGE RELATIONS

1.5.1 Growth in Literature on Arctic Landscapes

There has been growth in Arctic landscape studies that grapple with the paradoxes and rapid change of Arctic landscapes. The discipline is operating with landscape categories and aesthetical categories that do not fit the Arctic blend of custom, ontologies, perceptions and practices in the region (Hellström-Reimer, 2012; Ponte 2014; Kampevold Larsen and Peter Hemmersam, 2018). *Future North* is an interdisciplinary book on changing landscapes in the

Circum-Polar Arctic. All the authors have been part of the Future North project, and many of them have participated in the project journeys to Iceland and the Russian, Norwegian and Canadian North. ‘The Future North must involve an act of reading in order to salvage discourses and views that are blotted out by the rhetoric of Arctic futures and Arctic frontiers’ (Schimanski, 2018, 16). Many of these are transdisciplinary publications, where essayists and interviewees come from a range of fields, including geography, art, literature, architecture, landscape architecture, science, environment and business.

Northern Experiments was one of the pioneering works of mapping the High North within the field of landscape, urbanism and planning. This transdisciplinary edition offered a new mapping of the territories of the Barents Region. A proposition made by Espen Røyseland and Øystein Rø (2009), the editors and project leaders, was to establish a contemporary Pomor Zone, an idea that became implemented in the Norwegian High North Policy, so that the population in Kirkenes and Nikel could cross the Russian-Norwegian border without applying for a visa for every single crossing. In the book, *Many Norths, Spatial Practice in a Polar Territory*, by Lola Sheppard and Mason White, the authors have drawn, as much as they have written, ethnographic accounts of the material cultures of the Canadian Arctic. ‘Through the past 100 years, architecture, infrastructure, and settlements were employed as tools of economic, cultural, and military colonization’ (Sheppard and White, 2017 viii). Sheppard and White have included interviews with several Canadian scholars, cartographers and social scientists. Taking a systemic approach, *Extraction Empire: Undermining the Systems, States, and Scales of Canada’s Global Resource Empire* (Belangér, 2017), edited by landscape architect and former surface miner, Pierre Belangér, examines the historic and contemporary Canadian culture of extraction and confronts the colonial practices of the global mining industry. Through essays, interviews, archival material and multimedia visualisations, the publication is a massive mapping of global mining that renders Canada, the financial centre of more than 75 per cent of the world’s mining firms, the Empire of Mining. From an infrastructure and systemic approach, Belangér proposes decolonisation of planning from a landscape architectural point of view. He is known for his infrastructural approach. Affirming that architects and landscape architects design a vanishingly small per cent of the built and infrastructural environment, he emphasises the importance to give attention to the territorial scale.

These recent publications in architecture and landscape architecture that examine the discipline’s complicity in colonialism are a reaction to a disciplinary history, of which architect historian, Felicity Scott, brings cautionary

tales. Her book, *Outlaw Territories*, brings together stories of how architecture came to serve as a tool for neoliberal capitalism during the historic postcolonial rebuilding of former colonies. Following Foucault '[a]rchitecture is a political technology, one that remains endowed, quite literally, with the task of regulating the health, socialization, and productivity of a country's citizens' (Scott, 2016, 18). She explores 'how discourses at work within different streams of environmental and architectural research and "human settlement" activism functioned (knowingly or otherwise, and often ambivalently) within the logics of globalization' (Scott, 2016, 24). As an emerging field, the literature regarding Arctic landscapes in the field of landscape architecture is often nested within conference proceedings and architect competitions. Writings in landscape architecture often follow a topic, instead of centring on a geographic place or region. Examples of such categorisations are infrastructural landscapes; extractive landscapes; praxis landscapes, tourist landscapes, industrial landscapes, urban landscapes and pastoral landscapes (Kampevold Larsen and Hemmersham, 2018, 4). Such landscape categories align with different sectorial planning and management regimes of outlying fields. Winge (2013) explains how, until the 1960s, such different approaches to landscapes materialised far apart from each other, but that the current increased activity implies that the different uses in outlying fields competes for the resources.

1.5.2 Emerging Indigenous Approaches

During the 20th century, systematic injustices were committed against Arctic Indigenous peoples in the name of modernisation and nationalisation. During the last decade, Truth and Reconciliation Commissions have been set up in Canada, Greenland and the Nordic countries. Their mandate has been and is to document the century-long conduct of assimilation policies and the consequences and after-effects for people living today. First, in 2015, the complete report of the Canadian Truth and Reconciliation Commission, documenting the history and the human consequences of the Canadian Indian residential school system, was made public. Responding to the focus on the dark chapters of Canadian history, architecture education institutions in Canada now create room for Indigenous design thinking (Boutsalis, Oct 18, 2018). 'Common to the Nordic countries and Greenland is also the fact that the injustices were committed by Scandinavian welfare states in their making' (DIIS, 2019).

In 2017, the final report from the Reconciliation Commission of Greenland dealt with internal reconciliation in Greenland, considering the modernisation and Danification policies after 1953. In Sápmi, the Norwegian Truth Commission started its work in 2018 to document the history of the

Norwegianisation policies directed towards the Sámi people, the Kven people and Norwegian Finns, as well as the long-term effects and possible initiatives to foster reconciliation. In 2019, the Swedish Commission was nominated, and in 2020 Finland started the discussions about nominating a Commission.

Time will show how the work of the Arctic Truth and Reconciliation Commissions influences how landscape architects and scholars relate to Sápmi and other Indigenous landscapes. Internationally, Truth and Reconciliation Commissions have prompted built environment professionals and institutions to start to decolonise their approaches. For instance, the Australian Institute of Landscape Architects has made a Reflect Reconciliation Action Plan, in which they rehearse decolonising approaches, by acknowledging and respecting Traditional Owners across Australia as the original custodians of our land and waters. In this plan, the president and CEO of AILA encourage landscape architects to ‘advocate for a “Connection to Country” approach to landscape planning, design and management on all our projects, in varying contexts and across many scales’ (Corkery and Arnold, 2018, 2). Indigenous Architecture and Design Victoria supports Indigenous architects, as well as other architects, to become more engaged with the Indigenous community’s needs and to educate the profession about Indigenous cultural landscapes and opportunities. Working with ‘exposing built environment colleagues to the value of Indigenous Knowledge Systems and to the appropriateness of working with Australia’s Indigenous peoples and communities’ (Jones et al., 2017), working groups make curriculum strategies, aimed at empowering Indigenous protocols and knowledges in Australian university built environment education.

Architect and landscape students become internationalists during their training. Young Indigenous designers and scholars make their voices heard on environmental and Indigenous issues. When indigenous professionals and students now begin to network about Indigenous issues, landscapes and architectures, they bring with them a design thinking that might start to reconcile the discipline’s concepts of landscape with Indigenous landscape concepts and caring practices. It is a shift about to happen that gives hope for a decolonisation of the design disciplines. In the present, there is a perpetual negotiation about what to exclude and include in the timelines of the past events and future trajectories that society regards as the history of its constitution and institutions. The records of history are continually revised in accordance with new knowledge about what took place. These efforts build on century-long Indigenous struggles. In 1999, one of the forerunners in Indigenous critique, Linda Tuhiwai Smith (Ngati A wa and Ngati Porou), wrote that

The idea of contested stories and multiple discourses about the past, by different communities, is closely linked to the politics of everyday contemporary indigenous life. It is very much a part of the fabric of communities that value oral ways of knowing. These contested accounts are stored within genealogies, within the landscape, within weavings and carvings, even within the personal names that many people carried. (Smith, 1999, 33)

Art historian, Elin Haugdal, notes that the lack of Sámi architects practising in Sápmi makes it hard to identify ‘Sámi architecture’ solely on the basis of the ethnicity of the designer. ‘It is more cogent to recognise the building’s Sáminess as conditioned by place or by its usage, i.e. how the building allows for Indigenous living to take place’ (Haugdal, 2018, 827). Networks of Indigenous architects, designers and landscape architects across the world have started to organise their own communities that address Indigenous architectural and built environment issues. This is especially so in Aotearoa New Zealand, Australia, and Canada, with Ngā Aho, the Network of Māori Design Professionals, working as a driving force in educating Māori architects and landscape architects that inspire the global networks of Indigenous professionals.

1.5.3 Transdisciplinary Approaches to Contested Landscapes

There has been a considerable growth in transdisciplinary landscape studies on, in and about the Arctic that aims to savour landscape narratives and make sense of Arctic urgencies with planetary consequences.

Living Planet Dark Ecologies (Belina et al., 2016) is a collection of essays, co-written by artists and scientists who were also participating in the Dark Ecology research projects, led by Sonic Works and Hilde Methie from Pikene på Broen (Kirkenes). The book places specific art, performances, sound works and temporary sculptures that were enacted at locations in Nikel, Tromsø, Rotterdam and Kirkenes during journeys and seminars. Representing a new materiality in the arts, the collaboration between ethnographers and artists brings to the table a considerate rethinking of Arctic peoples’, Indigenous and otherwise, connection to the tundra, the coast and the scorched and battered extraction landscapes created by the extractive industries. The Hollow Earth project aims ‘to understand the scale of which Arctic geographies are being transformed at the hands of resource extraction, metals and minerals’ (Škarnulytė and Busse, 2013, 3). Landscape studies are rarely developed in a vacuum but often in a transdisciplinary discursive environment and with shifting cultural geographic approaches.

Landscape research is a fuzzy and diverse field because ‘Landscape is one of the media that hold together what science analytically must hold apart’ (Geelmuyden, 2016, 64). Transdisciplinary reading provides rich accounts of climate, landscape and cartography studies in cultural geography, Alpine and Arctic studies, anthropology, law, environmental humanities, political ecology, science and technology studies and the arts. Since no medium, be it a map, a story or an image, can hold everything and all things, the mix of elements contained together in landscape studies varies greatly. The disciplines that are involved in shaping the physical environment all have historical roots—like trees. Cartography is employed across the sciences and landscape as ‘a concept which cuts right across a very wide range of disciplines’ (Howard et al., 2013, 3). In this section, I situate my research where the disciplinary branches intersect and rub against each other. This is not a stable site, conceptually or materially. In this section, I braid different threads of feminist approaches and postcolonial theory, and there is an anthropological thread running through the thesis.

Finding landscape in the margins of extractive, governmental and cultural practices is bound to be a transdisciplinary endeavour. Shelley Egoz observes that ‘Landscape is found in scientific disciplines like ecology and physical geography, through fields such as human geography, archaeology, history, sociology, psychology, anthropology and not at least in the applied arts such as spatial planning, design and Landscape Architecture’ (Egoz, 2016, 113). Landscape geographers, Gunnhild Setten and Tom Mels, observe that ‘Different opinions about the meaning of landscape, combined with various players of power and interest, tend to translate into practical problems in the field’ (Mels and Setten, 2007, 200). Different landscape concepts remain contained within different disciplinary practices related to landscape. Setten emphasises the tension in the meaning of the term “landscape” as central to landscape studies.

Landscape is an analytical perspective, e.g. a way of looking at the surroundings, while at the same time it is the concrete you look at: the physical landscape. Landscapes are thus both material and discursive, and these dimensions presuppose each other (Setten, 2010, 93).¹

Exploitation and controversies about extractive prospects in Indigenous

1 My translation from Setten (2010): “For meg er det mest sentrale for å bruke landskapen spenningen som ligger i selve begrepet: Det er et analytisk perspektiv, dvs. en måte å se omgivelsene på, samtidig som det er det konkrete du ser på, selve det fysiske landskapet. Landskap er derfor både materielt og diskursivt, og disse dimensjonene betinger hverandre.”

landscapes in the Arctic is an emerging transdisciplinary research field where landscape representations and mapping are essential, but often implicit components. The existing literature in landscape theory does not join up, but rather holds apart, the discursive and material practices that produce Arctic landscapes. To map out the shifting landscape categories that are in use, I have followed a procedure inspired by the way the North Norwegian Philosopher, Jacob Meløe, proposed investigating a concept:

The method of investigating the concept of a harbour, therefore, is this: Situate yourself within the practice that this object belongs to, and then investigate the object and its contribution to that practice. If an object belongs essentially to a practice, as a harbour does, and a hammer, a coin, a cheque, a king's sceptre, etc., where the concept of that object is our understanding of that object's contribution to the practice, within which it is that object (where the accounts that we give may take care of only the uppermost layers of that understanding). (Meløe, 1988, 394)

Landscape is not an object that belongs essentially to one single practice (as a harbour does). In order to investigate the concept of landscape within the different practices that it contributes to in environmental controversies, I paraphrase the above quotation from Meløe in this way: The method for investigating the concept of a concept of landscape, therefore, is this: Situate yourself within the practice that this concept of landscape belongs to and then investigate the concept of landscape and its contribution to that practice. In Chapter 2 I have arranged my review of related literature by way of a transdisciplinary charting of theories, ontological differences and practices.

1.6 OUTLINE OF CHAPTERS

The dissertation comprises nine chapters, structured in three parts. Part I is an encircling of Arctic landscapes that calls for a multifaceted concept of landscape and gives a transdisciplinary methodological framework for design approaches in fieldwork, mapping and analysis. Chapter 1 has provided an overview of the thesis.

Chapter 2 gives accounts of historical context and discusses historical depth and prospective trajectories of landscape, prospecting, cartography, Sámi landscape terms and multispecies seasonality.

Chapter 3 offers accounts of the methods used in the study and provides an account of what I have done and how. I argue for the combination of multiple qualitative methods and that researchers should seek proximity to differently positioned actors in landscape controversies. The chapter further discusses the production of knowledge based on dialogue and mutual relations.

Part II consists of three thematic chapters, discussing mineral policy and its impacts on landscape, Sámi reindeer husbandry and coastal fishery. The chapters are based on my fieldwork, mappings and media analysis.

Chapter 4 discusses positions, cartographic encroachments and counter moves during the implementation of the new generation of mineral strategies, in the context of governable landscapes. The chapter zoom in from global mining, national strategies in the Nordic countries and the Nussir case as a touchdown project for the opening of a new mining region.

Chapter 5 brings forward firsthand experiences of how the so-called coexistence between reindeer husbandry and mineral prospecting function in the coastal mountains in Kvalsund municipality. In writing about fieldwork in the reindeer garasing district of Fiettár I also reflects upon worlding landscapes.

Chapter 6 is based on fieldwork at the shore of Repparfjorden and media studies focusing the plans for mining waste deposits in the fjord and the environmental struggle against it. Repparfjorden is the epicentre of the perforated landscape of the Nussir case.

Part III contains two analytical chapters and the conclusion. It applies the theoretical framework more explicitly and reflects upon fieldwork encounters, document and media analysis, mapping endeavours and the writing process.

Chapter 7 analyse the Nussir prospect through the notion of migratory landscapes at the scale of multispecies seasonal migration. Here, I discuss counter prospecting as both an analytical and creative, spatial method. This leads to the discussion on how to put at work the prospective capacities in landscape architecture praxis. In this chapter I contribute with counter prospecting as an explorative counter praxis that is ontologically inclusive, while resisting extractive approaches.

Chapter 8 reflects upon prospective landscapes. It describes how, during fieldwork, I started pondering the cartographic qualities of reindeer earmarks.

I apply counter prospecting as a discursive tool in enacting critical and situated analyses of the ongoing digitalisation of reindeer husbandry in Norway.

Chapter 9 concludes and discusses how my study relates to methodologies of decolonisation of landscape architectural approaches and methods. I consider the implications of my findings and list some prospective responsibilities and openings for future research.

1.7 CONCLUSION TO CHAPTER 1

The introduction has encompassed the theme of contested Arctic landscapes. The knowledge about contested Arctic landscapes is sectorial and perforated with knowledge gaps. Industrial prospects in the Sámi *Meahcci*, the outlying fields of the European Arctic, conjure potential landscapes among multiple future landscapes. Perforated landscapes are landscapes that are prepared for and marked by prospecting and extraction. The thesis explores the material and discursive impacts of mineral prospecting through documenting and analysing the landscape discourses and practices on and off the map, on site and in the media. The perforation of Arctic landscapes is documented through three thematic studies of the externalities of Fennoscandian mining, ways of knowing in Sámi reindeer husbandry, the marine environment and Sea-Sámi coastal fishery in North Norwegian Sápmi. The analysis combines power perspectives in critical cartography with multiple landscape concepts at large in environmental controversy, discourse and governance.

The Nussir and Ulveryggen copper mine prospect is an interesting case to explore as regards contested landscapes because it is well known as one of the great environmental controversies in the Arctic, with consequences for both Indigenous rights and the environment. The Nussir prospect has further been developed in parallel with a new national tool for landscape assessment, new national mineral strategies, new legislation for reindeer husbandry and the initiation of a Truth Commission on the Norwegianisation process.

We know that, in extractive prospects, ecological knowledge is often subverted by the economic expectations of the mining prospect. This study contributes to landscape research with *The Perforated Landscape* as a lens to interpret the discursive and material enactments of “landscape” in the European Arctic. The thesis analyses perforations between landscape assessment practices and landscape politics. Next, in Chapter 2, I explore multiple mean-

ings of the term “landscape” and discuss some implications of working across disciplinary borders with landscape as an ontologically slippery term. I argue for conceptualising landscape architecture as a prospective art that is situated in a privileged position to explore contested landscapes and to propose alternative trajectories.

Chapter 2 Material and Discursive Landscapes

2.1 INTRODUCTION

In the introductory chapter, I showed that there is renewed interest in studying extractive industries and Indigenous peoples in environmental humanities, the fine arts and in the social sciences in and on the Arctic. There is a growing body of literature in the social sciences about mineral exploration and exploitation across Arctic Indigenous lands. Landscape theoretical studies of current extractive prospects in Sámi areas are harder to find and often contained in transdisciplinary projects and conference proceedings. In the disciplinary field of landscape architecture, there is a theoretic gap in addressing contested landscapes through studying interactions between extractive industries, landscapes and local and Indigenous peoples in the European Arctic. Through developing the notion of the perforated landscape as a lens to understand the prospective agency of landscape practices, this chapter asks how we might engage analytically with a multiplicity of ways of understanding the many readings of Nordic and Sámi landscapes. The cartographic component of this chapter draws from critical cartographer, Jeremy Crampton (2001), who emphasises the power structures that are embedded in mapping practices. The aim of including discourses in critical cartography is to incorporate maps in a broad and historically reflected discussion in the light of postcolonial studies, articulated by Indigenous and feminist scholars and social anthropologists.

Environmental controversies assemble different worldviews. Different governmental and landscaping practices endow the term “landscape” with different meanings. The multiple realities that come together in contested landscapes are represented in different maps or map layers. It calls for a critical mapping of prevailing landscape concepts in cultural geography and

the implications of these different positions within landscape studies. Here, I next assemble four ways of framing a discursive and material analysis of the perforated landscape. Each of the following landscape categories holds a part of this thesis' literature review, with an emphasis on recent publications on Arctic landscapes, and each category is based on vested interest in landscape and cartography. "Governable Landscapes" draws on the Nordic landscape discourse, "Worlding Landscapes" discusses Sámi and Indigenous landscape concepts, "Prospective Landscapes" discusses resistance through the arts of making, and "Migratory Landscapes" asks questions of multispecies interests. These are not static categories. They assemble landscape in different ways that, taken together, join up insights from research into landscape within the dynamics, power relations and diverse practices, different interests and political formations.

I have selected four key maps to contextualise and to inscribe the four analytical categories of landscape in the history and entangled trajectories of Sápmi and Fennoscandia. I use these maps as passages to a reading of ongoing research on extraction and Indigenous landscape practices that these maps might represent and through which concepts and understanding may be conveyed. I conclude the chapter by discussing the four landscape concept categories, in order to understand how the term "landscape" eludes governance, while, at the same time, being subject to both governance and corporate exploitation. Taken together, the inquiry into these four concepts of "landscape" opens a discussion of counter prospecting as an alternative analytic and prospective method. The methodological implications of this counter-prospective mapping of the term "landscape" will be further unpacked in Chapter 3. It proposes a strategy, inspired by material semiotics, regarding how we might engage analytically with the multiplicity of ways of enacting Nordic and Sámi landscapes.

2.2 GOVERNABLE LANDSCAPES

In English language, the word "landscape" is used almost synonymously with "a view" or a representation of a landscape, as in "landscape painting". In the Nordic and German languages, "landscape" has a more substantive meaning, as it refers to an area. Governable landscapes lean on the term "Landscape as Polity" that is central to the Nordic countries' legacy in understanding "landscape" as a place governed by law and custom. 'A substantive concept of landscape is thus more concerned with social law and justice than with natural law and aesthetics' (Mels and Setten, 2007). The polemics about the

meaning of the term “landscape” went on for many years among landscape theoreticians. Most notably, there has been an oscillation between two positions among cultural geographers: landscape as “scenery” and landscape as a “spatial and political entity, a polity”. A polity is an area governed by law and custom. Landscape as polity refers to areas that are made orderly and enacted by law and custom. The notion of landscape as polity is well established in Nordic landscape research and based on cultural geographer Kenneth Olwig’s notion of the “substantive landscape” that is different from the English understanding of landscape as “scenery.” Olwig’s position in the discourse of the meaning of the term “landscape” restores the cultural geographer J.B. Jackson’s concept of landscape as a political or cultural entity, changing in the course of history. The concept of landscape as polity greatly influenced the definition of the term “landscape” that is used in the European Landscape Convention (CoE, 2000), which renders landscape and landscape perception governable in ways that acknowledge concerns of justice and democracy. The Council of Europe definition of landscape that reads as:

“*Landscape*” means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors. (CoE 2000, 9, Article 1: a)

To state that landscape is perceived by people makes it possible to discuss enactments of cultural readings of landscapes; stating that it has a character shaped of the action and interaction of natural and/or human factors implies that the landscape may change character. *The Routledge Companion for Landscape Studies* (Howard et al., 2013) finds that, through the European Landscape Convention, the Council of Europe has recognised a significant change ‘in the way that landscapes are regarded by academics, professionals and other interested parties,’ and continues:

The shift is from the identification, description and protection of ‘special’ landscapes towards an interest in the qualities of quotidian places, the ordinary, the everyday, even the degraded or stigmatized. (Howard et al., 2013, 4)

An emphasis on urban landscapes is part of a more general shift in landscape theoretical concerns towards the importance of justice and the possibility to discuss the right to landscape.

2.2.1 The Right to Landscape

Governable landscapes, a category derived from a concept of *landscape as domain*, makes it possible to talk about land rights defined by custom and

presence in the landscape from time immemorial. These are rights that have been subverted during the formation of the modern national states and colonial empires, but that have survived and gained strength after the postcolonial conjunction in time. The Council of Europe committed each party that signed the European Landscape Convention to undertake:

To recognise landscapes in law as an essential component of people's surroundings, an expression of the diversity of their shared cultural and natural heritage, and a foundation of their identity. (CoE, 2000, 11, Article 5: a)

A recent elaboration on how landscape architects and governments can respond to this responsibility is presented in *Defining Landscape Democracy, A Path to Spatial Justice*, edited by Shelley Egoz, Karsten Jørgensen and Deni Ruggeri. The book focuses on case studies showing how landscape planning attempts to enhance democracy, by employing a wide range of qualitative methods, such as storytelling, interviews and participant observation, participatory mapping and community-based planning. The editors build a theoretical framework of democracy, management of landscapes and inclusive planning, from a landscape perspective. In the foreword to *Defining Landscape Democracy* (Egoz et al., 2018), the cultural geographers, Olwig and Mitchell, remind the readers that the European Landscape Convention is largely rooted in Western notions of democracy, and that the landscape architecture approaches to landscape democracy are framed in a way that does not take into account the political landscape. In their opinion, the book raises the question of:

to what degree the concept of landscape, and the accompanying concept of democracy, as generated by professional landscape architects and planners who are intentionally engaged in *doing* landscape as a planned and designed space, is compatible with places whose value as landscape is difficult to calculate in such intentionally spatial, planning and aesthetic terms. (Olwig and Mitchell, 2018, Xvii)

Olwig and Mitchell's critique touches upon the prospective capacities in landscape architecture and landscape planning and, by the same token, implicitly conjures a third practice, namely that of assessing landscapes as "places whose value as landscape is difficult to calculate". As I will return to later, planning and building legislation makes landscape assessments a mandatory part of the decision-making process of every major landscape encroachment. According to cultural geographers, Mels and Mitchell,

the European Landscape Convention renders landscape governable in a particularly tricky way, by stating very clearly that landscape is an area as perceived by people, because:

Beyond its recognition of local culture and lay knowledge, the Convention simultaneously supports an approach to procedural justice that prioritizes instrumental rationality through expert rule over the landscape. (Mels and Mitchell, 2013, 218)

Mels and Mitchell (2013) further state that expert discourses ‘can be a form of cultural imperialism which through its avowedly expert-led scientism serves to mask fundamental, substantive concerns’ (Mels and Mitchell, 2013, 218). Don Mitchell developed the notion of “the right to landscape” through his empirical work in rural America, where he emphasised the relationship between law, rights and public space. The authors argue that the right to landscape might be the last counter in the environmental controversy.

I am interested in how landscape architecture may find novel ways to study and relate to contested landscapes. In a study about contested landscapes in the Arctic, there is reason to investigate whose quotidian spaces are recognised. In landscape management, Arctic landscapes are by outsider experts characterised as nature, the landscape qualities are thus assessed on a scale ranging from the ordinary to outstanding landscape qualities. It is largely overseen that, for local and Indigenous peoples, these landscapes are in fact “quotidian spaces” and landscapes of the everyday. *Arctic Voices: Resistance at the Tipping Point* (Banerjee, 2012) is a collection of essays by and interviews with environmentalists, local and Indigenous, that shine a searchlight on the rapid fragmentation of ecocultural spaces. The editor of the book, Environmental Writer, Subhankar Banerjee observes that:

great efforts of ecological restoration in urbanized areas, and ecological corridors are planned to connect landscapes that have been fragmented throughout the nineteenth and twentieth centuries. In the Arctic, however we are going in reverse—severely fragmenting the ecocultural space with great speed. (Banerjee, 2012, 2)

It makes one ponder how are, then the everyday, the ordinary and quotidian landscapes perceived in the European Arctic? How are for instance the landscape perceptions of the pastoral communities of Sámi reindeer herders recognised in landscape assessments?

Next, I provide historic context to the Nordic countries and the making of the Carta Marina. The historic content in these sections is in addition to scholarly sources, retrieved from Store Norske Leksikon and Store Danske Læksikon. I also refer to content in two recent grand historical TV series that have presented recent developments in historic and archaeological research, *Samernas tid* [Time of the Sámi], produced by Sveriges Television, and *Danmarks Historie* [The History of Denmark], produced by Danmarks Radio. I have crosschecked the information between all these sources, in order to gain an understanding of the historical and colonial conditions that have led to the current state of landscape in the European Arctic and Sápmi.

2.2.2 Landscape as Polity

Olwig (1996) has studied the etymology of the word “landscape” and argues that landscape understood as a polity is a historic reality in the Nordic countries, where *landskap* was the term used on tracts with relative self-governance. In her article, ‘Scapelands of the North – Roots, Rights, Routes’, Maria Hellström Reimer states that ‘The Nordic notion of landscape (*landskap*), in the Nordic languages, is a territorial notion referring to the cultural activity through which lands, forests, wild expanses, are regulated according to laws and synonymous with tract/trakt’ (Hellström Reimer, 2012, 429). The suffix “scape” is related to the Nordic verb *å skape* (to create). In the context of governance, the scape is related to the process of making the land orderly, enacting the land as a landscape. The landscape polities in the European Arctic are older than the national states, and I discuss these in relation to the Fennoscandian and the Sámi history, which are intertwined.

In the Middle Ages, the regional jurisdictions were called *landskab* in Denmark, *lagdømme* in Norway and *landskap* or alternatively *lagsaga* in Sweden. Landscape laws (*Landskabslove*) applied in the individual jurisdictions/landscapes. ‘The oldest transcription of the Norwegian *Gulatingssloven* is from the 11th century. In Denmark, the oldest *landscape laws* were written in the 12th century, and in Sweden at the beginning of the 14th century: *Göta-lovene* and *Svea-lovene*’ (Jørgensen and Andersen, 2017). The landscapes were ruled by the thing, *ting*, *lagting* and *landsting*, which was both a court of law and had legislative power.

The Renaissance way of objectifying landscape according to geometric rules originates from the city-states in what is now Italy. Cosgrove’s (1985) position regarding the meaning of the term “landscape” was that the mastery of space, aesthetically and scientifically, led to a politically charged “way of seeing” that spread from Italy to England. In the 16th century, the term

“landscape” occurred in England in the meaning of “scenery.” Olwig (1996) countered that the objectified landscape—as aesthetically pleasing scenery—which characterises the ideas inspired from Italy, is different from the Northern tradition, where landscape represented the particular customary qualities, however idealised, of actual *Landschaft*. In emphasising vision, representation practices and aesthetic taste, Cosgrove’s (1985) concept divorced the term “landscape” from community and the position of J.B. Jackson that “landscape” meant an area governed by law and custom. England had close cultural ties to Italy, and the import of spatial representation technologies came to influence the English painterly tradition and scenography in the English theatre. The English court commissioned “Italianate landscape paintings” that were constructed on the basis of geometric principles and that ‘emphasized the timeless geometrical laws of spatial aesthetics as expressed in natural scenes’ (Olwig, 1996, 638). Englishmen translated *paesaggio* to “landscape”. The scenic landscape from the arts and the theatre further inspired the ideal of the English landscape gardens, estates, and larger physical environment. Olwig states that:

The distinction is important because these scenes express a concept of nature and law that is different from that expressed by *Landschaft*. These ideas, which were foreign to Northern Europe, lent legitimacy to the ideological transformation of land into private property. (Olwig, 1996, 638)

The modern English concept of landscape came from two sources: the Italian and the German/Scandinavian where “landscape” in reality is a much older concept that means an area governed by custom and law. Olwig (1996) argues that the new synthesis of the English and the Germanic meaning of the word “landscape” suited a politics of commodification of landscape that spread through Europe.

2.2.3 Critical Reading of Cartography

As expertly produced, measured representations, ... maps are conventionally taken to be stable, accurate, indisputable mirrors of reality, providing the logical basis for future decision making as well as the means for later projecting a designed plan back onto the ground. (Corner, 1999, 215)

Maps are archives of collective geositioned knowledge. Baseline maps draw on centuries of collective achievements. Through the process of select-

ing what to represent in the map, this knowledge is already privileged. Geography historian, J.B. Harley, is known for bridging cartography and literary critics in a postcolonial rethinking of cartography. He encouraged an epistemological shift in the way the nature of maps should be interpreted. Claiming that historical maps had been under-articulated as a source of knowledge, he proposed a textual analysis, a deconstruction of maps inspired by the methods of poststructuralists like Jacques Derrida. In the case of colonial maps, JB Harley draws the attention to the fact that and the measurements of coasts and interiors in overseas and margin territories depended on the contribution of local informers. The contribution of Indigenous Peoples in cartography has largely gone unnoticed and unacknowledged. Maps is a tool for state governance. Drawing on Michel Foucault's ideas about power-knowledge, J.B. Harley argued for the introduction of a distinction between external and internal powers of cartography. By external power, he referred to the power of the cartographer's client, the state or private commissioners. By internal power, J.B. Harley referred to the power in the hands of cartographers, for instance to choose between thick and thin line styles, sizes of icons, etc. within cartographic conventions. In analysing maps, both the external and the internal powers are interesting. Appealing to geographers with an interest in maps, J.B. Harley proclaimed that:

The objective is to suggest that an alternative epistemology rooted in social theory rather than in scientific positivism, is more appropriate to the history of cartography. It will be shown that even "scientific" maps are a product not only of "the rules of the order of geometry and reason" but also of the "norms and values of the order of social ... tradition." Our task is to search for the social forces that have structured cartography and to locate the presence of power—and its effects—in all map knowledge. (Harley, 2002, 152)

J.B. Harley's work during the 1980s inspired a new generation of geographers and cartographers to perform a series of poststructural informed analyses of colonial maps, as well as counter-mapping initiatives. Among cartographers who provide critical accounts of cartography, we find Crampton, Wood and Perkins. Critical cartographers have attempted to read and articulate critical social theory from the position of practising cartographers, as critical theory leaves little room for the phenomena of the physical world and the knowledge of the drawing hand. Critical Cartography is first and foremost a mapping praxis. Informed by critical social theory, critical cartographers both theorize representation and power relations and produce maps. Powerful narratives often underlie the seeming objectivity of maps. In the geographer

and critical cartographer Crampton's words: without deconstruction, maps are 'doomed by ontologies, heavily complicit in imperial and colonial power' (Crampton, 2010, 182). J.B. Harley suggested that historic maps can be read as cultural documentation, reflecting social, political and ideological circumstances. Critical cartographers perpetuate J.B. Harley's work to clarify the epistemic break between the concept of cartography as a neutral communication system and a power-sensitive concept of maps in which cartography is seen in a field of power relations, where knowledge is constructed.

2.2.4 Map: *Carta Marina* and Nordic Landscapes

The Renaissance revolution in cartographic techniques would facilitate the shift of the global economic and cultural hegemony westwards from the Middle East to Western Europe. In the following century, overseas would be colonised, while, in the North and in Russia, processes of internal colonisation (Etkind, 2011) were in progress. Due to the introduction of the Protestant Reformation in North Europe, an archbishop in the Catholic Church of Uppsala travelled to the Pope. Olaus Magnus 'left for Rome at the turn of the year 1523/24 and never returned to Sweden' (Blix Hagen, online article, retrieved in 2016).² He took 16 years to craft a grand map and an ethnographic description of the Northern Lands. Magnus' political, environmental and cultural knowledge are presented on the map plane with imbedded representations of landscapes and denizens including sea monsters. In 1539, he printed his *Carta Marina* in Venice (Fig 2.1). The full title translates as: 'Marine Map and Description of the Northern Lands and their Wonders, Carefully Executed Anno Domini 1539' (Ginsberg, 2006, 39).³ Ginsberg notes that, despite its name, the *Carta Marina* is not a sea chart and that its compass roses and laxodromes are added for decorative purposes. The ocean was and still is important to wealth and culture along the northern coasts. The depiction of the oceanic territory provides openings to historical and cultural geographical contexts. Fish from the North Atlantic coasts and the Baltic Sea had already been exported throughout Europe for hundreds of years, when Magnus produced the *Carta Marina*. The map shows a native fishing boat outside Helgeland on the North Norwegian coast. Further north, three trade ships are grouped around Moskenesstraumen, the infamous maelstrom outside Lofoten.

2 The Protestant Reformation was a schism in Western Christianity initiated by Martin Luther with the publication of the "Ninety-five Theses" in 1517.

3 Map-collector and economist, William Ginsberg, writes that the *Carta Marina* is the first large-scale regional map of Europe. It is recorded in two copies. The first is at Bayerische Staatsbibliothek in Munich and the second is in the University Library of Uppsala.

Magnus conveyed with great care the territory as a culturally diverse space. More than a hundred illustrations are all marked with a letter that corresponds to a descriptive legend. Troy Storfjell (2013, 554) notes that ‘In those northern regions various groups *Scrifinni, Lapps, Bothnians*, etc. (all appellations for the Sámi) exist largely separated from the other Nordic Peoples’. The Bothnian Bay is covered with ice and crossed by warrior tribes. The illustrations also show historic hunting and husbandry practices. A Sámi woman is milking a reindeer. The legend states that ‘Domesticated reindeer gives fabulous milk’ (Ginsberg, 2006, 40). According to the documentary *Samernas Tid [The Times of the Sámi]*, the Sámi peoples traded seal oil, fish and products from fishing, hunting and reindeer husbandry, such as dried meat, cheese, traditional skin works, tools, pelt and fur, throughout the Middle Ages (Sveriges Televisjon, 2017). These were all desirable products for the European ruling classes. Alongside the work with the map, Magnus wrote a history of the Nordic peoples, *Historia de Gentibus Septentrionalibus*, that deepened the ethnographic and geographic account of the North. Magnus aimed to educate the Europeans about the North, to adjust prevailing misconceptions and to show the wonders that got lost to the Catholic world due to the Protestant Reformation in the Nordic Kingdoms. In Troy Storfjell’s words:

Olaus, as the last major writer on the Sámi to position himself as a spokesman for the interests of Western Christendom, sought to depict all the residents of Scandinavia as interesting, picturesque, and worthy of papal attention. (Storfjell, 2013, 555)

Historia de Gentibus Septentrionalibus rests heavily, however, on earlier written sources. Storfjell critically notes that Magnus’ accounts of the Sámi are influenced by medieval Christendom’s ambivalent relationship to wilderness and the wild man.

2.2.5 From Empire to States

Magnus produced the *Carta Marina* in Venice in 1539 in the mental image that existed in the North before the rise of the modern national states. The sense of geographic unity in the *Carta Marina* reflects the empirical condition under the Kalmar Union, initiated by the first female regent in Norden: Margrete of Denmark. The Kalmar Treaty was signed by the Danish, Norwegian and Swedish nobles at Kalmar Castle in 1397. In the era of the Kalmar Union, the regent of the three kingdoms ruled an early empire that included Finland and Karelen, parts of the Kola Peninsula, Greenland and Iceland. The union further controlled tax lands in the Faroe Islands, and the earldoms of Orkney and Shetland. In the Sámi areas, *Finnmarkene*, there were overlap-

Fig 2.1: Olaus Magnus, Carta Marina, a wall map of Fennoscandia convey governable landscapes. The caption reads “Marine map and Description of the Northern Lands and their Marvels, most carefully drawn up at Venice in the year 1539 through the generous assistance of the Most Honourable Lord Hieronymo Quirino”. Wikimedia Commons. URL: https://upload.wikimedia.org/wikipedia/commons/thumb/e/ea/Carta_Marina.jpeg/2916px-Carta_Marina.jpeg





Region	Coat of Arms
FRISIA	[Coat of Arms]
POMERANIA	[Coat of Arms]
PRUSSIA	[Coat of Arms]
LITHUANIA	[Coat of Arms]
RUSSIA ALBA	[Coat of Arms]
RUSSIA NIGRA	[Coat of Arms]
FINLANDIA	[Coat of Arms]
SCANDIA	[Coat of Arms]
NORVEGIA	[Coat of Arms]
SVECIA	[Coat of Arms]
FINMARCHIA	[Coat of Arms]
BIARMIA	[Coat of Arms]
SCOTIA	[Coat of Arms]
IRLANDIA	[Coat of Arms]
BRITANNIA	[Coat of Arms]
FRANCIA	[Coat of Arms]
GERMANIA	[Coat of Arms]
ITALIA	[Coat of Arms]
SPANIA	[Coat of Arms]
PORTUGALIA	[Coat of Arms]
AFRICA	[Coat of Arms]
ASIA	[Coat of Arms]
INDIA	[Coat of Arms]
CEYLONIA	[Coat of Arms]
AVSTRALIA	[Coat of Arms]
ANTARCTICA	[Coat of Arms]

ping tax lands, and the population in some landscapes had to pay taxes to the Swedish/Finnish and Danish/Norwegian king and the Russian Tsar.⁴ The Kalmar Union was never formally dissolved, but, in 1523, the year Olavus Magnus left for Rome Sweden detached from the Kalmar Union because of the brutal rule of King Christian III of Denmark. The Finnish people supported the Swedish king, Gustav Vasa's liberation war. In 1523, the Swedish kingdom was restored in union with Finland, while Norway stayed under Danish rule for the next four hundred years. In contrast to the Scandinavian kingdoms, the Sámi and other Indigenous peoples in the north did not organise state structures. When the Nordic kingdoms started to employ state technologies, such as maps and statistics, the Sámi landscapes, named on the *Carta Marina* as *Finmarchia*, *Scrifinia* and *Lappia*, became increasingly inscribed in the national states. While the Sámi were relieved from taxation to different kingdoms, Sápmi was divided and subjected to direct rule under the new state administrations.

As for the meaning of the word "landscape", there has been a transition from landscapes (*landskapr*) to states and, in the process, the meaning of the term "landscape" has also shifted in the Nordic countries. The regions that Olaus Magnus depicted in the *Carta Marina* are the different "landscapes" that were governed by the "things". It is possible to recognise these Nordic landscapes (*lagdømme*, *landskap* and *lagsaga*), when looking at this historical map. In Norway, some of the landscape names survived the 400 years of Danish rule, when the country was organised in an early form of counties (*amt*), and have lived on as the names of today's counties (*fylker*). Sweden had 25 *landskap* ruled by the feudal elite until the 17th century, when the country was reorganised into counties (*län*).

2.2.6 Royalty's Mortal Fear of Monsters

As mentioned above, Storfjell critically notes that Magnus reiterates the dualistic conception of the Sámi in medieval Christendom. He further notes that

4 An historian with a special interest in resource history from fur to the exploitation of oil, gas, and minerals, Alexander Etkind argued that the Russian empirical experience was one of internal colonization. The tsardom was built on the fur trade. 'Throughout the middle ages and what elsewhere was known as the Renaissance, man-made migrations of small, wild, furry animals defined the expansion of Russia' (Etkind, 2011, 66). This "zoological wealth" and the European elites' taste for fur created 'a tragedy on the frontlines of the hunting colonization, where the Cossacs were exterminating the hunting tribes in order to force them to exterminate the fur animals' (ibid., 86). Etkind writes that 'No other quest of a single commodity has been so well forgotten in the history of human suffering... looking at the splendid portraits of British kings, nobody thinks about those little peoples in the Arctic who exchanged these furs for "protection"' (ibid., 87).

this split image, of simultaneously innocent children of nature and dangerous sorcerers in league with diabolic forces, would remain as a central element in the pre-colonial discursive treatment of the Sámi. Studying Sámi fairy tales, as written down by Qvigstad in 1928, and reindeer herder and artist Johan Turi's book *Muitalus Samiid birra* [*An Account of the Sámi*] from 1910, religion scientist, Brita Pollan, reflects that, in contrast to the questions of the meaning of life in the hegemonic global religions, the Sami spiritual tradition, as it is known through oral sources,

testifies to the wondering about the forces of nature that govern life and the wondering about the human situation in a world it shares with many non-human living beings. It is a wondering that lies closer to natural science issues than philosophical ones. (Pollan, 2017, 264. My translation)⁵

By the end of the 1530s, the royal powers of the North had introduced Lutheran teachings as state religion. The authorities hit hard on practitioners of traditional Sami religion, partly because of the desire to make Danish/Norwegian colonisation easier. Far North, in the middle of the upper edge of the *Carta Marina*, there is a small island with a fortification: Varrdahvs (Vardøhus). Magnus has flanked the island with an eagle eating a lizard-like animal, and a hybrid sea monster clutching onto a mountain ridge. Vardøhus would be central in a dark chapter in Danish/Norwegian and Sámi history, when European witch persecution reached its northernmost shores. During the period between 1600 and 1692, 135 persons were accused of sorcery and brought to trial. Of these, 91 were convicted to be executed by burning. Seventy-seven women and 14 men were burned alive; 13 of these men were Sámi (Willumsen, 2019).

In today's city of Vardø, there is a place to commemorate the victims of the bizarre practice that, in the 17th century, was normalised through the legal system. Steilneset Memorial stands in memory of the victims of the Finnmark Witchcraft Trials. It was designed by the Swiss architect, Peter Zumptor, in collaboration with the late French-American Artist, Louise Bourgeois. In the pavilion of wood and canvas, the visitor walks through a dark cocoon, where the fates of the victims are given tangible form by a window and a lamp

5 My translation from Pollan (2017, 264): 'Tradisjonen vitner derimot om undring over hvilke krefter i naturen som styrer livet, og undring over menneskets situasjon i en verden det deler med mange levende vesener som ikke er mennesker. Det er en undring som ligger nærmere naturvitenskapelige problemstillinger enn filosofiske.'

lighting a table bearing the written convictions that have been compiled by historian, Liv Helene Willumsen. A chair with a burning flame is surrounded by mirrors in the bourgeois' installation, *The Dammed, the Possessed, and the Beloved*. The flame conjures the presence of the accused person, and the visitors in the pavilion can see their own face reflected in the mirrors that represent the accusers.

Dedicating her professional life to research on the witchcraft trial proceedings, Professor in History at the Arctic University of Norway, Liv Helene Willumsen, has retrieved a letter, in which King Christian IV accused the Sámi of using sorcery. In an interview, she states that the trial proceedings reveal a great fear of supernatural and diabolic forces. 'A powerful elite with a strong anxiety about the devil was crucial to women being accused and executed for sorcery to a far greater extent than men' (Bergstrøm, 2013).⁶ This fear was a European fear, spun out of the power struggle within Christianity at a time when science, technology, reason and rationality became increasingly important to state steering. Leading thinkers in contemporary environmental humanism are now rethinking the division between nature and culture that, during the Reformation and Enlightenment, became a basic division in Western thinking, not as fundamental but specific to Western scientific tradition. In Anna Tsing's words:

Luther helped forge what we think of as the modern world through his campaign against category-crossing monsters. But the forms of progress and rationalization that the enlightenment and the reformation sparked have proven far more scarier than the beasts they sought to banish. (Tsing et al., 2017, M 6)

During the Enlightenment, other traditions' ways of knowing were condemned as superstition and irrationality that needed to be cleared away. Since the works of the great French philosopher, René Descartes (1596-1650), the distinction between the "real world" and its representations, between nature and culture, human and non-human, body and soul has been defining to Western thinking.

For later thinkers, rationalization meant individualization and creation of distinct and alienated individuals, human and nonhuman. The

6 My translation from Bergstrøm (2013): 'En maktelite med sterk angst for djevelen var avgjørende for at kvinner ble anklaget og henrettet. For trolldom i langt større grad enn menn.'

Landscape making practices that followed from these new figures imagined in the world as space filled with autonomous entities and separate kinds, ones that could be easily aligned with capitalist fantasies of endless growth from alienated labour. (Tsing et al., 2017, M 6)

2.2.7 Borders and Recognition

In 1751, the national border between Denmark/Norway and Sweden/Finland became formally established. As a preparatory measure for the negotiations with Swedish king, the Danish king commissioned Major Peter Schnitler to obtain onsite knowledge along the mountain areas between the two kingdoms. Schnitler worked with this mapping task from 1742 to 1745. In a letter to the Danish king, he claimed that, because he had interviewed Sámi informants, his descriptions and maps on Nordlands Amt were more accurate than any previous descriptions (see Mordt, 2008, 13). The Schnitler's accounts, the *Border Examination Protocols*, is an example of how the Sámi population contributed with geographic knowledge that were crucial for the state formations. The treaties that settled the national borders in Fennoscandia is testament to just how close in time the division of Sápmi into four parts occurred and that Sámi history is intertwined with the history of Norway, Sweden, Finland and the Russian Kola Peninsula. The border treaty between Sweden and Denmark/Norway is connected to a codicil that acknowledged the Sámi people's rights, in accordance with old rights of usage. The Lapp Codicil secured for the reindeer herders seasonal passage across the border and the right to let their herds graze in summer- and winter land on each side of the border. Historian, Steinar Pedersen, who has studied the application and status of the *Lapp Codicil* during the period from 1751 to 1859, notes that:

In conjunction with this border's establishment, the nation states – Denmark-Norway and Sweden recognised the Sami as a separate people with fundamental rights. They therefore adopted rules intended to ensure the continued existence of the 'Lapp Nation'. This was enacted through an addendum to the border treaty, which was later called the Lapp Codicil. (Pedersen, 2008)

When Scandinavia was divided all the way to the Tana River in the north, the affected Sami people were given full rights to use the natural resources on both sides of the border. This applied to reindeer husbandry, hunting and fishing, which included sea fishing and hunting for seals. It was also applicable to Sami people not engaged in reindeer husbandry, in order to ensure that the Sami people could use the natural resources as before. Pedersen further docu-

ments that provisions were also included concerning Sami people's choice of citizenship and the full freedom of trade in Norway for Swedish Sami people living in the northernmost regions. Further, Sami neutrality in the event of war was granted.

2.2.8 National Romance, Assimilation, War and Modernisation

When Danish rule over Norway ended in 1814, a double Norwegianisation process started. On the one hand, it was a decolonisation process, to establish a new government and express difference from Denmark, by building a new national identity. On the other hand, it was a brutal Norwegianisation of the Sámi and the Kven people, and an intensified colonisation of Sámi landscapes and coastal resources. In line with Etkind's (2011) notion of internal colonisation, one might say that there was one external and one internal Norwegianisation policy: the first being decolonial and the other being colonial. The Norwegianisation policy lasted for 120 years, from the 1860s to the 1980s, and aimed to assimilate Sámi individuals and communities into the growing majority population. Similar nationalisation processes went on in Sweden, Finland and Russia, to control the peoples and exploit the resources. Internationally, the nationalisation processes coincided with escalating colonialism, which was legitimised by an evolutionist and natural determinism theory. In 1917, Elsa Laula Renberg led the first Sámi national meeting in Tråante/Trondheim.

Art historian, Mathias Danbolt (2018), writes in his article, 'Kunst og kolonialitet' ['Art and Coloniality'], that the National Romantic period in the arts, most notably in landscape paintings, up until now had been interpreted as a liberation process from Danish rule. He argues that it is necessary to see both the National Romantic period and contemporary art with new eyes, and confesses that:

For a long time, I was quite ignorant of the fact that National Romance, for example, coincided with the intensification of colonial research policy in relation to minority groups such as Kven and Sami in the north. (Danbolt, 2018)⁷

He further notes that such a coincidence in time between the Norwegianisation period and the National Romantic period is nowhere to be

⁷ My translation from Danbolt (2018): 'At nasjonalromantikken, for eksempel, sammenfalt med intensivering av den koloniale fororskningspolitikken i forhold til minoritetsgrupper som kvener og samer i nord, var jeg lenge pent ignorant overfor.'

seen on the magnificent paintings on display at the National Museum, nor is it mentioned in the communication texts of the museums. Only rarely, if at all, is the assimilation of the Sámi taken up in art historical overviews.

The Sámi landscape has been affected in various ways by Fennoscandian national authorities' political actions and use of power. On the Indigenous conditions internationally, Elizabeth Grant states that: 'The legacy of colonisation and its ongoing structures has continuing effects across all aspects of Indigenous cultures, and architecture is no exception' (Grant et al., 2018, 2). While Sámi reindeer herders, who managed to create an economy from the resources in the outfields and the mountains, kept Sámi as a working language, the Sea Sámi population lost their language. Sámi identity in coastal areas almost disappeared, due to assimilation, outmigration and the burning of the material and architectural heritage. During World War Two (WW2), the Germans occupied Norway. When the Germans were losing the war, they evacuated Finnmark and North Troms, and torched every house, barn, boathouse and school. The totality of Sea Sámi built heritage burned to ashes, but the people returned to their home places and started to build their society up from scratch. In the following decade, state-led reconstruction after WW2 introduced new building typologies and urban centres.

2.2.9 The Right to Land and Water

The first major area encroachments in reindeer pasture lands appeared in the 1960s, by means of hydropower development in Northern Norway. According to social anthropologist, Ivar Bjørklund, the development received little public attention. 'Common to all these projects was that, in various ways, they created problems for reindeer husbandry, but without leading to any public debate' (Bjørklund, 2016, 186).⁸ Bjørklund discusses how the state's approach to Sámi reindeer pastoralists has changed throughout history, from the Common Lapp Act of 1883 (*lappesfællendloven*) to the Mineral Act in 2010. Bjørklund traces the basic characteristics of the position and political context of Sámi reindeer herding, in a condensed account of legal and environmental history. He finds that the Norwegian state has changed its approach to reindeer herding from that of a "guardian" to that of a "negotiator". At the time, 'pastoral use did not provide legal protection in connection with intervention. Herding was defined by the state as "tolerated use" in the legal sense. Subsequently, reindeer husbandry necessarily had to give way to another activity'

8 My translation from: 'Felles for alle disse prosjektene var at de på ulike vis skapte problemer for reindriften, men uten at det førte til noen offentlig debatt.'

(Bjørklund 2016, 186).⁹ This approach changed with the Alta-Kautokeino case that Bjørklund described as a turning point in Norwegian policy towards the Sámi population (Fig 2.2). The Alta-Kautokeino conflict, where Sámi reindeer herders and environmentalists opposed hydropower interests and the Norwegian government, lasted from 1979 to 1981.

The Alta case was in many ways a phase shift within Norwegian law, policy and management. As far as reindeer husbandry was concerned, it led to the politicising of area encroachments in a whole different manner than before. (Bjørklund, 2016, 182)¹⁰

Political mobilization and international organization on the part of the Sami and other indigenous peoples over the last two decades has led to changes in assimilation policy in the Nordic countries. The Nordic Sami have been acknowledged as an indigenous people, and their own Sami parliaments have been established in the three countries. (Nilsen, 2003 163)

The Finnmark Act (*Finnmarksloven*) was adopted in 2005, with the aim of fulfilling the obligations to the Sami people in Article 14 of the ILO-169, and started a process of assessing all land in Finnmark, according to land rights. ‘So far, not one square meter has been acknowledged as Sámi land’ (Ravna, 2017).¹¹ The mapping of Indigenous usage of land and sea are thus done within the state system, and counter mapping takes a different form. The Finnmark Act transferred about 46,000 km² in Finnmark County in Northern Norway, which equates to around 96 per cent of the county’s total area, to the residents of Finnmark County. FeFo—the Finnmark Estate Agency, now manages the Finnmark estate area. Principal activities are land-use management on behalf of the residents of Finnmark.

The critical question concerning the rights of indigenous people to their own nature resources has, meanwhile, still not been clarified. This applies even in Norway, where the Sami’s right to land and water

9 My translation from: ‘Deres bruk ga ikke rettslig vern i forbindelse med inngrep, staten var som oftest grunneier og definerte reindriften som “tålt bruk” i juridisk forstand. Det betød at reindriften nødvendigvis måtte vike for annen aktivitet.’

10 My translation from: ‘Alta-saken ble på mange vis et tidskille innen norsk lovgivning, politikk og forvaltning. For reindriftens vedkommende førte det til at arealinngrep nå ble politisert på en hele annen måte enn tidligere.’

11 Øyvind Ravna in lecture, October 2017.

has been in the process of being evaluated for over twenty years.
(Nilsen, 2003, 163)

The Sámi Parliament has chosen to follow the judicial path in land-use issues. There has been significant discussion regarding the indigenous peoples' rights in accordance with article 27 of the *International Covenant on Civil and Political Rights* (1976). Article 27, states that:

In those States in which ethnic, religious or linguistic minorities exist, persons belonging to such minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practise their own religion, or to use their own language. (UN 1976, article 27).

Norway voted in favour of adopting the UN Declaration on the Rights of Indigenous Peoples in 2007 and was the first country to ratify the International Labour Organization (ILO) Convention (No. 169) *on Indigenous and Tribal Peoples in Independent Countries* (1989). Sweden has (by 2018) not ratified ILO 169.

Indigenous peoples often bear the social and environmental cost of extractive industries while obtaining little of the wealth they generate. Growing national and international recognition of indigenous rights, changes in corporate policy, and greater indigenous political capacity are changing the legal and political context of extractive industry. (O'Faircheallaigh, 2013, referred to by Nygaard 2016)

The Fennoscandian countries' governments are arguing that mining and other outfield practices can coexist. This is especially outspoken in the case of Sámi Reindeer husbandry that is an Indigenous landscape practice that is protected by ILO 169 and in the Constitutions of the Scandinavian countries. The notion "balanced coexistence" occurs in the Norwegian strategy for the mineral industry of 2013.

The first touchstone for such a "balanced coexistence" is the planned mining facility in Kvalsund pursued by the Nussir AS company. What kind of coexistence is the state—and the mining company—here envisioning? What kind of adaptations must reindeer husbandry make

for mining to take place—and what kinds of adaptations have they already made? (Bjørklund, 2016, 185)¹²

Bjørklund (2016) shows that the setting of the negotiations in the Nussir case is characterised by a strong asymmetry, due to existing power structures and not least because, he argues, there are a number of fields important to the reindeer grazing district affected, which have obviously been withheld from any negotiation. Bjørklund finds that, despite its role as a negotiator, the state does not take into consideration the situation of reindeer pastoralism. Conversely, Bjørklund claims, the notion of “balanced coexistence” remains insubstantial in its rhetoric, as it implies that reindeer herding must give way to mining and its related infrastructure.

“The right to landscape” (Mels and Mitchel, 2013) is a central concern in landscape research. The notion of landscape as polity makes available landscapes orderly, social spaces, and makes it possible, as Tom Mels has articulated, to bridge landscape, environmental justice and human rights. But while the European Landscape Convention comes into use to settle landscape controversies, the hegemonic landscape discourses have not proved relevant for the contested landscapes in the European Arctic. How, then, are the everyday, the ordinary, the quotidian and the circannual landscapes perceived in the European Arctic? How are the landscape perceptions of the pastoral communities of Sámi reindeer herders recognised in the practices of “landscape” management? To start to answer this question, it is important to turn to landscape as a worlding practice.

2.3 WORLDING LANDSCAPES

2.3.1 Encounters between Worlding Practices

The hegemonic meaning ascribed to the term “Landscape” has shifted throughout history. Moreover, “landscape” is not easily translated between disciplines or even between national languages. The analytic category, “worlding landscapes” includes highly relevant works that explain Sámi landscape concepts.

12 My translation From Bjørklund (2016, 185): ‘Den første prøvesteinen for en slik «balansert sameksistens» er det planlagte gruveanlegget i Kvalsund i regi av selskapet Nussir AS. Hva slags sameksistens er det staten—og gruveselskapet—her ser for seg? Hva slags tilpasninger må reindriften foreta for at gruedrift kan finne sted—og hva slags tilpasninger har de allerede foretatt?’



Fig 2.2: Resistance: An iconic image of the Kautokeino-Alta protests, January 1981. Protesters block the construction of construction roads at Stilla in connection with the hydropower development in the Alta-Kautokeino waterway. Photographer: Helge Sunde. Reproduced with the photographer's consent.

Since the 1970s, there has been a revitalisation of Sámi culture along the coast and in cities. Many theoretical works, therefore, emphasise the importance of the Sámi language. A growing body of literature written by Sámi scholars articulates the Sámi landscape terms and knowledge from and about reindeer pastoralism, traditional knowledge, reindeer luck, herding skills, ethics and aesthetics.

It matters what thoughts think thoughts. It matters what knowledges know knowledges. It matters what relations relate relations. It matters what worlds world worlds. It matters what stories tell stories.
(Haraway, 2016, 35)

In troubled times, it matters, also, what maps map maps. The cartographic component of this chapter discusses thematic mapping as a worlding practice, before looking into counter mapping and Indigenous cartographies, before reviewing the cartographic art works of the Sámi/Norwegian artist, Hans Ragnar Mathisen, and the Greenlandic/Danish Artist, Pia Arke. It matters what landscapes landscape landscapes. Studies in archaeology,

anthropology and other social sciences suggest that it is vital to seek nuanced understandings of how the landscape is cultivated through ongoing mutually constitutive relations between people and their environment. An archaeologist working in Finnmark in the 1970s, Audhild Schanche analysed how landscape terms in use in Sámi language differ from those used in Norwegian landscape management, that is particularly evident in the divide between natural landscape and cultural landscape.

2.3.2 Marking Difference

Post-structural social thinkers claimed that maps, culture and even action have the character of “texts” and can be “read”, using the same or similar interpretative techniques. In the field of cartography, there is no scarcity of calls for new Indigenous cartographies but few examples that challenge cartographic orthodoxies. According to Associate Professor in Sámi literature science, Harald Gaski, ‘Sami descriptions of landscape can function as maps, in which are incorporated topography, geography and information as to which routes are best to take’ (Gaski, 2004, 372). Introducing language and landscape terms widens the discourse of what forms of counter cartographies, re-cartographies, counter-narratives and countering representations of landscape exist, and what other prospects exist.

The short philosophical text, ‘The Two Landscapes of Northern Norway’, written in 1988 by the North Norwegian Philosopher, Jacob Meløe, is one of the first texts to articulate that a Northern place-theory must be closely connected to northern subsistence practices. It has become important in the scholarly discourse on North Norwegian and Sámi landscapes. Jakob Meløe maps two landscape terms that help understand how practices, landscape and language are interconnected. He studied the praxis-related and spatial implication of the coastal fishermen’s concept of a “natural harbour”, and the reindeer herders’ concept of a *jassa*. The professional terminology in Sámi reindeer pastoralism is in Sámi language, and the philosopher relies on the herders to explain for him, not only that a *jassa* is a patch of snow with certain qualities that are important to the well-being of the reindeer herd during the summer, but the text also expands to how the nomadic pastoral system works.

Based on Wittgenstein’s language theory, Meløe argues, that to understand a word, the object that it refers to must be ‘securely placed within its proper network of internal relations’ (Meløe, 1992, 140), and ‘within a given realm of human activities, or within a given practice, there is a network of implications between activities and activities, between activities and artefacts,

between artefacts and their natural surroundings, and between artefacts and artefacts' (Meløe, 1992, 136). The networks of implications constitute worlds and landscapes that yield concepts in the language: 'It is only the activity of sailing a boat too large for its crew to draw it ashore that will yield the concept of a landscape formation providing an adequate harbour' (Meløe, 1988, 392). Reflecting elsewhere on how to understand how small children learn their mother tongue, Meløe argues that:

If [you] don't already have a rich understanding of the world ... you are not able to extend the space where the words fits in place. (Meløe, 2006)¹³

The three most important criticisms that have been made about 'The Two Landscapes of Northern Norway' are, first, that the explicit global claim that there are "two" landscapes of Northern Norway excludes other landscapes, such as the agricultural and industrial landscapes. 'The Two Landscapes of Northern Norway' articulates knowledges of landscapes that, at the time the article was written (1992), were neglected in landscape and place theory, as well as in environmental governance. Geographer, Michael Jones, connects Meløe's text in line with strategies of marking difference, as an implicit critique of resistance to Southern Norwegian cultural and political dominance, as the interest in cultural landscapes at the time was centred on South Norwegian agricultural landscapes (see Jones, 2008). Further, Jones holds that reindeer herding and fishing are typically male activities and, thus, that Meløe's text is gender-blind. But, if one extends the networks of herding and fishing to include the pastoral and coastal communities, the gender picture becomes more complex. Both the reindeer herders and the fishermen's landscapes are sustained by women's work and intertwined with the surrounding society.

From a phenomenological perspective, philosopher Anniken Greve (2014) emphasises the dimension of landscape perception and appreciation. Reindeer herding and coastal fishery cannot be framed entirely within landscape usage only. She writes:

I suggest that even the reindeer herder's relation to his surrounding world is constituted by an interaction that is more primordial than the craft of herding itself. It is marked by an intimacy and invites an

13 My translation from Meløe (2006), lecture online video: 'Hvis man ikke allerede får en ganske rik forståelse for verden, ... så får du ikke bygget ut det rommet som ord skal falle på plass innenfor.'

appreciation of the surrounding world that begins before it becomes useful for him, and continues beyond that point. (Greve, 2014, 83)

In the current discourses of intensified utilisation of Fennoscandian and Sámi landscapes, both reindeer herding and coastal fishery landscapes that Meløe described in the essay are under unprecedented pressure. Mining in Norway impacts land and sea. Because of the topology, mining companies rely on depositing the environmental problematic waste—mine tailings—in fjords. While mines are typically localised in the mountains, the mining industry in Norway is allowed to deposit mine tailings into fjords. Herders and fishermen spend most of their time in the mountains, on Arctic beaches and in coastal waters. Conversely, the landscapes that are impacted by mining and energy development are exactly ‘the two landscapes’ described by Meløe. Husbandry, fishery and mining matter, and are emblematic examples of contested landscapes through which we can understand the iterations and connections between environment, language, and the practices that make up Arctic landscapes. Greve’s emphasis on the intimacy with landscape highlights that, in contested landscapes, more is at stake than subsistence, economy and use. The right to landscape has a spiritual dimension.

2.3.3 Layering Worlds in Map Layers

Scholars in material semiotics have recently been productive in conceptualising ways to relate to Indigenous landscape practices. Moving from an understanding of different perspectives to an understanding of different practices and performativity, John Law, referring to Anne Marie Moll’s work, discusses a conjunction between actor–network theory and material semiotics that opens up the possibility to talk about multiple realities, where each practice generates its own material reality:

[H]ow these relate together, if they do so at all, is itself a practical matter. Sometimes, and for a time, they may be coordinated into a single reality, but often this does not happen. (Mol, cited by Law, 2009, 152)

The technology allows for different realities to be stacked on top of each other in map layers. Landscape futures is at large in a negotiation between cartographies governed by sectorial knowledge domains. These maps are layers that need to be read differently from landscape concepts such as the palimpsest, layers of cultural meaning or other blanketing metaphors. My interest in establishing a multi-layered reading of the landscape is the possibility to explore hybrid forms and contact points that become decisive for planning

policy. John Law (2009) claims, with support from Mol, that the world is more often not held together: we get multiple bodies, multiple worlds. If each landscape practice generate its own world, is landscape the media that holds these worlds together?

2.3.4 Counter Modes in Cartography

Critical cartography takes off from a set of basic critical questions: Who is the author of the map? What is portrayed? How, and for what purpose, is the map made, and what is not represented in the map? No map is innocent. Counter mapping refers to the crafting of maps that contest hegemonic map information; it shows and points to information that is subjugated or rendered invisible in existing maps. A counter map is basically countering another map. The term “counter mapping” was coined by Nancy Lee Peluso. It is associated with postcolonial and Indigenous mapping practices that emphasise traditional land rights that are subjugated or rendered invisible in state maps. In 1995, Peluso shone the searchlight on mapping practices perpetuated by international NGOs (non governmental organisation) in response to the Indonesian government’s superseding of customary forest rights through official planning and cartographies that provided land for industrial timber exploitation. Counter mapping harnesses the power of maps to raise awareness about the politics of spatial justice. Peluso recognises that ‘An alternative or “counter” mapping movement has begun’ and goes on to say that:

The goal of these efforts is to appropriate the state’s techniques and manners of representation to bolster the legitimacy of “customary” claims to resources. The practical effect is far-reaching: the use of maps and a highly “territorialized” strategy redefines and reinvents customary claims to standing forest resources and harvestable products as claims to the land itself. (Lee Peluso, 1995, 384)

Counter mapping is a criticism of hegemonic mapping practices; it involves the making of counter maps to reveal what is invisible in the debate and enables an analysis of how power structures in the discourse of contested landscapes are partly manifested through the use of maps. Two mapping initiatives are of special interest in Sápmi: Globio and RenGis. RenGis is a mapping tool for Swedish Sámi reindeer pastoralists, where industrial plans, biodiversity and reindeer behaviour were superimposed, so that the impacts of landscape encroachments were visualised in a comprehensible way. ‘RenGis is the only systematic register of land encroachments in the field of

reindeer husbandry that is publicly available' (Kløcker et al., 2016, 34).¹⁴ In Norway, Protect Sápmi follows this method in supporting reindeer husbandry in development cases in the Norwegian part of Sapmi. Globio is developed by GridA. In an analysis from 2010, industrial plans and plans for infrastructure in North Fennoscandia forecast a loss of reindeer pastures of 50 per cent by 2030. Landscape architect James Corner (1999) proposes employing the power of maps as a liberating enterprise and draws inspiration from artistic appropriation of cartography.

Unlike the scientific objectivism that guides most modern cartographers, artists have been more conscious of the essentially fictional status of maps and the power they possess for construing and constructing worlds. (Corner, 1999, 220)

Artist and cartographer Denis Wood has raised criticism of critical cartographers' attempts to turn cartography—that is a tool of state governance—against the state, 'because in the end, what gives a map power is the power behind the map, that is the State' (Wood, 2010). Especially problematic for Wood is the tendency among 'counter-cartographers' to render their own contribution invisible by referring to it as 'technical stuff' and, instead, make claims of authority, by referring to 'authenticity'. Quite harshly, Wood suggests that NGO-driven counter mapping initiatives 'help cartography penetrate every single space where it has not yet been', thus unwittingly perpetuating colonial mindsets. He then gives examples of court rules where Indigenous peoples have been granted land rights through material evidence of occupancy that is not maps.

Yet having been challenged by a song, a dish of sand, a painting, no state map can ever again be quite the authoritative thing that it was. And this in the end has to be the systemic contribution of Indigenous mapping to cartographic critique—no matter its manifold contradictions—that of calling into question the authority of the state's maps. Unless the contribution lies in the very contradictions, cracking open, the way they do, the shell of the map as they remake it. (Wood, 2010, 130)

14 Translated by me from Kløcker et al., 2016, 34: 'RenGIS är den enda fullständiga sammanställningen av all markanvändning inom renskötseområdet som finns offentligt tillgänglig.'

Critical cartographer and writer Jeremie Crampton finds that, in cartography, ‘Two developments are especially notable: artistic appropriation of mapping and the storming success of map hacking’ (Crampton, 2010, 21). Crampton considers “non-cartographic mapping” some of the most interesting critiques of cartography, and notes that ‘Many of the artists are interested in geographic re-mappings, and have worked with the assumption that maps are political without explicitly saying so’ (ibid, 21). Counter cartographies take many forms. A founder of the Indigenous Mapping Workshop, Steve DeRoy from Ebb and Flow First Nations in Manitoba, emphasises the importance of making Indigenous communities visible on corporate hegemonic maps, such as Google Earth, as well as state maps and various map applications (Pauls, 2017). The Indigenous Mapping Workshop supports geospatial capacity building, to promote Indigenous people’s ability to collect, analyse and visualise community-based geospatial information in mapping the future.

The late Greenlandic artist Pia Arke’s term “ethno-aesthetics” mirrors the European fetish for the exotic and the way of perceiving the Indigenous artist as someone that is supposed to produce Indigenous art. Arke’s insights are also applicable to the expectations regarding the kinds of cartography that Indigenous peoples should make in Wood’s (2010) criticism above. The different ideals of cartography, of scientific objectivism, artistic expression, conventions and experiments live and develop side by side and find their expression through maps of different natures. Pia developed the term “ethno-aesthetics” in her master thesis. It was published by Kuratorisk Aksjon after her death, with an extensive commentary section, written by Lars Kiel Bertelsen. Earlier than most, Bertelsen writes, ‘Pia had understood that both in great things and in small things colonialism (the mastery over and exploitation of one party by another) is a consequence of the aesthetic distinctions between “them” and “us”’ (Bertelsen, 2010, 8). He continues:

For Pia [Arke] this question was an “aesthetic” concern (i.e. a matter of form), and perhaps her choice of the concept “ethno-aesthetics” instead of “postcolonialism” also contains an existential recognition that this challenge is fundamental and permanent. It is a challenge that all people are faced with; a challenge which therefore does not just come “after colonialism”, but in a certain sense before it. It is not a matter of past guilt, but of future responsibility. (Bertelsen, 2010, 8)

While studying fine arts in Copenhagen, Arke found an image of her grandparents, labelled ‘Greenlanders’ in the magazine, *National Geographic*. This prompted her to make contact with tourists, researchers, constructors

and administrators that had been in Scoresbysund/Ittoqortormiit and ask for copies of their photos. Her project included an exhibition in Scoresbysund, where the citizens were invited to write names on the photos and share stories about the people that were depicted. In this way, Arke restored the history of the Greenlandic town, Ittoqortormiit. Pia Arke died in 2007. Throughout her whole artistic career, she deployed postcolonialism and geopolitics as a deep personal experience. In 2010, a retrospective exhibition, ‘Tupilakosaurus’, curated by Kuratorisk Aksjon, took place in Nuuk. One of the works in the exhibition, *Legend I-V*, comprised five large collages of early maps of Greenland, juxtaposed with portraits of the Inuits that contributed the knowledge and skills that made the expeditions and measurements possible. In the programme for ‘Tupilakosaurus’, Jan-Erik Lundstrøm (2012) alluded to J.P. Harley, in writing that:

Legend I-V unites life experiences rooted in personal biography with geopolitics; how the small strokes of the pen, which change a map, a map picture, and which draw in a territory, can completely at one and the same time, affect and define people’s lives. (Lundström, 2012, 275)

In the same year, *Stories from Scoresbysund: Photographs, Colonisation and Mapping* (Arke, 2010) was published. It is a book about the Greenlandic-Danish Artist Pia Arke’s work from 2003 on cartography, story-making and postcolonial reflections as an artist. Pia Arke explored how geopolitical tensions affected the Greenlandic population. Growing up in Scoresbysund, a city constructed by the Danish rulers as an answer to a Norwegian land claim on East Greenland in the 1920s, she lived a colonial experience. The town had the Greenlandic name, Ittoqortormiit, which ironically means, ‘the place with big houses’. The Norwegian land claim was taken to court in The Hague. The Norwegian anthropologist, Helge Ingstad, one of the main figures in Norwegian anthropological history, was Sysselemann in Scoresbysund the year Norway claimed East Greenland under Norwegian jurisdiction. Besides the measure of constructing the town, the Danes further produced the first territorial map that was based on aerial photos and won the trial. Pia Arke showed how territorial politics affect and define people’s life, but also that the challenge is to take on a future responsibility.

2.3.5 Map: Sápmi

Sámi artist Hans Ragnar Mathisen started a life-long project of making hand-drawn maps with Sámi place names, a practice of storytelling by maps showing the presence of Sámi cultural landscapes. Mathisen’s maps are artworks

that belongs to the context of Indigenous emancipation, acknowledgement of Indigenous rights and revitalisation of Sámi culture. Spoken language, texts and music have temporal extents that have the power to invoke mental images. Images, on the other hand, seemingly give away all information at a glance. Turnbull (2007) notes that it is the viewer that lets the eyes move across the map plane, that adds the extent of time to the experience of reading the map.

From his art research into cartography, landscape and ancient and traditional Sámi expressions, the artist-cartographer Hans Ragnar Mathisen has developed a cartography of connectedness, which turns a critical searchlight on the lack of Sámi place names in official maps of the region. The map *Sápmi* (Fig 2.3) from 1974 demonstrates a reinterpretation of all the conventional map elements, the legend, the frame and icons. Borders are absent, while the shape of the water sheds, the topography and Sámi place names provide orientation. The colour intensity and density of toponymes is fading at the southern margins of the traditional Sámi territory, where the map serves as a background to insertions of large-scale and small-scale maps, as well as depictions with ornamental and symbolic content.

The claims in Mathisen's maps are the right to belonging and connectedness, and the proofs are the occurrence of Sámi place names. At the time, questions about knowledge production and Sámi identity and rights started to surface. For Mathisen, who has produced almost 40 such hand-drawn maps over several decades of dedicated work, *Sápmi* is best represented in accordance with a 'cartography of connectedness' that registers the historical continuity of Sámi place names. 'From Kola to Lofoten, from the North Cape to Femunden, the map became a reminder of our connectedness in the larger context' (Mathisen 2010). Mathisen was concerned about the public reception of the map he was planning to draw of *Sápmi*. In order to negotiate the ambition to show undivided Sámi lands and to mitigate the ethno-political impacts, he expanded the map with cultural documentation, thinking that, if he managed to craft this in a pleasing and beautiful manner, even critics would accept that Sámi culture and place names existed in large parts of Fennoscandia.

Sámi place names were under-represented on the official topographical map series, and this is what got Mathisen started. 'Place names are essential to any map,' he wrote in 2010, 'and it was the bad treatment of the Sámi place names on existing maps that made me try to initiate another practice' (my translation). A year earlier, he had made a map based on rector and linguist Just Qvigstad's collection of Sámi place names from Tromsø Municipality,

published in 1935. Historian Per Pippin Aspaas (2011) notes that later collections by Stine Benedicte Sveen and the Sami language centre in Lakselvbukt (Gáisi giellaguovddáš, established in 2004) have documented that many Sami place names are still in oral use in several settlements within the current municipal boundaries, but that the Sami names of settlements are only to a small extent incorporated into official maps. ‘The Sami names are almost exclusively localised to the mountain and the plains, while urban areas are named in Norwegian. (...) This helps to cement an impression that the Sami is something to do with reindeer husbandry, while the larger resident Sea Sámi population are wiped out of history.’¹⁵ Sámi place names are an integral part of Sámi cultural heritage. Mathisen has been engaged in a personal and collective effort to collect Sámi place names, with a passionate sense of urgency. ‘The old people are dying; now I am old too. I have challenged young people to take up the tradition of collecting names, place names are cultural heritage’ (Lecture in Tromsø, October 15, 2013). Indigenous toponymes/place names carry traditional knowledge about the environments and landscapes.

Place names provide the basis for the transmission of a cultural landscape, through an oral way of mapping built around narratives and the designation of specific landmarks...because official maps are unable to express the continual renewal of Sami place names and the land features that are meaningful to the Sami. (Cogos et al., 2017, 43)

Depicting companion species in his cartography, Mathisen negotiates the culture-nature divide. Displaying motives extracted from Sámi history and artefacts collaged into topographic representations, together with fish and birds, poems, people and cosmologic icons, his cartography maps conjure a state of timelessness and connections between peoples and lands. The scales in inserted smaller maps on the sheet range from the whole coast of Sápmi to connection between small biotopes and cultural practice.

Mathisen has crafted a large series of territorial maps that can be seen as re-appropriations of mapping into artworks. Mathisen negotiated his entitlement to produce Sámi maps; to comment on, represent and inscribe his métier as a creator of maps into the Sámi tradition of *duodji* (traditional handicrafts), within the Sámi community. The act of crafting a map, using the

15 My translation of Aspaas (2011): ‘De samiske navnene er nesten utelukkende lokalisert til fjell og vidde, mens tettbygde strøk navngis på norsk. Slik Pedersen ser det, bidrar dette til å sementere et inntrykk av at det samiske er noe som har med reindrift å gjøre, mens de tallmessige overlegne, fastboende sjosamene blir visket ut av historien.’

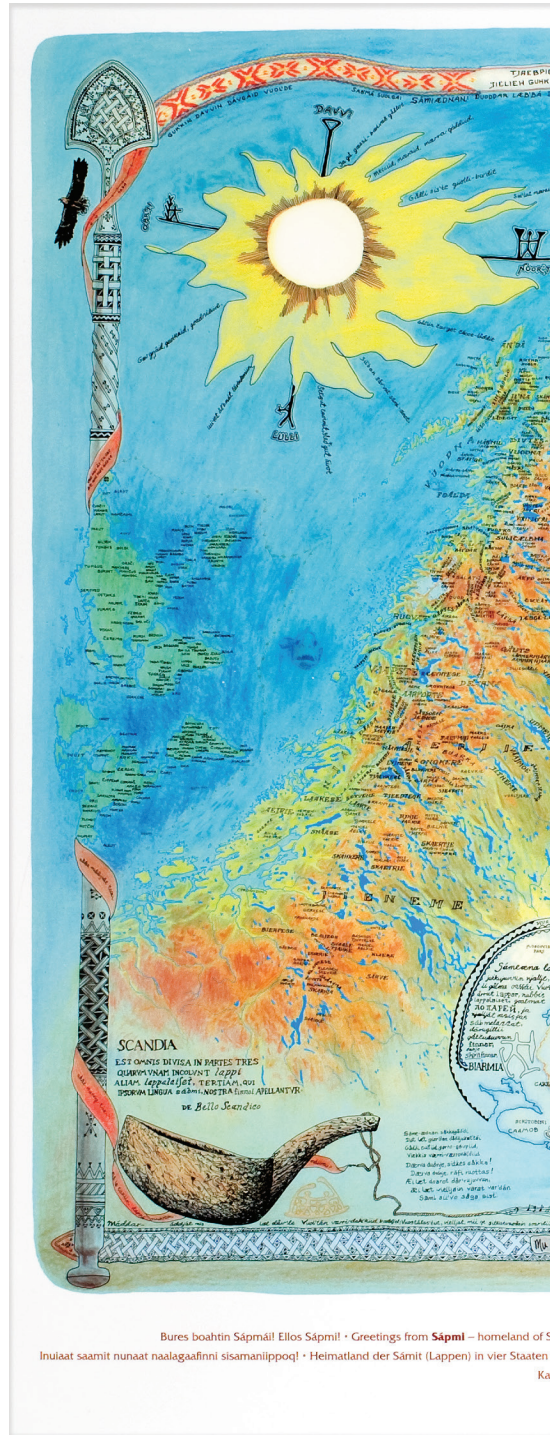
tools at hand: the drawing table, the foils, the different ink pens, the colouring pencils, tools he explored in his work as a draftsman at an architect practice in the 1970s, and the way he invented methods to make these tools perform what he wanted to achieve is one such connection to *duodji*. Mathisen's carefully crafted maps join the past to the present and demonstrate the continuity of human existence with the natural world. 'Besides his goav-dis, the shaman drum, Noaidi also had an inner map of the region. He knew which mountains were Bassevárít, sacred mountains, and what they entailed' (Mathisen, 2010, 123, my translation). Reiterating the need to protect Indigenous sacred knowledge, Mathisen warns that, 'One has to be cautious about naming *sámesiiddat* [Sámi sacred sites] on maps, because people can go there and destroy them'.

The now young generation of Sámi artists and activists occasionally uses maps to voice criticism of extracting governance in Sápmi. The anonymous Sámi art collective, Suohpanterror, spread the map *Sámietnama Diamánta* on social media as an answer to the mineral strategies that were launched in Scandinavia in 2013. *Sámeeatnama Diamánta* [*The Sámi Diamond*] (2014) is a game board, proposing that the intensified resource exploration and exploitation in Sámi lands is a continuum of colonial praxis.

2.3.6 Outlying Fields

Outfields and coastal seascapes are subjected to major alteration, both by increase in human activity, resource extraction and climate change. The extraction policy for outfields and coastal seascapes is contested in terms of societal needs, economic development, environmental concerns and Indigenous rights. In the early 2000s, Svanhild Andersen led the project "Environment, Culture, and Ways of Knowing: Usage and Management of Cultural Environments and Natural Resources in Sámi Areas [Miljø, kultur og kunnskap. Bruk og forvaltning av kulturmiljø og naturressurser i samiske områder]. Two reports were published in *Dieđut*, a transdisciplinary and multilingual journal on Sámi research at the Sámi Állaskuvla. Archaeologist Audhild Schanche wrote a much cited and comparative analysis of central Norwegian and Sámi landscape concepts in the second report, *Sámi Landscapes and Agenda 21* [*Samiske landskap og Agenda 21: kultur, næring, miljøvern og demokrati*]. The article problematises the categories that are used as organising principles in national landscape, cultural heritage and environmental management. Schanche's analysis is in keeping with long-standing theoretical work by feminist and postcolonial thinkers, who have articulated strategies to overcome such dichotomies. The divide between "wilderness" and "cultural landscapes" collides with Sámi terminology, landscape concepts, relations to and customary organisation of the landscape.

Fig 2.3: Worlding landscapes. Hans Ragnar Mathisen, Sápmi from 1974, reproduced with the artist's consent.



Bures boahhtin Sápmaíl Ellos Sápmaíl · Greetings from Sápmi – homeland of Sápmi
 Inulaat saamit nunaat naalagaafinni sisamanilppooj · Heimatland der Sámit (Lappen) in vier Staaten



SÁPMI

Sápmi (Lapps in four states) • Hilsen fra Sápmi – samenes hjemland i fire stater! • Terveisin Saamelaiskansan kotimaasta – Sápmi – njejjässá valttiossa! Saamit nunaant tikillaarit –
 La Patrie du Sámis (Lapons) en quatre pays • Saludo de la Sápmi, patria de la gente Sámi (Lapones) en quatro estados! • Привет от СІМІ — родина саамов четырех государств!
 y hatun Sápmi illaččatymanta pacha narayuy kichis kaypi! — tukuy tlaq yunakuna tawa suyuuyq illaččupri!

歡迎到沙黎東沙黎人的家鄉在四個國家里

Kartalle - Elle-Hänna • Hans Ragnar Mathsson. SÁPMI (SAMELAND - FINNMORIK) Map of Sámi Homeland
 Cartography by Ming Ying Gu • Produced 1974-75 © KEVIELLE 1979-2000

We made the landscape you appreciate as wilderness; it is our culture landscape. (Conference notes, Tromsø, 2014)

The *Law about Outdoor Recreation [Lov om friluftslivet]* defines infields and outfields like this:

What infield and outfield means: In this Act, as an inland or equal to an inland area includes yard, building site, cultivated land, meadow and cultural pasture and similar areas where the general public's traffic will be to undue displacement for the owner or user. Uncultivated, smaller plots in cultivated land or meadow or fenced in areas along with such area are also counted equally with inland. The same applies to areas for industrial or other special purposes where the public's traffic will be undue displacement for the owner, user or other. By outfields, this Act means uncultivated land which, according to the previous paragraph, is not counted as inland. (Lovdata, 1957, § 1a, my translation)¹⁶

The definition of outfields that is provided by the Law of Outdoor Recreation, defines everything that is not defined as infields as outfield to secure free roaming for recreational purposes. It is a negative definition where the rest is outfields, outlying fields. The Sámi *meahcci* has become enacted as *utmark* (outlying fields), but it is noted by several researchers (Schanche, 2002; Bjørklund, 2013; Law and Østmo, 2017; Joks, Law, and Østmo, 2019) that this narrowing of the meaning of *meahcci* is rooted in a series of mistranslations between Sámi and Norwegian terms, practices and interests.

2.3.7 Meahcit

In the North-Sámi language, the landscape term *meahcci* conceptualises these landscapes as providing for, and being central to, human life—landscapes ‘where the natural resources are found’ (see Schanche, 2002).¹⁷ There are

16 My translation from Friluftsløven § 1a: Hva som forstås med innmark og utmark: Som innmark eller like med innmark reknes i denne lov gårds plass, hustomt, dyrket mark, engslått og kulturbeite samt liknende område hvor allmenhetens ferdsel vil være til utilbørlig fortrensning for eier eller bruker. Udyrkete, mindre grunnstykker som ligger i dyrket mark eller engslått eller er gjerdet inn sammen med slikt område, reknes også like med innmark. Det samme gjelder område for industrielt eller annet særlig øyemed hvor allmenhetens ferdsel vil være til utilbørlig fortrensning for eier, bruker eller andre. Med utmark mener denne lov udyrket mark som etter foregående ledd ikke reknes like med innmark.

17 My translation

many traditional harvesting activities of natural resources that together form the material base for Sámi culture and language. The final report from the Sami Parliament's working group for outfields concludes that:

This is perceived as a paradox by many in relation to the rationale for protection—which is usually that one must secure “pristine” areas for the future. The paradox lies in the fact that it is exactly the old Sámi traditional use and management of the areas that has been so gentle and sustainable that the areas appear “pristine” today. (Final report from the Sami Parliament's working group for outfields, February 29, 2016, 27)¹⁸

In the next sections I discuss selected literature on Sámi landscape terms closely. Audhild Schanche emphasises the connection between the physical aspects of the Sámi landscape and the Sámi terms and categories on nature, environments, area usage and landscapes. Through discussions of five Sámi landscape terms, which she compares with the terms “natural landscapes” and “cultural landscapes” in Norwegian heritage- and environment management, Schanche attempts to open a path to understanding how the Sámi terms resist static understandings of landscape. *Luondu*, *Louhtu* and *Meahcci* are terms that are covered by the Norwegian and European meanings of “nature”. *Loundu* has two meanings: in older use of the term, it denotes a thing's, an individual's or a creature's inner nature. ‘As a prefix, it means natural or innate. In modern Sámi use of the term, *loundu* denotes the external physical environment’ (Schanche, 2002, 162).¹⁹ As such, the contemporary use of *luondu* has replaced the term *luohtu*. Schanche finds support in old Sámi dictionaries and interviews with elders to hint that, ‘while *luohtu* is the physical reality out there, regardless of whether you are present there or not, *meahcci* is the same landscape but related to human mobility and usage’ (Schanche, 2002, 163).²⁰ *Meahcci* means the place where the resources are found, as shown

18 My translation from Sluttrapport fra Sametingets arbeidsgruppe for utmark (29.2.2016, 27): ‘Dette oppfattes som et paradoks av mange i forhold til begrunnelsen for vern – som gjerne er at man skal sikre «uberørte» områder for fremtida. Paradokset ligger i at det nettopp er den gamle samiske tradisjonelle bruken og forvaltninga av arealene som har vært så skånsom og bærekraftig at områdene fremstår som “«jomfruelige” i dag.’

19 My translation from Schanche (2002, 162): ‘(I Konrad Nilsens samiske ordbok (Nilsen [1932-1962]1979) er ordet *luondu* oversatt til norsk med natur, egenhet, vesen, karakter, sinn eller gemytt). Som første ledd i sammensatte ord betyr det naturlig eller medfødt. I moderne samisk språkbruk er *luondu* tatt i bruk om natur i betydningen ytre fysiske omgivelser.’

20 My translation from Schanche (2002, 163): ‘(Det jeg mener å ha holdepunkter for i det minste å kunne antyde, er at) mens *luohtu* er den fysiske virkeligheten som er der ute uavhengig om du ferdes i den, er *meahcci* det samme landskapet, men relatert til ferdse og bruk.’

in the terms *muorrameahcci*, which is where firewood is found, *luomebáiki*, where cloudberries are found and *guollemeahcci*, where the fishing lakes are located. Meahcci translates to the Norwegian term mark, but the narrower term utmark (outlying fields) is used in area management and legislation. Until it became common to travel by snowmobiles and all-terrain vehicles (ATVs), the *meahcci* was so far away from home that you had to spend the night. Hunting, gaming, trapping and fishing, which are typical *meahcci* activities, are called *bivdit*. Schanche notes that *bivdit* also means to pray or make a request, and this, she writes, has to do with the activities where you cannot fully control the outcome, acts where nature is the subject. As is the case with many Sámi words, meahcci is also used in the form of characterisation. The noun *meahcet* denotes people or domesticated animals that linger in the *meahcci* and do not return home to the *báiki* at the right time.

The dwelling, *báikesadji*, and its close surroundings are *báiki*; what is beyond this circle is *meahcci*. You are in the *meahcci* when you no longer see the dwelling and its closest surroundings. When you move the dwelling, the surroundings that were *báiki* become *meahcci* again, and a new patch of what was *meahcci* becomes, for a while, *báiki*. (Schanche, 2002, 164)²¹

In addition, *báiki* is a landscape that is closely tied to customary rights to perform specific activities. Places with bladder-sedge [sennagress], bogs and outlying hayfields are particularly private. A place where a family has fished throughout the generations is their *guollebáiki*. ‘The boundaries fluctuate, and there is a constant communication and exchange between them. The wilderness exists, not as an outlandish space but as a place you can be at home’ (Schanche, 2002, 168).²² To use landscape terms that draw sharp lines between nature and humans’ place in the world breaks with both the Sámi usage of nature and Sámi terminology. Schanche suggests that the cultural significance of nature in Sámi perceptions of landscape may be tied to other concepts and ways of understanding the world. Law and Østmo argue that: ‘It

21 My translation from Schanche (2002, 164): ‘Boplassen, *báikesadji*, og de nærmeste omgivelsene er *báiki*, og det som er utenfor denne sirkelen er *meahcci*. Når du ikke lenger ser boplassen er du i *meahcci*. Når du flytter boplassen blir det som var *báiki* igjen til *meahcci*, og en ny del av det som var *meahcci* blir for en tid *báiki*.’

22 My translation from Schanche (2002, 168): ‘Grensene fluktuierer, og det foregår hele tiden en kommunikasjon og utveksling mellom dem. Villmarka finnes, ikke som et fremmed sted, men som et sted du kan bli hjemme i.’

is a world in which a binary distinction between nature and culture makes no sense' (Law and Østmo, 2017). In their essay, 'On Land and Lakes: Colonizing the North', they argue that: 'Policies that enshrine urban understandings about nature as wilderness affect a wide range of Sámi practices' (Law and Østmo, 2017). In the case described in the essay about of lakes within the boundary of a National Park,

environmental restrictions threaten ritualized fishing and lake-caring techniques that maintain a reciprocal relationship between Sámi traditional knowledge holders and their environment (Law and Østmo, 2017).

In 2007, the Sámi Parliament's guidelines for changed use of *Meahcci* pursuant to § 4 in the Finnmark Act were announced and came into force [*Sa-metingets retningslinjer for vurderingen av samiske hensyn ved endret bruk av meahcci/utmark i Finnmark*]. The guidelines aim to ensure that public authorities and the Finnmark Estate make a thorough and sound assessment of the effects on Sami culture, reindeer husbandry, land usage, commercial practice and community life before decisions are made in cases of changed use of *meahcci/utmark* in Finnmark County. The Sámi landscape term *meahcci* is conversely known to and also in use by non-Sámi developers and planners and inhabitants in Troms and Finnmark County.

Utmark is a term in everyday Norwegian language that describes areas with certain landscape qualities, practices and values that are different from Sámi values. As outlying fields, *utmark* are lands that are not disrupted by buildings or crop fields but that may be cut through by infrastructures. When one attempts to translate *utmark* to English, it becomes problematic because dictionaries translate it as "undeveloped" and "uncultivated" land. Those terms translate back into Norwegian as *uutviklet* and *ukultivert*, and the connotations of those Norwegian terms suggest there might be a lack of development and culture in an area. Even though some developers might actually mean that the land is undeveloped, it is very rare to hear those terms because it is also considered rude and uncultivated not to have an ear for a culture of another nature.

The Norwegian word *mark* does not translate well into English either. It can mean "soil" and "ground", and the following examples of uses give an indication of the term's elasticity: *slagmark* (battlefield), *jaktmarker* (hunting grounds), *på åpen mark* (on open land), *dyrket mark* and *innmark* (cultivated land), *udyrket mark* and *utmark* (uncultivated land), *willmark* (wilder-

ness), *ødemark* (wasteland), *markblomster* (wildflowers) *markjordbær* (wild strawberries). According to *Det Norske Akademis Ordbok*, *mark* etymologically stems from the Norse word *mørk*. *Mørk* was commonly used in Norse landscape names, for instance Heiðmørk, the lands of the Heiðnir tribes (until recently the County of Hedemark, now Innlandet), and Finnsmørk (currently the eastern part of the County of Troms and Finnmark). Because Sámi people were called Finns by their Norse neighbours, Finnmark translates as Sámi Lands. According to the *Norwegian Place Name Lexicon*, some variations, *mørk* and *mork*, probably stem from a similar Gothic word, *marka*, meaning border, and Old High German *marka*, meaning borderland, that is probably related to Latin *margo/margins*, which can be true for the forest areas surrounding Oslo in South Norway. Nordmarka and Østmarka are made available for outdoor recreation.

The Norwegian phrase *Å gå på tur i marka* means to go for a walk in the woods. Those woods around the cities are highly maintained forested areas, but the leisure wanderers, if they have not learned to read forestry characteristics, might perceive it as “nature”, in contrast to the urban areas. The same kind of blindness, or insensitivity, to Sámi cultural landscapes is at work when *meahci* are perceived as wilderness, and the cultural marks on the landscape are described as “intangible” as opposed to tangible or even “readable”. Schanche emphasises that Sápmi exists, not only as an idea but also as an actual, physical area, with geographical, geological, biological and ecological, as well as cultural and ethnic, characteristics.

2.3.8 Material Flows between Landscapes

The work of Sunniva Skålnes draws attention to how the tools and products of the *meahcci* influence the physical fabric in the Sámi village, Kautokeino/Govdaguaidnu, where she lives. Skålnes is an architect and now leader of the cultural heritage department of the Sámi Parliament. Skålnes’ thesis, *Bustad og beiteland* [Dwelling and Pasture] from 2003 explores housing development in a period of urban growth during the 1990s. In this, she regards community planning and land use as the expression of an encounter between the modern Sami identity, the Norwegian planning system and commercial housing development. Internationally, her work may fit in a field of scholarship; Elizabeth Grant and colleagues describe it as investigating the full impact of culturally inappropriate buildings and spaces, based on dominant settler cultural values, on Indigenous cultures.

With sensitivity to design thinking, Skålnes weaves together the usage of the *meahcci*, the strong family ties in Sámi traditional social and spatial organisa-

tion, and the material fabric of the built environment. Skålnes notes that, to a particular extent, women took on the responsibility for planning the new homes, both in the discussions with the municipality during the planning phase and later on, when using and adapting the house and its estate to fit the family's *meahcci* practices. The main focus in Kautokeino Municipality, as regards reindeer husbandry, had been on securing grazing resources in the outlying fields, but they had, to a limited extent, taken into account reindeer husbandry practitioners' spatial needs in the dwelling and gardens. One exception was the planning of the reindeer hamlet [*reindrifstunet*] in Kautokeino. The reindeer hamlet was planned and realised in the 1990s in cooperation with the reindeer husbandry industry. The municipality facilitated larger plots of space for work, storage and the opportunity to establish housing for the next generation. As a result, reindeer husbandry became more visible in Kautokeino, and the central location provided room for various business opportunities for the families.

The book, *Gardens Facing the North* [*Hager mot Nord*], edited by Ingebjørg Hage, Elin Haugdal and Sveinulf Hegstad is focusing on North-Norwegian landscape projects, gardens and significant landscapes. Sunniva Skålnes' book chapter, 'A Place for the Meahcci Things' made a contribution that is important to implement in landscape research, by advancing a concept of a Sámi garden typology rooted in *meahcci* practices. There are two garden types in Kautokeino: the working garden and the recreational garden. 'The active use of the *meahcci* is reflected in most of the gardens in the village' (Skålnes, 2015, 380). While the recreational garden was an implementation that came with modern estate planning, using the garden as a working place was the sensible answer to a traditional way of life.

All tools, vehicles, and other equipment that characterise this garden signalize that a harvesting and subsistence culture is still alive in the village. But little is cultivated and harvested in the garden, and it is rare to find crops and vegetable gardens. The harvesting occurs elsewhere, most often in the mountain plateau and in rivers and mountain lakes. (Skålnes, 2015, 380)

In contrast to the recreational gardens, 'the venturesome, forthright combination between the traditional and the modern, is most visible in the work gardens' (Skålnes, 2015, 380). Skålnes observes a significant seasonality in the flow of raw materials through the village. The processing of meat, fish, skin and bladder-sedge [*sennagress*] are outdoor activities that saturate the village environment.

A brief moment during the spring-winter, the housing areas are saturated with a lavish amount of food, that more than anything tells that the village is in the middle of a large reindeer husbandry area. (Skålnes, 2015, 371)²³

What I find intriguing is that, while the traces of harvesting activities in the *meahcci* are invisible to strangers, the physical expression of the harvesting activities is shaping the physical environment in the village. This, Skålnes notes, breaks with the aesthetic ideals of the recreational garden, but the work gardens are highly appreciated.

They are pleasant because they represent something familiar to people and provide space for what is important: work and processing of resources from the outlying fields, and they provide space for fellowship through this work. (Skålnes, 2015, 380)

The work-gardens become signifiers of belonging to the larger, providing landscape, the *meahcci*. Around ten per cent of the Norwegian Sámi population have their livelihoods in reindeer husbandry, and the material distribution of products from reindeer husbandry and *meahcit* products is the base of Sámi material cultural expressions. Skålnes sees the current change in people's livelihood from smallholding farms, harvesting and reindeer husbandry to other work spatially expressed in the village because the recreational garden is taking over from the work-garden. From this, it can be learnt that, in order to read *meahcit*, one needs to look for the processing sites in the *báikkit* and also for the clothing, food and equipment made in the *báiki* and brought back to and used in the *meahcci*.

2.3.9 Landscapes that Yield Worlds

Worlding landscapes are landscapes that yield worlds through practice and encounters. Inspired by material semiotics that renders landscape practices ontologically productive, this section elaborates on how different landscaping and landscape practices refer to different ontological objects when referring to “landscape”. Concepts of landscape practices as “worlding practices” are also employed in discussing Indigenous land rights across the globe. It is

23 My translation from Skålnes (2015, 371): ‘Ei kort stund på vårvinteren blir bustadsområda fylte opp med ei overdådig mengd med mat som meir enn noko fortel at bygda ligg midt i eit stort reinbeiteområde.’

important to connect the right to land and water with the right to landscape. Schanche (2002) noted that what is regarded as *báiki* and *meahcci* in nomadic reindeer husbandry varies according to where along the migration route the reindeer herd is located at any time. As the reindeer move through the geographic space of the migratory route, they wander in a sphere of landscape that is continually created by their presence.

2.4 PROSPECTIVE LANDSCAPES

In this section, I draw attention to the projective aspects of landscaping practices. Prospective landscapes is a category that emphasises the prospective capacity of landscaping practices. Understanding landscapes as prospects implies opening a discussion between different potentials and trajectories, in the light of Anna Tsing's (2012) notion of a 'privileged conceptualisation of the world'. The prospective landscapes category invokes "ways of seeing" in extractive prospects. The use of the term "landscape" in academic discourse has moved beyond the privileging of eyesight. I think it is important, however, not to throw out Cosgrove's (1985) insight into how "the prospect" mediate spatial and physical conditions and opportunities in order to change the site. Exaggerating some similarities between mining and landscape architecture as practices that change and transform landscapes, I suggest categorising landscape architecture as a prospective art. By introducing counter prospecting, I then suggest utilising the kind of embodied knowing learned through "*doing* landscape" to explore the kinds of landscaping practices that happen prior to the plan, namely "prospecting".

2.4.1 Technologies of Mastering Space

During the Middle Ages, the Middle East and the Far East held and developed scientific knowledge. Human geographer Denis Cosgrove's (1985) article 'Prospect, Perspective and the Evolution of the Landscape Idea' uncovers the political implications of geometrical techniques and the tools for mastering and representing space that occurred in the Italian Renaissance. Cosgrove identifies a shift in 1435. The Italian humanist and architect Alberti published *Della Pittura* [*On Painting*], in which he demonstrated the technique and theory of the single-point perspective. 'The relationship between geometry, optics, and the study of geometric space is very strong in European intellectual history since the Renaissance' (Cosgrove, 1985, 58). Cosgrove refers to the architects Alberti and Vitruvius as 'central agents' in the Italian merchant cities' enterprise of mastering space through mathematics and geometry. 'For Leonardo, as for Alberti, painting is a science because of its foundation on

mathematical perspective and on the study of nature' (Cosgrove, 1985, 52). Cosgrove observes that certain consequences flow from Alberti's technique of visual appropriation of space. Perspective geometry can 'achieve aesthetically what maps and ordnance charts achieve practically.' The Italian Renaissance was a cartographic event, as well as an artistic one. Geometry and the measurements of distance, surface and volume provided increased control of space. Cosgrove urges his contemporary human geographers to pay attention to the geographical consequences of the collaboration of art, science and practical skill that came about through the "Albertian revolution."

In Cosgrove's analysis, the activity of making representations of landscape "produces" a way of seeing. It is an analysis of how landscapes' representations and landscape alterations are put to use as a powerful tool by the economic and ruling elites. Anna Lowenhaupt Tsing also makes this observation:

Conceptualizing the world and making the world are wrapped up with each other—at least for those with the privilege to turn their dreams into action. The relationship goes both ways: new projects inspire new ways to think, which also inspire new projects. (Tsing, 2012, 506)

It is important to grasp the implications of Cosgrove's argument, in order to understand the manner in which landscaping practices are prospective. Those who have resources to make prospects are empowered in this discourse and are seen as representatives for future possibilities. Those who oppose prospective representations are regarded as gatekeepers that slow down development.

2.4.2 Prospective Modes in Mineral Speculation

Cosgrove further examines the OED definition of "prospect" that traces the etymology in the Latin word *prospectus*, which means "view", a derivative from *prospicere*, meaning "to look forward". By the end of the 16th century, "prospect" was understood in the sense of 'an extensive commanding sight or view, a view of the landscape as affected by one's position' (Cosgrove, 1985, 55). Prospects represented in images, paintings, maps, diagrams and writings influence both the worldview and the perceptions of landscape.

In this respect perspective may be regarded as one of a number of techniques which allowed for the visual representation of a bourgeois, rationalist conception of the world. (Cosgrove, 1985, 49)

In the early mid-16th century, use of the word "prospect" referred to a view

of landscape, a mental image and an anticipated event. In the last of these usages, a prospect is something likely to happen. The prospect in the meaning of an anticipated event conversely holds a promise of change; it conjures expectation and forces a sense of inevitability. Landscape and cartography come together in the “prospect” because the maps are central in the mediation of opportunities, the mineral prospect is a view and an anticipated future. Artist and cartographer Denis Wood argues that maps serve the interest of the state by enacting geo-located observations as facts (Wood, 2010, 163). Mineral and carbon resources are mediated through dynamic models and cartographies that aim to attract mineral prospecting companies. The extractive industries explore and exploit mineral and carbon rent from agent biological richness and mineralisation processes in the Earth’s crust.

In making visible what is otherwise hidden and inaccessible, maps provide a working table for identifying and reworking polyvalent conditions; their analogous-abstract surfaces enable the accumulation, organization and restructuring of the various strata that comprise an ever-emerging milieu. (Corner, 1999, 224-225)

Humans have mined for thousands of years. ‘The 19th and 20th centuries marked the break-through for geology as a science, in Norden (the Nordic countries) as well as internationally’ (Sundquist et al., 2008, 185). While mineral prospecting has remained an activity driven by mining companies, geological research became funded and controlled by the national states. In 1835, the Geological Survey of Great Britain was founded. Shortly after, in 1858, followed the establishment of the Geologic Survey of Norway (NGU), the Geological Survey of Sweden (SGU) and the United States Geological Survey (USGS). By the rise of the modern states, cartography had developed into a technology to explore, control and govern the resources. Geological knowledge has a transnational dimension, as the mineral sector and geological surveys cooperate across borders regionally as well as globally. The European Union’s (2008) Raw Materials Initiative called upon the northern European states to develop national strategies for mineral extraction. A major part of the national strategies for the mineral industries to attract investors and prospectors and to inspire politics is the dissemination of geological maps and the naming of “new” territories. A prospect is a representation of a value that a prospector has an intention to realise. Cosgrove observes that:

The OED notes that the verb “to prospect” emerged in the nineteenth century referring to the particularly capitalist activities of speculative gold mining and playing the stock exchange. It is interesting to note

how ‘speculation’ has its root in visual terminology. (Cosgrove, 1985, 61)

Prospects are ideas about land use change that is often “scaped” by an interest in economic outcome. Philosopher Nils Oskal commented to me that: ‘The landscape will always be perforated by the use you want to make of it’ (conversation in Tromsø, 2015). Prospects change the ideas about what a particular landscape can become, and in turn prospects transform the landscape. The last usage of the word “prospect” that is listed in the OED is an apprentice, a newcomer in a motorcycle club, someone young with a potential future in a social group.

2.4.3 Map: The Fennoscandian Ore Deposit Database

Digital sensing and representation technology exacerbate the mastery of space and depth of surface. Cartographies today are not flat but topographic, three-dimensional models and four-dimensional simulations.

The map I have chosen for my discussion of the term “prospect” is a poster from the Fennoscandian Ore Deposit Database (FODD), started in 2012 as a joint venture of the geological surveys of Norway, Sweden, Finland and NV Russia, hosted by the Geological Survey of Finland and partly financed by the European Union. FODD published a series of posters with the geological map of Fennoscandia, alongside geological reports and publications (Fig 2.4). Two hundred years of publicly funded systematic geological sampling, systematisation and visualisation with increasingly sophisticated methods, tools, and techniques is compiled and readily available. The database is easily accessible and directed towards the extraction of resources. It contains information on mineral occurrences, operating and closed mines, as well as unexploited mineral repositories. The narrative behind the Fennoscandian mineral deposit posters is that they represent Fennoscandia as a potentially lucrative field of exploration. According to the FODD website: ‘Mineral resources in the Arctic have been getting increased attention during the past decade. Major drivers have been the EU, pointing to Fennoscandia as a major resource province for Europe’ (Eilu, 2014). Pasi Eilu at the Geological Survey of Finland presents the Fennoscandian Ore Deposit Database, FODD as the first ever compilation of mineral deposits and metallogenic areas across Fennoscandia.

2.4.4 With a Licence to Drill

In many societies, the desire to develop extractive industries is a high priority and seen as a guarantee of government revenues and well-being (see Nygaard, 2016). An impact assessment is a part of the opening process of extractive prospects.

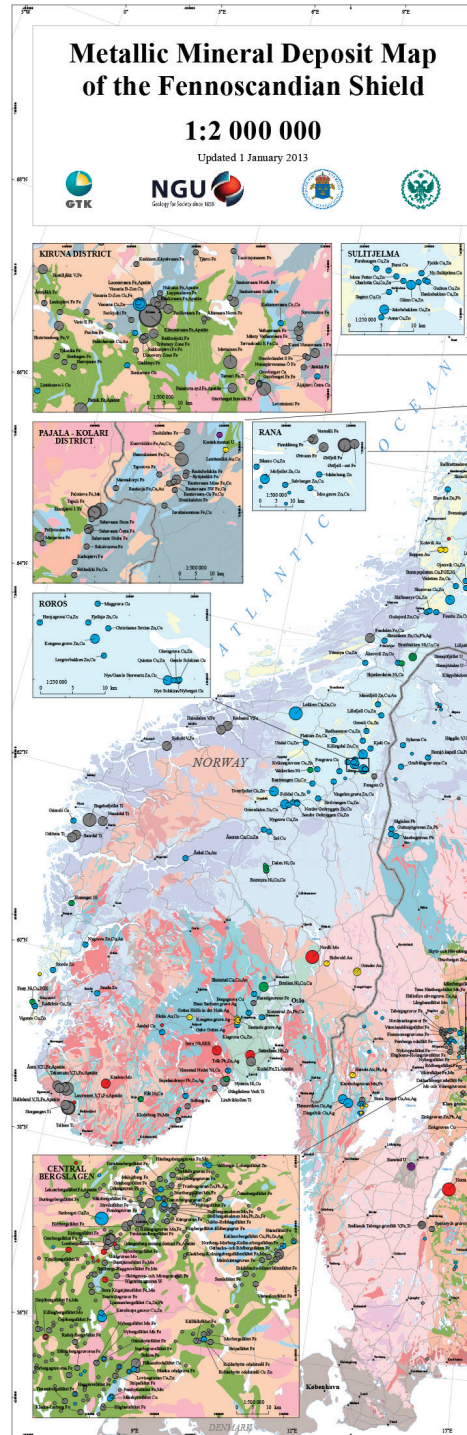
The International Association for Impact Assessment (1999) defines such an assessment as “the process of identifying, predicting, evaluating and mitigating the biophysical, social, and other relevant effects of development proposals prior to major decisions being taken and commitments made”. (Nygaard, 2016)

A prospect’s legitimacy relates to whether the proposed development is acceptable to the society. Anthropologist Brigit Dale’s research on oil extraction in the Norwegian Arctic suggests using Foucault’s concept of governmentality, ‘that a process of governing resources becomes one of governing mentalities and actions’ (Wilson and Stammeler, 2016, 4-5). This implies that energy and mineral companies are not alone in working to achieve a social licence, governmental and local authorities work in concert with private corporations to heighten public acceptance of environmental impacts from the (non-renewable) extractive industries. What mineral prospects has in common is that the surrounding landscape is treated as “externalities”. Here, I insert a long citation from Canada.inc by Deneault and Sacher (2012), to explain the economic term “externalities”, which I find useful for understanding extraction in terms of landscape:

What we need to understand is that public or civic figures in Canada are helping to maintain a powerful taboo on one of the key issues of our jurisdiction: that of “externalities,” defined as the consequences of company activities that are not listed on their balance sheet. In some cases, the environmental, social, political, or cultural damage they cause not only has little if any harmful effect on the company, but actually constitutes the way which the company is able to profit from its reprehensible activities while destroying the environment and bringing disaster to the populations involved. As long as no independent audits are required to assess this kind of damage, there will be no reason to speak of corporate “responsibility” for these companies in Canada. (Deneault and Sacher, 2012, 31)

The prospector hires consultants to deal with externalities, through the retrieving of economic, social, geological, hydrological and ecological knowledge to support the prospect. For the prospector, this process implies a steep learning curve during the development of the operational design of the mining prospect. Much of the academic scrutiny in the social sciences gravitates towards a notion that originates from the mining industry: ‘a social license to operate’ (Prno, 2012). The notion is connected to the framework of corporate

Fig 2.4: Prospective landscapes: Metallic Mineral Deposit Map of the Fennoscandian Shield, Geological Survey of Finland 2013. The map is a compilation geological knowledge from the geological surveys in Norway, Sweden, Finland, and North-West Russia. It shows that Sápmi is a highly mineralised region. Reproduced with reduced size, and according to GTK's open product license. URL: http://tupa.gtk.fi/kartta/erikoiskartta/ek_085_100dpi.pdf



responsibility and adherence to governance claims, and relations to affected groups. Espiritu (2015), Dannevig and Dale, (2018) and Johnsen (2016) have all shown interest in “how” mining Nussir ASA worked to achieve social acceptance for the copper mine prospect in Kvalsund.

A social license to operate refers to the on-going acceptance and approval of a mining development by local community members and other stakeholders that can affect its profitability. (Prno, 2012, cited in Nygaard, 2016)

Nygaard’s (2016) comparative analysis of the Nussir case and the Biedjovagge case ‘illustrates that the national legal framework regulating Sami interests and planning of mining development remains unclear.’ The critical point, Nygaard notes:

will be to ensure that all relevant Sami interests are considered in the overall knowledge base collected through the EIA-process. This implies that the planning authority, the municipality, must have adequate information of not only organized Sami interests, but also interests that have no official voice. (Nygaard, 2016, 23)

Nygaard (2016) focuses in her article three relatively new or revised Acts regulating the relationship between indigenous interests and mining industry. Around 2010 the Minerals Act, the Planning and Building Act (PBA), the Finnmark Act, and the regulations for environmental impact assessments were revised or new acts. The acts regulate the relationship between the mining industry, the Norwegian government, local and Indigenous interests, and the procedures for legitimate planning, assessment, implementation and closure of mining operations. The International Centre of Reindeer husbandry (ICR) states in a report for UNEP that, even though Environmental Impact Assessments (EIA) hold generally high standards in northern Europe, they are widely limited to the individual development projects (Vistnes et al., 2009). It is a lack of coordinating measures. Any planned change of use of outfields in Finnmark County should be assessed according to the Sámi Parliament’s directive for outfield assessment that ‘[aims] to safeguard the material basis for, and ensure further development of the Sámi culture’ (Lovdata, 2007a).²⁴ Finnmarksloven is supposed to secure an evaluation of changes in the usage of outfields.

24 My translation of: ‘Sametingets retningslinjer for utmarksvurdering (...) sikre naturgrunnet for og sikre videre utvikling av samisk kultur.’

2.4.5 Landscape Assessments

Norway was the first nation to ratify the European Landscape Convention. Ole Kristian Fauchald mentions the ELC as one of the ‘international commitments (that) may be relevant to the direct environmental consequences of mining’ (Fauchald, 2014, 54).²⁵ Chapter 5 will look into how the ELC is used in relation to extractive prospects. Here I discuss current changes in Norwegian Landscape Management. In controversies over land use, landscapes are written into various contexts. In the context of global mining, valued landscape qualities are other than those in domestic reindeer herding, which in turn differ from valued qualities in agriculture, outdoor life, tourism, etc. Dale (2016) notes that, in light of the science-oriented discourse, local valuation of landscape and landscape practices is often dismissed as biased and grounded in sentience. The Norwegian State Road Administration has developed thorough methodologies to describe infrastructure impacts on the landscape, using a system for unprized effects (see Lindhjem et al., 2015). This methodology from *Handbook 140*, now in a new version, *Handbook V712*, is fully incorporated in the impact assessment routines in Norway and is used in several sectors. Likewise, the Swedish State Road Administration, Trafikverket, has published reports on landscape in long-term planning and in Denmark, the Nature Agency encourages all municipalities to apply the landscape character method to ensure a common framework for assessing landscape values.

Norway has a long tradition in environmental mapping. Since the beginning of the 20th century (1910), landscapes without major infrastructure development have dropped from about fifty per cent to twelve per cent. The so-called ‘INON-mapping’ is an indicator of environmental status that was updated every five years on the national level until 2012 (Fig 2,5). INON is the abbreviation for “Inngrepsfrie områder i Norge” meaning areas in Norway without major infrastructure. The Norwegian Directorate of the Environment mapped areas respectively one, three and five kilometres from infrastructural landscape encroachments. In 2013 the government platform [*Sundvollenerklæringen*] stated that: “The Government will discontinue the use of designated areas without major infrastructure development (INON) as a tool in land-use policy (Government of Norway, 2013, 59). The rationale to discontinue the INON registrations was to give landowners and municipalities more leeway to develop outlying fields.

25 My translation of Fauchald, 2014, 54

Simultaneously, Norway is currently implementing the ELC in legislation and governance through the introduction of NiN-Landscape. One of the current initiatives is to expand the Norwegian biodiversity database, Nature in Norway (NiN), with a landscape application: NiN-Landscape. Erikstad et al. (2016) propose that ‘Landscape type mapping can function as a tool for monitoring land use changes, on a more detailed level than the INON-series’ (Erikstad et al., 2016, 6). Critics claim that “landscape” is abandoned to systemic categorisation of landscape typologies, to cartography, instead of, as landscape theorist Fiskevold (2016) points out, to be treated as existential, as landscape. ‘It seems that an unfortunate outcome of this practice is that the use and reuse of standardised methods has deprived the analyst of the critical act of perception’ (Fiskevold, 2016, 72). His point is that reference systems ‘have displaced the analyser’s own ability to perceive an area as landscape and to argue in favour of its values’. Further, and connected to “Worlding Landscapes”, the distinction between culture and nature has for decades been the subject of critical reassessment, as I previously discussed. However, the distinction remains prominent in landscape management because different aspects of landscape itself are split between different governance agencies.

The Norwegian Environment Agency has a responsibility to implement the goals set for the management of landscapes in the Nature Diversity Act, Planning and Building Act and the European Landscape Convention. The Environment Agency mainly concentrates on the natural elements of the landscape, since there is a separate directorate with the responsibility for built and other cultural heritage (Directorate for Cultural Heritage). (Lindhjem et al., 2015, 132)

Excluding culture and people’s relation to landscape from landscape analysis was hardly the aim of the European Landscape Convention. As discussed above in section 2.3 worlding landscape, the consequences of separating “natural elements” and “cultural heritage” does not make sense in indigenous areas.

2.4.6 The Prospective Arts

In material encounters with the environment, landscape architects use the mixed toolbox of cartographic, modelling, representational, participatory and perception techniques at their disposal. Girot (2016) traces an unbroken *Course of Landscape Architecture*, from the Italian gardens via Frederick Law Olmsted and Calvert Vaux’s design for Central Park (1857) to contemporary infrastructure designs. Olmsted and George Oskar appropriated the term ‘landscape architecture’ (which, until then, had been used in art

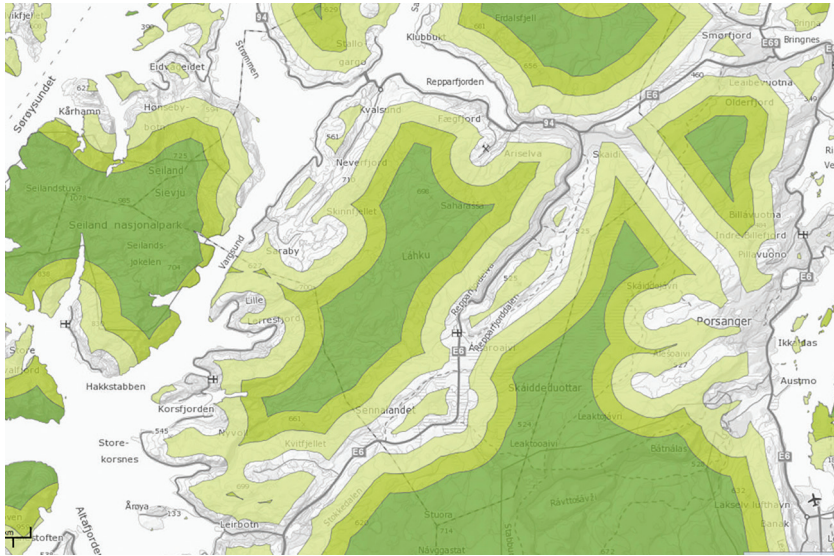


Fig 2.5: Norway mapped the disappearance of landscapes without infrastructure from 1912 to 2014. This image is a section of the INON map from Finnmark dated January 2013. Dark green areas on this map are defined as ‘without major infrastructure development’, lying at least 5 km from the remaining dark green areas are in the north, and they are under growing pressure. Source map: Norwegian Environment Agency.

criticism) to the task of designing with plants, landform, water, paving and soil structures. In 1863, Olmsted and Vaux were the first to adopt landscape architect as a professional title.

Design thinking and design skills are the core of the profession. Design thinking is to inform the project from knowledge in the sciences, the local community and the users, and to synthesise this with the needs of the client when making a project. The main critical questions remain: What informs the project? What knowledge and what ways of knowing are considered in the project? Who is the client, the project owner, that is, on behalf of whom is the project designed? Major infrastructural and industrial prospects frame the landscape discourses in the Arctic. Landscape architecture ‘is a profession by no means the only one concerned with shaping the human environment and arguably less extensive in its effects than civil engineering and urban planning (Oles, 2017, 2). As landscape architecture is remaking itself from within, new questions are being asked about ecological approaches, environmental design and participation. Landscaping tools are employed differently by different landscaping practices, such as civil engineering, extraction industries, landscape architecture, architecture, forestry, agriculture and husbandry. The

manner in which these practices employ documents, cartography, plans and models in environmental discourses is prospective of different landscapes. Landscape architect James Corner argues that:

Description and projection entail taking a particular point of view – both spatial and rhetorical – that not only reflects a given reality but is also productive of one. (Corner, 1999, 18)

Both mineral extraction prospects and architectural projects have a discursive existence that “scape” the land discursively through drawings, maps, diagrams, models and plans. Such prospective trajectories aim to change the environment. As a material object, a plan aspires to being replaced by the next plan. The architectural project and the mineral prospect on the other hand both aspire to enter the life cycle of the landscape. How does the concept of the prospective landscapes apply to landscapes that are not static but, as it were, migratory? Next, I connect prospects that exist in contested landscapes, in terms of seasonal migration.

2.5 MIGRATORY LANDSCAPES

In line with the constant redistribution of land use, the outlying fields have gone, in many places, from being an abundant to a scarce resource. A quote from *Samernas tid* (2017) describes how the landscape is encroached upon by development measures:

The traces of the exploitation of Sápmi are today everywhere to be seen. Roads, railroads and power lines perforate the landscape. Where the forest is harvested the lichen no longer grows. Rivers have been dammed, migration routes closed, and pastures set under water. (Sveriges Televisjon, 2017)²⁶

The Arctic contains significant migratory landscapes for many wild species besides the salmon and the semi-domesticated reindeer. In this chapter, I propose the analytic landscape category “Migratory Landscapes”, to be understood as landscapes that are “scaped” by annually recurring migratory events.

26 My translation from *Samernas tid* (Sveriges Televisjon, 2017): ‘Spåren av Sápmis exploatering syns i dag överallt. Vägar, järnvagnspår och kraftledningarna perforerar landskapet. Där skogen avverkas växer inte längre nån hänglav. Älvar har dämats, flyttleder stängts och betesmarker hamnat under vatten.’

Migratory landscapes are characterised by the great geographical gestures of multispecies seasonal migration. Tim Ingold's (1993) well-known concept of the temporality of landscape is useful to convey migratory landscapes that include multiple temporalities of landscapes. The critical cartographers Harris and Hazen's (2006) call for a more than human geography: a geography that negotiates between humans, animals and landscapes that draws on some terms from Arctic biology and marine biology research. When the circum-polar projection in maps became accepted and conceivable by the public, marine and Arctic biology had a new canvas to show and mediate seasonal wildlife migration and physiological adaptation to seasonal changes.

2.5.1 Legislative and Spatial Fragmentation

Chairman of the Board of the Norwegian Association for Environmental Law, Associate Professor Nikolai K. Winge (2013) describes the situation in Norwegian outlying fields (*utmark*) as a 'battle for land'. His thesis in 2012 explored the legal steering resources for a comprehensive land management of outlying fields in Norway. His (2013) book, *Kampen om Arealene* [The Battle for Land], explores the extent to which area management's duty and competence rules [*arealforvaltningens plikt-og kompetanseregler*] in Norwegian law ensure that the cumulative effects [*sumvirkningene*] of several development measures [*utbyggingstiltak*] in outlying fields are taken into account.

The legislation is fragmented with a complex distribution of competence across sectors and between different levels of decision-making in governmental agencies. This means that different knowledge fields are managed by different bodies, each with their own concerns. Decisions made by one body will often affect or interfere with the interests of other bodies. This creates the basis for conflicts in land management during the decision-making process in development cases. According to Winge, the development of outlying fields can be characterised as a bit-by-bit development without anchoring in holistic plans. In Norway, the Planning and Building Act regulates all common activities that shape the environment. The planning and environmental authorities assess all prospects that are submitted in the form of a plan. Plans with anticipated impacts on the environment will have to be evaluated in a social and environmental impact assessment. One of the themes that are assessed is the consequence of impacts on landscape. Winge finds that the sectorial fragmentation of the law, combined with increased pressure on the outlying fields, has led to clear conflicts of interest between the sectors in the public administration.

Decisions on development measures must be made with sufficient

regard to the cumulative effect of several development measures, in order to avoid the area being scaled down bit by bit. (Winge, 2013, 74)²⁷

Although a single development measure in isolation does not result in any particular adverse effects, the sum of a number of measures over time can produce unforeseen and undesirable effects. The challenge is to see the overall impact of every small measure.

As mentioned, it may be demanding to take into account the sum effects of several development measures, as long as the legislation is fragmented and sector-based and far from being designed to deal with individual measures. (Winge, 2013, 74)²⁸

According to Winge, the legislation expresses many good values and considerations, but a continuous bit-by-bit development implies that the governmental institutions will not be able to safeguard the values and considerations the Parliament has emphasised to ensure sustainable land management. While the Planning and Building Act is a sector-neutral act, with an objective to encourage development, the individual development measures and the activities of the affected parties are regulated by sector laws.

2.5.2 Coordinating Modes in Cartography

Different approaches to landscape employ different technologies of seeing and perceiving, mapping and representing landscape. The plan and the map are tools of representation that the landscape architecture and planning cannot do without; at the same time, these tools are imbedded with a precedence of reinforcing power structures. Dichotomies like cultural–natural and human–nonhuman are reinforced in governance, and the gaps are widening, as more efficient technologies of mapping and documentation are developed within each sector.

Sector authorities associated with different scientific domains produce and gather knowledge for resource, environmental and population management.

27 My translation from Winge (2013, 74): 'For å unngå at utmarksområdene bygges ned bit-for-bit, må beslutninger om utbyggingstiltak skje med tilstrekkelig hensyn til sumvirkningen av flere utbyggingstiltak.'

28 My translation from Winge (2013, 74): 'Som nevnt kan det være krevende å ta hensyn til sumvirkningene av flere utbyggingstiltak all den tid lovverket er fragmentert og sektorbasert, og langt på vei utformet for å behandle enkelttiltak.'

Geographic Information Systems coordinate collections of geographic objects that are alike in layers. These layers can be combined into maps. The GIS layers are instrumental means of sorting immense amounts of geopositioned information. Maps made by or commissioned by state agencies in Norway are public. Thematic maps for each sector may be viewed individually or combined. In public GIS, the representation of layered realities conjures a new concept about how to represent landscapes.

Multiple realities in map layers are, in particular, evident in thematic maps produced by state agencies that geoposition knowledge with rigid practices of updating the knowledge. While the Anthropocene assembles time and space in new ways, the knowledge is accumulated in sectorial compartments. In synthesising map-layers, plans, prospects and projects coordinate different worlds into one single reality. Different practices assemble the worlds differently, unify differently. Reindeer husbandry relates to, and is affected by, multiple worldviews. It can thus be said that reindeer husbandry keeps the world together in specific ways.

2.5.3 Map: A Collage of North Atlantic Worlds

There is tension between the territorial cartographies of Arctic resources and environments and the ethnographies of places, peoples and landscapes. Different approaches to landscape employ different technologies of seeing and perceiving, mapping and representing landscapes. This map (Fig 2.6) is a collage of several publicly available maps and images. It shows extraction, weather, animals, Fennoscandia, the north Atlantic and Sápmi.

The map assembles grand territorial gestures that shape the perception and materiality of the landscapes of the European Arctic. It shows wind, sea ice extension, resource exploration and multispecies seasonal migration. Seasonality matters greatly in the wider context of Arctic biodiversity, communities, commercial interests and outfield practices.

2.5.4 Temporality

In 1993, anthropologist Tim Ingold introduced the dimension of time to the landscape discourse in order to:

move beyond the sterile opposition between the naturalistic view of the landscape as a neutral, external backdrop to human activities, and the culturalistic view that every landscape is a particular cognitive or symbolic ordering of space. (Ingold, 1993, 152)

The criticism in the article ‘The Temporality of Landscape’ was particularly directed at Denis Cosgrove’s (1985) idea of many-layered constructions of meaning and symbolic, social constructions of landscape. By the concept of “taskscape”, Ingold refers to ‘the entire ensemble of tasks, in their mutual interlocking’ (Ingold, 1993, 158). He used music and a Dutch landscape painting, drawing from the peasant scenery in the Bruegel painting ‘The Harvesters’ to further unpack what he meant by the term “taskscape”. ‘Music exists only when it is being performed (...). Similarly, the taskscape exists only so long as people are actually engaged in the activities of dwelling’ (Ingold, 1993, 161). Dwelling activities follow the rhythm of the year, as he explains in a much-cited quotation:

The rhythmic pattern of human activities nests within the wider pattern of activity for all animal life, which in turn nests within the pattern of activity for all so-called living things, which nests within the life-process of the world. (Ingold, 1993, 158)

In a recent text Ingold (2018) calls for a commitment to the world as one world.

With multiple ontologies, everything or every being is its own world, closed in and complete, so that ultimately there are as many worlds as there are beings or things. But with multiple ontogenies, every being or thing is open, subject to growth and movement, issuing forth along its own particular path within a world of nevertheless unlimited differentiation. (Ingold, 2018, 167)

Through thinking in terms of “ontogenesis”,²⁹ Ingold treats “multiplicity” as he in 1993 treated the term “landscape”: by including the concept of time, movement and the lifeline of multiple living beings, and he continues: ‘Nothing in this world is settled, once and for all. In short, ontogenesis allows us to reconcile singularity and multiplicity, agency and patiency, within one world’ (Ingold, 2018, 167). All the different worlds are on the same Earth. All the differently socially constructed landscapes are in the very same physical terrain. Movement is a way of ordering space into a narrative extent of time.

29 The development of an individual organism or anatomical or behavioural feature from the earliest stage to maturity.

2.5.5 Reindeer Husbandry as an Area of Law

Reindeer husbandry is a provider of Sámi material culture and a keeper of the Sámi languages. Simultaneously, the pastoral communities experience considerable economic pressure, due to the loss of pastures to mineral extraction, infrastructures, extended urban use of nature, as well as state-steered rationalisation of reindeer husbandry. Nygaard addresses the sectorial organisation of land use management in relation to Sámi interests:

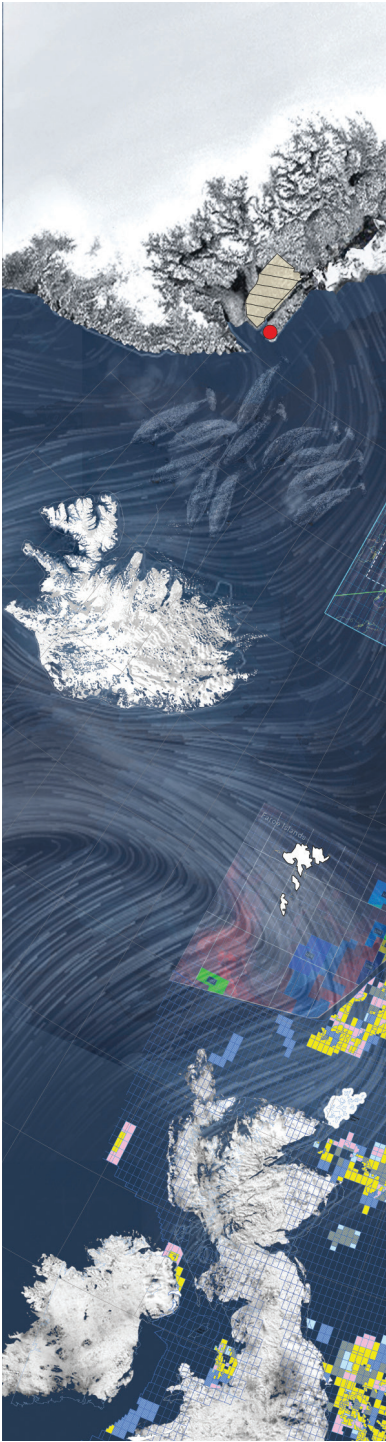
Sectorial ministries are naturally concerned about their own sectors and have their agendas, while Sami interests often require a different sector- overlapping approach. Reindeer herding can be held up as an example of this, as effects from mining activities can seldom be isolated from other land developments in the same area. Such developments will have cumulative effects that together can form a threat to future herding. (Nygaard, 2016, 22)

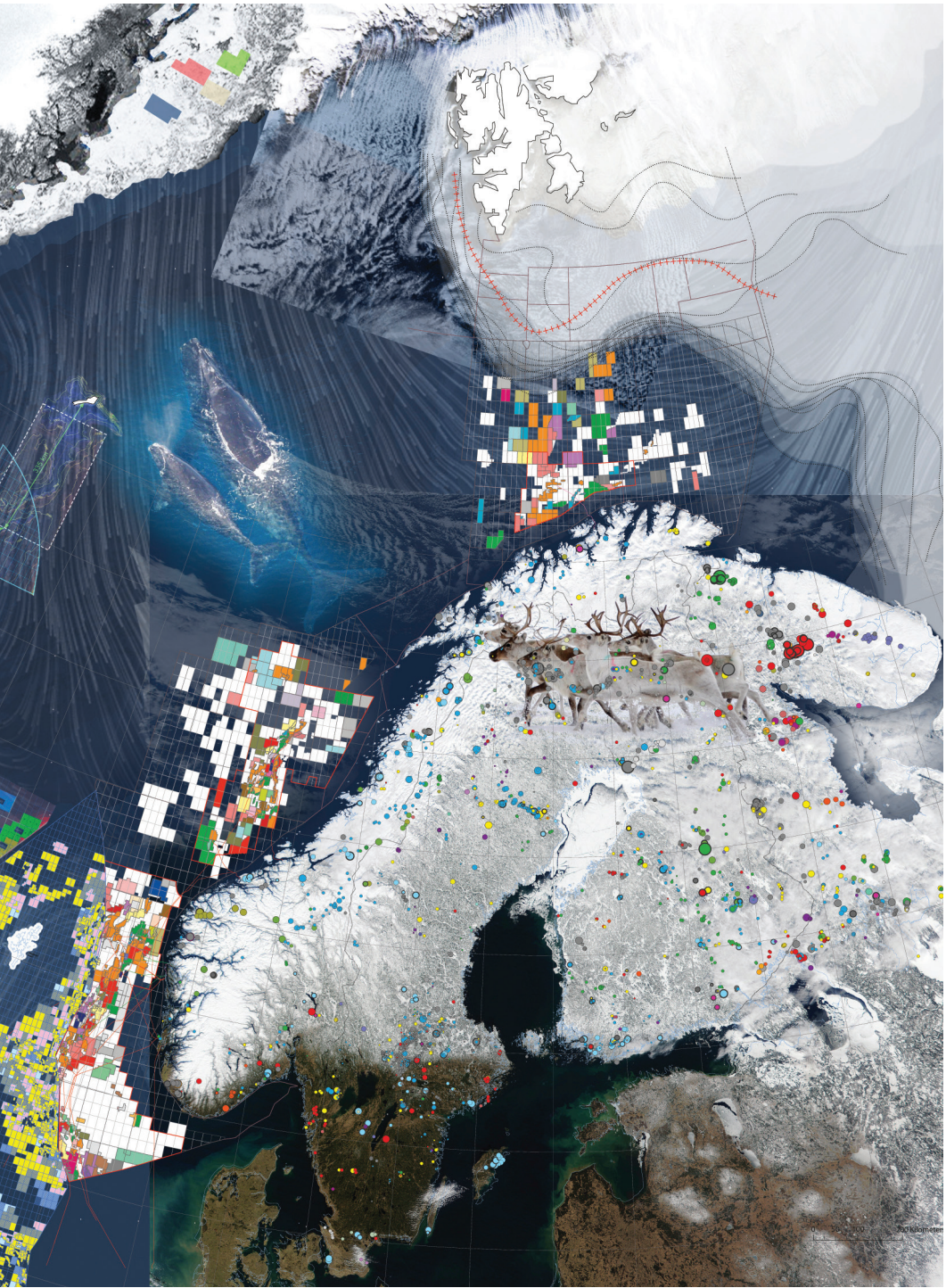
As an answer to the sectorial fragmentation of formal governance structures that leads to spatial fragmentation of the landscape, Ellen Inga Turi (2013) proposes incorporating the traditional reindeer herding *siida*'s knowledge and understanding of land-use change for a better governance of the outlying fields, the *meahcci*. In the context of reindeer husbandry, a *siida* is a group of reindeer herding families that work together to manage their herds at different geographic seasonal pastures throughout the year. She argues that the *siida* is:

perhaps the only institution with a clearly vested interest in understanding all the different types of change spanning its customary pasture areas, as such changes may directly affect the practice of their livelihood. (Turi, 2013, unpublished)

Reindeer husbandry law is a topic in the field of jurisprudence that covers legal issues related to reindeer husbandry's use of land, water and natural resources, as well as other legal issues of relevance to their business practices and culture. The reindeer is a key Arctic species with circumpolar habitats and circannual, migratory routes. In *Cultivating Arctic Landscapes* Anderson and Nuttall (2004) discusses reindeer and caribou management and Indigenous peoples' ways of knowing in the circumpolar North. Sámi reindeer husbandry and the Nordic States' relation to circumpolar reindeer husbandry is a regional variance in the planetary blend of processes of change. All around the Arctic Circle, extractive industries and infrastructure encroach upon its ranges. In Alaska and Canada, the numbers of once-grand caribou herds are dwindling. In Sápmi, the Fennoscandian States, Norway, Sweden, Finland

Fig 2.6: The Perforated Landscape. A juxtaposition of governable, worlding, prospective and migratory landscapes in Sápmi and Fennoscandia. It is a collage of several maps of the north as a resource frontier. Oil concession maps, mineral deposits, snow cover and sea ice, ocean currents, and charismatic migratory species. Sources: Eartwind, The Fennoscandian Ore Deposit Database, The Norwegian Polar Institute, Resource cartographies from Norway, England, Iceland, and Greenland. Background map: a collage of Satellite images from Nasa and K-sat.





and North-West Russia govern Sámi reindeer husbandry, to keep the reindeer numbers low. Reindeer peoples, be they herders, trappers or hunters, fight in the courts, in all the Arctic Nations, for the reindeer's right to be at the right place at the right time. In doing so, they are in the front line of protecting Arctic landscapes. Reindeer peoples have two issues in common. The first is encroaching infrastructures that perforate and fragment the land; the second is state management systems that do not acknowledge Indigenous custom or traditional knowledge.

As a professional discipline, reindeer husbandry law includes the rights and obligations of reindeer herders within their industry and legal issues regarding protection against interference from other industries and society as such. Professor in Law Øyvind Ravna at UiT the Arctic University of Norway has published extensively on the subject and has now written the first Norwegian textbook in Sámi Law and Reindeer Husbandry Law. Ravna's (2019) book also covers highly relevant topics within Sami law, such as Sami land and resource rights issues, including international Indigenous law aimed at safeguarding Sami culture and material cultural expressions. Professor in Law Kirsti Strøm Bull at the University of Oslo is the pioneer in modernising this field of law, through her leadership in the works in the reindeer husbandry law committee, appointed by the Ministry of Agriculture on November 5, 1998 to review the Reindeer Husbandry Act of 1978. Professor in Philosophy Nils Oskal was one of the members of the committee. Further, Kirsti Strøm Bull, Nils Oskal and Mikkel Nils Sara (2001) wrote the legal history of reindeer husbandry in the period 1852-1960 [*Reindriften i Finnmark, Retts historie 1852-1960*]. Here I centre the later writings of social scientist scholar and reindeer pastoralist Mikkel Nils Sara, who has discussed the outcome, the 2007 Reindeer Act. Sara notes that:

The official administrative organization of reindeer herding has formed gradually through legislation, of which the Finnmark Reindeer Herding Act of 1854 was the starting point. (Sara, 2009, 155)

The national authorities have governed Sámi reindeer husbandry by organising reindeer grazing districts. The districts are mapped, and geographical boundaries updated. The maps are publicly available at NIBIO's map portal. The open access reindeer husbandry maps are compiled and hosted by the Norwegian Institute of Bioeconomy (NIBIO) on the behalf of the Directorate of Agriculture. The map application shows seasonal pastures, borders and infrastructures. It is made through governance to control and protect pastureland. The lines, fields and points on the map are the results of court

rules, negotiations and information from the reindeer grazing districts. The district names consist of a number and often a place name of the summer grazing area. The district council is the organisational body that answer to the authorities, *Fylkesmannen* and *Reindrifststyret*, that are under the Directorate of Agriculture. The district council represents the reindeer husbandry interests in the district, and its tasks are to safeguard reindeer grazing resources in the district, in accordance with the laws and usage rules, as well as engaging in negotiations with developers, planning and authorities. The law of 2007 about Reindeer Husbandry states:

The district council may, among other things, settle conflicts, sue and get sued on behalf of reindeer husbandry practitioners in the district's internal affairs. This also applies to matters concerning protection of areas, even when not all practitioners are affected. This does not preclude a *siida* or herder from safeguarding his or her own special interests (Lovdata, 2007b, §44).³⁰

The Reindeer Act of 2007 describes the main objectives in the Norwegian Parliament and government's reindeer policy as assuring economic, ecological and cultural sustainability. The government wants to achieve 'ecological sustainability' by reducing the number of grazing animals, especially in Finnmark. In the reindeer policy, 'economic sustainability' is pursued by introducing calf slaughter, to increase meat production. The Reindeer Herding Act of 2007 emphasised Sami traditions in the management of the internal affairs of reindeer husbandry, by introducing the *siida*-share [*siidaandel*] as a continuation of the reindeer husbandry concession that was introduced in the Reindeer Husbandry Act of 1978. Internally, the reindeer husbandry districts are obliged to make usage rules every year that define which areas can be used by the respective *siida units* in the district. While a *siida* is a group of reindeer herding families that work together to manage their herds at different geographic seasonal pastures throughout the year, the districts comprise the *siiddat* (plural for *siida*) that are cooperating at the summer pastures.

The formation and subsequent failure of reindeer herding districts has

30 My translation from the Law of 2007 about Reindeer Husbandry §44: 'Distriktsstyret representerer reindrifstinteressene i distriktet. Distriktsstyrets oppgaver er å ivareta reinbeiteressursene i distriktet i samsvar med lover og bruksregler. Distriktsstyret kan blant annet inngå forlik, saksøke og saksøkes på vegne av reindrifstutøverne i distriktets felles anliggender. Det gjelder også i saker som gjelder vern av arealer, selv om ikke alle utøvere er berørt. Dette er likevel ikke til hinder for at en *siida* eller *reineier* ivaretar egne særskilte interesser.'

gradually led to the disintegration of traditional concepts of legitimate *siida*, increased internal conflict, and has interfered with the pursuit of *siida* rights. (Sara, 2011a, 141)

Sara commented that the Reindeer Act recognised the *siida* ‘as the basic institution regarding land rights, organisation, and daily herding management’ (Sara, 2009, 152) but noted that this acknowledgement should also ‘result in recognition of its autonomous processes of knowledge as well as recognition of its land rights’ (Sara, 2009, 152). The *siida* system is traditional, while the organisation into districts and the division into *siida units* [*siidaandel*] are interventions from the state that combine the concession system and the *siida* institution, which in turn are connected to different systems of rights and heritage.

2.5.6 Traditional Ecological Knowledge

The government and planning authorities are obligated by the Law of Biodiversity [Naturmangfoldsloven] to acknowledge Indigenous ways of knowing. Further, according to a range of laws and international conventions, traditional knowledge is to be included in research that respects Indigenous society, economies and cultural survival. This is a challenge to landscape management, because different ontologies and worldviews condition different ways of knowing. ‘Traditional ecological knowledge sits outside management, and more often than not it is in conflict with it’ (Law and Østmo, 2017). When discussing power-knowledge within reindeer herding research and management, the social scientist and reindeer pastoralist, Mikkel Nils Sara, argues that

the authority of science, representations in the form of diagrams, and precise quantitative analyses have a greater impact on the decision-making processes of mainstream society, while traditional Sámi reindeer herder knowledge, on the other hand, exists within the *siida* as its professional forum, where the practice-related approach to the problem at hand lays the foundation for what is viewed as relevant contributions for the situation. (Sara, 2009, 165)

In the field of ecology, since the 1980s, a number of researchers have raised a discourse with an interest in the traditional ecological knowledge of Indigenous peoples. Canadian Research Chair of Community-based Resource Management, Fikret Berkes, nurtures a special interest in integrated systems of people and environment, commons, knowledge systems and their cultural and political significance for Indigenous groups themselves. An article Berkes has

co-authored with Ian J. Davidson-Hunt (2006) brings together discussions of biodiversity and traditional management systems with the discourse of cultural landscapes. Their findings show that traditional Indigenous landscape practices nurture, manage and cultivate ecosystems in the areas they live. As a result, there is greater biodiversity in places that are managed by Indigenous peoples than in protected areas such as national parks. Interviewing elders of the Anishnaabe (Ojibwa) people of Shoal Lake, north-western Ontario, they learned that a key to understanding the increase in species is that the Anishnaabe (Ojibwa) people keep the landscapes in the territory in different stages of plant succession, serving as a habitat for different species. “Cultural landscapes”, they argue, is a key term used to discuss the importance of traditional knowledge for complementing scientific ecology. Berkes and Davidson Hunt (2006) focus on ethnoecology, cultural landscapes and Indigenous peoples in Canada and Mexico, but their argument also has relevance for the Arctic landscape discourse. Earlier, Berkes crafted a much-cited definition of traditional ecological knowledge as:

a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment. (Berkes et al., 2000, 1252)

Berkes approaches traditional ecological knowledge as a knowledge-practice-belief complex that is a challenge to the positivist-reductionist paradigm in Western science. Well-known examples are Sámi reindeer pastoralists’ knowledge of snow and winter pastures and Inuit trappers’ knowledge of and adaptations to everchanging sea ice conditions. The *meahcit* practices rely on a balance between multiple species in functioning seasonal ecosystems.

Sámi reindeer herders’ knowledge of snow and grazing conditions in winter is part of their traditional knowledge, which is a systematic way of thinking and knowing that is elaborated and applied to phenomena across biological, physical, cultural and linguistic systems. (Eira et al., 2018, 928)

Traditional ecological knowledge is articulated in Sámi by Sámi scholars as *Árbedietu*.

Árbediehtu is the collective wisdom, practical skills and theoretical competence evolved and acquired by Sami people through centuries

in order to subsist economically, socially and spiritually. (Porsanger, 2011, 242)

Sámi Philosopher Nils Oskal notes in his article ‘On Nature and Reindeer luck’ from 2000 that both natural scientists and reindeer herding peoples are engaged in interaction with reindeer. ‘The perception of reindeer is perhaps in every case culturally defined and made meaningful through practical engagement and cognition’ (Oskal, 2000, 175). He argues that it should not be treated as a dogma that the validity of traditional knowledge is internal to particular languages and cultures, while scientific knowledge holds cross-cultural validity. ‘The privileged status of scientific knowledge cannot be assumed a priori and is rather a question of accurate and concrete argumentation from case to case’ (ibid., 175). Oskal invokes the Sámi writer Johan Turi (1854-1936), who in 1910 wrote that ‘Knowledge is not enough to ensure success in reindeer husbandry and trapping. One must also have luck’ (ibid., 176). Oskal’s main concerns are ‘ethical and moral questions and the place of reindeer in Sámi reindeer herders’ evaluation of their lives as meaningful, fulfilling, good, etc.’ (ibid., 176). Reindeer luck, *boazulihku*, is connected to the ethics on how the reindeer peoples lead their lives, think and speak, in relation to their herd, the landscape, neighbouring herds and people. Oskal’s article mentions and comments on many situations that require appropriate moral and aesthetic responses. As regards landscape, Oskal writes that:

Being honest, just, and honorable means that you can get along with others but you must also get along with places – pastures, migration routes, calving places – anywhere that can be considered a home to the herd. Such places have protective spirits which you must also get along with somehow. An appropriate way is to ask for permission from the land and to make requests of the land.

Both the reindeer and the Reindeer Sámi have strong ties to grazing land. Ancestors, memories, stories and conversations in general would be empty without reference to their particular setting. There is little to remember or tell without including the landscape which gave forms to these events. It is not an accident that wishes and enquiries are to the grazing land and that a place is remembered through *yoik*, embellished, made happy and invoked like an old and loyal friend. (Oskal, 2000, 178)

Through his investigation into reindeer luck, Oskal opens ‘a different range of possibilities of making sense of human life that can give us a new sense of

what constitutes human satisfaction and wellbeing' (ibid., 179). A herder has reindeer luck when the flow of events benefits the herd it grows and is beautiful. Actions, behaviour, words and thoughts influence reindeer luck. And it is exactly in the stories, practices, or the traditional form of song, *yoik*, and cultural prescriptions of how to go along with the animals, humans, beings and landscapes, that the traditional knowledge is handed on to new generations. Relationships between landscapes, humans and more-than-humans are hampered in management regimes, despite the legal framework that requires the inclusion of Indigenous and local knowledge.

Solveig Joks, who studied traditional salmon practices and salmon fishery management in the Tana River, *Deatnu*, notes that it 'becomes a difficult task for researchers to treat traditional knowledge that is not part of their field of study, and which they also do not have the knowledge to handle' (Joks, 2015, 197). Referring to Nasady's (2003) observation that the influential abstractions produced by the natural scientists have no intention of representing local knowledge that might be too rich to be represented by numbers, she argues that:

Traditional knowledge that should form part of the management of luonddualljodagat should therefore be operationalised and conceptualised where possible, namely by those who have this knowledge. (Joks, 2015, 200)³¹

Landscapes, she argues, are in a continuous process. They are shaped by humans, while at the same time shaping people. The salmon in *Deatnu* is thus created through the practices that take place in the river (Joks, 2015). In order to follow the laws and conventions that nature management is committed to, Joks argues, it is bound to be just as natural to include concepts from traditional salmon fishing as from natural scientists.

What Indigenous methodologies have in common is that they relate to a historical past, where Western colonialism has had an impact on the knowledge of Indigenous peoples. Colonialism has meant that Indigenous peoples' own stories about themselves are limited. The written

31 My translation from Joks (2015, 200): 'Det blir derfor en vanskelig oppgave for forskerne å behandle tradisjonell kunnskap som ikke inngår i deres fagområde, og som de heller ikke har kunnskaper til å håndtere. Tradisjonelle kunnskaper som skal inngå i forvaltningen av luonddualljodagat, bør derfor operasjoniseres og begrepsfestes der det lar seg gjøre, nemlig hos de som har denne kunnskapen.'

sources, analyses and descriptions that Indigenous peoples have access to are mostly prouced by others (Joks, 2015, 64).³²

Next, I look into the work of the researchers with close ties to reindeer herding, some of whom are reindeer owners with herding experience, who have taken on the task of “translating” reindeer herding knowledge for the academic research community. This implies positioning traditional ecological knowledge within reindeer husbandry in relation to natural science knowledge regimes and articulating the linkage between traditional and academic ways of knowing, as well as identifying instances where sectorial governance becomes acutely problematic for Sámi reindeer husbandry.

2.5.7 Sámi Reindeer Pastoralism

Sara has described how Sámi reindeer husbandry *siida* has formed an adaption of ancient *siida* principles that regulate the rights and commitments of individuals, households, cooperating households, territory, resources, equipment, infrastructure and migratory routes.

The main elements of the *siida* are the individuals (in Sámi *siidda olbmot*); the husbandry units (*báikedoalut*); the collective and the herding unit (*siidadoallu*); the *siida* territory, resources, and infrastructure (*orohagat/siidavuodđu*); and the semi-nomadic or nomadic lifestyle in accordance with the flow of the seasons (*johtáladdan*). (Sara, 1999, 85)

The North Sámi / North Norwegian coast is rocky with alpine islands, sounds with strong tidal currents and fjords. In Finnmark, the coastal mountains and islands are the summer lands for reindeer that are in the inland during the winter. Further south, the snow conditions and topography are different, and the archipelago off the coast provides for winter pastures, while the inland mountains are summer pastures. Some places there are all-year-round pastures. The reindeer herd knows its migratory ranges, and the Sámi reindeer herding *siida* seeks a compromise with the reindeer that needs to keep its instincts intact to survive in challenging conditions:

32 My translation from: ‘Det urfolksmetodologier har til felles, er at de baserer seg på en historisk fortid der vestlig kolonialisme har hatt innvirkning på kunnskapene om urfolk. Kolonialismen har medført at urfolks egne fortellinger om seg selv er begrenset. Tilgangen som urfolk har til skriftlige kilder, analyser og beskrivelser, er for det meste utgitt av andre’ (Joks, 2015, 64).

The reindeer are recognized within the *siida* as beings or members capable of learning and forming their own “opinion.” They are not only living beings, but beings with lives and minds of their own. Thus the relationship between herders and reindeer is referred to by herders as a “compromise” between two parties, with opinions that differ to some extent, but through which both parties ultimately benefit. (Sara, 2011a, 148)

Weather conditions, snow cover quality and climate variations from year to year imply a need for flexibility, regarding the time for moving in and out of and to and from the different seasonal pastures. There is an ordinary space of flexibility that is continually negotiated between different *siiddat*, to avoid the mixing of herds. The need for flexibility generally does not provide a right for *siiddat* to transcend their own pasture borders without an agreement with the affected neighbouring *siida*, except in unusual, extreme and rarely occurring cases.

The interdisciplinary research project, *Dávvggas*, connected researchers that have provided scholarly contributions on reindeer husbandry in environmental and development studies, environmental humanism, biology, veterinary subjects, economics, Sámi language, and various social science disciplines, to tease out the difficulties of reconciling traditional knowledge and customary rights with state governance and public opinion. Several of the contributors have backgrounds in reindeer husbandry and are active reindeer herders. *Dávvggas* had participants from the Norwegian University of Environmental and Life Sciences (NMBU), the International Centre for Reindeer Husbandry (ICR) in Kautokeino, the Sami University of Applied Sciences in Kautokeino, the Oslo Met, the Arctic University of Norway, UiT, and the University of Tallinn. The project produced a series of English articles that translate reindeer terminology and concepts for international readers and a book in the Norwegian language called *Samisk reindrif – Norske myter* [*Sami Reindeer Husbandry – Norwegian Myths*] (Benjaminsen et al, 2016). The title corresponds with the authors’ main claim that Norwegian management of reindeer husbandry is based on myths that may lead to the collapse of reindeer pastoralist capacity for sustainable operation.

The theoretic framework of political ecology is expressed through the publication’s emphasis on power-knowledge in politics, governance and law. Political processes and power relations materialise, by determining human use of the environment. I draw from this that law-making is a landscaping practice. More concretely, the authors describe reindeer husbandry as a pas-

toral system, in contrast to an agricultural system or ranching. The continual adaptation to changing conditions requires flexibility. A co-authored article on traditional knowledge from this group of researchers notes that:

The traditional Sámi pastoral way of understanding reindeer husbandry with a focus on maintaining flexibility stands in contrast to the positivist-reductionist approach in Western science that dominates contemporary resource management. (Johnsen et al., 2017, 8)

To govern reindeer husbandry as if it were agriculture or ranching leads to a ‘misreading of Arctic Landscapes’ (Benjaminsen et al., 2015). In Norway, 40 per cent of the landscape is reindeer pastures. The pastoral landscapes of Finnmark, Troms, and Nordland comprise 98 per cent of the total land areas. During the last decade of discussion on reindeer numbers, Sámi reindeer pastoralists were often accused of over-exploiting the pastures. In her PhD project related to the Dávvgas project, geographer Kathrine Ivsett Johnsen studied the problems related to reindeer husbandry’s co-management position in the state’s reindeer husbandry management; she pointed out that, in many contexts, the reindeer herders were regarded as irrational players who did not know their own best interests, while the reindeer owners developed a deep distrust of the authorities. Her dramatic finding was that the reindeer number adjustments were seen as a means for a clearing away of reindeer husbandry in favour of mining, wind farms and other development.

In 2018, the government presented a White Paper with new strategies and measures for reindeer husbandry, to better utilise its potential in a rational and marked oriented direction. Meld. St. 32 (2017-2018) Reindrift. Lang tradisjon – unike muligheter [Reindeer Husbandry. Long Traditions – Unique Possibilities] (LMD, 2018) is the first White Paper to the parliament on reindeer husbandry in 25 years. The decisions regarding the internal legal state have been unaltered since the Reindeer Act of 1978. The Reindeer act of 2007 focused economical, ecological and cultural sustainability. An important premise for was that reindeer husbandry depends on biological resources, and that its use must be sustainable from a long-term perspective. This was reflected in an emphasis on facilitating those who have reindeer husbandry as their main income. In the 2017 White Paper on reindeer husbandry, the government wanted to remove the third objective in the law of 2007, that of “cultural sustainability”. The law is supposed to include a statutory framework that guarantees a greater degree of internal self-government in the industry, but two measures increase state control and intervene in the private economy of reindeer husbandry practitioners. The first of these is to make individual

electronic marking of the reindeer mandatory; the second is to make the reindeer numbers of the siida units public within reindeer grazing districts. Anthropologists Bjørklund and Eidheim argued in 1997 that ‘earmarks are more than individual signs of ownership. The earmark is ‘a Sámi multi-functional communication system and, as such, a central element in the social and economic organization of reindeer husbandry’ (Bjørklund and Eidheim, 1997, 569).³³ In Chapter 8, I discuss their notion, in order to understand earmark cartographies.

2.5.8 Seasonality

The notion of “Eight seasons” is closely associated with Sámi culture. The Sámi singer Mari Boine released the record *Eight Seasons* [Gavcci jahke-juogu] in 2001. In 2012, NRK launched the documentary *Åtte Årstider* [Eight Seasons] that followed a South Sami reindeer herder family through the year. From Finnmark, the NRK documentary *Reinlykke* [Reindeer luck] from 2008 followed a North Sami reindeer herder family through the year. The ethnographer Ernst Manker popularised the notion of the eight seasons in the book *De Åtta årstidarnas folk* [The People of Eight Seasons] in 1963. In North Sámi language, the seasons are called: *gidđa* [spring], *gidđasgeassi* [spring summer], *geassi* [summer], *čakčageassi* [autumn summer], *čakča* [autumn], *skábma* [autumn winter], *dálvi* [winter] and *gidđadálvi* [spring winter].

In his article, ‘Seasonal Landscapes in Northern Europe’, cultural geographer Michael Jones defines seasonal landscapes as

[L]andscapes showing marked seasonal contrasts in their physical appearance or in activities occurring in them, as well as artistic and other representations of this. (Jones, 2004, 13)

Jones acknowledges the seasonal changes as a driver for activity and production. ‘Although some livelihoods pay relatively little attention to seasons, many livelihoods actively exploit the seasons, often through mobility’ (Jones, 2004, 21). When he enquires into the uses and meanings of the words “season” and “seasonal”, Jones notes that ‘It is worth remarking that nearly all these meanings relate to various cultural activities, and only to a certain

33 My translation of: ‘Reinmerker er et tegn som i samekulturen bærer langt flere og mer komplekse betydninger enn det vi på norsk forstår med “eiendomsrett”. Reinmerking er m.a.o. en meget viktig del av et samisk multifunksjonelt kommunikasjonsystem og som sådan et sentralt element i reindriftens sosiale og økonomiske organisasjon.’

extent to periodicity in nature' (Jones, 2004, 13). Seasonality also affects the many meanings of the term "landscape":

All these different dimensions of seasonality have their impact on the landscape in its various meanings, including landscape in the sense of our physical surroundings (both natural and human), landscape in the sense of representations of our physical surroundings, and landscape in the sense of an area, region or territory with particular characteristics incorporating people, land, law and custom. (Jones, 2004, 11)

Fishing, harvesting and reindeer husbandry exist as cyclic practices that depend on functioning ecosystems and the seasonal migration of fish and reindeer. A situated, circannual approach to contested landscapes encircles the local impact on and the agency of landscapes, while paying heed to the movement of migratory species on land, in the air and in the oceans.

2.5.9 Planetary Multispecies Migration

Migratory species face challenges. The ongoing process of environmental and climatic changes that lead to species extinction is well known. In 2011, the United Nations Environment Programme reported a 'dramatic decline in migratory species, including whales, ungulates and birds' (Kurvits et al., 2011, 6). This is a global problem, particularly apparent in the Arctic region, where large parts of the species are migrating. The humpback whale crosses the Atlantic Ocean to mate in Caribbean waters and returns to the Norwegian coast to feast on herring that swim towards the marginal ice zone in the Barents Sea to feed on zooplankton in the marginal ice zone. With its global flight, the Arctic tern connects the Antarctic and the Arctic summers. The snow owl commutes between Siberia and Finnmark, where the semi-domesticated reindeer wander between their seasonal pastures.

Marine ecologists work with terminologies that may be of help to conceptualise the scale of the impacts of human activity in territories that are home to migratory species. The territory where a migratory species lives and roams is called a "contiguous domain". The contiguous domain varies, depending on which perspective is taken. The contiguous domain of pollution is for instance how it spreads in water bodies and the contiguous domain of bird populations is the migratory routes nesting places, feeding places and resting places. Carmack and Wassmann (2006) describe how these "contiguous domains" are shaped by the seabed topography of depths, edges and shelves. Ocean and coastal currents circulate globally and transport

particles and microorganisms in a pull and drift that is called “advection”.

Multiple migration routes coordinate multiple worlds and places. Plans and cartographies have a responsibility to account for the multispecies planetary choreography. In doing so, it is important to relate to the ontologies enshrining traditional ecological knowledge.

As much as “one-world globalism” is about unrestricted movement, the means of transport are restricting multispecies planetary seasonal migration. Few researchers would really disagree on the importance of providing space for the entangled ecologies in the circannual Arctic. The Arctic is nevertheless being perforated and fragmented. Different worlds are crammed together in the landscapes of one planet. Circannual studies is a mode of encircling place that makes possible encounters with people and their landscapes. It evokes the interest of multiple migratory species and humans staying and travelling during the year. Arctic multispecies mobilities make the study of contested landscapes a planetary endeavour. The study includes a pondering on the relationship between humans and non-human denizens because wherever free-ranging animals swim, fly or run, they are at home and contribute to the sense of place. In doing so, it is also crucial to be committed to both multiple worlds and the one world (Ingold, 2018) that we share as humans with multiple other species.

2.5.7 Decolonising Landscape Approaches

I argue that it is uncultivated to call *meahcit* or *marker* “uncultivated landscapes”, “wilderness”, or “wastelands” because those terms fail to acknowledge the cultures of other natures. When environmental impacts on *meahcit* (Schanche, 2002) are assessed as though they were impacts on “landscape” in the meaning of the word that is used in environmental governance or, alternatively, uncultivated areas, those impacts are not registered. Studying or teaching “landscape” in reindeer pastures without recognising Sámi pastoralism and traditional relations to the *meahcci* is at best ignorant. At worst, it is a discriminatory continuation of colonial practices.

It is first and foremost anthropologists and geographers that have taken on the big job in articulating methodologies that reflect postcolonial thinking. At a lecture on the Oslo School of Architecture and Design (AHO) in 2012, Jérémie McGowan called for self-reflection among architects. Architects have not discussed the colonial element in their attempts to perceive and represent places. McGowan criticised architects from Fehn to Koolhaas, as enjoying the status as the last white male intellectual heroes, in a profession where

this is not yet addressed. It is time, then, to stop lagging behind in taking on the task of postcolonial self-scrutiny. Philosopher Etienne Turpin proposes that ‘By discovering affinities and alliances with both the sciences and the theoretical humanities, architecture as a practice can begin to reassess its privilege, priorities, and capacities for inscription within the archive of deep time’ (Turpin, 2013, 4). Reassessing privileges is part of a process to decolonise a discipline and a profession. Landscape architects do not yet have a clear voice in discourses of contested landscapes that matter greatly for Arctic communities. Can design thinking, tools and skills, the prospective capacity of the profession contribute in the negotiations of the future landscape?

Following Cosgrove, the art of representing space in the Renaissance became a science. Using science, measuring and gauging are necessary to make a prospect, in the meaning of both a view of a landscape and a mineral prospect. It might be useful to group the landscaping practices depending on the mastery of geometrical techniques and tools as prospective arts. But, in the meaning of a future, of making a future, a wider range of vested interests, strategies and tools needs to be taken into consideration, to understand the practice of prospecting. I therefore propose to use the term “prospective arts” for landscape-changing activities that are deliberate and regulated. The prospective arts propose landscape trajectories and have a vested interest in shaping the physical environment.

The materialities in the multimodal construction of arguments in the architectural professions are acts of making. They are enmeshed in the social, in power-saturated relations but, at the same time, contribute specific ways of knowing, through material engagement with the world, by ‘employing the many media available for it, from buildings, drawings, exhibitions, magazines, books, photographs, to film, television, statistics, the Internet, and more’ (Scott, 2016, 442). Such material experience is implicit in the participation in discourses surrounding industrial and infrastructural prospects and at local cultural scenes and international venues. In the public discourse about anticipated futures, the counter knowledge that is provided in the prospective arts is multimodally mediated in the shape of counter prospects.

Placing landscape architecture among the prospective arts places it in the same category as mining, infrastructure development, agriculture, husbandry and other prospective activities that compete to shape the future landscapes.

2.6 CONCLUSION TO CHAPTER 2

From the oceans, a continuous landscape stretches through Norway, Sweden, Finland and northwest Russia, from green islands and alpine coastlines deeply indented with fjords to deep boreal forests, lakes and rivers, mountain plains and thawing tundra. The Atlantic Current of the Gulf Stream keeps the coastal waters ice-free. With multiple regional extensions and disparate political affinities, Fennoscandia and Sápmi go by many names: ‘Scandinavia’, the ‘Barents region’, the ‘North Calotte’, and, in its uppermost regions, the ‘European Arctic’. These names have different histories, all of them freighted with geopolitical significance, and all of them confirming the high strategic importance the region has retained from the 16th century—when it was represented as an inchoate northern territory—to the politically and economically demarcated resource province of the present day.

Studying and relating to contested landscapes requires a multifaceted concept of landscape. The term “landscape” appears with different meanings and ontological content in material and discursive landscaping practices. Ethical, aesthetical and ontological dimensions apply differently to landscapes, depending on what the term “landscape” means, both as multi-dimensional cultural landscapes and as multiple mediated representational landscapes that make policy. This chapter has developed the notion of the perforated landscape as an analytical framework to explain material-discursive practices in contested landscapes.

Although the polemics on the meaning of the term “landscape” have come to a temporary rest with the European Landscape Convention, various definitions of the term “landscape”—that is, different landscape concepts contained in different ontologies—are decisive for how landscape is governed, represented, perceived, constructed and mapped.

I have employed multiple prevailing meanings of the term “landscape” to construct four analytical categories of landscape that all have performative, representative, material, cartographic, discursive and prospective dimensions.

In these clusters of theoretic entanglements, the concept of landscape holds on to its elusiveness, resists definition and performs its tricks in the confounding discourses that surround contested landscapes. Unmasking the discursive attributes of the term “landscape” aims to highlight the tricky logic by which the term “landscape” is employed in landscape discourses, in order to be aware of the elusiveness of the term as a quality that is both simultaneously prospective and counter prospective.

“Governable landscapes” building on the concept of “landscape as polity” are represented, governed and contested through infrastructures of cartography and counter cartographies that can be explored in multimodal discourse analysis. “Worlding landscapes” are landscapes that yield worlds that can be encountered in ethnographic approaches, conversations and presence. “Prospective landscapes” read prospects as landscapes and concern the proposed, projected, planned and prospected areas that are read through resource mapping. “Migratory landscapes” are monitored in ecosystem mapping but also enacted in seasonal practices, herding, fishing, gathering and hunting. It is in landscapes that traditional ecologic knowledge and scientific ecologies meet. The combination of the four analytical landscape categories provides a base for a multimodal discourse analysis of resource mapping and counter mapping, and the prospects of various landscaping practices.

There is an urgent need to incorporate a broader understanding of the many ways environmental impact assessments endow landscape with different meanings, and how generalised valuations of landscape reflect local appreciation of landscape or not. I argue that it is necessary to investigate the implications of different positions within landscape theory about the meaning of the term “landscape” for projective landscape- and mapping practices, to better understand how the elusiveness of the term “landscape” works across government bodies and act accordingly.

Further, this chapter argued that the architectural professions are among what I call the “prospective arts”. Bridging the issues of landscape perception and the right to landscape with questions of resource extraction and the prospective capacities of the architectural professions opens the way for a discussion on prospective responsibility.

Taken together, the inquiry into these four concepts of “landscape” opens up a discussion of counter prospecting as an alternative analytic and prospective method. The “prospective arts” are in a good position to explore contested landscapes. In Chapter 7, I develop “counter prospecting” as material-discursive practices in contested landscapes. In this, I employ the prospective capacities of landscape architecture in a counter-prospective mode. The method shares characteristics with counter mapping in that it is a critical praxis that resists extractive worldviews. I propose that counter prospecting may be employed as a method to engage with such perforated and indeed contested landscapes. Taking a prospective approach to perforated landscapes entails methodological possibilities and implications that I will unpack in Chapter 3.

Chapter 3 A Counter Prospective Approach

3.1 INTRODUCTION

This chapter outlines the selection and application of research methods and position the study methodologically. In the following sections I list the methodological approaches and methods I have employed, explain how I have employed visual techniques and performative strategies in the study and give accounts of the circumstances and relations through which the research data are collected. The chapter further shows how I have gathered the basic data from different encounters with and in the field and handled the material methodically and analytically. Finally, I look at the ethical implications of focusing on contested landscapes through personal encounters in the landscape and conclude the chapter with some critical reflections and discussion.

3.1.1 Challenges in Landscape Methodologies

Methodologies discussed within landscape architecture and planning are moving towards more action-based and holistic approaches under the influence of the ELC (Jørgensen et al., 2016; Stahlschmidt et al., 2017; Egoz et al., 2018). The preamble to the ELC calls for a ‘true landscape democracy’ (EC, 2000, cited in Primdahl et al., 2018, 162). Methods for public participation in landscape matters are up for revision towards more inclusion in the negotiation of landscape value. One of the means to achieve that is to challenge the prevailing practices of “landscape character assessments” that have gained importance and are now a mandatory part of any project that is subjected to environmental impact assessments in Northern Europe. *In Landscape Analysis: Investigating the Potentials of Space and Place*, the authors, Per Stahlschmidt, Simon Swaffield, Jørgen Primdahl and Vibeke Nellemann, emphasise that the landscape analysis process must become more accessible and values-based as a ‘discursive activity’ if it is to be a means to democra-

tising landscape in the future (Stahlschmidt et al., 2017, 32). They provide ample space for disciplinary established landscape approaches and methods used in the process of “making landscape”. These situational landscape analysis tools can be listed as transdisciplinary map inquiries to understand the “natural aspects” of the landscape (geology, hydrology, topography or land-cover), “historical landscape analysis”, different examples (retrieved from the historical record within the architectural disciplines) of utilising cartography interpretatively to understand place (such as the Nolli Map of Rome), as well as techniques of investigating “landscape potential”, by drawing site sections and overlay methods. Investigating landscape potential is part of the prospective capacities of landscape architecture. I argue that these projective capacities have much to offer landscape theory in terms of anticipation of landscape trajectories. It is a potential in this to develop a multimodal and anticipatory discursive method.

Rural landscapes are subject to rapid change. Primdahl and Kristensen (2016) argue that ‘Experiences gained in urban planning are, therefore, useful when discussing the emerging rural landscapes’ (Primdahl and Kristensen, 2016, 227). The authors propose drawing in insights from urbanism to meet the challenges posed by deregulated/centralised market policies and policy interventions that are fragmented across various domains and political-administrative levels, while ‘spatial planning has been inadequate to deal with rural landscape change’ (ibid, 228). Jørgen Primdahl and Lone S. Kristensen compare challenges to policy and planning approaches to guiding agricultural countryside change in Denmark with geographer Patsy Healey’s (1988) analysis of how urban problems in the 1970s and 1980s led to the following: ‘More strategic and more integrated approaches focusing on place making issues for neighbourhoods, town quarters, city regions and other spatial entities have to a large extent replaced former, highly sectorial urban planning practice’ (Primdahl and Kristensen, 2016, 277).

To be successful, a landscape strategy process requires a relatively high degree of consensus among the stakeholders involved in managing the landscape in question and is, therefore, unlikely in landscapes with high levels of unresolved conflicts. (Primdahl et al., 2018, 162)

In order to understand landscape, and landscape terms, one will actually have to spend time in the landscape, and to be curious and open to the knowledge those who produce the landscapes through practice. Further, we need to be careful to connect and to interpret concepts and theories in relation to practice and to a variety of ways of knowing. Fiskevold (2016) calls for critical acts

of perception, in order to be able to perceive something that is not already preconfigured as and described as a landscape category. In other words, to be open, be observant and attentive and willing to learn. Learning new concepts alters the mode of landscape perception.

In 2013, I attended a lecture by Mikkel Nils Sara on reindeer herd socialities. He described herd dynamics, from a social science perspective and described how the herders learned to know the personalities of the individual reindeer through the ways they interacted with the herd. For instance, some individual reindeer always moved to the very centre of the herd, some were always taking the lead during migration, while others were always lagging behind. In the spring, for instance, they would be gnawing lichen from the stones sticking out of the snow and waiting till they were prompted by the herder to resume walking. In 2015, I participated in a short stretch of the spring migration. From the snowmobile I saw, just as Sara had said, that there was a group of reindeer that always waited until the herders was quite close before they moved on. A calf was falling behind because it started to get exhausted. We drove close to see how it was coping and I saw that it was walking in the footsteps of those in front. When I asked about this afterwards, I was told that yes, reindeer walk in each other's paths to save energy, and that is something everybody knows. This landscape experience taught me the complexity of relating to practical knowledge and building relations to landscape on many levels.

As I concluded in chapter 2, studying and relating to contested landscapes requires a multifaceted concept of landscape. Feminist, postcolonial, and Indigenous approaches have discussed methodology in ways that help analysing the complexities and ambiguities that exist contested landscapes.

Under a communitarian, feminist ethical model, researchers enter into a collaborative relationship with a moral community. (Denzin and Lincoln, 2011, 418)

This is what my thesis has attempted to carry out in terms of research methodologies and methods but also through design techniques and tools. It is important, at the start of the chapter, to mention that these are drawn from my professional expertise and practice as an architect. They are also part of my development as a researcher, learning how to apply my graphic, spatial and visual literacies and fluencies to fieldwork, to a wider critical reading of cartography, and to providing a mix of data and their relations in academic analysis.

3.2 REFLEXIVE AND QUALITATIVE RESEARCH METHODS

Broadly, my research is largely qualitative in character, both contextual and interpretative in its reach. It is a reflexive study that employs multiple methods and draws on aspects of design-based and hermeneutic inquiry. It does so in a reflexive research design that includes the interplay between situated studies that draws on document analysis, along with the voices of a diversity of participants.

Methodology concerns questions about how we know what we know and how we make accounts of the world(s) we study. ‘Methodology, as the word suggests, relates to processes where the design of the research and choice of particular methods, and their justification in relation to the research project, are made evident’ (King and Harrocks, 2010, 7). Across the humanities and social sciences, there are different schools of thought as to what are appropriate methods in the production of different kinds of knowledge.

Qualitative methods are well established in most social sciences and in the humanities. Qualitative methods of collecting and analysing empirical material range from ‘the interview to direct observation, the use of visual materials or personal experience’ (Denzin and Lincoln, 2011, 14). Qualitative methods also include the procedures of managing and interpreting large amounts of qualitative materials. Denzin and Lincoln (2011, 14) continue: ‘The researcher may also use a variety of different methods of reading and analysing interviews or cultural texts, including content, narrative and semiotic strategies.’ In Alvesson and Skjölberg’s (2009) view:

It is not method but ontology and epistemology which are the determinants of good social science. These aspects are often handled better in qualitative research – which allows for ambiguity as regards interpretative possibilities, and lets the researcher’s construction of what is explored become visible – but there are also examples of the use of the quantitative methods in which figures, techniques and claims to objectivity are not allowed to get the upper hand but are subordinated to a well thought out overall research view. (Alvesson and Sköldberg, 2009, 7)

Critical approaches study the material conditions of ideology. ‘Foucault’s thinking has a special methodological relevance, since he focused on the relation between power and knowledge’ (Alvesson and Sköldberg, 2013, 228). Qualitative research covers a range of approaches with a commitment

to radical democratic, participatory and power-sensitive research practices. That is taken up in disciplinary and transdisciplinary formations in and between anthropology, different forms of discourse analysis, cultural studies, media studies, community and place studies, landscape research, pedagogy, healthcare, critical arts-based inquiry and more. ‘Critical arts-based inquiry situates the artist-researcher in a research paradigm committed to democratic, ethical agendas’ (Denzin and Lincoln, 2011, 415).

It might be appropriate at this point to restate that my study is not a wholly or exclusively social science study. My thesis is an interpretative landscape study with a critical design approach. Design approaches in research are often process-driven inquiries. I work in a way which is multimodal, transdisciplinary and multisited, all of which are modes of inquiry that are encouraged in qualitative research. I have worked primarily with qualitative methods but have included some quantitative research from the environmental sciences in my analysis; further, cartographic representations always contain quantitative and geo-positioned information. While quantitative research is concerned with measurements, frequency, and probability expressed by numbers, percentages and ratios, qualitative research is interested in rich descriptions and interpretations of people’s lifeworld. In the *The SAGE Handbook of Qualitative Research* (2011), Norman K. Denzin and Yvonna S. Lincoln offer an initial, generic definition:

Qualitative research is a situated activity that locates the observer in the world. Qualitative research consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including fieldnotes, interviews, conversations, photographs, recordings, and memos to the self. At this level, qualitative research involves an interpretative, naturalistic approach to the world. This means that qualitative researchers study things in their natural settings, attempting to interpret phenomena in terms of the meaning people bring to them. (Denzin and Lincoln, 2011, 3)

The positivist ideal of the disinterested and neutral researcher that is often privileged in research programmes is challenged in reflexive methodologies. Reflexivity offers insight into the researcher’s own interests, in order for the reader to locate from where the research text is speaking. A focus on cultivating a method to be reflexive of the researcher’s position comes to the forefront.

Thus in reflexive empirical research the centre of gravity is shifted

from the handling of empirical material towards, as far as possible, a consideration of the perceptual, cognitive, theoretical, linguistic, (inter)textual, political and cultural circumstances that form the backdrop to – as well as impregnate – the interpretations. (Alvesson and Sköldbberg, 2009, 9)

In reflexive methodology, there has been long-standing work to find strategies to analytically and methodologically relate to complexity and ambiguities. In qualitative inquiry, that orientation is related reflexively and interpretatively to contexts, participants and participative voices and interested perspectives (Denzin and Lincoln, 2011). This may be a mix of the ethnographic and the participant observer, a set of contextual studies from law to policy, and a variety of shifts between description and analysis.

To be situated and to be reflexive are different things. According to Haraway (1988), we do not have enough insight in ourselves to be reflexive; instead she proposes that the knowledge that is produced must be situated. I draw on theoretical support from Donna Haraway on how knowledge comes into being and focus on how the ethnography (the multimodal ethnographic description) that I created came into being. Haraway writes that:

A map of tension and resonances between fixed ends of a charged dichotomy better represents the potent politics and epistemologies of embodied, therefore accountable, objectivity. For example, local knowledges have also to be in tension with the productive structurings that force unequal transitions and exchanges—material and semiotic—within the webs of knowledge and power. (Haraway, 1988, 588)

Situated knowledge is located and based on critically positioned seeing that open for reflection.

We are also bound to seek perspective from those points of view, which can never be known in advance, that promise something quite extraordinary, that is, knowledge potent for constructing worlds less organized by axes of domination. (Haraway, 1988, 585)

To move beyond generalised explanations that render everything the same, real conversations in actual landscapes are needed.

The alternative to relativism is partial, locatable, critical knowledges sustaining the possibility of webs of connections called solidarity in

politics and shared conversation in epistemology. (Haraway, 1988, 584)

Such conversations do not leave the field untouched (Stien et al., 2015, 294). All research is performative ‘because realities are being made alongside representations of realities’ (Law, 2003). In research involving landscape and cartographies, this is indeed the case, as ‘Mapping itself participates in any future unfoldings’ (Corner, 1999, 214). More than mere rhetoric, qualitative research has also sought to shape and to convey the type and character of its investigations, their status and their potential to provide trustworthy and detailed accounts that draw on a range of media types and modes of communication.

Qualitative research allows the researcher to be flexible and let the events that take place during the study to a certain degree guide the choice of methods. If new tools or techniques have to be invented or pieced together, then the researcher will do this. (Denzin and Lincoln, 2011, 4)

Multimodality (Kress, 2011) asserts that “language” is just one among the many resources for making meaning. Some of the multimodal methods I used was invented or augmented during the course of the study.

3.2.1 Interdisciplinary Positioning

Winge (2013) and Nygåård (2016) among others, address the problems of sectorial governance in land use management. In the encounter between different knowledge traditions, new knowledge is produced (Førde, 2004). Impact assessments are examples of trans-sectorial inquiries, but, to study those, I need to expand the transdisciplinary field and work that already characterises the “making disciplines” (Dunin-Woiseth, 2011), such as design, public planning procedures, building, construction and maintenance processes, to a trans-sectorial study.

Design research covers many fields and one of its challenges it to keep making links in its interdisciplinary moves between domains and the selections that it makes within and across knowledge domains and their various formations. (Morrison and Sevaldson, 2010, 3)

The challenges in communicating across disciplinary boundaries are illustrated when *The SAGE Handbook of Qualitative Research* specify that ‘Visual researchers use the word visual to refer to phenomena that can be

seen, be given meaning' (Denzin and Lincoln, 2011, 417). Ringholm (2007) states that the combination of theme and method determines the discipline to which a scientific work belongs. In studies of contested landscapes, one needs knowledge of methodologies outside one's own discipline, to be able to communicate across disciplines. I do this to better inform my work, but I also find it important to observe differences in ways of working, and to test different ways of working. Torill Ringholm notes that interdisciplinarity might be threatening to existing institutions because it may change them. Such work 'requires individuals or groups who are willing to take the risk of being a hermit' (Ringholm, 2007, 99). However praised, interdisciplinary work can be risky, because the researcher can define herself out of her own discipline, while working to change it and reconcile its approaches to a transdisciplinary field. The question is, then:

Has the secluded existence generated knowledge that is strong enough to withstand the confrontations it needs to undergo to create a position in the tension between hierarchy and individualism? (Ringholm, 2007, 99).³⁴

The test of the transformative power of interdisciplinary works, Ringholm suggests, is enabled the moment the 'hermit' seeks re-entry in her institution to propose a new disciplinary track. Landscape as a field of study is diverse, as it ranges from physically non-inventory modes that border ethnographic studies, via techniques of landscape characterisation and representation, and landscape planning, to landscape architecture, which, on the other end of the spectrum, borders engineering but is informed by both the natural and the social sciences, while belonging to the humanities. Inter-disciplinary readings of literature relevant to my thematic and geographic focus have been a major component of my study, as well as maintaining dialogue with researchers from other disciplines. Analytical perspectives in material semiotics, Indigenous methodologies and STS have been important to me in a transdisciplinary reading in the knowledge domains of human geography, cultural studies, anthropology, Arctic and marine biology, and human rights literature.

34 My translation from Ringholm, 2007, 99: Har den avsondrede tilværelsen generert kunnskap som er sterk nok til å tåle de konfrontasjonene den må gjennomgå for å skape seg en posisjon i spenningsfeltet mellom hierarki og individualisme?

3.2.2 Pre-Understanding from Praxis

I have employed the dialogical and prospective capacities of architectural spatial knowing and, more broadly, design approaches to research. This section reflects upon what it implies for my methodological approach that I come from a particular Arctic architectural and urban praxis. Architectural working methods are “transdisciplinary”, most apparently because architectural, urban or landscape architectural projects are carried out in collaboration with people from other disciplines. More importantly, architectural and other development projects concern people’s life world. Changes in landscape and environment are of public interest and are regulated by laws with procedural prescriptions for inclusion, public participation and decision-making. Urban development is further anchored in insights from an array of disciplines that need to be taken into consideration in the shaping of the city. Tromsø is an Arctic city that hosts the Arctic University of Norway, The Fram Centre and other research institutions with a special responsibility to investigate Arctic issues. To inquire into Arctic landscape and urban issues in a transdisciplinary and multicultural field has been an integrative dimension in Dahl and Uhre Architects’ projects.

In these projects we employed a collection of communicative, narrative and visual approaches, which awaited a continuous process of experimentation, and posed a challenge to, established practices and political and administrative institutions. (Uhre and Dahl 2017, 175)

A plan or a project cannot be a record of everything that has been said in a participatory process. In our practice, reflecting upon our citizen participation processes, my partner and I searched for the statements and information that was possible to translate into programs, spatial organization, and architectural form. Urban participatory projects draw on insights from participatory research in the social sciences. Methods in architectural citizen dialogue projects are close to those in ethnography, but they are not the same because it is the possible future, articulated in models, drawings and diagrams, that is the discursive medium. More concretely, I have learned to relate to Arctic issues and policy, and participated in the public discourses, by conducting architectural urban citizen participation projects. Design implies making choices and to prioritise between values, and those are ultimately political choices. When combined with techniques of making visible the not yet seen, and making what does not yet exist, this constitutes a powerful political tool in the negotiations of development on local and territorial scales.

Architectural working methods are “multi-scalar”, because one must tend

to all the contexts in which the project is embedded, for example the global scale of the materials that are shipped to the construction site and the human scale of the proportions of, for instance, steps between different heights. It is “multi-thematic” because the project team must have knowledge of all the themes relevant to the development of the project and be able to discuss those. Being one that thinks in images and draws drawings to imagine and think, I have had to learn how to wrestle with theoretical categories and also to find out what needs to be articulated in linguistic terms, and what is already articulated in the disciplinary context.

The truth is that the propositions of art and architecture, to the extent that they carry force, must be grounded in a profound understanding of the lived world, and conversely that anthropological accounts of the manifold ways in which life is lived would be of no avail if they were not brought to bear on speculative inquiries into what the possibilities for human life might be. (Ingold, 2011, xi)

I bring with me modes of working and thinking from praxis to academy. It has been a process of learning, resisting, questioning and utilising academic terms. Architectural project work demands a creative fluency in working across modalities, discourses, scales, sites, temporalities, materialities and technologies. Such work is, of course, organised in phases, regulated by law and guided by ethics. It has, on the other hand, been something of a challenge to “discipline” the border crossing modes of spatially discursive and connecting skills (needed in architectural practice) according to academic methodology and scholarly tradition.

3.3 APPROACHES

3.3.1 Design Approaches

Contemporary approaches in design research are concerned with the articulating what kinds of knowing design approaches in research can contribute with. ‘Developing the conception of research by design is also about situating such research in a wider system and communication oriented views on designing as knowledge production’ (Morrison and Sevaldson, 2010, 2). Design methodologies are heterogeneous because a design process, starting with research into the client’s needs and ideas and ending with a product that shall be built or mass-produced, must be able to synthesise very different performances in the making of and realisation of design. These are relations developed through negotiation about the social programming of architectural proj-

ects, accessibility, form, economy and structural and ecologic performance. The negotiations are assembled by the visual and material representations (concept sketches, sketch models, digital models, various analysis, various mappings, etc.).

Design approaches in research are emerging into a research practice that ‘emphasizes insider perspectives, a generative approach, operates in rich and multiple layers and relates to real life contexts’ (Sevaldson, 2010, 8). Alongside and connected to them, are diverse, and not fully established, research practices drawn from fine art, performing arts, various domains of design, landscape architecture, urbanism and architecture. This inquiry, often addressing entangled and complex matters, goes by many names: ‘practice-based research, practice-led research. Art-based research, artistic research, etc.’ (Biggs and Karlsson, 2011, xiii). Such research seeks to encapsulate the processes and outcomes of situated approaches to knowing, through making and analysis. It may be demanding in its reach and in its need to convey to others the procedures and activities that may be embedded in design practice.

Design research and research through design should, of course, not be confused with “research design”, which is the planning and the plan of any research undertaking. While “design research” may reflect on design practices, “research by design” implies making a design object to explore a research problem, or to solve a design problem, including a theoretic and methodological reflection of the process. In the Foreword to *The Routledge Companion to Research in the Arts*, the editors, Biggs and Karlsson (2011), discuss the wide range of contesting strategies for how to develop and evaluate this field of research.

In particular we wanted to find ways of discussing the experimental aspects of the creative arts whilst maintaining a position on auto-ethnocentricity that would enable researchers from other disciplines to understand what was being claimed and make use of the discussion. (Biggs and Karlsson, 2011, xv)

Catharina Dyrssen, one of the contributors, states that ‘While ten years ago, artistic practices were still often looked upon with suspicion by other research paradigms, today I meet curiosity when lecturing in different research environments’ (Dyrssen, 2011, 239). Methods in design research and artistic research explicitly facilitate for communication with other modes of research. Dyrssen argues that:

architectural thinking-making-composing is largely a complex, artistic activity, a mode navigating in heterogeneity of finding hidden connections between seemingly disparate elements to construct new coherencies. (Dyrssen, 2011, 224)

In Chapter 2 I proposed to see the architectural professions as “prospective arts”. Architectural propositions are directed towards physical and material change. Following Ingold’s (2011) argument, for architectural propositions to carry force they must be grounded in ‘profound understanding of the lived world’. While theories in anthropology and ethnography can shed light on the way architects observe and negotiate prospects, those theories are based on ways of knowing that are different ways of knowing made explicit through artefacts and visual gestures that cannot be replaced with written or oral descriptions. Ingold divides strictly between anthropology and ethnography, but I quote his comparison between art, architecture and anthropology, in which he encourages anthropologists to make propositions and not only descriptions:

The truth is that the propositions of art and architecture, to the extent that they carry force, must be grounded in a profound understanding of the lived world, and conversely that anthropological accounts of the manifold ways of which life is lived would be of no avail if they are not brought to bear on speculative inquiries into what the possibilities of human life might be. Thus art, architecture and anthropology have in common that they observe, describe and propose. (Ingold, 2011, preface)

Prosser predicted in 2011 that ‘In the next decade there will be a greater alignment between visual methodologies and art-based research’ (Denzin and Lincoln, 2011, 417). The material turn in the social sciences and the humanities, alongside the Anthropocene paradigm that places humans in the material world, has actualised the contributions from design research. Research projects such as Dark Ecology (Belina et al., 2016) radically align art-based research with the sciences and social sciences and the humanities.

3.3.2 Multimodal Approaches

Discourse takes many forms: geopolitical discourse, public discourse, academic discourse, political discourse, and discourses at the workplace and among friends and family. The focus on discourse thus means a concern with ‘talk and text as part of social practices’ (Potter, 1996, cited in Alveson and Sköldbberg, 2013, 231). Among such studies are Discourse Analysis

(DA), which may refer to different empirical and systematic approaches to investigating written text and spoken language. Michel Foucault's thinking and historic inquiries into how gender, power and knowledge are intertwined through the course of history have greatly influenced discourse analysis. His archaeology of knowledge has inspired many works within Historical Discourse Analysis (HDA). DA signifies a wide range of semiotic approaches to the study of social text and speech.

In the past decade, this focus on language has been supplanted by attention to a mix of modes of communication and the emergence of multimodal discourse analysis (e.g. Kress and van Leeuwen, 2001; Morrison, 2010). One example of such a work is Berit Ingebretsen's (2008) semiotic analysis of the symbolic vocabulary of the newspaper drawings of Saul Steinberg and Finn Graff in her thesis 'Metaphor-based Drawing' [*Metaforbasert tegning*]. Works that are characterised by multimodality engage in different modes of communication and representation. 'Multimodal ethnography understood as a methods assemblage is increasingly becoming standard in many social science settings' (Brattland, Kramvig, and Verran, 2018, 13). 'Semiotics is a broad field of study concerned with signs and their use' (Peräkylä and Ruusovuori, 2018, 530). In social semiology, Günter Kress (2011) argues:

The etymology of the word text draws attention to the result of processes of "weaving" together differing 'threads' – usually assumed to be either speech or writing – into a coherent whole. 'Weaving' implies a 'weaver' who has a sense of coherence. In multimodal discourse analysis (MMDA) – as in others – the question of who the 'weaver' is, and what forms of 'coherence' are shaped by her, him, or them, is a significant issue at all times. (Kress, 2011, 36)

In terms of landscape, mapping, counter mapping, culture and context, I draw on a level of DA and its interest in power and communication and recent interest in aspects of the social semiotics and multiple modes of discursive processes and mediation. Mediated communication, Andrew Morrison (2010) notes, are pervaded by a variety of discourse modes and compositional practices. Multimodal communication employs different means to communicate, through text, through speech, through image, etc. that, taken together, constitute social semiotics.

In a multimodal approach, all meanings, in any mode in a culture are explicit meanings – even though there may at any one moment exist a limited vocabulary for their description – a problem of means for

transcription – either in ‘common parlance’ or in theoretical accounts. (Kress, 2011, 39)

To include multiple modes of communication, such as, for instance, maps and tables in policy papers, is crucial, because the power in such modes escapes analysis that only scrutinises the use of written language. ‘In institutional situations where power-difference is marked, work done in a mode that is not “recognized” is easily disregarded’ (Kress, 2011, 39). Landscape knowledge in particular escapes public scrutiny because a rendering uses a mode of communication that can only be countered with another rendering if it is not going to slip into aesthetic argument. I have been grappling with how to explain that I include cartographies, images, seasonal migratory movements, conversations, weather and landscape shapes in my discourse analysis without this being a sort of art critique. I use a set of modes that I have been patching together from techniques of investigation and dialogue in my architectural praxis and theoretic categories from the social sciences and the humanities that I have encountered in my transdisciplinary reading.

In planning documents, I find the maps, landscape models and photographs that occur frequently, and analyse the ways they both create and confirm mental images of the mineral discourses. In analysing those, I lean on works in cartography that emphasise the importance of the following: ‘Understanding the varied ways maps are used in political processes may aid our understanding of their power, and possibly of the political outcomes of the same processes’ (Hongslo, 2017, 349). To account for the power of maps, it is not, however, sufficient to understand the “power of prospects”, because prospects operate in multiple discursive modes. A social discursive linking is needed to:

Analyse the relationship between discourse and technology but also to place this analysis in the broader context of the social, political, and cultural issues of any particular time – to use discourse analysis to engage in social action. (Scollon and Wong Scollon, 2004)

Throughout my research in collecting, analysing and mediating the data, I have been working multimodally. In so doing, I connect a nexus of discourse (see Scollon and Wong Scollon, 2004). Little work has been done connecting a design-based, located study of discourse, cartography, landscape and culture. Cartography is a quantitative discipline, but cartographic techniques are appropriated by qualitative means in many disciplines. ‘Unlike the scientific objectivism that guides most modern cartographers, artists have been

more conscious of the essentially fictional status of maps and the power they possess for construing and constructing worlds' (Storr, 1994 cited in Corner, 1999, 218). Corner proposes employing the power of maps as a liberating enterprise and draws inspiration from artistic appropriation of cartography in his analysis of emerging architectural mapping practices in 1999. Giambattista Nolli's iconographic map of Rome, *The Nolli Map* (1748), Guy Debord's (1957) representation of the *dérive* in the psychogeographical map, *The Naked City*, and Buckminster Fuller's *Dynamixion Airocean World Map* (1994) are historic examples of the iconic cartographies that have inspired architectural mapping. Landscape architect Bieke Cattoor and geographer and critical cartographer Chris Perkins have built on Corner's ideas combined with critical cartography. In a review of cartographic work by critical and emerging practices, they claim that 'Architects employ cartographic knowledge differently than cartographers and provide *another counter mapping*' (Cattoor and Perkins, 2014, 168). They suggest that, by subverting cartographic norms, architectural atlases might 'escape from standard and accepted orthodoxies' by reimagining figure/ground relationships and employing hybrid forms of cartographic visualisation, such as montages, juxtapositions and collages. 'The researcher-as-interpretive-bricoleur is always already in the material world of values and empirical experience' (Denzin and Lincoln, 2011, 243).

The use of analytical diagrams in architecture and landscape urbanism is a subject matter that has been studied in its own right. In her critical thesis of the "diagram as a map for change", Architect Lene Basma (2012) discusses the utilisation of diagrams to translate conditions and information into graphic form. Basma observes how a predominantly visual culture undergoing changes in the way environments are produced, analytical diagrams have social efficiency and capacity to give authority to certain forms of action, which in turn aid the production of physical objects. In focusing on descriptive diagrams utilised in different forms of analysis, she points out that diagrams utilised by the architectural practices she studied:

express a wish to position architectural practice in relation to changes in the way environments are produced, expanding cartography both in terms of scale and the themes covered. At the same time, in keeping with the nature of the diagram as a form of representation, they are used to produce knowledge focused on structures and relationships. (Basma, 2012, 135)

Basma suggests that the use of analytical diagrams may be considered to belong to a particular attitude towards practice and thoughts about

architecture that emphasise programme, process and experimentation. In her material, she found that the persuasive efficiency of the analytical diagram was often put to work to promote neoliberal development. An architectural project is co-produced and negotiated, in a complex field of often-politicised relations ranging from architect-client, architect-stakeholder, architect-public to architect-authority. Making diagrams may also be seen as an act of multimodal storytelling.

Telling a story and following a path are cognate activities, telling a story is ordering events and actions in space and time – it is a form of knowledge making. Diagrams and maps are likewise stories. In science, just as in all knowledge producing traditions, the processes are inherently narratological; they involve the creation of knowledge spaces in which people, practices and places are discursively linked. (Turnbull, 2007, 143)

I connect those seemingly disparate thematics by a design approach, assembling many kinds of communicative spaces through visual rhetoric, history, law, action and movement. As regards writing modes, the thesis includes passages of autobiography in a negotiation between thematic and chronological narratives. ‘Many argue that we can only study our own experiences. The researcher becomes the research subject’ (Denzin and Lincoln, 2011, 417). I employ different modes of author’s voice, memories, notes and detours from the academic text, where, for instance, I insert passages in which I quote and comment on my own field notes. The autobiographic sections can be reflections or descriptions of my own perception of landscape that I type in italics and set in the same style that I use to set the extracts from interviews and conversations. In the next section, I describe how I conducted my research, mention some turning points and give examples of how I have worked multimodally in employing qualitative methods.

3.3.3 Multisited Approaches

To discuss encounters between worldviews and how they intersect in the perforated landscape, I lean on Anniken Førde, who discusses ‘knowledge production as encounters between different experiences on multiple levels’ (Førde, 2004, 43). In this, I see landscape knowledge as a matter of tensile encounters between knowledge holders with different ways of knowing and relating to landscape, territory and landscape change. From starting out to explore how extractive prospects are rhetorically represented as inevitable futures, I took an interest in how it is for the reindeer pastoralists to live with

extractive prospects for extended periods of time, where the pastoral community have to react to governmental procedures for making decisions with direct consequences for all dimensions of “landscape”. In 1995, Marcus conceptualised an emerging research praxis in transdisciplinary environments in cultural studies as “multisited ethnography”.

“Site” is a word that has a material-discursive fluidity derived from the Latin word *situ*, meaning ‘local position’. The noun “building site” is the location of a building under construction. Then there are online sites, discursive sites and sites of resistance. According to ethnographer Anna Tsing, ‘*Immersion* works because we are forced to enter other ways of life—that is to become social—before we have any idea what we are learning’ (Tsing, 2013, 31). In the perforated landscape, there are many voids and practices for me to immerse myself in. A multisited ethnographic inquiry involves a complex set of immersions with many arenas in which to learn “to become social”. Multisited ethnography (Marcus, 1995) studies not only anthropological sites but discursive sites.

Because people have connections to landscape, fieldwork in landscape studies and conversations about landscapes, at some point becomes a version of anthropological fieldwork. Document studies shed light on the complexities and ambiguities that exist contested landscapes. In order to perceive the changing atmospheres, light, sounds, and scents of a landscape it is clear that one need to be present and spend time there. It is in itself a practical matter to move through a landscape, and a cognitive process to perceive the landscape as “landscape”. Experience, knowledge, tools and skills must be activated to spend an extended period of time outdoors comfortable and safely. But the romantic idea of being alone in the landscape and perceive in its own right is not compatible with the landscape as a social shared space; a world. ‘There is no pure, objective, detached observation; the effects of the observer’s presence can never be erased’ (Denzin and Lincoln, 2011, 416). To be present in the landscape is to be present in another humans’ world. Landscape observation implies an obligation to getting in conversation with people about their landscapes, but people does not have an obligation to talk to the observer about their relation to landscape. Negotiations, and socialisation, therefore is central to ethnographic fieldwork.

Negotiating entry to a community or home can require a lot of meetings within formal structures, or it can be a confusing informal process—in any case, the dynamics of research relationships are hugely complicated. (Brattland et al., 2018, 6)

I have already established in chapter 2 that the outfields, *meahcit*, are cultural landscapes. Literature helps conceptualising the networks of implication between human activity, practices, artefacts and surroundings (see Meløe 192). Ongoing work in ethnographic and Indigenous research are emphasising methodological approaches to decolonise knowledge. Indigenous methodologies emphasize the importance of acknowledging Indigenous thinkers when dealing with Indigenous issues and handling Indigenous peoples' own knowledge and methodological approaches as authoritative (see Joks 2015). There are some theoretical thresholds to get into conversation in and about the landscape. Information about natural resources the families have customary rights to harvest, such as good fishing lakes, and crowberry places, should not necessarily be located on a map. Disciplines and research traditions relate differently to their disciplinary past. Many scholars in social anthropology have addressed the colonial past of ethnographic research practices. Employing ethnographic field methods while coming from another discipline that are just in the beginning to undergo such self-scrutiny, demanded a back and forth dynamics between conversations and reading. I wrestled with my own doubt regarding my entitlement to conduct research in an ethnographic field. I was eager to learn new practical skills during participant observation, but cautious hesitant to draw conclusions in writing. Brattland, Kramvig, and Verran (2018) propose a researcher role as a careful partial participant:

Careful partial participation means that there are no clear-cut inside-outside positions, and that participant and persistent tinkering take on the ambivalence and tensions that planning and doing research bring into the world. (Brattland et al., 2018, 6)

A shared conversation in epistemology may not be without friction and misunderstanding. 'The relevance and need for a radical ethics of care and commitment becomes even more apparent' (Denzin and Lincoln, 2011, 417). At the outset, I did not anticipate that I would become "immersed" in the field, but, when I did, it propelled my curiosity and I became more opportunistic in asking people if I could participate in their outfield activities. So, what started out as a study that could have been achieved as a desktop study of media, archives and cartographies turned out to be a personal, intense field study, leading to personal friendship. That transition was theoretically demanding, and, in parallel, I was reading about reflexive methodologies and Indigenous methodologies, as well as research literature from the social sciences on reindeer husbandry, resource extraction, coastal fishery and marine biology.

3.4 RESEARCH DESIGN

I have repeated a set of knowledge gathering and sharing activities—literature reviews, multimodal document studies, travelling, participant observations, qualitative interviews, informal conversations and interpretative mapping—in different geographic scales and proximity scopes. It is a hermeneutic encircling, where each round learns from the previous one. The time wheel (Fig 3.1) spirals through an extended period of the study and shows how the field activities and attempts to get in conversation with the field through presentations and publications are distributed between 2012 and 2018. The activities are colour-coded according to theme. The map (see Fig 4.4) shows my journey routes, boat trips and flights on a perforated territorial map, made up of the Fennoscandian Ore Deposit Database’s registration of mineral ores, divided from the ocean territories by the islands on the Sámi/Norwegian coast. Together, these two representations of my whereabouts and activities in time and place show that the “phases” are assemblages of concern that have spiralled in parallel as an expanding hermeneutical circle and that the seasons, winter-spring, summer-autumn, have had an impact on my research. This work is organised in four overarching tasks that partly overlap in time.

Phase 1 Encircling the Field

I was attending seminars and conferences, studying documents and research literature on extraction in governance and public discourse across Fennoscandia/Sápmi. I made an overview of stakeholder interests in the mineral policy and travelled to mines and mining towns. At the end of the first phase I conducted qualitative interviews which I sound-recorded and partly transcribed.

Phase 2 Multisited Ethnographic Fieldwork

In 2014 and 2015 I conducted participant observation among actors that have a vested interest in outfield landscapes, in spaces such as the reindeer fence, and the fishing boat, protest riots in urban spaces, and I went with the mineral prospector to the prospecting site. In parallel, I analysed process documents, maps and media reports regarding the Nussir prospect during the local and national political decision-making process. I documented onsite observations and experience from participation in outfield practices with photos, hand-drawings, diagrams and maps.

Phase 3 Making and Discussing Outfield Atlases

I made one outfield atlas on mining and the Nussir Case, which I brought to

an interview with the CEO of Nussir, and one outfield atlas that I brought to interviews with five of the reindeer owners from different siida units in the Fiettár reindeer-grazing district. In this period, I also participated in the public and academic discourse through presentations and publications. These include researcher media presence, publications, conference presentations, lectures, informal presentations and presentations in formalised interview settings. I brought the feedback from these communicative works back to the analysis.

Phase 4 Assembling Theory Building

Writing and editing chapters was challenging because the Nussir application process kept evolving and I was observant to the discourse and kept updating my readings as new research on the case was published. The empirical chapters in my thesis give the reader access to narrative and visual, ethnographic, situated knowledge that I have represented in texts, maps and images, and emphasised differently through the graphic layout. The analytical chapters is building a counter-prospective analysis, and writing forth counter prospecting as a method.

3.5 THE EMPIRICAL STUDIES

3.5.1 Journeys

During the first phase of the study, I travelled across Sápmi and Fennoscandia and participated at events, such as conferences, seminars and protest riots, and organised journeys where the immediate future and long-term trajectories of terrestrial and marine areas were discussed on the basis of extractive industries and the consequences of their impacts. Here, I observed and participated in public debates and sought to catch up on conversations with the actors and participants. I also had the opportunity to participate in four organised journeys through northern landscapes, visiting operative and closed mines and mining towns in Sápmi/North Fennoscandia, Labrador and Quebec. Journeys in the Arctic are both historically and currently a research strategy that is prevalent across the sciences. Throughout these waves of exploration of the northern expanses, artistic, visual representational techniques have been and are fully integrated aspects (Schimanski, 2018). The move from the territorial scale, with an array of cases, to focus on the Nussir case, entailed a reframing of my approach from a remote to an ethnographic study on the places that are affected by Nussir ASA's activities.

I conducted the second phase on local scales concentrated around participant

observation in outfield activities, such as outdoor life in the mountains and at sea, reindeer husbandry, mineral prospecting and coastal fishery. This movement from a public sphere to a sphere reliant on personal relationships was gradual as I gained contacts and an overview of who the spokespersons were in the first phase and got to know people personally in the second phase. When I focused on the documents in the application process of the Nussir case, the zoning regulation and the environmental impact assessment and consultancy statements, I connected those to the surrounding policy papers, visual representations and the related public debates in the mass media.

I hiked and hitchhiked, conducted my first series of qualitative interviews and participated for the first time in reindeer earmarking. Doing fieldwork in Finnmark without a car is unpractical as the bus connections are not the best. As articulated by Tone Huse, the car provides (in addition to the obvious mobility) protection, privacy, independence and autonomy (Huse, 2015). Without a car, I was often dependent on the people I met. I did not travel contained in a sphere of privacy, arriving at places or departing from places contained in a room of my own. Instead, I had to be invited into other people's private and mobile spheres. With a car, many of the fieldwork experiences that I really appreciated would never have happened.

3.5.2 Document and media studies

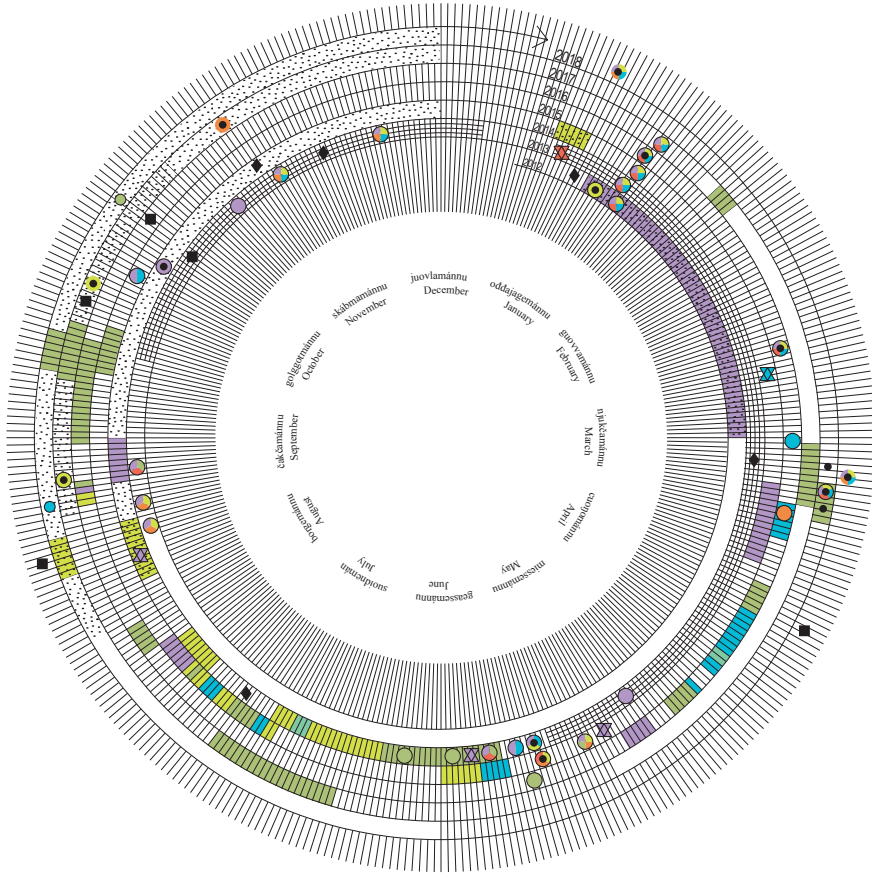
The documents circulating in the public discourse consist of governmental white papers, published maps and plans, media coverage, social media debate and case-related documents, such as zoning plans, impact assessments and hearings. I also went to the official webarchives of the Government, The Finnmark County, Kvalsund Municipality, The Nussir company site, and Retriever. I selected the documents to study more closely and, thereafter, a selection of the documents to analyse. The documents that I used are listed in the reference literature, to provide transparency. The criteria for selection are "relevance" to the Nussir case. The texts that I have compiled throughout the course of the process that I have studied are written from and constitute different cultural worlds. 'Any description of an action is from a point of view or a position which carries with it an attitude or motive of the describer toward the action' (Scollon and Wong Scollon, 2004, 11). Consultancy statements in cases that concern land use changes contain troves of landscape knowledge.

While following the Nussir case real-time, I related to and discussed the Nussir documents while they were new. A challenge with my mode of working is that, as the Nussir case has evolved, subject matters that I gave ample space

to while it was unfolding in real time, I condensed in retrospect, when the next events gained importance. To keep updated, I monitored the publications of documents and media coverage regarding landscape practices, Indigenous peoples and resource extraction from 2012 to 2016. Most notably, these are texts related to the *Norwegian Strategy for the Mineral Industry* and the texts produced during, in and in relation to the planning process of the Nussir prospect in Kvalsund municipality/Fálesnuorri Suohkán. My study takes the production of texts, maps, images and diagrams related to the public discourse on resource extraction in the European Arctic as the ‘key mediated actions’ (Scollon and Wong Scollon, 2004) in landscape transformation. Documents circulating in the public domain, and are both part of and referred to continually in the public discourse. They are shared and commented on in social media. In discussing online ethnography as multilocal ethnographies, Sara Gatson (2011) writes that ‘The online site is already inscribed and performative’ (Denzin and Lincoln, 2011, 418). In following the development in government work of the mineral strategy, different mining cases and particularly the Nussir case, I searched online archives such as atekst retriever, Stortinget.no, Regjeringen.no, Sametinget.no, Nussir.no and municipal websites, as well as daily and online media and social media.

3.5.3 Participant Observation

I used time to socialize and develop my networks of acquaintances at conferences and events organized by the art scene, by universities, by environmental organisations, by the mining business, the government, and the reindeer husbandry association before I even thought of doing participant observation. Starting in 2012, attending at everything I found thematic relevant for contested landscapes meant that I got to know people even though I felt awkward in mingling situations. I brought my methods books northward and spent the summer of 2013 in Finnmark. I got to join the 2013 Dávvgas research seminar about traditional knowledge in reindeer husbandry. The seminar was at Arnøya, an island which the reindeer swim to and from during the spring and summer migrations. During the winter of 2014, I changed my research strategy to include qualitative interviews and participant observation. My project was approved by the Norwegian Privacy Ombudsman for Research, and I bought a tape recorder. An object that literally terrified me at the beginning. The next summer, I returned to Finnmark with a letter of prior informed consent. I held the letter in front of me as a white flag and did five semi-structured interviews. The presence of the letter of informed consent and the sound recorder turned out to perform some magic in the staging of an interview setting. When I met up by the reindeer fence in Kvalsunddalen/Fieddarvággi, I had only a vague appointment with the then leader of the dis-



CIRCUMANNUAL OUTLINE OF
FIELDWORK, ACTIVITIES AND JOURNEYS

- | | | | |
|---|---|---|-------------------------------------|
| ○ | participation at conference/ seminar | ■ | Arctic mines and mining towns |
| ⊗ | participant observation at activist event | ■ | northern landscapes and communities |
| ⊙ | presentation at conference/ seminar | ■ | indigenous right issues |
| ● | public presentation/ lecture | ■ | environment and ecology |
| ◆ | publication | ■ | reindeer husbandry |
| ■ | academic publication | ■ | coastal fishery |
| ⋯ | teaching landscape architecture/ theory | ■ | agriculture |

Fig 3.1: This time wheel includes diagrammatic presentation of the sequencing and overlays of the methods and means of conducting the research. This conveys both the methods selected and carried out with the means to communicate their complex relations and influences between and upon one another. In doing so, this example is indicative of how I have taken up my own design-based experience to understand how to arrange the work and how to convey its dimensions as a whole.

strict and lingered there to wait for the interview to happen. It did not, but then one of the women came and recognised me from the seminar at Arnøya. She provided me with the social bond, so that I could stay longer and participate in the fence work. The landscapes and matters I studied in literature came to life and started to matter in another sense when someone taught me new skills, for instance how to tie a knot that could be rapidly untied. This was the beginning of a friendship. Even though there was no doubt that I was there as a researcher, this role was never clearcut because, over time I came as a friend.

I also participated in the mining group in Norges Naturvernforbund/ *Luondudugáhttenlihttu*. I made sure to present myself as a researcher, so that there was a general understanding about who I was and that I was carrying out research on landscape related to the Nussir case. The mining group was a place where I could follow the discussion and obtain news about emerging cases.

3.5.4 Qualitative Interviews

Participant observation and qualitative interviews are the most common qualitative ethnographic methods. I combined them with photography, hand-drawing and mapping. Social anthropologist Britt Kramvig and social scientist Anniken Førde argue that

The ethnographic interview is both about knowing a knowledge field well enough to regard oneself a relevant dialogue partner, and to be humble enough to let one self be challenged—to learn and seek insight in a world that is not one's own. (Kramvig and Førde, 2010, 73)³⁵

Qualitative methods, and particularly the qualitative interview, rely on 'building relations with people' (King and Horrocks, 2010, 3). The qualitative interview, they write, is flexible and open-ended in style and tends to focus on people's actual experience more than general beliefs and opinions. In order to understand why and how landscapes are contested, it is crucial to know stakeholder positions in environmental controversies and to acquire knowledge of the actors' relation to landscape. I am interested in how the same things are narrated differently by different subject positions and to explore how the different approaches were interconnected.

I had a number of conversations with active participants in the debate about

35 My translation from Kramvig and Førde, 2010, 73.

planned or anticipated landscape encroachments and environmental impacts in northern regions. These are moments and conversations that became important for understanding the contested land-use change in Kvalsund from multiple landscape perspectives. The summer 2014, I did five contextual semi-structured interviews that I sound recorded, while at the same time taking notes. One of these interviews I transcribed in total and reworked into a portrait interview that I published. During the spring of 2015, I did three thematic interviews about Sea Sámi and environmental issues that were unstructured and sound recorded. In the fall of 2015 I did an on-site interview with the CEO of Nussir in Ásavággi where I used my outfield atlas on mining as interview guide, and a series of Interviews with the members of Fiettar reindeer grazing district with the outfield atlas on reindeer husbandry as interview guide. I get back to the Outfield atlases shortly.

Alvesson encourages using the qualitative interview ‘to get ideas and develop concepts’ and to consider ‘empirical material as source of inspiration for thinking and theory development rather than grounded descriptions’ (Alvesson, 2011, 6). In some of the interviews, I used sketching to build knowledge through multimodal communication. The next two paragraphs are examples from interviews where hand-drawing and mapping was important components. I was particularly interested in how actors with vested territorial interests read the landscape differently and how they perceived the scale of the anticipated impacts of the planned mining operation.

feedback are an important part of my learning process and a means through which I could develop ideas and produce knowledge, together with my informants.

3.5.5 Outfield Atlas Conversations

I use drawings to analyse field experiences and to develop ideas. I employed diagrams by means of exploring connections and to clarify concepts for myself, before writing it out in text. Regarding drawing, Ingold observed that: ‘It is the trace of an observational gesture that follows what is going on’ (Ingold, 2011, 225). During interviews I would sometimes draw sketches showing my pre-understanding of the issue and I would ask my dialogue partners to draw a sketch of what they explain to me, so that I could understand it better. ‘It is not like this, the movement goes more in this direction, you see?’ These sketches are performative, gestural features of the conversation. So, when later, when I write out the field narratives, I am informed not just by words spoken or written and my own fieldwork experiences but also by sketches drawn during conversations. Ingold continues:

My suggestion is that a descriptive endeavor of the second kind, whose instrument is the pen or pencil rather than the camera and keyboard, would yield studies that are with people rather than of them. (Ingold, 2011, 226)

I analysed the first series of interviews visually by sketching maps and diagrams that I assembled with interview notes, lecture notes, literature references, and photos from participant observation and edited in Outfield Atlases. The outfield atlas came about as an idea, to better focus the next series of qualitative interviews. I made three different drafts of the outfield atlas: one about the pastoral system, one about Repparfjorden, and one about the Nussir prospect. During the autumn of 2015, I performed one series of semi-structured interviews that were based on my drafts of the outfield atlases (Fig 3.2). In those interviews, I staged conversations as to get feedback and critique of the outfield atlases, which included interpretative map-diagrams, maps and illustrations of what I had obtained from the first phase of research. With something to show, I felt more confident in the interview situation but at the same time exposed to the interviewees' evaluation of what I had made. The atlas series included interviews with eight members of the Fiettar district and with the CEO of Nussir ASA. The third outfield atlas about coastal fishery in Repparfjorden I made after a shorter period of participant observation. This last one I only briefly discussed with the interviewees afterwards. To present and discuss drafts and analyses while in the making opens up the possibility to learn from multiple landscapes, actions, dialogues and conversations. As such, the outfield atlases implied a recursive practice, involving critically reworking my own tentative cartographies back into the empirical material that I analysed. The feedback, questions, advice and reactions (or lack of reactions) that I received on my propositions on these occasions then became added layers of inquiry and interpretations that deepened my understanding of the spatial dimension of landscape practices in outlying fields.

3.5.6 Ethical Considerations

All research and scientific activity is based on trust. Through the planning, conducting and reporting of a study, researchers need to use methods that are accepted by the research community, legal by law, ethical and updated according to contemporary academic discourses. I know, respect and relate to issues of research ethics that apply to the discipline through the planning, conducting and reporting of the research.

As regards document and map studies, I have made selection criteria of sources and methodical handling as transparent as possible. Regarding social

research, I have followed the ethical guidelines of NSD, the Norwegian Privacy Ombudsman for Research [*personvernombudet*]. The contact at NSD, who helped me with the application form and letter of consent, was very helpful in discussing how to handle cartographies and visual data, themes that are not thoroughly described in the guidelines. All research that regards humans shall build on prior informed consent. At its point of departure, a landscape study is not “on” people or communities but related to people and communities.

Ethical conduct of research in Indigenous areas is increasingly becoming an issue in academic discourse. Since 1997, the Sámi Parliament/Sámediggi, the University of Tromsø and the Sámi University for Applied Sciences in Kautokeino/Sámi Allaskuvla have discussed drawing up ethical guidelines for research in Sámi areas. A greater interest in Indigenous questions, knowledge and ontologies also implies a greater pressure on the Indigenous communities to give accounts of their life and landscapes to researchers. The Norwegian Biodiversity Act (Naturmangfoldsloven) requires consideration of a prospect’s effects on biodiversity and that Indigenous knowledge should be a part of this consideration. In April 2015, I gave a formal presentation of my project at the district board of Fiettar, a large reindeer husbandry district that experiences pressure from researchers who want to work with them. The then leader of the district board said:

– As long as these [ethical guidelines] is not settled, it creates uncertainties about research ethics among the reindeer pastoralists. We experience a growing pressure from the research community, a condition that creates some strong opinions. (Leader of Fiettar District Board, 2015)

The Norwegian Privacy Ombudsman for Research further recommends that I represented the series of interviews in the encircling and contextual phase in mappings.

Consideration of ethics and reflexivity not only applies to research design and data collection, it must also be borne in mind in relation to what you do with your data (King and Harrocks, 2010, 4).

Information about persons, intellectual property and partners must be treated with particular caution. To the extent that it appears third party data, the information should be anonymised. Third party data can, however, be complicated to define. The mapping of geographically specific information can be sensi-



Fig 3.2: Conversations on the outfield atlas gave valuable feedback to the visual interpretations of learnings from the fieldwork. Anne Berit Skum and Johan Henrik Skum, Áisaroiivi 2015.

tive information in outfield businesses for two reasons. First, the right holders to different areas are known in the community; this implies that land information is personal information, and it can, to some degree, be sensitive. The individual interviewed persons have to the degree that it was practically doable been allowed to check and comment their own interviews and the mappings I have derived from it, and the images where they are recognisable. The Nussir case impacts the landscapes of people who never chose this conflict but have to stand in it to protect the prospects of their own livelihood. Not all of them necessarily want to be public figures, but some of them do. I have chosen to anonymise some of the conversations. I have a responsibility to sort out carefully the kind of information that belongs to the informal conversations and what is given me in the context of a research conversation, what is contextual and what is direct. I also have a responsibility to what I leave out.

3.6 ASSEMBLING AND ANALYSING MULTIMODAL DISCOURSE MATERIAL

Through multimodal discourse analysis (Morrison 2010), I have combined prospective, power-sensitive, situated and assembling approaches to identify concrete and contested intersections between the interventions or perforations of the mining companies, the supportive institutional apparatus and the attempts of the affected actors and their organisations to act in relation to such perforations. Although there are many sophisticated and technology-aided methods of discourse analysis, Peräkylä and Ruusovuori propose that, in many cases, an informal approach may be the best choice in research that focuses on written texts:

try to pin down their key themes and, thereby to draw a picture of the presuppositions and meanings that constitute the cultural world of which the textual material is a specimen. (Peräkylä and Ruusovuori, 2018, 530)

In the above quotation, the expression “to draw a picture” is used metaphorically. In multimodal communication, drawing is an act of communication. The documents that I analyse contain pictures, maps, diagrams and designs. I produce pictures, maps, diagrams and designs in my analysis, in addition to written analyses of the discourse.

As a “discursive site”, the Nussir prospect includes government documents, case documents and media accounts. It extends to include ongoing research: the work of researchers from different disciplines that in turn might influence policy and landscapes elsewhere. While doing fieldwork, I met other researchers with different approaches, who studied, published and talked about their research. I read their publications and chronicles I met actors with different interests and the discourses in the governmental sectors that they are affiliated with and heard interviews with them on the news. The discursive site of the Nussir prospect perforated the landscape of reindeer husbandry, also in the sense of making the pastoral community more accessible to researchers. When I write that the knowledge gaps conjured by extractive prospects attract knowledge producers, it is not only a figure of speech but also a highly concrete field observation. The discursive formation gravitating around the Nussir prospect and the public interest and contestations made it possible to study the multiple realities enacted in a perforated landscape.

Making the outfield atlases assembled the study and was a strategy to bring

back into the social field the gestural, shape-making, drawerly capacities of a design approach, alongside textual descriptions and propositions. The outfield atlases were helpful for staging a setting for a semi-structured interview but not for structuring the conversation. The interviews became very long, and I learned things that I wanted to learn more about. To conduct such an analysis, I engaged in a social-material discursive practice, that is, first and foremost, a “learning process”.

To write an academic text we need to write authoritatively, yet the author in the text needs to recognize the author as a learner. Making this challenge explicit, we propose to inhabit the figure of the careful, partial participant rather than the figure of the removed judging observer, through epistemic practice. (Brattland, Kramvig and Verran, 2018, 11)

In the pastoral community, the diagrams and mappings that I had made opened paths to conversations about traditional knowledge and interior discussions that I had not anticipated. Then, I had brought a set of printed drafts of the outfield atlases back into the field as a tool to focus the qualitative interviews, but now it was more in a mode of conversations, corrections of my interpretations. Drawing an interpretation of the stories told offered the opportunity to see what I heard and to show what I heard. Annotating the outfield atlases was a means to enhance the co-production of knowledge. Rather than a mapping of landscape practices, the atlases can be seen as an engine for inquiry and co-production of knowledge to move the landscape analysis process towards a ‘more accessible and values-based as a discursive activity’ (Stahlschmidt et al., 2017, 32). Thereafter, I made a new analysis of the printed copy of the atlas that was annotated with notes made during the interviews and directly afterwards. Some of the maps and diagrams are printed alongside the field narratives in Chapters 4, 5 and 6, and some spreads of the annotated atlas are included in the analytic Chapters 7 and 8 in this thesis. The analytical work and the modes of presenting the study included choosing between the potential texts in the empirical material and my field experiences. Thus, writing is just like mapping an act of power. When “writing” multimodally, this extends to considering how to select images, to deciding what sketches to develop further into maps.

3.7 CONCLUSION TO CHAPTER 3

In this chapter I have described a counter prospective approach as an iterative movement back and forth between ethnographically inspired field studies and detailed discourse analyses of documents, events and assessment matrices, in parallel tracking both seasonal livelihoods and industrialising activities. It is built through transdisciplinarity but it is not undisciplined, though, like “anything goes”, but an analysis of actual things on maps, actual legally binding documents, actual conversations. A multi-method analysis demands a sense of fluid disciplinary transgression that follows the landscape controversies that flow over territorial and disciplinary borders.

In order to chart the implications of “migratory landscapes”, I assemble and appropriate seasonal cartographies from the natural sciences of the movements and spatial demands of migratory species on land, in the sea and in the air. I combine these with power-sensitive discourse analysis, in order to understand how prospects perforate the “landscape as polity” and to identify the various layers of landscape knowledge hidden in sector-oriented governance. In mineral prospecting, physical samples from drill holes are enrolled as arguments in the multimodal social discourse; as such, the physical landscape becomes discursive in its own right. I have situated myself in the voids generated by disputed prospects and carefully observed the discourses, avoidances, knowledge production and practices circling around them, and I have found qualitative traits and records of relations to and within landscapes that are brought to the negotiation table but subjugated in the course of the political decision-making processes.

Without the rich accounts of landscape that come from spending time there together with those who have tasks to do there—in the taskscape—you do not become sufficiently informed about what landscape controversy is all about. In addition to mapping, map analysis, sketching and photography, and diverse media production and analysis, active participation and participatory observation in outfield households, livelihoods and practices, I sought learning from multiple perspectives in environmental forums, conferences, and conversations.

In order to describe “landscape as prospect” and understand landscape as assemblages of possible futures, of different prospects, I employ prospective design approaches and techniques. With a counter prospective approach, I study landscape in the impact zone of a future mine, together with local and Indigenous people who are experts on the dynamics of their own landscapes,

and with various skills at incorporating traditional knowledge into changing practices and changes in land use. As such, I aim to make a counter prospective mapping of the landscape discourse. The prospective capacities of the architectural professions, aka the prospective arts, can be activated via counter mapping and lead to the emergence of counter prospecting as a multimodal and anticipatory discursive method.

Part II

Thematic chapters based on fieldwork, document and media studies.

The three chapters in this part describe the development of an Arctic mining prospect in the context of its externalities. Chapter 4 gave accounts from field trips through Fennoscandia and eastern Canada, studied the Nordic extractivist discourse and encircled the Nussir prospect. Chapters 5 and 6 presented field narratives, document studies and mappings from Fiettar reindeer grazing district and Repparfjorden, alongside a study of Nussir ASA's application process. The empirical chapters of my thesis give the reader access to narrative and visual, ethnographic, situated knowledge that I have represented in texts, maps and images.

Chapter 4 Limits Of Exploitation

4.1 THE GLOBAL NORTH AND THE HIGH NORTH

This chapter starts in the larger geographical examples of how the corporate, management and government levels are intertwined in the construction of future landscapes, and how the maps from the Fennoscandian Ore Deposit Database came to influence the Norwegian High North policy and the preparations for the Norwegian strategy for the mining industry that was launched in 2013. These discursive accounts are placed in juxtaposition to personal encounters at a series of seminars and journeys through Arctic extractive landscapes to mines and mining towns. I trace the first sequence of fieldwork, when I was inquiring what the mining lobby had in mind. In 2010, the copper prospecting company, Nussir ASA, presented a prospect of interest to the High North strategy. Situated in Finnmark/Finnmárku County, the prospect was seen favourably as a “first mover” in realising the objectives in the Norwegian mineral strategy (NHD, 2013). This mining prospect impacts the landscapes that Meløe (1988) called the two landscapes of Northern Norway: the landscape of reindeer husbandry and the landscape of coastal fishery. These are introduced through the lens of the Nussir case in this chapter and encountered in their own right in the next two chapters.

The mineral sector is a strategic priority all over Fennoscandia, inexorably subject to the collective (sometimes competing) extractive imperatives of the region’s nation states. Postcolonial critical works with categories of “North” and “South” are, according to John Law (2015), useful as shorthand to explore Western/Northern world views in contrast to worldviews in the postcolonial “South” but recognise from the contradiction in this “North”

that the transpolar Indigenous people are not really from the “North”. The Global North and the High North are different. Seen from the world, the Nordic countries are part of the Global North, but seen from the Norwegian capital, Oslo, North Norway is part of the resource frontier, the High North. To reverse the orientation: The South of the High North is the North of the Postcolonial South.³⁶

States spend considerable resources to retrieve the field data that provide a primary rationale for extraction—hence the aforementioned mineral deposit map that I introduced in Chapter 2 (see Fig 2.4), which is part of the first systematic compilation of mineral deposits and metallogenic areas in Fennoscandia. As stated by the Geological Survey of Finland (GSF) in the foreword of a publication on the Fennoscandian Ore Deposit Database, the map is provided as ‘a tool for [both] land-use planning and political decision-making ... a tool for fulfilling the requirements set by the raw materials policy of the European Union and by the countries in the region’ (GSF, 2012). The map, and the comprehensive database to which it belongs, contains information on almost 1700 mines and other significant mineral repositories and has played a major role in evolving national mineral strategies in the region.

4.1.1 A New Generation of Mining Codes

The Nordic States updated mineral resource legislation and produced national strategies for the mineral sector, as requested in the European Union’s Raw Material Initiative in 2008. The mineral industry in Norway and the Norwegian Geological Survey (NGU) engaged proactively when the European Union renewed its searchlight on resource security. The Norwegian mineral industry [*Norsk Bergindustri*] was founded on March 28, 2008.³⁷ The NGU produced an estimated figure of 2500 billion Norwegian kroner of subsurface mineral wealth and a vision of industrial development, based on the ripple effects of mining in North Norway. Globally, the first decade of the millennium produced a new generation of mining codes and strategies inspired by Canadian resource policy. As claimed by Alain Deneault and William Sacher,

36 With the 1979 map, McArthur’s Universal Corrective Map of the World, McArthur protested not only the usual north-up orientation but people’s prejudice against the south: ‘Never again, to suffer the perpetual onslaught of ‘down under’ jokes-implications from Northern nations that the height of a country’s prestige is determined by its equivalent spatial location on a conventional map of the world’ (Wood 2010, 114).

37 The Association of Norwegian Mines (BIL), The Federation of the Norwegian Stone Industry (SIL) and the Norwegian Aggregates Producers Association (PGL), decided to merge, in order to join forces to promote their members’ interests.

the new mining codes that Canada exported throughout the world—partly through the Canadian influence on agencies such as the IMF and the World Bank—all share one troubling characteristic: ... public authorities are set up to “solve” the thorny issue of the ancestral presence of indigenous peoples on these lands by subordinating it to the interests of Western corporations. (Deneault and Sacher, 2012)

The European Union’s Raw Material Initiative (2008) prepared the ground for the Norwegian mineral industry to engage in conversations with the industrial committee of the Norwegian Parliament. Studies of political documents and decisions taken during the enactment of the new mineral policy reveal that these conversations in turn motivated the work in drawing up a new national strategy for the mineral industries in Norway.

The Mineral Resources Act, the Nature Diversity Act and the Pollution Control Act provide the framework for new mining activities. Mining activities are polluting and can be land-intensive and have disruptive environmental impacts, related to which important species and habitats and remaining areas without major infrastructure development can be affected, and waste management is critical. When reviewing the environmental legislation relevant to mining, Fauchald observed: ‘Given the reliance on marine deposit of mining waste in Norway, it is problematic that the waste regulation does not address issues of particular importance to marine waste facilities’ (Fauchald, 2014, 54). The Norwegian Sámi Parliament objected to the Norwegian Mineral Resource Act and claimed that it did not meet human rights’ objectives (Skogvang, 2013, 323). It was, however, passed by the Norwegian Parliament in 2010.

4.1.2 A Treasure Hunt in Treasured Lands

At a press conference on October 1, 2010, the Geological Survey of Norway (NGU) celebrated Trond Giske, then Norwegian Minister of Commerce, as “the first Minister of Minerals in Norway”. The Ministry of Commerce had allocated funds of NOK 100 million to NGU for the exploration programme, Mineral Resources in North Norway (MINN), which aimed to improve coverage of basic geological information. NGU had produced an estimate of NOK 1500 billion for known ‘state minerals’ in the ground and promised that this figure would increase substantially through further assessments of the mineral potential in the three northernmost counties (Langøren and Tønset, 2010; Løvø 2010). The “Minister of Minerals” substantiated NGU’s vision by proclaiming: Let the treasure hunt begin!

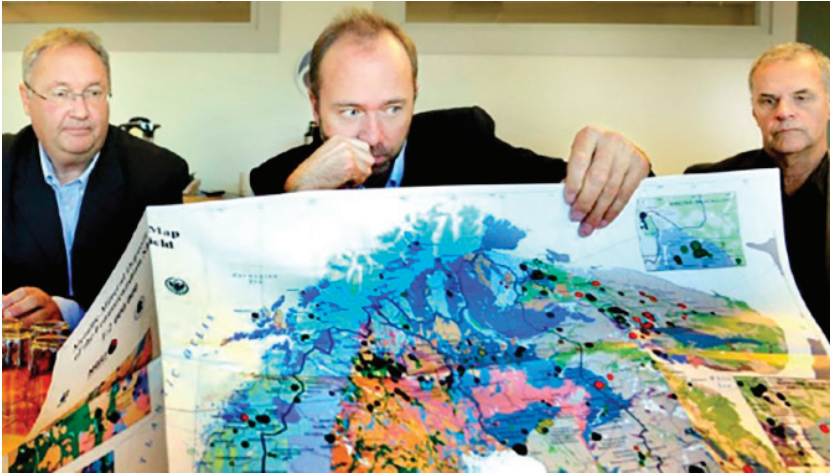


Fig 4.1: Minister of Commerce Giske with NGU Director Morten Smellror and Deputy Director Jan Cramer on the press conference of the launching of Minerals in North Norway, 2010. Giske is holding the Fennoscandian Metallic Mineral Deposit Map. Photo by Steinar Fugelsøy.

In the press photograph (Fig 4.1) then Minister of Commerce, Giske holds the 2009 version of the Metallic Mineral Deposit Map of Fennoscandia.

The mapping project Minerals Resources in North Norway (MINN) had its first season during the summer of 2010; planes and helicopters hired by the Geological Survey of Norway performed a peculiar choreography at low altitudes in the North Norwegian landscapes and scanned underground for indications of valuable minerals. Early reports from MINN created expectations of future mineral wealth. The standard response from mayors in local municipalities, when NGU reports of field discoveries are presented is that it is very exciting. Geoscience field methods range from gauging and remote sensing at different altitudes to earth sampling, seismic drilling and test mining. These steps are increasingly capital-intensive, and their impacts on the terrain mount accordingly. The data are open to private prospectors. Through the identification of “target areas”, investors are invited to explore further, so as to assess and ascertain the economic viability of mineral repositories, thereby attaching local landscapes to a global commodity price.

The compilation of field data, and the industry expectations that derive from

it, ensure that the process of mapping is already politically charged. Mineral resources mapped in expensively state-backed geological surveys are hawked to trans- and multinational prospecting companies; mineral prospecting companies and their investors expect economic outcomes from their activities, either through selling their data to mining companies or by starting mining themselves.

4.1.3 Preparations for the Mineral Strategies

The Norwegian Strategy for the Mineral Industry, which was put forward in March 2013, is a document that intervenes in multiple societal and environmental issues. The government wishes to facilitate growth in the mineral industry and believes that new mining operations could form the basis for business development and value creation. The mineral strategies in both Sweden and Norway were put forward as white papers from the Nordic governments and not as propositions that had to be passed by the parliaments in order to change the legislation. This implies that there would be no public hearings or political discourse on the strategies. The strategies were, however, carefully prepared by broad dialogue processes. I start this chapter with the discursive context in the time span 2010-2013, leading up to the launching of the mineral strategies.

In 2010, the Industry Committee of the Norwegian Parliament proposed that Norway should put forward a strategy for the mining sector, based on the European Union's Raw Material Initiative. This process was conducted by the sitting social democratic government, but the minutes from parliament meetings reveal that the proposition put forward by the Industry Committee of the Norwegian Parliament was in fact proposed by the conservative representative, Frank Bakke Jensen, from Finnmark, who had been in conversation with mineral industry representatives. The industry committee recommended on June 15, 2010 at a Parliament meeting that a strategy for the Norwegian mining industry should be put forward.³⁸ Frank Bakke Jensen presented the recommendation and argued:

The proposal for a national mining strategy is motivated by our meet-

38 My translation of: 'Innstilling fra næringskomiteen om representantforslag fra stortingsrepresentantene Frank Bakke Jensen, Svein Flåtten, Elisabeth Røbekk Nørve og Bjørn Lødemel om en strategi for norsk bergindustri (Innst. 308 S (2009–2010), jf. Dokument 8:100 S (2009–2010)': 'Recommendation of the industry committee representative suggestions from Members of Parliament Frank Bakke Jensen Svein Flåtten, Elisabeth Røbekk Nørve and Bjørn Lødemel on a strategy for Norwegian mining industry (sett. 308 (2009-2010), ref. Document 8: 100 (2009-2010))'.

ings with the mining industry and by our experiences of the debate surrounding mineral extraction in several parts of the country, including from my county of Finnmark. In addition, the situation in the world market is making the need for minerals increase and increase. Climate change and new technology to tackle this, economic growth in large, populous countries in Asia and Africa and the Western countries' struggle to retain their leading positions will create huge demand for minerals in the future. (Norwegian Parliament, 2010)³⁹

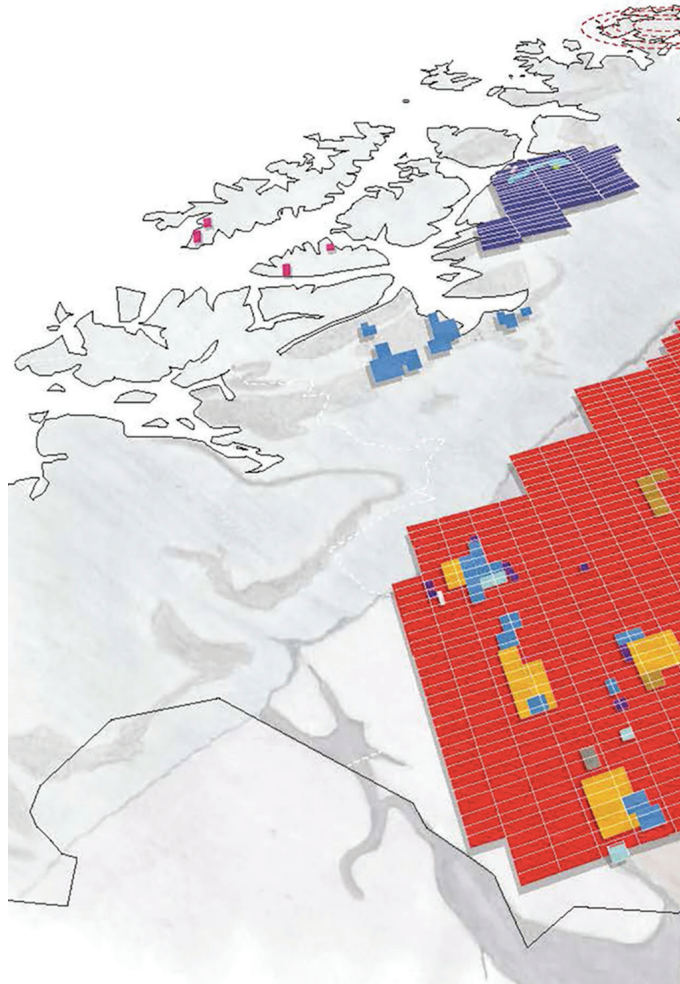
The arguments from the recommendation of the industry committee representative and suggestions from Members of Parliament were later included in the 2011-2012 update of the High North Strategy (UD, 2011). The Government intended to carry out a survey of Norway's mineral resources in the High North because the global demand for ores, metals and minerals is rising rapidly. These are surveys that will be made in the service of global mining. The white paper continued by stating that the Government will develop contacts with Finland and Sweden so that the region can be considered as a whole, for example as regards infrastructure and competence building. It also mentioned the potential for cooperation with Russia in the area of mineral extraction.

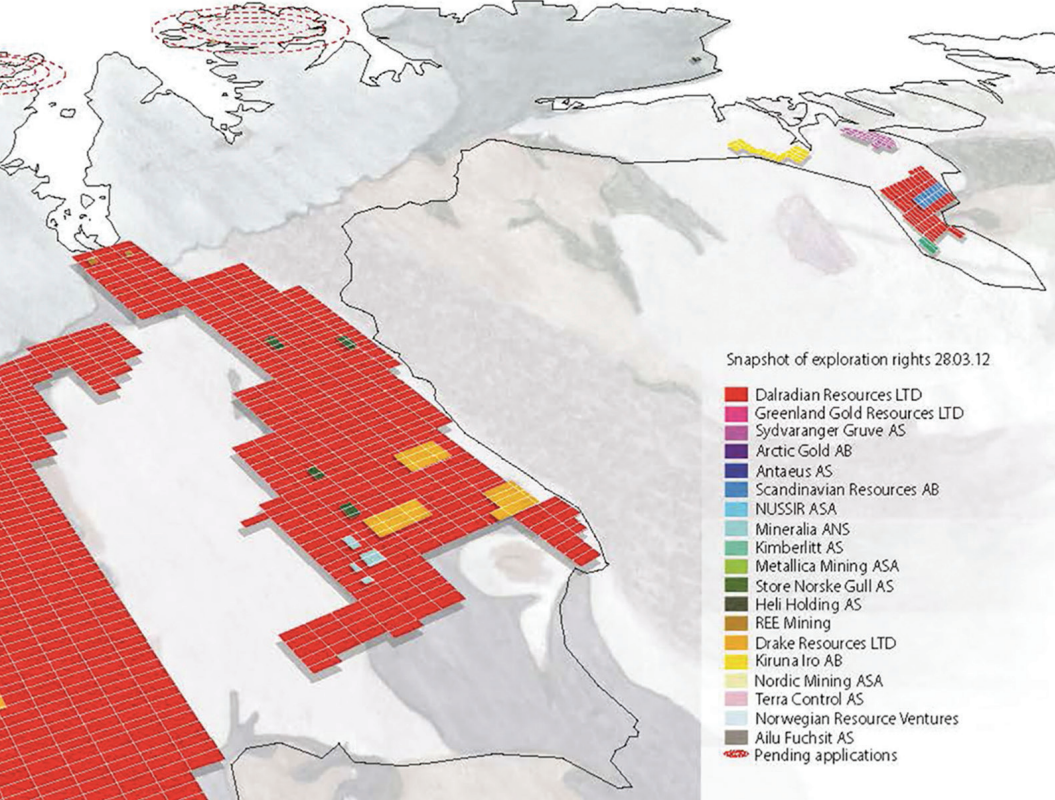
4.1.4 Fields of Exploration, Limits of Exploitation

In 2010, Norwegian extraction policy became manifest through a new mineral law, and the preparations for the Norwegian mineral strategy were frequently referred to in the popular press. The implementation of the new mineral legislation in Norway immediately resulted in financial speculation, and the acquisition of mineral prospecting licences in Norway increased from 1,112 square kilometres in 2010 to 18,663 in 2011, and the resulting prospecting licence grid defines a possible new landscape of mineral exploitation. The Master Landscape Architecture course, *Fields of Exploration, Limits of Exploitation*, conducted a landscape architectural inquiry into the renewed interests in mineral extraction in North Norway. In 2011, we had seen the preparation for a Norwegian Strategy for the Mineral Industry as an important subject of architectural investigation of changing landscapes in the

39 Minutes from Parliament Meeting Tuesday 15th June 2010, Agenda (no. 96): Case # 6 (1:04:29 p.m.) Frank Bakke Jensen (H) (13:16:36): My translation of: 'Forslaget om egen bergverksstrategi er motivert av våre møter med bergverksnæringen og av våre opplevelser av debatten om mineralutvinning i flere deler av landet, bl.a. fra mitt fylke Finnmark. I tillegg er situasjonen på verdensmarkedet slik at behovet for mineraler øker og øker. Klimautfordringen og nyutviklet teknologi for å takle dette, økonomisk vekst i store, folkerike land i Asia og Afrika og de vestlige lands kamp for å beholde sine ledende posisjoner vil skape enorme behov for mineraler i framtiden.'

Fig 4.2: Mineral stakes in Finnmark surged when Norway in 2010 got a new Mineral Act. Map: Student work by Hanne Johnsrud at the master studio Fields of Exploration Limits of Exploitation, AHO 2011. Reproduced with consent.





NÆRING
OG NORDOMRÅDENE

Taliban 713 891 | energi@postboks.no

NHO vil øvke lekamkt

«...»

Starkt bilavgil Norge i for

«...»

Postkasselskap har i det stille sikret seg rettigheter til enorme områder i Nordland, Troms og Finnmark

MINERALRAID I NORD

Spørstussens lokali
Borner har i det stille sikret seg rettigheter til enorme områder i Nordland, Troms og Finnmark.

«...»



PHOTO: BILG. Illustrasjon: Illustrasjon av et område i Nordland fylke. Illustrasjon av et område i Nordland fylke. Illustrasjon av et område i Nordland fylke.

political pursuit of expanded mineral resource extraction. Knut Eirik Dahl coined the concept of “the perforated landscape” during the preparations for the studio when we learned that the Norwegian Geologic Survey had extracted 2500 earth samples from Finnmark in a mineral mapping campaign. A report put forward by the Norwegian Geological Survey, the GEONOR report, combined possibilities of mineral industry development to a vision of a new industrial era in Finnmark in line with the government’s High North policy.

Inviting more than 20 guest lecturers, experts and stakeholders, the group of teachers and students explored how a new version of the territory was being mapped, described and conceived in the light of global mining (Dahl et al., 2012). ABC nyheter was present at the final critique and reported: ‘The perforated landscape impacts nature, places, and our lives’ (Vermes, 2012). Findings from Fields of Exploration, Limits of Exploitation were later included, when Dahl was interviewed by Sámi film director, Roger Manndal, in the TV documentary *Gollegiisá/The Treasure Shrine* (Manndal, 2013). The title alluded to the Norwegian Minister of Commerce, Trond Giske, who, on several occasions where he was presenting the government strategy for the mineral industry, called Finnmark County a “treasure shrine”.

Gollegiisá/The Treasure Shrine focuses on the Biedjovaggi case, a particularly interesting case where the municipality stopped an impact assessment before it was realised in Guovdigeadnu municipality. Sámi reindeer pastoralist, Mathis Isak Triumpf, whose reindeer have winter pastures in the mining prospect, stated: ‘They say that Finnmark is a treasure shrine, but I think it’s already a treasure shrine, there are reindeer here, and Sámi people—all kinds of Sámi people’ (Manndal, 2013). Thus, our studio mappings were charted in the discourse of mineral and landscape values in the *meahcci*, the Sámi outfields (Fig 4.2). The documentary brings this introductory text back in time to where I prepared this study.

4.2 MINING WASTE

The most acute environmental and economic challenge in mining is the management of mine tailings. ‘Traditionally, tailings have been stored in land dams, but the lack of land availability, potential risk of dam failure and topography in coastal areas in certain countries results in increasing disposal of tailings into marine systems’ (Ramirez-Lodra et al., 2015, 1). ‘Mine tailings are known to contain heavy metals, chemical reagents used in the separation

process (e.g., cyanide from gold processing), and sulfide-bearing materials' (Vogt, 2014, 7). When the ore has been mined, it is ground in water and crushed into finely grained particles. Added chemicals bind with the target material and make it float, so that it can be separated from the ore through a flotation process. The remaining mud, which can be more than 99 per cent of the ore, is called mine tailings. As a part of waste management, a mix of chemicals called flocculates is added to cause the particles to lump together in order to sink to the bottom of a water body.

There are about 2,500 industrial-sized mines operating around the world. Except for a very few, these mines dispose of their mine tailings on-land, usually under water in impoundments or behind dams. In a very few countries, mines are allowed to dispose of mine tailings into rivers and into marine waters. (Vogt, 2014, 7)

For further contingency and as required in the mineral strategy, the Norwegian Research Council initiated projects to explore the potential for and environmental impacts of mine tailings disposal in fjord systems. In one of these projects, a published state-of-the-art review on results from environmental research in Norwegian submarine tailings disposal sites concludes that 'In most cases, submarine tailings disposal (STD) and deep sea mine tailings placement (DSTP) activities are taking place before sound scientific baseline information is available.' The researchers recommend 'the use of the precautionary approach when knowledge is too scarce to assess impacts' (Ramirez-Lodra et al., 2015, 18). The main environmental impacts from STDs and DSTPs include: hyper-sedimentation, toxicity, turbidity and changes in sediment grain morphology. 'Understanding these impacts on the habitat and biota is essential to assess potential ecosystem changes and to develop best available techniques and robust management plans' (Ramirez-Lodra et al., 2015, 13). During 2015, the Norwegian mineral industry developed guidelines for submarine tailings disposals (2015). In parallel, even as Bergverksindustrien lobbies in Brussels, it blithely advocates that disposal of tailings in Norwegian fjords should be regarded as "best available practice" and included in the Integrated Pollution Prevention and Control (IPPC) Best Available Techniques Reference Documents.

Norway holds the whole stretch of the ice-free coast of Fennoscandia. Throughout history, the forgiving ocean surface has hidden all kinds of garbage and industrial waste. When environmental legislation and regulations came into force during the 20th century, the mining industry was allowed to continue to discharge mine tailings in the fjords. While environmentalists

hoped that this practice would be put to an end with the new mineral act and strategy, the Norwegian mineral industry lobbied to keep the privilege of cheap and easy waste management. The mineral industry succeeded, and Norway is now one of five states that allow submarine mine tailings deposits. From a material and ecological view, chemically reactive geologic material is moved from its underground containment in order to extract the target mineral. Thereafter, it is redefined as waste and placed in a biologically active submarine location, upon which it is spread, with life-exterminating effect. The mineral industry insists on calling such placement of tailings in the ocean “sea deposits”, while opponents prefer to call it “dumping”.

The Norwegian mining prospects that received most attention at conferences and in the media were: first, Nordic Mining’s plan to extract the mineral, rutile (titanium dioxide TiO₂), a white pigment from the Engebø Mountain in the village of Vevring in Sogn and Fjordane County. The prospect includes removal of the mountain and a fjord deposit of gigantic proportions in the Førdefjorden fjord: 300 million tonnes of mine tailings would elevate the fjord bed 150 metres over a stretch of four kilometres. Artists and local farmers, fishermen and the Young Friends of the Earth resist the plans, and 60 local companies within fisheries, aquaculture, wild salmon, and tourism signed a petition against it. Second is Kvalsund, on the coast of Finnmark County, where Nussir ASA’s plan, in keeping with the Norwegian practice of disposing of mine tailings in the local fjords, conflicts with coastal fisheries, tourism and aquaculture. Here, multiple stakeholders, among them Sea Sámi fishermen, are involved, and communities must act in several different political arenas, in order to protect their own interests.

Scientists from the Norwegian Institute of Marine Research warn that the marine ecosystem of the fjords used for mine tailings will be destroyed, and that the very fine waste particles will spread to larger areas, with severe risk of polluting the food chain. Third is the Biedjovagge prospect in Guovdageaidnu/Kautokeino in the inland of Finnmark County, where conflict was exaggerated between people in favour of and against the mine. In Sweden, the broad acceptance of the moving of the city of Kiruna serves as an example of how dependent on continued mining a mining town becomes, while the Kallak/Gällöck case reveals strong and growing local resistance to mining plans. The resistance is gaining momentum across North Sweden. Rönnbäcken, Kallak, Norra Kärr, Vindfall and Laver are examples of local communities that resist mining prospects. In Finland, the Talvivaara scandal hit the press in 2012.

4.2.1 Cartographies

The maps from the geological surveys are meant to appear power-neutral representations of facts, and this is what gives them their persuasive power (Wood, 2010). If the analysis is power-blind, thematic maps are easily taken for granted, as displaying expert knowledge. Cartography is one of the arts that cannot be completely de-colonised, because of the powerful ways it projects the mapmaker's intention onto the territory that is mapped.

Environmental governance relies on scientific, environmental research to make sound policy. A growing body of literature addresses case-to-case assessments, with step-by-step decisions by governance agencies in favour of extractive prospects, leading to a bit-by-bit disappearance of coherent landscapes (Sara, 2011a; Winge, 2013; Eira et al., 2018). Scientific findings are pitted against each other in the decision-making process. Scientific representations of geological wealth, on one hand, and scientific representations of animal behaviour, which is biosphere wealth, on the other hand, support different political choices. Exclusion processes are also at work as regards scientific and environmental matters. Mapping and counter-mapping of the currents in Repparfjorden drew scientific controversy, represented in maps, into the centre of discourse (Bjørge and Bay-Larsen, 2017). In the Nussir case, this was evident in the exclusion of advice regarding marine currents, marine biodiversity and the cumulative effects on reindeer husbandry.

Society does not appear to have tools to handle such complex entanglements of dynamic systems. The highly entangled and relational issues that are enacted in environmental controversies cannot be reduced to numbers alone. Governance agencies do not have the tools to examine complex issues. Generally, maps can be built as an argument when the question is posed in a way that it can be answered with geo-positioning.

This example shows that, with some effort, thematic layers can be superimposed to make effective analytical map-images. Different sector authorities govern scientific domains in knowledge production regarding the same areas and produce different maps (Wood, 2010). The maps support different development trajectories that cannot coexist.

For years, the reindeer pastoral communities in Norway have addressed the lack of a synthetic map of landscape encroachments and articulated the implications of the case-to-case assessments of landscape encroachments, leading to a piece-by-piece disappearance of coherent landscapes. The knowledge layers of thematic maps are kept apart in Norwegian environmental gover-

nance, regardless of a growing acknowledgement of the aggregate impact that individual encroachments have on the biosphere.

The NIBIO maps might sometimes be taken by developers to give exhaustive information of the land-use of reindeer husbandry. The traditional ecological knowledge of the areas is thus effectively excluded from the initial steps of development plans. Recent examples from the wind-power industry are illustrative of why this is a problem. In 2018, Norwegian Water Resources and Energy Directorate (NVE) produced a scoping plan for potential wind turbine industrial development. This scoping plan refers to the NIBIO maps as a knowledge base for reindeer husbandry. However, it is not easy for actors with no knowledge of reindeer husbandry to read this map. The second problem is that it is complicated for non-cartographers to combine the knowledge layers with other land-use thematics.

In Sweden, there is another mapping solution. More research has been done on the cumulative effects of various nature interventions in reindeer husbandry areas in Sweden than in Norway. The Swedish map tool RenGIS is based on reindeer herding's needs, experience and perspective. RenGIS superimposes known plans and existing situations, to show a map image that indicates the consequences for the Sámi reindeer husbandry communities [*Samebyar*]. RenGIS is owned and maintained by GIS experts in the pastoral communities. Graphic representation of evasion zones is included as an element in the analysis of the externalities described in the literature on the field and local experience gained from reindeer husbandry practitioners. The pastoral communities own and manage RenGIS.

According to the pastoral communities, the impacts from the mining industry must be seen together with other impacts, as the aggregated impacts pose stressors on outfield landscapes and Indigenous livelihoods. Furthermore, the so-called viewshed analyses on terrain models may show where the interventions are visible, from the perspective of the reindeer.⁴⁰ Lassila explains:

Mapping calls for a response, a return to what is real, enduring and vital within a specific context. If maps make a reality, it is people who can further influence what follows by interacting with the maps through their world-making and knowledge practices.

40 The report 6722 from the Swedish Environmental Protection Agency, 'Cumulative effects of exploitation on reindeer husbandry - What needs to be done within permit processes?' gives a good overview: <http://www.naturvardsverket.se/978-91-620-6722-9>

(Lassila, 2018, 8)

In 2012, the NGO, Protect Sápmi, wanted to introduce the RenGIS model in Norway, but the Norwegian Department of Agriculture chose instead to learn from RenGIS how to improve Kilden and keep the ownership of the maps. The avoidance zones for different encroachments in RenGIS have a parallel in the non-encroachment zones in the INON registry in Norway which defines nature areas as being without encroachments, based on how far an area is from infrastructure. The INON registry has produced an entire series of maps every fourth year since 1912. This registry has strong legitimacy in environmental governance in Norway, but, in 2014, the government decided to stop the systematic INON mapping, to make it easier for municipalities to develop the outfield landscapes. The decision was justified with an outspoken intent to deplete the environmental management of agency.

GLOBIO is another anticipatory mapping methodology that is informed by planning, climate research and traditional ecological knowledge. GLOBIO extrapolates current development trends, to map future loss of pastureland. In the UN report for the International Polar Year, the group anticipated the possible consequences of future landscape encroachments would be that, by 2030, 30 per cent of today's pastureland would be lost.

4.2.2 Observing the dialogue process

To become acquainted with the actors and the arguments on all sides in the mineral discourse during 2012 and 2013, I attended in five events initiated by the Norwegian government and five events that were critical of the direction that the mineral extraction policy was heading (Fig 4.3). I identified four main traits in the argumentation from the Ministry of Commerce and the mineral industries. Those can be summed up as great “expectation” regarding the opportunity to create mineral wealth, an appeal to the general public to indulge the mineral industry with “acceptance” of the environmental impacts of mining. Such an acceptance is justified, based on a belief in the possibilities for “coexistence” between mining and reindeer husbandry and coastal sea-food production. There is also an attempt to justify it through a sense of the “inexorability” of an expansion of the mineral industries in a perception of landscapes as vast and a belief in space as an “abundant resource”. Raw material prices were peaking around 2011, and the political expectations for the subsurface wealth were also peaking. The Swedish Mineral Strategy of 2013 stated that:

The Government's opinion is that the requirements of the mining industry must be satisfied quickly in order to make full use of the op-

portunities provided by the current boom in the industry. (Government of Sweden, 2013, 36)

Echoing this notion, the Norwegian Strategy for the Mineral Industry Sector focused on the importance of state-funded mapping and ‘an information strategy on mineral deposits in Norway directed towards Norwegian and foreign exploration- and mining companies’ (NHD, 2013, 40). Intensified mineral repository mapping and participation in Arctic geoscience research and exploration programmes were both a part of the preparation to make a mineral strategy in Norway and the most important recommendations in the strategy.

An analysis of the mineral sector in North Norway, made by Vista Analyse and Sweco commissioned by the Ministry of Commerce in 2013, stated that the ‘negative environmental impact [of mining] will have to be accepted, and [that] sea deposits of tailings will have to be the rule wherever possible’ (Gorud et al., 2013, 16).⁴¹ The emphasis on acceptance can be seen in connection with the mineral industry’s attempts to manoeuvre in a landscape with greater local power in land use planning. This was articulated as the importance of achieving “a social licence to operate” (Prno, 2010). On November 14-15 in 2012, I was at a conference in Oslo organised by the ministries of commerce in the Nordic countries and North West Russia: The High North—Top Mining Region of the World. One of the presenters put forward the steps towards ‘a licence to drill’. In Norway, the Nussir case and the Biedjovagge case have been compared in several studies (Espiritu, 2015; Dannevig and Dale, 2018). These studies describe the personal social skills of the CEOs of the mineral prospecting companies and their approach to the local communities as determinants of the outcome, with Nussir having their assessment programme approved, while Arctic Gold had their assessment programme rejected.

The Swedish strategy goes far in its ambition ‘to expand the mining and minerals industry with respect for and in harmony with reindeer herding rights, other industries and natural and cultural values while fulfilling Sweden’s environmental quality objectives.’ Further, it identifies reindeer husbandry as one of two threats to the Swedish vision for the mineral industry. The other is: ‘Lack of consensus and dialogue among actors [, which] leads to opportu-

41 Translation from Gorud et al., 2013, 16): ‘Miljøpåvirkninger vil måtte aksepteres, og sjødeponi må være regelen for alle anlegg hvor det er mulig. Negative miljøkonsekvenser må kompenseres økonomisk så langt det er mulig uten at det går ut over lønnsomheten til bedriftene’ – my emphasis.

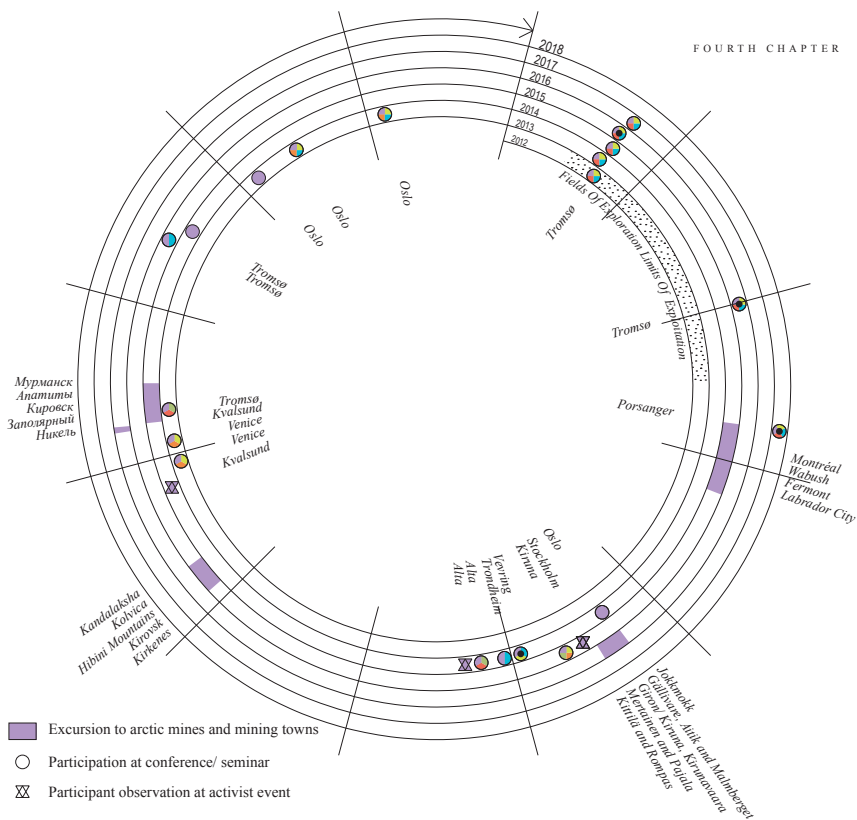


Fig 4.3 A timewheel showing attendance at conferences and excursions focusing the mineral industries.

nities not being utilized to their full potential’ (Government of Sweden, 2013, 23). As Lena Söderberg, director of the National Geological Survey in Sweden, sees it, the greatest challenge to the Nordic mining industries is to obtain social acceptance, so as ‘to find ways to operate in harmony with society’s representatives both nationally and locally. Without acceptance,’ she continues, ‘much time is spent trying to resolve conflicts instead of doing business’ (Biovie, 2014, 1). An opposite view was voiced at the annual meetings in the Norwegian Reindeer Herders Association that I observed in 2013 and 2015. The greater part of the speakers pointed to a lack of knowledge about reindeer husbandry among planners and project engineers and in the court system, and to the fact that this represents a problem, because a lot of time is taken to teach the decision-making parties in every single case.

The Norwegian Mineral Strategy emphasises the importance of dialogue between the mineral industries and affected parties. As theorised by Bjørklund (2013), the strategy proposes a ‘coexistence between mining and reindeer husbandry’. On September 10-11, 2012, I was in Tromsø attending Extractive Industries and Indigenous Peoples, arranged by the Ministry of Foreign Affairs, Norway, and the Working Group on Indigenous Peoples in the Barents

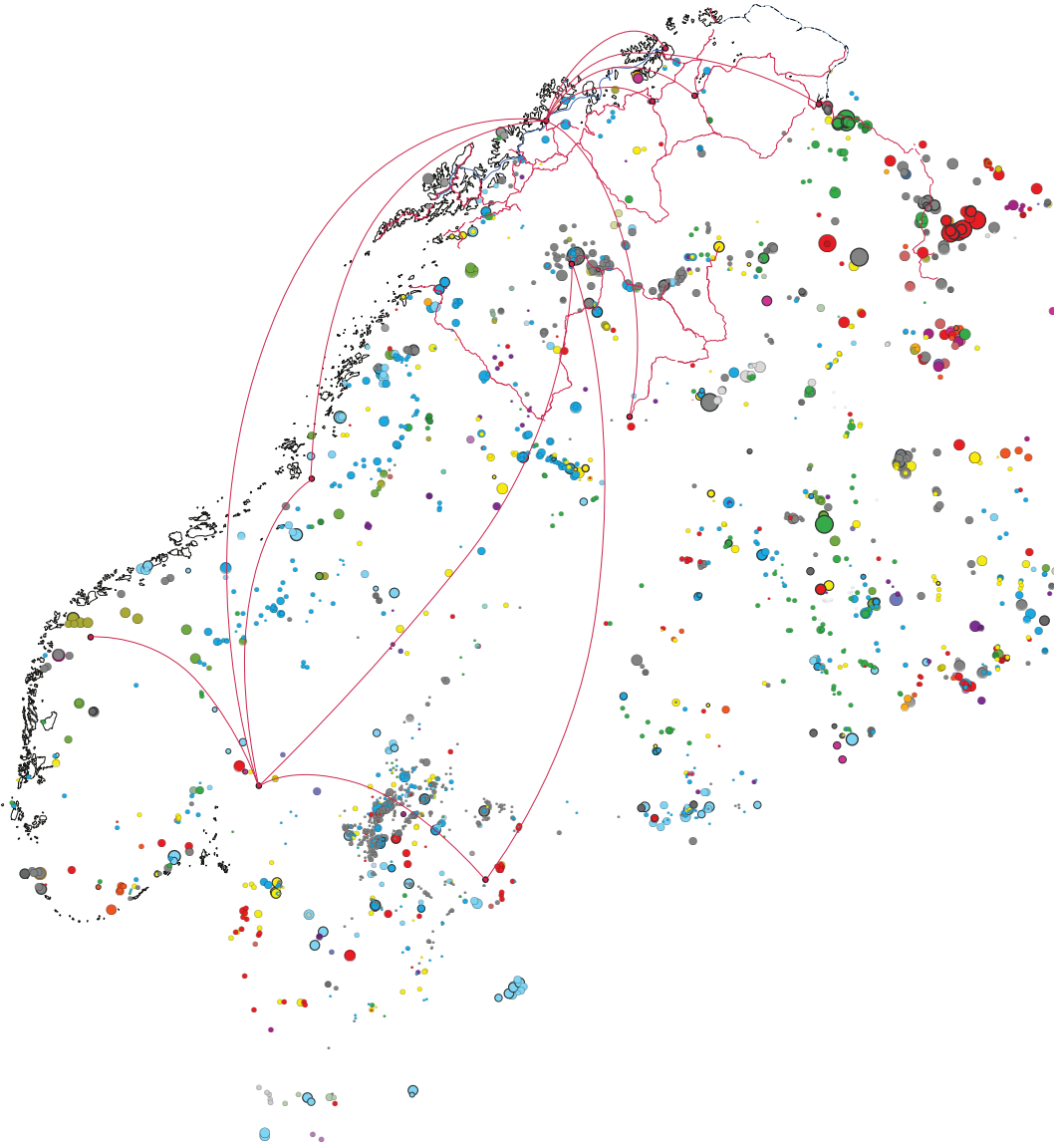


Fig 4.4: Travel map juxtaposed with mineral deposits in Fennoscandia extracted from the FODD map (described in chapter 2). The red lines trace my movement to places and events during the study.

Euro-Arctic Council, in cooperation with the Centre for Sami Studies, the Arctic University of Norway, UiT. At this conference, several of the presenters questioned the belief in coexistence between mining and reindeer herding.

In December 2012, the Norwegian Ministry of Commerce arranged the last dialogue seminar before completing the new mineral strategy. It was very broad and placed representatives from the Friends of the Earth, Norway, *Norges Naturvernforbund/Luonddugáhttenlihttu*, the Sámi Parliament, the Fishermen's Association and a number of mining companies in the same room. The box was ticked. The sense of inexorability became apparent at the Polytechnic Association's mining seminar at Litteraturhuset in Oslo, one month after the launching of the mineral strategy. The focus on this seminar was how to get more students into the subjects of geology and mining. In an answer to a question I had asked the panel, Elisabeth Gammelsæter replied:

I will make one fact very clear for the architect student: The minerals are there and they are going to be extracted. (Secretary General of *Norsk Bergindustri* [Norwegian mineral industry], Elisabeth Gammelsæter, in panel, Oslo, May 10, 2013)

The same rhetoric about mitigating efforts and coexistence was the background of a dialogue conference in Trondheim, where Norwegian mining industry representatives and the Ministry of Commerce met with the organisations representing the seafood industries and the environmental movement, to conduct a dialogue about sea deposits of mine tailings (*Dialogkonferanse Fisk/Mineraler, Trondheim, 2013*).

I also attended critical seminars. In 2012, the globalisation conference arranged by Fagforbundet included a short event, focusing on local communities in the Arctic, and there were “conferences that gave ample space for critical views and affected parties”: *Framtid for fjorden*, Vevring, 2013; Reindeer Herding and Mining, side-event to Áлта 2013; *Mineraler, milliarder, miljø og motstand – gruvekonferansen* in Kautokeino/ *Guovdageaidnu* November, 2013; and *Folkefest for Repparfjorden* June, 2014. Attending these conferences prepared the fieldwork as I got to know the discourse, and built an extended academic and social network.

4.2.3 Journeys to Mines and Mining Towns

I participated in four group field trips, visiting mines and mining towns. These collective activities yielded fieldwork moments that I wish to articulate, because they offer a context of mining in Fennoscandia. The future of

prospected landscapes might be perceived elsewhere at places where the mining industry has transformed communities and environments. Participating in four group excursions to Arctic regions highly afflicted with extractive industries, I have visited mines and mining towns in Canada, Sweden, Finland, Norway and in the Russian Kola Peninsula (Fig 4.4).

The first journey was to Montréal, Fermont, Wabush and Labrador City, with the Future North Research Group (Figs 4.5 - 4.7). The flight from Montréal to Wabush took hours, and we looked down on the patched extractive landscape of industrial forestry, then we drove by minibus through the forests with their artificial mountains of waste rock piled up in horizontal shelves covered in snow.

We stand on the viewing platform, marvelling at the grand open pit of the Arcelor Mittal iron ore mine outside Fermont, Quebec. Twelve-metre-high trucks spiral upwards and downwards. This mine started off by removing the mountaintop and then blasting the way downwards to get to the ore: 14 metres deeper each time. It is narrow down there at the bottom. Rusty dust and snow are mixed. The trucks look ant-sized from our perspective. Our guide informs us that soon it will no longer be possible to operate the pit. The mining company will then remove the million dollars' worth of blue pumping pavilion on the pit floor, and the open pit mine will slowly be filled ground with water. (Field notes, April 2014)

The centre of Fermont is a mining town inside a one-kilometre long building.

One night, we visit the bar across the hall from the kindergarten. A pole stands idle in a darkened scene. To prevent romantic relationships with the miners, the dancers are employed on 14-day fly-in, fly-out contracts and circulate between the different mining towns in the region. (Field notes, April 2014)

The Future North the Kola Peninsula were different. Here I bring a field note from the car ride between Nickel and Zapolyarny, and an image from The beach at Lake Kirovsk (Fig 4.8).

We travel through scorched tundra. Gradually, as the driver put distance between Nickel and our minibus, vegetation cover improved. But when we closed in on Zapolyarny the landscape darkened once more, blackish. We passed a bridge, and housing blocks appeared in



Fig 4.5: A warning flag on a mined shelf in the Mont Wright mine.



Fig 4.6: The Future North research group on an excursion to Canada.



Fig 4.7: The view from the viewing platform for visitors to the Mont Wright mine in Fermont, Canada. Snow and rust colour the open pit.



Fig 4.8: The beach at Lake Kirovsk taken at the Future North excursion to the Kola Peninsula. It looks idyllic, but the lake is polluted and over fertilised from the upstream riverine mine tailings discharge pipes.

the horizon. We passed them and, all of a sudden, we were in a green streetscape and soon at the main city square, with pigeons congregating in the square and families enjoying the evening sun. Entering the city was like entering a living room with green plants at every available space. Every street and boulevard exhibit double rows of autumn-coloured native trees.

In August 2014, I participated in a tour arranged by the Friends of the Earth, Norway, [*Norges Naturvernforbund/Luonddugáhttenlihttu*] and Kola Environmental Centre to the Kola Peninsula and the White Sea. We met up with local environmentalists and had three long walks in the Hibini Mountains, in forests along the Kandalaksja coast (Fig 4.9). On these walks, we escaped the extractivist logic by following trails through the mined mountains and crossed the mountain pass to the valley beyond, where the locals worked to establish a national park.

We walked along the trails of the transport trains, through the mining fields of Kirovsk and across the mountain pass in the Hibini Mountains. Our path was very rocky. Snow patches in the narrow passages gave relief to tired legs. Then we descended into a mountain valley, the soon-to-be national park of Kirovsk. On the distant horizon, artificial mountains of waste rock rose like the imaginative castle of Soria Moria that was depicted on the Norwegian government's High North strategy. Do these Russian mountains show the future Norwegian landscape? The Hibini Mountains used to be Sámi reindeer husbandry landscapes, but not anymore. (Fieldnotes, August 2014)

From May 10-15, 2015, I participated in a North Calotte round trip, visiting mines and environmental activists in Sweden and Finland, arranged by Friends of the Earth, Norway-Sweden-Finland [*Naturvskyddsföreningen/Norges Naturvernforbund/Luonddugáhttenlihttu and Suomen Luonnonsuojeluliitto*]. The larger mining companies had specially assigned staff to maintain the interface between the production of ore and the production of public relations. At Boliden's grand copper mine (Fig 4.10), Aitik in Gällivarre, a highly competent young woman presented herself as responsible for 'the externalities' of the mine: environment, local community and reindeer herding.

By the shore of the mine tailings deposit we are warned: 'Do not attempt to walk out on the plain, it is quicksand.' I try to capture the grey mud plain in a photo. Later, we meet up with representatives of the reindeer herding district, and they tell us that once they lost a



Fig 4.9: When we walked in the Hibini Mountains, we came over a ridge and saw waste rock deposits in the horizon raise like a vision of the imaginative castle Soria Moria. Is this the future? Naturvernforbundet and Kola Environmental Centre excursion to the Kola Peninsula.



Fig 4.10: The image shows the outlet of the Mine tailings disposal in Aitik. From Naturvernforbundets excursion to the North Calotte.

group of reindeer that got through the security fences and drowned there in the toxic mud. (Fieldnotes, August 2014)

In north Finland, we visited the famous Kittilä gold mine, also known as the Suurikuusikko mine (Fig 4.11). Kittilä is one of the largest gold mines in Europe. It is owned by Agnico-Eagle Mines; in 2015, it produced 177,374 ounces of gold.

The information lecture in the Kittilä mine was given by the old-school CEO of Agnico-Eagle Mines himself. He showed the prospecting maps of the areas surrounding the mine, where they drilled continuously to find feasible extension possibilities for the mine. When a slide titled 'Sustainable Mining' appeared in his presentation, he shrugged and said: 'Sustainability: Sustainability is the name of the game these days'. (Field notes, August 2014).

When we visited Kittilä, we were aware that the prospecting firm, Arctic Gold, which put forward the mining prospect in Biedjovagge (but failed to achieve a permit to go forward with an impact assessment), originally planned to sell the complete prospect with permissions and concessions to the mining corporation, Agnico-Eagle Mines. At least, the CEO said so in the NRK documentary, Gollegiisá. Kittilä is, in fact, not far from Guovdageaidnu/Kautokeino. The Swedish town Kiruna/Giron is a company town built by Luossavaara-Kiirunavaara AB, a mining and mineral group that mines and processes Norrbotten's unique iron ore wholly owned by the Swedish state. The iron ore mine in Kiirunavaara has been extracted for 120 years, and now the city is moving to allow for continued extraction. Visitors are treated with a bus ride 500 metres down in the tunnels to an underground visitor centre, where they show a film about 'green mining' and the automatisisation of mining operations. The film reveals that robots perform most of the manual labour in Kirunavaara, and they are steered remotely from south Sweden.

In a study of mineral prospects, excursions to comparable mines provide an illusion of seeing the future. Mining companies, conversely, make sure to present the world view of global mining and take very good care of visitors in their operating mines. Every mine is unique, but the mines I have visited, both in Canada and in Fenniscandia, had arrangements for visitors that followed the same general scheme: security information and distribution of visitor helmets and vests, a guided tour through selected stops along the production line from solid rock, via crushed ore, to ore concentrate and pellet production. The main attraction on such tours is a viewpoint platform over-



Fig 4.11: Ventilation outlet from the underground gold mine in Kitåla. From Naturvernforbundets excursion to the North Calotte.

looking the open pit or sometimes, as in the Áitik copper mine, a downwards spiralling ride down in the pit, which we are told will be a future lake when the mine is closed for production. The tailings deposit we had to negotiate to be allowed to see. Back at the visitors' centre, which might include an exhibition, a meal is served, and lectures given; one can ask questions, but the answers seem rehearsed. Finally, one receives glossy brochure handouts and souvenirs. When it is possible to experience landscape change by moving through and perceiving the landscape, change has already taken place. Plans and prospects and political strategies depict transformed landscapes before change has taken place. The plans do not reflect the massive change that is about to happen.

4.3.1 A Surplus Globe

The Norwegian High North policy in 2005 was assigned to the Ministry of Foreign Affairs. 'High seas, in maritime law, all parts of the mass of saltwater surrounding the globe that are not part of the territorial sea or internal waters of a state' (Encyclopædia Britannica). The fact that the term "High Seas" means international waters beyond national jurisdictions is rather illustrative of the Norwegian approach to North Norway. 2014 was an election year



Fig 4.12: The cover of the government's northern area strategy in 2014. The North Globe [Nordkloden] conveys the north as a remote and resource-rich frontier – in fact, a globe on its own. Source: Nordlys, November 10, 2014.

and a change to conservative government in Norway. In September 2014, Prime Minister Erna Solberg and Minister of Foreign Affairs Børge Brende launched the new government's status report on Norway's Arctic policy, *Nordkloden* [The North-Globe] at Polar Base in Hammerfest, the main base for oil and gas activities directed at the Barents Sea. Not only was the far North enacted as another foreign policy, as in the previous northern area strategies, the North was pictured as a surplus globe.

The North Globe was presented with a brand-new map of the north, in which, shown in an ice blue palette, was North Fennoscandia, seen as remote, from above and from the south, with the Barents Sea curving northwards (Fig 4.12). The North Globe abounds with pictograms of oil rigs, liquid natural gas tank-ships, mines, industrial trawlers, trawlers, windmills, fish farms, even a lavvu and some tourists. The graphic profile of the "North Globe" got attention. Sámi Parliament member Christina Henriksen noted that representations of coastal culture are absent: 'It's a clear signal from the government that they do not use very much energy on the fjord population and the existence of the Sea-Sámi culture' (Henriksen, 2014). The map and the graphic design of the North Globe report, website and PowerPoint were delivered by

advertising and content agency, Redinc. Then editor of the regional newspaper *Nordlys*, Oddvar Nygård commented that the brochure was so elegantly equipped that it would probably receive a design award, while the content did not bring forward any revitalisation of the High North policy but was rather a continuation of the policy of the previous government (Nygård, 2014). The Prime Minister proclaimed that, while Norwegian industry in the south will be readjusted to non-fossil activities, the fossil era will be intensified in the North.

Meanwhile, the mineral industry sector was impatient to see results, in both the Nussir case and Nordic Mining's prospect in Engebø municipality on the west coast of Norway. Secretary General of *Norsk Bergindustri* [the Norwegian mineral industry] Elisabeth Gammelsæter claimed that the mining industry needs both economic incentives and to obtain permission to open new mines, to be able to do research on 'environment friendly' solutions for extraction and waste deposits, as the government required in the mineral strategy. Threatening national states with divestment is a common neo-liberal threat, and the *Norsk Bergindustri* [the Norwegian mineral industry] argued that Norway needs to open a big mine as soon as possible to sustain credibility to such expectations 'or, else, the investors will go elsewhere' (Gammelsæter in an interview with Ballari, October 7, 2014).⁴² Speculation of this kind is, by definition, competitive, as the Secretary General puts it:

The best the government can do now is to get the two companies currently under consideration—Nussir in Finnmark County and Nordic Mining in Sogn og Fjordane County—through the process. If the government does so, they will serve as examples of the feasibility of establishing business in the mining industry (Gammelsæter in an interview with Nergård and Bakken, October 7, 2014).⁴³

The Norwegian Prime Minister Erna Solberg held on to the importance of continued geological mapping. At her opening speech at the conference *Agenda North Norway* [*Agenda Nord-Norge*] November 11th she said that: 'The most important contribution from us as authorities is to provide ever

42 Gammelsæter in interview with Nergård and Bakken, October 7, 2014. My translation from Ballari July 8, 2014: 'Man trenger forutsigbarhet i prosessene frem mot å åpne nye gruver. Derfor må investorene se at enkeltprosjekter lykkes.'

43 My translation from Nygård and Bakken, October 7, 2014: 'Det beste regjeringen kan gjøre nå er å få gjennom de to selskapene som står i kø, det gjelder Nussir i Finnmark og Nordic Mining i Sogn og Fjordane. Hvis regjeringen gjør det, vil de være eksempler på at det er mulig i praksis å etablere virksomhet i bergindustrien.'



Fig 4.13: The agenda North Norway Conference made a feasibility study that claimed that 98% of the area in North Norway was unused. The President of the Sámi Parliament reminded about reindeer husbandry. Courtesy of Sparebank 1 Nord Norge.

improved information about the mineral resources, to stimulate expanded activity in the mineral industry' (Solberg, 2014).⁴⁴ The engagements in multiple worlds do not provide more globes (i.e. a North Globe), any more than multiple constructions of landscape provide more land.

4.3.2 The Lure of Perceived Vastness

In 2014, the impatience among regional actors who wanted to see results from the High North policy was voiced by the leader of the regional bank, Savings Bank One North Norway), in a programme called *Agenda North Norway* that summoned the industry and commercial leader of the North. Agenda North Norway produced a feasibility study and hosted a conference called *North Norway in World-class, Agenda 2014*. In line with claims from the mineral and energy industries, it called for access to land and smoother planning processes for industrial prospects. 'It is important to note that the in-

44 My translation from Solberg 2014: 'Stadig bedre informasjon om mineralressurser er noe av det viktigste vi som myndigheter kan bidra med for å stimulere til økt aktivitet i mineralnæringen'

dustries that *are considered world leaders* are also considered relatively land intensive' (Menon and Kunnskapsparken Bodø, 2014b, 77, my emphasis). It is interesting to note that, among the cited sources in North Norway in World-class, Agenda 2014, there is not one article about reindeer herding or, with the exception of tourism, about the land usages that are dependent on sound ecosystems. The agenda report refers to such usage of the land as "other businesses", and those are listed as obstacles to the "world-class industries". The report continues:

Northern Norway's minerals are still under the ground, due to area conflicts, lack of entrepreneurship and extensive popular scepticism of a business that can disrupt and destroy nature. This is especially true of mining, where area needs and deposition of waste rock and tailings are particularly relevant. Area conflicts can be linked to natural environments in the form of impacts of non-intervention areas (INON), reduction of outfield areas used for outdoor activities and effects on natural diversity. The conflicts may also apply to access to areas for *other business*, including reindeer husbandry, agriculture, fisheries and aquaculture (mine tailings disposal) and tourism. (Menon and Kunnskapsparken Bodø, 2014b, 76, my emphasis)⁴⁵

This, first, Agenda North Norway conference simply claimed that 98 per cent of the land in North-Norway is "unused" [*uutnyttet areal*] (Menon and Kunnskapsparken Bodø, 2014a, 12). In the regional public discourse, Agenda 14's claim that 98 per cent of North Norway is unused turned out to be a weak argument that first and foremost revealed the aggressive agenda of Agenda North Norway. According to the journalists Måsø, Guttorm, and Sara, the report itself was not of world-class standard (Måsø et al., 2014). In their opinion, the President of the Sámi Parliament, Aili Keskitalo, who was invited to the conference as a keynote speaker, saved the day, by setting this misunderstanding straight she said:

In the same breath as it is claimed that reindeer herders use too much

45 My translation of My translation of Menon and Kunnskapsparken Bodø 2014b, 76: 'Nord-Norges mineraler ligger fortsatt under bakken, som følge av arealkonflikter, manglende entreprenørskapsånd og utstrakt folkelig skepsis til en virksomhet som kan forstyrre og ødelegge naturen. Dette gjelder spesielt for gruvedrift, hvor arealbehov og deponering av avgangsmasser er særlig aktuelt. Areakonfliktene kan være knyttet til naturmiljøer i form av påvirkning av inngrepsfrie naturområder (INON), reduksjon av utmarksområder som brukes til friluftsliv og effekter på naturmangfold. Konfliktene kan også gjelde tilgang til arealer for annet næringsliv, herunder reindrift, landbruk, fiskeri og havbruk (gjelder spesielt sjødeponier) og reiseliv.'

pastureland, it is established that they do not exist there. I do not understand how they can be forgotten. (Måsø et al., 2014)⁴⁶

In Keskitalos speech, she told about how the North Norwegians and Sámi had been written out of history, but she also invited conversations, in which both peoples, Sámi and Norwegians, together should develop the region and find ways to utilise natural resources without destroying them. Reindeer husbandry interests in the region were invisible in the conference preparations, yes, but certainly not inaudible at the venue. The invisibility was the very feature that Aili Keskitalos used in her speech to make reindeer husbandry audible at the conference and the media coverage of the event (Fig 4.13). Reindeer husbandry, was in fact mentioned in Menons feasibility study for Agenda 2014 in terms of contested landscapes where many industries compete about the same land. In the illustrated summary of the feasibility study it was bluntly put:

For example, renewable energy production and mineral extraction are on a collision course with reindeer husbandry and agriculture. If North Norwegian business and industry are to become world leaders, compromises must be made to better utilise the abundance of area that exist in the north. (Menon and Kunnskapsparken Bodø, 2014a, 13)⁴⁷

Mentioning Reindeer husbandry as a land use that stood in the way for a world class utilisation of the land it was an echo of the development of hydropower in the 1960's (See Bjørklund, 2016). It is also a paradox that the paragraph confirms that it already is a competition on utilisation of the areas in the North and at the same time states that there exists area in abundance.

The persistence of the idea that vacant space exist in abundance, might have something to do with how landscapes are perceived. While landscapes are fragmented bit by bit, there is a romanticised insistence of the existence of vast landscapes in the North. Television series confirm it all the time through the feel-good road-movie and wilderness-encounter formats. One evening during the winter of 2015 I watched a BBC documentary where Joanna

46 My translation from Nils H Måsø, Kjell Are Guttorm, Klemet Anders Sara, NRK Sápmi, 12.11.2014: 'I samme åndedrag som det hevdes at reindriftsutøvere bruker beitelandet for mye, slås det fast at de ikke finnes der. Jeg skjønner ikke at de kan bli avglemt.'

47 My translation of: 'Eksempelvis er fornybarproduksjon og mineraluttak på kollisjonskurs med reindriftsnæringen og landbruk. Hvis nordnorsk næringsliv skal nå verdenstoppen må likevel kompromisser inngås og den overflod av arealer som finnes i nord utnyttes bedre.'

Lumley on a quest to experience the Aurora Borealis. In part three she drives along the snow-covered road towards Kautokeino/ Gouvdageidnu through what she describes as: “This endless expanse of Arctic tundra”. She looks in awe through the side screen of her car and sighs:

‘Vast expanses of landscape! Wonderful!’ (Baron et al., 2008).

It is wonderful. But that little word: the intensifier “vast” signifies an overwhelmedness and a perceived infinity of landscape. In an otherwise well informed and fascinating production wonderfully hosted by Lumley, “Vast expanses of landscape” is a construction that clouds the contested nature of a landscape where space is a scarce resource. *Meahcit* are disappearing at an alarming rate, the pressure to harvest “green” energy, facilitate new economies, more infrastructure and mining has led to sharper discourse about the utilisation of outfields.

While the extractive industry and those who welcomed it started to become impatient with the politicians, public resistance to industrial prospects became more outspoken. In an interview, Prime Minister Erna Solberg stated that ‘It is not in the interest of Norwegian Sámi communities if it becomes so that it is perceived as impossible to run business development in the north. If so, we cannot provide employment, new jobs, or community services’ (Ballovari and Balto, November 15, 2014).⁴⁸ The interview continues with Solberg’s appeal to local communities: ‘a no-line in minerals, business development, it is essentially the same as weakening the areas in which your children will grow up, says Solberg’ (Ibid).⁴⁹ Evoking rural communities’ fear of not having a prospect, the Prime Minister points towards mineral prospecting and industrialisation as the ways to continued prosperity.

4.4 A WINDOW OF OPPORTUNITY

The Repparfjord Tectonic Window is a window through which geologists can study formations in deep geologic time. In the wording of geologists in a

48 My translation /paraphrasing of Ballovari and Balto, November 15, 2014: ‘– Det er ikke til norske samers interesse hvis det blir slik at det oppfattes at det ikke kan drives næringsutvikling i nord, at vi ikke kan sørge for sysselsetning, nye arbeidsplasser og utvikling av lokalsamfunn, sier Solberg.

49 My translation /paraphrasing of Ballovari and Balto: ‘– En nei-linje på mineraler, på næringsutvikling, det er egentlig det samme som å svekke de områdene som man har barn som skal vokse opp i, sier Solberg.’

recently published geologic research paper:

The Repparfjord Tectonic Window (RTW) is situated within the Scandinavian Caledonides in Finnmark, northern Norway, and comprises primarily a ~8 km-thick, Early Palaeoproterozoic, volcano-sedimentary succession. It represents the northwesternmost exposed termination of the Fennoscandian Shield and is generally correlated with the nearby Alta–Kvænangen Tectonic Window and the Kautokeino and Central Lapland greenstone belts to the south. (Torgersen et al., 2015)⁵⁰

A number of minor mines were in operation until the 1920s. In the 1970s, the Mining Company, Follidal Verk, mined *Gumpenjuni* [the Wolf Nose] and discharged mine tailings into the fjord, Repparfjorden. The open pit mine was operated until bankruptcy in 1978 (Lund, 2015). After seven years, copper prices fell, and the mine was abandoned without any environmental remediation. Indications of the Nussir ore were unearthed in the 1980s, but the copper repositories in the district have been known for a century. Throughout that century, geologists have been sampling stones in, and publishing academic papers about, the copper occurrence. Kvalsund Municipality prepared in 2004 a municipal plan where the Gumpenjuni/Ulveryggen Mountain was marked as an industrial area.

The Norwegian copper company, Nussir ASA, was established in 2005 to exploit the copper ore at the base of the Nussir Mountain in Kvalsund municipality. Øystein Rushfeldt is a home-grown North-Norwegian mining executive, capable of representing the adventure story of the copper ore. The CEO Øystein Rushfeldt carefully sought opportunities to conduct dialogues with interested parties, and the municipal authorities in Kvalsund welcomed industrial activity.

The company produced a digital model of the ore body that they use, to produce and represent geologic knowledge, to present convincing arguments about the feasibility of the project, to attract investors and to engineer the mining operations. Rushfeldt told me in an interview that it is ‘this model that is the value of the company’ (Interview, Alta 2015). The prospecting activity was among the main drivers in the public discourse, as the media frequently reported their findings. In October 2014, *High North News* claimed that ‘Nus-

50 The Kautokeino and Central Lapland greenstone belts are the ones that sustain the Kittilä gold mine in Finland.

sir had become even bigger' (Storholm, September 30, 2014). By participating in different venues over a course of time, I have seen how the presentations by the CEO of Nussir ASA have changed according to the prospective knowledge extraction. The 3D models, diagrams and maps make it possible to envision the ore body and make it “real” in the social contexts where it is at work, for instance in transdisciplinary research workshops.

In October 2014, I observe and take notes at the research workshop, 'Fate and Impact of Mine Tailings on Marine Arctic Ecosystems (MIKOS)' at the Fram Centre in Tromsø. Everybody's attention is focused on the projector screen, with a digital model of the Nussir ore body looking like a golden-metallic sheet of confectionary paper. 'This site has been drilled since 1985—close to 200 drill holes at different depths,' says Øystein Rushfeldt. By now, we know that the deposit is—he turns and points at the model—that 'piece of paper' going down into the mountainside. Thin lines representing the drill holes pierce through the lean form. He rotates it, to the delight of the workshop attendants, and continues: 'Since the Geological Survey of Norway is attending today, our great thanks to them and the state-sponsored programme, "Minerals in North Norway". They have had a lot of activity in this area. It is obviously a great help for our understanding of the region'. (Field notes, Tromsø, October 14, 2014)⁵¹

The site Rushfeldt referred to in the above-mentioned seminar is an—until now—“untouched” mountain valley that I am going to visit in the next chapter. The Sámi name of that valley is *Ásávaggi*, and it is a calving land in reindeer grazing district 22, Fiettar (Fig 4.14). The reindeer herding district of Fiettar is familiar with the issues of coexistence between mining and reindeer herding. During the mining operation in the 1970s:

the disturbances resulted in that the reindeer eventually stayed away from this area and gathered in the western and southern parts of the summer grazing area. It was this period also registered lung disease at the reindeer. (Bjørklund, 2013, 418)

Here, I first look into the planning process, and I start with the proposal for the Assessment Programme and scoping plan that was put forward in 2008.

51 Fate and Impact of Mine Tailings on Marine Arctic Ecosystems, Framcenteret Tromsø, October 14-15, 2014, Akvaplan-niva, NIVA and NGU.

4.5 THE COPPER MINE PROSPECT IN KVALSUND MUNICIPALITY

Nussir ASA commissioned the Finnmark office of the multinational consultancy firm, Sweco, to conduct the planning and application process. The scoping plan promised 150 jobs (including ripple effects). The municipality saw the prospect of mining as an opportunity but also a challenge, because they did not have the apparatus in place to handle big industrial projects. The municipal council of Kvalsund municipality approved the assessment programme at the council meeting on July 20, 2010. Copper extraction and strong wind-power projects are literally in line to extract billions worth of monetary value from Kvalsund municipality, with almost a thousand inhabitants. Despite delight at the arrival of the big industries, this also poses challenges to the small municipality.

‘We do not have enough competence in our municipality to take care of all the things we have to do to prepare for the things we will be facing in an industrial future,’ says deputy chairman of Kvalsund, Eli Liland (Sp). (Klo, March 31, 2011)

In retrospect, it has been claimed that the municipality rushed to this decision and failed to do its job in programming the planning programme. See Dannevig and Dale (2018), for analysis of how a municipal decision to adapt an assessment programme leads to the realisation of large industrial projects. Then a planning programme is produced that is subjected to public scrutiny. Recent research (Nygaard, 2016; Dannevig and Dale, 2018) shows that the application process of the planning programme is the stage where local authorities can impact the process. If the planning programme is adapted, the prospector goes on to make a regulation plan and conducts an impact assessment, in which knowledge of the impacts of the prospect is collected; in this, the prospecting company commissions consultants to “extract knowledge of the externalities of the mine” (see Deneault and Sacher, 2012, 31).

Supporting opportunities for the mineral industry, the government encouraged a balanced coexistence between reindeer herding and mining (see Bjørklund, 2016). Nussir ASA came to an agreement with the Sámi Parliament on procedures for negotiations during the company’s application process. ‘If we succeed here, the whole world will follow,’ proclaimed the local paper, *Altaposten*, and cited Rushfeldt: ‘As soon as we, here in Norway, have reached an agreement with the Sámi Parliament and the reindeer industry,

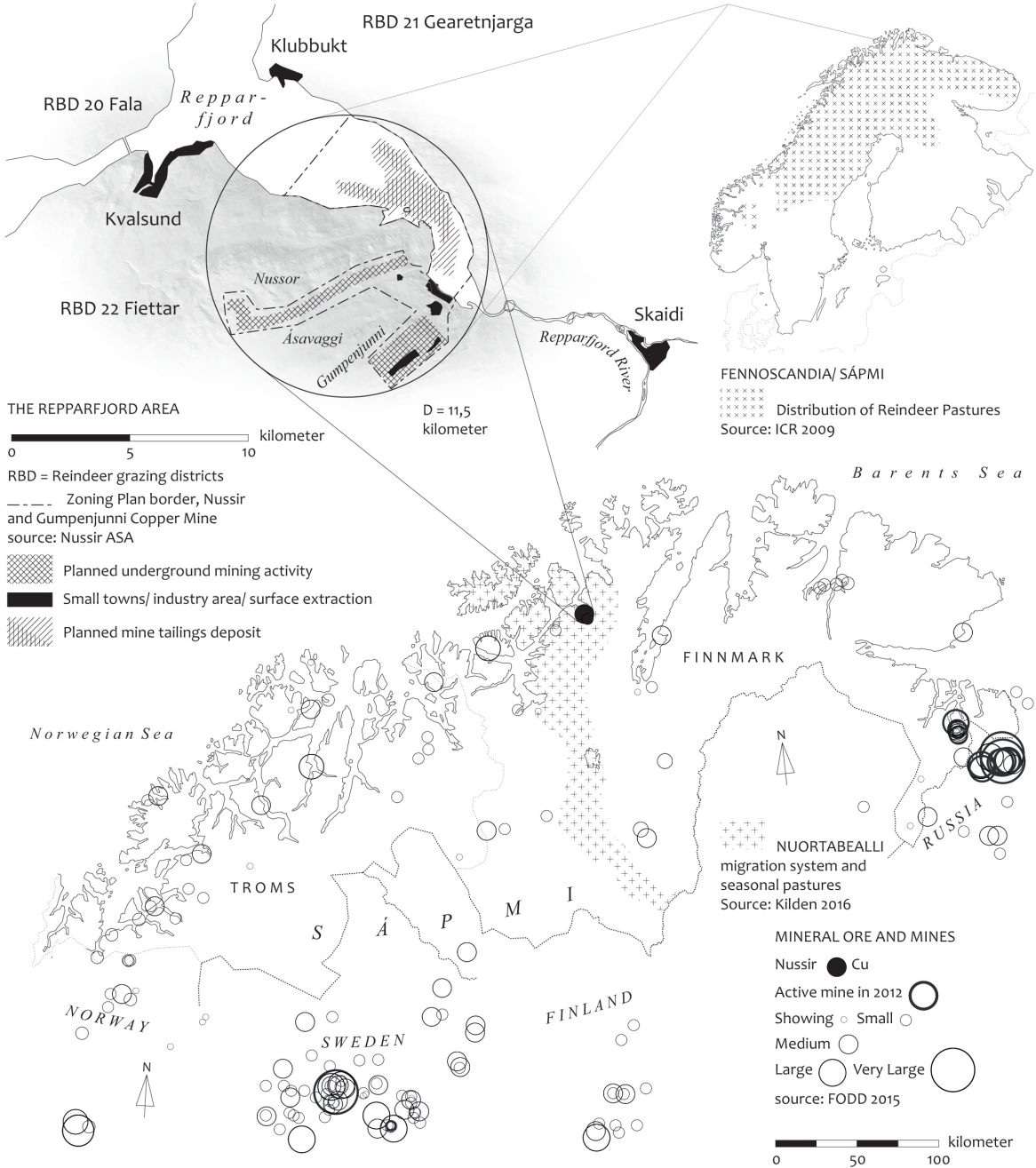


Fig 4.14: The Nussir copper mine prospect in the context of reindeer husbandry, coastal fishery, and mineral prospecting. Sources to the map are retrieved at Nussir.no, 2010, Kilden.no, and the Fennoscandian Ore Deposit Database.

others will follow' (Eilertsen, November 4, 2010).⁵² This attempt to get access to the reindeer pasture areas was not, however, agreed upon by the right holders—the affected reindeer owners and herders. In January 2016, the Sami Parliament Council announced that the agreement was no longer valid, but by then Nussir ASA had already rounded the critical milestones in the application process.

Corporations must work to secure their interests, especially so when consultative processes may reveal contradictions in needs and development (Prno, 2010). Nussir—the Norwegian Copper Company—successfully retained a social licence to operate when they needed it most at the beginning of the process to get the assessment programme approved in 2010 (Dannevig and Dale, 2018; Espiritu, 2015). Thereafter, followed years in which Nussir ASA secured milestones in the planning process and further explorations of the copper ore. During this period, the reindeer/boazu walked every autumn to the winter pastures in inner Finnmark, returning every spring to the summer lands. In the pastoral community, children grew up and learned to participate and behave confidently in the *girdnu* [the reindeer working fence] every spring and autumn.

4.5.1 The Zoning Plan

Nussir ASA's zoning plan and plan description—accompanied by an environmental impact assessment of mining in Ulveryggen and Nussir with tailings disposal in Repparfjord—was subject to a hearing in 2011 (see Figs 4.15 and 7.4). The hearing documents amounted to 2,500 pages, and the zoning plan and impact assessment are referred to as the largest in Norwegian planning.

The zoning plan of the prospect of copper mining in Nussir and Gumpenjunni, with its three alternatives of mine tailings disposals, one in the fjord and two showing land deposits, was tentative and unclear. The physical project was not represented in a way that was clearly readable. The impact assessments conducted by experts in the different sectors impacted by the mining prospect were consequently very general, showing little detail.

Not until 2017, as I will describe at the end of Chapter 6, when Nussir ASA presented the project in their mining concession application, did Nussir ASA represent the mining project in a comprehensive and conceivable manner. If the impact assessments had been conducted on that material, they would have

52 My translation of: 'Lykkes vi kommer hele verden etter/Når vi i Norge har fått til en avtale med Sametinget og reindrifta, vil andre komme etter, sier Rushfeldt.'

been better informed on the prospect and would probably have been able to arrive at more concrete assessments of the consequences of the impacts from the proposed mining operation.

4.5.2 Overlapping Area Usage Categories in the Zoning Plan

Land use designations that are layered on top of each other are applied to a large extent in the zoning plan, both on land and in the fjord. In Municipal plans here is an opening to do so in the national planning regulations, as there are only six possible land use categories—and the combination of these—to choose among in municipal plans and zoning plans.

Land use objectives, unless the plan indicates otherwise, will apply both on the ground, in the ground and above the ground. This applies also to sea and waterways. Objectives can also be specified separately within the levels. For example, for transport facilities, it may often be appropriate to specify the purpose separately for tunnels, bridges and under landscape covers while other purposes may apply to the surface. (Miljøverndepartementet, 2009, 90)⁵³

In this section, I show these examples and raise the question of whether the zoning plan of the mining prospect, by layering purposes above and below the surfaces on land and at sea, obscures the realities of the plan. When a new plan is adapted, it replaces the existing plans in the regulation areas. When proposing a new plan, the proposer must give an account of the existing plans, as articulated here by Sweco:

The majority of land area included in the zoning plan is designated in the municipal land use plan as ‘LNF [agriculture, nature, and outdoor recreation] areas without provisions for scattered housing’. Current zoning plans for the area [were], in 2011, the municipal land use plan adopted June 15, 2004; the plan for the Ulveryggen waste disposal that was adopted September 21, 2006; the zoning plan for Repparfjord

53 My translation of Miljøverndepartementet, 2009, 90: ‘Arealformål vil, med mindre planen angir noe annet, gjelde både på grunnen, i grunnen og over grunnen. Tilsvarende vil gjelde sjø og vassdrag. Formål kan også angis særskilt innen nivåene. For samferdselsanlegg vil det eksempelvis ofte kunne være aktuelt å angi formålet særskilt for tunneler, broer og «lokk» samtidig som annet formål gjelder på overflaten.’

Industri I that was adopted December 16, 2003 and II that was adopted March 15, 2005, as well as the zoning for Markopneset, adopted November 8, 2005. (Didriksen, March 06, 2011, 45)⁵⁴

The zoning plan regulates 37.6 km², including the areas in Repparfjorden. The terrestrial area comprises (except for the islands outside Markopneset) around 16.8 km². A further 1.4 km² are distributed areas, with specific uses that serve the mining operation and the Øyen industrial area by the fjord (roads, storing spaces, hydropower dam, etc.). The existing waste deposit (0.2 km²) at Ulveryggen, as well as the zoning for Markopneset, are included unchanged.

The zoning plan defines 15.4 km² as LNFR areas, that is agriculture, nature, outdoor recreation and reindeer husbandry (Fig 4.15). This overlaps with an area that, in the then-effective Kvalsund municipal land-use map of 2004, was codified as purple—an industrial area awaiting further exploitation (Fig 4.16). The online map application from the Reindeer Husbandry Administration shows, however, migration corridors and seasonal pastures in the same area. It depicts seasonal layers of overlapping biological functioning in the pastoral system of the reindeer herding districts, 22 Fiettar and 20 Fálá.⁵⁵ This was a situation where a dormant industrial plan was in reality used as customary reindeer pastureland. Referring to the consultations regarding the Nussir zoning plan, a former planner from Kvalsund municipality recalled: ‘It made no sense to me that the reindeer herders rejected the plan. We even gave them more grazing areas! Just look at the regulation map!’ (Interview with former planner at Kvalsund municipality, Tromsø, December 2015).⁷ He then explained that, within the new borders of the zoning plan, they had coloured the whole area—except the processing plant and harbour area—in a green code, as LNFR—agriculture, nature, outdoor recreation and reindeer husbandry areas. What has seemingly happened is that an area regulated for an industrial purpose has been retrieved for outdoor recreation and reindeer husbandry, but if one looks at the regulations of the zoning plan, it states that:

The areas where subsurface mining is allowed are regulated to LNFR

54 My translation of: ‘Hoveddelen av landarealet som inngår i varslet planområde er i arealdelen avsatt til “LNF-område uten bestemmelser om spredt bebyggelse” Gjeldende arealplaner for området [var] i 2011 kommuneplanens arealdel vedtatt 15.6.2004, reguleringsplan for Ulveryggen avfallsdeponi vedtatt 21.9.2006, reguleringsplan for Repparfjord Industri I vedtatt 16.12.2003 og II vedtatt 15.3.2005, samt reguleringsplan Markoppneset vedtatt 8.11.2005.’

55 The reindeer husbandry maps are accessible at <https://kilden.nibio.no>.

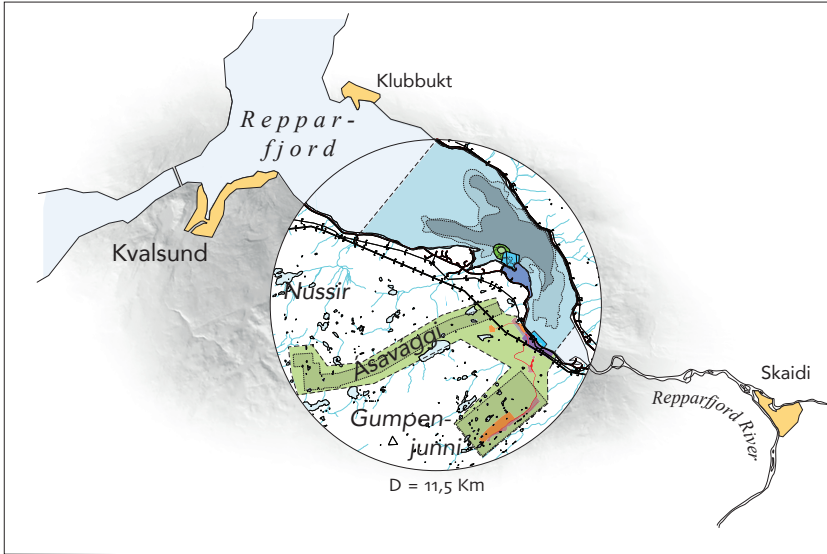


Fig 4.15: The zoning plan of the copper mine prospect of Nusssir and Ulveryggen/Gumpenjunni placed in the geographical context. Source map: Didriksen et.al., 2011.

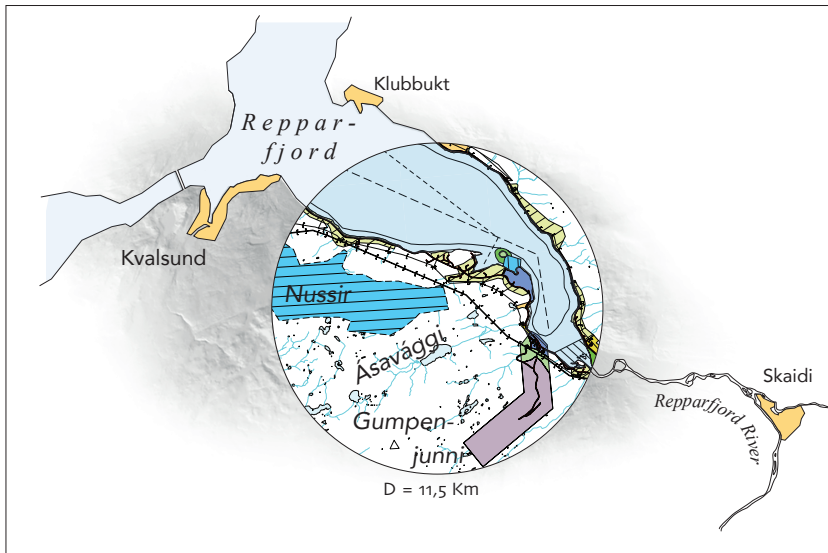


Fig 4.16: An extract of the Municipal plan of 2004. To the left. Source map: Kvalsund Municipality, 2004.

areas with specific regulation areas where subsurface mining and the placement of necessary ventilation shafts with rooftops are permitted. (Didriksen March 06, 2011, 158)⁵⁶

Remnant spaces in between the different industrial and infrastructural areas are likewise coded green as LNFR areas. While this way of colouring the zoning map has given Nussir ASA a rhetoric point about placing a small footprint, such green painting of plans carries little credibility among the herders. The Fiettar reindeer herding district commented in the consultation statement to the hearing in 2011 that, for the LNFR coding to be a reality, the regulations for use of the area should at least be consistent with the LNFR functions. The geographer Kathrine Ivsett Johnsen, who has analysed the political ecology of the decision-making process regarding Nussir, writes that, ‘While the pastoralists claimed that the mining company and the municipality never understood their concerns, the decision-makers claimed that the pastoralists were not willing to discuss solutions for coexistence’ (Johnsen, 2016, 27). The case shows that planning authorities have had a tendency to downplay pastureland encroachments in official documents. A similar multi-layered logic is at work in the zoning of the area in in the fjord. Sweco’s (and the municipality’s) zoning regulation states that:

The area associated with sea deposit is zoned for the use and protection of seas and waterways with designated regulation areas related to sea disposal, as well as a discharge conduit pipeline in the sea. (Didriksen March 06, 2011, 159).⁵⁷

Nussir ASA sought to deposit between 1 and 2 million tons mine tailings annually and require a fill volume of 25 million m³. When copper concentrate is extracted from the finely milled ore, the remaining tailings will be flushed into the fjord through a pipeline that is designed to bend back and forth to distribute a fan of viscous mud that, in theory, will descend downwards to the deepest level of the deposit site. The proposed size of the deposit area in the zoning plan is 8 km² and consists of the fill site of approximately 5 km² and the deposit border zone of approximately 2.5 km². By layering different area usages in the water column of the fjord, Sweco manages to combine the land

56 My translation of: ‘Arealene hvor underjordisk gruvedrift tillates er regulert til LNFR-områder med egne bestemmelsesområder hvor underjordisk gruvedrift, samt oppsetting av nødvendige luftesjakter med overbygg tillates.’

57 My emphasis, and my translation of Didriksen March 06, 2011, 159: Arealet knyttet til sjødeponi er regulert til bruk og vern av sjø og vassdrag, med egne bestemmelsesområder knyttet til sjødeponi, samt avgangsledning i sjø.

usage prescription “use and protection of seas and waterways” with “marine disposal.” The zoning map represent this area of the fjord in an innocent baby blue colour. The question before us is to what degree the sea-use categories that the plan proposes to combine can coexist with the existing marine ecosystem and its value as a site for the production of a variety of fish.

Researchers from the Institute of Marine Research (IMR), with the national responsibility to secure sound knowledge-based management of marine biodiversity, as well as representatives from the seafood sector, claimed that knowledge about the impacts of the planned sea deposit was lacking on a range of issues. The applied methodology for valuating marine environments was taken from the Norwegian Public Roads Administration. IMR questioned whether this methodology was suitable. Their consultation statement concluded:

In many ways, a very thorough assessment of the environmental impact of this applicant’s prospect has been done, and the impact assessment clearly shows that a fjord deposit will represent serious pollution of the fjord. It is, however, worrying that the impact assessment writes down the value of marine life and marine resources and thus determines that the severe pollution has “little consequence”. (Fosså et al., 2011)⁵⁸

The entire regulated area is located in two bodies of water, Inner Repparfjorden and Outer Repparfjorden. I will now look closer three spots, which are particularly mentioned but not visualised further in the planning regulations. First the Repparfjordelva river mouth in inner Repparfjorden. Repparfjordelva is an important Salmon river (Fig 4.17). Second Fæg fjordholmen, a round islet and its immediate waterscape (Fig 4.18), and third the waters between Fæg fjordholmen and Markopneset in Outer Repparfjorden (Fig 4.19).

The east border of Nussir’s plan is tangential to the area that is defined as the river mouth of Repparfjordelva. The Repparfjorden river is of national interest because of its status as a national salmon river. In the preparation of the Nussir prospect, and on behalf of Nussir ASA, Akvaplan Niva made an analysis of anadromous fish migration in the river and in the fjord. Akvaplan

58 My translation from Fosså et al. (2011): ‘Det er på mange måter utført en meget grundig vurdering av miljøkonsekvensene av dette omsøkte tiltaket, og konsekvensutredningen viser tydelig at et fjorddeponi vil representere en alvorlig forurensing av fjorden. Men det er foruroligende at konsekvensutredningen nedskriver verdien av marin natur og marine ressurser og på den måten kommer frem til at alvorlig forurensing får liten konsekvens.’



Fig 4.17: The salmon steps in the Repparfjorden River. A juxtaposition of map-information showing that the mine tailings deposit area of the Nussir's zoning plan is very close to Akvaplan Niva's definition of Repparfjordelva's river mouth.

Niva used six sample points in their mapping; three of these were in the area their report defined as the river mouth. The river mouth is outside the zoning border, and, in the regulations for the zoning plan, Sweco describes the buffer zone as 'far from the river mouth', but a comparison of the maps shows that the planned buffer zone is only two hundred metres from the sample points in the area defined as the river mouth by Akvaplan Niva.

Fæg fjordholmen is the only island in Repparfjorden. The island and its surrounding waters were regulated as an "outdoor and marine recreation area" in the municipal plan of 2004. Nussir's zoning plan of 2011 perpetuates this regulation and combines it with sea-fill of mine tailings. The zoning map shows that 50 per cent of the seabed within the area of marine recreation is regulated as sea-fill of mine tailings (Fig 4.18). It is worth mentioning that this is the very place where the discharge conduit is allowed to move in a fan from side to side to annually distribute 2,000,000 tonnes of mine tailings. Such release points are associated with turbulence and plume formation. "Outdoor recreation areas in the sea and in waterways" are areas where outdoor activities are central and given priority in the use of the sea, waterway and any associated coastal zone. 'In an open-air area, the legal effect according to the plan will mean that measures that would be disadvantageous for the purpose

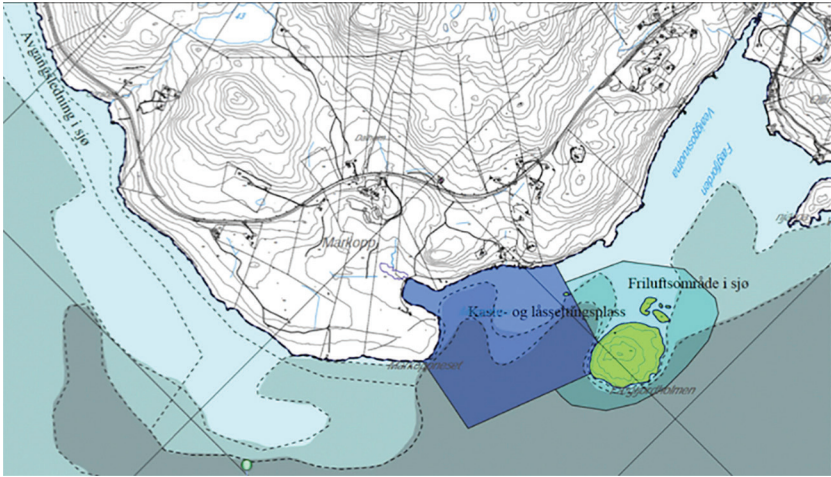


Fig 4.18: A section of Nussir's zoning plan showing the "Marine Recreation area", and the "fish pitches." The dotted line marks the discharge conduit from where daily 5470 tonnes of mine tailings is supposed to run downwards to the core area of the fjord deposit site (dark grey), but are allowed to spread in the defined buffer zone (light grey). Source map: Didriksen et al. 2011.



Fig 4.19: A fishing boat passes Fæg fjordholmen on its way to the landing in Fæg fjord. The western shore of Markop promontory is to the right in the image. The photo is from April 2015. The circle show photo-point and areas that will be smothered by mine tailings. Source map: Didriksen et al. 2011.

are not allowed, such as buoys and the like, so that they cannot be placed there' (Miljøverndepartementet, 2001, 51).⁵⁹ The lawmakers probably did not anticipate that anyone would come up with a proposition to combine an area for outdoor recreation at sea with mine-tailings disposal. Plumes in the water column and smothered seabed are bound to be disadvantageous for the purpose of outdoor recreation areas in the sea and in waterways. Adjacent to the area for recreation, the zoning plan marks a fishing-and-locking-place [*kaste og låssettingsplass*]. A locking place is a location for fish pitches to store live fish for later use. Such locations are scarce because a wide range of conditions, including specific landscape and sea-current conditions, must be balanced. A *kaste* place is a place for fishing from the beach rocks. Fishing-and-locking-places are, with almost no exception, protected. These places belong to a traditional practice of local salmon fishing in the fjord and are associated with certain right holders. The government plan's guidelines for differentiated management of the beach zone describe special protection for such spaces. 'Important fishing and storage places for fish pitches should be maintained, and be kept free from fixed installations as buoys, moorings, private piers and the like, which may be a disadvantage for fishing operations' (KMD, 2011).⁶⁰ The zoning plan prolongs the designation of the area west of Markopneset as a 'kaste og låssettingsplass', in keeping with the municipal plan, but, in the area designated for tailings disposal, more than half of the protected area and the proximity zone of the mine tailings disposal reaches entirely up to the land. Such multi-layered designations beg the question as to how it is possible, if at all, to combine the categories of use assigned to these places. In order to use the places in the way they are described in the zoning implies storing live fish for later consumption in the toxic mine tailings deposit.

As professionals make the plans and maps, decision makers often take maps that propose coexistence between different purposes at face value. The client of the consultancy that made the zoning plan, in this case the prospecting company, has an interest in making it look feasible that the activities can coexist. As I have shown above, the attempt to combine these uses in the plan raises the question of whether this has been either wishful thinking or witting obscuring of realities.

59 My Translation from Miljøverndepartementet, 2001, 51: "I et friluftsområde vil rettsvirkningen etter planen innebære at tiltak m.v. som vil være til ulempe for formålet, for eksempel bøyer og lignende, i utgangspunktet ikke kan plasseres der."

60 My translation from KMD, 2011, Viktige fiske-, kaste- og låssettingsplasser bør opprettholdes, og være frie for faste innretninger, som bøyer, moringer, private brygger og lignende, som kan være til ulempe for utøvelsen av fisket.

4.6 THE DECISION-MAKING PROCESS

Now I unpack some of the processes behind the decision to place mining tailings in an ecologically vibrant fjord. Most of the 85 consultancy letters about the zoning plan with the environmental impact assessment voiced concern about marine life. *Bivdi*, the Sea Sámi Coastal Fishermen's Association, the Fishermen's Association, *Vestfinnmark Jeger og Fisk*, the Institute of Marine Research, the Directorate of the Environment and environmental non governmental organisations all strongly discouraged sea disposal of tailings. This was seen as untenable, given the potential for the leaking of heavy metals that could enter the food chain, with the risk of spreading particles to larger areas. Some consultancy letters, however, referred positively to the anticipated societal ripple effects and employment, among them the letter from the Ministry of the Environment.

There was, however, a strong political will to realise the mining prospect. A letter of recommendation from the Ministry of Trade, Industry and Fisheries sustained the approval from the Ministry of Local Government and Modernisation. In this recommendation, the Minister of Fisheries, Elisabeth Aspaker, stated: 'Currently, we have sufficient knowledge to conclude that sea disposal in Repparfjorden will not have an unacceptable adverse impact on the seafood industry' (Holm, February 14, 2014).⁶¹ In other words, the government, with the Minister of Fisheries that should safeguard the fishery sector, insisted instead that mine tailings disposal in fjord systems—called dumping by their adversaries—is a sound environmental praxis. The prospect of a dead fjord made media headlines all through the process, and environmental protest gained global attention.

In March 2012, the final plan, which included references and comments to the 85 consultation statements and two objections—from the Reindeer Husbandry Board and the Sámi Parliament—was presented to the municipal council. There was, in addition, a third objection, from the Directorate for Fishery Region North that was not taken into consideration. This objection was excluded by the municipal administration because it came in several weeks too late. Had it been delivered in time, it could have led the municipal council of Kvalsund to refute Nussir ASA's zoning plan already in 2012. A planner in Kvalsund municipality said to me in an interview, in which s/

61 My translation from Holm (2014): 'Vi har i dag god nok kunnskap til å kunne konkludere med at sjødeponi i Repparfjorden ikke vil ha uakseptable negative konsekvenser for sjømatnæringen..., sier fiskeriminister Elisabeth Aspaker.'

he preferred to remain anonymous, that ‘This objection would have been particularly embarrassing for the Ministry of Trade, Industry and Fisheries, since the expertise in the Directorate for Fishery, Region North opposed its central political leadership’.⁶² Local activists opposing the fjord deposit refer to the withholding of this objection by the regional head of the directorate as something of a scandal.

On May 8, 2012, the council approved the zoning plan and disregarded the objections. The County Governor of Finnmark then initiated an unsuccessful mediation between Kvalsund municipality and the Sámi Parliament, and the case was sent on to the government for a final decision. In a letter of March 23, 2014, The Ministry of Local Government and Modernisation approved the plan on the premise that the affected reindeer herding districts and Nussir ASA came to an agreement on mitigating measures (KMD, 2014a). The ministry emphasised the importance of exploiting mineral resources and the positive local economic ripple effects. The estimated annual revenue from the mine was, at the time, NOK 600-700 million. To reiterate Eva Ramirez-Lodra et al.’s research on sea deposit practices, the research group found that ‘In most cases, submarine tailings disposal (STD) and sea mine tailings placement (DSTP) activities are taking place before sound scientific baseline information is available’ (Ramirez-Lodra et al., 2015, 18). It may thus be fair to claim that the Nussir zoning plan was pushed forward through a system perforated with knowledge gaps. It is only possible that it was enacted due to the arrangements of planners and politicians and the type and extent of consultations and evaluations. As shown above, these are not absolute but partial and are perforated by a series of redefinitions over time. The condition, set by the ministry, that the prospecting company and the reindeer herding district came to an agreement on mitigating measures on the mining operation has been criticised because, by doing this, the government left the question of Indigenous rights in the hands of corporate mining. The proposer of the zoning plan, Nussir ASA, did not come to an agreement with the reindeer pastoralists. Nevertheless, the planning process continued. The ‘thorny issues’ identified by Deneault and Sacher (2012) as a problem in developing countries turned out to be thriving in the process of industrialising northern outfields.

62 The withheld objection is referred to as something of a scandal by opponents and a municipal planner who wants to remain anonymous.

4.7 CONCLUSION TO CHAPTER 4

This chapter has looked into how global mining affects National industrial strategies in Fennoscandia. It has further followed the first years of the Nussir prospect. While prospectors get to define the prospect for the landscape, prospects from the mineral industry complicate the prospects for other outfield industries, such as tourism, harvesting, reindeer herding and coastal fishery. The Norwegian part of Sápmi is also often described as a vast landscape with an abundance of space and unexplored resources, particularly by those who plan to utilise the natural resources. I will elaborate on the “contiguous habit of viewing landscape as external to landscape encroachments” in Chapter 7. Global and seasonal migration routes of multiple species crisscross the Arctic and subarctic regions of Europe’s Nordic countries. It is a territory where it is crucial to be at the right place at the right time of year. Next, in Chapter 5, I give accounts of my encounters with members of three *siiddat* in reindeer grazing district 22, Fieltar, that the government firmly believes can find ways to coexist with a copper mine and discuss the proposed, layered combination of area usage in the mountain that comprise reindeer pastures and underground mining (with ventilation shafts).

Chapter 5 The Summer Mountains

5.1 INTRODUCTION

- Can you say *boazu*?
- Yes, I can say *boazu*:/’pɑ̃tsu:/.

One of the kids and I keep the coffee-fire while the reindeer herders prepare to round up a part of the reindeer herd and lead it to the calf marking fence. From where we sit, we see the Nussir Mountain, where a mineral prospector has found copper ore. If we’d moved a bit to look down the valley, we’d get a view over Samuelssundet, which is contiguous to Repparfjorden/Riehpuvuotna, where the prospect of the copper mine prescribes a mine-tailings deposit. (Field notes, Fied-darvággi, July 2018)

Sámi language is the working language in Sámi reindeer husbandry. *Boazu* is the North Sámi term for the semi-domesticated reindeer, and reindeer husbandry is *boazudoallu*. Social scientist and reindeer pastoralist Mikkel Nils Sara (2009; 2011a) explains that the reindeer is seen as a free being with its own nature:

Sámi herders do not always refer to their animals as *boazu* (reindeer living in compromise with herders). They use other general and all-embracing terms for them; reindeer are called and perceived as “lives”. To be more specific, there are several words in Sámi meaning “life”. Thus individual reindeer are often called *heagga*, which means “body life”. (Sara, 2011a, 150)



Fig 5.1: Calf marking, *miessemarkun* summons all the families in the *siida*. It is the main arena where the children learn to handle reindeer. The image taken early July 2014 in Kvalsunddalen shows how to walk with the ribbon to prompt the reindeer move from the large corral to the medium-sized pen.

The reindeer's annual migration routes follow the expanding and retracting snowcap, the frozen exhales and inhales of the Earth. Caribou, the French-Canadian term for the reindeer's wild relative, is a word derived from the Mi'kmaq word *galipu*, which means someone who shovels snow. The reindeer and the caribou follow the snowmelt, which provides conditions for sprouting grasses in the spring and precedes the autumn snowfalls, returning to the winter pastures with dry and cold conditions that make the snow possible to shovel. Every year, they walk back and forth on the tundra, in the taiga, in the boreal forests, in the coastal mountains all around the Arctic Circle. They cross rivers and swim to and from islands. The *boazu* can read people's intentions, and people bond with this charismatic being whose eyes are blue in the winter and brown in the summer. Losing the proximity to reindeer is traumatic.

This chapter presents the coastal mountains of Fálesnuorri/Kvalsund in the context of Sámi reindeer pastoralism, mineral prospecting and the praxis of landscape assessments. The landscape narratives in this chapter are infused with document studies and bring records of personal encounters and observa-

tions in different seasons from 2014 to 2018. It is important to note that this chapter does not provide any basis, legal or otherwise, for determining rights internally between different reindeer herding districts, *siiddat* (plural for *siida*) or *siida* members. The fieldwork methods are participant observation and qualitative interviews with members of the Sámi pastoral community in Fiettar and the CEO of Nussir ASA. The narrative is edited according to the order of the recurrent activities in the reindeer year. In addition, the chapter brings forward two cartographic components: first, a design investigation of reindeer marks as landscape cartography and, second, a close reading of the impact assessment for mining in Nussir and Gumpenjuni on “landscape, biodiversity, and outdoor recreation”. The latter is followed by a cross reading of media content and governance documents, revealing that, in the same time span, the landscape assessor contributed to the development of a new national landscape mapping tool: NiN-Landscape. With this tool, Norwegian landscapes are supposed to be mapped in keeping with the European Landscape Convention, but it deliberately excludes Sámi landscapes from the map. Given the power relations at play between diverse interests and stakeholders that voice concerns, ranging from national and corporate to those that reflect professional local area landscape practices and livelihoods, the content of this chapter prepares the ground for discussing how different ways of knowing—including the reindeer herders’ attentiveness to the reindeer’s knowledge of the seasonally changing landscape conditions in the district—can be charted in new dialogues about future landscapes.

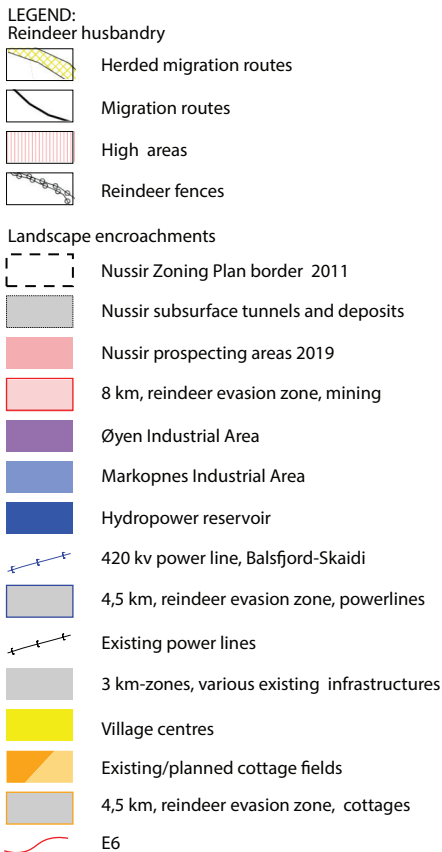
5.2 FIETTAR REINDEER GRAZING DISTRICT

During May, thousands of reindeer calves are born in Kvalsund/Fálesnuorri municipality (Fig 5.1). Reindeer have, for millennia, stayed in these coastal mountains from spring to autumn. Historic tax protocols document that

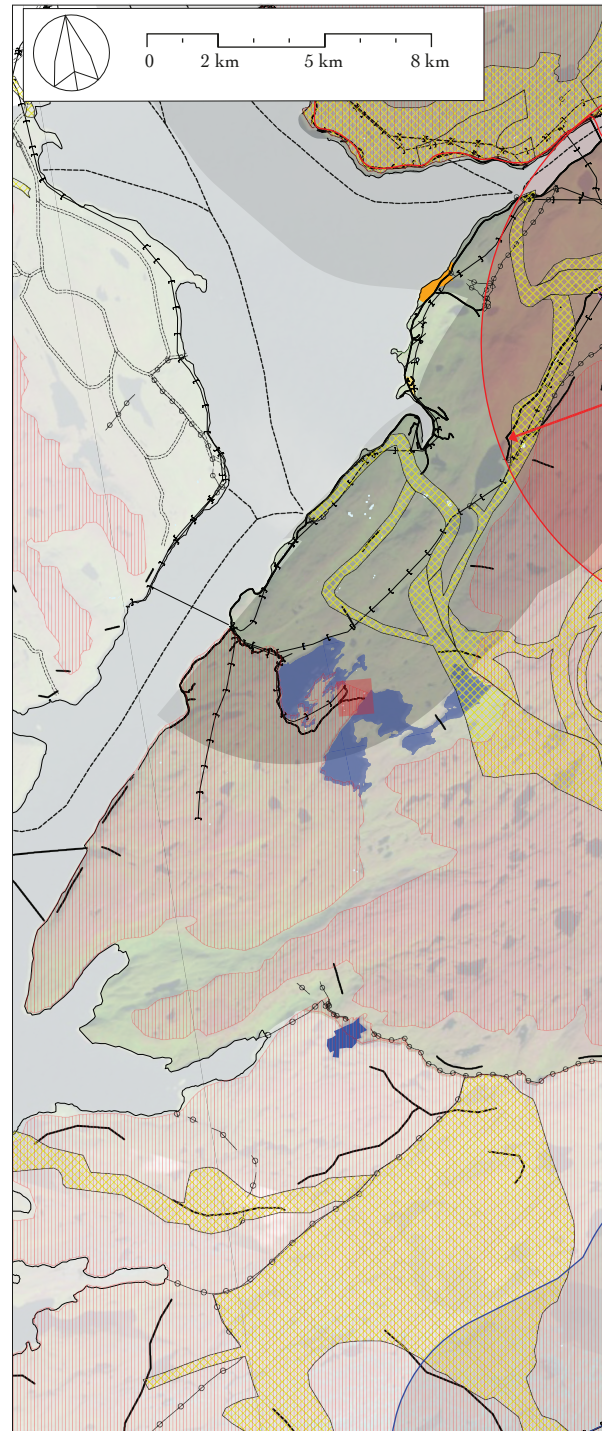
‘The area along the south coast of Riehpovuotna/Repparfjorden has been summer pasture for nomadic *siida* reindeer husbandry for at least four hundred years’ (Lango, September 11, 2017).

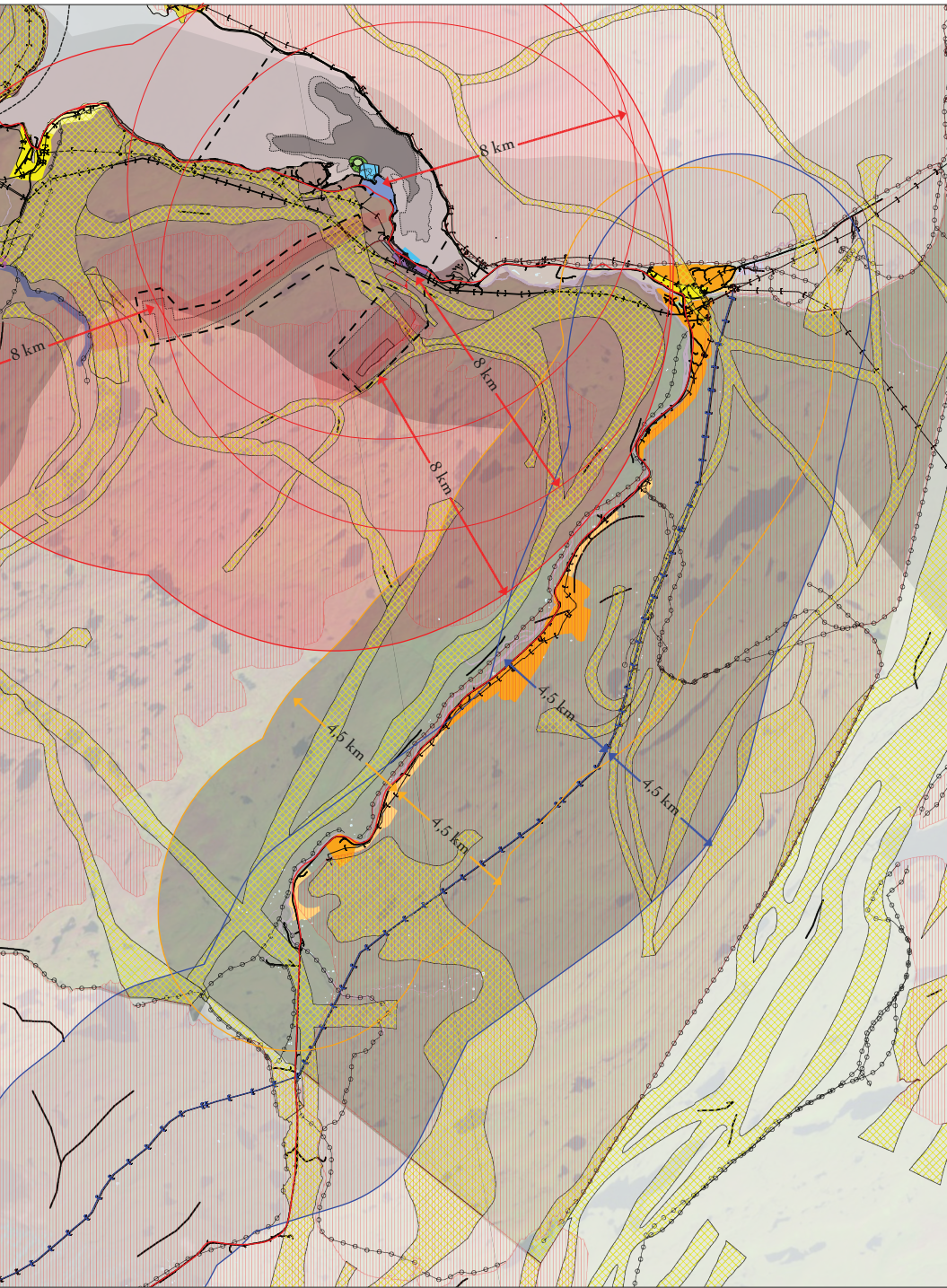
Reindeer grazing district 22, Fiettar, is both a geographic entity and an administrative unit, Fieddarhasat, with a council and a leader that is elected by the members of the *siiddat* that reside within the district borders during the summer (Bjørklund, 2013). They live in the summer lands from early spring to late autumn—from *gidđa* to *skábma*. In 2013, approximately 120 reindeer owners with registered reindeer marks belonged to the Fiettar district. In 2016 the district had 14 family-based *siida* units, comprising 106 reindeer

Fig 5.2: The Fiettar district with infrastructure and cottages. Based on the documents of the impact assessment, the map juxtaposes the Nussir zoning plan (scaled and rotated) in the geographical context. It shows the proposed, layered combination of area usage. Red circles with a radius of 8 km designate the experience based zone that reindeer avoid around mining activity other places. Evasion zones are shown on the map in light red, inspired by the method used in Ren-Gis, which shows how the impacts on reindeer pastures have much more significant consequences than the size of the actual encroachment. Such zones give an indication, but must be further adjusted to the local condition.



Map sources: Høydedata (Georange.no), Satellite Image, Nasa; Reindeer husbandry: Landbruksdirektoratet (kilden.nibio.no); hydro power: NVE (georange.no); Industrial area, cottage fields, village centres, existing powerlines: Kvalsund Municipality plan of 2004; Nussir zoning information: Didriksen, 2011 and Directory of Mining (dirmin.no).





owners (Norwegian Agriculture Agency, 21.12.2016). Fiettar is one of three summer grazing districts in Kvalsund municipality. They arrive when the herd belonging to district 20, Fálá, have already passed through Kvalsund, and those from district 21, Gearetnjarga, have passed Skaidi. In the autumn, the reindeer herders of Fiettar depend on the reindeers' voluntary movement through Ásavággi and around Gumpenjuni, so that they can congregate in Ásaroaivi by the southern district border. The herds from the neighbouring district, Fálá, then use the valley as a rutting area. They all belong to the Nourtabealli/Eastern range pastoral system in West Finnmark that I will describe in more detail later in this chapter.

5.2.1 Landscape Encroachments

Over the years, the *siiddat* in Fieddarhasat have adapted to a bit-by-bit encroachment of grazing land. When Nussir and Kvalsund municipality presented the assessment programme for mining in the Nussir and Gumpenjuni Mountains in 2010, a large number of infrastructural projects, including a 420-kW power line and a wind-power plant, were planned simultaneously (Fig 5.2). It has been decided in court that the critical limit for loss and degradation of pastureland has been reached for the summer ranges in district 22, Fiettar. As I referred in Chapter 4 above, the then leader of Sámi reindeer herding district 22, Fiettar, Mikkel Nils Sara, explained it in this way to the author Svein Lund:

‘Nobody understands that the plans and the threats they pose are already an encroachment on reindeer pastoralism. It takes all the energy we should be using to develop our own practice’ (Lund, 2015, 93).⁶³

Since the early prospects for the Nussir ore were made known in 2005, Fieddarhasat has stated its assertion that mining in Gumpenjuni, Nussir and Ásavággi cannot be implemented without inflicting irreversible damage on the Sámi reindeer pastoralism in the area. The district's consultancy statement about Nussir's zoning plan in 2011 stated that:

Mining will further reduce valuable land, threaten the balance between “spatial entities” [that the reindeer use under shifting weather and insect conditions], and create uncertainty about the future natural resource base that the traditional nomadic *siiddat* (plural for *siida*) and settled communities build upon. (Sara, Consultancy Statement,

63 My translation of: ‘Ingen ser at bare planane og trugsmåla allereie er eit inngrep i drifta vår. Det tar alle kreftene vi skulle brukt til å utvikle drifta.’

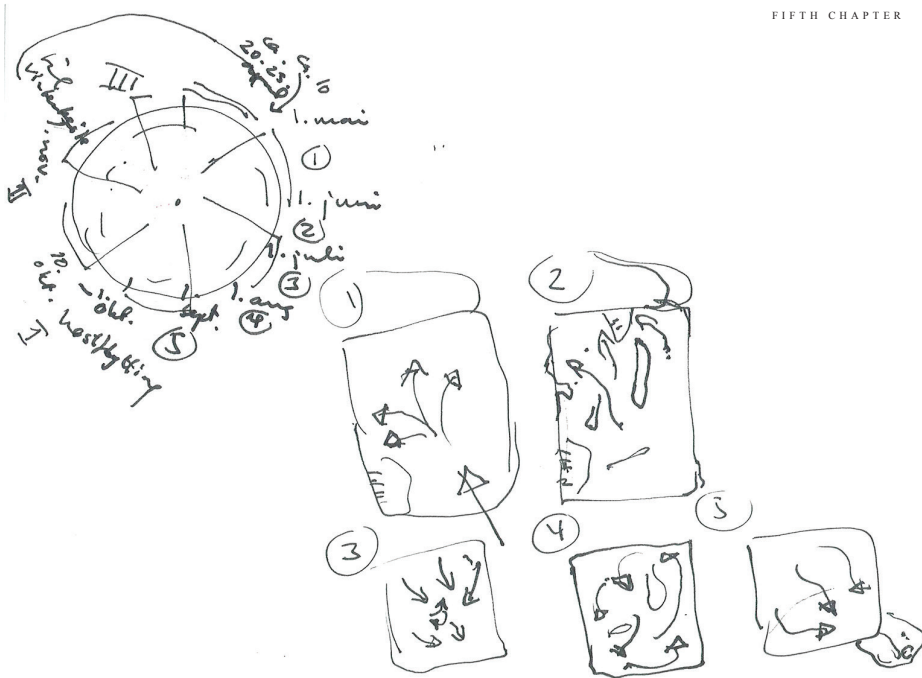


Fig 5.3: 1: The herds arrive by the end of April, the first days of May, they are led to each siida's customary calving ground. 2: At the beginning of July, the herds are collected and led to pasture-gardens to prepare for calf marking. 3: after calf marking the herds walk big circles in the whole district, combined with daily, small circles between lower areas for food and higher areas for cooling down and get rid of insects. 4: August, the males begin to herd groups of fe-male reindeer and calves. 5: September, the reindeer start moving southwards along their migration routes.

2011a)⁶⁴

The only remaining walkable passage along the Gumpenjunki Mountain was of special concern, apart from further fragmentation and depletion of the pasturelands in a district that is already heavily charged with landscape interventions. The plans for wind power were turned down, but, six years later in 2017, the district lost the case of the 420-kW power line, and the situation with the mining prospect had worsened.

5.3 GRAZING CIRCULATION





In a conversation back in 2013, Mikkel Nils Sara pedagogically explained to me the importance of timing the herd's arrival at the spring-summer grazing lands with the snow melt and the early greening, with green plants sprouting:


64 My translation of [and comment on]: 'För det reducerer verdifulle arealer, truer balansen mellom arealenhetene og skaper usikkerhet om det fremtidige grunnlaget som tradisjonelle nomadiske siidaer og bofaste lokalsamfunn er bygd på.'


Fig 5.4: Important high lying summer pastures and migration routes. The mountain pastures are covered with snow in April when the reindeer arrive and in May during the calving. Reindeer prefer to follow the terrain formations. On the migratory path along Reppar-fjorden, they need to cross the terrain formations. This section and section-perspective through a terrain model show the rifts and valleys where reindeer can get lost if they are disturbed during the migration.

LEGEND:


Reindeer husbandry


-  Herded migration routes
-  Migration routes
-  High areas
-  Reindeer fences

 Nussir subsurface tunnels and deposits

 Nussir prospecting areas 2019

 E6

 420 kv power line, Balsfjord-Skaidi

 Existing power lines

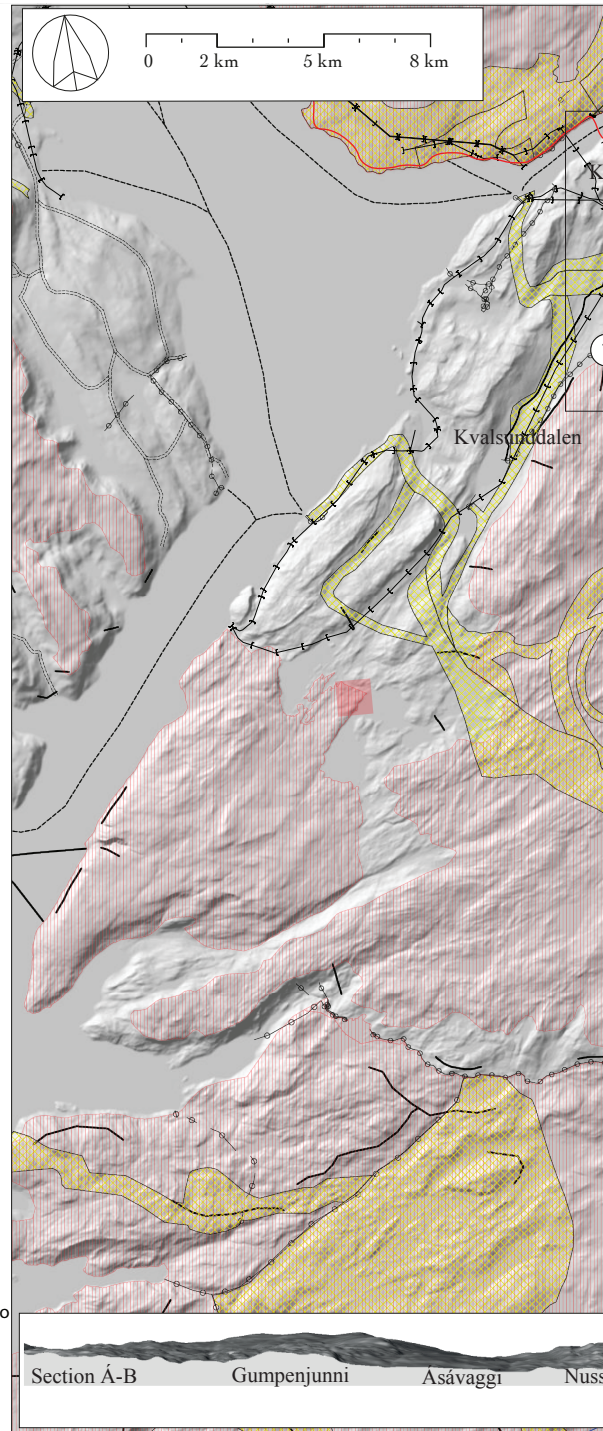
① *Calf Marking fence*

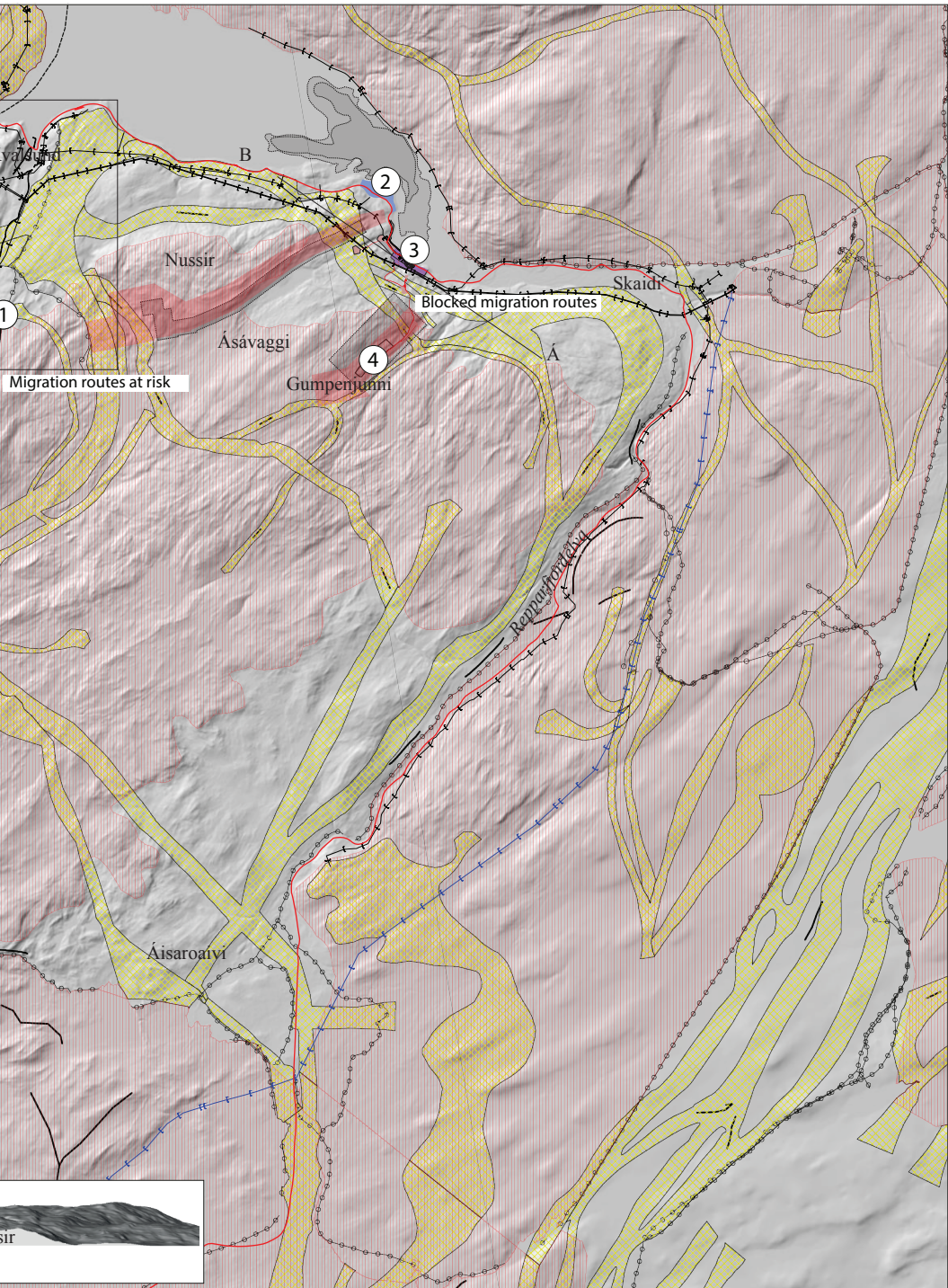
② *Markopnes*

③ *Øyen industrial area*

④ *Abandoned mining pits*

Map sources: Høydedata (Geonorge.no). Reindeer husbandry: Landbruksdirektoratet (kilden.nibio.no); hydro power: NVE (geonorge.no); Industrial area, cottage fields, village centres, existin powerlines: Kvalsund Municipality plan of 2004; Nussir zoning information: Didriksen, 2011 and Directory of Mining (dirmin.no).





'When the reindeer come from the mountain pastures, they must be slowly accustomed to the rich nutritious grasses, and it is detrimental to their well-being if they arrive too late' (Interview at the Sámi University, Diehtosiida in Kautokeino, June 2013).

The winter *siiddat* migrate independently and arrive at different entry points at the southern border of Fiettar at the end of April. From these entry points, they spread out in the terrain, and the female reindeer seek out their calving grounds to stay there for the next five weeks or so. Sara drew a diagram (Fig 5.3) to convey the different phases the reindeer stays in the summer grazing land of Fiettar. The reindeer are constantly on the move in smaller and larger circles when they are in a seasonal pastureland; they eat while they walk in their grazing circulation between different landscapes and snowscapes, depending on insect, snow and weather conditions. While the female reindeer and calves stay in the mountains away from disturbance, the males seek out the richer pastures along the shore of Riehpovuotna. At another occasion, the leader of one of the *siiddat* told me that there could be up to 12 generations of mothers and daughters walking together in such a group, a *čora*. Good female reindeer walk together with their daughters, granddaughters and great granddaughters. Since the reindeer themselves create the pastures, by choosing or avoiding areas to graze and fertilise, they are the designers setting the terms for coexistence.

Man is thus affected to make up his mind and judgements, from the perspective of the reindeer, and to seek knowledge of nature and landscape, based on the movements of the reindeer there. (Sara, 2003, 246)

Males and older experienced females can be tolerant towards human activity and prioritise access to food, while 'Most female reindeer avoid disturbances, especially during the calving' (Vistnes and Nelleman, 2011, 9). Disruptive human activity thus carves "a void" in the grazing movement of the herd (Fig 5.4). The topography is particularly challenging in the western part of the Fiettar district, but Ásavággi secures access to the different landscape entities. Ásavággi rests between Nussir's steep east side and the stony and ragged massif of Gumpenjuni, the Wolf Nose. The economist Erik Reinert has compared the blocking of this migration passage to the removal of a stair in a house and the ensuing loss of access to entire floors (Reinert, 2012). The Ásavaggi valley is a calving ground and preferred nursery for many of the female reindeer that choose to spend the vulnerable first weeks of their newborns there. 'A change of calving ground represents considerable disruption for both reindeer and herders, and is contested especially by fully grown females' (Sara, 2011a, 151). The herders appreciate the reindeer's knowledge of the places they return to and recognise as home places. In 2017, Then-

leader of the district, Cathrine Lango reiterated the importance of the areas and wrote in the consultancy statement on Nussir's concession application:

The mining company representatives have shown little will and interest in seeking knowledge about the reindeer husbandry's use and management of the relevant areas and thus have not gained any understanding of the reindeer husbandry's usage pattern... the summer grazing district as a coherent entity is an essential prerequisite for the pursuit of reindeer husbandry. (Lango, Consultancy Statement September 11, 2017)⁶⁵

5.4 CALF MARKING / MIESSEMĀRKUN

The birth of new calves marks the start of a new reindeer year. In North Sámi language, May is named the reindeer calf month, *Miessemánnu*. During the summer months, there are two major events in reindeer husbandry: calf marking/ *miessemearkun* and autumn slaughter. 'In early summer, *gidásgeassi*, June, earmarking of the calves is done in some *siida* in Western Finnmark, while other *siida* might earmark in the autumn' (Eira, 2012, 23). To have a registered earmark gives the right to perform reindeer herding that includes customary rights to reside and utilise outfield resources in customary seasonal territories. 'As such, a personal earmark embodies an individual right to own reindeer, and owning reindeer gives the possibility of engaging in pastoralism, developing a herd, and prescribing rights to land' (Johnsen et al., 2017). At any given time, there is an approximate correspondence between the "ears" in the terrain and the practising reindeer owners (Fig 5.5). It is possible to have a registered earmark without owning a reindeer, so there will be more earmarks registered in the annually updated earmark register of the authority. Regional reindeer-mark tribunals approve new earmarks in the register and remove earmarks from the register. One reindeer owner told that her son got his earmark approved without question, while there were complaints about her daughter's earmark. The approval and disapproval is one of many practices revealing the inevitable power structures imbedded in reindeer husbandry management.

Children and youngsters very much want to be present when the herd is collected in the working fence; that is one of the few occasions

65 My translation of: 'Gruveselskapets representanter har vist liten vilje og interesse til å sette seg inn i reindriftens bruk og forvaltning av de aktuelle områdene, og har således tilsynelatende ikke ervervet noen forståelse av reindriftens bruksmønster' and 'sommerbeitedistriktet som en sammenhengende enhet, er en essensiell forutsetning for utøvelse av reindriften.'

where multiple generations have common activities and conversation subjects. (Sara, 2003, 248)⁶⁶

During the calf marking, the pastoral community see their reindeer again and document how many of the calves have survived the first critical weeks. In the pastoral communities, the families devote a lot of effort to bringing children out to participate in reindeer husbandry activities in all kinds of weather.

5.4.1 By the Reindeer Fences

Fieddarhasat prepares for earmarking. The reindeer herders round up the reindeer in the mountains and lead them to pasture gardens by the marking fences (Fig 5.6). That takes several days. The pasture garden in Fieddarvággi stretches from Náivuotna (Neverfjord) to Kvalsund. During the calf marking fence-work, the *siiddat* stay in Fieddarvággi for one to two weeks. Along the road, there are cars, caravans and trailers for storage. On the mountainside, there is a tent camp in close proximity to the calf-marking fences.

July 2014, I had an unspecific appointment for an interview with the then leader of the Fiettar district. I met up at the calf-marking fence in Fieddarvággi/ Kvalsunddalen. Earmarking is a family event. The calf-marking fence was on a small shelf with a hill on the east side of the valley. A group of young people were covering the working fences with tarp. The temporary architecture of the translucent tarp followed the contours in the landscape (Figs 5.7). It reminding me of land art; Christo's 'Running Fence'. One of the *siida* members explained to me that understanding and working "with" the reindeer's horizontal movement through the landscape is key to knowing where to place the reindeer fences.

I lingered at the hill, slowly realising that there was not going to be an interview. A woman came towards the working fence with a baby stroller. It was Eli Ristin Skum. She recognised me from a seminar the previous year. Eli and Per Johnny Skum include the children in all the pastoral activities. When they invited me to take part in their activities, the reindeer fences and the mountains became a learning environment also to me. From then on, I was associated with their family by the members of the pastoral community. Learning about the landscape through practical experience gives depth to the theory that can be learned from attending seminars and reading research literature.

66 My translation from Sara (2003, 248): 'Barn og unge er svært gjerne tilstede når flokken tas inn i arbeidsgjerdet en av få tilfeller der flere generasjoner har felles aktivitet og samtaleemner.'

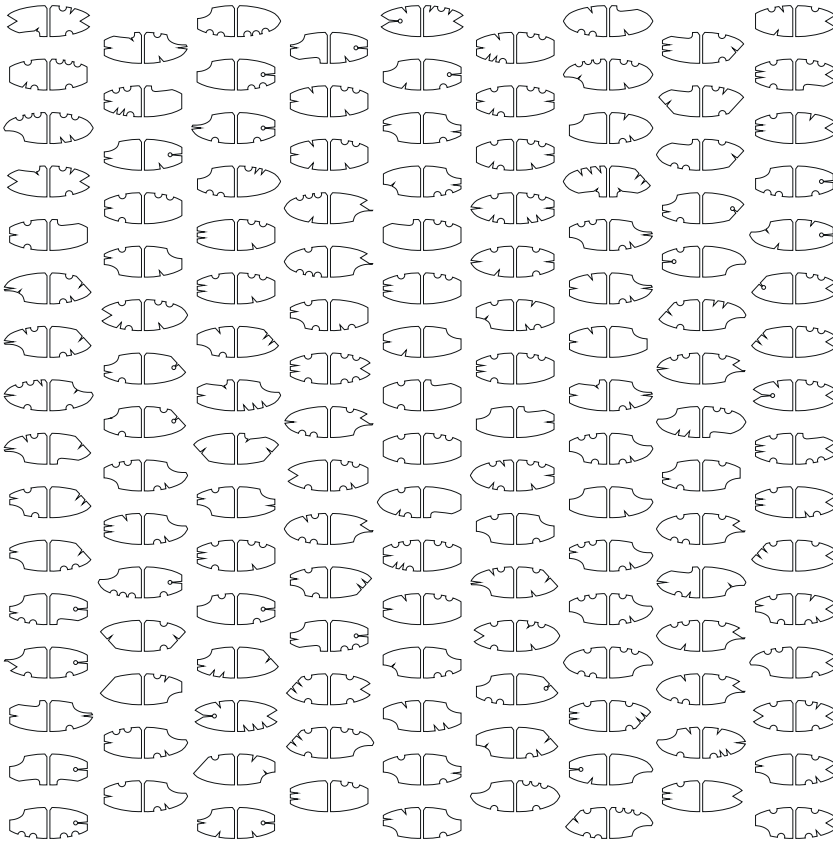


Fig 5.5: Reindeer marks of members of the Fiettår summer grazing district by August 2014.
Source diagram: The reindeer mark register.

In the next couple of paragraphs, I briefly describe the flow from the pasture garden, through the pens and corrals in the calf-marking fences, to the summer pasture. This procedure is repeated one to three times every night until the whole group of reindeer has been through the fences. The reindeer cannot be held in the fences when the temperature is too high, so the community work at night and try to sleep during the warmest hours of the day.

A part of the herd of reindeer is first gathered from the pasture garden. The terrain is challenging, and the use of drones reduces the need to go with ATV four-wheeled all terrain bikes to the most dangerous places, as well as relieving the vegetation from wear and tear. The reindeer is led to a corridor, between two parallel fences, that is one kilometre long. A group of good run-



Fig 5.6: Fieddarvággi/ Kvalsunddalen. The reindeer fences are in the middle ground to the right in the image. The community centre is in the middle of the image where the fjord meets the valley. The camp is sprawled along the long fence between spring and summer pastures on a shallow plain in the mountainside of the Kvalsund Valley/Fieddarvággi.



Fig 5.7: The fences are temporarily covered with textiles during calf marking.



Fig 5.8: A part of the herd have been running through the corridor. Something has spooked the first reindeer and the rest turns and move back just at the arrival of the large corral.



Fig 5.9: All the reindeer went through to the medium pen.

ners wait at the entrance to run behind the reindeer to the end of the corridor, where a small hill blocks the view to the corral/*gárdi* so that the reindeer do not attempt to turn and run back (Fig 5.8). Sometimes they did.

When the reindeer have calmed down in the *gárdi* and are walking in a slow circle, as many people as possible hold orange ribbons to lead the reindeer into the next corral (Fig 5.9). While the reindeer regroup in a calm circular walk in the medium-sized corral, the families in the camps get ready to work in the smallest corral, the *girdnu*. In the medium-sized corral, a group of pastoralists now isolate a smaller group of reindeer, about 40, which they chase into the *girdnu*. In the *girdnu* the reindeer run in a narrow circle, male reindeer are drawn out and released directly to the summer pasture. A female reindeer with calf is an *áldu*. Representatives from the neighbouring district, Fálá, are present to collect Fálá-reindeer that have been mixed with the Fiettar herd.

The children have their own task in the *girdnu*, they capture calves [*miessi*] and bring them to a person who is responsible for giving them a yellow number sign. The female reindeer and the calves are growing summer fur and new antlers. Shed winter fur swirls in the air and covers the floor. The new antlers are soft and delicate, and the reindeer are handled with caution, so that antlers do not break.

Standing outside looking over the fence of the girdnu I am told that a child and a calf have the same strength balance as a grown up and a fully-grown reindeer. (Field notes, July 2014)

When all the *miessi* carry number signs, they are let back into the biggest pen, the *gárdi*, where *áldu* and *miessi* start searching for each other while the next group of reindeer comes storming into the *girdnu*. The process is repeated until all the males are in the summer pasture and all the calves have number signs hanging around their neck and walk with the females in the large pen. Some calves and mothers have already found each other and walk calmly or lie down in the grass. Some of them, bleating and grunting, run around, calling for each other. They are let in peace for a couple of hours to calm down. The reindeer calf river, *Miessejohka*, runs through the fence so that the reindeer has access to water. It is time to have a coffee by the campfire. After a while, the reindeer owners go to the large pen to observe the reindeer that are now circulating calmly, calves and mothers together. They are going to match the list of the numbers that the calves carry with the earmarks that their mothers carry. They have binoculars, and, when they are in doubt about which female a calf belongs to, they observe more and discuss a



Fig 5.10: Per Johnny Skum and Eli Ristin Skum present a calf for their youngest son before marking it with his reindeer mark.



Fig 5.11: The smaller kids play on the boulders between the tents and the girdnu.



Fig 5.12: Conversations by the coffee fire.



Fig 5.13: The Reindeer Calf River and the view towards Suolvággi with the Nussir Mountain in the background.

little longer. When everybody has come to an agreement regarding ownership of the calves, the herders come to the campfire and continue the conversation.

Like by a signal people from all the fireplaces congregate in the *gardi*. Now the task is to get all the reindeer into the medium-sized pen once more. During the second rounds in the *girdnu*, the children capture the calves and shout their numbers. The owner of that calf then comes and brings it to the stockade wall, where it is laid down and fixed to the ground so that it is possible to cut its ears. The children are getting calves of their own. Per Johnny Skum chooses calves with easily recognisable fur patterns and introduces them to his children (Fig 5.10). His oldest daughter got a calf with black, red and white patterns. White patches are called milk stains, and he said that this calf looked like the calf had been bathed in milk. Per Johnny Skum maintains the old pastoral documentation system and sews one cut-off from each mark on a string, to preserve them and compare the yield from year to year (see Fig 8.4). Other parents in the *girdnu* are supervising teenagers regarding how the knife has to be held to be able to make the different incisions when they cut their personal mark in the reindeer ear. When the calf is released, it shrugs and calls insistently for its mother. To make sure that the mothers and calves find each other once more, they are let back into the big pen.

When all the calves have been marked and the herd have calmed down in the *gárdi*, a large section of the fence is discretely opened. The first reindeer that sees the opening runs through, with the rest following closely. Then they run up the mountainside towards Ásavággi and disappear out of sight. I am told that each *áldu* bring their *miessi*, as far away as possible from the earmarking fence. This implies that the location of the fences is a part of the management of the reindeer circulation in the summer lands.

5.4.2 By the Reindeer Calf River

The fence work is the reason for this congregation of people, but a lot more is going on. The children participate in the fence work, but they do a lot more than learning to handle reindeer in the *girdnu*. Most of the time the reindeer are not in the corrals. All those other hours of the day, the children are playing and socialising with each other, playing by the river or roaming around in the mire. Three large boulders between the *girdnu* and the tents constitute the main hangout for the children (Figs 5.11). On and around the boulders, there is a miniature landscape with colourful toys: buckets, shovels, toy lorries and toy cars. Stones and sticks, arranged as fences, sand roads and mud-dams change position from day to day. Sometimes the *girdnu* serves as a football pit.

For reindeer herders, mountains and wilderness are not just nature and not just workplaces but a larger community that includes life form, identity and human growth. Within the framework of such a whole land and water in general, but also landscapes and places by name mention, is valuable to them, because these holds very much of their life values. (Sara, 2003, 248)⁶⁷

We sit around the fireplace, talking about how it is to be here (Fig 5.12). A twenty-year-old girl finds it hard to sleep during the heat of day and says that she finds all this waiting tedious. A woman says that the life in the camp is the whole point of being here; it's like being at a festival. A second woman asks: 'Does it not just astonish you how much energy is invested in the ear-marking? Just think of how many people we are here, a hundred at least, and we all stay until the work is finished!' Much time is spent on collecting firewood, maintaining the fire, cooking, drying clothes and charging the batteries of the mobile devices for humans and reindeer, driving down to the road and then to the shop, comforting the children when they have had a quarrel or have fallen in the creek so that they need dry clothes, driving to the hotel in Skaidi to have a shower and a bathe in the pool, spending time contemplating the landscape or going to a nearby fishing lake.

I am awake in my tent and listen to the sound of water and air bubbles that dance down the little creek, Miessejohka [Reindeer Calf Creek]. I wonder if the blasts from the possible future mine will intrude on those gentle sounds. I hear the girls wake up, small voices. Then, with a definite sound, they zip up my tent door and squeeze inside. 'We are going to catch rihcce,' the oldest sister proclaims.

'What is a rihcce?

They answer that "rihcce" are small animals that jump and swim.

Frog. Rihcce.

On the other side of Miessejohka (Fig 5.13), there is a mountain wetland, a small mire sprinkled with tiny streams and pounds (Fig 5.14), where the

67 My translation from Sara (2013): 'For Reindriftssamen er fjell og villmark ikke bare natur, og ikke bare arbeidssted, men det er også et bredere samfunn som innbefatter levesett, identitet og menneskelig vekst. Innenfor rammen av en slik helhet er land og vann generelt, men også landskap og steder ved navns nevneelse, verdifulle for dem, for i disse ligger svært mye av deres livs verdier.'



Fig 5.14: During the break, the older kids roam in the small wetland by Miessejohka.



Fig 5.15: The children learn to respect biodiversity. When they capture frogs, they are told about the Maddu - the spiritual mother of all frogs that protect them against harm.

older kids roam around. The sisters have found the courage to join them, and soon tiny frogs inhabit the landscape between the boulders, swim in colourful buckets or escape from the mud-dams (Fig 5.15).

When we sat by the campfire that night, Adja [Grandpa] warned: 'Do not harm the frogs, because if Rihcce Maddu, the big frog-mother, can't find her children, she will go searching for them while you are sleeping. If they are dead, she will grab those who killed them.' That was a rather scary story, and the girls collected the frogs that hadn't already escaped and brought them back to the mire. (Field notes, Kvalsunddalen, 2016)

The Maddu is a spiritual animal (Kramvig and Pettersen, 2016, 138). The story of the great frog, the Rihcce Maddu, is a traditional Sámi story that has been passed on between generations. In Just Qvigstad's collection of Sámi folk tales and fables told by Sámi storytellers from between 1927 and 1929, Elen Ucce from Kautokeino told him that everything has a guardian mother, an ancestress:

One says that even the beetle has a Maddu. If you kill it while it's not on people's belongings, they start to come, and in the end Maddu also comes to suck the blood of the human, so that it dies immediately. (Qvigstad, 1928, 475)⁶⁸

Eli Ristin Skum says that these kinds of stories, or fables, teach the children respect for nature, to care about the creatures that live in nature, included insects.

To learn about life is to learn about death. To be able to live in the Arctic, with its (near) unpredictable changes in weather conditions, one has to respect nature, and be sensitive as well as respectful toward others who live on the same land. This must be learned. (Kramvig and Pettersen, 2016, 138)

The fireplaces of each family are gravity points. We check in there, sit there, in alert relaxation, to anticipate when there is going to be action in the fences.

68 My translation from Qvigstad (1928, 475): 'Man sier at også tordivelen har en maddu. Når man dreper den og den ikke er på folks saker, begynner de å komme, og tilsist kommer også Maddu og suger blodet av mennesket, så det straks dør.'

Eli glances towards the fence, and when she sees that it is about to be opened, she gets to her feet and says: 'Come, let's go and see when the reindeer leave, that is one of my favourite sights.' A white reindeer cow lags behind and calls for her calf that struggles to keep up with the pace. (memory, 2018)

The Nussir Mountain is located at the northeastern end of a continuous mountain ridge between Fieddarvággi and Ásavággi. Leaving the *gárdi*, the group of reindeer, the *eallubihta*, moves like a river running upwards and out of sight to find passage through the mountain passes that lead to Ásavággi, which, in turn, offers passage further into the summer grazing land. Sámi pastoralists do not call the reindeer a grazing animal. As articulated by Mikkel Nils Sara:

From the perspective of a reindeer herding practitioner, use of the term “grazing animal” as a general characterization of reindeer, is both reductionist and distance-dominated. (Sara, 2011a, 149)

Imagining following the *boazu* across the ridge and out of sight, the perspective shifts to that of the landscape assessor. On the other side of the ridge, the *boazu*, now “grazing animals”, enter one of the “landscape areas” that was assessed in the Nussir and Ulveryggen Copper Mine Impact Assessment of 2011.

5.5 NUSSIR ASA'S LANDSCAPE ASSESSMENT

The Environmental Impact Assessment on Landscape, Outdoor Recreation and Biodiversity on Land and in Fresh Water, in connection with the mining prospect in Kvalsund, was conducted by Sweco, that is Nussir ASA's consultant in developing the zoning plan and EIA. Unlike the other thematic reports in the EIA, that were conducted by external experts, Sweco kept the landscape assessment and valuation within their own organisation and combined it with the assessment of biodiversity and outdoor recreation (Fig 5.16).

The landscape areas in this case were assessed according to a different definition of landscape than that of the ELC, namely that which is in use in NIJOS's landscape valuation system. A “landscape area” is ‘defined as a visual, spatial unit in the landscape, as a rule bounded by the hills at the top of the selected field of view’ (Frilund and Simensen 2011). Be reminded that the methodology for assessing the impacts from an infrastructural project, such as a mining prospect, is based on a system for unprized effects developed by

the Norwegian Public Roads Administration that is fully incorporated in the impact assessment routines in Norway (Lindhjem et al., 2015). The impact of an infrastructural encroachment is determined by comparing the scope of the encroachment with the value of the area. The impacts of the encroachment are then graded in a 9-part scale, ranging from a very large positive consequence to a very large negative consequence. If the area in question holds a great value, the impact of an encroachment in question will be assessed to cause large consequences. If, on the other hand, the area in question holds a minor value, the impact of the same encroachment will be assessed to cause minor consequences.

The themes to be included in the EIA were defined, in 2008, by Sweco in the proposal for the Assessment Programme (AP). The AP includes prescriptions to use the methodology that follows the Norwegian Institute for Agricultural and Forest Mapping's classification system for landscape, regarding the landscape typology, the landscape character and the assessment of the landscape value. According to that method, 'Visual impacts on the landscape character shall be visualised by photorealistic representations, described textually and evaluated' (Frilund and Simensen, 2011, 13).⁶⁹ It is interesting to note that the municipality gave away its possibility to define the themes, means and definition of methods in the landscape assessment. Through interviews in the Kvalsund area in 2014, the social science scholars, Halvor Dannevig and Brigit Dale, found that, while the EIA had assessed the potential impact on reindeer herding, cultural heritage and outdoor recreation, other forms of traditional resource use in the Repparfjord area, such as hunting, berry picking and fishing, had been wittingly under-communicated: 'The head of the municipal administration made an assessment report of how other users' interests would be affected by the mine, but the politicians on the municipal council did not want to use it, as they were afraid it would provide arguments against the zoning plan' (Dannevig and Dale, 2018, 164). Their finding suggests that it mattered for some *not* to focus on cultural landscapes.

The municipal council of Kvalsund municipality approved the AP at the council meeting on July 20, 2010. In keeping with the AP, landscape architect Trond Simensen and biologist Gunn Frilund at Sweco then assessed the consequences of the planned mining operation and concluded that the project

69 Translation from Simensen and Frilund (2011, 13): 'Landskapet skal kartlegges etter metodikk som følger Norsk Institutt for Jord- og Skogkartlegging (NIJOS) sitt klassifiseringssystem for landskap med omtale av landskapstype, landskapskarakter og vurdering av landskapets verdi. Tiltakets påvirkning på landskapskarakteren skal visualiseres, beskrives og vurderes for de ulike landskapsområdene.'

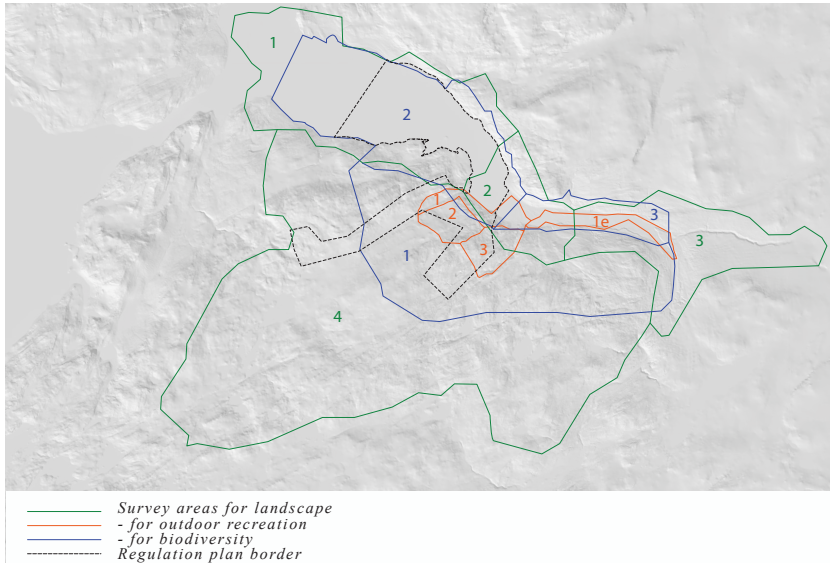


Fig 5.16: This map is a compilation I made of Frilund and Simensen’s survey areas. Landscape area 2, 3 and 4 is in the summer grazing land of the Fiettar district. Fiettar emphasises that the landscape is of importance to them and that the movement between the landscape entities is crucial.

would cause minor negative consequences for landscape, biodiversity and outdoor recreation. The assessment report contains “valuations” of landscape areas, biodiversity and outdoor recreation in separate survey areas, “descriptions” of the current situation and of the physical appearance of the mining prospect in three alternative designs and, finally, “assessment” of consequences and propositions for mitigating measures.

The conclusion of the landscape assessment has passed unnoticed in the media and has not been challenged, even by critics of the mining prospects, as in the critical assessment of the socio-economic impacts of the Nussir and Gumpenjuni prospect assessment by Vista Analyse (Ibenholt et al., 2016), commissioned by the Sámi Parliament. This lack of interest has, however, been commented on by research conducted by social scientists and anthropologists. Frode Bjørge and Ingrid Bay-Larsen, who, in their article, ‘Lost in Translation’, aim to give voice to the municipal administration and council, suggested that, due to scientific controversy about the planned submarine tailings disposal, local issues for the municipality disappeared from the agenda. ‘While environmental non-governmental organizations actively engage in questions related to marine ecology, few organizations participate in sharpening the focus on cultural landscapes, demographic and cultural

situation in the community, which are also issues of great importance to local decision makers' (Bjørge and Bay-Larsen, 2017, 7). For the project owner, Nussir ASA, it is, of course, good news that an assessment report passes unquestioned, but, if the threshold of the European Landscape Convention is taken into consideration, it is a clear weakness that information on the local traditional utilisation of outfield resources was excluded from the political decision-making process. The following quote from the consultancy letter in the hearing of the zoning plan states clearly that the themes of landscape, biodiversity and outdoor life are significant to the *siida* members.

The zoning plan is of major concern for reindeer grazing district 22, Fieltar, primarily because it restricts and affects the connectivity of the reindeer habitat, but it obviously also has significance regarding the *siida* members' additional resource utilisation and appreciation of biodiversity and pristine natural areas. (Consultancy statement, Sara, 2011b)⁷⁰

It is a weakness that the landscape assessment does not consider the Sámi pastoral *siida*'s relation to landscape. In the following, I will inquire why the Environmental Impact Assessment on Landscape, Outdoor Recreation and Biodiversity on Land and in Fresh Water failed to engage public debate (or, alternatively, succeeded in not fuelling public debate).

5.5.1 The Landscape Survey Areas

It was an assessment of three alternatives. The three alternative designs of the mining project have in common the tunnels, shafts, infrastructure and processing facilities, while employing different solutions to mine tailings disposal. The first alternative has mine tailings disposal in Repparfjorden. Alternatives two and three involve two different placements of mine tailings disposal dams in the mountain. While the report states that the only realistic option is alternative one, the two comparative options certainly introduce a measure of gigantic proportions. 'It would be 60 metres high and the longest dam in Norway' (Frilund and Simensen, 2011, 41).⁷¹ All three alternatives were assessed according to two different zero-alternatives: one with and one

70 My translation from Sara (2011b): 'For rbd. 22 Fieltar har reguleringen stor betydning først og fremst fordi det innskrenker og berører sammenhengen av reinens leveområde, men den har selvsagt også betydning hva angår siidamedlemmenes øvrige ressursutnyttelse og verdsetting av biologisk mangfold og uberørte naturområder.'

71 My translation from Frilund and Simensen, 2011, 41: En steinfyllingsdam for et eventuelt landdeponi ved Nussir vil bli Norges lengste damanlegg. Med en damhøyde på 60 meter.

without a planned 420-kV power line. In addition, the biodiversity assessment considered a proposed plan for a wind-power facility.

For each theme, Simensen and Frilund have selected discrete survey areas that, in turn, are divided into sub-areas with different characteristics. The survey areas for each theme are represented in the report on maps in different scales and appearances. To represent it in such a way is rather confusing, and I have superimposed the areas on the map above (5.16).

The biggest survey area is that of “landscape”, which includes areas up to ten kilometres away from the physical intervention in areas from which the interventions will be visible. The landscape study encompasses four areas: 1: Outer Repparfjorden, 2: Inner Repparfjorden, 3: The Repparfjord River including Skaidi, and 4: Guoiratrášša.

Impacts on “outdoor recreation” are subdivided into three areas: 1: the mountains above Folldal Verk and the areas around Dypelv and Fiskevatnan, 2: the forest belt and fjord areas, and 3: the Repparfjord valley and the estuary of the Repparfjord River.

Finally, three areas are assessed for impacts on “biodiversity”: 1: Dypelva, the industrial area, and 1e: the Repparfjorden River Delta, 2: the hillside over the industrial area, and 3: the area adjacent to Aresjohka. These areas comprise the physical interventions on land and an impact zone that is set to one hundred metres for flora and one kilometre for fauna. Frilund argues (on page 84) that the prospect is surrounded by open landscapes and that this indicates that the impact zone from noisy activities will be larger than it would have been in, for instance, a forested area with noise reduction and less visibility. While she mentions lynx and eagles that pass through the defined impact zone, it is interesting to note that she does not consider whether impacts inside the defined zones have consequences for the range of species she mentions. The assessment reveals that all three alternatives push the INON borders and lead to loss of areas, without major encroachment. When this happens, it is an issue, however marginal, but Nussir’s consultants belittle this by stating that:

‘The non-encroachment areas in Kvalsund are of relatively modest size compared to wilderness areas further south and east in Finnmark.

The project areas and the Repparfjorden River valley already are in areas influenced by major infrastructure. (Didriksen, March 06, 2011, 4)⁷²

Finmark holds all the areas without major infrastructure of some size that are left in Norway, and the area in question is among the largest non-encroachment areas in the country.

After being evaluated and valued, the impacts on these 12 partly overlapping study areas are assessed according to the matrix of prospect-alternatives. The results of the valuations are presented in eight lists, paragraph or tables, and the consequences are presented in 18 tables. The immense number of tables, maps and photo montages makes the report appear objectively detached and scientific. The document contains 27 maps of different scale and orientation; four landscape models looking like aerial photos; 17 landscape photos without people or animals; 17 photo montages of the tailing dams, seen from different locations; two very small comparable photos, showing tunnel entrances from other mines; 12 tables explaining the different valuation methodologies; and two tables explaining the terms in use in the assessment.

Simensen and Frilund assigned an average value score to all the landscape areas, all the fields of biodiversity and, with one exception, all the areas for outdoor recreation. The exception was the Repparfjorden River, which, due to its status as a nationally important salmon river, was valued as a “very important area for outdoor recreation”.

5.5.2 Spectacular vs Everyday Landscapes in the Meahcci

The areas that were assessed for their suitability for outdoor recreation were evaluated on a scale from one to five, according to 12 given criteria for outdoor recreation, set by the handbook of 2004 for Valuation of Outdoor Recreation Areas by the Directorate of Nature Management. The evaluation criteria are availability, usage frequency, users, suitability, function, experience qualities, symbol value, knowledge values, facilitation, extent, and degree of intervention. Regarding experience qualities, an area has great value if it is “special or outstanding”. “Outstanding quality-areas” for outdoor recreation are defined as ‘nature- or culture environments with special experi-

72 Translation of: ‘De inngrepsfrie områdene i Kvalsund er av relativt beskjeden størrelse sammenlignet med villmarksområder lenger sør og øst i Finnmark. Prosjektområdet ved Repparfjorden og dalføret langs Repparfjordelva, ligger i områder som allerede er preget av “tyngre tekniske inngrep”.’ (Didriksen, March 06, 2011, 4)

ence qualities for outdoor recreation and tourism that attract mainly national and regional users, but also having strong local importance’ (Frilund and Simensen, 2011, Appendix).

The landscape assessment emphasised visual qualities in the landscape areas that were mapped according to the methodology that follows the Norwegian Institute for Agricultural and Forest Mapping (NIJOS) classification system for landscape. As regards the *landscape typology*, the *landscape character* and the assessment of the landscape value (see Frilund and Simensen, 2011, 13), the system classifies landscape areas into A, B and C landscapes. Class A includes outstanding landscapes of great value that have qualities that give strong landscape experience to the observer. The typical landscapes of a region that have generally good qualities are class B landscapes. (B1 is the typical landscape without encroachments, B2 is the less diverse typical landscape with minor encroachments.) Landscapes of class C have minor value.

To unpack the rhetoric in NIJOS’ methodology, I take a closer look at Simensen’s assessment of landscape area 4, Guoiratrášša, which he typifies as a “hilly highland landscape” in keeping with the landscape-type categories in the database, Nature in Norway (NiN), hosted by Artsdatabanken (Norwegian Biodiversity Information Centre). He then characterises the landscape by describing the main landforms, subsidiary landforms, lakes and waterways, vegetation, agriculture and outfields, buildings and technical infrastructure, according to the NiN sub-categories. In this description, there are some passages of rather nice landscape writing. Simensen describes fields of bare rock, alternating with fields of peat and marshland, plains with boulder fields and interesting quaternary geological formations. He adds information about the geology: ‘These rocks are rich in minerals, and there are copper deposits that are interesting for the commencement of new mining in Kvalsund.’ And he describes ‘luxuriant and varied vegetation with willow and dwarf birch along the waterways... heaths with mountain avens (Reinroseheier) and other rich alpine vegetation.’ All the small waters and streams, he finds, ‘contribute to a mountain scenery with varied experience qualities.’ Then he mentions that: ‘The whole area is reindeer pasture with heavy grazing pressure’ (Frilund and Simensen, Sweco, 2011, 35).⁷³ Given this description, the landscape assessment takes notice of traces from the existing mining interventions and their

73 My translation of: ‘Særlig langs vassdragene er det frodig og variert vegetasjon med vier og dvergbjørk. Kalkrike berggrunn gir flere steder opphav til reinroseheier og annen rik fjellvegetasjon’ and ‘Det er reinbeite i hele området med stort beitetrykk.’

materialisation in and on the landscape:

Traces of mining from the 1970s are visible in parts of the area, in terms of roads, the open pit at Gumpenjinni, the Wolf Nose, several tunnels with smaller landfills outside and scattered traces of exploration for minerals. These interventions are rarely visible over long distances. However, there are several places with deep tracks from the use of all-terrain vehicles (ATV). (Frilund and Simensen, 2011, 35)⁷⁴

Finally, it classifies Guoirratrášša as a class B landscape:

The area is not unique in the region. The landscape has an above average value in the local context but is commonly occurring in the regional context. (Frilund and Simensen, 2011, 35)⁷⁵

The methodologies for landscape assessments contained in the national handbooks for landscape evaluation describe as attractive the more spectacular kinds of landscape. Such value criteria have been criticised from many perspectives. Archaeologist Audhild Schanche has argued that:

if priorities and the focus in the Norwegian versus the Sami cultural heritage work reflects differences in Norwegian and Sami landscape understanding, the differences show in monumentality vs. nature, high age vs. experience, object vs. task, social status versus religious significance and expert knowledge versus local knowledge. (Schanche, 2002, 157).⁷⁶

Cultural bias has also been noted as a weakness in landscape valuation

74 My translation of: ‘Spor etter gruvedrift på 1970-tallet er synlig i deler av området i form av veier, dagbruddet ved Ulveryggen og flere tunnelpåhugg, med mindre deponier utenfor og spredte spor etter prøveboring etter mineraler. Disse inngrepene er sjelden synlige over store avstander. For øvrig er det flere steder tydelige spor etter kjøring med terrenggående kjøretøy (ATV).’

75 My translation of: ‘Vekslingen mellom en rekke mindre landskapsrom gjør at landskapet oppleves som variert, med fine opplevelseskvaliteter knyttet til små vann og vassdrag, variert fjellvegetasjon og særpreget berggrunn. Området er ikke enestående i regionen. Landskapet har en verdi over gjennomsnittet i lokal sammenheng, men er vanlig forekommende i regional sammenheng.’

76 My translation from Schanche, 200, 157: “dersom prioriteringer og fokus i det norske versus det samiske kulturminnevernet reflekterer forskjeller i norsk og samisk landskapsforståelse, går forskjellene på monumentalitet kontra naturnærhet, høy alder kontra erfaringsnærhet, gjenstand kontra gjøremål, sosial status kontra religiøs betydning og ekspertkunnskap kontra lokal kunnskap.

methodologies. Landscape theorist Andrew Butler (2016) has theorised the hidden dominance of the ‘objective’ outsider; landscape preferences among landscape planners and experts do have an influence on landscape valuation. In this regard, it is interesting to note that landscape architect Trond Simensen maintains a photo-blog with landscape photographs, in which he presents himself as an outdoor recreation and mountain climbing enthusiast. He writes: ‘My favourite motives are grand, dramatic and distinctive landscapes, special weather- and light conditions, flora and fauna’ (Simensen, 2011).⁷⁷ These are motives celebrated in the Norwegian outdoor recreation tradition. But it is an exception: One image in autumn colours from Guoiratrášša, entitled ‘an ever so small waterfall’ [*en aldri så liten foss*], stands out with its tranquillity among Simensen’s otherwise dramatic landscape footage.

Maybe the privileging of spectacular and outstanding landscapes in valuation assessments leads to the disappearance of the gentle and embracing Arctic mountain valleys. Maybe landscapes that now are evaluated as ‘commonly occurring landscape in the region’ will end up being outstanding ones in future assessments. That ‘commonly occurring’ landscapes seems to be less valued by landscape assessors, and conversely less protected from landscape encroachments is consistent with the experiences the of the reindeer herders:

*They always take the finest landscapes—the flat, gentle landscapes.
(Interview with member of the Fieltar RHD, Áisaroaivi, 2015)*

5.5.3 Uncertainties and Lack of Information

The Nussir and Gumpenjuni prospect was not fully developed at the time the impact assessment was done. Assessments are generally performed prior to the detailed design of a prospect, and, in keeping with the Norwegian Plan and Building Act § 33-4 and Regulations on Impact Assessments [*Forskrift om konsekvens-utredning*] from 26.6.2009, it shows three alternatives in addition to a zero alternative. As a consequence, the assessors might not have a clear concept of what they are assessing, while having to represent it in a conceivable way. The lack of a clear prospect is a problem that the assessment of landscape, outdoor recreation and biodiversity shares with all the other environmental impact assessments in the Nussir case, and it has characterised the whole process. New realities are being introduced continuously. Finally, in the Concession Application in 2017, which represents the prospect in a clear manner for the first time, the CEO of Nussir claims (as we will see in Chapter

77 My translation of ‘Mine favoritt motiver er storslagne, dramatiske og særpregede landskap, spesielle vær- og lysforhold, plante- og dyreliv.’

7) that people have misunderstood the prospect. Simensen and Frilund were a part of Sweco's project organisation; they had the best access to information regarding the three alternative prospects of the mine.

It is important to note the major disclaimers that Frilund and Simensen make in the introduction about the precision of the assessment. The only features of the prospect that were determined by the time of the assessment and that the authors in their own words were able to describe in terms of 'good data' were 'the major interventions like landfill, tunnel-entrance by Dypelv, and the location of ore concentration facilities.'⁷⁸ Because plans have changed since the agreed inspection was held, other interventions escaped a precise assessment.

The impacts from the interventions in Ásavággi are not assessed because: 'The location of ventilation shafts for mine galleries have not been determined, thus it has not been possible to include these in the report.' However, these assessors do not see this as a problem as: 'Ventilation shafts are encroachments, each of which occupies a small area. *According to Nussir, there will be very little noise* from such shafts' (Frilund and Simensen, 2011, 1, my emphasis). It is interesting to continue reading:

Area seizures resulting from the proposed tunnel entrance, buildings outside the current Follidal Verk, minor roads, waste rock disposal, visible pipes for tailings and recycled water from the mine tailings deposit in the fjord are described without inspection. These are based on the study of aerial photographs and other available sources; in consequence, the data are poorer. *We hope that* this provides the authorities with a sufficient basis for decision-making, since these facilities are located adjacent to the current industrial area. (Frilund and Simensen, 2011, 1, my emphasis)⁷⁹

The assessment further contains several notes in the assessment about scarce

78 My translation of: 'Prosjektet har utviklet seg underveis, og tekniske planer har endret seg etter at avtalt befaring er holdt. De største inngrepene (landdeponi, påhugg ved Dypelv og plassering av oppredningsverk) har vært fastlagte, og er derfor beskrevet på bakgrunn av et godt datagrunnlag.'

79 My translation of: 'Arealbeslag som følge av øvrige foreslåtte påhugg, byggverk utenfor dagens Follidal Verk, mindre veier, gråbergsdeponi, rør i dagen for avgangsmasser og returvann fra deponi har vi måttet beskrive uten befaring. Her har vi basert oss på studier av flybilder og andre tilgjengelige kilder, men datagrunnlaget er følgelig dårligere. Siden disse anleggene er plassert i tilknytning til dagens industriområde, vi håper likevel dette gir et tilstrekkelig vurderingsgrunnlag for myndighetene.'

knowledge about local conditions and places the assessors did not inspect. The national biodiversity database did not have information about red-listed species in the area—thereby Frilund concluded that the encroachment would have small impact on biodiversity, but no supplementary mapping of species was carried out in the assessment. Simensen found ‘no known’ *landscape element of greatest value* in Guoirratrásša. In the equation that is used to decide landscape value ‘not known’ functions as ‘not existing’; consequently, the lack of knowledge nudges the valuation towards the lower range of the valuation scale.

Interviewing a balanced selection of informants might have mitigated these discrepancies, but the range of informants was very narrow. Fourteen oral sources (Frilund and Simensen, 2011, 123) were interviewed. Apart from one woman, all the informants are middle-aged men, four of them from the mining company or consultants for the mining prospect. Three are from different levels in the planning authorities. One is from the local sports association; three are from different local and regional hunting and freshwater fishing associations. Two are experts on wildlife and birds, while one man is listed as a person with local knowledge.

My analysis suggests, first, that a combination of a privileging of special and outstanding qualities, in combination with the lack of knowledge about local and pastoral people’s valuation of landscape, biodiversity and use of the outfield resources, contributed to the low value scores in the assessment. For example, while the assessment of outdoor recreation briefly mentions that children play around the cottages, young persons are not among the informants. The pastoral communities are neither mentioned in the assessment nor asked about their recreational activities in the area. Local traditional uses of outfield resources are barely mentioned in the assessment and were, as it later turned out, not given importance in the decision-making process.

Secondly, the ventilation shafts planned to be placed along the whole length of Ásavaggi were not assessed at all.

Thirdly, uncertainties about the design of the mining prospect, and the contrast provided by the enormous tailing dams in alternatives 2 and 3, led to a belittling of the consequences of alternative 1, which, from the outset, was regarded as the only realistic alternative. Further, the report emphasises that the encroachments were going to occur in *landscapes that were already marked by similar industry*. In the years that have passed since this assessment was

conducted, The Nussir and Gumpenjunni prospect with sea deposit has been considerably developed, and an alternative location for the industrial area has been introduced. The current mining design in the Nussir prospect completely alters the consequences for many of the study areas in the 2011 assessment.

5.6 CHANGES IN NORWEGIAN ENVIRONMENTAL GOVERNANCE

The landscape assessment was barely mentioned in the media. I have found only two media records that indirectly mentioned the landscape assessment. Even though these mentions do not focus on landscape as such, they are of interest because they shed light on the overarching system of prospective knowledge extraction, changes in Norwegian landscape management, and how actors in the consultancy businesses move towards power positions. I now look into structural changes in environmental governance that took place during Nussir's regulation process and the method the Environment Agency's have chosen to meet the requirements in the European Landscape Convention.

In 2012, no new fjord deposits had been opened in Norway since the Titania deposit in Rogaland County was closed down in 1994. The Department of the Environment [*Miljøverndepartementet*] was studying how to manage the anticipated applications from the mining industry to open new sea deposits. In doing so, they sought general advice about preferable mining waste management solutions regarding landscape and biodiversity: fjord deposits or land deposits? The answer from the Directorate for Nature Management was referred to by both *NRK Sápmi* and *Altaposten* in December 2012. The directorate was reluctant to give a general answer and stated that 'Every single case is unique and must be assessed individually' (Kristensen, 2012). The answer contained a table, listing *visual impacts of fjord deposits*, that was signed by landscape architect Simensen, who, in October 2011, had started working at the Directorate for Nature Management.

The process to merge the Directorate for Nature Management and the Norwegian Climate and Pollution Agency (Klif) began in April 2013, and the Environment Agency was established on July 1, 2013. Critics stated that merging the Directorate for Nature Management, which had a history of making decisions on behalf of the environment, and the Climate and Pollution Agency, with a history of making decisions on behalf of polluting

industries, might be bad news for the environment.

In February 2014, the Environment Agency approved the Nussir zoning plan as being sufficiently assessed to start the approval process of the discharge permit application. Landscape architect Simensen then appeared as head of the Section of Spatial Planning and Regional Coordination. This section coordinated both the Nussir case and the Førdefjorden case. He could theoretically end up working on the decision about whether or not Nussir ASA should be granted a discharge permit.

Freelance journalist Bente Bjercke then picked up on the landscape assessment from 2011: not to discuss the content of the assessment but to illustrate the role of landscape architect Simensen. In a feature article she made for NRK Sápmi, she asked whether there were issues of impartiality in the Environment Agency, since two of the three section managers working with the licencing process of mining prospects had backgrounds from the mining industry and thereby were sitting on both sides of the table (see Bjercke, 2014a). The other section manager in question was Harald Sørby, who had been working in the mining company, A/S Sydvaranger, which deposited mine tailings in a fjord outside Kirkenes, and later obtained a position in the Norwegian Climate and Pollution Agency (Klif); he was responsible for coordinating the work on additional sea current measurements that was required in both the Nussir and the Førdefjorden cases. The Director of the Environment Agency, Ellen Hambro, answered in Bjercke's feature article that she valued the competence her section managers contributed and that she 'did not see their experience as a problem; on the contrary.' For the record: Simensen did not end up working directly with the decisions on the Nussir case. He devoted his capacity to coordinating the Environment Agency's implementation of the European Landscape Convention, with the development of a landscape-mapping tool —Nature in Norway-Landscape—a project he had been working on in parallel with the landscape assessment for Nussir ASA.

5.6.1 A New National Tool for Landscape Mapping

In this section, I follow Simensen's work to trace a line from Sweco's impact assessment to the development of the methodology in NiN-Landscape before joining up the critique of landscape mapping approaches that are used in Norwegian prospective knowledge extraction.

While working as an environmental planner at Sweco Norway, Simensen was engaged in several experimental landscape mapping projects that aimed to revise the national landscape mapping methodology. One month before

Sweco completed the EIA for Nussir, Sweco Norway, in collaboration with the landscape architect practice, Aurland Naturverkstad, and landscape geologist, Lars A. Uttakleiv, completed a preliminary project to develop a methodology and strategy for landscape mapping in Norway, commissioned by the Norwegian Environment Directorate. This project was named ‘Nature in Norway-Landscape’ (NiN-L).

In 2014, this group of professionals completed the project, *Landskapstyper i Nordland* [*Landscape Types in Nordland*] (5.25). Simensen, now head of planning at the Norwegian Environment Agency, worked on the development of the methodology. The project was conducted as a cooperation between the county governor of Nordland, the Norwegian Environment Agency and the Norwegian Biodiversity Information Centre [*Artsdatabanken*]. The reference group included representatives from Directorate for Cultural Heritage [*Riksantikvaren*], and the Sámi Parliament. Considering that the NiN-Nordland Survey claims that it is based on the European Landscape Convention (ELC) and the broad panel in both the expert group and the reference group, it is interesting to note how the survey aims at a continuum of a landscape approach based on typology. The authors of the report argued a certain way to help define landscape in a way that served the project. The rhetoric manoeuvre by which the Landscape Types in Nordland Survey claims that it is based on the European Landscape Convention is done in a step-by-step deconstruction of the ELC definition of landscape, which reads as:

Landscape means an area, as perceived by people, whose character is the result of the influence of and interaction between natural and/or human factors. (CoE, 2000, 9, 1a)

NiN-L interpreted the second part of the first sentence, ‘as perceived by *people*’ as meaning: ‘as *most* people perceive it’ (Lykkja et al., 2014, 22).⁸⁰ Most people are, the text continues: ‘focusing on *general features* in the landscape.’ The authors of the report further interpret ‘as people perceives it’ to imply that ‘the emphasis should be on properties that are observable on a landscape-relevant scale’ (ibid, 22).⁸¹ The second part of Council of Europe’s landscape definition: ‘natural and/or human factors’ is used as an argument to conclude

80 My translation from Lykkja et al., 2014, page 22: “‘slik folk oppfatter det’ tolkes i betydningen ‘slik folk flest oppfatter det’; det vil si med fokus på generelle egenskaper ved landskapet;”

81 My translation from Lykkja et al., 2014, page 22: “‘slik folk flest oppfatter det’ tolkes dithen at det skal legges vekt på egenskaper som observerbare på en landskapsrelevant skala;”

that ‘geo-ecological characteristics and land use characteristics taken together shall form the basis for landscape typology division and landscape description in NiN-Landscape.’ (ibid, 22).⁸² The definition of “landscape” used in NiN-L reads as:

Landscape means a geographic area with its uniqueness, as it is expressed through presence of natural and anthropogenic landscape elements in the area. (Lykkja et al., 2014, 22)⁸³

NiN-L’s rhetoric manoeuvre drains the ELC definition of landscape of the cultural dimension. But, while landscape in Nordland mentions landmarks, such as *mea*, that one does have to know about to be able to see, I was surprised to learn that other Sámi cultural landscapes were excluded from the project:

NiN landscape is based on general and observable features of the landscape. NiN landscape should work in parallel with landscape analysis that includes non-observable characteristics of the landscape, for example cultural references, Sami cultural landscape and aesthetic judgments (Lykkja et al., 2014, 11)⁸⁴

How could the reference group arrive at describing Sámi culture landscapes in Nordland as “non-observable”? Pursuing this question, I made contact with the representatives from the institutions in the reference group: at Nordland County, where I obtained general information about the process, and contacts at the Directorate for Cultural Heritage [*Riksantikvaren*], and the Sámi Parliament’s Department for Cultural Heritage, Land-Use and Environment. At both *Riksantikvaren* and at the Sámi Parliament, the persons I talked to were reluctant to comment on the NiN-L project. The presence of their name on the printed product is, however, legitimising. This is a reoccurring problem that Turi and Gaup Eira write about in the publication *Perspectives for Future Area and Environmental Policy in Sápmi* (Turi and Gaup Eira, 2016, 107).

82 My translation from Lykkja et al., 2014, page 22: “‘naturlige og menneskelige faktorer’ tolkes slik at ‘geo-økologiske egenskaper og arealbruksegenskaper sammen skal legges til grunn for landskapstypeinndeling og landskapsbeskrivelse i NiN.’”

83 My translation from Lykkja et al., 2014, page 22: “Landskap betyr et geografisk område med dets særpreg, slik det kommer til uttrykk gjennom områdets innhold av naturlige og menneskeskapte landskapselementer”.

84 My translation from: ‘NiN landskap tar utgangspunkt i generelle og observerbare trekk i landskapet. NiN-landskap skal fungere parallelt med landskapsanalysemetoder som omfatter ikke-observerbare egenskaper ved landskapet, f.eks. kulturelle referanser, samisk kulturlandskap og landskapsesteske vurderinger.’

The Sámi Parliament is invited to participate in many activities, but participation is not financed.

5.6.2 Landscape Surveys as Prospective Knowledge Extraction

In the autumn of 2015, the Norwegian institute for Nature (NINA) hosted a seminar to present NiN-Nordland and various methods of landscape analysis and valuation. At this seminar, Simensen represented the Norwegian Environment Agency and introduced the NiN-Landscape survey aimed at compiling landscape classifications in a national database. In a review of the event printed in *Arkitektnytt*, Anne Katrine Geelmuyden wrote that:

‘no one at the seminar went as far as the Nature-in-Norway-Survey in its eagerness to give an authoritative interpretation of the whole country’s territory as landscape’ (Geelmuyden, 2015, 30).⁸⁵

Geelmuyden argued that to map an area is something other than to map a landscape. She noted that, while all the presenters at the seminar claimed to base their work on the European Landscape Convention, the presentations were built on older landscape mapping practices with implicit and partly outdated landscape concepts. In her words, translated by me:

To map an area is something else than to map a landscape. When we are mapping an area to satisfy a need for environmental management, as, for example, the NiN-cartographers do, we produce a landscape. (Geelmuyden, 2015, 30)⁸⁶

She argued that NiN-L is a statement about a territory that says something about the values in a particular consideration and technological opportunities today, but that it cannot be taken for granted which specific elements in a substantive area in any context at any given time contribute to what can be perceived and make sense as landscape. While acknowledging that the Nature-in-Norway data maintained by Artsdatabanken [*the Norwegian Biodiversity Information Centre*] is crucial to Norwegian environmental governance, she is critical of allocating public funding to a national survey of landscapes moulded in the NiN-templete. Towards the conclusion of her critique, she

85 My translation of: ‘Ingen av disse går riktignok så langt som Natur i Norge-kartleggingen (NiN) i sin iver etter å gi en autoritativ tolkning av hele landets territorium som landskap.’

86 My translation of Geelmuyden, 2015, 30: ‘Å kartlegge et område er derfor noe annet enn å kartlegge et landskap. Når vi kartlegger et område for å tilfredsstille et behov hos miljøforvaltningen, slik som for eksempel NiN-kartleggerne gjør, produserer vi et landskap.’

states that we need to look at landscape as a more dynamic entity and that:

We should be more flexible in terms of what we choose to register, identify and describe. It must be adapted to each single planning task and societal context. (Geelmuyden, 2015, 31)⁸⁷

The group of professionals that are drivers in the NiN-Landscape Survey cooperated over years across sectors and across private-public boundaries. They developed software, published scientific articles and disseminated their message. Eventually, the Environment Agency allocated funding.

During 2016, biologists and landscape mappers were trained in the new methodology, and the survey commenced. In an update of the general object catalogue at Geonorge's webpage, NiN-Landscape is described as a system that 'contains standardized methodology for delineation, type classification and landscape description, and relates to the definitions of the European Landscape Convention and the Nature Diversity Act' (Geonorge, 2017).⁸⁸ In prospective endeavours the existence of NiN-Landscape as a thematic layer in the map database might be a great resource. But there is no information there about landscape as it is perceived by people.

As impressive it is embarking on such a task, and as useful a landscape catalogue might be, NiN-Landscape has a different objective than that of the Council of Europe. The mapping tool that is being developed by the Norwegian Environment Agency cannot alone fulfil the objective of the ELC. Erikstad et al. (2015) stated that 'The ELC and natural scientific landscape definitions can be made complementary by considering landscape research in a two-phase process' (Erikstad et al., 2015, 1): first, in accordance with the natural science-based material landscape tradition and then stakeholder involvement. This was certainly not done in the landscape assessment in Kvalsund, and it is not likely that municipalities prescribe more than one landscape assessment in large EIAs that involve several sectors. It is still an open question how NiN-Landscape will be applied according to cultural landscape, landscape analyses, and landscape valuation.

87 My translation of Geelmuyden, 2015, 31: Vi bør være mer fleksible når det gjelder hva vi velger å registrere, kartlegge og beskrive. Det må tilpasses hver enkelt planoppgave og samfunnsmessige kontekst.

88 My translation of: 'Systemet inneholder standardisert metodikk for avgrensning, typeklassifisering og beskrivelse av landskap, og forholder seg til definisjonene i den europeiske landskapskonvensjonen og i naturmangfoldloven.'

In reality, the issue of whose landscapes EIAs are going to be bound to assess—and how—is played back to the municipalities and the manner in which they handle assessment programmes. In this, great responsibility rests on the landscape experts who make the drafts for the assessment programmes on landscape. If the assessment is relevant for local discourses, more people will be engaged in how the landscape is treated. If it is alienating, less people will relate to it, and it disappears from the discourse. In Geelmuyden's words, translated by me:

For a landscape to have agency in planning and environmental management, it must be a community's landscape of which many people know the reference(s), understand and relate to as relevant for an explicit purpose. (Geelmuyden, 2015, 31)⁸⁹

The Environmental Agency insists on inscribing landscape in the natural scientific tradition in Norwegian environmental management. This tradition, which has been celebrated for its agency in safeguarding the natural environment, is, however—as this analysis of the landscape assessment in the Nussir-case shows—counterproductive as regards making policy that safeguards landscapes. Purely visual approaches produce inert landscape characterisations that serve extractive governance. The methodology avoids articulating both grand and intimate encounters in the landscape and is thus not relevant to the local people who experience such encounters. If it is not relevant, it does not make policy.

5.7 PERFORATING ÁSAVÁGGI

Among geologists, the geological formation that holds the Nussir copper ore (Fig 5.17) is known as the Repparfjord Tectonic Window. This is the window of opportunity through which the mining prospector extracts the knowledge needed to develop his mining prospect, from both previous geological research and the physical terrain.

There are three alpine valleys in the Fiettar district, Fieddarvággi/Kvalsundalen, Ásavággi and Riehpovággi/Repparfjordelvdalen. *Vággi* is a North-Sá-

⁸⁹ My translation from Geelmuyden, 2015: Et landskap som skal få betydning i planlegging og miljøforvaltning, må være et fellesskaps landskap som svært mange kjenner referansen(e) til, kan forstå og slutte seg til som relevant for et eksplisitt formål.

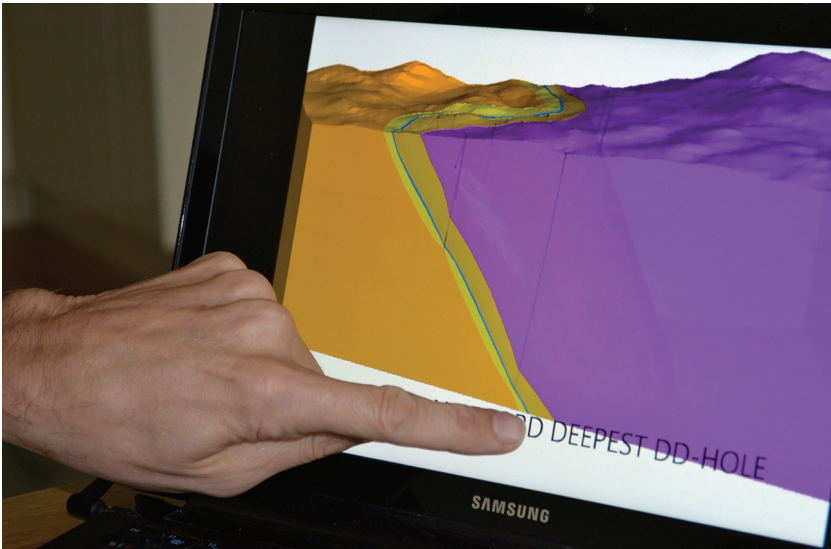


Fig 5.17: The Nussir Copper Ore lies beneath Ásavaggi, the Ása valley.



Fig 5.18: Ásavaggi is the only broad alpine valley without infrastructural encroachments in the Fiettár reindeer grazing district.

mi word that describes a broad “mountain valley without trees”; such valleys often have good grazing conditions early in the spring, with nutritious newly grown grasses and snow where the reindeer can avoid insects. The alpine valleys are therefore often chosen by the *nálla* (female reindeer) as calving grounds. The E6 road, connecting Alta and Hammerfest, was constructed in 1978, parallel to the Riehponjohka/Repparfjordelva River. The E6 divides the district in two, and half of the *siiddat* (plural for *siida*) have their grazing lands on the east side of the road. Repparfjorddalen has since been filled with cottages. Until WW2, there were a number of summer farms in Fieddarvággi, and the municipality centre, Ráhkkerávju/Kvalsund, is located where the Fieddarjohka/Kvalsundelva River meets Repparfjorden. That leaves Ásavággi as the only broad alpine valley without infrastructural encroachments in the district (Fig 5.18).

AS Prospektering had been drilling in Ásavaggi since 1984. In 1997, the geologists found proof of a copper ore. The drilling was perceived by the reindeer husbandry practitioners as disruptive. To avoid conflict and disturbance, the reindeer owners adapted, by moving their calf-marking fence from Ásavággi. In 1999, they gathered for fence work in Ásavággi for the last time. The following year, they arranged for calf marking in the autumn fences at Áisarovaivi. In 2001, the district had completed the construction of new fences in Kvalsunddalen/Fieddarvaggi. The decision to move the earmarking fence from Ásavaggi had gendered implications for the landscape. Ásavaggi had been a childhood landscape, just as Fieddarvaggi is now. Children had played there and heard the stories about the Rihce Maddu and other magical beings. When the families ended their visits to the valley, it became masculinitised, a landscape for herders and miners. When, in 2009, Rushfeldt publicly announced his plans to mine the Nussir ore, the municipal administration was already aware of controversies regarding the drilling activity: In 2007, the Reindeer Police—a special branch of the national police—prosecuted Nussir for environmental crimes, including illegal motorised traffic and damage to the vegetation. Vistnes and Nelleman, (2011,10) mention that in 2008, Fiettar had to get a court decision to stop drilling activities that disturbed the reindeer during calving.

In September 2015, I interviewed Øystein Rushfeldt at different locations of Nussir ASA, including the mountain valley they were prospecting. I sat in the backseat of Rushfeldt’s ATV four-wheeler. He referred to the valley as *the prospecting site* and I referred to it as *the calving ground*. He had brought orange road marker sticks as temporary survey stakes to mark the GPS points for the next drilling campaign (Fig 5.19). On our way up the mountain, we met the commissioned drill crew from Arctic Drilling. In 2006, Nussir AS



Fig 5.19: The Mining Director mark the locations of the planned drill holes with vertical road sticks.

retrieved the prospecting licence from Prospektering AS and has, since 2007, extracted core samples from the Nussir copper ore in the mountain valley, Ásavággi.

We climb up a high moraine on an ATV trail that has grown deep from frequent use. Ásavággi lies before us like a green carpet between the Wolf's Nose and the Nussir Mountain. Rushfeldt shows me a pair of drill holes.

'It is smart to keep the openings of the tubes covered, in case someone in the future needs to access them,' says Øystein Rushfeldt. He then removes the cover and throws in a small stone. It makes a long-drawn, tinkling sound as it falls and slides along the interior walls of the drill hole. At unknown depth, it breaks the groundwater surface with an echoing splash.

'Insane!' I whisper.

I pick up another stone—a shard of a core sample—and hold it over

the opening. When I drop it, another howling sound swirls downwards. When the shard is swallowed by the groundwater, the echo of the shattering water mirror seems to come back up through the hole until it slowly fades.

'A very interesting sound,' the mining director says:

'It sounds like science fiction.' (Field notes, Ásavággi September 7, 2015)

This is not the first time stones have been thrown into the iron tubes in Ásavággi. In October 2014, state broadcaster's Sámi service, NRK Sápmi, presented two critical feature articles about the terrain damage and disruptive drilling activity in Ásavággi. Freelance journalist Bente Bjercke interviewed Per Johnny Skum, who said: 'The tubes represent a hazard for the reindeer; they will not see them when they come running.' Bjercke comments: 'Two iron tubes points up from the soil here too, [he] throws a small stone into the hole to check how deep it is' (Bjercke, 2014b).⁹⁰ The weather was very nice when I was there with the prospector. Further up in the valley, we crossed small waterfalls, and I saw scars in the terrain from the drilling activity.

Rushfeldt says: 'The Ása valley isn't such an important reindeer pasture as the researchers are claiming in the Environmental Impact Assessment on Reindeer Husbandry,' and he continues: 'We have been prospecting this valley for six years, and I have only seen a handful of reindeer. Take today: we haven't been here since January, and still there's no reindeer here.'

In the upper part of the valley, we stop by some muddy patches made by a drill rig. I notice a reindeer hoofprint in the mud: 'Look!' He sees it and answers, 'Yes, one has been here. Here, at this very place they were supposed to be avoiding because of the machinery. What a shame!' I notice the humour in his voice, but just have to point out that 'There isn't any machinery here now.' I notice droppings almost every third metre and comment that it looks like a lot of reindeer have roamed the valley. It's nice that they thrive here,' he says, 'that it is possible for us to co-exist, as we used to say.'

90 My translation of 'Rørene kan være farlige for reinen, den vil ikke se dem når den kommer løpende. (...) To jernrør stikker opp fra jorda her, også. Per Johnny Skum kaster en liten stein ned i hullet for å sjekke hvor dypt det er.'

I can't resist contesting: 'You just told me that you haven't been here since January.'

'Yes, this is the first trip. On the other hand, this drilling activity will go on for some years and will be remembered as just a moment in history. Now, could you do me a favour and contribute to the mining business by holding that red stick over there?' He hands me a red stick and laughs: 'I won't tell anybody!' (Field notes, Ásavággi September 7, 2015)

The logic of prospected landscapes is vertical, in contrast to the horizontal logic of reindeer herding landscapes. On the way back, we rested at the top of the moraine before driving to the planned tunnel entrance in Gumpenjünni.

Standing on the moraine, we hear a low frequency roar as if a storm is under way. I see two ATV bikes with skilled drivers in the distance.

'Could it be the guys from Artic Drilling?' Rushfeldt wonders, 'they have nothing to do over there. No, it has to be someone from the reindeer herding district, checking out what we are up to.'

'What do you do if you don't get the discharge permit?' I ask.

'I think I will go fishing in the mountain lakes,' he answers. Then he stretches backwards in the heath, looks up in the sky and says: 'This is where I like to be, I mean, apart from the tubes and the ATV, just to be in the mountains.' (Field notes, Ásavággi, September 7, 2015)

The environmentalists have criticised as a kind of hypocrisy Rushfeldt's profiling of himself as an outdoor man who enjoys nature. The idea of the prospector who appreciates the landscape is an irregularity. Such irregularities are counteracted through governance. Kvalsund municipality's dispensation decision for the drilling campaign in 2017 can serve as an example. The official letter clearly states that the dispensation to use motorised terrain vehicles is valid just for work and not for pleasure drives (Kvalsund Municipality, 2017).

5.8 SLAUGHTER TIME

Three months after my first visit to the earmark fence in Fieddarvággi/Kval-sunddalen, I received an invitation from Eli Ristin Skum to join the autumn fence work:

*The reindeer are on their way to the fence; do you want to come?
(Private text message, 2014)*

I valued the invitation highly and arrived in Fiettar's summer settlement the next day (Fig 5.20). Fence work during the slaughter time is an important arena for knowledge exchange between the herders and the other reindeer owners, their families and children, and the surrounding community. Occasional visitors from schools and kindergartens, journalists and researchers come to the *girdnu*. Per Johnny made sure I understood the role of the different people congregating at the working fences. A professional reindeer herder will typically be at work, while at the fence, and does not have much time to tend to guests and journalists. 'You will get different answers from those who work professionally and those who own a few reindeer in the herd while making a living from other work,' he said. Those most likely to give information to visitors are not necessarily those with detailed knowledge about the pastoral usage of the landscape. I would continue to participate in the autumn fence every year to come. The field experiences I describe here are from notes I made between 2014 and 2017. Autumn fence work is when the herd structure is maintained and adjusted. That is, to decide which of the *boazu* are going to comprise the *eallu* [the living herd] next year and in the years that follow. In 2015, the herd was extraordinarily late (Fig 5.21). At Áisarovaivi, everybody was waiting for the *boazu* to arrive, and the summer village prepared for intensive days. That year, there was also more time to do qualitative interviews. I found out who had been in Ásavággi that day I was there with the mineral prospector.

The two herders that the CEO of Nussir ASA and I had seen in Ásavággi later told me that they had been heading back to the road after checking up on the herd. 'You would have seen a group of close to 200 reindeer if you had started out earlier and arrived there before us,' said one of them. 'They moved away, you know, when we came.'
(Field notes, Áisarovaivi, September 2015)

The whereabouts of reindeer is a recurring theme, both in the media and around kitchen tables. One of the herders said that he found it remarkable that people complain about reindeer when they are close to the settlements but seem unable to observe them in the terrain. 'The reindeer observe the surroundings all the time and don't need to move much to be out of sight,' he explained. 'But when they actually are there in plain sight, people still don't see them.'



Fig 5.20: Autumn at the summer settlement in Áisarovaivi



Fig 5.21: 2015 was a good mushroom year, and the reindeer herds lingered before starting the movement southwards, on this image a part of the herd has arrived at Áisarovaivi.

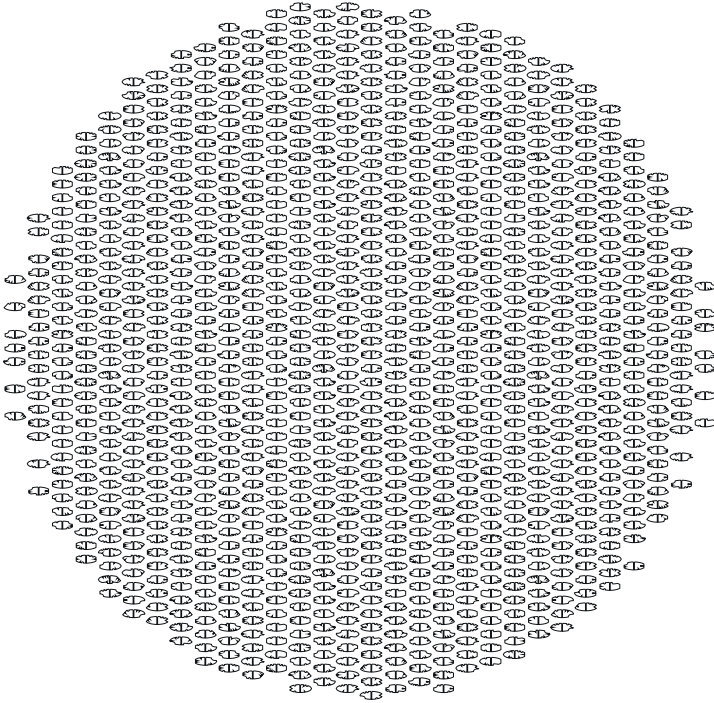


Fig 5.22: The reindeer herd is called eallu. A diagram from the outfield atlas. Source: Notes from a lecture by Mikkel Nils Sara's, July 2013.

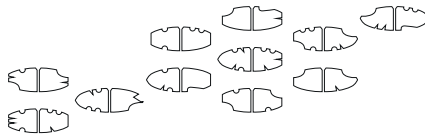


Fig 5.23: A small group of reindeer is called a Čora. A diagram from the outfield atlas. Source: Notes from a lecture by Mikkel Nils Sara's, July 2013.

The reindeer owner scanned the hillside through his kitchen window; he reported that it was a particularly good year for mushrooms, and that the boazu [reindeer] feasted on this treat instead of moving southwards. 'Now,' he said, 'they are here!' I stared in the direction he was looking, and it amused him that I couldn't see them. He lent me his binoculars. At last I saw two moving white spots, and then, with this hint of the scale, I saw the whole lot of them coated in the various colours of the surroundings. (Field notes, Áisaroaivi, September 2015)

When most of the herd, the *eallu* has congregated at the district border, the reindeer are let into the pasture garden, and from there parts of the herd, *eal-lubithu*, are gathered every day and led to the autumn work fences until they all have been through the *girdnu* and let go in the autumn pasture garden. Figure 5.22 and 5.23 are reindeer marks drawn to represent a herd and a small group of reindeer, a *Čora*.

5.8.1 The Autumn Herd

The first corral, the big one, is where the herd structure is decided. Reindeer is the only deer species in which both females and males grow antlers. In the evening, when, together with Eli Ristin Skum, I looked through the images from the day, she told me that, throughout the year, the males and females wear antlers at different times and follow different cycles in shedding, growing and shaping their antlers. While walking to the winter pastures, the males shed their antlers. Winter grazing involves digging in the snow. The male reindeer that are strong and fit to dig through heavier snow than the rest of the herd. Because the males do not have antlers in the winter, they surrender the newly dug grazing pits to calves and pregnant females that have antlers during the winter. The female reindeer sheds her antlers when the calf is born. As she grows new antlers, they are covered with pelt, and she carries these soft antlers with elegant caution as if she were on a catwalk, lean and wide-eyed after the long winter and maternity period. In traditional Sámi reindeer husbandry it is an aim to have a balance between males, castrated males and females (see Skum, 2016, 129). When the antlers are fully grown, the male and female reindeer brush off the pelt.

Five o'clock in the morning, I got a ride with Per Johnny Skum's ATV when the reindeer herders were leading a part of the herd from the pasture garden to the autumn work fences. When we looked through the images in the evening, Eli Ristin Skum told me that experienced reindeer herders are able to read the health of the reindeer from the shape of the antlers. Moreover, since the males and the females grow

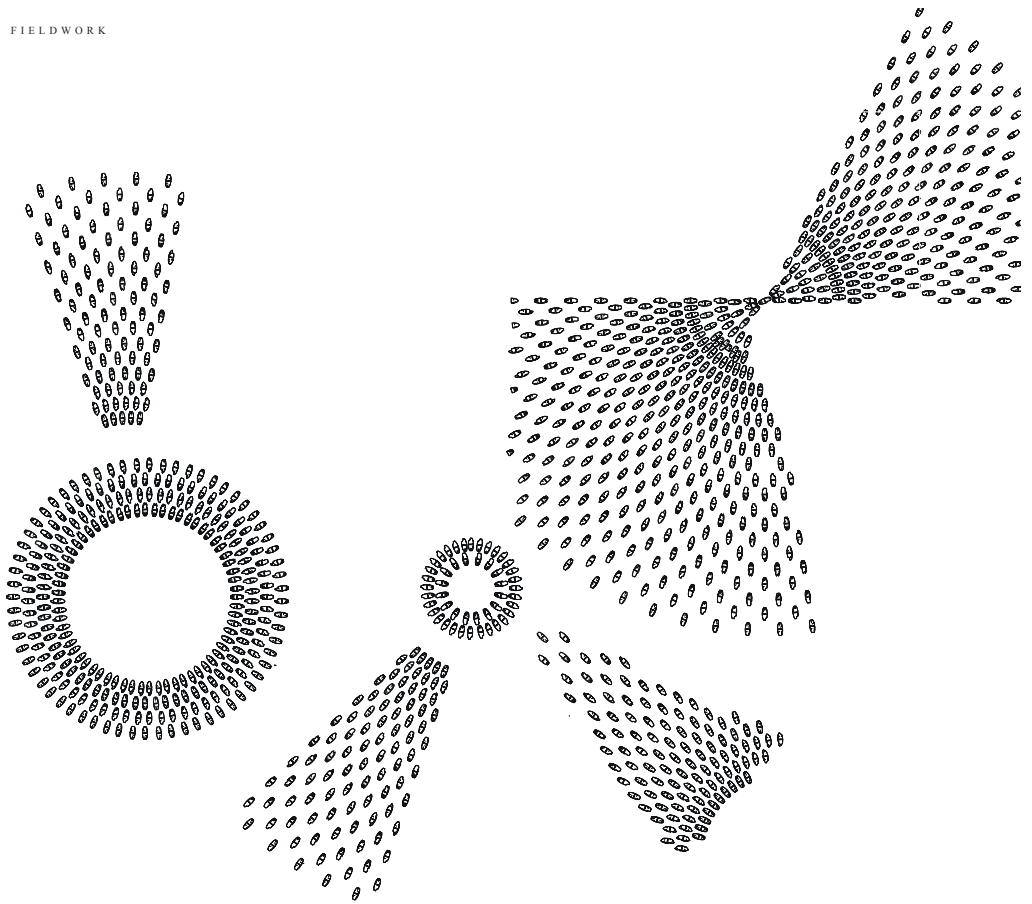


Fig 5.24: A diagram of earmark symbols showing reindeer movement through the autumn working fences in Áisarovaivi, October 2014.



Fig 5.25: When the reindeer get through the opening between the corridor and the grand corral, it looks like a river of antlers. Áisarovaivi, 2016.

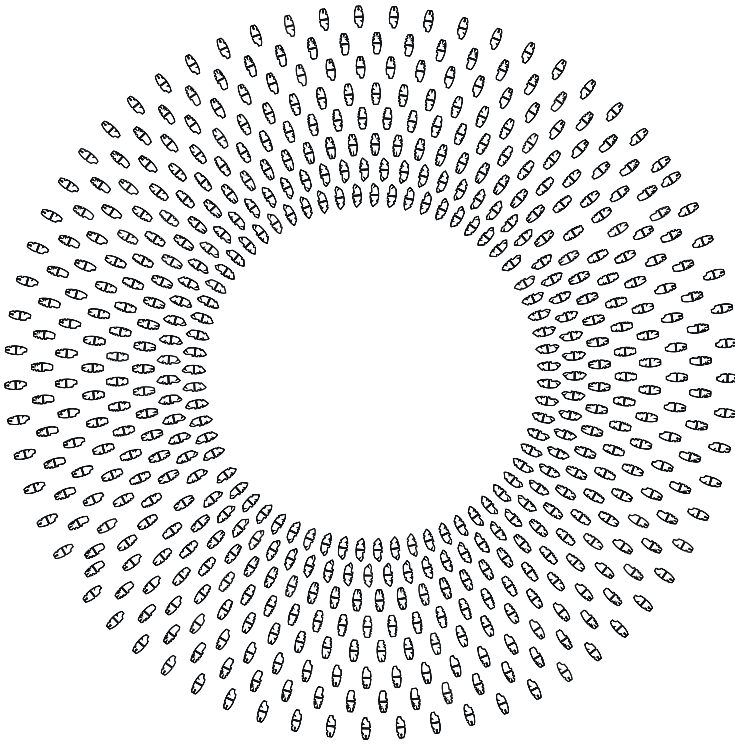


Fig 5.26: A diagram of earmark symbols representing reindeer running in a circle.



Fig 5.27: The damp from the animals' breathing and perspiration create a moving cloud in the cold morning hours.

their antlers at different seasons, from the autumn herd, it is possible to read whether it has been a good year or the seasonal pasture conditions have been challenging for the reindeer. (Field notes, Áisaroaivi, September 2015)

The well-being of the herd, and the health of every individual, is impacted by the changing seasons and the landscapes they have circulated in throughout the year.

The reindeer owners spend many hours observing the reindeer in a large corral before taking them to the next working fence (Fig 5.24-5.29). The reindeer walk in a large circle; if the circle is disrupted, they rearrange in a new circle. In the district herd, the reindeer from the different *siiddat* are mixed together, but every *siiddat* plans their own herd structure. To be skilled in recognising the earmarks is crucial, but also to recognise the individual qualities of each reindeer. To recognise the good female reindeer and their calves is important, in order to have a good herd (see Johnsen et al., 2017). There are a lot of concerns to consider when selecting the animals that are going to be slaughtered for the families and relatives' own consumption. Reindeer are slaughtered not just for meat but also for material to produce traditional handicrafts [*duodji*].

Reindeer are the most important providers of material for making *duodji*. Skin, antlers, bone and tendons from different part of the animal's body are brought back to life through *duodji* and the making of the multiple objects that are connected to traditional costumes. (Kramvig and Flemmen, 2018, 11)

It is important to keep alive the skills in field slaughter: the traditional way of skinning, cutting the right cuts, undressing the carcass from the skin. Per Johnny Skum has helpers by the fence, and one of them taught me how to skin and butcher the reindeer. 'Remember to cut in front of the ears, so that the ears follow the skin. A skin with no ears looks like a stolen skin', he says.

He shows me how to hold the knife to open the reindeer. It must be done the right way. If I puncture the rumen, gastric spill might ruin the meat. He instructs me to hold two fingers under the knife. The fingers slide between the skin and the rumen while I cut all the way up to the chest bone. The carcass is warm, and there is pressure inside. The rumen swells beautifully out of the cut. (Field notes, Áisaroaivi, 2014)

While participating in the work, the children learn traditional skills and to be



Fig 5.28: Snowfall.



Fig 5.29: The reindeer ears are furrier and look different in the fall than in the spring.



Fig 5.30: Per Johnny Skum has slaughtered one of his reindeer and prepare the meat with salt to make smoked meat.



Fig 5.31: The hide from the legs is used to make traditional shoes.

attentive towards the reindeer and see how tasks are carried out (sometimes differently by different people).

The kids were playing outside the small working corral, the girdnu, two of them sat on the ground by a newly slaughtered reindeer. I knelt down with them. The oldest kid read the reindeer's right ear with his fingers. 'This is Johnny's reindeer,' he said. In the corral, I noticed that, whenever a reindeer was captured, the one handling the animal would also inspect the ear to confirm the earmark, reading it by hand. (Field notes, 2014)

The smallest fence, the *girdnu*, in the autumn fences is connected to several gardens for different reindeer: one for calves that are sent to the slaughterhouse, one for older animals that are going to the slaughterhouse, one for stray animals from other herds, and a temporary garden to keep the *eallubihta* of the day close before they are let into the large pasture garden where the herd stays until the autumn migration starts.

I am standing in the smallest circular corral, the girdnu. The air is damp from the animals' breathing and perspiration. I feel privileged for the first time to participate in the handling of the reindeer. I hold them while Eli Ristin Skum treats them. We're just done, but I linger a while watching the reindeer as they run around and round: their antlers, their stylish ears, their GPS bracelets, their faces with curly fur on the foreheads, the graffiti paint on the shoulders of those who received parasite treatment. Suddenly, I sense a marvellous calmness. It is an all-encompassing feeling that I don't know the source of. The reindeer slow down and pass me on each side so close that I merge into the carpet of bodies. I forget myself, spellbound for just a moment as if in another time. Then I look around—puzzled and a little disoriented—to see what is going on. The reindeer owners inside the girdnu stand along the stockade wall—waiting. I hurry cautiously towards them. When I find myself once again outside the circle of animals, one of the guys opens the exit gate. The scene explodes in motion as the reindeer notice the opening and run for the escape. (Field notes from Áisaroaivi, September 2015)

When Per Johnny Skum prepares meat and skin outside the fences, by the house or in the smoking hut, he always explains the details and nuances of what he is doing or tells stories while he is working, passing on troves of traditional knowledge (Fig 5.30). There is always someone around, a child

or a helper that needs to learn the tasks that he is doing and why it is done in a certain way. One day, he was skinning reindeer leg bones; he showed his youngest daughter a peculiar fur-brush between the toes of a hind leg. He said that the reindeer sculpt their antlers with their hind legs and that the brush is connected to a large sebaceous gland that the reindeer use to lubricate the antlers. I had seen one such brush when one of the women in the district taught me how to skin reindeer legs, and I had wondered what it was. The leg skins are used to make traditional shoes (Fig 5.31). The products from reindeer husbandry are part of keeping the connections between people and the seasonal landscapes. It is important for society at large, not only for the Sámi communities that the habitual lines of migratory species are maintained.

5.8.2 *Conversation by the herder cottage*

Reindeer husbandry is family-based. That has some gendered implications for participatory research. While at first I associated reindeer husbandry with those typically male activities, such as herding, those activities were what I wanted to observe. Fortunately, I was included family activities, and I was able to learn from the inside about reindeer husbandry and the many ways that women hold it all together, for instance the transference of traditional knowledge between generations. Eli Ristin Skum said in a conversation that:

If children and grandparents are to interact in those situations where reindeer husbandry is practised, the women need to participate in reindeer husbandry and facilitate those meetings. (Field conversation, Áisaroaivi 2016)

Quotidian life with all its material and social friction is lived on the plains: clothes that get wet and will have to be dried; food that has to be made for every meal during the day; dishes, fireplaces, ovens, firewood, diesel, gas-stoves; crying, quarrelling, laughing, wide-awake and tired children; siblings, grandparents, aunts, uncles, neighbours, guests and researchers.

In parallel with all the ongoing encroachments of grazing land, the district has reduced the number of reindeer by 40 per cent during the time of my fieldwork. That is dramatic (Fig 5.32-5.33). The Norwegian government's forced reduction of the reindeer stocks in Norway, and particularly in Finnmark, has received a lot of attention, and its objectives and wide-ranging consequences were discussed in the Dávvgas project (Benjaminsen et al., 2016). One case in particular got a lot of attention in the press. A young *siida* unit owner was allowed to own only 75 reindeer and that would force him to leave reindeer husbandry altogether. He has taken his case all through the

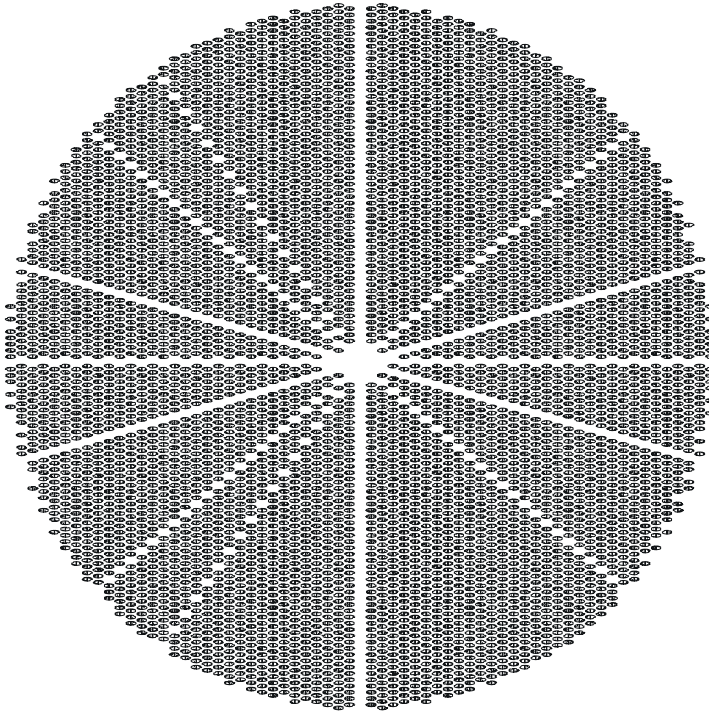


Fig 5.32: This diagram shows the earmarks in Fieddarhasat, multiplied in a circle divided into 14 sections, one for each siida unit.

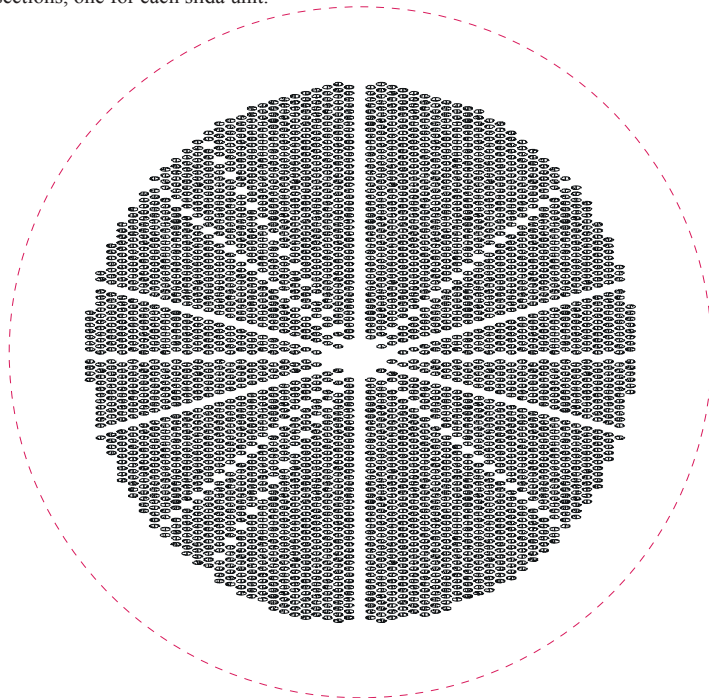


Fig 5.33: 40 % reduction of reindeer numbers

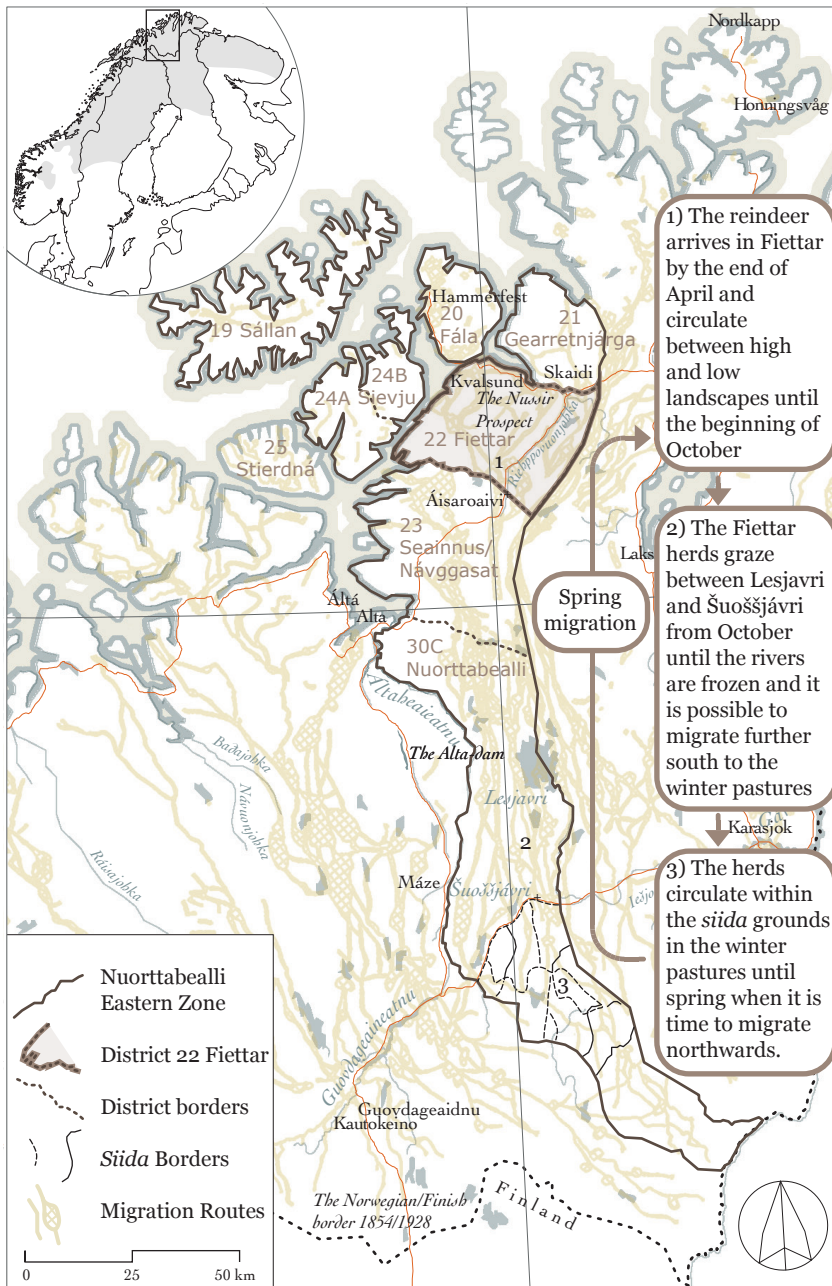


Fig 5.34: Nuorttabealli (the Eastern zone) migratory system, contain the summer districts 19 Sállan/Soroya; 20 Fála/Kvaløy; 21 Gearretnjarga; 24A Oarje Sievju/ Seiland West; 24B Nuorta Sievju/ Seiland East, 22 Fiettar and 23 Seainnus/Návvgasat. The winter *siiddat* have designated migration and resting places in the autumn and winter pastures, area 30C.

court system, and his sister, an artist, has organised an art protest, Pile O' Sápmi, that highlights the herd reduction process as a human rights issue. What has received less attention is the situation of the larger siida units that comprise several families. The herd reduction process affected everybody in the district. This theme is beyond the limitation of my study, but it need mentioning because it was a demanding process that the community went through while the Nussir case evolved.

The history of Fennoscandian expansion northwards is embedded in the family histories. When the Norwegian-Finnish border was closed in 1852, they lost winter pastures, and the reindeer herders on the Finnish side lost summer pastures. 'In 1852 winter grazing in Finland was closed to reindeer-herders from Finnmark and reindeer herders based in Finland could no longer cross to summer grazing in Norway' (Jones, 2004, 20).

On the drive from Kautokeino to Alta, the bus takes a loop through Máze, the home of many of the families belonging to Fiettar. I look out through the bus window at the mountain on the other side of the river, and I think about their herds on the other side of that mountain. During the Alta-Kautokeino case, the government had planned to flood Máze to build a mega hydropower dam. The plans were scaled down before the Alta Dam was built in 1980, but they lost pastures. And now, with the Nussir case, a migration bottleneck will be blocked, which in turn will force two Sámi reindeer herding districts to give up calving grounds and summer lands. The Sámi reindeer herders are fighting on many fronts for their siida's right to bring their herd to the right place at the right time. They are experiencing loss of pastures to infrastructure, extractive industries, energy production, urbanization, extended urban lifestyles and widespread building of cabins. The mine with its infrastructure is a major threat to one of the largest reindeer husbandry districts in Norway and adds stressors to other reindeer herding districts. Now they lose lands to the Balsfjord power line, and they lose pastures on both sides of the E6, which was constructed in 1970. (Field Notes, 2016)

5.9 AUTUMN MIGRATION

The districts that reside in Kvalsund municipality constitute, together with five other districts, the migratory system of Nuortabealli, the eastern range of West Finnmark (Fig 5.34). The herds that have been distributed across

coastal mountains and islands migrate in a queue system. The longest migration routes range more than 200 kilometres. Those who are furthest out on the coast in the summer migrate deepest into the mountain plains. When the *siiddat* from the outermost districts have passed, the next follow and so on until all the reindeer are in the winter pastures. Sara (2011a) wrote that, while summer districts were mapped a long while ago to mitigate conflicts between pastoralists and farmers, the winter *siida* grounds remained unmapped, and the pastoralists have to rely on their neighbours' respect for customary winter grazing land rights.

Fiettar uses 7-10 days for the migration from Áisaroaivi to the autumn pastures. The autumn grazing areas are like pit stops, a little more than halfway between Áisaroaivi and the winter pasturelands. Here, the herd is divided into its respective winter *siiddat* and migrates southwards to inner Finnmarkku/ Finnmark.

Normally, we remain in the autumn pastures until early November. Occasionally, we wait until the end of November, divide the herd into the winter siiddat, and then we will be at the winter pasture until the end of April.

Here, you have plenty of siiddat, which are also on the move, different, so there is great danger of mix in this travel distance, and, also, if some reindeer are left behind, then comes the next migrating herd, and they are all heading south. Here, at the border between East- and West Finnmark, we have both Karasjok and Kautokeino herds. Karasjok herds go quite far away, and some of the Kautokeino herds will also have a bit of distance. If you have confusion here and lose reindeer to those herds, you're not sure where to start searching, because here you can have a dozen siiddat where you might have stray animals. (Interview, 2014)

The winter *siiddat* (plural for *siida*) are located between Suoššjavre and the national park, Ánarjohka, by the Finnish border. The snow conditions defines the pasture quality (Fig 5.35). The herders plan the grazing of the winter lands carefully so that the snow stays untouched and not get trampled until an area is about to be grazed.



Fig 5.35: A male reindeer (without antlers) is digging a grazing pit in the snow while the female reindeer (with antlers) stands nearby. The image is from the winter pastures at Fielmbejohka, April 2015.



Fig 5.36: Running northwards home to the calving grounds.



Fig 5.37: The GPS bracelets need to be recharged and programmed. Eli Ristin Skum is taking notes of the individual numbers.



Fig 5.38: Follow the herder dog, Čammo's gaze across the ridge and see the reindeer herd at the foot of the mountain on the far side of the valley.

5.10 RUNNING HOME TO THE SUMMER MOUNTAINS

The North Sámi word *giddajohttin* denotes the spring migration from the winter pastures towards the calving lands. It is crucial for the reindeer to be in the right place at the right time, and what is right varies from year to year. The reindeer herders aid the reindeer in the movement between calving lands, rutting lands and seasonal pastures, not only by safeguarding the reindeer herd's crossing of infrastructures, but, as importantly, by maintaining conversations with authorities, neighbouring siida and others actors along the migration route. In 2015 I joined Per Johnny and Eli Ristin Skum's siida for the two last days of the spring migration (Fig 5.36-5.38). when the herd crosses the E6, passes Áisaroaivi and arrives at the calving grounds in the coastal mountains. When the reindeer arrive in their calving land, they face new challenges. The herders stay close to the herd to protect them from predators during the calving and nursery period in May and June, but not too close, so that they disturb them.

Eli and Per Johnny's evaluate plot patterns from the GPS bracelets that selected reindeer have worn during the summer. One hundred individual digital tracks provide indications about how the herd moves. Per Johnny shows me eight tracks at the time on his screen.

'Look at this female,' he says, pointing to a single track on the screen. 'She ran off directly to Ásavággi to give birth, after our last stop at the spring-migration!' The machine's eye had confirmed the herder's traditional knowledge. 'I want our reindeer to be able to follow their own will,' he says on another occasion. 'If the herds are forced to adapt too radically to human activity, more of them might roam infields and gardens.' (Field notes, Áisaroaivi, September 2015)

During the winter season, Arctic Drilling had extracted 10,000 metres of core samples through 30 new holes (Carstens, 2016). Nussir ASA had obtained a dispensation from Kvalsund municipality to extend the drilling operation to include April 2016. The drilling campaigns are supposed to end before the reindeer arrive, but the herders have to negotiate with both the mining company and the municipality to make them close down the drilling activities when the reindeer arrive. The herders then detected a diesel spill and debris, such as ropes, pipes and tarpaulin, littered around. 'This is not good when it is a calving area' (Sveen, 2016). There was a lot of negotiation when the siidas. The seasons of leisure use of snowmobiles was still not put to an end

and Nussir was still drilling. In addition there was helicopters involved in maintenance of a telecom mast in Repparfjordalen.

‘However, it’s not as bad as it was in the beginning,’ Per Johnny says. ‘Back then, when we opposed them drilling in Ásavággi when the herd arrived, they just drove to the mountains regardless. We had to go to the district court to stop it, in the midst of the calving period. Now, at least Nussir ASA has regulated dates to adhere to. From May 1st to August 1st, nothing will happen. But we do have reindeer that are supposed to graze there in August too; all these landscapes are autumn pastures. Then they fly in containers and barracks with helicopters on the mountain. When the prospectors are there, we lose pastures. When one starts taking the reindeer out of the area in August, they refuse to return later in the autumn. This is the kind of intervention that’s already happening now. Now today.’

5.1.1 CONCLUSION TO CHAPTER 5

Nussir ASA’s activity of prospecting for a future mine in the coastal mountain is already perforating the traditional calving ground in Ásavággi. The cylindrical holes left behind from extracted drill cores are elevators through geological time that become integrated parts of the terrain. The subterranean echoes of anticipated blasts remain in the soundscape of Ásavaggi. The boreholes are like wormholes for the echoes to take on time travel in the landscape: down through the strata of geological time and up to the discourse on the future landscape. The holes bear witness to both extracted matter and extracted agency, as the negotiation of the future landscape takes place at other venues. The Nussir prospect was developed in parallel with a number of other grand infrastructural prospects of national interest. This included a number of wind turbine plants, hydropower development, powerlines, and land-based waste deposits for the offshore oil industry. Reindeer husbandry and meahcci practices are supposed to be safeguarded through the impact assessments in development projects. But, as Dannevig and Dale (2018), Nygaard (2016), Winge (2013) and other scholars have noted: An impact assessment is a part of the opening process of extractive prospects. When an impact assessment is done, it is often already too late to influence the outcome of a development case.

Sámi pastoral communities negotiate on behalf of their *boazu* [reindeer], when dialogue processes aimed at constructing consensus around the opening of new mines (among other encroachments) demand their attention. In doing

so, the reindeer herders are the human voice in an interspecies diplomacy that assures good terms between the reindeer, people, landscape and territory. In consultancy statements from reindeer husbandry districts regarding landscape encroachments, there is a trove of place-specific landscape knowledge, concepts and perceptions. The way in which environmental and social impact assessments are organised excludes these rich accounts of landscape from the assessments of impacts on landscape. In the Nussir case, they remained excluded throughout the whole planning process.

The taskscape (Ingold 1993,163) is more than just tasks, it is also play and appreciation, as I have shown by describing the playgrounds by the earmarking fences. The landscape that the children make when playing among the corral, the *goahitis* and tents is there in Kvalsunddalen is landscape while they are playing there. When they leave, it lingers in memory and stories until they return the next year. The nomadic pastoralist's dwelling landscape, in Sámi *báiki*, which could be translated as both "place" and "home", and the Norwegian category of *nær-landskap* [the everyday landscape], reveals itself when the *siiddat* are present and hides itself when they are elsewhere.

In Chapter 6, I follow the Copper Mine application process further. Situated by Repparfjorden, in conversation with coastal people of views from the local context, communities and cultural perspectives, I follow the procedural institutional decision-making process of the discharge application and the application for a mining concession.

Chapter 6 The Winter Fjord

6.1 THE REPPARFJORDEN WINDOWS

Sounding the depth of the perforations in the coastal landscape, this chapter elaborates on how a diversity of research initiatives, subject positions and policies gravitates towards the Nussir prospect as a matter of concern. It also portrays Repparfjorden through conversations with local residents and people who have a special relation to the fjord. Around Repparfjorden, we find the Sea-Sámi fishing villages, Klubbukt, Skaidi, the promontory Markop, and Kvalsund centre. While those who have been public about their views on the environmental controversy around the Nussir prospect, one of the interviewees chose to be anonymous, saying that: 'Even though local people probably would recognise me if they read the text, the rest of the world does not necessarily have to know my name.' Overlooking Repparfjorden, there are kitchen windows, windows in living rooms, in porches and boathouses. There are windscreens in fishing boats and cars, computer screens. Through these windows, people watch the changing conditions of the fjord from different perspectives. These views also constitute a perforated landscape. The field narratives from Repparfjorden is written in context with with historic accounts and a document and media study of Nussir ASA's application process for a discharge permit. The latter is further informed by participatory observation in Naturvernforbundets mining group. The chapter further include an analysis of Nussir ASA's application for a mining concession. Taken together, the interviews, documents and media records unfold Repparfjorden as a perforated landscape.

6.1.1 Seasonal Food and Food Security

The 100th anniversary of Friends of the Earth was celebrated with a seminar in Repparfjorden in June 2014. Anne Lise Thingnes Før Sund who leads the resistance against mine tailings disposal in Førdefjorden held a speech where she reminded that: ‘We must remember to live our lives while we fight to save our fjords.’ She emphasised the importance of upholding practices of care, harvesting and appreciation of the landscape through environmental struggles that can last for decades. The leader of West Finnmark *Naturvernforbund/ Luonddugáhttenlihttu*, Annie Henriksen (Fig 6.1) talked about her perspective as a community midwife who engages in the struggle for clean fjords, from her perspective as a *čalbmeeadni*, (eye-mother), the one who first sees the newborn child.⁹¹ After the anniversary seminar she agreed to let me interview her. ‘When, in 2013, I read in the morning paper that it was likely that the mining industry should be allowed to pour more heavy metals and pollutants into the sea, our food garden, while I am already bound to advise pregnant women that they must eat less of the traditional seafood here, I could not sit idle.’ Along the coast, the health authorities give health warnings for fish and seafood caught at specific places but also general advice for certain species of fat fish. ‘We have known for a long time from international monitoring programs that there are traces of heavy metals and environmental pollutants in the placenta, in the newborn child, and mother’s milk.’ The midwife and her family are members of the hunting and fisher association and used to take part in the salmon fishing in the Repparfjorden River. ‘I eat the food nature gives in the different periods of the year. Following the seasons is part of the pleasure of living here. I raised my kids like that; I have taught them to enjoy the seasonal changes.’ The *čalbmeeadni* sees feminism and environmentalism as two sides of the same cause. She continued:

– While the authorities allow the release of toxins that accumulate in the food chain and end up in the most wanted and delicious parts of the traditional food, they send the responsibility for food security over to the woman. She must be cautious about the food she eats, and she is forced out of the food tradition that she might have wanted to keep and to pass on to her children. When I talk about the diet with the women in Loppa, I feel that we are in this together. They too experience sadness when they are told that they, for instance, have to throw away the liver from pollock that they have been fishing.

91 In North Sámi language, the midwife is the *čalbmeeadni* (the eye mother) of the newborn because she is the first one to see the child. A longer version of this interview was published in *Tidsskrift for Jordmødre/ Journal for Midwives* nr 7 (Uhre, 2014).



Fig 6.1: The midwife participates in a protest rally against mine tailings deposits in Repparfjorden. Photo by Geir Jørgensen. Reproduced with consent.

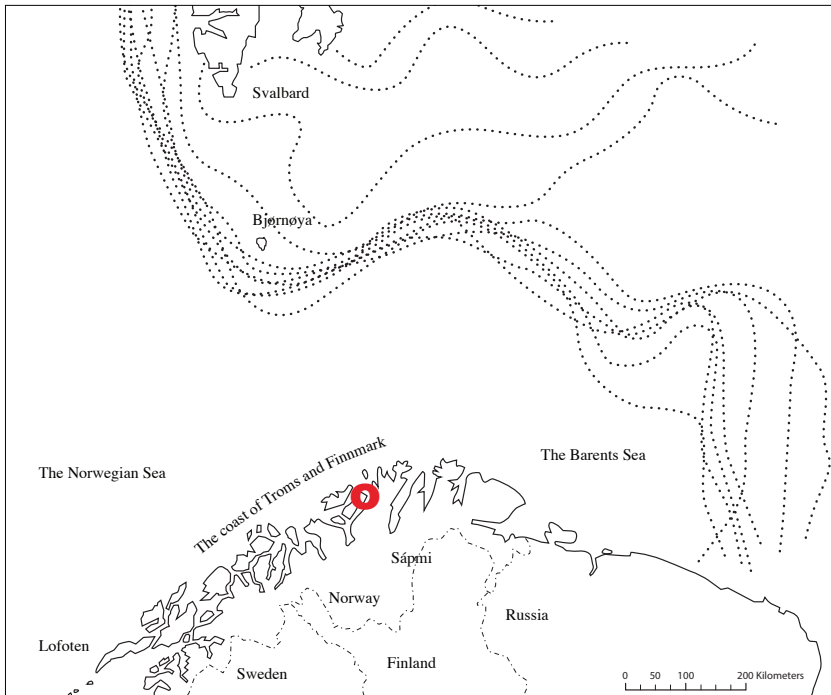


Fig 6.2: Location map, Repparfjorden in the context of the Norwegian Sea, the Barents Sea, and the extent of the sea ice zone. Source (ice): The Norwegian Polar Institute

Moreover, such dietary advice does not only apply when you are pregnant; no fertile women should eat liver taken from fish within the coastal baseline—and they should also not eat adult demersal fish—those living on the seabed such as the great halibut. The great halibut is our most beloved fish. You can find it carved in the rock at ancient places in the landscape. It is such a divine fish, it is the finest fish we have here on the coast—immersed in mythology—and then it comes to this. (Interview, Hammerfest, 2014)

The midwife's story shows that the seasonal food that nature gives is part of keeping the connections between citizens/denizens and the migratory landscapes. The location map (Fig 6.2), shows Repparfjorden in the context of the Norwegian Sea, the Barents Sea, and the average extent of the sea ice zone.

6.1.2 A Garden of Peace

The author Marion Palmer has invited me to sit with her on her glassed porch. Through the windows, we see the panorama of outer Repparfjorden, the Samuel Strait in light bluish tones between Kvaløya/Fálá and the mainland. 'The outermost mountain on the mainland is called Klubben,' she says and tells that there is a Sea Sámi fishing village called Klubbukt (Fig 6.3). In the foreground, where her garden ends in an Arctic stone beach, she points out her uncle's boathouse and fish racks.

'Kvalsund wants to take part in the industrial adventure of the North, but until now we have been blessed only with industrial waste,' she says.

She is from a Sea Sámi family and nurtures a close relationship with one of the family-based reindeer husbandry *siiddat* in the Fala district that crosses through Kvalsund on their migration to Kvaløya. She interprets this friendship as a contemporary version of the traditional guest-friend relationship, *verdevuohtta*, between Sea-Sámi and Sámi pastoral families. 'The reindeer in Kvalsund were all born here, you know. When they arrive, they are coming home,' she says. We have been walking to the foot of the Nussir Mountain and she has shown me her garden. 'A garden of peace,' she observes. Marion enjoys the fact that reindeer visit her garden, but she also likes to keep her flowers. Therefore, she has planted Siberian poppies and other colourful species that the reindeer avoid eating.

'The Sámi history of Kvalsund is rich,' she says and continues: 'The first Sea Sámi author, Anders Larsen, lived here, and historically there



Fig 6.3: A girl playing at the beach of Repparfjorden. To the right in the middle ground of the view is Klubben, the landmark hill of the Sea Sámi village Klubbukt.

have been close ties between the sedentary families and the reindeer husbandry families; in fact, we are related' (Field notes, Kvalsund, 2014).

To be a *verdde* was to engage in 'a bilateral exchange relationship between the sedentary population and reindeer herders' (Bjørklund and Eidheim, 1997, 562, my translation). Until changes were made in the Reindeer Husbandry Act, the Sea-Sámi *verdde* could own individual reindeer in the migrating herds. Johnsen (2016) proposes that the loss of reindeer and the connection with the mountain may explain some of the negative feelings towards reindeer husbandry among the sedentary population in Kvalsund.

Kvalsund was burned at the end of WW2, every house and barn torched by the retreating German invasion forces. Palmer is the author of the novel *Bare kirka stod igjen* [*Only the Church Remained Standing*]. Based on interviews and archive studies, she maps the individual stories from the evacuation. 'When the war was over, people didn't wait for permission from the government to return home,' she said. 'They went home and started reconstructing with the materials at hand.'

6.2 CAUTIONARY TALES OF REPPARFJORDEN

Repparfjorden was one of the last Finnmark fjords famous for its herring in a period of severe overfishing in the 1960s. At the time, the stock of Norwegian spring-spawning herring [*Norsk vårgytende sild*] was decimated all along the coast. The over-exploitation also denuded the stocks of endemic fjord cod that were taken as bycatch by the industrial herring vessels [sildesnurpere] that vacuumed the fjords. Repparfjorden was famous as one of the last Finnmark fjords to hold herring. It is mentioned in a song from 1978 by the band, *Boknakaran*, that describes an unfortunately drunken crew's hardships on the cargo boat, *Hortensia*, shipping small herring from Finnmark to the herring mill factories further south in Nordland County. 'It went well until December, when they came from Repparfjorden for a stop in Tromsø intended to be swift'.⁹² From Tromsø, the song continues, *Hortensia* with her crew resumed a hazardous voyage down the coast but never made it to the destination.

In the 1960s, the demand from the herring meal industry led the herring fishing vessels to use nets so finely meshed that they caught fish larvae. In his colourful language, Olsen told me that: 'In the end, the individual herring caught in Repparfjord were so small that twenty of them could fit in a match-box.' For the leader of Bivdi, Torulf Olsen, the overfishing of the 1960s is a cautionary tale.

Throughout a year, and through longer periods, the cycles of the ocean produce times of plenty and times of scarcity,' he said. Bivdi aims to use and protect the renewable resources and to keep the economy of those resources in the community.⁹³ 'In times of abundance, as now, it is enough for everyone to come here and harvest. However, in periods of scarcity, people have to survive, and then you do not want to have given away your rights. (Interview, Klubbukt, 2015)

The herring meal industry eventually collapsed, and the fishery authorities introduced rigid control of the herring stock. Russia contributed by prohibiting catchment of young herring in the Russian zone' of the Barents Sea. 'The leading institutions that perform most investigations in that part of the sea

92 My translation from the song 'Hortensia with Crew', second verse: 'Det gikk bra tel i desember da dæm kom av Reppar-fjorden, og la turen innom Tromsø, der dæm skuille være snar.'

93 Bivdi is the North Sámi term for hunting, trapping, and fishing, in the plural: bivdit. In Schanche's (2002) article, I learnt that bivdit also means to pray or to state a request. This, Schanche proposed, might imply that hunting and fishing is an art of communicating with nature.

are the Knipovich Polar Research Institute of Marine Fisheries and Oceanography (PINRO) in Murmansk and the Institute of Marine Research (IMR) in Bergen' (Jakobsen and Ozhigin, 2011). 'Productive discussions in March 1965 were very important as a means of strengthening cooperation between PINRO and IMR' (ibid., 27). Given protection, and sustainable fishery management over time, the herring stock along the coast slowly started to recover. The other cautionary tale concerns copper mine tailings. In Chapters 4 and 5, I briefly mentioned Folldal Verk Mining Company, which ran a mining operation in Repparfjorden from 1972 to 1978. During these six years of open pit mining in Gumpenjunni (The Wolf Nose)/ Ulveryggen (The Wolf Ridge), the mine tailings were discharged in the marine environment of the fjord Riehpovuotna/the Reppar Fjord. Folldal Verk subsequently led to a dismantling of the local fishing fleet in Repparfjorden.

6.3 FIELD TRIP IN THE WINTER FISHING SEASON

To help me understand the coastal fishery in Repparfjorden, the leader of Bivdi, Torulf Olsen planned a series of meetings with fishermen and a fisher woman during a couple of days in the winter-spring fishing season of 2015. Olsen arranged meetings and fishing trips at the fjord, and he took an active part in the interviews. There were particularly three issues he wanted me to grasp: What happened with the local fishing fleet in the 1970s during and after the mining operation of Folldal Verk; what is the condition of Repparfjorden today; and what lives inside the borders of the planned mine tailings deposit site? Incidentally, we also met and interviewed a marine researcher, who was collecting samples from the marine environment in Repparfjorden and the neighbouring fjord, Revsbotn. I choose to anonymise some of the interviews from this field trip.

6.3.1 The Fish Landing

The winter-spring season for cod-fishing starts around Easter. I met up with Torulf Olsen at Skaidi in Kvalsund municipality. 'Everybody wants to see Repparfjorden from a fishing vessel these days,' Olsen said, 'but be welcome.' Our first destination was a collective quay with a boathouse and some fish racks in the small fjord called Fæg fjorden. There he had arranged to meet two fishermen, father and son, when they came ashore with their fishing boat. We remained at the quay and saw the boat as it passed Fæg fjordholmen. It came slowly towards us while the fishermen slaughtered the catch (see Fig 4.19). A flock of seagulls swarmed around the small fishing vessel.

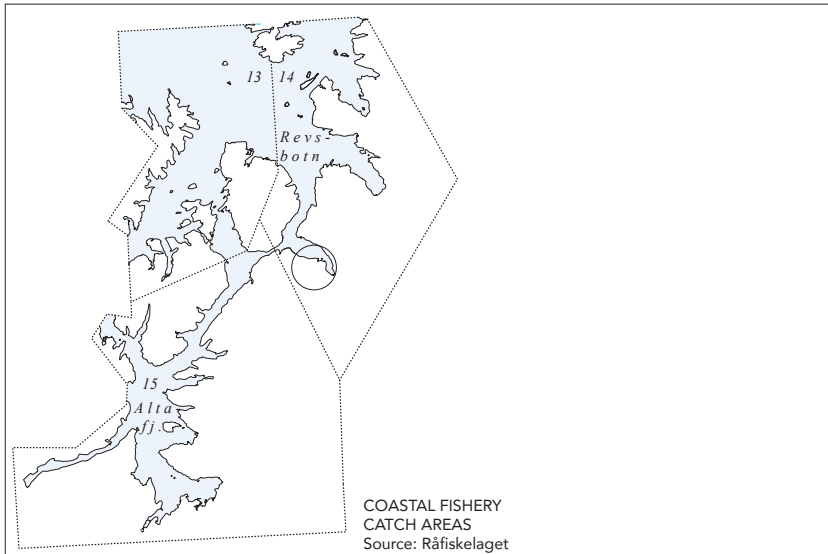


Fig 6.4: Fish caught in Repparfjorden is registered in the Catch Area nr 14, Revsbotn. In consequence, there are no statistics of how many tonnes of fish caught in Repparfjord in the official harvesting statistics.

Once they had moored the boat, Torulf was delighted to see the catch: big and firm coastal cod and migratory cod [*skrei*], halibut and different flounders. An unfortunate king crab followed as incidental catch. The son held it up high and gifted it to us, so that Torulf could prepare a meal that was a taste of Mikkolaholla, which means the Mikkola-deep. Their net chain had been placed down the slope of Mikkolaholla and stayed there overnight. The stretch of the gillnets had, in fact, been along the planned location of the discharge pipeline from the Nussir mine. Near the bottom of the fjord, or in the demersal zone, live species such as cod, flounder, halibut, and snapper that feed from other demersal fish or from aquatic organisms, which live on or in the seabed. The seabed is in the benthic zone where one finds crabs and abalone, corals and sponges. ‘I prefer to call it Rushfeldtholla,’ Olsen says, ‘because now Rushfeldt wants to dump his toxic mine tailings there.’ The king crab turned out to be an absolutely delicious treat when we later ate it.

Usually, the catch is sorted between *kokfesk*, fish to be kept and consumed privately, *boknafesk*, and standard sized fish to be delivered at the fish landing. The *boknafesk* will be salted and then semi-dried. Coastal fishers get a higher value for the catch when they prepare dried fish and the popular semi-

dried fish, boknafesk, but, during the winter fishing season, the economically most important category is the fish to be landed at the fish landing. The closest fish landing is in Hammerfest. Landed fish is registered in *Råfisklaget's* harvesting statistics. In these statistics, the Norwegian coast is divided into catch areas. Repparfjorden is in a *catch area* comprising the neighbouring fjord, Revsbotn, and a basin between the mainland and the islands beyond (Fig 6.4). In consequence, there are no statistics of how many tonnes of fish are actually caught in Repparfjord.

6.3.2 Fishing Cod in Repparfjorden

The following day, Olsen had arranged for us to participate in a fishing trip with a man who had resumed fishing in Repparfjorden after his retirement from employment in Hammerfest. We met up at the breakwater in Klubbukt (Fig 6.5). Four boats were moored inside the breakwater. The reflection of the boats shifted lazily on the swell. One of the jetties was covered in colourful piles of gillnets. Olsen approached the fisherman who was sorting out the gillnets. They greeted each other and Olsen introduced me. I got on board and settled in the boat, while the men made jokes about having a female crew member. The boat is part of the coastal fleet of boats under 11 metres. It is a 25-foot vessel with neat and lissom proportions. It has a yellow hull, white weatherboard, and a fore cabin of oiled wood. The boat took a turn in the Klubbukt bay, and the engine speeded up as we passed the opening of the breakwater.

I peeked into the fore cabin. The fisherman explained that we were going to a location west of Klemmersteinen (a shallow area mid-fjord that was a fishing ground) to set the net-chains he was preparing (Fig 6.6). Thereafter, we would go to haul the nets he had set at dawn. There, he planned to gut the catch while letting the boat drift until it was time to return to Klubbukt. In the evening, he would drive with the catch to the fish landing in Hammerfest. This whole process with the gear and live matter in the fjord is called *sjøvær*.

The dashboard displayed three screens, one of which showed the sea chart. The fisherman pointed out the GPS position of the boat; we were heading towards a red x in the middle of the fjord. The second screen featured red, green and blue dotted lines. 'Is that the echo sounder?' I asked. He then explained that he combines three navigation systems to position the boat. The GPS shows the position of the boat, the gillnet, and the destination, as well as a log of his earlier fishing trips. The echo sounder shows the reflection of the seabed and schools of fish under the boat—he checks this information according to his seafarer landmarks [*mea*]. When we arrived at the 'x' west



Fig 6.5: The harbour in Klubbukt with the Nussir Mountain, Nussor/Steinfjellet [The Stone Mountain] in the background.



Fig 6.6: Nussor/Steinfjellet seen from Klemmersteinen, a shallow field [grunne] that is a known spawning area and fishing ground in Repparfjord.

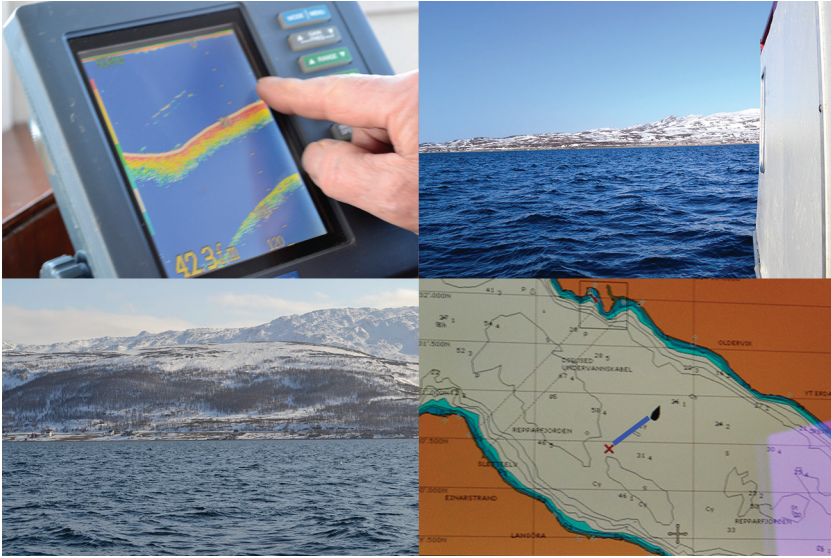


Fig 6.7: The Captain checks his landmarks (mea) on each coast, the echo sounder shows a shoal of fish, the GPS show yesterday's position of the boat that is the position of the gillnet.



Fig 6.8: The Captain checks if the newly set gillnets are all good.

of Klemmersteinen, he stopped the engine and showed me his *mea* on both sides of the fjord. Then he explained how he uses the *mea* to know where he is and to set the course: ‘Can you see those two buildings there? When the wall of the house and the wall of the barn intersect, we are at the right place. (Fig 6.7) Before they built this barn, I used the landscape formation there combined with the house. On the other side of the fjord, I use that river you see there.’ I asked: ‘Why don’t you use the mountain tops as *mea*?’ ‘If I used the mountains, I would not be able to see the *mea* in bad weather or fog,’ he answered. ‘The landmarks have to be close to the water surface.’ After a while, he said: ‘This is where we are going to start here. This is the right place.’ ‘You see the depth on the echo sound. It is 50-60 fathom deep here. We are going to go with the net-chain [*garnlenka*] along this seabed ridge [*landbakken*].’ The use of *mea* is a type of practice-based knowledge in and of particular landscapes that is learned from experience. The Captain set the boat in motion and I went out on deck.

Torulf threw in the gillnet anchor [*ila*] of the first net in the chain and shouted over the engine roar: ‘The anchor is ready! The anchor is done; the net chain is running!’ I looked at the nets stretching out behind us; there were a few tangles, and I ask what to do with them. ‘When the yarn tangles, you have to keep your fingers away, otherwise you cut them off,’ he answers. ‘Setting nets is a dangerous game. One of the common accidents that occurs in small fishing vessels like this is that the fisherman gets a foot stuck in the net and follows it down into the water. One always has to take such precautions.’ The setting proceeded swiftly, and we went back along the gillnets to see whether they were all good (Fig 6.8). It was time to go to the netchains that were set at dawn. A buoy marked the anchor position of the chain. On the echo sounder screen, I saw that the nets were loaded with fish. The men started hauling nets on board over the reel [*rullen*]. It held plenty of fish. With the reel with a static spool [*spellet*] the hydraulic device that winds in the nets], they regulated the pace of the haul, according to the volume of fish. The nets ran over the bench [*garnrenna*] where the men untangled the fish, before it went through over hoop that to extended the nets to untangle them. Thereafter, the gillnets were stored astern, ready to be set the next day. The halibut were selected carefully and placed with the white side facing upwards; the cod and skrei were placed in the large wooden box on the deck amidships. ‘According to ancient beliefs, halibut must always lie with the white side up, and there are hundreds of explanations,’ Olsen said. When all the gillnets were on board, the Captain turned the engine off. It was time to bløgge [*slaughter*] the catch. The sudden silence was soon filled with sounds from the fjord and approaching seagulls.

6.3.3 The Eagle and the Deposit Site

The two men improvised a production line. ‘Where is the knife?’ Olsen asked, and, when handed one, he slashed open the first fish and handed it over to the fisherman, who took out the gut. ‘This is the line of work: one cuts, the other removes,’ he said to me and my camera (Fig 6.9). He was excited to see that the cod had been feasting on herring in the fjord. The Captain said to set aside four of the best specimens and place them in a smaller box. The cod was bursting with roe. The roe went in a special bucket, the liver in another, gut and stomach contents remained in the box. ‘This is how it looks inside the slaughter-bench!’ Olsen explains. The contents of the box revealed that the cod were caught during a feeding frenzy. Small filter-feeding fish such as herring compensate for their small size by forming shoals. Barely digested herring poured out of the guts of every cod they slaughtered (Fig 6.10). ‘Look! The fjord is full of food! Aiaiai! This is what wealth looks like.’

Seagulls of different kinds congregated by the boat: black-backed gulls, hooded gulls and tern. The air filled with flapping wings and balancing tail feathers. The gulls dived for the guts that were thrown in the water; they caught, swallowed and rose around us. A spread of fish parts had settled on the water surface. An eagle came gliding to get its special treat. The eagles do not dive or swim, and Torulf told me that they cannot take guts because they can bounce upon their tails and weigh them down. The eagle then risks drowning. Torulf threw in a haddock that he had set aside at the weather-board. The haddock floated. Coastal fishers often give the eagle a suitably sized fish. The top predator came closer, in wide circles, then it sailed downwards with its legs stretched out towards the white, floating fish, caught it in its claws and rose again in a perfect curve. I looked for it as it flew towards land to eat; in the background of this spectacle, I saw the place where the fjord turns to Markopneset. That was where the sea deposit of mine tailings was planned to be located. Olsen pointed out the location: Mikkolaholla (Fig 6.11).

The fisherman looked towards the deposit site. Full of sorrow, he said: I think a new period of waste dumping here will be the end of the fjord.’ He held the cod he was working on towards me. ‘Look at this.’ He lifted one gill so I could see the red filters inside. ‘This is how healthy gills are supposed to look (Fig 6.12). In the Folldal period, the fish had grey gills, full of mud. The fish from Repparfjorden at that time, I must say, were not suitable for animal feed and certainly not for human consumption...’ ... ‘The fish were destroyed by the fact that the gills were clogged.’ There was so much mud in there that the fish could not draw in oxygen, so the fish were gone.



Fig 6.9: The boat is adrift while Olsen and the Captain slaughter the cod.



Fig 6.10: The cod has feasted on herring. 'This is what wealth looks like!'



Fig 6.11: A view from the coastal fishing boat in Repparfjorden towards the planned mine tailings deposit site.



Fig 6.12: The gills of this cod is healthy and clean.

Repparfjorden was always a herring fjord and a fishing fjord before Folldal's operation started. 'You can say that, with the discharge in the sea, Folldal killed all the fish industry in Repparfjorden'. ... 'It took 15-20 years before the fish started to return, maybe longer, even though Folldal ran for only a short period.'... 'You know, one, two or ten individual [cod] could be caught, but that is nothing for a fjord.'

6.3.4 The Herring is Back

When the fisherman started the engine, Olsen selected some of the herring and arranged them by size. 'This is what makes the fjord alive! It is impressive,' he says, and continued to teach about the cohorts, or year classes, that are hatched during the same spawning seasons. 'This is a so-called plus one, it is more than one year old, hatched in 2013. This one is two years; these are two years, look! It is downright amazing. This one might be a "two plus", it may be on the third year because you can see it has got a grate.' He moved them to the bench. 'We put them here, and we need a scale. I want to document exactly this.' His enthusiasm was contagious. 'Look at this wealth! Their stomachs are full of herring, the cod has eaten and now they are spawning in our fjord. It makes me so happy that they are back.'

Back in Klubbukt, Torulf and the fisherman winched the catch ashore. In general, the cod ranged from 70 cm to 1 metre, muscular, trim and in very good shape. The fisherman turned to Olsen and told him about a fishing trip some weeks earlier when he had observed whales chasing herring towards the shoreline. 'There was so much herring that they almost raced dry on the beach.' Then he explained for me that for decades there was no herring to be seen, 'there was nothing here! The spawning fish were lost and stayed lost for a considerable amount of time. No migrating cod [*skrei*] came to feed in Repparfjord until the fjord became clean. From now on and onwards, it is a base for life in Repparfjorden.'

The fisherman's wife waited on the jetty and invited me to walk with her while the men moored the boat. The couple's old, black dog followed us uphill through the village. We agreed that I should return, to hold a formal interview with the two of them together. That would give me the time to edit the images, listen to sound recordings and make a draft outfield atlas of Repparfjord to structure the interview.

Later that afternoon, when we looked through the photos, Olsen said: 'These are fresh facts, showing that the fjord abounds with life; the marine research-

ers should have seen this!’ The radio was playing in the background. ‘Hush, listen!’ He turned the volume up and we got news from the Norwegian west coast. The prospecting company, Nordic Mining, had acquired a permit to deposit mine tailings in Førdefjorden. The radio went on to cover the general reception of the news. North Norwegian politicians interviewed about the decision of the Department of Environment anticipated that this would also bring a discharge permit for Nussir ASA much closer. Olsen said that he would never allow them to take the fjord. I looked through Olsen’s kitchen window across Repparfjorden towards Kvalsund. There, on the other shore, Marion might be sitting on her porch, looking towards Klubbukt. There was no wind outside, no waves. A flock of Arctic terns feasted on herring mid-fjord. The outflow of freshwater from the salmon river looked like meandering ribbons’ silky smoothness that mirrored the Nussir Mountain perfectly.

6.3.5 In the House

The following day, in the couple’s garden, I admired the greenhouse, and the woman told me that, later in the spring, she would nurse flowers, carrots and turnips in there, until the time was right to replant them outdoors. She and her husband were both retired and had time to cherish the soil and the sea. Upstairs in their house, I saw the wall of family images: a wonderful assemblage of photographic advancement from carefully arranged black and white portraits, via faded Kodak colour outdoor group images, to bold digital prints, all mounted in time-specific frames: images from their wedding, images following three children from when they were toddlers until they, as proud parents, held their own children. There is a semi-open solution between the kitchen and the living room. A bowl of waffle batter stood on the counter; I learned the secret of how to make the waffles crunchy. That secret is perfectly safe with me, as I immediately forgot it, and my tape recorder was not yet turned on. When the first spoon of waffle batter sizzled on the iron, the most wonderful smell filled the room.

I opened my laptop to show the pages with images and notes from the fishing trip and turned on the recorder. ‘I wanted to show and discuss this,’ I said and turned the screen towards the fisherman. ‘Oh yes, that. Have you seen this?’ he asked his wife. He pointed to an image of the cut content of the cod: ‘Look, the fish feed. This is the herring that is in the fjord. This one,’ pointing to the smallest of them, ‘was here in the fjord earlier, then came the blade herring (as big as the fisherman’s knife blade); it is bigger, you see, and it arrived not so long ago. We have had blade herring as a matter of fact in Akkarfjorden and Fæg fjorden. I fished with herring nets in there and salted the herring. It’s just three years ago.’ He then commented on an image of the firm

catch. ‘All this disappeared, you know; we talk about before Folldal and after Folldal.’

‘Yes,’ his wife confirmed. ‘I know this, because a fisherman who now is dead told me—I always used to buy dinner fish [*kokfesek*] from him—that he had moved his gillnets away from Repparfjorden because the fish there wasn’t edible. Of course, people now that say that this is a myth. In the beginning, when Folldal first started mining, the fish was not too bad. The damage came over the course of time,’ her gaze tellingly said what it is unnecessary to repeat in words, ‘and the dumping did not even last for a long time.’

The living room had big windows facing Repparfjorden and the view of the little harbour behind the breakwater of Klubbukt. What was life like here, previous to the mining in the 1970s? The fisherman said: ‘Repparfjorden was a fishing fjord, there were only fishermen in Repparfjorden, but after the war there were only a few young guys who were fishing. They lived in settlements a little bit further out, places such as Brensvika.’ He continued: ‘I went to the sea when I was very young and was away on the ocean. When I returned, I took whatever job I could get. Then I was called for military service. After the military, I went to the available work. Folldal Verk was probably the first employment available here that was not related to the fisheries. Further, Folldal Verk gave financial support to the workers who wanted to build new houses. This whole neighbourhood was built in the period of optimism following the opening of the mine.’

The wife grew up in Brensvika and went to elementary school in Klubbukt. Her family were smallholders. Her husband continued: ‘This was what existed here, smallholding and fishing. There were smallholdings and fishing all around the fjord. A handful of fellows worked for the state road administration. All of us young boys left.’ ‘Yes,’ she confirmed, ‘many of them were very young so they started sailing the school ships.’ There were only elementary schools in the villages around Repparfjorden. When the second elementary opened in Kvalsund in 1964, the boys no longer headed for early careers at sea. ‘What did the girls do?’ I asked. ‘Well, we were at home,’ she answered, and he added: ‘They waited for us to return.’ ‘Oh no, no-no!’ she laughed, ‘No, the girls were here. Usually they would tend to domestic service [*huspost*] and then they helped their parents at home. Some did, of course, go to Hammerfest and work there in the boarding houses. However, apart from that, they were only here, only here at home and had domestic service from one smallholding to another. The majority were at home with their parents because, in most cases, one had to be both at sea and on the land.’

‘Did the girls participate in the coastal fishery?’ I asked, and she continued, ‘There was no rule saying “no, you are a girl, you cannot take part in the work at sea”; they had to work for a living. Those days,’ she continued, ‘they had only small boats, open-boats and that kind, so one went out in the morning, hauled the yarns, came back on shore and worked with the fish, so it wasn’t like...’ [Unfortunately, I interrupted her here with my next question, loaded with my newly acquired knowledge about how the fishermen here now had their drying racks.] ‘Did you hang the fish then?’ ‘No, we delivered them to the fish tradesmen. First, there was a landing in Kvalsund, but later it was here and then it became very convenient. Then they did not have to go across the fjord. They just came here.’

During our conversation about the lives of the rural girls in Repparfjorden, I realised that my understanding of what it meant to *stay at home and help one’s parents* needed an adjustment. I asked if there was work for the girls at the fish landing, and she answered, ‘Yes, indeed! We worked at the fish landing.’ He added that ‘There were four fish landings in Repparfjorden: two in Kvalsund, one here in Klubbukt and one in Rækfjord.’ Then she continued her story: ‘At the fish landing in Klubbukt, they produced dried and salted fish. Girls of 14 to 15 years used to be there when the dried fish was taken down and packed for transport. We were the ones “taking down”. We climbed the racks and threw the dried fish down to the older women below. High up! We were not afraid of heights, we just went up, and we used to shout to the women: “Hah! Now you can stay down there!”’ I ask if she earned good money. ‘Good and good—I remember when I first started there with the fish tradesman. I was 15 years and made six NOK an hour, but, you know, we were not used to having our own money, and we also did not have anything on which to spend it. It was like we were *here*. I must say we were *only here* walking back and forth on our feet. There was no road, so we used our feet to move around, and, during the winter, we used our skis. But later, when I became older and we got piecework—as they say so aptly—of course I earned more money. There was much work and I got to work a lot.’ The story about all the daughters of smallholder farmer-fishers that worked the waves and the fields completely changed my mental image of the coastal fishery and smallholding economy.

‘The fish tradesman, Berg, started to take in and process pollock during the high seasons. The working line was partly automated. That was convenient. I was very quick in my movements. The landing foreman used to say, “You shall stand there, because you are the fastest”. There was one machine at the start that scraped the pollock and another that cut off the heads. So, we stood

at the outside and fed pollock into the scratcher and then: *swosh*, through it went.’

‘The tradesman got the fish and we got work; that is how it was, that is how we lived here. Life here began to change when he got ill and died in 1967. Then it got very silent and quiet; the women stayed at home and the men went away for work. That’s reasonable; there was no work here. Then the road was built in 1968.’ She was sure of that because: ‘There was no road when our son was born, only a short stretch, but, in 1969, when my youngest daughter was born, then the midwife came here by car.’ Her husband recalled: ‘That year, I worked in a shop in Hammerfest. I went directly from the free life of a seafarer to a spot behind a counter. When Folldal prepared to open the mine in Repparfjorden, I attended a blasting course and got work as a blaster in the mine in 1971.’

She is one of the few women that worked at the mining company. She told that, when she first started at Folldal, she was cleaning. ‘I started during the summer and we were doing general cleaning in the portcabins (temporary buildings for accommodation and working). We washed and washed. Then, I got promoted to work in the laboratory with the geologists there. We were analysing the ore samples, to read off the copper grade. We mixed the ore samples with a liquid and placed it in a cupboard. Towards the end of the time at Folldal, I worked on the switchboard. Folldal Verk was a good place to work. We were young and we did not know that we were destroying the fjord.’

In NRK’s online archive, there is a TV documentary from that time: *Finnmark 1978*, which features the time when modernism and a money economy developed a stronghold in the county. In Kvalsund, it was mining, but the documentary portrays a place with few workplaces for women and little for young people to do. Nothing in the documentary suggested that Folldal Verk would be bankrupt just months later. When the mine went bankrupt, most of the former fishermen, now unemployed miners, started to commute to construction work in other communities. No one went back to coastal fishery. Her story suggests that, when the artisan fishing disappeared from the fjord, it was the livelihood of the young women that disappeared. The open boats also disappeared. The whole fleet of Northland Boats in Repparfjorden disappeared from the landings and pebble beaches.

6.4 DESCRIBING THE FJORD IN GOOD FAITH

In Áltá, I made a follow-up call to the marine researcher I had met at the MIKOS workshop (mentioned in Chapter 4). He said that he was a bit busy and could not speak much because he was in a boat. ‘Where are you?’ I asked, and he replied that he was doing cod-egg sampling in Repparfjorden. Until Nussir ASA obtained a discharge permit and mining concession and started to deposit tailings in the fjord, there was a timeframe, a *window of opportunity*, within which the Institute for Marine Research might assess the development of the ecological health of the fjord. Terje van Der Mehren’s current activity suggested this might be an opportunity for me to see a researcher in action. I asked whether I could come to his location; he had borrowed a boathouse in Kvalsund centre for the afternoon to prepare his samples. He said I was welcome to join him, and I called Olsen, asking whether he was willing to take me there.

‘This here is a mobile field laboratory in packed suitcases and bags,’ the marine biologist said. He had a petri dish placed in a microscope (Fig 6.13), and the magnified image of the live matter in it showed on his PC screen (Fig 6.14).

‘Where in Repparfjorden have you been?’ Olsen asked. ‘We have been all over the fjord, from the innermost to the outermost parts.’ The marine biologist showed us a printed map and explained the history of the sample points. They had been sampling from some of the points earlier; they used some of the points on which Akvaplan Niva had data, and next year, he said, the nature-type mapping would probably add one more point. The map would be part of his report. Now they were deriving a timeline and statistics from samples of fish egg and larvae from the breeding grounds in Repparfjorden and Revsbotn, which served as a ‘reference fjord’ in the study: a fjord without the polluting evidence or effects of industrial activity.

In 2011, Nussir ASA’s impact assessment described Repparfjorden as a poor fjord with few fishing boats. The marine researcher said that, even though Repparfjorden had a bad reputation as a fishing fjord because of the crisis caused by the overfishing in the 1960s and the tailings disposals in the 1970s, one should allow Repparfjorden to be described as having the potential to again be a rich fishing fjord. Describing Repparfjorden in good faith was, in his opinion, crucial, because the fisheries had the potential for a new revival and, more importantly, because climate change would prompt fish species to move northwards.

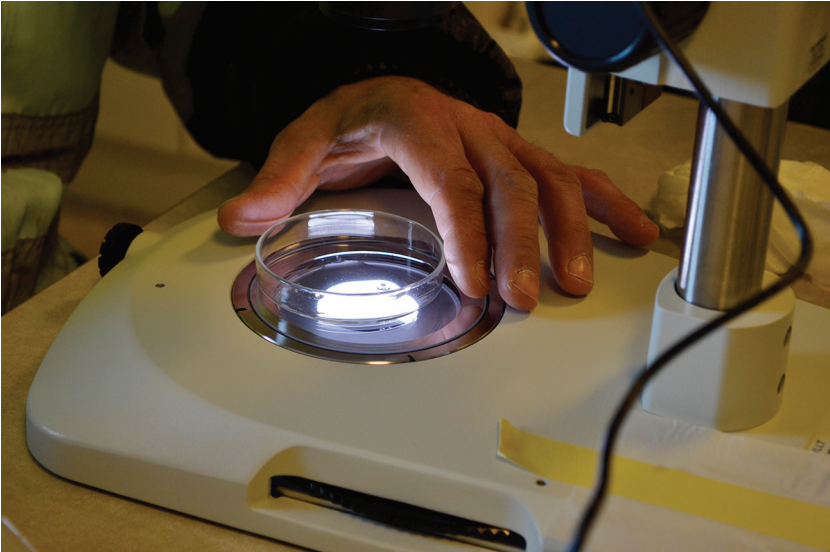


Fig 6.13: A petri dish with egg samples from Refsbotn that is a reference fjord for the samples in Repparfjord.

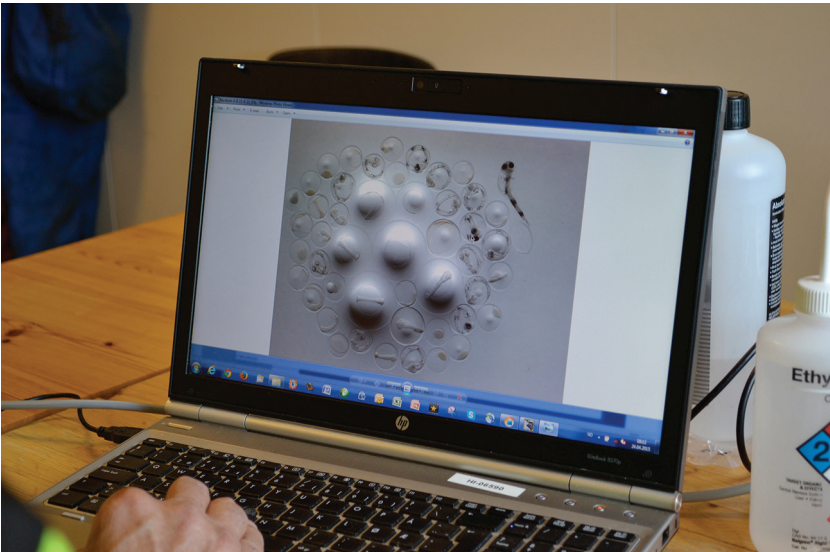


Fig 6.14: The petri dish contains fish larvae and fish eggs in different stages of development.

6.4.1 The Fjord as a Migratory Landscape

Riehpovuotna is also home to migratory fish species, humpback whales and seabirds, including Arctic tern. Repparfjorden is a national salmon fjord, and the Repparfjorden River is a national salmon river. This is a status given to protect the population of wild Atlantic salmon that come home to spawn in the river they were hatched in after crisscrossing the Atlantic Ocean for four years. Moreover, cod larvae from the rich spawning areas from Lofoten drift past towards the shallow shelves of the Barents Sea and the marginal sea ice zone, until they are ready to swim back against the current and spawn along the coast.

The demersal fish and benthic species living on the seabed in Riehpovuotna would lose their habitat; local fish species would lose feeding grounds and spawning grounds. Sources of local pollution add to the burden of environmental stresses in the larger oceanic territory. The tidal current in Riehpovuotna is connected to the coastal current. Akvaplan Niva conducted the required measurements of currents in Repparfjorden for the impact assessment of 2011. The Institute of Marine Research questioned the quality of this assessment and maintained that the potential spreading of the mine tailings from the fjord to larger marine areas had been underestimated. ‘The spread would probably be greater than calculated’ (Fosså et al., 2011, 7).

6.5 NUSSIR ASA GETS THE DISCHARGE PERMIT

At the time when the impact assessment of the Nussir prospect was conducted, in accordance with the Norwegian Plan and Building Act, it was sufficient to rely on existing knowledge. Thus, the impact assessment reviewed ‘estimated impacts based on available information’ (KMD, 2014b). This has since changed, through the introduction of a second sentence in paragraph seven in the Directive for Impact Assessments that was adapted in 2014: ‘If such information about important matters is not available, new information shall be obtained as necessary’ (KMD, 2014b). The herring is returning, the endemic coastal cod spawn and the fisheries in the fjord are building up. As the fisherman in Repparfjorden said: ‘Three years ago, it started to stabilise with the amount of fish, especially this year. We have seen a progression between the last three years. Now, we have got herring back in Repparfjorden, and we see this because the cod and the porpoise comes back as well.’ (The porpoise, called nise in the Norwegian language, is the smallest of the whales). The

assessment of the impacts on marine life have been contested and the government did require additional measurements of the currents in Repparfjorden. New information about marine life put forward by the Institute of Marine Research in 2015 that was however not taken into consideration.

On December 8, 2015, the Norwegian Environment Agency [*Miljødirektoratet*] granted Nussir ASA a permit, according to the Pollution Act, to annually discharge two million tonnes of mine tailings in Repparfjorden and establish a temporary deposit on land of four hundred thousand tonnes of waste rock. After a short hearing including the Christmas holiday, the permit was validated January 15th 2016.

The discharge permit was met with disbelief and disgust from environmental non-government organisations and local stakeholders and activists. However, the Mayor of Kvalsund, Terje Wikstrøm, who received the news from the journalist that interviewed him called the decision a ‘Christmas gift’ and looked with expectation towards the prospect of more economic activity and workplaces in the municipality. Rushfeldt casually commented that ‘The acceptance of mining activity had increased.’ As Dannevig and Dale (2018) have observed, the decision did not settle the case, as ‘Controversy over the knowledge base in the impact assessment persisted.’ There is no denial in the public documents from the decision-making process that the impacts of the mining operation and tailings disposal will have severe impacts on the marine ecosystems, fjord fishing and Sámi reindeer herding. In the wording of the discharge permit, the Environmental Agency admitted that the mine would negatively impact the livelihood of local fishermen and reindeer pastoralists but stated that it was ‘likely that the initiative [would] provide significant revenue for society.’⁹⁴ This formulation points to an inherent conflict between different interests and formal spheres of rights and motivations, including what is deemed ‘society’ and revenue routes. Moreover—anticipating criticism based on Indigenous rights—‘the Environmental Agency cannot see that the proposed initiative will affect religion or language particularly negatively.’⁹⁵ This sentence indicates a peculiar blindness to the close relations between culture and ways of life, landscape and language. Mineral extraction and waste disposal are presented as trumping other needs, practices

94 My translation from *Miljødirektoratet*, 2016, 46: ‘... lagt særlig vekt på at det er næringspolitiske føringer for å utvinne mineraler i Norge og at det er sannsynlig at tiltaket vil gi betydelige inntekter for samfunnet...’

95 My translation from *Miljødirektoratet*, 2016, 19: ‘Miljødirektoratet kan ikke se at det omsøkte tiltaket vil påvirke religion eller språk negativt i særlig grad.’

and interests.

In Nussir's impact assessment, little mention is made of the societal effects that are mentioned as negative and why these are considered to be supportable, other than by both profit and an unelaborated argument for the societal value of such revenue. The Sámi Parliament questioned the assumption of societal benefits and sought a better knowledge base for their decisions regarding how to respond to the discharge permit. In 2016, they commissioned Vista Analyse to do the first social economic analysis of the Nussir case. This review found that neither documents from the environmental impact assessment nor complementary studies used in the decision-making process justified the strong belief in societal benefits held by the planning authorities. The report concluded that 'The uncertainty in terms of both benefits and costs implies that the precautionary principle should be emphasized in the management of the area (Ibenholt et al. 2016). The doubts raised in the report—about societal benefit for the Repparfjorden area and its inhabitants—was important for the plenum meeting in the Sámi Parliament deciding to appeal. The Norwegian Environment Agency [*Miljødirektoratet*] received 3 formal complaints to the discharge permit: From the Sámi Parliament January 8th 2016, from Friends of the Earth Norway [*Norges Naturvernforbund/Luondudugáhttenlihttu*] with Young Friends of the Earth Norway [*Natur og Ungdom*] February 5th 2016, and from Norwegian Salmon Rivers [*Norske Lakseelver*] December 28th 2016. The Repparfjorden case got much attention from regional media during the discourse of the discharge permit when opponents and proponents submitted chronicles and opinion notes. During the decision-making process of the different phases in the Nussir prospect it was interesting to note the rhythm in the way Nussir appeared in the press. Anticipating the events, media occurrences appeared some days before the decisions were made, as if to prepare for the reception of the announcements.

6.5.1 Awaiting Formal Government Response

In the autumn of 2016 the media started to feature Rushfeldt, the Nussir prospect and its proponents. On October 22, NRK Finnmark conducted a portrait interview of Øystein Rushfeldt—The Gründer. The text concerned his stamina and the hardships he suffered by standing in this process for so long. An image showed the core samples, and the byline of that image started building the story that Finnmark was getting unattractive for mining investors: 'The stone samples in the warehouse of Nussir ASA show that the mountain is rich in minerals. Nevertheless, foreign companies have given up

mining in Finnmark’ (Forland, Oct 22, 2016).⁹⁶ Over the following weeks, the media repeated these two messages: The processes take too much time, and foreign investors are scared away. The deputy chairman of Arctic Gold—the company that was unwelcome in Kautokeino in 2013 but three years later still lobbied in the municipality to get an opportunity after the election—Hanne Markusen Eek put it quite bluntly in an interview in *NRK Finnmark*: ‘As long as we have governments that do not dare to go in and create predictability about Sámi questions, the mining industry can only forget about Finnmark’ (Mortensen, Nov 16, 2016).⁹⁷ A week later, *High North News* then criticised the Ministry of Climate and the Environment for taking too much time to give a formal response on the appeal process (Highnorthnews, ed. Nov 17 2016). On November 11, 2016 there was a brief note on NRK Nordnytt (district news) about an upcoming consultation between between Sámi Council member Silje Karine Muotka and State Secretary Lars Andreas Lunde from the Ministry of Climate and Environment in Alta, to discuss the Sámi Parliament’s complaint to grant a permit under the Pollution Act for mining in Nussir and Ulveryggen in Kvalsund municipality. The note simply stated: ‘Nothing indicates that the appeal from the Sámi Parliament will be endorsed.’⁹⁸ On December 19, 2016, the Government gave a formal response to the complaints (Ministry of Climate and Environment, letter of December 19, 2016). The Ministry of Climate and Environment concluded that the Environmental Directorate’s decision of January 15, 2016 was maintained and that the complaints were not taken into account.

6 . 6 ARE THE ACTORS TALKING ABOUT THE SAME FJORD ?

In the environmental impact assessment, Repparfjorden was described as a poor fishing fjord, but recent dynamics in the herring migration have made Repparfjorden a rich spawning and fishing fjord. I close this chapter with a question of whether the recovered health of Repparfjorden has changed the overall societal impacts of the fjord deposit, before reorienting to the global image. Repparfjorden is not an isolated system; the great movement along

96 My Translation from Forland, Oct 22, 2016: ‘Steinprøvane på lageret til Nussir ASA viser at fjellet er rikt på mineral. Likevel har utanlandske selskap gitt opp gruve drift i Finnmark’.

97 My Translation from: Så lenge vi har regjeringer som ikke tør å gå inn og skape forutsigbarhet rundt samiske spørsmål, så kan gruveindustrien bare glemme hele Finnmark, sier nestleder Hanne Markussen Eek i styret i gruveselskapet Arctic Gold.

98 My translation of: ‘Ingen ting tyder på at Sametingets får medhold i klagen på at Nussir etablerer kobbergruve og sjødeponi i Repparfjorden.’

the coast has drawn the fjord back into life, just as the Institute of Marine Research said it might. Then the herring started to drift into fjords along the North Norwegian coast and brought with them the whole food chain, feeding on them. The endemic coastal cod managed to reach a critical mass, and the migrating cod [*skrei*] also visited the fjord. In 2015, the fjord abounded with life, and Kvalsund planned to reconstruct the infrastructure for the central fish landing.

The mining company, Nussir, is still, at this point, missing a mining license, which both the company and the municipality have been waiting for over many years. In May 2017, Kvalsund municipality put forward a new strategic business plan. *NRK Finnmark* then interviewed the Mayor of Kvalsund, Terje Wikstrøm, who stated that he was convinced that there would be mining in the municipality, but he did not know when and believed it was important to facilitate more legs to stand on and to develop other industries. The journalist reassured that the mayor wished Nussir to start up in his municipality, ‘But 12 years is too long on standby he believes. Since 2005, the municipality has been waiting for jobs in the copper mine in Repparfjord (Bendixen and Eftestøl, May 22, 2017).’⁹⁹ Major Terje Wikstrøm continued:

Through working with a strategic business plan, we have gained recognition and new knowledge of what we had and have from before. Take, for example, fishing, which for a long time has lain fallow in Kvalsund municipality. We have had active fishermen but have not focused enough on fisheries, says the mayor. (Bendixen and Eftestøl, May 22, 2017)¹⁰⁰

The copper mine prospect and the focus on the ongoing prospective knowledge extraction has pacified the municipality, and it is interesting to note that Wikstrøm acknowledges that the municipality must plan for the municipality’s future industry, also without Nussir.

A counter prospective intervention might, at an earlier stage, have shown the

99 My translation of André Bendixen and Ine Eftestøl May 22, 2017: ‘Han både håper og tror at Nussir en gang vil starte opp i kommunen hans, men 12 år er for lenge på hold mener han. Siden 2005 har kommunen ventet på at det skal bli arbeidsplasser i kobbergruva i Repparfjord.’

100 My translation of André Bendixen and Ine Eftestøl May 22, 2017: ‘Gjennom arbeid med en strategisk næringsplan har vi fått erkjennelse og ny kunnskap om det vi hadde og har fra før av. Ta for eksempel fiskeri, som lenge har ligget brakk i Kvalsund kommune. Vi har hatt aktive fiskere, men ikke nok satsing på fiskeri, sier ordføreren.’

municipality that the Nussir mine was not the only prospect for the settlement in Repparfjorden. Simultaneously, marine researchers built scientific knowledge of the changing marine environment in Repparfjorden. The marine researcher Terje van der Mehren also claimed that the cod stock in Repparfjorden is building up, and that the prospect of a recovery of Repparfjorden as a fishing fjord is unfolding. When the impact assessment on mining was done, the fjord was not regarded as an important fishing fjord; there was no fish landing and only a few fishers. The herring has now breathed life into the fjord, which has proved its potential as a rich fishing fjord. The context of the Nussir prospect has changed now because the fish have returned. The discharge of mine tailings will cause harm—not to a damaged but to a healing marine ecosystem.

6.7 THE PROSPECTORS' APPLICATION FOR A MINING CONCESSION

In 2017, the Norwegian Directorate of Mining received an application from the prospecting firm Nussir ASA for a concession to start a copper mine operation in Kvalsund municipality. The company had now existed for twelve years. It was established in 2005 to prospect and mine the Repparfjord copper occurrence and started the application process in 2010, by submitting a scoping plan, planning programme and assessment programme to Kvalsund municipality. Nussir's formal planning and application process started with the zoning programme in 2011. Over the past seven years, Nussir ASA developed the design of the mining prospect in parallel with the public application process. More knowledge was added, about both the geology and the design choices of the mining operation.

In the Nussir case, the impact assessment laid bare that there were too many uncertainties, but this became apparent only after Nussir had achieved its local 'licence to operate' (see Dannevig and Dale, 2018; Espiritu, 2015). According to the Norwegian Planning and Building Act (PBL), an application process is all about making decisions and reducing uncertainties. Public scrutiny shall secure that interested and affected parties and the public shall know about the project before it is realised (KMD 2014b). A prospect is not static; rather, it consists of a series of prospects. When, in 2015, Nussir ASA had all permissions from other authorities in place, the prospecting company started to prepare the application for the mining concession that it needed to start the mining of the copper ore and become a mining company. At this last stage of the application process, there were still uncertainties. Nussir did not have an

agreement on mitigating measures with the reindeer grazing districts, Fiettar and Fala, and Finnmarkseiendommen had yet to assess the changed use of outfield landscapes. I will look into two aspects of the application: first, the clarified, but as yet inconclusive, operation design; second, how Nussir now describes its anticipated coexistence with reindeer herding.

The preparation for the mining concession application was done in dialogue with the Directorate of Mining with the Commissioner of Mines for Svalbard, DMF. The Directorate of Mining has the primary responsibility for carrying out an assessment, based on the Mineral Act, to decide whether an applicant for a mining concession is fit to recover the occurrence, if the prospect seems economically feasible, if the applicant has sufficient competence, and if the planned operation follows sound and proper mining practice. DMF also looked into a number of relevant matters of the specific case of mining in Kvalsund municipality: the operation's importance for wealth creation and business development; impacts on Sámi culture, business, and society; the effects on the environment and nearby areas during operation; the environmental impacts; and what plans for re-use or remediation of the area after ended extraction exist (DMF, 2017, 2).

Nussir ASA submitted the application for a mining concession with attachments on May 16, 2016, and it was made available for public consultation in a hearing period from June 21, 2017 to September 1, 2017. In the instructions for the consultancy statements, DMF requested information about 'circumstances that are not adequately illustrated in the application'. Private parties were asked to provide information considered relevant according to specific circumstances in the current case, when writing their consultancy letters. The letter also informed that 'General comments about land-use in the already adopted zoning are not up for consideration.'

From the sector authorities, the Directorate of Mining with the Commissioner of Mines for Svalbard requested specific information about conditions that speak for or against the application and, if appropriate, propose mitigating measures and terms. It is of interest to note the following requests to authorities that had already made decisions during the planning process. First, the municipality and the county governor were requested to inform whether an encroachment [*tiltaket*] would affect biodiversity, including impacts and the effects of impacts, and eventually to propose mitigating measures and conditions. Second, the county was asked to inform whether there was known cultural heritage that could be affected by the encroachment [*tiltaket*], including impacts and the effects of impacts. The Environmental Directorate was asked

to consider in particular the following issues: the operation plan's compliance with the given discharge permit, including runoff and plans for landfilling of grey rock and extraction in Ulveryggen seen concerning the current closing plan for the (existing) deposit area at Ulveryggen. In the hearing letter, the directorate requests from the Sámi Parliament and the Finnmark Estate Agency [*Finnmarkseiendommen*] to 'state clearly if they intended to go against an adaptation of the application, in which case the decision would be made by the Government, in which case the final decision ultimately would be done politically'.

The copper prospecting company Nussir ASA claims in the mining concession application that reindeer herding and mining can coexist in Kvalsund municipality. One of the company's recurring arguments to sustain social acceptance for the environmental impacts of the operation has been that it poses a small footprint. Throughout the application documents, Nussir elaborated the company's argument about setting a small footprint. Considerable amounts of ink were spent to argue that the size of the proposed project was small, and that the size of the ore deposit was large. In these documents, the argumentation used during the ten-year-long prospecting and application process was galvanised into a set of truth claims about the prospect and its impacts. Nussir ASA stated that, compared to other copper mines, Nussir is probably the *smallest* in the world. Although DMF stated that area uses in the adopted zoning plan were no longer up for discussion, Nussir's focus was to argue that the mine is smaller than it appears in their plan:

Even though the area of the zoning plan is relatively large, it does not follow that the activity on the surface will comprise an accordingly large area. The surface activity will actually be bound to a very small area that, for the most part, is already regulated to and used for similar industrial activity today. (Nussir ASA, 2017, attachment 5,3: 4.2).¹⁰¹

Following the metaphor in this logic, Nussir ASA walks in and expands a little the footprints of already transformed landscapes imposed by Folldal Verk and Wergelandgruppen. In the current prospect, Nussir ASA's industrial area is located in a stone quarry that operates on the former site of Folldal Verk's processing plant, but the company has also presented plans for placing

101 My translation from: 'Selv om reguleringsplanens område er relativt stort vil ikke det si at aktiviteten på overflaten vil være tilsvarende stort. Faktisk så vil overflateaktiviteten begrense seg til et meget lite område som i all hovedsak er regulert og brukt til tilsvarende industriformål den dag i dag' (Nussir ASA, 2017, vedlegg [attachment] 5,3: 4.2).

the industrial area on a pristine promontory in the fjord. It was a quality that project did an attempt to re-use the industrial landscapes at Øyen, instead of occupying intact landscapes for the processing plant. The current layout of Nussir's industry area is compact and aims, in tune with modern mining, to electrify and automate as much as possible. Nussir wants a moral discount for re-using already abused landscapes, even though they now prefer and plan to establish their industrial operation on the pristine promontory of Markopneset. By introducing the notion of a day activity area [dagaktivitet-sareal], Nussir ASA claims to use 'only 0.4 km²'; this figure has stuck to the prospect since the very start but is nowhere to be found in any of the legally binding planning documents. It is also far from accurate, as the zoned areas for industrial activity, harbour, hydropower dam, extraction (service) areas and industrial roads for trucks sum up to 1.2 km² (if one does not include the existing Ulveryggen waste disposal, which is 0.2 km²).

Nussir further reiterates that the mine is 'probably the smallest in the world' and speculates that opponents to the prospect must have 'misunderstood' the project, thinking that the day activity area is bigger than it is. However, the re-use of the industrial area has never been an issue of dispute. On the contrary, the landscape at Øyen is today quarry, surrounding the remains of abandoned industrial buildings (Fig 6.15). The disputes revolve around the environmental impacts in the influence area of the proposed mine, regardless of how the borders are defined. Why then has the 'smallness' of the day activity area become such a mantra for Nussir? The seabed is a surface, the mine tailings deposit and its buffers zone should be added. According to the zoning plan, the sum of completely transformed surfaces (not including stopes, tunnels and shafts) is 10 km².

When Nussir ASA discusses the reindeer herding practices they claim to be able to coexist with, it becomes evident why the company holds onto the rhetoric of a small footprint. In the operation plan, several small-scale maps show Øyen as a tiny point in a field of unspecified topography framed by the reindeer grazing district borders. The bylines to these illustration and maps in the documents are telling:

Map showing the reindeer grazing districts (rbd) in West Finnmark, including those affected by Nussir's business. The little red spot shows,

somewhat enlarged for visibility, Nussir's planned day activity area. (Nussir ASA, 2017)¹⁰²

Nussir has a clear financial interest in arguing that they will change only a small area. For further contingency, Nussir needs a general support for the company's claim of setting a small footprint. First, the company still needs local support and acceptance from society, to deplete nature. Second, it is an attempt to minimise public support and understanding of the importance of properly compensating the loss and degradation of the areas used by reindeer husbandry and coastal fishery that are going to lose their nutritional basis.

Several of the consultancy letters complain that Nussir's description contains undocumented claims about reindeer behaviour and aims to discredit the impact assessments on reindeer herding.

6.8 NUSSIR PROPOSES TO MOVE THE PLANT TO A PRISTINE PROMONTORY

Nussir ASA proposes to move the industrial processing of the ore from the existing industrial landscape in the bay of Øyen, to the pristine promontory of Markopnes in the middle of Repparfjorden. On page two in the hearing letter, DMF states that ore concentration and processing facilities will happen at the industrial area at Øyen with a previous renovation of the facilities there, but that an alternative location for this activity is considered at Markopnes. The proposition to move the plant was made known to the public on March 13, 2017 by the journalist Allan Klo. The use of Markopnes as an industrial area was welcomed by the mayor who saw the possibility that it would generate more industrial activity to the area. Markopnes was regulated for general industrial purposes on November 8, 2005, but no encroachments had yet been made in the terrain. In rendering the industrial plan at Markopnes, Nussir ASA is given a prominent place overlooking the whole fjord, just where it turns (Fig 6.16). In effect, the plant will be seen and heard in the whole fjord-landscape. Dust and sound from the production will be distributed differently.

Markopnes is a pristine promontory. Mentioning the alternative site in the concession application makes the decision makers used to the idea, but it is

102 My translation of: 'Figur 2 kart som viser reinbeitedistriktene (rbd) i vest-finnmark, herunder de som er affisert av Nussirs virksomhet. Den lille røde flekken viser, noe forstørret for synlighet, Nussir's planlagte Dagaktivitetsområde.'

important to note that it has not been subject to public scrutiny. Moreover, the area where subsurface mining and placement of necessary ventilation shafts is allowed in combination with LNFR areas expands beyond the regulation border at Dypelva, but this can, however, only be noticed if one studies the maps closely. This is central in the perspective of the perforated landscape because the claim that prospectors make on the future landscapes is open-ended, including perpetual landscape changes in an unforeseeable future. Nussir ASA has claimed ownership of the future landscape. This includes a privilege of achieving the necessary flexibility to be able to react to both ore quality and international mineral prices when conducting future mining designs. This example illustrates that there will always be new perforations and knowledge gaps about the prospect's social, economic and environmental impacts. It also shows that Nussir is confident of having a stronghold in Kvalsund. The prospector's argument about the size of the footprint of 'day operations' seems suddenly forgotten.

Nussir ASA has continuously communicated its findings, to attract investors and to get public and political goodwill. Already in 2014, the company claimed that the area holds 70,000,000 m³ copper ore reserves, almost three times the 25,000,000 m³ that the company has applied to extract. The ore is not yet fully explored, and nobody knows for certain how far it stretches. Consequently, it is likely that new zoning plans will be proposed if the first phases of the operation turn out to be successful. The question is whether this will be handled as a dispensation from the adapted zoning plan or if it will be relevant to demand a new zoning plan. Discharge permits have to be renewed every tenth year, and the applications can be different every time. The company is confident that the authorities welcome the prospect of extended and prolonged operation. A mining application process must follow a process according to the Planning and Building Act (PBL). The logic of a mining prospect, however, is the opposite of that of PBL. A prospect is all about keeping options open and maximising opportunities for growth.

Information about the anticipated state of the environment and landscape after mining operations have ended is to be found in two of the documents in the hearing: '*Økonomisk sikkerhetsstillelse*' ['Evaluation of the Need for Economic Security'] (attachment 5.7) and 'Driftsplan for Nussir og Ulveryggen', version 5, 2017.05.11 ['Operation Plan for Nussir and Ulveryggen'] (attachment 5.5).

The 'Evaluation of the Need for Economic Security' (attachment 5.7) describes an unambitious closing plan: The landscape Nussir ASA plans to



Fig 6.15: The Øyen industrial area.

NRK Finnmark

[Tips oss](#)

[Trafikkmeldinger](#)

[Se TV-sendinga](#)

[Følg #NRKFinmark](#)

[#NRKBjff](#)

U

Nussir velger trolig Markopneset

Gruveselskapet Nussir vurderer ny lokalisering for fabrikklokalene for uttak av kobber i Repparfjord. Området det dreier seg om, er Markopneset i Fægffjord, et industriområde på 500 mål og en fremtidig gullgruve for Kvalsund kommune.



Grafikken viser Markopneset i Fægffjord, og kan bli Kvalsund kommunes melkeku i årene som kommer.
FOTO: REKLAMEHJSET NORD/KVALSUND KOMMUNE



Allan Kio
Journalist

MER OM GRUVEDRIFT I NORD

Oppdatert i dag, for 6 timer siden

Fig 6.16: Screenshot from *NRK Finnmark* with a rendering of the plans to appropriate Markopneset, a promontory where Repparfjorden turns.

leave behind after operations have ended will not be remediated, and the installations and roads they inherit from the Folldal period will be used, as long as Nussir ASA needs them, and then they will be left as they are. No remediation or landscape reclamation will be done, since they will add ‘no new roads’ (4.3.2). The open pits at Ulveryggen (Fig 6.17) will be fenced. Waste rock will be filled back into the shafts and stopes of the Nussir mine, and, when pumps are shut off, the mine will be filled with water. The entrances will be sealed but allow for runoff. Nussir claims that the runoff ‘won’t be acid, and that no action is required.’ From other copper mines, waste rock and water are known to create an acid cocktail of heavy metals. Industrial buildings and installations will be closed off and left as they are. Nussir ASA thereby avoids the costs associated with cleaning up after the operations that were run to bankruptcy by Folldal Verk. Nussir ASA estimates that NOK 300,000 is sufficient to cover the costs.

As I noted in Chapter 5, the landscape assessment had several disclaimers, listing places that were not visited during the assessment. For the Øyen area, landscape architect Simensen advised that the big tank for ore concentration should be placed as low as possible in the landscape. If it is to be placed at Markopnes, the tank will be visible from any position in the whole fjord-landscape, and that is certainly not assessed as regards landscape. The landscape assessment concluded that the project will not have a negative influence on the landscape. The rationale for such a conclusion was that the industrial plant was planned to be located in an already existing industrial landscape. The industrial remains from Folldal Verk and Wergelandgruppen will not be remediated and re-used if Nussir appropriates the new grounds on Markopnes, and the aforementioned ‘kaste og låse plass’ that was protected in the regulation plan is erased. In other words, there is not a single element left of the prospect that was assessed in the landscape assessment of 2011; conversely, no landscape assessment exists of the prospect as it was described in the concession application of 2017.

6.8.1 A List of Events 2017-2020

In the autumn of 2018, the Directorate of Minerals gave formal, and explicitly critical, recommendations to the government, based on Nussir’s application for a mining concession. In 2019, Nussir received their mining concession. The complaints on this mining concession from the Sami Parliament, *Naturvernforbundet* and Fiettar reindeer grazing district were finally dismissed in December 2019. It is now down to how economically viable mining investors find the Nussir and Ulveryggen prospect.



Fig 6.17: One of the pits in Gumpenjuni/Ulveryggen, the abandoned open pits that have been un-remediated since Folldal Verk went bankrupt in the 1970s.

6.9 GREENWASHED MINING RHETORICS

The new generation of mineral strategies in the Nordic countries in the 2010s coincided with many new mineral prospects being established in Sámi areas. Sweden has landscapes that are already heavily changed by extractive industries. In autumn 2018, the Swedish daily newspaper *Svenska Dagbladet* featured a series about the mining industries and reindeer husbandry, stating that the mining prospects ignite the question of Sámi Indigenous rights (Fröberg 2018). Over the past ten years, the rhetoric of the mining industry has been reshaped, so that it could be tailored to shifting political ideals. On their side, the Ministry of Commerce, through the actions of a long line of Ministers of Commerce (Giske, Aspaker, Isaksen), showed itself to be favourably inclined to Nussir ASA on several occasions.

In 2019, after giving Nussir the mining concession to extract copper ore and process copper extract pellets in Repparfjorden, the Norwegian Minister of Commerce, Isaksen, wrote chronicles and statements in the press, claiming that mining has a positive role to play in the shift from fossil fuel to renewable energy. In the mineral industry magazine, *GEO 365*, he wrote that:

‘Loud protestors who are eager for a green shift should realize that copper and mining are part of the solution’ (Isaksen, 2019).¹⁰³ The philosopher Svein Anders Noer Lie, at UiT, replied that we can no longer depend on extractive practices that destroy the conditions for life, arguing that:

With the notion of the Green New Deal, the meaning of “efficiency” must be given new content. You are no longer efficient if you extract in a manner that produces environmental problems that you have to spend great resources to solve. The externalities, as the economists call them, must be included in the costs-benefit analysis. (Lie, 2019)¹⁰⁴

Soon after this claim, Isaksen participated in a public meeting in Kvalsund, in order to help the prospector Øystein Rushfeldt promote the Nussir mine as necessary for the green new deal. The President of the Sámi Parliament called for climate justice because Arctic Indigenous peoples, as Indigenous peoples worldwide, pay the disproportionate price of both climate crisis impact and climate emergency mitigation.

6.10 CONCLUSION TO CHAPTER 6

There are strong opinions both for and against the mine in the communities along Repparfjorden. Local fishermen, environmentalists and marine scientists warn that the tailings will spread into the larger coastal currents and threaten food security. Some individuals hold strong opinions for and against reindeer herding in the area.

This chapter has shown that the regulatory and political handling of Nussir ASA’s copper mine prospect has been privileged as the main prospect of Kvalsund, through supportive policy and media attention. Regulatory agencies in government have rendered the pastoral and coastal fishery community’s plans for the future less important than the prospects of the mining industry. As this chapter has shown, seemingly abstract discourses constitute highly efficient forms of governance that both transform and

103 My translation of: ‘Høylytte protestanter som ivrer etter et grønt skifte burde innse at kobber og gruvedrift er en del av løsningen.’

104 My translation of: ‘Med begrepet ‘det grønne skiftet’ må effektivitet gis et nytt innhold. Du er ikke lenger effektiv hvis du driver på en måte som produserer miljøproblemer som du må bruke store ressurser på å løse. Eksternalitetene, som økonomene kaller det, må regnes inn i kost/nytte-analysen.’

directly encroach upon spatio-material environments. The environmental struggles in Førdefjorden and Repparfjorden are interconnected but take different forms. In the Sámi areas, the question of Indigenous rights to land and water widens the conflict to a more holistic resistance to a large number of different encroachments in the reindeer pastures.

Revisiting field experiences the chapter has shown examples of how discursive landscape interventions produce knowledge voids that demands for new knowledge to fill these voids while at the same time rendering invisible, ignoring or cutting out existing landscape knowledge. Seasonally repeated events manifest as assemblages, and the migratory landscapes prevail in relation to the linear ordering of events and milestones in the evolving application, assessment and licensing process of the Nussir and Ulveryggen Copper Mine. A migratory landscape approach changes the focus from linear to cyclic sense of time-place. Scopes and geographic scales range from the regional to the local and microscopic and back to the global.

Part III

The next three chapters more explicitly apply the theoretical and methodological framework of the thesis in a macro-level multimodal discursive analysis and add a critical review.

Chapter 7 revisits analysis from fieldwork and develops an empirically informed “pro-spective” practice that I call “counter prospecting”. Chapter 8 discusses the counter prospective aspects of traditional knowledge. The thesis closes with Chapter 9, in which I argue for the importance of employing the prospective capacity of landscape architecture as a prospective art, with a prospective responsibility.

Chapter 7 Counter Prospecting

In a multimodal inquiry of contested landscapes in the European Arctic, this thesis explores the performance of two terms: *landscape* and *prospect*. Both terms are ontologically slippery and derive their meaning from the multimodal context in which they are used. I have been building the concept of counter-prospecting throughout this thesis. In this chapter I revisit the studies of counter cartographies and the influences from counter cartographies of mining, reindeer husbandry and coastal fishery. I also revisit two conversations. One from fieldwork, and one from Tromsø.

Knowledge gaps gash open when a community anticipates the prospect of a mining operation. Arguing that prospective knowledge extraction perforates the landscape physically and discursively, this chapter charts how new knowledge gaps tunnel through multiple layers of contested landscapes.

As such, this chapter is a counter-prospective analysis of what I constructed as a macro-level multimodal articulation of landscapes, resources and territories in the environmental impact assessment of the Nussir case and the Norwegian Mineral Strategy. In conceptualising prospects as future landscapes, there is a possibility to introduce practices of counter prospecting, practices of creating futures that may be characterised as prospecting in their own right. Through an investigation of alternative trajectories, counter prospecting proposes alternative futures.

7.1 THE BEST LANDSCAPES

In the Anthropocene, landscapes are assembled in new ways, but sectorial governance keeps on dividing landscapes according to sectorial interests.

An assessment of landscape, biodiversity and outdoor recreation is part of the environmental impact assessment that, in Nussir's case, piled up to approximately 2,500 pages. The consultants from Sweco who produced Nussir's

landscape assessment report concluded that the Nussir prospect had minor negative impacts on the landscape. In this extraction-driven assessment, the concept of landscape is given a narrow definition as a visual surface and thereby deprived of relevance. Frode Bjørgo and Ingrid Bay-Larsen's Latour-inspired analysis of the Nussir case claimed that the process was black-boxed (Bjørgo and Bay-Larsen, 2017). The consequences for living landscapes and cultural landscapes slipped away from public scrutiny.

Such a conclusion is reached on the basis of the definition of landscape that is used by the assessors, alongside the applied methods of observation, representation and valuation in relation to the anticipated impacts of the mining operation. These conditions are, as I referred to in Chapter 5, listed in the introduction to the landscape assessment report, but, in the processes of reducing the total volume of sectorial impact assessments into recommendations in a zoning plan, the particularities and uncertainties disappear, and the conclusions from each sector stand alone.

The landscape valuation in the Nussir case moved under the radar, and not even critical reviews of the case questioned its conclusions, by looking into its basic definition of the term "landscape". In the few instances where decision-makers have referred to the landscape assessment, they have only mentioned that the mine has 'minor negative impacts on the landscape'. That is the only thing they need from that report, to justify the decision in terms of landscape, even if the decision-makers use the word "landscape" in a different meaning from that which was used in the report. In addition, it is interesting to note that, to the extent that consultancy statements are mentioned in the landscape assessments, those notions never surfaced in the media discourse. The consultancy letter of 2011 on the regulation plan from reindeer grazing district 22, Fiettar, mentioned the siida member's appreciation of biodiversity and nature areas without technical interventions (INON). The landscape descriptions in the consultancy letters were never read in terms of landscape, only in terms of usage and user rights. A consultancy letter from a cottage owner, describing his childhood landscape, never got any mention, except for being counted and archived.

Cultural bias in the system of landscape valuation values rare and spectacular landscape features more highly than the flat and hilly 'ordinary' landscapes. Consequently, such 'ordinary landscapes' enjoy less protection in landscape assessments. A comment from one of the reindeer herders in Fiettar is illustrative of this problem:

– *They always take the best landscapes, the flat and gentle pastures that are good for the reindeer. (Field notes, 2015)*

Even though the landscape assessment states that the landscape is characterised by grazing, the migratory landscapes of the reindeer were not included, either as part of the biodiversity environment, of outdoor recreation, or in terms of landscape in any of the meanings of the word. As such, it repeats the historic silencing of both the Sámi and the local relation to nature. The pastoralists' and their children's relations to landscapes are neither acknowledged nor considered in the decision-making process. Svein Lund has claimed that some environmental governance practices are prolonging the discriminating practices of the Norwegianisation policy (2018), and Geelmuyden complained that they are lagging behind in outdated concepts of landscape (2015). The concept of landscape in the method of "landscape characterisation" in the Nussir and Gumpenjuni area was allowed to prevail over all the other landscape concepts.

Landscape characterisation is a method that aims to quantify landscape, and it is often used in landscape assessments. Andrew Butler (2016) has claimed that, even though landscape characterisation is meant to be objective, the landscape assessor's preference for certain landscapes often influences the valuation of landscape. Further, as Schanche (2002) argues, the landscape terms in the nature/culture divide in Norwegian environmental governance fail to acknowledge Sámi concepts of nature and landscape. Similar issues are at play in the theme of outdoor recreation. The pastoral families live in the district from April to October. That implies that Sámi herders' children literally grow up in the landscape until they reach school age. It is paradoxical that living outdoors does not count as outdoor life in the impact assessment. Nussir's landscape consultants interviewed only a handful of sedentary, middle-aged men about outdoor recreation in the municipality.

A problem arises when such a landscape approach displaces approaches that are more relevant to a diverse local population. The distinction between the use of an outfield area and the appreciation of landscape leads to paradoxical results. A recent example from Fálesnuorri Suohkan/Kvalsund municipality shows clearly the cultural differences in the approach to outdoor recreation. The municipal webpage identifies Fálesnuorri/Kvalsund as 'The Outdoor-Life Municipality' (2018). As part of the national mapping of important areas of outdoor recreation, the Norwegian government has asked all municipalities to map their important and valuable outdoor-life areas, and to include them in the municipal plans. In 2018, the mapping, participatory process and hear-

ing about outdoor recreation in Fálesnuorri/Kvalsund was completed. The municipal council followed the administrative recommendation and voted that Kvalsund ‘does not have any valuable outdoor-life recreational areas’ (Kvalsund Municipality, 2018). The reason behind this decision is that the outdoor life in Finnmark often includes snow scooters, and valuable outdoor recreation areas restrict the use of motorised vehicles. The consequence, however, is that, in the future, industrial encroachments in these areas will be assessed as minor on outdoor recreation, since they are not officially valued as such in the municipal plan.

In addition, my analysis of the launching of the NiN-Landscape mapping is an example of how people in power execute this power, by developing the state technologies available and define the conditions for landscape trajectories in Norway.

7.1.1 NiN-Landscape and the Perceived Abundance of Space

As I highlighted in Chapter 4, through the discussion about the High North policy and Agenda Nord, Arctic nation states harness ambitious strategies, where territorial cartographies project extractive trajectories, energy lines, infrastructures, service points, prospecting rights and extractive fields. There is a need to scrutinise the prevalent perception of scale that was discussed in Chapter 4: When processes play out in time, such as in the Nussir case, it is quite extraordinary that the positions on how to perceive scale by the proponents have not moved an inch, where, to the contrary, the argument of a small mine in a vast landscape has been galvanised throughout the process.

Moreover, Nussir speaks to a field where the arguments from reindeer husbandry and other parts of the policy field of Indigenous and Sámi rights are met with aggression, injury and insult. Terrible commentary fields in the local online press have long endured, without risk of exclusion. The level of trolling, insults and personal attacks got so bad that, in May 2019, the newspaper Nordlys decided to curb the commentary fields for comments on articles regarding Sámi issues.

Through the landscape mapping tool developed by Simensen et al., (2011), NiN-Landscape pursues a technical approach, where landscape assessors can observe the landscape in solitude. Local and indigenous knowledge of, relation to and perception of the landscape are excluded from the NiN-Landscape mapping tool that was developed to give an overview of Norwegian landscape types.

The opportunistic representations of vast expanses of landscape readily exploitable for their resources suit an extractive perspective. It is counter-intuitive to perceive a landscape that appears as natural to be crowded. ‘Most people’ (Simensen et al., 2011) might perceive that they drive through ‘vast landscapes’ when they cross the tundra, even in winter when the reindeer herds are present at the winter siida grounds. This is why the NiN-L definition of landscape is unfortunate when “the landscape” is defined ‘as most people perceive it’; the minority view perceived by landscape practitioners remains unconsidered. As outfields in Fennoscandia, the Sámi *meahcci* are landscapes in use (Schanche, 2002), where expert traditional practitioners know the landscape intimately.

To an untrained eye, the industrial landscapes of the Arctic may look small, and the impact zones that surround them may look like wilderness. However, wildlife avoids disturbance from human activities. As a consequence, disrupted ecological functioning surrounds industrial and infrastructural encroachments. Even though such zones visually appear as “natural landscapes” and offer natural experience and outdoor-recreation opportunities, they have, in reality, become industrial landscapes.

I argue that, in the circannual Arctic, there is no such thing as a vast landscape. The UN has identified change of land use globally as the main cause of species extinction. It is no longer possible to talk about vast landscapes. There is not an abundance of space to appropriate. Landscape-caring practices and the ontologies they are part of must be included in concepts of landscape.

Arguments for the exploitation of Arctic landscapes often employ the common perception of a vast landscape, which can lead to a belief in the existence of an abundance of areas. Different ways of perceiving and representing landscapes are acts of constructing landscapes. But, when it comes down to valuating physical areas, these different ways of constructing landscapes are forged together in the same terrain. On Earth, there is a forged coexistence between the multiplicities of different worlds.

Space is a scarce resource, and humans share it with other species. For every new encroachment, the expanses of landscape shrink. Even if most people would perceive the landscape as vast, those who live along the migratory routes perceive it as crammed. Landscape assessments that work as prospective knowledge extraction are an ongoing colonial practice. Only when all other concepts of landscape are excluded, except for that of the exploiter, is it

possible to talk about and perceive vast landscapes. Describing outfield practices in a multimodal, sensitive manner is the opposite of describing landscapes as vast. I follow up on that at the end of Chapter 8. Here, I first look into ongoing mapping practices in Sápmi relating to mineral prospecting.

7.1.2 Mineral Prospecting

Prospective knowledge extraction is a driver in landscape transition. As material-discursive landscape interventions, mineral prospects produce knowledge gaps that demand the extraction of new knowledge. In order to understand this through landscape theory, I keep in mind Cosgrove's (1985) notion of the prospect as a commanding view on the landscape, while applying the concept of *landscape as polity*. Various sectorial authorities govern different modes of being in the world. Socially and materially constructed landscapes are 'both discursive and material' (Setten, 2010). How can human presence in and perception of the landscape be governed, if the very presence in and perception of the landscape flicker between different modes of being? – A flicker of being in the landscape, being in the meahcci, being in the area, being in the presence of other beings.

Geological maps construct a contested landscape of expectations. Scientific representations are made in sequence and are perforations to realities not available to us through our senses. These cartographic representations are perforations between the realm of what is available to human senses and what is not available to human senses; that is, they lie and operate between the visible and the invisible. Mineral ore is not readily available for easy observation. Exploration of natural resources in the European Arctic is mediated through sophisticated cartographies and dynamic models. They anticipate a decrease in income from oil and gas extraction. The Norwegian government, as I discussed in Chapter 4, has allocated funds to improve the coverage of 'basic geological information relevant to the assessment of the mineral potential in the three northernmost counties' (see NHD, Strategy for the Mineral Industry, 2013, 40).¹⁰⁵ The geological maps are publicly funded and actively used to attract prospectors.

The threefold objective of mineral prospecting—the search for minerals, the development of mining prospects and the achievement of getting a social licence to drill—employs cartographies that discursively construct possible

105 The Norwegian government allocated funds of NOK 100 million for the period 2011-2014 to the Geological Survey of Norway (NGU).

extractive landscapes. Geological cartographies attract prospectors. The prospectors claim stakes, explore geo-located claims and proceed to examine the target area in depth and detail. Mapping and modelling of the ore quality is the first objective, and the prospector attempts to find answers, by hiring a crew to drill physical holes in the material landscape. The crew drills many holes that perforate the rock. They bring core samples to laboratories, where geophysicists measure ore grades. Then cartographers interpret the probable quality of the ore and mediate the results of the geological sampling and calculations.

A model of the anticipated quality of the ore is put forward, to attract investors that, in turn, fund a mining prospect. The ore models are perforations between geological, speculative and political formation. Such perforations are passages to extractive policies and resistance towards those policies that physically and discursively perforate the landscape. When the ore is quantified and “seen” on maps and diagrams, it cannot become unseen again.

A prospect is put forward to the planning authorities and the public. Mining prospects are thus interpretative of the social context, because the mining industry will need to acquire a ‘social license to operate’ (Prno and Slocombe, 2012). The mineral industries have seductive strategies to build public relations that will yield a licence to drill. Such public relation strategies are made up of presentations of maps and estimations of mineral wealth, guided tours in existing mines and externalisation of environmental and local social issues.

Mineral prospecting undeniably scars the land. Resource frontiers may be understood as landscapes perforated with knowledge gaps. Natural resource prospecting perforates the material and discursive landscapes on many levels: drill holes, information voids, behavioural avoidance and knowledge gaps that, in sum, constitute a perforated landscape. The complex natures of these perforations bring voids of uncertainty from the prospected futures into the contemporary landscapes. These uncertainties, in turn, open knowledge gaps, towards which research in a wide range of disciplines gravitates.

Prospected landscapes may also be understood as conjuring hybrid forms between map and terrain. The mining industry seeks the continuation of advances and the expansion of extractive enterprises. An expanding mining industry has impacts of unknown consequences. The impacts continue to grow, in advance of a mining operation, during the operation, and through the workings of residual pollution after the eventual closure of mines. The

perforated landscape is thus an extended landscape. These are landscapes where anticipated excavations, waste piles and mine-tailings disposal add to the production of uncharted terrains. Researchers, politicians, government and non-government bodies, stakeholders, affected and interested parties, Indigenous and local people, environmentalists, artists and journalists ask questions, which, in turn, reveal even more knowledge gaps.

It is important to recognise that an extractive landscape is discursively constructed years before the application processes begin. Simultaneously, networks are woven, connecting tissue braided between prospectors, adventurers, investors, local interests and politicians across all levels. General knowledge from this particular case can be drawn across the prospective arts and geographically. The conceptual, economically strategic and defining work is often done by the prospector's consultancy team before first contact with the planning authorities. These corporations serve clusters of clients, even mining, aquaculture and wind-power corporations. Local plans, for instance, are often outsourced to planning consultants and made far from the local democracy.

Geological knowledge may be seen to pre-figure great agency and the implicit promise of wealth. Even in cases where the authorities reject the prospect, the pressure from an unexploited, known mineral deposit will remain, and prospectors can propose new extraction prospects. Mineral prospecting conjures expectations of wealth. Application processes, consultations and dialogue meetings are rigged to get the prospects through the system in a legitimate way. In recent case studies in Lofoten/Vesterålen/Senja and Biedjovagge, Kautokeino, that have carried out research on environmental controversies in the Arctic, we can see that it is at the stage of decisions on the planning and assessment programme prior to the plan that local communities can have a say in development questions that concern landscape (Dannevig and Dale, 2018). Simultaneously, networks are woven, connecting tissue braided between prospectors, adventurers, investors, local interests and politicians across all levels.

7.2 LIVING WITH EXTRACTIVE PROSPECTS

There are minerals. There are stories. There are also bundles of trajectories towards colonisation revealed through long timelines of regional presence. In the media, considerable focus has been on the person, Øystein Rushfeldt, and the fact that there are costs in securing social acceptance for a mining

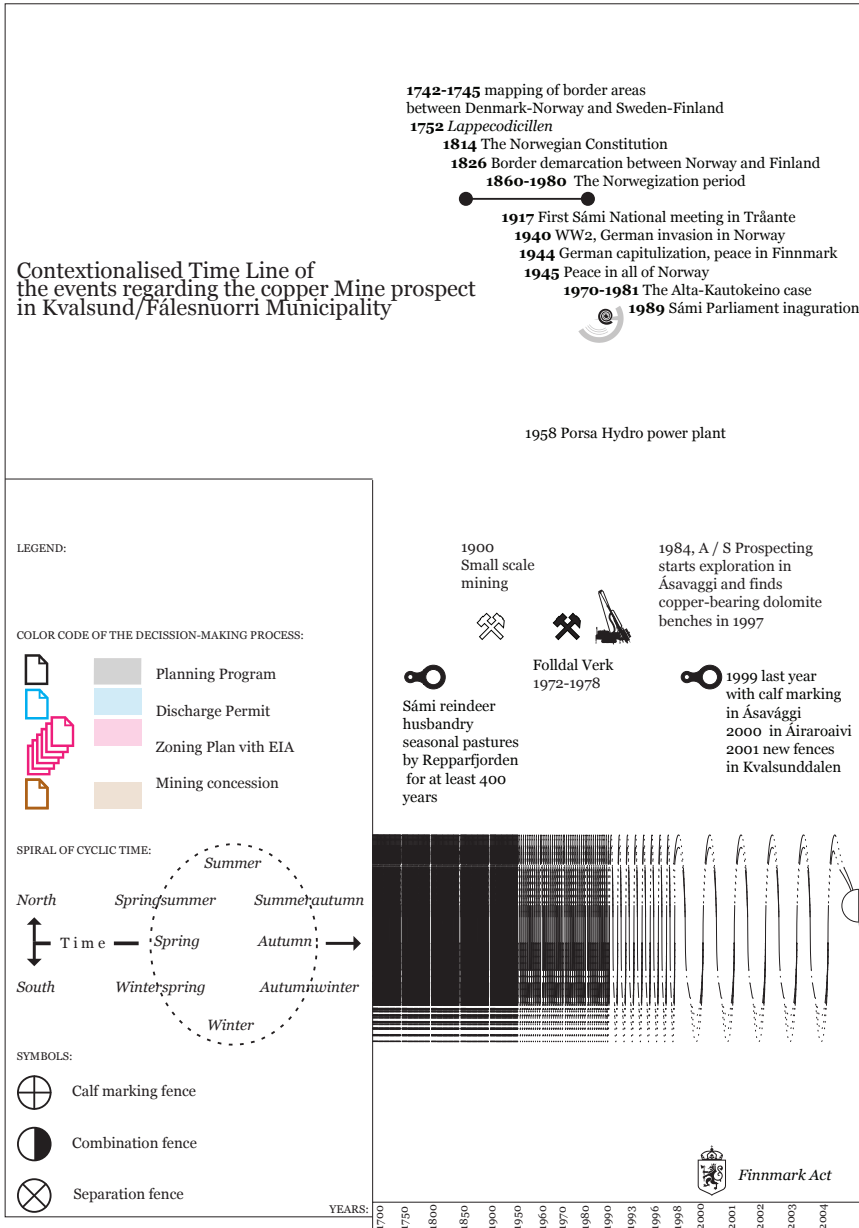


Fig. 7.1 A timeline is providing accounts of the Repparfjorden process and related views on the case. Linear and circular (spiralling) time showing the historical context of reindeer husbandry and mining in Kvalsund Municipality 1700-2020. This section of the timeline show 1700-2004.

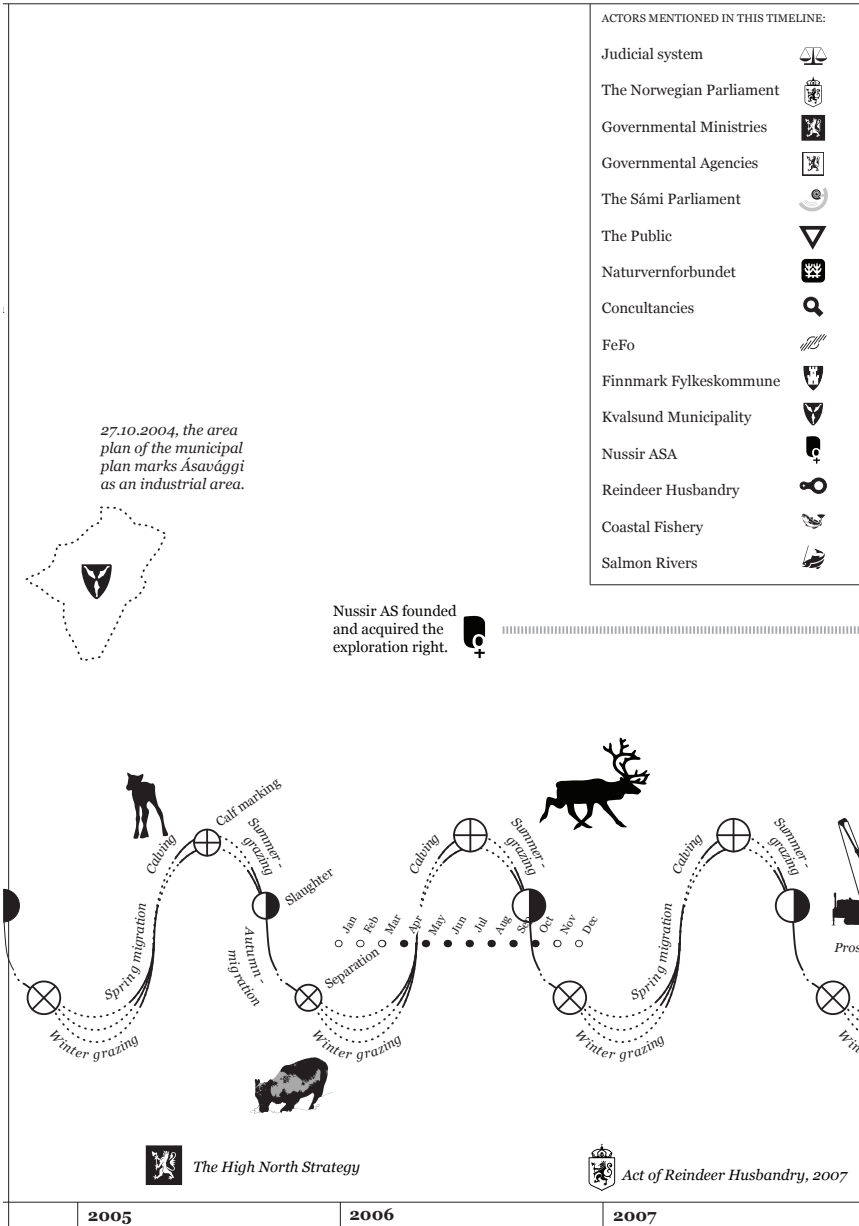


Fig 7.2: 2004-2007

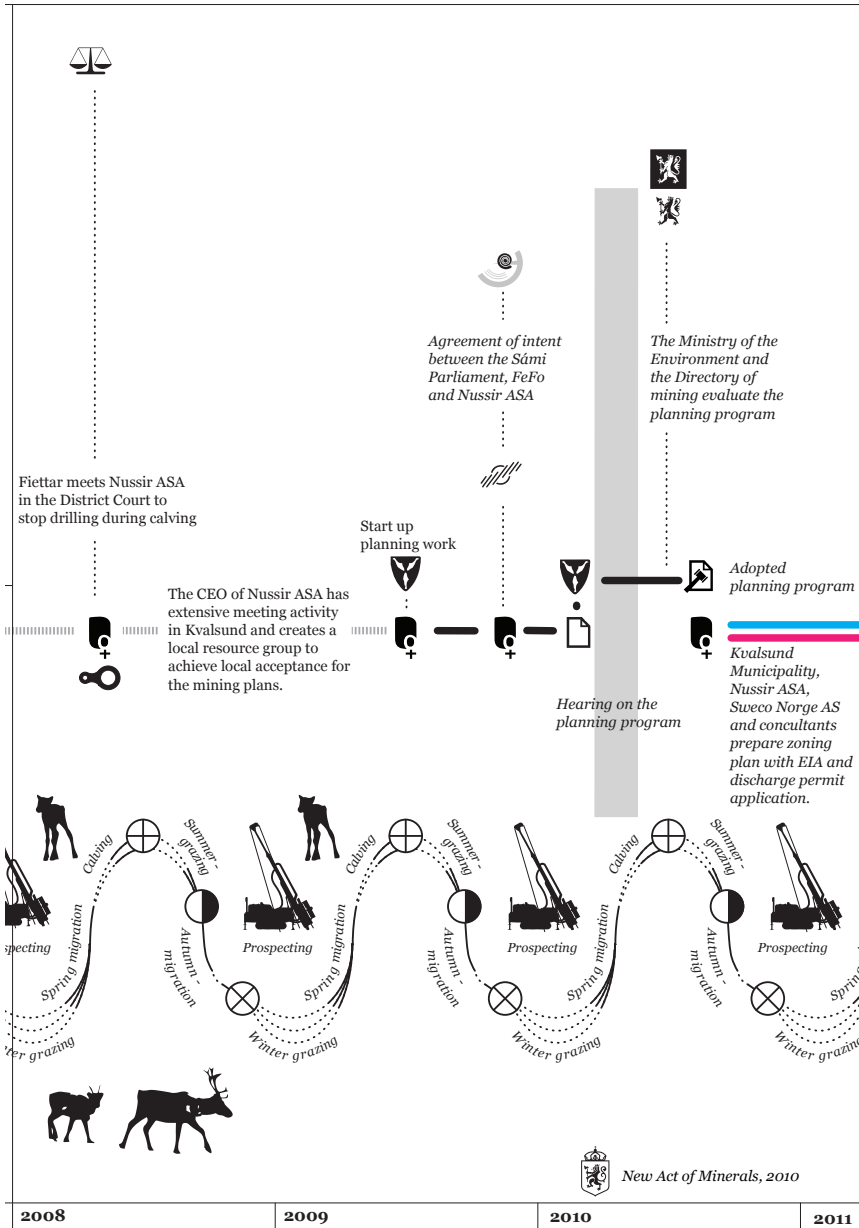


Fig 7.3: 2008-2011

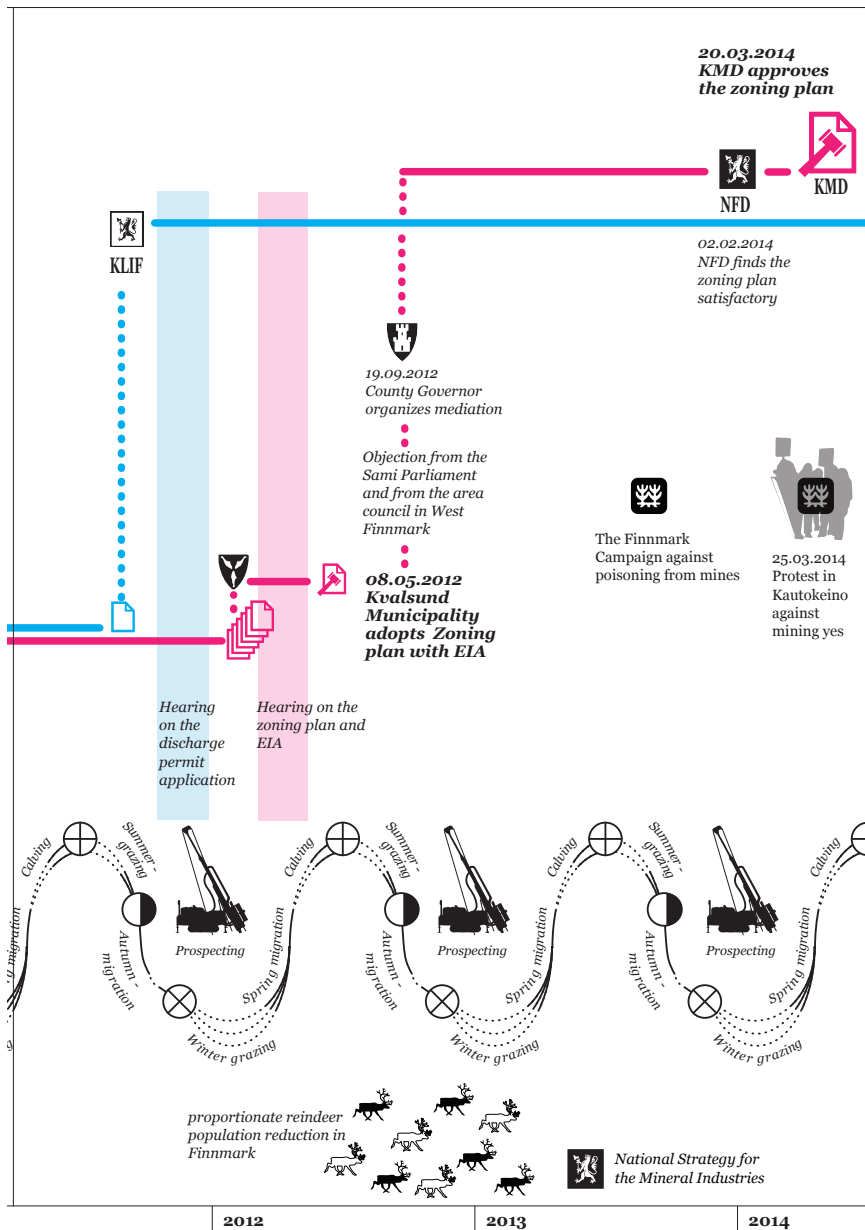


Fig 7.4: 2011-2014

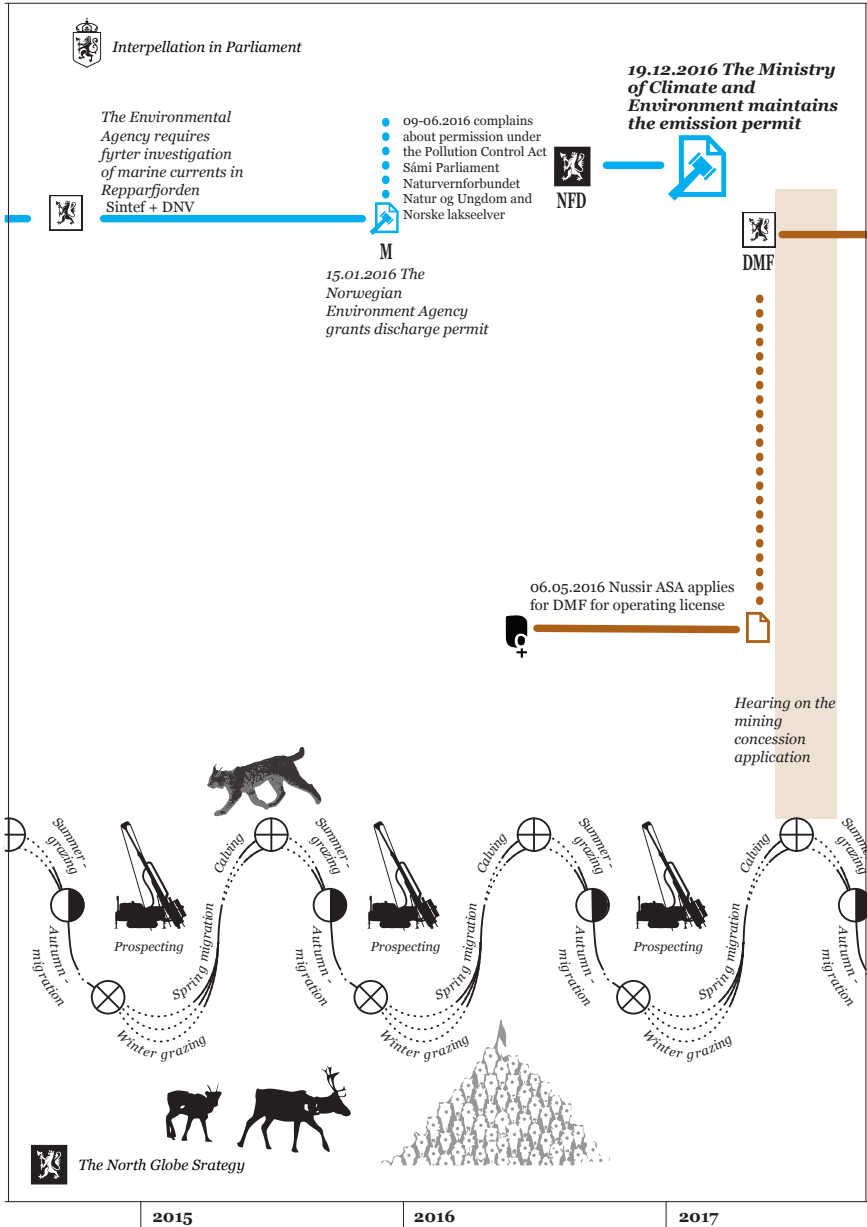


Fig 7.5: 2014-2017

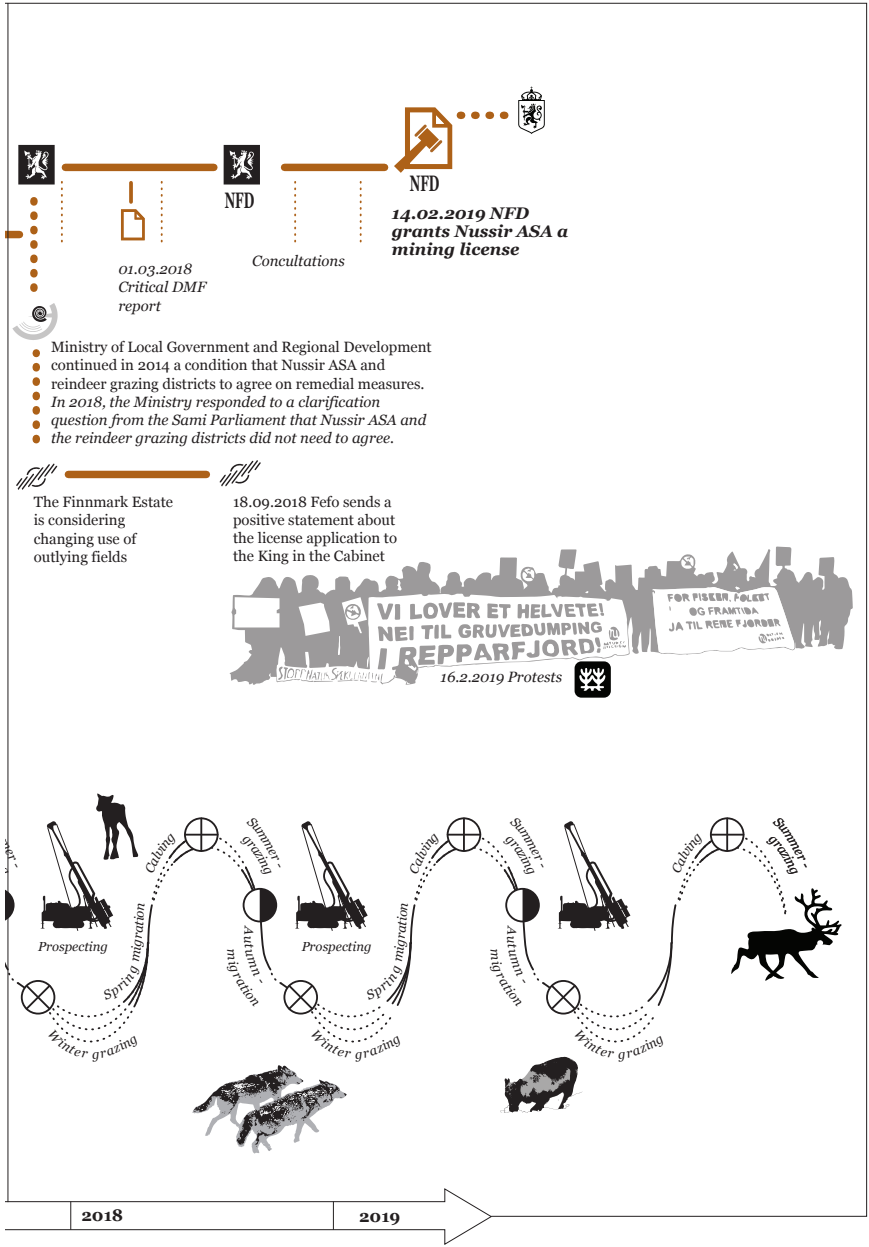


Fig 7.6: 2018-2019

prospect. There has been less attention on the toll it takes to resist the mining prospect, generation after generation. It is long-term, tiring, unpaid and unglamorous work to protect nature. The construction of the Nussir prospect has been going on for 30 years (Fig 7.1-7.6). And then it has been taking place in a landscape already scarred by an abandoned mine, with a hydropower dam and leisure cottage fields. The rest of the process is comprised of the public and administrative procedures involved in carrying out the plan.

Recent research (Dale, 2015; Nygaard, 2016; Dannevig and Dale, 2018) shows that the application process of the planning programme is the stage at which local authorities can impact the process. The first step in the application process to open a new mine is to make a planning programme. The municipalities must take a decision: Do they want to know more about this prospect and its consequences? Once the prospector has retrieved the social licence to drill from the local authorities, sector-specific knowledge production informs governance and negotiates political priorities. The prospector goes on to make a regulation plan and conducts an impact assessment, where knowledge of the impacts of the prospect is collected; in this, the prospector commissions consultants to extract knowledge of the externalities of the mine (see Deneault and Sacher, 2012, 31). Important to note is that the landscapes are physically and discursively perforated previous to any social and environmental impact assessment produced by the prospector's consultants. While the prospecting is going on, there is much noise in the mountains. The reindeer avoid confrontation, and the ranges of their grazing movement are thereby perforated.

The Nussir case is connected to three large discourses. First, it is linked to development of the mining industry, second, to the environmental campaigns to ban sea deposits of mine tailings, and, third, Indigenous rights connected to reindeer husbandry and coastal fishery. As discussed in Chapters 5 and 6 above, the plan locates the mine and the processing plant within important reindeer grazing lands, and the disposal of mine tailings in Repparfjorden. Thus, the Nussir prospect cuts across a range of issues, especially the prospects of continued fishery and reindeer herding in the area. In my study, accounts were being given of the mining prospect derived from interviews, first as seen from the sea, then as seen from the mountain pastures. They provided some testament to experiencing how the search for minerals, the development of mining prospects and the conduct of the licensing process challenge the continuum of knowledge production within reindeer pastoralism.

Early on in my inquiries, the planning authorities admitted that they approved an encroachment in the reindeer herding districts, but they did not acknowledge what the loss of the pastoral landscape implies. This referred to neither the loss of the reindeer's intimate knowledge of their summer ranges nor the pastoral relation to this particular place. The decision does not reflect that the encroachments challenge the continuum of knowledge production within reindeer pastoralism and, in turn, affect Sámi language and culture. In 2014, the Ministry of Local Government and Modernisation [*Kommunal og Moderniseringsdepartementet, KDM*] approved Nussir's zoning plan, on the premise that the mining company secured an agreement on mitigating measures with reindeer husbandry (KMD, 2014, 1). When the zoning plan was approved, with the notion that the mining company and the reindeer grazing district should reach an agreement, it was easier for other actors such as Fefo to approve the plan. In the end, though, the government wrote a letter in which they stated that mining was 'not dependent on consent' from the reindeer grazing district of Fieltar.

The landscapes that the mining industry has externalised in Fennoscandia are first and foremost the landscapes of Sámi reindeer husbandry, marine food production and outfield businesses, such as hunting, harvesting, freshwater fisheries and recreation. Prospected landscapes are landscapes of knowledge gaps, voids, holes and abysses of things we do not know about the aggregation of impacts. The main "claims" will probably remain paper prospects, but they do not disappear if they are rejected politically because the knowledge of the minerals is made available to the discourse. The analysis of planning legislation in Landscape Justice (Egoz et al., 2018) clearly opens the door for an interpretation in which prospectors in due time for action keep these prospects readily available for prospectors that will resume the application processes.

7.3 SÁPMI AND FENNOSCANDIA ON AND OFF THE MAP

The 'Metallic Mineral Deposit Map of Fennoscandia' (Fig 2.4)) and Sámi artist-cartographer Hans Ragnar Mathisen's 'Sápmi' (Fig 2.3) represent the same territory with different names and worldviews. The main purpose of the first of these maps is to depict the distribution of mineral deposits in the region. National borders are provided, but only for the reader's orientation, and these are discreetly traced in a semi-transparent grey. Meanwhile, the latter dispenses with national borders altogether, in accordance with its maker's

ambition to show the continuity of Sámi lands, cultural presence and belonging to landscape (Mathisen, 2010, 120-133). If Mathisen's maps delve into colonial history, in order to make visible what is unseen, geo-resource cartography like the mineral deposit map of the Fennoscandian Shield digs into the Earth's crust, in order to reveal the wealth that is hiding in the subsoil.

In comparing maps like these, an opportunity arises to discuss the kinds of worlds they constitute, as well as to see how proofs are visually registered and communicated. Thirty-four years separate Mathisen's 'Sápmi' map (1975) from its Fennoscandian geological counterpart (2009), and, while both are examples of modern cartography, the maps are not maps in the same sense. The geological map is best seen as the interface of a searchable database, an effective aid to resource extraction, whereas Mathisen's map offers more oblique information on Sámi cultural heritage that is by no means inaccessible but is certainly not accessible in the same way. Both maps are parts of larger atlases that are material agents in political discourse. The maps are reproduced as posters at an affordable price to be displayed in people's homes and working places, and, thus, they take part in identity building. This is also the case for the geological maps: paper copies are available and affordable. *Both The Metallic Mineral Deposit Map of the Fennoscandian Shield*, published by FODD in 2009, and the map *Sápmi*, published by Artist Hans Ragnar Mathisen in 1975, are drawn on the base map, and both emphasise in different ways the unity of the territory. The geological map depicts the distribution of mineral occurrences in uniform graphics, suggesting that the wealth belongs to the global mining economy. The same land that encompasses both economies is alternatively mapped as evidence of cultural patrimony and evidence of mineral wealth.

Artistic re-mapping, such as is evident in the maps of Hans Ragnar Mathisen, has the potential to enter into negotiation on landscape futures with a narrative logic. In his maps, Mathisen articulates culture and nature values in ways that build community and have the potential to nurture an ongoing commitment. Mathisen's cartography digs into the subtle colonial history to shine a searchlight on unacknowledged subversion in official maps, and geo-resource cartography digs into the Earth's crust to reveal, with scientific realness, the wealth hidden in the subsoil.

As is evident from the contexts of the FODD maps and Mathisen's maps above, maps and the larger atlases to which they belong are powerful agents in political discourse. Knowledge of the lands is power, and maps, when accepted, define and change the world, both externally and

internally (Wood, 2010). The maps belong to different worlds—or at least to different worldviews—but, in the contemporary context, these views operate increasingly in the same political and economic arena, opening up possibilities for dialogue, even if such dialogues go largely unheard in mainstream society—unless protests become visible and audible.

The nation states connect in different ways with the “two worlds” that these atlases represent (Law, 2015; Bjørklund, 2016) but increasingly in the same arenas: dialogue processes and hearings on mineral resource policy, and application processes for opening or reopening mines. In Norway in 2010, the Fennoscandian Ore Deposit Database made policy (Fig 4,2). The printed map was used as a prop to rhetorically argue that, compared to Finland and Sweden, Norway was lagging behind. The uncharted mineral wealth in North Norway ultimately led to extensive public funding of geological mapping.

7.4 PERFORATIONS

The exploitation of Arctic territories rests on a perception of a landscape as vast: vast expanses of landscape. Exploiting this confusion of scale, Nussir ASA has been successful in establishing a narrative about size: a small mine in a vast pastoral landscape. Doing so, the company—which has already acquired the discharge permit and mining concession—presents a prospect that is not weighted down by its externalities. Moreover, rhetorically, when there is lack of agreement on the problems that are caused by extractive projects, how can there be any agreement on mitigating measures?

Governance agencies and the general public do not believe the tools developed in reindeer husbandry are suited to analyse external factors. Further, the problem is that the multimodal, multisensory experience that is accumulated through continuous monitoring of an adaption to the changing environment is more advanced than the tools that are used in landscape planning. In order to counter the worldviews of extractive prospects, the so-called ‘externalities’ of extractive prospects must be included in impact assessments and landscape planning (see Deneault and Sacher, 2012, 31; Noer Lie, Nordlys, February 22, 2019). It is important to acknowledge that it is not an act of aggression when pastoralists and researchers on wildlife behaviour explain and try to get acknowledgement for the life course of the reindeer herd and how it uses the landscape.

7.4.1 The outfield atlases

The autumn of 2014 was a turning point in my PhD research as regards working mode. By that, I refer to making sense of my fieldwork experience, by drawing maps and diagrams. I had been through the first round of research activities. I repeated readings of counter-mapping, while completing an article (Uhre, 2015) about Hans Ragnar Mathisen's artistic mapping of Sápmi and the map compilations of the Fennoscandian Ore Deposit Database.

One evening, I had just returned to Tromsø from my first experience of autumn fence work in Áisarovi, where, under close supervision, I had skinned and butchered a slaughtered reindeer. I brought home the meat.

After a ten-hour bus ride, I arrived at my home in Tromsø and I had to tend to the reindeer meat right away. I was bursting with the impressions from Áisarovi. I unpacked my bags. It took me the better part of the night to prepare the hide and the meat. When I woke up the next day, I had the strangest feeling of learning about the world for the first time once again, as if my brain was hardwiring an extra set of childhood memories. (Personal notes, 2014)

Practical experience is crucial to spatial imagination, to make improvisation work, in order to make prospective suggestions. To participate in fence work is to be immersed in an environment where traditional knowledge is practised. 'You do not freeze when you butcher reindeer,' said one of the bystanders, who observed me when I learned to skin the reindeer. I remember the warmth between the pelt and the skin. The experience added a tacit layer of knowledge: to be sensible towards another way of thinking.

The field experience, combined with conversations about the field experience, drew me to think through drawings when thinking about reindeer pastoralism: to go beyond a description of observations or deconstruction of map information.

7.4.2 Conversation I

The prospect of the copper mine adds to multiples of infrastructural encroachments in the district, such as new power lines, cottage fields and recurrent proposed plans for hydropower and wind power plants. The impact assessment referred to research showing that these factors compound to make the reindeer more vulnerable.

To show this, I include two versions of the same map, drawn three years

apart, and refer to a conversation about the first one. ‘There should be red all the way here,’ a herder said and pointed at the lightly coloured field. ‘That is the consequence of the prospectors who roam around in the pastures.’ His wife agreed and said:

– *When you see such a map, you might think: That is not much. Red is usually a colour that you use where you show consequences: The industrial installation may be in a neutral colour because the built object in itself is usually not as dramatic. The impact of the installations is not relative to the size of the installation. What are important to map in a red code are the areas where the pasture is lost, or else it becomes misleading to the eye. (Field notes, 2015)*

I pointed at the map. ‘The Nussir Mountain is here,’ I said and continued to ask, ‘Will the mountain not shield Fieddarvaggi from disturbance from the planned mine?’ The herder then pointed to a mountain pass on the map and said:

– *You see, the entrance to that valley is here, at Suolohokka. When you have taken the Nussir Mountain and Ásavággi, a smaller valley crosses the Nussor Mountain and connects the two places, but now even this passage, Suolovággi, is threatened by a hydropower project, then you lose Suolohokka, and then there is only the passage below the bridge in Kvalsund and the mountains down there left. You have, in reality, lost everything when you lose access to these areas. (Field notes, 2015)*

His wife said that it was important to keep in mind that the consequences of the mine would be felt, not only by the pastoralists but also by the local population.

Not only will the pastures be blocked, but the waterways and fishing lakes might also be polluted by dust from the mine and the ventilation shafts. (Field notes, 2015)

In the reindeer husbandry study that followed Nussir ASA’s impact assessment for mining in Nussir and Ulveryggen/Gumpenjuni, reference is made to literature from avoidance studies, showing that reindeer can stay 2-20 kilometres away from development, depending on the type of development, season, terrain, pasture conditions and several other factors. (Vistnes and Nellemann, 2011, 27). ‘Evasion’ means that most of the herd reduces their

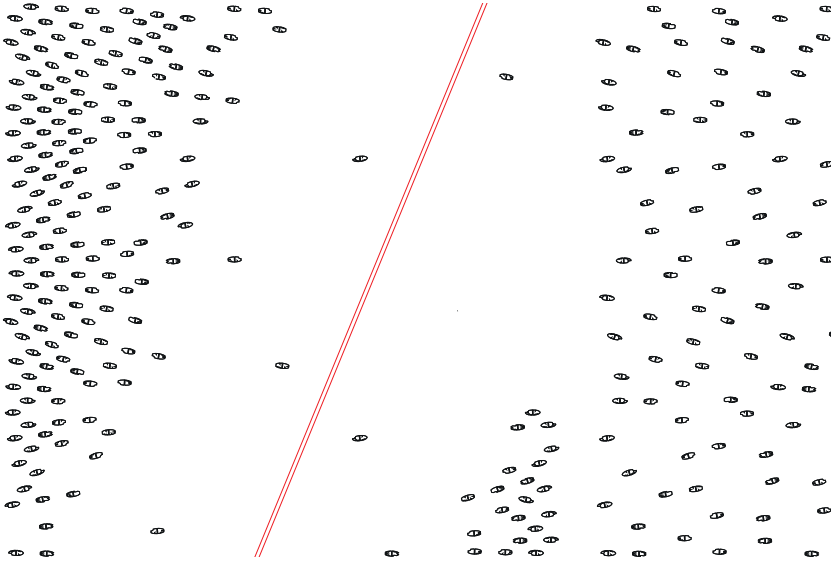


Fig 7.7 Disruptive human, infrastructural, and industrial activity carves a void in the grazing movement of the herd. Earmark symbols used to illustrate the thinning of reindeer appearances along a line of disturbances.

use of the area that is close to development and human activity (Fig 7.7). The continuum of reindeer herding in Fiettar and Fala is in peril, due to multiple simultaneous extractive and infrastructural prospects being considered by local and national authorities. What we see is not an abrupt or sudden disappearance of this relationship between movement, land and meaning, but a subtle violent bit-by-bit erasure of cultural difference, language, multimodal forms of expression and relations to landscape. As the *siida* loses flexibility, it becomes less resilient, with the related prospect that some of the families in the district will have to leave reindeer husbandry becoming more apparent.

7.5 COUNTER MOVES

Mineral prospecting shares the extractivist worldview with a wide range of extractive industries, yet Arctic people carry a disproportionate burden of climate change mitigation. It is urgent to assemble knowledge of the multiple trajectories of all the outfield businesses that are threatened by mineral prospects. Such knowledge is invisible in aggregated studies of the impacts that mineral prospecting imposes on landscapes, without studying Indigenous landscapes.

In this light, exclusion of experience-based knowledge has material consequences for the landscapes that are externalised by the mining industry. These externalised landscapes are under pressure from a wide range of industries. Further, power structures between different ways of knowing and conceptualising the world are also active within each sector, and these too have their effects on the trajectories of landscapes and environments.

While cartographers are restricted to remaining within a scientific theme, studies that take a design approach are obliged to superimpose all the themes available. Design thinking is expressed through synthesising actions.

Extractive prospects are often favoured in development discourses because extraction fuels the machinery of power. It is dangerous to underestimate the power of mining prospects and the planetary violence in which they are entrenched. The killing of environmental and Indigenous leaders worldwide shows that the supporting systems of mineral prospecting have the will to inflict violence when they are not kept in check. Norway keeps its industries in check with rigid regulations, but regulations to protect the environment have been severely weakened during the latest decade.

At this point, it is appropriate to include a reflection of the ‘cultural circumstances that form the backdrop to – as well as impregnate – the interpretations’ (Alvesson and Skölberg, 2009, 9). In its workings, democracy needs narratives and counter-narratives, moves and counter moves, mapping and counter-mapping. Indigenous silence is a form of protest. A new generation of Sámi artists and activists asks different questions about territoriality, to find new *Ways of Living on a Damaged Planet* (Tsing et al., 2017). Law and Østmo argue against separating the social or the ritual from the scientific versions of the natural world and write that: ‘In this world, facts and values are interwoven; it is a world filled with beings that are lively both physically and morally’ (Law and Østmo, 2017). The season-ability in landscape practices is under pressure from rigid physical and legislative structures implemented in the *meahcci* areas. This obstructs the relational practices with nature and the respect for and commitment to seasonal cycles and events.

7.5.2 Counter Prospecting

Counter prospecting counters extractivism. In this section, I develop and reflect upon counter prospecting as a method to decolonialise the prospective arts through projective action. Counter prospecting has the protentional to be an active part of global counter-discursive moves in extraction discourses. Landscape architecture can contribute multimodally to these discourses, by

making counter prospects. In doing so, remote attendance is not sufficient. Counter prospecting builds as a method on prospective encounters in and with the cultural, material and discursive landscape.

How can a making profession transpire to stop-making actions, without falling out of its calling, which is designing landscapes, objectifying landscape, inserting landscape in landscape? Still, landscape proposals are needed to mitigate the consequences of rapid changes. Connected to this, it is a question of landscape mapping going beyond recording and witnessing the disappearance of ecosocial spaces. How can design efforts be resistant to bit-by-bit depletion of landscapes? Resisting the bit-by-bit reduction of multispecies habitats and cultural landscapes is a continuous design effort, currently enacted in a discursive field in the realms of planning, environmental and Indigenous resistance, and landscape policy.

I will first start with a caution. In a time where alternative truths flourish, it is important not to conflate counter-knowledge with ignorance. It is necessary to be critical about what to counter and when, because, in reality, everything can be countered and is countered. What should be countered are the unjust, violent and careless prospects that expropriate human and natural habitats.

Counter-mapping employs the power of maps in the making of a map that counters a map. In the conduct of my study, I needed an additional analytic category, ‘a tool made up along the course of the study’ (Denzin and Lincoln, 2011). I developed a category, where architectural working methods could fit. From a design research point of view, I have suggested that disputed prospects and contested landscapes may be addressed through a counter-prospective approach. I developed counter prospecting to give a name to an anticipatory ethnography that produces prospective knowledge and counters privileged prospects. The definition below was crafted in 2014 and published in 2018:

I introduce Counter Prospecting as an experimental and interpretative praxis-based method that operates on two intersecting planes: It resists dominant and already given prospects, while on a plane of anticipation it reaches beyond these in a ‘pro-spective’ exchange towards possible alternate futures. (Uhre, 2018, 143)

By introducing counter prospecting, I found a material-discursive field between prospects and counter-prospects that resembled the visual-discursive field between mapping and counter-mapping. Counter-mapping represents and explores contested landscapes. Counter prospecting employs

counter-knowledge that is provided and mediated through counter-cartographies, but it goes further in proposing alternative prospects. Counter prospecting counters a prospect with another prospect. It is a method that makes landscapes through drawing out alternative trajectories (Dale and Kristoffersen, 2018) and counter-narratives that focus multiple expectations on the good life (Oskal, 2000).

We therefore argue for a focus not only on disruptive technologies, but even more importantly on fostering disruptive ontologies, as the imagining of potential post-petroleum futures begins with paving multiple paths, multiple possible trajectories. (Dale and Kristoffersen, 2018, 254)

In this tensive field, it was possible to position prospects of different kinds. Multimodal discourse analysis allows the drill hole and the earmarked reindeer's movement in and along the terrain to be analysed as signs of discursive acts anchored in social and material semiotics (Law, 2009, Kress, 2018).

Industrial prospects all over the European North on land and at sea conjure expectations as to what is going to happen in 10, 15 or 20 years: mineral and energy prospecting on land; oil and gas prospecting; bio prospecting at sea; aquaculture prospecting in the fjords. Prospects are put forward and perforate the discursive landscape, by multiplying interpretations of future landscape conditions. Extractive industrial prospects set the briefs for the landscape discourses in the Arctic. Contestation and protest are part of knowledge production. Yet, counter-knowledge is often co-opted by the more powerful parties in the controversy.

The governmental preparations for extended mineral extraction perforate the landscape physically and discursively, and the perforations work across scales from the territorial to the microscopic, from the expectations of mineral wealth to drill holes and pollutant agents. A mineral prospector proposing a mining prospect is often regarded as the only provider of a prospect for economic growth and local prosperity, as well as critical materials for the green shift. Landscape practices that are threatened to be displaced or erased due to environmental depletion are being regarded as out-dated in the political pursuit of a greater good, defined as employment opportunities, tax revenues and ripple effects.

Counter prospecting harnesses some of the energy in the social friction,

the resistance, against a prospect, but it does not need to centre on an anticipated mine. I remain interested in the externalities of mining and study the multispecies movements across the mineral stake. In a reading of the word prospecting that defines it as making futures, everybody is prospecting. Analytically, counter prospective analysis is a way of reading the future landscapes as assemblages of prospects. A counter-prospect, therefore, draws on an assemblage of anticipatory narratives, mappings, propositions and mediations, but goes further in design thinking.

The prospective capacities of design inquiry are called for in the social sciences and humanities. Local communities need building capacity to enter planning processes at the right time and get agency in shaping future landscape conditions by shaping the prospect. When questioning hegemonic prospects, forward-directed concepts are needed. Emma Wilson and Florian Stammler's (2016) writing is a call for 'the production of possible landscape futures that might enter the discourse.' A prospect can counter another prospect. This then becomes a question about whose prospect, and which anticipated future, is most valued by the majority or best protected by the law. The critical, and possibly radical, aspect of counter prospecting is to choose whose prospects one engages in, by utilising the prospective capacities in the prospective arts. As a critical practice, counter prospecting aims at producing alternate prospects, based on existing landscape practices, and thus providing imaginaries and models that conjure the probability of alternative landscape trajectories, based in local and Indigenous landscape practices.

To hold on to and develop a lifestyle might, under encroaching extractive circumstances, be resistance work in its own right. This is about the continuum of life, of the herd, of the breeding in the fjord, the planetary multispecies migrations. 'We must remember to live our lives while we fight to save our fjords,' Anne Lise Thingnes Førsund's emphasis on the continuum of life through environmental struggles that can last for decades illustrates how to cope with living with extractive prospects.

Let me briefly reiterate Cosgrove's (1985) analysis of 'prospect' and 'landscape'. He used it to support his argument to interpret the term "landscape" as a way of seeing: 'It is interesting to note how "speculation" has itself a root in visual terminology' (Cosgrove, 1985, 61). The term "prospecting" stems from the Latin phrase *pro-spect*, which means "looking forwards" (Oxford English Dictionary), in Cosgrove's reading 'an extensive commanding sight or view, a view of the landscape as affected by one's position' (Cosgrove, 1985, 55). What does it mean to counter a forward-directed gaze? A criticism that could

be raised against the term “counter prospecting” is that countering a forward directed gaze is to be “looking backwards”. Consulting the OED once more, I find that “back” in Latin means “re”; conversely, the Latin for “looking back” translates to “re-spect”. Respect is an important element of historical considerations and reciprocal conversation. Further, the act of turning the perspective and look back at the prospect can be a way of confronting it. In this context, it is interesting to look with a contrary logic at Cosgrove’s (1985) concept of landscape as a way of seeing: Can landscapes be represented as counter prospects?

The spatial expertise in the *prospective arts* might be put at work to support the counter prospects that already exist and highlight subverted landscape narratives. Such practices may include enhancing alternative prospects that imagine futures with a more diverse economy, acknowledge climate emergency, ecologic catastrophe and cultural survival. Counter prospecting may also be understood as a method to endow the voids in the perforated landscape with renewed interpretations of landscape values: interpretations where the continuum of life is part of the valuation of the landscape.

7.5.3 Conversation II

In the continuum of conversations, my dialogue with the Tromsø-based Artist Tanya Busse has proved important to me in my research. Busse and her colleague, Emilija Škarnulytė, run the New Mineral Collective that tries to grasp the relations to minerals through traumas in landscape, scars on earth and determination of the territory. ‘Hollow earth constructs a form of undergrounding through impact with terrestrial process, decay, the perforated landscape, xenoarchaeology, abyss, radical geology, and layers of cultural strata’ (Škarnulytė and Busse, 2014, 5). Appropriating methods from mineral prospecting, their pamphlet, ‘Hollow Earth - Prospecting for Speculative Pleasure’, is edited as a logbook from an expedition to a closed mine, where they had staked a prospecting claim.

Busse and Škarnulytė’s artistic appropriation of methods from mineral prospecting intrigued me. They came up with a method that implied buying mineral stakes at the Directorate of Mining and, with the right to explore the stake, they went there exploring for different things. ‘The act is the method, and the goal is to prospect alternative forces, e.g. desire, poetry, love, passive resistance, lust, water, etc.’ (Busse and Škarnulytė, cited by Latimer, 2019). I was reading the new mineral collective’s field report when I had just started grappling with my new term, “counter prospecting”, and I saw that

it could be used to describe Busse and Škarnulytė's work. On one occasion, in 2014, I told them about the concept: 'What the two of you are doing is counter prospecting,' I said. A couple of years later, when planning their next exhibition, Busse asked me if they could use my term as the exhibition title.

In the hands of the artists, the term also started living its own life 'Acts of making, yes, but...' wrote the New Mineral Collective in 2019 and proposed other ways of doing counter prospecting. Blurring the boundaries between Earth and the human body, they look destruction directly in the eye and confront it with what we could say is a female, dangerously loving gaze. Their work, *Erotics of Counter-Prospecting* (2019), shows that mineral prospects can be met with elaborate ways of looking back at the prospector. Quinn Latimer (2019) wrote the exhibition text that acknowledged me as the one that coined the term "counter prospecting" and included two citations from my 2018 chapter in the *Future North* book. Busse and Škarnulytė also acknowledged me in their opening speech, in the introductory text on the exhibition wall and in online presentations.

Such dark activity – a convergence of the neoliberal corporate-state's voracity – suggests the need for, yes, counter-prospecting, some possible future counter to the apocalyptic one that such extractivism is leading us to. (Latimer, 2019)

By saying this, Latimer reintroduces counter prospecting as something that has to do with making some possible future. Busse and Škarnulytė turned the perspective and "looked" destruction directly in the eye. The landscape researcher "looks" at the externalities of extraction economies to find people who make different futures, while, at the same time, resisting the petrifying seduction of extractive processes.

7.5.4 Contrapuntal Storylines

Hegemonic prospects may be characterised by a lack of internal discourse, resistance, depth. A counter-prospective approach can be contrapuntal, by adding consequence to the utopia of the coexistence of mutually exclusive trajectories.

In order to understand the manifestation of alternative trajectories as something new, it is important not to overlook the way local debates – not least in LoVeSe - have included alternative visions of future pathways. (Dale and Kristoffersen, 2018, 251)

A counter argument can be posed in a debate; a counter prospect is the result of a longer period of design research and design development. A prospect is, after all, a timely endeavour that includes literature studies, map compilation, archive studies, lab studies, remote sensing, field sampling, political and financial negotiation, and application processes. Counter prospecting equals in labour landscape studies, anthropological studies and artistic articulation of visual narratives. Counter prospecting, then, looks towards another future with respect for the past.

Transdisciplinary encounters and exchange of ideas are important but must be done without conflating those ideas. Counter prospecting is a concept that can be open and used in different ways, but I insist that it is more than looking back at the aesthetics of the conducts of the extractive industries and consumption. Counter prospecting may fill a void in current counter discourses, by adding materiality and imaginaries to counter-narratives and alternative trajectories. Counter prospecting implies exploring how knowledge gaps in the perforated landscape—as attention gravitates towards them—demand engagement with multiple landscape perspectives in the negotiation between multiple landscape trajectories. A diversity of prospects is needed to understand that there there is a multiplicity or possible futures, and that the future constantly changes. Counter prospects are landscapes not yet constructed. Sharing a counter prospect is sharing a future not yet unfolded. Fostering anticipation, counter prospects empower the material and discursive landscape, by keeping the prospective imagination alive.

7.6 CONCLUSION TO CHAPTER 7

Prospects blur the distinction between the map and the terrain, the landscape and the representation of landscape. This chapter has been a macro-level type of multimodal discourse analysis, showing how Nussir ASA's prospecting activity opened gaps, which in turn alerted researchers, environmental NGOs, artists, journalists, Indigenous rights' advocates, stakeholders and interested parties. Both the midwife voicing her concern for the generations to follow and the reindeer herder caring for the family herd are "prospecting" for times to come. The reindeer herders look at the herd to make the prospect of the next eight years. Prospects relate to one another. Counter prospecting counters extractivism.

Landscape characterisation moves the living landscapes to the background, as shifting, intangible and irrelevant, while the industrial plans and prospects

appear tangible and realistic. I have tried to show that it can be otherwise; the ever-changing landscapes provide permanence, while extractive prospects are shifting. Generally, it can be claimed that government reports aimed at assessing the feasibility of extraction can be seen as prospective knowledge extraction. Through exclusion and inclusion processes, the knowledge that supports the prospect that is extracted is highlighted in feasibility studies, while critical knowledge is excluded.

Counter prospecting is a forward-directed praxis that detects and interprets the dynamics at work in the perforated landscape. I have developed this concept to find ways to analytically endow the voids in the perforated landscape with renewed relations to multiple ways of knowing. More generally, this approach to hegemonic prospects has global application: it may be applied, I suggest, so as to find alternate prospects that are grounded in practices that pay attention to local and Indigenous traditional knowledge. This implies learning about landscape practices and incorporating input from people working directly with the land, when designing alternative prospects.

All aspects and multiple meanings of the term “landscape” are at play in extractive encounters. Questions about rights, resources, pollution, species extinction and climate change come together in increasingly fragmented landscapes. The next chapter methodologically elaborates on counter prospecting as a strategy for participative design research related to traditional knowledge and scientific ecological and marine ecological knowledge.

Chapter 8 A Shape In The Landscape

8.1 INTRODUCTION

I now move on to reflect on and connect the dialogic forms of counter-prospective actions that unfolded during the study. Acts of counter prospecting may be found across disciplines and practices, artistic practices, landscape practices and the conducts of the prospective arts. This chapter entrenches some temporal conclusions from the mappings and conversations in the empirical chapters, where I described what I learned through participating in traditional landscape practices and mediated through making outfield atlases. It connects the lines of thought that I followed during the study to one coherent argument. I invoke, with theoretical support from Bjørklund and Eidheim (1997), reindeer earmarks as a map of the landscape of reindeer husbandry. The reindeer earmark is an example of Indigenous protocol that has flowed from the Indigenous documentation system to a state documentation system. The earmark system is as old as Sámi reindeer pastoralism (Bjørklund and Eidheim, 1997). It has been in use, tested and trialled, for at least four hundred years, probably longer, and it still works. Then, through records from conversations with reindeer herders, I explore the condition of what I called ear cartography. These conversations are described in cross-connection with public sources of information on reindeer husbandry governance. In part four of this chapter, I zoom out into the larger geography and ask whether the prospect of Sámi reindeer husbandry has significance for human relationships with the larger territorial gestures of planetary multispecies seasonal migration. Supported by already existing anticipatory and governmental mapping practices on the territorial scale, this analysis of worlding landscapes is

gravitating towards landscapes as ontological and meaning-making sites that mediate the life-supporting planetary entanglements we all depend on: the annual and always contemporary rhythm of migratory landscapes. Finally, in the light of a set of pointers in the methodological framework, I conclude the chapter with acknowledgements and cautions that the study actualised and that I now can see more clearly.

8.1.1 Disruptive Footprints

The importance of seasonal spaces and the inclusion of diversity of seasonal circulations and practices is obvious. However, the Nussir case shows that such inclusion is not obvious to those who cannot or do not want to see this. On the contrary, the dynamics of seasonal migration are systematically downplayed, both in Nussir ASA's 2015 application for a mining concession and in the 2018 mining concession provided by the Norwegian government. Multispecies migration connects Arctic landscapes to a living planet. Migratory landscapes are, however, not necessarily safeguarded in governable landscapes. The planetary scale also connects landscape encroachments to capitalist globalism, where money migrates from peripheries to centres. Planetary life is regarded as *externalities* to global mining. Nationally, the mining industry categorises environmental and societal questions as 'externalities' to industrial mining.

Nussir ASA's company CEO argued in the mining concession application that the mine is very small, in contrast to the reindeer grazing land that he described as abundant. This argument has been galvanised throughout the process, and it culminated in an information folder made in 2019 by an advertisement company on behalf of Nussir ASA. This folder employed the propagandist power of maps on different scales to 'prove' that the mine was small in comparison to the Fiettår reindeer grazing district (Nussir ASA, 2019). Lack of knowledge of and respect for the seasonal events and practices taking place in a landscape hampers the ability to understand the scale of impacts or to assess the degree to which an objectified landscape encroachment, big or small, harms the lives lived there. It is not given that the relationship between stationary objects and migratory systems can be reduced to a matter of size. Physical landscape and seascape changes can seem relatively small, compared to the geography of the *contiguous domains* of the species that is affected, but the impacts of such encroachments may be on a global scale, as the fate of those species that are affected cascades to ecosystems far away. The contiguous domain of landscape depletion has planetary impacts.

Deeper consideration of migratory landscapes might shed new light on the discourse of mining in the Arctic, including the Nussir prospect. Not until the

mine's externalities are perceived as integral to the mine will it be possible to discuss its impacts in a coherent manner that accounts for how the mine is perceived through different worldviews. The mine is discussed, on the one side, as an inert object and, on the other, as an actor in a migratory system. The two sides do not really discuss the same mine.

8.2 WHAT IS THE PROSPECT FOR SÁMI REINDEER HUSBANDRY?

Prospect means a view; it also means a plan about the future, and it means an anticipated future. What is the prospect of Sámi reindeer husbandry? The answer to this question leads to the quest for Sámi pastoral cartographies, by briefly connecting literature on cartography with a diversity of understandings of the Sámi reindeer earmark. It is urgent to pay special attention to the continuous construction of landscapes and alternate futures in outfield territories, the *meahcci*. The opening of Finnmark to mineral extraction is not the only viable path to prosperity or to a green shift. In a recent study of cumulative impacts of land and natural resource exploitation on Sámi reindeer herding, carried out for the Swedish Environmental Protection Agency, the authors, Kløcker et al. (2016), recognise that: 'One of the greatest challenges in landscape planning concerns the many and often competing claims on land and natural resources' (Kløcker et al., 2016, 9).

Loss of grazing land is the most serious threat to Sámi reindeer husbandry (Vistnes et al., 2009; Benjaminsen et al., 2016). As of today, reindeer pastoralism is in fierce competition over access, rights and use of land with other outfield business and infrastructures. The prospect of reindeer husbandry is at stake in the controversies between planning authorities, pastoralists and prospectors. Sámi pastoral communities negotiate on behalf of their *boazu* [reindeer], when dialogue processes aimed at constructing consensus around the opening of new mines (among other encroachments) demand their attention. The states across Sápmi express their concerns about the prospects of Sámi reindeer husbandry, by offering prospects of coexistence (Bjørklund, 2016, 177) with the extractive industries in the reindeer pastures.

During the summer fence work, when the calves got their earmarks, I wondered how it could be that all the energy was concentrated on the reindeer and the children's interaction with the reindeer, even at a time when the pressure from all sides posed threats to the pastures in the district. I learned that the pressure is a constant, but that the calves are new every year, and that, without earmarked reindeer, there is no immediate or long-term future in reindeer husbandry.

As such, personal earmark embodies an individual right to own reindeer, and owning reindeer gives the possibility of engaging in pastoralism, developing a herd, and prescribing rights to land. (Johnsen et al., 2017,13)

The work of marking the calves summons the *siiddat* that keep their herds in the same landscape as the earmarking fence, and they stay until all the calves are marked. All the families in the *siida* stay together in the landscape for up to ten days; young ones train their skills, and traditional knowledge is passed on to the next generation.

Since Folldal Verk's unsuccessful mining operation in Gumpenjuni in the 1970s, there has been a continuum of mineral prospecting in the Fiettar reindeer grazing district: A generation-long depletion of the human-reindeer-landscape relationship has been allowed to go on, since the copper ore was discovered in the valley of Ásavággi. In 1999, the Rášša Siida used the earmark fences from Ásavággi for the last time before moving them to avoid conflict and disturbance from the disruptive prospecting activity. The loss of meeting places in the landscape implies the loss of the intimate knowledge of this particular pasture landscape and the conversations about herding at this particular place. It is clear that, when the families ceased to congregate in the valley, Ásavaggi was denuded of its capacity to renew the Sámi pastoral terminology and pass it on to young generations. In such processes, the landscape is depleted of language. The reindeer return to and recognise places as home in this landscape, but, if the reindeer in the future are scared off by mining activity, the valley may be lost as a calving ground and nursery, and, along with the loss of function, the female reindeer's relation to the valley as a familiar landscape, will be lost to the female reindeer, mothers and daughters, that roam together.

The experience-based knowledge about how reindeer use the place-specific landscape capacities under changing weather and insect conditions is expressed through the terminology of Sámi and other Indigenous reindeer husbandry people in the circumpolar Arctic. 'In a world where there is no reindeer herding, there is nothing to yield the concept of a JASSA' (Meløe, 1988, 388). The prospect of ending the reindeer herding needs to be understood as a future scenario of a landscape in which the language will be depleted of meaning.

The 'prospect' of the mineral prospector is a mine. Prospecting practices are

different from each other and relate to each other. When the siida members of the Fiettar district contest the assertion that reindeer herding and mining can coexist, the prospect of reindeer husbandry counters the mining prospect. What are the prospects for reindeer husbandry? Can this question be asked differently? If this question acknowledges the world views of Sámi husbandry, the answer is both simple and illuminating, as it shifts the attention from a multitude of external forces to one fundamental task. In the autumn visits I made, I observed the reindeer owners watching their reindeer for hours and hours walking in their circles in the large pen before handling them into the tight gárdi. Being in such close proximity to the reindeer entranced me the first times I participated. Through conversations, lectures and readings, I learned to see that the reindeer owners planned the structure of the herd, by considering the lifespan of each individual boazu, the economy and the social structure of the *eallu* [the herd]. ‘This term is derived from the word *eallin*, “life course” or “life as it is lived” (Sara, 2011a, 150). The prospect of reindeer husbandry is the herds, life as it is lived, and the continuum of seasonal planning for the well-being of the herds. The *eallu*, the reindeer herd, is the prospect of the Sámi reindeer husbandry practitioner. The herd is the prospect in its own right, but in relation to the mining prospect, it becomes a counter prospect. The one fundamental task is to keep the herd alive and to pass on the knowledge of how to keep the herd alive. To take away the prospects of reindeer husbandry, the reindeer, is to take away the future. From this, we can learn that prospective responsibility means to care for life as it is lived.

8.3 THE MAP IN THE TERRAIN

In the section above, I argued that the herd is the prospect of reindeer husbandry. How is, then, the herd, the prospect of reindeer husbandry, represented and mediated? What kind of multimodality is at work in the management of the reindeer mark system? This section aims to capture Sámi reindeer husbandry’s own contemporary multimodal representations. I pick up on some analogies here, to be able to describe the earmarked reindeer as a walking, breathing map that shows its own way of navigating the territory. Bjørklund and Eidheim (1997) described the earmark system as an ‘*Earlanguage*’ and ‘*a culturally defined map*’.

Artist and cartographer, Hans Ragnar Mathisen, traces an interpretative connection between ancient Sámi visual and oral expressions and modern cartography. His maps mark a deliberate attempt to make a connection between Sámi *duodji* [traditional handicrafts] and mapmaking. ‘Sámi art and *duodji* are linked [via] a long prior tradition from the Shaman drum, sacrificial sites,

mazes, and petroglyphs' (Mathisen, 2010, 120, my translation). Mathisen uses representations of earmarks as identifiers of reindeer grazing districts in some of his maps but does not suggest that the earmark is in itself a map.

Maps are multimodal documents, but they are not the only ones. Denis Wood claims that the systemic contribution of Indigenous mapping to cartographic critique is that it calls into question the authority of the state's maps, by using oral and material systems of record as proof of land rights in the court system. 'Yet having been challenged by a song, a dish of sand, a painting, no state map can ever again be quite the authoritative thing that it was' (Wood, 2010, 130). In line with such an investigation of material systems of record, Grenersen et al. (2016) propose, from the field of information studies, that documents, or what counts as documentation, include more than written texts. They argue that 'ways of seeing natural phenomena' are fundamental forms of information that can be documented. 'Oral accounts, legends, traditional songs and traces in the landscape are seen as documents and documentation in Sámi and other indigenous cultures' (Grenersen et al., 2016, 1181). Sámi epistemology implies that 'experience, knowledge and a personal relation to the object is crucial if the documentation is to be regarded as truthful and reliable' (Grenersen et al., 2016, 1181-1182). In their argument to regard traces in the landscape as documents, these writers seek support from Suzanne Briet's (1951/2006) manifesto on the nature of documentation but also criticise her well-known rhetorical question:

Is a star a document? Is a pebble rolled by a torrent a document? Is a living animal a document? No. But the photographs and the catalogues of stars, the stones in a museum of mineralogy, and the animals that are catalogued and shown in a zoo, are documents. (Briet, 1951/2006, 10 cited in Grenersen et al, 2016)

While referring to Sámi reindeer herding practice, Grenersen and colleagues (2016) argue that:

Briet's assertion that an animal in the wild is not a document does not make sense in a Sámi context where the animal in the wild can be observed as a vital source for information connected to nearly all aspects of the herders' practice. (Grenersen et al., 2016, 1188)

Such an argument does not take into account that the *boazu*, the semi-domesticated reindeer, is not just any animal. Distinguished by its earmark, the reindeer carries its own documentation when it moves through the terrain. The earmark has all the hallmarks that are needed for an object to become a

document in Briet's explanation. Further, the earmarked reindeer is actually sometimes perceived as a document. Mikkel Nils Sara (2011a) notes that one aspect of the living, semi-domesticated reindeer is that:

[R]eindeer are sometimes referred to as "ears", because patterns of notches or cuts are made in the ear to signify ownership. For those involved in herding, this reference to "ears" focuses attention on ownership of specific reindeer in the here and now. (Sara 2011a, 149-159)¹⁰⁶

I experienced this myself when I was participating in the autumn fence work. We were in the large pen, and the twins were working with their lassoes, when Eli Ristin Skum pointed at a calf and said:

– *Look, there is a geažotbeallji.*
The unmarked calf was supposed to be captured and given a number plate, so that it could be confirmed which of the female reindeer it kept close to. She continued:
 – *It is quite small, it must have been born after the earmarking.* (Field notes, Áisarovaivi 2018)

What can the earmarks teach us about the inherent cartography that exists in the Indigenous landscape practices? There is no scarcity of calls for new Indigenous cartographies among cultural geographers. Cogos et al. (2017) lean on philosopher Jacob Meløe's (1988) influential text about how the landscape of reindeer husbandry is tied to the Sámi language. These geographers note influential weaknesses in mainstream mapping of place names, so that 'Toponymic knowledge has to be transmitted along with its context of emergence, situated at the crossroads of cognitive, perceptive, emotional, and social dimensions' (Cogos et al., 2017, 43). These writers argue that:

[T]here is an urgent need to conceive new forms of cartography that can guarantee the transmission of toponymic knowledge to future generations, maintaining the relationship that binds the Sami to their environment. (Cogos et al., 2017, 43)

However, they do not give examples of how such maps may look or proposals to design guides and rules for such maps. To include multimodality and go

106 Examples in Sara (2011a): footnote (sic) *geažotbeallji* = whole ear (unmarked reindeer), *geaiggobeallji* = long ear (reindeer with ears that are marked with small notches and no big cuts).

beyond spoken and written language might be a starting point for a cartography. The Sámi reindeer earmark is a multimodal system that exists and is able to transmit the landscape knowledge and values of Sámi reindeer husbandry.

The reindeer earmark may be understood as a visual language that is in daily use, and it is documented in multiple ways.

Earmarks represent a communicative system expressing social and economic relations between people, and *verdevuohtta* is a reciprocal exchange relationship between the sedentary Sámi population and reindeer owners that reproduce these relationships. (Bjørklund and Eidheim, 1997, 569, my translation)¹⁰⁷

‘The reindeer marking builds on an old system that combines main marks (*válu sánit*) and secondary marks (*smávva sánit*)’ (Bjørklund and Eidheim, 1997, 564, my translation).¹⁰⁸ Bjørklund and Eidheim noted that ‘the Sámi terms for earmarks, *váldu ja smava sánit*—mean big and small words’ (ibid., 576).¹⁰⁹ Johnsen and colleagues follow up on using language systems and reading as metaphors to make sense of the world, stating that:

We use the term literacy not to imply an ability to read and write, rather we are engaging the part of the word’s etymology which recognises having competence in a system of knowledge. (Johnsen et al., 2018, 81).

Not only the earmarks but also the trimmings are used as portable documentation of the earmarked calves. In Chapter 5, I described the earmark trimmings sewn on a string. As a document, it produces a rich and complex materiality that enables the owner to compare the yields from year to year. The string of trimmings adds tactile information to the notes in notebooks and laptops (Fig 8.1). I also found such strings exhibited at the University Museum in Tromsø.

107 My translation from: Bjørklund and Eidheim (1997, 569): ‘Reinmerker representerer et kommunikativt system som uttrykker sosiale og økonomiske relasjoner mellom folk, og verdevuohtta er et gjensidig bytteforhold mellom fastboende og reineiere som reproducerer disse relasjonene.

108 My translation from: Bjørklund and Eidheim (1997, 564): ‘Selve merkingen bygger på et gammelt system an hovedmerker (*váldu sánit*) og bimerker (*smávva sánit*).’

109 My translation from Bjørklund and Eidheim (1997, footnote 7): ‘Jfr de samiske betegnelsene for øremerker: *váldu ja smava sánit* – store og små ord.’

Earmarks stand strong in Sámi reindeer husbandry, and they are implemented in the state governance agencies. The Reindeer Husbandry Act prescribes that each reindeer in the Sámi reindeer area is to be marked by its owner's registered earmark the year it is born (lovdata 2007b, ch 5 §33). In 2019, the government presented changes in the Act of Reindeer Husbandry (2019) that make electronic ear-chips mandatory. 'Exchange of technologies between Western institutions and Indigenous people has occurred for centuries' (Palmer, 2009, 34). In such exchanges, important aspects may disappear. The Reindeer Mark Registry, which is managed by the agricultural government agency, emphasises only the ownership aspect of the reindeer mark. The earmark is a sign that carries far more complex meanings in the Sámi culture than we in Norway understand by *ownership*, 'it also symbolized skills, rights, and identity' (Johnsen et al., 2017). Bjørklund and Eidheim (1997) note that the oldest officially documented earmarks in the Guovdageaidnu/Kautokeino area are from the court protocol [*tingprotokollen*] in 1760. Bjørklund and Eidheim's accounts of the complex meanings and functions of Sámi reindeer marks led them to argue that:

Earmarks should be understood as a culturally defined 'map' and a 'language' that serves to communicate fundamental non-material values and relations. If the use of earmarks is reduced to merely marking the ownership of individual animals owned by reindeer husbandry, it does not just mean that the number of 'words' is reduced accordingly. The 'ear language' also becomes a rudimentary and poor language and thus unsuitable for communicating the social and economic complexity that it previously did. (Bjørklund and Eidheim, 1997, 571, my translation)¹¹⁰

The earmark system is a visual language, in which notches and cuts are the words (Fig 8.2). But as regards *map*, one needs to be cautious about how cartographic vocabularies are employed differently in different disciplines. Anthropologists may not always mean "map" in the sense that cartographers

110 My translation from Bjørklund and Eidheim (1997, 571): 'Som det fremgår av vår redegjørelse, er øremerkene å forstå som et kulturelt definert "kart" og et "språk" som tjener til å kommunisere fundamentale ikke-materielle verdier og relasjonsforhold. Hvis bruken av merker reduseres til kun å markere eiendomsrett til individuelle dyr eid av reindriftsutøvere, betyr det ikke bare at antall "ord" reduseres tilsvarende. "Ørespråket" blir også et rudimentært og fattig språk og dermed uegnet til å kommunisere den sosiale og økonomiske kompleksiteten som det tidligere gjorde.'



Fig 8.1: A string of cuts from the right ear of every calf from the family's herd, documents the amounts of calves that spring.

do when they use the word. Both geographers and anthropologists, however, refer to the material records of usages and rights. The uses of analogies are a postcolonial checkpoint because they can erase *difference* (De la Cadena (2015) cited by Kramvig and Flemmen, 2018). It is important to write ‘with a sensibility for recognizing difference in ethnographic materials’ (Kramvig and Flemmen, 2018, 2). In state management of reindeer husbandry, the earmarks are used to signify ownership. Making analogies between earmarking and mapmaking recognises the multimodality and layering of different meanings in both these practices.

Sámi “cartographies” are described in the literature as intangible features, such as place names and descriptions where landmarks such as *mea* are important, or as inscriptions on cultural artefacts, such as the shaman drum. Yet, the reindeer mark exists as a tangible document that walks in the terrain. It is useful to explore the earmark system, to build an understanding of other knowledge systems. In doing so, landscape features that are described as ‘intangible’ might be perceived as material. The material basis for Sámi culture is still characterised by authoritative landscape architects as composed of “immaterial” values (Geelmuyden, 2015; Simensen, 2015). When Indigenous landscapes are described as intangible, they are often denied a material existence and perceived as less “real”.

According to the cartography literature, Sámi people are not known traditionally to have produced their own territorial maps. In 1997, Bjørklund and Eidheim showed how the combinations of major and minor incisions ‘organize and express the kinship between the owners’, and one can ‘read’ kinship out of a reindeer herd (see Bjørklund and Eidheim, 1997, 569). Cartographers have explained inscriptions and carvings on artefacts as ancient cartographies, and cultural geographers have focused *place names* (toponomies), *oral histories* and descriptions of landscape and, again, as Grenersen et al. (2016) propose, *traces* from landscape usage. Cartographers have not previously proposed reindeer earmarks as cartography, maybe because they have studied artefacts and not the mapping of living animals.

The earmark shares material features with both the map and the diagram. If one considers the cartographic qualities of the cuts and thinks of and treats the earmark as a map, it graphically starts to act as a territory. Further, the earmark works as a furry info-graphic device, which is read by the fingers like Braille, and a territorial sign carried around in the terrain by the reindeer. The cuts in the reindeer ear are the pattern that connects the pastoral communities. I suggest that the earmark system is an instance of Sámi cartography,

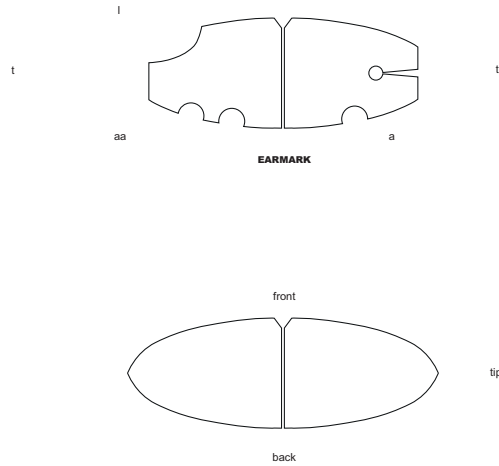


Fig 8.2: A reindeer mark and unmarked ears. The earmark system is a visual language, in which notches and cuts are the words.

where the earmarks perform as map icons. To read earmarks as territories within territories is theoretically interesting, because the reindeer mark has not previously been considered a territorial map system.

From a design-oriented perspective, the existence of walking breathing reindeer ear-maps implies that intangible landscapes become material and physically present as a mediated and represented landscape in the landscape. This is not an attempt by me to essentialise Indigenous cartographies or to throw away cartographic conventions. The earmark system carries a source of knowledge to understand the landscape of Sámi reindeer husbandry. When it comes to cartography and to how the landscape is used, to imbed the earmarks in the graphic opens up the door for a new kind of mapping, because it starts from another standpoint, from an interpretation of Sámi traditional knowledge.

The reindeer herds are moving in the terrain, and that is a fact that adds a territorial dimension to this culturally defined map (Bjørklund and Eidheim, 1997). The earmark as an Indigenous cartography connects language, landscape and kin, while, at the same time, resisting ready-made categories. The earmarks perform a seasonally migrating mapping of the terrain, and the earmarked herd is associated with rights and customary use of landscape

(Johnsen et al., 2018).¹¹¹ Land rights negotiated between the different reindeer husbandry *siiddat* and districts are expressed through the earmark system. The earmarked reindeer are, in this sense, mapping the cultural landscape of Sámi reindeer husbandry. They are present as moving signs, or semantic tags, moving through the terrain. The terrain is mapped while the herd is present, then, when it walks on to new pastures, the terrain is once again unmapped.

– When we get lost and don't know where we are, that can happen, we sometimes look at the earmarks of the reindeer that are present in the landscape to get an indication on which district we are in. (Fieldnotes, Áisaroaivi, 2015)

There is materiality and material links between terrain, ears, kinship, landscape, and diagram that are more sophisticated than the information that is stored in electrical chips.

The traditional earmark system combines multiple functions and meanings that are crucial to Sámi reindeer husbandry. I have argued that the herd is the prospect of Sámi reindeer husbandry. Following this line of thought, the earmarks are Sámi Indigenous mapping of the prospect of reindeer husbandry. As such, the earmarks are part of the cartography requested with a sense of urgency by Cogos and colleagues (2017): a cartography that can ‘guarantee the transmission of toponymic knowledge to future generations’ (Cogos et al., 2017, 43). It exists, and it is under pressure. Bjørklund and Eidheim’s (1997) article was written in the context of changes in the Act of Reindeer Husbandry that made it illegal for coastal Sámi and sedentary inland Sámi to own reindeer. The earmarks belonging to the sedentary Sámi population were erased and, in losing the right to own reindeer, they lost their material connection to nomadic reindeer husbandry through guest-friend relationships [*verddevuohttar*]. Now, as discussed in the article by Johnsen et al. (2018), the government proposes new changes in the Act of Reindeer Husbandry. This time the changes are proposed in order to make electronic chips attached to plastic ear clips mandatory and to make reindeer numbers public. It is urgent that policy makers become aware of how elaborate the earmark system functions are.

111 ‘Further, without a herd (a group of earmarked animals), it is difficult for a pastoralist to claim the right to pastures because the right to land, as acknowledged by national and international law, is tied to the customary use of the landscape’ (Johnsen et al., 2018).

8.3.1 Earmark Epistemology

With the earmarks written into the theoretical and discursive context, I now take a second look at the earmark diagrams that I presented in Chapter 5. This section cross-connects experiencing and knowing from being in the landscape with other sources and information, views and diversity of understanding. After briefly revisiting the drawing process, I discuss methodological challenges before turning to how I discussed the earmark diagrams with members of the Fiettar district up until 2015. The shapes and the combination of shapes, as Bjørklund and Eidheim noticed in 1997, are a language. This is a specialist language, located in the landscape; it is a very material expression.

What my study did differently from the studies I refer to above is that I engaged with the earmark system, by tracing, drawing and rearranging the markings from the source files, in order to understand how they work, and then I discussed these arrangements and groupings with the owners of the earmarks. The diagrams I show here are scanned pages from the outfield atlas, with red notes from the interviews. I do this to discuss the interviews as a material practice. The graphic work was an analysis, aimed at compiling information from different sources and making it understandable for myself. I discuss some implications of the learnings from the conversations about what I had been representing in the diagrams and my interpretation of these.

In the discussions of my outfield atlas of Fiettar reindeer grazing district, in the autumn of 2015, some of the themes in Norwegian reindeer policy and management came to the foreground. In 2014, the circumstantial public discourse about reindeer husbandry centred on a state-led process of reducing the number of grazing reindeer in Finnmark. In one instance, the accounts of reindeer numbers in all *siida units* in Finnmark were illegally published on NRK Sápmi. Reactions to this public display of private economic information included reports of children being bullied at school on the basis of how many reindeer their families owned. In 2015, the earmark register was removed from public access, and, in April 2019, the new Act of Reindeer Husbandry was sent to the Norwegian Parliament. In this, the government proposed to make electronic ear chips mandatory in reindeer husbandry.

The series of diagrams and map sheets in my outfield atlases was based on the reindeer owners' earmarks in the Fiettar district. In 2014, the source of this multimodal information was available online at the Directorate of Agriculture's reindeer mark register. This register is currently closed. While I traced the earmarks in the earmark register using Adobe Illustrator, a drawing programme that is very close to hand drawing, I paid attention to the notches

and cuts and the rich possibilities of individual combinations. The earmarks have iconographic and aesthetic qualities, and I found the shape of an earmark to hold a communicative power that was much greater than the shape of the territory inside the enclosed district borders. ‘This is Fiettar,’ I thought when I looked at the display of all the earmarks (see Fig 5.24 and 8.5). I saw the earmarks as tangible shapes in a cultural landscape that is often characterised as intangible. When I was tracing the earmarks, the lines followed a path that transcended into another knowledge system belonging to another epistemology.

During the winter of 2014, when I was tracing earmarks and saw them inhabiting my screen and graphical sheets, there was a public and an academic discourse about cultural appropriation. The discourse affected the way I handled the fieldwork experience. This was a process that at times felt troublesome. In 2018, Kramvig and Flemmen wrote a text about ‘turbulent Sámi objects’, a text that analysed the public debate about cultural appropriation. In the same year, Brattland, Kramvig and Verran wrote a text in which they introduced the careful partial participant. Those texts helped me in the personal process of articulating how I worked in relation to Sámi pastoral epistemologies. Approaching questions of Indigenous epistemologies ‘demands an ethic of care and respect’ (Brattland et al., 2018).

In approaching writing through a differently configured author, we propose a form of participatory ethnographic writing that encourages scholars to see themselves as partially participating in the collective workings of Indigenous knowledge communities rather than as adopting a position as a neutral commentator on those workings from idealized and removed observer positions. (Brattland et al., 2018, 75)

The knowledge system of Sámi reindeer husbandry displayed a different way of organising and ordering knowledge of the herd, the landscape and the people. The Sámi reindeer mark is important to identity and is treasured as a sign of cultural belonging, and, as such, it is a *Sámi object* (Kramvig and Flemmen, 2018, 1). The personal reindeer marks are Sámi objects, and vehicles of multimodal knowledge must be managed with respect. Kramvig and Flemmen (2018) encourage the researcher to learn from Donna Haraway (2016), to stay in these kinds of troubles. In the next section, bearing in mind the cautionary tales above, I reflect on the pastoral community’s reactions to and evaluation of my outfield atlases.

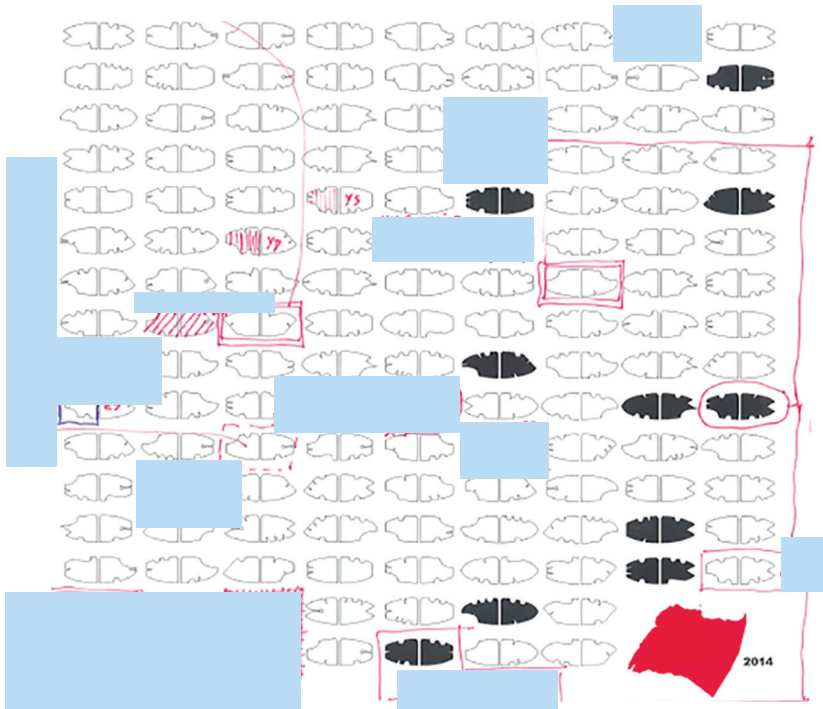


Fig 8.3: Chart of the reindeer marks registered in 2014 annotated from 5 different interviews in the Fiettarr district. I have “anonymised” it by covering names, but members of the district who are skilled in recognising earmarks might remember whose marks that are missing.

8.3.2 Conversation III

According to Anniken Førde (2004), new knowledge is made through the achievement of participants in *experience encounters*. Conversely, I brought my maps and diagrams back into the field I was studying, discussed them and then reflected on the discussions. Something happened in these conversations, a shift, like when you walk on the icy crust of a snowy plain and one of your feet suddenly punches through the crust and sinks into the snow. I think such a perforation between different ways of moving across the plain works well as a metaphor to describe the sort of perforation between charts and landscape and between different ways of knowing that happened in these conversations. There are also power relations to be considered between different ways of knowing within reindeer pastoralism (Sara, 2009, 165). Consequently, the text touches upon changes in Sámi pastoralism, not only due to extraction, but also in the light of the policy development regarding reindeer husbandry.

While the outdoor activities provide rich experience and knowledge exchange that attaches to strong memories, it is inside, at a table, that the conversations

about the past events and discussions, including maps and images, take place. In the autumn of 2015, I brought a draft of my Outfield Atlas to the summer settlement in Áisaroaivi. It was a compilation of photos, maps, texts and diagrams I had made or compiled to reflect upon what I had been learning in the field. I carried out interviews with representatives from five of the siida units where I used the atlas draft as an interview guide.

I discussed the outfield atlases with the members and leaders of five of the siida units in the Fiettar district (from both the east and the west sides of the E6, which crosses Áisaroaive). I felt more confident in the interview situation with something to show than I had done in previous interviews without anything but a notebook and a sound recorder. At the same time, I felt exposed to the pastoralists' evaluation of my work in progress. The act of drawing disturbs the unassuming disappearance acts of participant observation, because the drawings appear very present on the paper. Visual communication is not a way of hiding. As a result, my work was open to criticism and, in a good way, to guidance. How I saw it, these conversations came close to what Ingold terms '*studying with*' (Ingold, 2011, 226). The reindeer husbandry practitioners did not question my entitlement to use the earmarks in my cartographies but discussed instead how I had used them. When I turned the pages in my outfield atlas from ordinary maps and photos to the first earmark diagram, it was as if something clicked into place. The concentration with which the pastoralists studied the individual earmarks shifted the mode of the conversation (Fig 8.3). One of the women said:

– Looking at your chart is like looking through the herd to find our own reindeer.

The shift brought about by the pastoralists' readings of and comments on the diagrams led the conversations on the interior of the discourses on the pastoral system of the district and, more generally, on traditional knowledge and contemporary practice in Sámi reindeer husbandry. The pastoralists used my diagrams to teach me about different concepts of reindeer husbandry, herding strategies and also internal disagreements in the district. In particular, the full-time herders would study and comment on the earmark maps, naming the owners, telling stories. To recognise and to remember earmarks is a core skill in reindeer husbandry. The page with all the earmarks also intrigued reindeer owners with work outside reindeer husbandry. They pointed out for me their own mark, then their family members' mark. The full-time reindeer herders in particular were concerned about commenting on every single mark, some of which they told me were inaccurately traced.

– *That one is mine. Do you see another left ear similar to this one? That would be my son's reindeer mark.*

– *This diagram needs to be accurate. This mark has no reindeer in it, and the owners of those two reindeer marks have moved to another district, so those marks don't longer belong here.*

Reindeer husbandry practitioners depend on their earmark literacy to manage the herd. Earmarks are designed according to sophisticated design rules to make them distinguishable from other marks, not only on paper in the form of a flat icon but, more importantly, as a shape in four dimensions to be inspected by eyesight (with or without binoculars) while live animals move through the terrain or in the working fences. One herder told me that the incisions in the reindeer's ears make them fold in a certain way; the folds and the way the ear hair grows according to the folds form a particular shape. These shapes appear distinctly different from each other to the trained eye.

– *When in doubt, if you don't trust your eyes, the reindeer must be rounded up and captured so that the hand can read the notches and cuts.*

The drawn representation of the unfolded earmark used in the earmark register is an abstraction. It does not look like the folded, ear-shape on a reindeer moving in the landscape. It does not indicate the tactile information from the fingers that read the ears. Just like bordered territory can only be seen on the map, the layout of the combination of incisions can only be seen on the diagram; just like the terrain, the shape of the ear demands three dimensions plus the extension of time to be perceived. What about photography?

– *In a photo, it is always difficult to recognise the earmark, one actually sees the earmarks better when the reindeer moves so that one gets a perspective on both the ears: For instance if you get a photo, one of the ears will be hidden behind the antlers. (Interview, 2013).*

I asked what happened when the herders saw reindeer in the herd that did not belong to the herd, and if they all knew all the earmarks, so that they could alert the owner. One herder answered that it depends, as mix-ups occur more often with certain herds.

– *One will sum up the reindeer that does not belong to one's own siida, but whether one recognises the earmarks will, however, vary with*

experience. The siida that is closest, one will know, but, with more distant siiddat, one might have to explore what kind of mark it is and perhaps consult the earmark protocol. Over time, one gets knowledge of the marks, and some herders have better knowledge of earmarks than others. (Interview, 2013).

The simpler earmarks are considered more beautiful, and inherited marks with a history of previous owners that have been important to the pastoral community, árbemárku, are considered to be more valuable (Bjørklund and Eidheim, 1997) and associated with reindeer luck (Oskal, 2000). One of the reindeer owners showed me, more specifically, how the cuts in her family are related through the design of the cut. Another told me that all her children had jewellery in the form of their earmark, to go with their traditional costume, the gáhkti.

– Here is my mother’s earmark, and here is mine – are they not the most beautiful marks on the table? That one is my brother’s earmark; he has inherited it from our father’s side.

In these conversations, I experienced how the “earmark-language” worked in the setting of an interview. The interviews made me realise that I had been “writing” in a visual language that I did not know. As a result, I had made a diagram that I could not read, but, during the interviews, the pastoralists, both women and men in the district, read them effectively.

– ‘Why have you represented some of the earmarks with black colour?’ a woman asked.

– ‘Those are marks of the siida unit holders,’ I answered.

– ‘I think all the earmarks should be shown in the same code,’ she replied.

I understood that, when I had coded the siida unit holders’ marks, I had unwittingly privileged the Norwegian governance system that introduced siida unit holders as a privileged position after the ownership rules in agriculture where the oldest son or daughter inherits the farm. What I understand better now is that some of the reactions to the outfield atlas stemmed from different views about how reindeer husbandry should be practised and governed. Another notion of aesthetics is that the reindeer’s physiology shifts throughout the seasons, and a reindeer is supposed to look right, according to the season. One example from my fieldwork is a discussion about a photograph of a female reindeer in the earmarking fence.

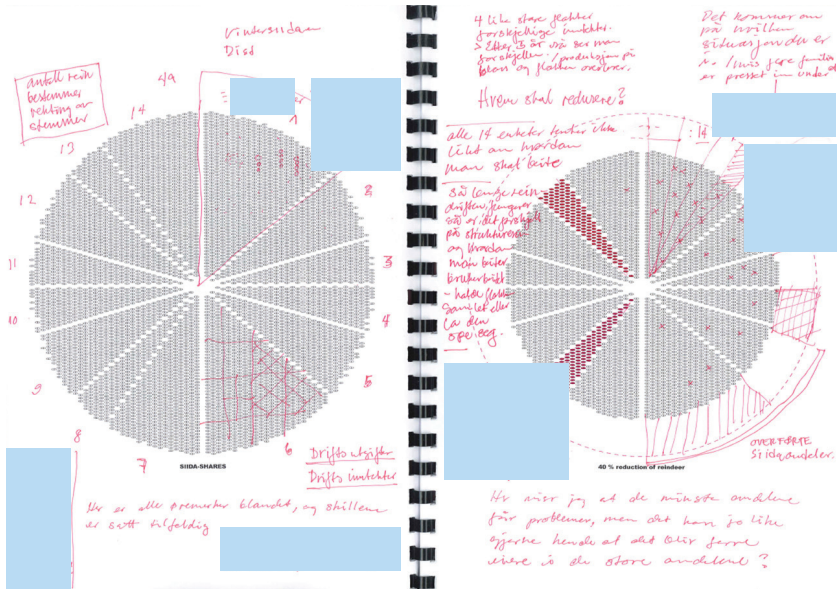


Fig 8.4: 40% reduction of the reindeer population.

The earmarks have dimensions that I have accounted for that are other than ownership, but the aspect of ownership needs to be taken seriously. Proprietary information needs to be secured. In order to make diagrams that showed the *siida unit* system in the Fiettar district without giving away private information, I made sure that the earmarks connected neither with the name of the individual owner nor with indications of the number of reindeer in each *siida* unit. The method I used to make an image resembling a sector diagram was, first, to multiply the square of earmarks, until I could subtract a circle wide enough to appear as to hold the reindeer herds in the district. The amount of earmarks in the circle does not correspond to the amount of reindeer in the district, but it gives an impression of a great number. Then, I cleared paths in the grid of earmarks, until the circle was divided into 14 sectors, each containing different and arbitrary numbers of earmarks.

The resulting diagram (Fig 8.4, see also 5.32-5.33) can remind us of the infrastructure of the separation fences that are used to divide the herd into different smaller herds. It shows that the Fiettar district comprises 14 *siida* units (as it was in 2014). I used a method of blurring in these two diagrams, to avoid revealing any private proprietary information. This blurring implied

that I distributed all the earmarks equally across the circle and divided it into sectors according to the graphic fabric and, subsequently, not according to the reindeer numbers in the different *siida* units.

I then subtracted 40 per cent of the circle to obtain an image of how the reduction showed graphically. Taken together, these two diagrams show the dramatic encroachment the herd reduction represented for every *siida* unit, without giving details about each individual *siida* or reindeer practitioner. I assumed that it was the smallest units that would suffer the greatest consequences, so I coded them in red. One reindeer owner who agreed to my colour coding said that this was the first time she had seen a graphic representation that showed the unjust distribution of consequences from the proportionate reduction of the reindeer herds in the district. Another reindeer owner explained that one could not draw automatic conclusions of how the burdens of the reindeer number reduction were distributed among the *siida* units only by looking at the reindeer number. One had to see how many families had their livelihoods in each *siida* unit. In one of the *siida* units, three families had members who were full-time reindeer herders.

*– You can have a big unit that is going to sustain many families or a small unit that sustains only one family. If you are alone in your concession, you might get along, even if the *siida* share contains few animals. You have expenses and income. (Reindeer owner and researcher, Fieltar district)*

– All the 14 units think differently about how to use the pastures. As long as reindeer husbandry functions, there will be a diversity of herd structures and strategies for how the pastures are used, if one keeps the herd collected or lets the animals spread out.

– For example, four herds that start out with the exact same number of animals would yield differently. You will see the difference in survival and production after five years.

There are high expenses in reindeer husbandry, and personal income comes from the personally owned reindeer within the herd. Working on my diagram, I showed that the smaller units got into trouble when the reindeer numbers were reduced, but that turned out to be a misinterpretation because some of the units comprised several families, while others comprised one family. The diagram (Fig 8.4, see also 5.32-5.33) propted discussion about the consequences of the reindeer number reduction, in other words the relation be-

tween the two circles. A sector diagram is, after all, supposed to be accurate. My attempt to *protect privacy by making the diagrams inaccurate* led to a lot of discussions about how it should have been, or could have been, and one of the reindeer owners objected, by saying that:

I do not want my marks to be scattered around in all the units – it is not an accurate representation. You should have used another symbol for reindeer in this diagram. (Reindeer owner and biologist, Fiettar district)

Given detailed information about the annual and long-term numbers of living reindeer, these earmark sector diagrams could, however, be made accurate, down to the individual earmark. Then they would be readable to those who know the earmarks and unreadable to those who do not, unless they invest time in learning the ear language. On the other hand, if the diagram had been made accurate, it would as another member of the district pointed out:

It would have been a powerful tool to get the full overview of the reindeer numbers in the district. (Full-time reindeer herder and owner, Fiettar district)

It is tempting to think of earmark diagrams that present statistics in a way that privileges ear literacy, that are readable only to those who know the earmarks. But it is important to bear in mind that reindeer husbandry is built up by private, family businesses that are in competition with each other. Today, the general overview of how the different *siiddat* are doing demands presence in the landscape and at fence work and to get along with ones neighbours. Internal publication of reindeer numbers is proposed by the state but not welcomed by Sámi reindeer husbandry. To use the capacity of such a diagram would, however, still violate the principle of securing the private proprietary information of the reindeer owners. Privacy measures would have to be taken. The power of maps and diagrams is most profound. Elusive material can be mapped in a very convincing way in support of an argument: a capacity that landscape architect James Corner (1999) has termed the ‘double projection of maps’. Maps and diagrams are always partial but appear comprehensive; herein lie their strengths and limitations. Visual tools have some perforations and pitfalls that can be mitigated by engaging with different ways of knowing. Palmer states that: ‘Tribal data protection including data storage, public access, securing proprietary information, and sharing tribal data with other government agencies’ (Palmer, 2009, 38) are the main concerns of Indigenous GIS users.

‘The Reindeer Husbandry Act of 2007 represents a return to the *siida* system’ (Sara, 2011a, 139). Sara mentions ‘Issues like internal clarification of different families’ rightful share of the *siida*, based on cases of conflict arising from the partially random assignment of licenses by the authorities (called *driftsenhet*), pursuant to the Reindeer Husbandry Act of 1978’ (Sara 2011a, 154). The *siida units* are the different families, and the number of earmarks differs from a handful to over 30. This means that every *siida unit* in the district has very different conditions and enacts different strategies for their survival. Earmark diagrams developed by reindeer husbandry may function as a device to convey an overview and see the problems in a different manner.

8.3.3 The Loss of Visual Language

In 2015, the public Reindeer Mark Register on the Agriculture Directorate website was removed from public access because the Directorate had to consider the mark registry against the Personal Data Act, to decide whether one has a registry that violates the provisions relating to ethnicity. It is not permitted to keep public registers of ethnicity in Norway. The registry combined the graphic representation of all earmarks, registration numbers and dates, as well as details about the cuts in each ear, with full names and addresses of the owners of the earmarks. On the occasion of the closing of the earmark register, journalist Åse Pulk from NRK Sápmi interviewed a reindeer practitioner, who said that the reindeer mark registry was helpful in his practice. In addition to recognising the ears belonging to the district, the reindeer herders must recognise the earmarks from the neighbouring districts.

It has been easy to use and I have especially looked at the new marks that have come. It has been a good tool. The printed mark protocols are not updated in the same way as the mark register online. (Pulk, June 18 2015)

Although the removal of access by the authorities was well intentioned, so as to protect privacy, it made a tool that was in active use by reindeer pastoralists inaccessible. As of 2018, the registry is still not online. The website states: ‘Due to technical reasons, the reindeer mark registry unfortunately is not available.’¹¹² At the Directorate of Agriculture, Section of Reindeer

112 My translation of: ‘Av tekniske grunner er merkeregisteret dessverre ikke tilgjengelig. Mer info kommer tidlig i januar 2018.’ <https://www.landbruksdirektoratet.no/no/reindriften/for-siidaandeler/reinmerker#klagenemnd-for-merkesaker> (Retrieved October 15, 2018).

Husbandry, they told me on the phone that the earmark registry is open only to the government agencies, and that they also no longer distribute printed protocols.

The Directorate is in the process of developing new specialised digital systems for the management of reindeer husbandry. This system includes annual digital reporting by the siida units, with number of reindeer, slaughter, calf yield and loss [*reindrifftsmeldingen*], reindeer marks and the rights that follow them, a case management system and calculation of the subsidies from the state. In 2019, the message was updated to: ‘Due to the privacy policy, the reindeer mark register is currently closed for access. We are working to establish a regulation that is necessary for the reindeer mark register to be available again for access.’¹¹³ Currently, the unique praxis of reindeer earmarking is at risk of disappearing, through the changes in the Act of Reindeer Husbandry. Thus, the visual language of Sámi reindeer husbandry might be on the path to disappearance, if it does not return in another form in the public services of the government agencies.

The earmark system of reindeer husbandry was originally adopted by the state, but it is now under pressure from the proposed changes in the Reindeer Husbandry Act. The visual language of the iconic reindeer earmark is seemingly threatened by a technological leap: first, it disappears from public access. It becomes harder for the herders to obtain updated information on new marks, and it becomes invisible to people with less connection to reindeer husbandry but that might be culturally interested. The new tagging technologies are phased in, to make it easier for the authorities to control the information given by the practitioners.

8.3.4 On Caring and Counting

The Sámi pastoral system of controlling their own animals works well internally, but it takes certain skills. To read earmarks, one must master earmark literacy and understand the earmark language. It takes a multimodal literacy to be able to recognise earmarks on living reindeer at a distance, to remember and recognise the ear diagrams in the earmark protocols, and to read the mark with one hand, while holding the strong reindeer with the other hand. Every autumn, the authorities arrange an annual control of the number of reindeer

113 My translation of: ‘På grunn av personvernreglene er Merkeregisteret på nåværende tidspunkt stengt for innsyn. Vi jobber med å få på plass en forskrift som er nødvendig for at Merkeregisteret igjen skal være tilgjengelig for innsyn.’ <https://www.landbruksdirektoratet.no/no/reindriften/for-siidaandeler/reinmerker> (Retrieved March 20, 2019).

in selected *siida units*. To do so, the reindeer must be in fences, and it is often done in relation to other fence work. Today, the public regional reindeer administrations are commissioning professional reindeer herders from neighbouring districts, who recognise the earmarks and assist the authorities with the counting.

The word *dovdat* (or *dow' dat*) seems to be pointing to a prerequisite for traditional Sámi documentation: that one knows a phenomenon and its connection to land and people thoroughly. A strong form of documentation is achieved when you see and feel things with your own senses and can tell about them afterwards. (Grenersen et al., 2016, 1181-1182)

The state has, conversely, good help in monitoring its animals and governing its peoples, but the authorities are not confident in this dependency on skilled reindeer herders to read the earmarks. To make earmark literacy superfluous in the governance system, the government proposes to introduce mandatory electronic earmarks instead. In the proposed changes in the Reindeer Husbandry Act, it argues that there is a need for a more efficient and accurate public control of reindeer numbers and states:

Electronic individual labelling will simplify and streamline the counting both for government and for reindeer husbandry. Practitioners with such technology can document reindeer numbers and losses in an accurate and verifiable manner. (LMD, 2018, 9)¹¹⁴

The political ecology of these changes in the Reindeer Husbandry Act is connected to global changes in animal husbandry. John Law's (2014) study on 'Modes of Syncretism' includes interviews from a farm in Britain. It shows that the introduction of electronic earmarks (REID chips) also meant problems for farmers, and that the introduction of the system was based on power inequality. While the state did not need all farmers to comply, a farmer who did not would be in trouble. Law argues that the state's ambition to know the exact whereabouts of all cattle in Britain was a utopian project, and that it was 'in denial of the hazzle' imposed on both farmers and animals (Law et al., 2014). The electronic ear chips contain information about the owner and the

114 My translation from: st. meld 32, (2017, 9): 'Det er behov for en mer effektiv og presis offentlig kontroll av reintall enn dagens omfattende system med tellekorps i felt. Individmerking vil forenkle og effektivisere tellingene både for myndigheter og for næring. Utøverne med slik teknologi kan dokumentere reintall og tap på en sikker og etterprøvable måte.'

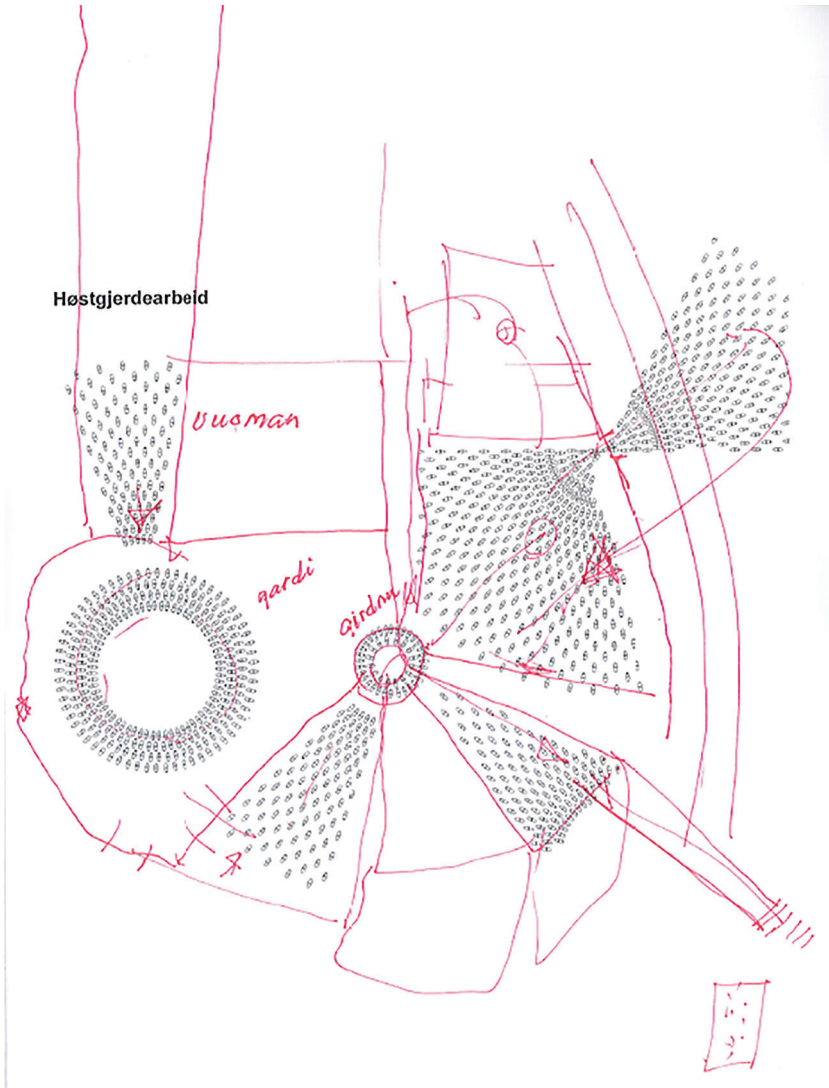


Fig 8.5: The earmarks as map-icons to show the flow of the herd through the autumn working fences. The diagram from the outfield atlas annotated during an interview. Corridor: *vuoman*, the big pen: *gardi*, the small working pen: *girdnu*.

animal. It can be remotely traced and may be read by handheld or stationary scanners. The tagging technologies are currently being introduced and phased in at selected districts, without carrying forward the unique multimodal language of the earmark, despite the fact that such technologies can easily include graphic information.

You'll lose the oversight of the reindeer marks. Our neighbours call us when they see stray animals of our reindeer in their herd. When it gets harder to read earmarks at a distance, the whereabouts of stray animals will get lost. When it is clips, the reindeer needs to be handled, and that is too much hassle to expect from a neighbour. As a result, 'you don't get that call', and the security of the individual reindeer is jeopardised. They rely on their owner taking care of them. (Conversation, 2018)

Earmarking on reindeer is the last cut-marking that exists in animal husbandry in Norway. There are tendencies that can be interpreted as if the state wants to do away with earmarks altogether. The Norwegian Food Safety Authority [*Mattilsynet*] claims that to cut healthy animals when alternative methods exist might break with the Act of Animal Welfare. The cut in the ears heals in a matter of days; the clip pierces the ear and stays in the reindeer's ear for its entire life. The cutting is more painful than the piercing, but the cut heals fast, while the clips may be an annoyance that does not heal. Further, the material in the chip leads to the cold and can damage the ear. While sheep, goats and cows spend the winters indoors, the reindeer are out all year long.

Sámi Council member Moutka wrote an article, in which she feared that Sámi traditional reindeer marks would be weakened through the forced introduction of ear clips (Moutka, 2019). Bjørklund and Eidheim's (1997) analogy to language should raise special caution, because of the Norwegianisation policy that is now under scrutiny by the truth and reconciliation committee. Today, the earmark stands strong among Sámi reindeer husbandry practitioners, but it is threatened. The complex meanings and the cultural context cannot be reduced to digits.

Sámi reindeer husbandry practitioners have a positive attitude to technological development but a negative one to the way in which the new law seeks to make electronic ear-chips digital. Further the earmark board was not consulted in the matter. The digital earmarks are primitive in their functioning, as they do not give accounts of all the aspects of the reindeer



Fig 8.6: By the end of April, the reindeer graze on the ridges along the migration route to their calving grounds in the coastal mountains.

that the traditional earmark does. Further, those with field experience contest the assumption that electronic earmarks are simpler in use. How would the earmarking fence work be organised? Would the participation of the pastoral community become rationalised away? This question transforms the question of the electronic, individual labelling into a question of cultural landscape.

The earmark diagrams envision belonging and connectedness to the landscape, to the reindeer herd and the individual reindeer, via the reindeer earmarks. The marking, mapping, tagging and documentary system of kin and herds exhibits hybrid forms between documentation, diagram, map, living animals and terrain. Earmarks can be seen as an icon that connects humans, reindeer, landscape and documents (or in the form of cuts on a string or economic protocols). This is a map mediated in a visual language that can be read by those who know the earmarks. The more earmarks a person knows, the more skilled that person is in reading the herd.

Sámi reindeer husbandry is informed by both natural science and traditional knowledge, while adapting to and testing out the usability of new technologies. The mode of knowledge building in the pastoral community is both traditional and forward-looking, as it seeks both continuity and development. The government claims that the proposed changes in the Act of reindeer husbandry are part of the policy goal in the reindeer policy of giving the Sámi *siida* system more autonomy. If that is the case, it will be crucial to imple-

ment the earmark language in the technological solutions that are developed to support and govern reindeer husbandry.

When that is not done, what we see is a semiocide (Maran, 2013; Puura, 2013). The concept “semiocide” was introduced by Ivar Puura. In his own words: ‘I understand semiocide to be a situation in which signs and stories that are significant for someone are destroyed because of someone else’s malevolence and carelessness, thereby stealing a part of the former’s identity’ (Puura, 2013, 152). Puura distinguishes between destruction of semiotic process that is a byproduct of the material environment and ‘cases in which the semiotic and communicative process themselves are the primary target’ (Puura, 2013, 152). If the Sámi reindeer earmark takes such a technological leap, this will have to be done from within Sámi reindeer husbandry and not as a forced application imposed by the Minister of Agriculture. Digital Sámi reindeer earmarking methods should manifest Sámi values. Cultural ethics and aesthetics are manifested in how the reindeer are represented.

8.3.5 The territorial dimension of the ear mark

The earmark diagrams evoked conversations about the traditional knowledge system of reindeer husbandry in a way that I did not anticipate. I investigated the territorial dimension of the earmark; by combining different knowledge systems—earmark literacy, cartographic literacy and specialist literacy—the earmarks can be read as territories, with geobodies (Fig 8.5). The question of what the prospects are, the existential questions of what to expect for the future for reindeer husbandry, cannot be answered without acknowledging a consideration of Sámi ontologies. Questions of ontology demanded another approach that in different ways illustrate links between traditional ecological knowledge, reindeer marks, maps, governmental systems and the Sámi cultural landscape, the *meahcci*.

When we studied the GPS of the reindeer herd on the computer screen, I noticed that the app “find my sheep” in some projections represented the reindeer as cartoon sheep. (Fieldnotes, Áisaroaivi 2015)

Would it be useful with a tagging technology that sustains the Sámi reindeer earmark system? What if the earmark showed up on the GIS tracking screen, instead of a sheep? Instead of applying tagging technologies developed for sheep and cows (adjusted solely to fit the reindeer’s physiology), the ear mark could be visible and move across the digital map. Special measures would be necessary to encrypt the information to ensure that only those that are entitled to the information can access it. Exploring how the ear marks work as map icons will have to be developed further by the reindeer husbandry organisa-

tions in close cooperation with the herders, because they are closest to understanding the knowledge on how to re-territorialise the ear language.

8.3.6 A Shape in the Landscape

The earmark is a cartography that has been hiding in plain sight: An Indigenous map that is alive and breathing now in the present.

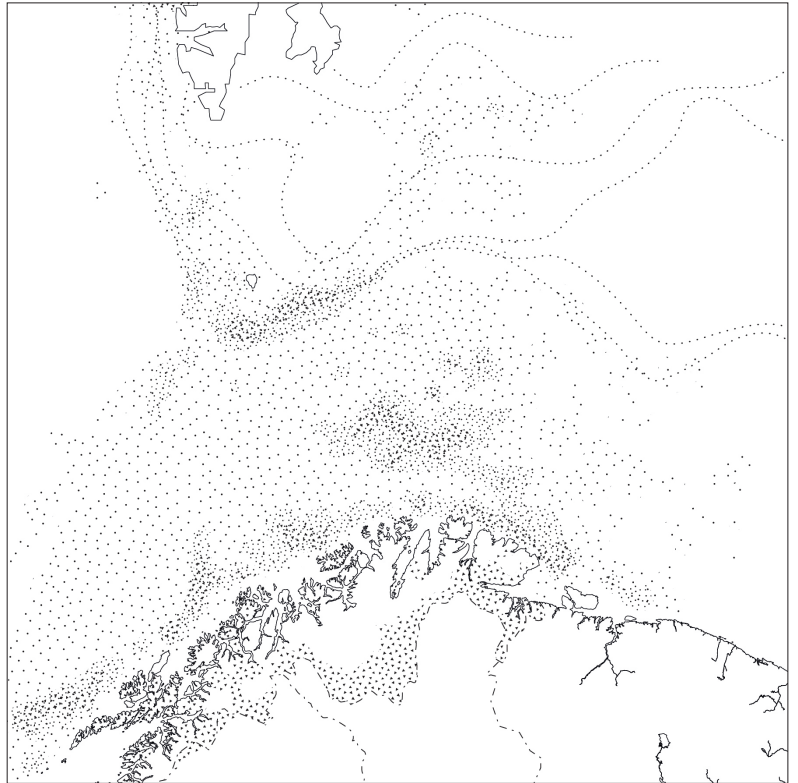
– We decide where to make the notches and cuts in the reindeer ear, but the reindeer chooses where it walks. When the reindeer walks, it makes a shape in the landscape. (Guovdageaidnu/Kautokeino, 2015)

The shape that the reindeer walks is dependent on landscape conditions and human activity. Working with the prospect of reindeer husbandry is a manner of counter prospecting in those cases where other prospects encroach upon pasture lands and worlding landscapes. Who else benefits from the pastoral communities' counter prospects that centre the well-being of the reindeer herds? In migratory landscapes, space is a scarce resource. Landscapes with a good functioning ecosystem are the foundation of all life. Spiralling out in the larger geography, the next section discusses a territoriality of multiple species' seasonal migration, where the *boazu* [the semi-domesticated reindeer] is one among many planetary travellers.

All the work that reindeer practitioners lay down to protect functioning Arctic ecosystems, which the herd depends on, benefits the landscapes and the habitats of Arctic species and globally migratory species. The landscape thus extends, by bending the field of view in time, and brings the planetary scale back in the scene. This is not in the sense of a planetary urbanism, which maps the emboundments of resource extraction and supply lines, but in a celebration of the migratory routes and the in-between territories where planetary lives are lived. These are the living, established conditions, rights and practices that commercial landscape use, largely extraction and “expert”, needs to move with and not against. Landscape architecture must come up with a landscape concept that resonates with seasonal migration, in order to be relevant to Arctic contexts.

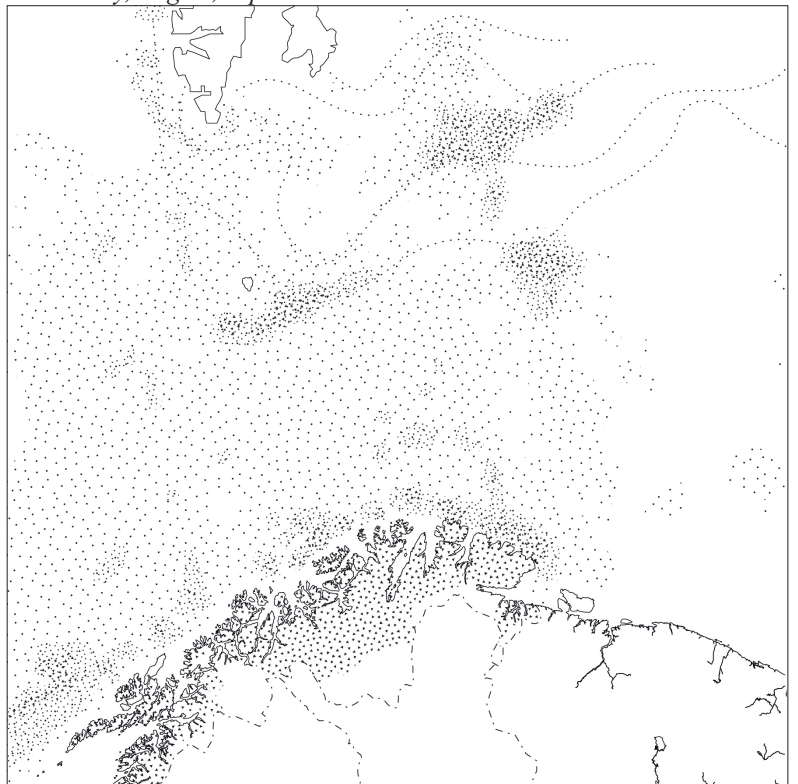
A breakdown of migration patterns threatens local and Indigenous populations' access to traditional foods in the right season and, as a consequence, their connection to cultural roots for their outmigrated or urbanised relatives. The relations between humans and the long-distance migratory animals are kept by few but important to many, through extended social networks.

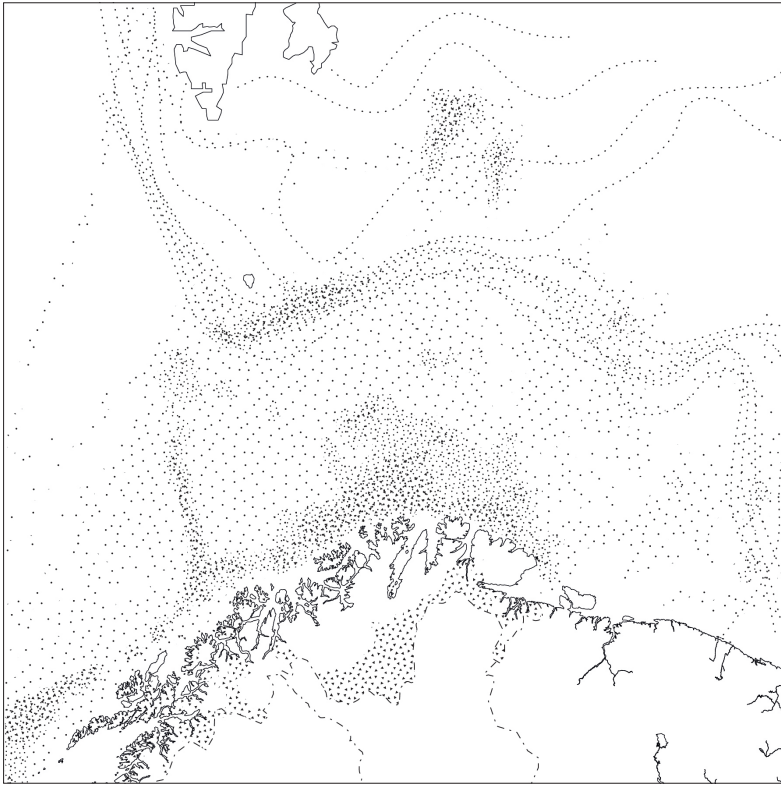
Fig 8.7: Quarterly maps show seasonal long-distance migration on land and at sea.



October, November, and December

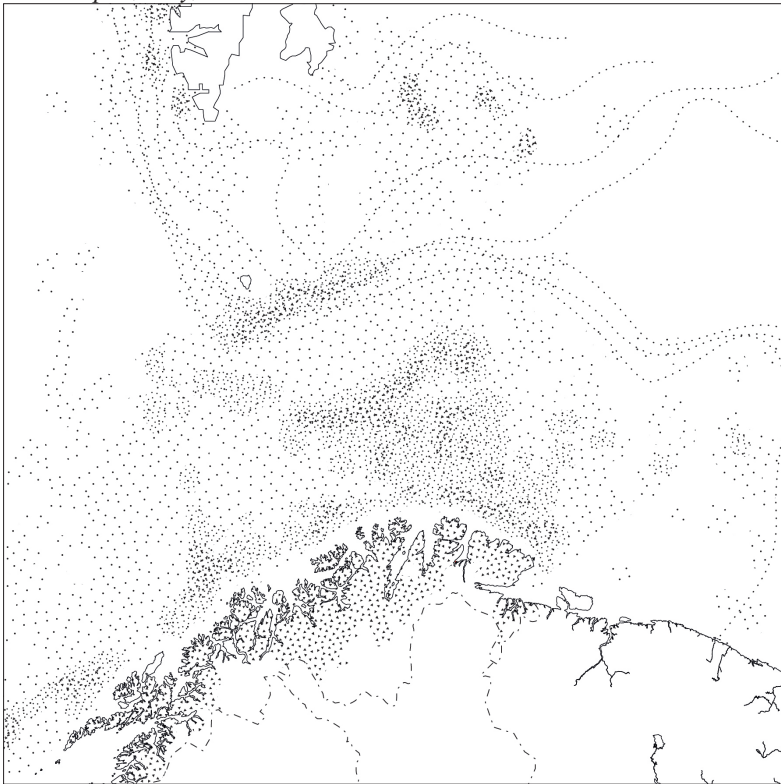
July, August, September





January, February, and March

April, May, June



8.3.7 Territorial Choreography

Fishing and reindeer herding are cyclic practices that depend respectively on the seasonal migration of fish and reindeer. Figure 8.7 is a sequence of maps, which collate the cartographies from the Directorates of Fishery and Agriculture, respectively. The cartographies of fishery management and reindeer husbandry management read the migratory cycles through human practices. The tracking of fishing vessels in Lofoten and the Barents Sea shows the mobility of commercial fish stocks as they are being harvested at different places throughout the year. On land, the maps show the seasonal reindeer pastures in Finnmark.¹¹⁵ The coastal fleet is unfortunately invisible on this map, because only boats longer than 15 metres have to keep tracking devices. Despite lacking that piece of information, it is possible to see the grand spatial gestures of key migratory species on land and at sea.

The quarterly maps (Fig 8.7) show seasonal long-distance migration. Taken together, the quarterly maps explose an image of the seasonal migratory movements of key commercial species on land and at sea and show clearly the relationship between territory, migratory seasonality and sub-Arctic food production.

8.4 PERCEIVING MIGRATORY LANDSCAPES

Based on Ingold's 'The Temporality of the Landscape' (1993), a migratory landscape opens the possibility for a perspective, where the environment can sometimes be landscape and sometimes just space. The migratory landscapes, *johtolat* (Sara, 2011a), are landscape when the pastoralists and the reindeer are present. When they move on, the worlding landscape retreats to become space, as it was in their absence.

In the context of the Norwegian Arctic, the movements of multiple seasonally migrating species cannot be captured within a concept of "landscape as a view", but transcend to the charted terrains of "governable landscapes". In this territorial dimension, landscape as an area, contradictory views about landscape values construct different prospects that are used to formulate

115 Sources of the map are: first, Directorate of Agriculture, Open Access Reindeer Husbandry Maps, <https://kilden.nibio.no>; second, Directorate of Fisheries, 'Fiskeriaktiviteten i området Lofoten—Barentshavet. Delrapport/ Fishing activity in the area of Lofoten—Barents Sea Sub-report,' ed. Jarle Kolle, Bergen (2012, 39-42); and, third, The Norwegian Polar Institute, Kart over isfrekvens i norsk Arktis, månedsvis for perioden 1986–2015/ Maps of ice frequency in the Norwegian Arctic, monthly for the period 1986-2015 (Tromsø, 2017). <http://www.npolar.no/no/fakta/iskantsonen.html>

political aims. At the governance level, several worlding landscapes are supposed to find paths to coexistence, but, as Winge (2013) exposes in his analysis, fragmented legislation leads to a bit-by-bit depletion of landscapes in outfield areas. The fragmented juridical status of the common and coastal seascapes establishes a fragile condition, where policy is based on bit-by-bit decisions. The research, mapping and governance of the outfields and coastal seascapes is sectorial, in the jurisdiction of diverse governmental bodies and legislations (Turi, 2013). As Schanche (2002), Joks (2015), Sara (2011a), Law and Østmo (2017), see Joks, Law, Østmo (2019), Winge, (2013) and others have shown, the current management leads to fragmentation of the *meahcci*.

When seasonally migrating species arrive at a place, they change the soundscape and the rhythm of human activities. During migratory events, the free-ranging animals bring with them the living rhythm of the landscape and the most desirable seasonal experiences, spectacles, sounds, food and company. Wherever they swim, fly and run, they are at home and intimately connected to the places where they stop to feed, rest, or to breed. In the perspective of the seasonal landscape (Jones, 2004), this makes sense, because:

Movements are related to the natural rhythm of the year, depending on the resources available at different locations in different seasons; but they are also given social meaning through religious festivals, markets and other recurring activities. (Jones, 2004, 21)

To be connected to a place implies to participate in *worlding landscapes*. The species that pass through the landscape belong to the landscape perception, memories and narratives. To take into consideration the territory defined by circannual rhythms is to begin to understand landscape encroachments on the migratory scale. It is clear that seasonal landscape practices cultivate humanity's relation to migratory species and form temporal multispecies communities at places. The analysis of the mining prospect shows that the scaling of impact assessments needs to adjust to the scale of seasonal migration, to be able to lead to respectful conversations about the consequences of impacts on landscape. The migratory scale is the scale of the *meahcci*.

8.5 Handling Landscape Elusiveness

Sector interests adhere to different worldviews. Every single sector with its spheres of knowledge production, external networks and internal discourse uses the term “landscape” in different ways. Different actors value different aspects of landscape. The term “landscape” is thus allowed to shift meaning

and deceive or serve extractive interests in decision-making in environmental controversies.

Different disciplines use the term “landscape” differently. It is clear that landscape is perceived differently when it is informed from different kinds of knowledge and practices. Connected to this, environmental and cultural heritage authorities’ landscape concepts affected their use of the term “landscape”. Conversely, different landscape concepts perpetuate their workings, untroubled by academic accounts of the development of the landscape definitions. The new definition from the ELC aimed to discipline the term “landscape” to perform in certain ways. This study has shown that even the European Landscape Convention’s definition of landscape is interpreted differently by different sectorial governmental agencies. For example, the NiN-Landscape framework interprets ‘how people perceive landscape’ as ‘how most people perceive landscape’ (see Lykkja et al., 2014). In prioritising surface features in the landscape over multiple perceptions of landscape the landscape-definition in NiN-Landscape effectively excludes local and Indigenous communities’ perception of landscape.

A contested landscape is a discursive landscape, where different worlds compete to be expressed through that landscape by means of constructing it. A conclusion in a landscape assessment of a landscape issue that is framed in one meaning of the term “landscape” slips through a perforation and becomes an argument for a recommendation in an entirely differently framed landscape discourse. As a consequence, the term “landscape” plays ontological tricks with very real consequences. In turn, the term “landscape” seems to lack relevance in environmental discussions. Mels and Setten (2007) have noted that ‘Ambiguity may be one of the reasons why landscape, despite its strong relationship to custom and justice, often has a weak status in the legal sphere (Mels and Setten, 2007, 200). Such a grave paradox calls for a new positioning of landscape architecture and theory.

The answer is not to dictate a correct use of “landscape”, a meta meaning of the term, but to make these discrepancies explicit in the landscape discourse, to be aware that the various actors’ landscaping perspectives make trajectories towards different landscape futures in the area. Instead of abandoning the term “landscape” or restricting its application by detailed definitions, “landscape experts” that give advice to governance agencies need to be able to handle the ontological slipperiness of the term landscape, to navigate the theoretical landscape under different conditions and circumstances.

In fulfilling the obligations in the Landscape Convention and the Act of Biodiversity, it is important to handle the elusiveness of the term “landscape”. I referred earlier to how Mikkel Nils Sara (2011a) explains that the boazu [the semi-domesticated reindeer] are called by different names, to designate different aspects of the reindeer in Sámi reindeer husbandry. As a follow-up, it is interesting to note Sara’s interpretation of Johan Turi’s (1910) description of strategies to deal with multiple concepts of the wolf during a wolf hunt. To succeed, it was crucial know all the names of the wolf in the local, Sámi language, to be flexible and prepared for changing conditions, and to steer one’s own thoughts about the wolf.

Using different names for the animal in focus, all with different connotations, allows the hunter to see the animal from different perspectives. In the case of the wolf the perspectives might be the wild (návdi), the fast (šolven), the voracious and attacking (gumpe), or other names. (Sara, 2009, 172)

This centuries’ old prescription for the wolf hunt, narrated by Turi (1910) and interpreted by Sara (2009), teaches how Indigenous ontologies prescribe ways to relate to and handle the surroundings and different beings living there that appear to shift shape.

To be able to discuss landscape change, it is important to relate to the shifting ways the term “landscape” is used and how landscapes are described and endowed with meaning. Using different names for the landscape in focus, all with different connotations, allows the researcher to see the landscape from different perspectives. Naming landscape differently is a turn towards the performance of the term “landscape”. This thesis has concentrated on four ways of assembling the many uses of the term “landscape”: *migratory landscapes*, discussing how landscapes and ecological systems are protected, monitored, and herded; *prospected landscapes*, exploring landscapes that are prospected, proposed, and projected; *governable landscapes*, focusing on how landscapes are governed and also contested; *worlding landscapes*, delving into how landscapes are spoken, described, celebrated and embedded in culture. Embracing the multiple uses of the term “landscape” and naming the capacities that are inherent in the mix of landscape concepts that is imbedded in different contexts might get us closer to the objectives of the European Landscape Convention. There are perforations between the analytical landscape categories. This thesis emphasises the importance of engaging in conversations and to keep the conversation going as ways to come to terms with how to understand landscape change. ‘To join the conversation, then, is to inhabit the world’ (Ingold, 2018, 159). Conversations that acknowledge the shift-shaping

capacity of landscapes could be a passage into a common ground on which to negotiate prospects and counter prospects on just terms.

8.6 STRENGTHS AND WEAKNESSES IN THE STUDY

This section discusses how the methods worked separately and in combination, the problems that arose along the course of the project, and what I learned from the process. My empirical work is organised by differently scaled approaches, both in time and geography. When I started the research in 2013, I had a firm praxis-driven belief in the possibility and importance of working trans-sectorially and investigating the global, regional and local scales, and I started by focusing on, mostly through literature and media studies, extraction discourses in the greater territorial field of Sápmi, from the Norwegian coast to the Russian Kola Peninsula.

In hindsight, my participant observation in the Friends of the Earth, Norway's [*Naturvernforbundets*] mining group might have been better suited to a research design closer to action research, where I would have taken an active part in the actual work that the group was doing. It did, however, provide an overview of the Norwegian mining cases that were running in parallel.

Through the course of the study, I concentrated on the contiguous impact zone of the Nussir copper mine prospect that includes the Sámi reindeer pastoral system of the eastern range of West Finnmark and Repparfjorden, with its extended marine environment. Through extensive transdisciplinary readings, I related my findings to studies by researchers from the social sciences, which have centred on the same case from the perspective of Kvalsund municipality and the Kvalsund community.

The different stakeholder positions in the Nussir case produced different relations between the field and my own understanding. My encounter with the Sea-Sámi fishing village, covered in Chapter 6, was a one-week visit, with additional meetings at events arranged by the Friends of the Earth with those who were actively resisting the Nussir prospect. While the mineral sector is expansive and eager to disseminate its perspective, the pastoral community was more distant from the discourse, leaving it to their organisations to lead their case in the media discourse. It therefore took more deliberate work to become accepted and included by the pastoral community, but it was also there that I learned the most about Arctic landscapes through recurrent visits and friendship.

In Finnmark, when I got outdoors, off the road, I met actual people. I became very curious about all the things that were going on and how things were done. I realised that the conversations and outdoors experiences helped me make sense of the literature I was reading. Engaging in qualitative methods, such as participatory observation, interviewing and ethnography, provided me with important experience and points of view. I sought encounters that could make imprints in my imagination and insights that could transform my own concept of the world. My ambition was to savour a kind of knowledge that enabled me to think through drawings. When you start to know a field intimately, drawings start to emerge. What often might characterise design approaches in fieldwork is that the researcher assembles empirical material with all their senses (including technical sensing devices, such as, for instance, handheld scanners). You assemble more material than can be captured in a text that gives accounts of every single aspect of its becoming—but that is needed in—and becomes imbedded in a design proposition, or, as in my case, the cartographies and diagrams.

When I started, I did not know how or if I would be able to get in conversation with the field, when I came without an architectural or specific “design” prospect—that is, without drawings, material trajectories to talk about. The decision to make outfield atlases stirred enough interest to lead conversations about the different landscapes I studied. It activated a set of skills to connect the textual discourse to the visual discourse in written, spoken and drawn narratives. These conversations helped in negotiating how to represent, visualise and interpret learnings from my fieldwork and visits. Rather than a mapping of landscape practices or of land rights, which one often thinks of as participatory mapping, the outfield atlas can be seen as a coproduction of a media for inquiry, theory building and communication that synthesises input and output. The emphasis on the learning situation that researchers find themselves in helped me to actually be able to write about and pursue the fieldwork experience through the analysis. I cannot rule out that there were power structures at play in this interview setting, but the power-balance is not given. Many of the reindeer husbandry practitioners had much experience in giving interviews, while I was a novice in holding them.

Design-oriented approaches utilise a mix of onsite observational methods and multimodal representational tools that make it possible to perceive and represent place-specific landscape practices that otherwise remain invisible in the imaginaries of the planetary matrix of forces that work the environment. Through being there at the geographic places, perceiving the terrain with all senses, and recording it by visual, audible, and written notes;

through talking about it and writing about the landscape; through studying the photographs, sketches and notes; through leading conversations about the material, and through reciting the landscape through stories told in and of the landscape, slowly I built a mental map of the landscape, where new information, new stories and views could find a place. To combine spatial knowing and an assembling, transdisciplinary way of working, on the one hand, brings overview and depth to the study; on the other hand, it becomes an overwhelming amount of material to sort out. It has been a challenge to analyse the work that was both transdisciplinary and multimodal.

Even though everyone in the Sámi pastoral community in Norway speaks Norwegian, the landscape-specific terms are not only hard to translate: many reindeer husbandry terms do not exist in Norwegian. When Law and Lin (2107) mention the translation of the Sámi term *meahcci* as an example of the difficulties of the art of translation, they claim that the overall lesson is that: ‘Translations are simultaneously sites of judgment and locations of continuing, power saturated struggle’ (Law and Lin, 2017, 257-269). Further, it is also not a straightforward process to translate landscape terms from Norwegian to English. The processes of recognising colonial structures and negotiating one’s approaches to landscapes are important steps to decolonialising the making of and constructions of landscape. The Sámi and international postcolonial literature confronted me with questions that I needed to reflect upon in a self-critical way. An evident limitation to my research is that I do not speak the Sámi language. The only way to get an understanding of the Sámi landscape terms, therefore, is to read and refer to the works of Sámi-speaking researchers, where they have translated, interpreted and set such terms in context. Accordingly, I have used Sámi place names and landscape terms that have been explained and translated in the research literature.

The textual articulation of the implications of learning new practical skills during fieldwork, drawing diagrams and maps and discussing them in the field, was a challenge. It felt self-conscious to negotiate with the literature about my entitlement to do what I did, while the Nussir case constantly evolved and induced a sense of urgency in the task. Brattland and colleagues’ (2018) phrase, *careful partial participant*, gave me a way into the articulation of my experiences. In the next chapter, I conclude the thesis by discussing what implications these insights have for landscape studies, landscape architecture education and environmental governance in the rural Arctic. I argue that, *in the prospective arts* (particularly in the architectural professions), the methodological handling of knowledge implies management of a prospective responsibility.

Chapter 9 Prospective Responsibility

9.1 INTRODUCTION

Navigating the many readings of Northern landscapes, the thesis has explored how landscapes, mappings and prospects of the Arctic interact. The vehicle of this inquiry was to find out in what ways do the national strategies for the mining industries in Fennoscandia influence the landscape discourse. This study has brought forward a critical, and contextual enquiry into aspects of Arctic landscapes in the mining application and licensing process of the Nus-sir and Ulveryggen Copper Mine. Centring on the externalities of mining, (see Deneault and Sacher, 2012, 31; Lie, February 22, 2019) I have searched for what moves across the borders of the mineral stake and the zoning plan. Focusing migratory movement, again, led to questions of what the prospects are for the landscape practices that the mining industry deals with as ‘externalities’. The Nusssir case is an ongoing mineral prospecting endeavour that impacts the landscapes of Repparfjorden, the outfields, the Salmon River, the leisure landscapes. It impacts coastal fishery and Sámi reindeer husbandry in West Finnmark. Landscapes, iconically described by Jakob Meløe (1988) as the ‘Two Landscapes of Northern Norway’. The legislation that regulates out-field industries is fragmented between sector authorities. This situation leads according to Nikolay Winge (2013) to a bit-by-bit development and increasingly fragmented outlying fields.

Landscape politics and extractive practices are intimately connected. They regulate how to govern natural resources, but also how to govern landscape narratives. Social and environmental impact assessments, including landscape assessments, are, to a great extent, funded by the extractive industries. In making prospects, the control of the narrative that guides landscape percep-

tions is central to build legitimacy. Descriptions of vast landscapes stretching out in an abundance of space are among such landscape narratives that position acceptance of landscape encroachments. Working transdisciplinarily with landscape implies to unpacking the conditions for the use of the term “landscape”, how it appears with shifting meanings (Mels and Setten, 2007), and what consequences their elusiveness has in the discourse. A counter prospective approach views landscape as an assemblage of prospects.

Conceptually, the thesis discusses mineral resource prospecting as perforation and argues that extractive prospects generate gaps around which knowledge production gravitates. Physical holes in the terrain, information voids and knowledge gaps in the assessment of consequences of impacts constitute perforated landscapes. The perforations extend to the landscape discourse because the term “landscape” draws its meaning from the context in which it is used. The diverse natures of these perforations bring voids of uncertainty from the prospected futures into the present landscape practices. The term “landscape” is allowed to play ontological tricks in decision-making processes. Landscape studies also need to perforate the interfaces between the academic disciplines, the players, discourses and forces that are changing the landscape. Analysing the zoning plan, cartographies, and landscape representations as a negotiating base for decision-making, prompted the following question: What can design approaches, spatial knowing and anticipatory projectories bring to studies of contested landscapes? Pragmatically, counter prospecting is an approach that is developed through this monograph and introduced as an experimental and interpretative praxis-based method.

The study has included oscillations between observing, reading, participating, documenting and representing, following a mixed, analytical design approach in a multisited inquiry. With an ambition to understand contested landscapes, I aimed at getting access to the spread of knowledge and ways of knowing that affects landscape perception, discourse and trajectories in time. I conducted a form of multimodal discourse analysis based on document studies, multi-sited fieldwork, transdisciplinary reading, mapping and counter-mapping. Being immersed in the different worlds that exist simultaneously in the landscape, I have embodied impressions from the landscape, as it appears with different trajectories, dependent on which world it sustains. The next section turns to ways the thesis proposes relating to the transdisciplinary fields of contested landscapes to the field of landscape studies and design research.

9.2 CONTRIBUTION

The thesis links the processes and multimodal rhetoric of change, resource extraction, landscape practices and Indigenous rights together, in the theme of the perforated landscape. We might navigate the many readings of Northern landscapes by identifying the various worlds of landscape knowledge hidden in sector-oriented governance and take on an expedition through the perforations. This I have termed enacting and interpreting perforated landscapes, in order to better chart landscapes, mappings and prospects of the Arctic. The perforated landscape includes both discursive and material dimensions. The term can thus be engaged analytically to explore the complexity and the dynamics at work in planned and prospected landscapes.

The thesis contributes methodologically to design research with ways of doing participatory design, with counter prospecting as an anticipatory practice that explores other prospects. Contributing to this view by exploring novel ways of performing participatory landscape mapping, the study is based on a recursive back-and-forth movement between cartography and conversations in the terrain. Counter prospecting contributes through diversifying the future by acknowledging a multitude of anticipatory projectories in contested landscapes. Counter prospecting operates on two intersecting planes: It resists dominant and already given prospects, while, on a plane of anticipation, it reaches beyond these in a “pro-spective” exchange towards possible alternate futures.

The thesis contributes empirically with a counter-prospective multimodal discourse analysis. It does this first on the conduct of the planning, application, and licensing process of the Nussir and Ulveryggen copper mine Prospect. It does this second with field experiences from the seasonal events in the reindeer grazing district of Fiettar. Third it does so with residents, environmental resistance, and winter fishery in Repparfjorden. Discussing the prospects of the fjord, and reindeer husbandry, the study includes a transdisciplinary reading of academic texts discussing the Nussir case from with different disciplinary responsibilities.

Ontologically, the thesis pursued insight into how power structures in the discourse of disputed prospects both evolve from and impact the physical terrain. Studying landscape across different disciplinary fields does not mean that it is possible to find omnipotent, solutions or definitions. In order to keep track of the usage of the term “landscape” in development discourse, I have assembled landscape discourses in four analytical landscape categories: governable landscapes, worlding landscapes, prospective landscapes and, finally, migratory landscapes.

9.3 MAIN FINDINGS

A map series from the Fennoscandian Ore Deposit Database became an actor in scoping the Norwegian mineral preparations for a political strategy for the mining industry. The new Mineral Act of 2010, led to increased mineral mapping and prospecting. In Norway, the mineral strategies manifest through contested mining cases. In Swedish Sápmi, people seemed more alert about mineral prospecting and started resistance work in the early stages, while, in Norway, contestation started when prospects were put forward to the planning authorities.

Landscape architect, James Corner, claimed that '[w]e have been adequately cautioned about mapping as a means of projecting power-knowledge', and asked 'but what about mapping as a productive and liberating instrument, a world-enriching agent, especially in the design and planning arts?' (Corner, 1999, 213). After decades of postcolonial criticism, however, we still see subtle silencing of Indigenous Sámi and local landscape knowledge in Fennoscandia. Indigenous scholars, activists and artists resist a meltdown of the discourse and claim that territorial matters are not only a matter of power-saturated knowledge regimes but also a matter of ontology (see Joks, Law and Østmo 2019). Power-saturated relations leads to unbalanced narratives in the landscape mapping of feasibility studies and environmental impact assessments. These are typical tasks undertaken by consultancy firms that employ landscape architects, planners and architects. Cartographers too often work in private corporations and practices, not in the municipalities, as cartography services increasingly are sourced out. As Wood, Fels and Krygier (2010) remind us, the question is which maps have the power to make policy. Mapping activities and spatial modelling expertise thus exist in a national-state-private-corporate sphere and surpass that of the municipal level.

The definition of "landscape" in the European Landscape Convention is reliant on 'people's perception of landscape' (CoE, 2000). The narrow definition of a landscape that was used in the method of landscape characterisation employed in Sweco's (Nusssir's) landscape assessment had implications for both the conclusions of the landscape assessment and the subsequent subversion of the lived landscapes in the areas that were assessed. The document analysis of the landscape assessment shows that the assessment focuses on the sedentary population and the tourists' landscape perceptions and that the Sámi reindeer pastoral communities are heard as regards land use but not as regards landscape. The impacts on the everyday, recreational and spiritual landscapes of the Sámi are thus not assessed at all. The Finnmark Estate,

Fefo, had the responsibility for assessing the consequences “change of use in the *Meahcci*” and was thus committed to another concept of landscape, namely the *meahcci*, productive outfields that may suffer severe impacts from the consequences of the prospect. Fefo referred, nevertheless, to the conclusion of Sweco’s landscape assessment as part of the knowledge base for their decision, along with the assertion that reindeer husbandry would be able to coexist with the mine: this is an assertion that, as I have discussed at length, is strongly contested by the affected reindeer grazing districts.

Tim Ingold, the anthropologist who started his career among Scolt Sámi in the Finnish Arctic, has wrestled with the term “landscape” for a lifetime. The criticism of landscape studies raised by Ingold (1993) is that a perpetual discourse focuses on the definition of landscape, instead of caring for the people who lose landscapes. Ingold traces the origin of the term “landscape” to the feudal agricultural logic and claims that this is irrelevant to Sámi lifeworlds. He proposes abandoning the terms landscape and seascape and, instead, describing the taskscape (1993), the weatherworld and the oceansky (2018). Indeed, these are “views” we need to engage with; however, giving up on the term “landscape” altogether is to give up on the discourse raised by the landscape convention and the claims to the right to landscape in a cultural and material sense.

9.3.1 Arctic Landscapes in Different Worldviews

The Nussir prospect summons three dominant discourses in North Norway. The first is about the development of the mining industry, the second, the reactive environmental campaigns to ban sea deposits of mine tailings, and the third is the discourse about local and Indigenous rights. The disputed issue both on land and in the fjord is if the extraction of the Nussir copper ore has a territorial impact that reaches far outside the area assessed in the opening process or, as the mining company claims: this is even smaller than the designated area in the zoning plan. The study has confirmed that, while the consequences of mining impact a wide range of outfield businesses, reindeer husbandry and coastal fishery, the cumulative effects of a wide range of competing outfield businesses, including mining, affect reindeer husbandry. Reindeer pastoralism is, as of today, in fierce competition over land with outfield businesses and urban- and extractive infrastructures. The pastoral communities have several pressing concerns, in addition to the loss of pastureland. For reindeer husbandry, it is a problem that project makers, planners, politicians and government representatives neither understand the Sámi pastoral systems nor know how to incorporate traditional knowledge in planning and implementation.

Transdisciplinary landscape studies are bound to relate to different knowledge regimes and ontologies. If different concepts of landscape are working together, the term “landscape” can overcome the Western binary between nature and culture that is fragmenting the governance of landscape. Landscape practices are a part of the political ecology, and in this, the different definitions are in use. To get an understanding of landscaping practices goes beyond observation and description is far more complicated as they intertwine in discourse and physical environments and are often mutually excluding.

9.3.2 The Prospective Arts

This thesis has argued for situating landscape architecture among the prospective arts. The prospective arts make futures, both prospects and counter prospects. The conduct of the prospective arts goes beyond criticism and engages in prospecting, the making of future environments. I take the reflections on the discipline of landscape architecture (the prospective arts), and use them to investigate another prospective art, namely mineral prospecting and the democratic procedures aimed at assessing its environmental, social and economic consequences. Intentionally, engaging in doing landscape, architects understand others that do landscape in even more brutal manners. Mining is particularly violent in its conduct of transforming the landscape. The architectural and landscape architectural project has, however, conceptually more in common with the mining prospect than with resistance work or even counter-mapping (Lee Peluso, 1995). The architect or the prospector observe in order to make prospects. After a phase of observation, comes a phase of designing a spatial proposal, an intervention, a prospect. The following dialogues aim at convincing the public about the virtues of the prospect: its effects, ripple effects and mitigating measures. Going outside the framing of the landscape architectural project and critically investigating another kind of landscaping project, one that the architect is not affiliated with but might understand from a prospective orientation, might bring home new reflections on the conduct of landscape studies and landscape architecture, as well as insights into landscape democracy.

9.3.3 Counter Prospecting

Extractive prospects stir the delicate coexistences and relationships that already exist between local landscape practices. Different landscape practices continually produce prospects. Prospects can counter each other or feed on each other. While the prospector is privileged in representing the future, those who resist the prospector’s prospect are accused of delaying development. I propose a proactive approach to perforated landscapes: To address disputed prospects with Counter prospecting. As a “pro-spective” exchange towards

alternate prospects, counter prospecting imply close interaction with both those who do the actual work of translating cultural concepts from the inside and the performers of traditional landscape practices. Counter prospecting suggests a new participatory praxis field that develops concepts based on local landscape knowledge and practices to a level of viable alternatives to predominant prospects.

As a critical practice, counter prospecting is concerned with finding examples of practices that invoke landscape values in a concrete and projective manner. Local and Indigenous landscape practices, as well as art, architecture and planning can exhibit examples of counter prospecting. The thesis argued for including the contiguous domains of migratory species in Jones (2004) notion of the seasonal landscape. Seasonal landscape practices cultivate humanity's relation to migratory species and form temporal multispecies communities. To include nomadic geographies in the discussion of landscape goes beyond ecological knowledge, as it acknowledges human relationships with migratory species. The Nussir mine acquisition process in Kvalsund municipality has been going on in parallel to the exploration of the Nussir copper ore for several years. Every spring, the reindeer arrive to a mess left behind by the prospector's drill crew. To focus on reindeer pastoralism is to summon insights from wide and intermeshed webs of research on ecology, traditional ecological knowledge, pastoral communities, animal care and land-use conflict. The products from reindeer husbandry are part of keeping the connections between urban citizens and the large-scale annual routines in the seasonal landscapes. Accounting for seasonality requires both ecological knowledge and knowledge of local and Indigenous landscape practices ability to exploit annual seasonal changes (Jones 2004) as well as the spatial flexibility needed to adapt to long term climatic disruption. Few steward the relations between humans and the long-distance migratory animals, but the relations are essential to many. Since the 1980s, Sámi culture is revitalised through diverse ways of developing and connecting to Sámi heritage and identity. However, Sámi reindeer husbandry practitioners, the minority within the minority, still experiences severe pressures that first and foremost is due to loss of grazing land and increasing activity and industrialisation of outfield landscapes. It is vital to the Sámi communities but also society at large that the pastoral communities protect the habitual paths of the reindeer across the region. Further, food security, the possibility to eat the fish from the sea and harvest the outfield resources charge people's perception of the landscape. Counter prospecting acknowledges the ontological attachment to the seasonal migratory events and opens the possibility for a different kind of dialogue that may reconcile contested landscapes, by acknowledging that Indigenous and local peoples make their prospects.

On a prospective level, architecture and landscape architecture can engage directly in counter prospecting through making counter prospects. The environmental humanities and social scientists call for alternative prospects (see Wilson and Stammler, 2016). Such alternative prospects will have to be designed by someone. Conversely, such calls entail an implicit call for the spatial and prospective capacities of landscape architecture. In taking on the prospective responsibility of being a prospective art, landscape architecture is in an excellent position to address the bit by bit depletion of Arctic landscapes. On a planetary scope, it is interesting to note that Haraway (2016) has references to design, art and architecture when she writes of ‘science art worldings’ (Haraway, 2016, 71) that give hope for humanity’s ability to stay with the trouble. See, for instance, Haraway’s description of the Pigeon loft in Batman park, Melbourne making architecture for companion species (ibid, 28). The Black Mesa Water Coalition projects is another example of a comprehensive practice for building on the strengths of local people, culture, and land, in an alliance with many partners (ibid, 97) and the Never Alone computer game as a world game that is made ‘with and from indigenous peoples’ stories and practices’ (ibid, 86).

Counter prospecting as a landscape architectural practice aims to give shape and materiality counter-narratives. Counter prospects can be a medium, through which to discuss landscape futures across ontologies. Counter prospecting employs the prospective capacity of the architectural arts to imagine space. Counter prospects are alternative prospects that highlight subverted prospects of future landscapes. In short, counter prospecting is the making of prospects that engage counter-expertise and counterbalance extractive governance.

9.4 IMPLICATIONS

9.4.1 Prospective Responsibility

In Arts of Living on a Damaged Planet (Tsing et al., 2017), Mary Louise Pratt alludes to Barad’s term deep future and asks: ‘How will we slouch toward our deep future, toward an almost certain demise whose script we are writing but cannot imagine?’ (Pratt 2017, 173). The planning, strategies and scripts for the future summon the architectural arts, and the tasks assigned to the landscape architects are more often than not how to make architecture out of extractivist prospects. The Nordic mineral strategies, especially the Swedish one (Government of Sweden, 2013), identify a range of possible assign-

ments for architects, landscape architects and planners, ranging from the moving of cities to the planning of new towns, impact assessments, planning of infrastructure and landscapes of new mining sites, after-use of abandoned mining sites, and the conducting of dialogue and participation processes and finding synergies. Through material engagement with the physical surroundings, architectural methods contribute to spatial expertise and design tools to understand change through projects, or, as it were, “prospects”. The landscape architect uses the spatial knowing, graphics skills and prospective capacity to understand the surrounding world and the actors that work to change that world. It is another point of departure for landscape conversations with people whose prospects are under pressure from continually proposed prospects to utilise their lands. To negotiate between spatial contradictions is an act of design. Reflecting on responsibilities, on the one hand, and opportunities for different kinds of dialogue, on the other builds a reconsideration of the role of the architectural and prospective arts.

9.4.2 Implications for Landscape Studies

Arctic territories are inscribed with grand narratives and extensive cartographies. As this thesis has discussed, there is a considerable pressure to develop rural landscapes for large scale industry, mining, energy plants and infrastructure. Some of these new developments will change the perception of the Arctic landscapes, and also present new preconditions for traditional ways of using natural resources. The aggregated environmental impacts on meahcit, the Sámi outfields (Schanche, 2002), have created new ethical terrains to enter when dealing with landscape change. Climate urgency and ecological catastrophe cannot be answered with solutions that implies a suspension of human, Indigenous and citizen rights. Landscape studies do not exist in a vacuum but collect information that relates to different kinds of knowledge in a transdisciplinary field. Studying a landscape implies researching, selecting, positioning and pursuing landscape in all its meaning, including to assess the implications of prospecting, conceptually and pragmatically in governable landscapes, worlding landscapes, migratory landscapes and prospective landscapes.

Various prospects contain impact assessments with landscape analysis. Conversely, plans and prospects contain knowledge of the future landscape, only showing it piecemeal through one prospect after the other. NiN-Landscape aimed to do a landscape mapping once and for all, to reduce the need for local landscape assessments; but leaving out the cultural component and, in particular, Sámi cultural landscapes, the landscape survey remains irrelevant. Or as claimed by Geelmuyden, The Norwegian Environmental Agency, nev-

ertheless, prescribes the use of persistent, outdated landscape categories when landscapes are assessed and valued (Geelmuyden, 2016).

Currently, a truth and reconciliation commission formed by the Norwegian Parliament is inquiring into the consequences of the Norwegianisation policy suffered by the Sámi and Kven populations. The Norwegianisation policy lasted from 1860 to 1980. In the environmental history of Sápmi, the controversy of the Alta-Kautokeino watercourse became a turning point in the relationship between the Sámi and the Norwegian State. Through Section 108 of the Norwegian Constitution and the UN Convention on Civil and Political Rights, the Norwegian State obliges the State to take decisive measures to safeguard Sámi and national minority cultures. The Truth and Reconciliation Commission does not, however, have the mandate to discuss land rights.

9.4.3 Implications for Landscape Architecture Education

Landscape research forms parts of the theoretical base to landscape architecture, while landscape architecture can link horizontally to other professions dealing with the landscape. Finding landscape in overarching, transdisciplinary themes such as societal challenges connected to climate change, urbanisation, exploitation of natural resources is a curatorial endeavour. A landscape education that is located in Sápmi needs to engage in conversation with Sámi landscape concepts and to build a curriculum that focuses on Sámi landscapes and incorporates Sámi cultural knowledge. Eanadatarkiteaktaoahppu is the Sámi name for landscape architecture education in Tromsø [a translation of the Norwegian word *landskapsarkitekturutdanninga*]. It contains three words: Eanadat means “soil” or “Earth”, *arkiteakta* means “architect”, and *oahppu* means “education”. It is indeed something to live up to, to build an education for an architecture of the Earth. In a Sámi area such as Tromsø, landscape architecture education is in an excellent position to arrange meetings in significant landscapes with Sámi landscape practitioners. Ninety-eight per cent of Northern Norway is outfields and a significant parts of these areas are reindeer pastures. On the national level, forty per cent of the land is reindeer pastures, including the ranges of wild reindeer. This fact imply that all land-use change in the outfields from Hedemark and northwards encroach upon reindeer habitats that are also habitats for wildlife. It is crucial to understand what is happening with the meahcci and in the landscapes of reindeer husbandry, alongside all the other changes in Arctic landscapes that need to be understood, just as, for instance—as thoroughly discussed in *Defining Landscape Democracy* (Egoz et al., 2018)—the everyday urban landscapes that are crucial for the health and well-being of the citizens.

Landscape architect students' main task is build relations to the landscape, and get to know the material and biological conditions of their sites, through doing design projects that are landscapes in their own right: Landscapes that relate to the larger territory. In order for the students to build an understanding of the issues and contestations of the places they are addressing, they need to consider many layers of implications of changing the landscapes. Knowledge about the discourses on ongoing colonialism, over-consumption, species extinction and climate change calls for a ground-breaking change in the new generation of landscape architects' relation to environment, community, survival and landscape. In supporting such a shift, educational programmes must provide studios that discuss how to decolonise landscape architecture. For the sciences, it is a long stretch to include different ontologies, but, for architecture, it is possible, because the architectural arts deal with aesthetic, social and natural phenomena while giving shape to both sacred and secular spaces. Learning to work with people in complex and specific landscape issues in one place gives an experience that is precisely the knowledge that is transferable to other places under other geographical and climatic conditions. The insights that young students learn through being careful participants (Brattland et al., 2018) among Arctic Indigenous peoples are transferable to work with all other peoples. The generative knowledge gained through close encounters at specific places in the Arctic is the skill of working in close relations to local communities. That is a skill that is needed globally, in both rural and urban landscapes.

Resisting the bit-by-bit depletion of landscape (Winge 2013) is a continuous design effort, but landscape architects do not yet have a clear voice in these debates that matter greatly for North Fennoscandian communities. There is a need to change the mindset in the discipline to what it means to cultivate landscapes. To 'rise to the challenge of imagining the next significant bond between humankind and its natural environment' (Griot, 2016, 10) is a collective task where the questions of whose prospects future landscape architects will be making becomes central. In order to make landscape architecture education relevant we need an explicit methodological discourse on how research-based landscape architectural approaches and linking to the landscape design tradition can be informed by traditional ecological knowledge in contemporary Arctic landscape practices. Suspended between expectations from extractive governance and relational practices, the architectural professionals need to take responsibility as practitioners of prospective arts.

9.5 FURTHER STUDIES

This thesis recommends, in Sápmi, a rethinking of the notions of externalities of extractive prospects in the light of Sámi landscape-caring practices. As the Nussir case has shown, and as I described in the timeline (Fig 7.1-7.7), the relation between exploiters and pastoral communities can go on for generations. The landscape discourses are, however, not continuous. A trove of landscape knowledge contributed by local voices, hidden in consultancy statements, are scattered across municipal and regional archives. The consultancy statements to various hearings from stakeholders in Sámi reindeer husbandry are all attempts to communicate detailed traditional knowledge about the landscape, how the reindeer use the landscape, and the connection the pastoral communities nurtures with the landscape. It is necessary to follow up the concerns that are expressed by the pastoral communities in all these hearing documents that sit idle in various municipal archives. A systematic review of consultancy statements could open new paths to understanding the changing landscapes of northern Fennoscandia. Prospective imagination needs to be grounded in local conditions and to be sensitive to traditional knowledge. Further research on contested landscapes addressed through counter prospecting could take place or be mediated, both onsite and online, on and off the map. Traditional knowledge in Sámi reindeer husbandry treasures insights into how to relate to migratory species, concerning providing space through respect and acknowledgement of the importance of letting our companion species remain wild, to be able to live, feed and survive without too much aid from humans. The cultural landscape of the reindeer earmarks became a key to understand some of the ways the different ontologies is at work in contested landscapes and diverse ways of making futures.

A resonant approach to perforated landscapes could lead to changes in landscape assessment and landscape mapping practices. Further, and connected to this, it would have been interesting to see the reception of a landscape assessment in Kvalsund that articulated local Sea Sámi, North-Norwegian and Sámi reindeer pastoralists' connections to the landscape. Conversely—and following the Nature in Norway approach to biodiversity—it would also have been interesting to see an expertly conducted map of landscape (terrain) entities that used Sámi landscape (terrain) terms and categories and thus followed the objectives of the Biodiversity Act. What about Nature in Sápmi-Landscape, NiS-Meahcci: Sámi landscape knowledge expressed in the Sámi language and the place names? Kautokeino Meahcci Centre is an initiative that, amongst other things, works to incorporate Sámi landscape terms in the biodiversity database. It would have been interesting to see a

Sámi mapping parallel with the NiN-Landscape mapping, a Nature in Sápmi based on Sámi language (NiS-Landscape) (translated into Norwegian). Such a mapping might find that the landscapes are already mapped and valued by the place names, resulting in a Sámi landscape-mapping parallel to the NiN-Landscape. “Nature in Sápmi” would categorise landscapes with Sámi terms and traditional knowledge of the outfield usages might reveal other divisions and connections. More importantly, acknowledging sami landscape terms will contribute to more informed and inclusive conversations on landscape valuation.

9 . 6 C O N C L U S I O N

The perforated landscape draws attention to its future. The issues of contested landscapes that arise from the Scandinavian strategies for the mineral industry is relevant in a broader perspective of the utilisation of outfield landscapes for Hydropower and wind power production, tourism, and infrastructure. Contested landscapes activate problematics of mapping, power structures countermeasures, counter-knowledge and counter-mapping. The relations between the mining industry and local and indigenous peoples are global issues. In a situation where landscape transition leads to the verge of the tolerance limits of multiple ecosystems, it is time to make counter prospects, to employ the imaginative, dialogical and prospective capacities of landscape architecture, to engage different ways of knowing: to be informed by science and engage Indigenous and local knowledge.

Landscaping practices constitute discursive fields, where the term “landscape” is used differently and with different meanings. The term “landscape” is conversely enabled to play ontological tricks in decision-making procedures. It is crucial to be aware of the capacity of various actors’ landscaping perspectives to bend trajectories in application and decision-making processes (Mels and Setten, 2007). The thesis has raised criticism of disciplinary blindness to Indigenous people’s contemporary cultural landscape. This lack of acknowledgement adds on an ontological layer to the thoroughly theorised difficulties that landscape assessments face in including local people’s perceptions of landscape.

As a prospective art, landscape architecture needs to commit to prospective responsibility. Prospective responsibility implies looking for other writings and scripts, or other prospects, to inform the landscape architectural project. It is urgent to decolonise landscape architecture, address environmental

violence, and use projective capacities to resist what is in essence, arguably colonial development prospects, however, greenwashed. The first step is to acknowledge Indigenous landscape-caring practices and ontologies in the roaming ranges of seasonally migrating species. Acknowledging Indigenous landscape literacies is crucial to understand how to relate sustainably to local and global environments.

Contested landscapes are discursive landscapes, where different worlds compete to be expressed through that landscape, through constructing it, which is making prospects. A counter prospective approach to landscape might help to build the resilience needed to address power and confront violence in extractive prospects. In the European Arctic, when various infrastructures are encroaching on Sámi *meahcit* and *báikkít*, the impacts on landscape cannot be assessed in isolation from their effects on the meahcci practices. ‘The right to landscape’ (Mels and Mitchell, 2013) implies the right to a prospect, the right to a future. Guided by responsible futures views, counter prospecting will hopefully lead to more just trajectories, by giving form and shape to counter-narratives and practices.

Bibliography

- Acosta, Alberto. 2013. "Extractivism and Neoextractivism: Two Sides of the Same Curse" in *Beyond Development: Alternative Visions from Latin America*, edited by Eduardo Gudynas and Miriam Lang, 61 -86. Quito, Amsterdam: Transnational Institute, Rosa Luxemburg Foundation.
- Alvesson, Mats and Sköldberg. 2009. *Reflexive Methodology, New Vistas for Qualitative Research, Second Edition*. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.
- Alvesson, Mats. 2011. *Interpreting Interviews*. Los Angeles, London, New Delhi, Singapore, Washington DC: Sage.
- Anaya, James S. 2011. UN Human Rights Council, *Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya*. Addendum: "The situation of the Sami people in the Sápmi region of Norway Sweden and Finland", 6 June 2011, A/HRC/18/35/Add.2, available at: https://www.ohchr.org/Documents/Issues/IPeoples/SR/A-HRC-18-35-Add2_en.pdf
- Andersen, Svanhild (ed.). 2002. *Samiske landskap og Agenda 21: Kultur, næring, miljøvern og demokrati. Dieđut 1/2002*. Guovdageaidnu/ Kautokeino: Sámi instituhtta.
- Anderson, David G. and Mark Nuttall (eds.). 2004. *Cultivating Arctic Landscapes. Knowing and Managing Animals in the Circumpolar North*. New York; Oxford: Berghahn Books.

- Arke, Pia. 2010. *Stories from Scoresbysund: Photographs, Colonisation and Mapping*. Copenhagen: Søren Arke, Pia Arke Selskabet and Kuratorisk Aktion.
- Arke, Pia. 1995. republished 2010. *Ethno-Aesthetics—Etnoæstetik*. Pia Arke Selskabet and Kuratorisk Aktion. Viborg: Specialtrykkerier a-s.
- Aspaas, Per Pippin. 2011. “Tromsø og det Samiske.” *Historikeren* 2, University of Bergen: 20-25.
- Ballari, Aslak. 2014. *NRK Nordnytt*, July 8, 2014. <http://www.nrk.no/nordnytt/investorer-skyr-mineralbransjen-1.11819154>
- Ballovari, Mette and Piera Balto. 2014. “Vi finner oss ikke i å bli usynliggjort/ We don’t accept to be rendered invisible!” *NRK Sápmi*, November 13, 2014. <http://www.nrk.no/sapmi/--vi-finner-oss-ikke-i-a-bli-usynliggjort-1.12042411>,
- Banerjee, Subhankar. 2012. *Arctic Voices: Resistance at the Tipping Point*. New York: Seven Stories Press.
- Baron, Archie, director, Helen Braun, producer and Joanna Lumley, presenter. 2008. “Joanna Lumley in the Land of the Northern Lights”, *BBC documentary*, Part 3, <https://www.youtube.com/watch?v=Md7rU7vNvSA>
- Basma, Lene. 2012. “Engaging Realities.” PhD diss., Oslo School of Architecture and Design.
- Belangér, Pierre (ed.). 2017. *Extraction Empire: Undermining the Systems, States, and Scales of Canada’s Global Resource Empire*. Massachusetts: MIT Press.
- Belina, Mirna with Arie Altena, Gideon Kiers, Lucas van der Velden, Anette Wolfsberger and Mark Poysden. 2016. *Living Earth, Fieldnotes from the Dark Ecology Project*. Amsterdam: Sonic Act Press.
- Bendixen, André and Ine Eftestøl. 2017. “Har ventet på gruvedrift i 12 år/ Have been waiting for mining for 12 years” *NRK Finnmark*, May 22, 2017. <https://www.nrk.no/finnmark/har-ventet-pa-gruvedrift-i-12-ar-1.13526688>

- Benjaminsen, Tor A., Inger Marie Gaup Eira and Mikkel Nils Sara. 2016. *Samisk reindrift, norske myter/ Sámi Pastoralism, Norwegian Myths* edited by Bergen: Fagbokforlaget.
- Benjaminsen, Tor A., Hugo Reinert, Espen Sjaastad and Mikkel Nils Sara. 2015. "Misreading the Arctic landscape: A political ecology of reindeer, carrying capacities, and overstocking in Finnmark, Norway", *Norsk Geografisk Tidsskrift - Norwegian Journal of Geography*, 69:4, 219-229. DOI: 10.1080/00291951.2015.1031274
- Bergstrøm, Ida Irene. 2013. "En maktelite med sterk angst for djevelen var avgjørende for at kvinner ble anklaget og henrettet. For trolldom i langt større grad enn menn." <http://kjonnsforskning.no/nb/2013/04/angst-djevelpakt-drepte-kvinner>
- Berkes, Fikret, Johan Colding and Carl Folke. 2000. "Rediscovery of Traditional Ecological Knowledge as Adaptive Management" *Ecological Applications* 10 (5): 1251-1262.
- Berkes, Fikret and Davidson-Hunt, Iain J. 2006. "Biodiversity, traditional management systems, and cultural landscapes: examples from the boreal forest of Canada." *International Social Science Journal*: 35-47.
- Bertelsen Lars Kiel. 2010. "The alien element that is at play in ourselves." In *Ethno-Aesthetics/ Etnoæstetik*, Pia Arke, Pia Arke Selskabet and Kuratorisk Aktion, 6-8. Viborg: Specialtrykkerier a-s.
- Biggs, Michael and Henrik Karlsson. 2011. *The Routledge Companion to Research in the Arts*. London: Routledge.
- Biovie, Ulf. 2014. "Gruvnäringen måste bli accepterad" *Metaller och Mineral*, February 2014. <https://www.yumpu.com/sv/document/view/31671427/metaller-och-mineral-februari-2014>
- Bjercke, Bente. 2014a. "Habilitetsuro i Miljødirektoratet." *NRK Sápmi*, February 17, 2014. <http://www.nrk.no/sapmi/habilitetsuro-i-miljodirektoratet-1.11549349>
- Bjercke, Bente. 2014b. "Kilometervis med kjørespor etter Nussir i Kvalsund/ Kilometres of tracks after Nussir in Kvalsund." *NRK Sápmi*, October 3, 2014. <https://www.nrk.no/sapmi/nussir-lager-dype-kjorespor-1.11964659>

- Bjørgo, Frode and Ingrid Bay-Larsen. 2017. “Lost in translation – Critical reflections on the disposal of submarine tailings in Kvalsund municipality” in *The Extractive Industries and Society* 4 (3): 481-488.
- Bjørklund, Ivar. 2004. “Sami Pastoral Society in Northern Norway: The National Integration of an Indigenous Management System.” In *Cultivating Arctic Landscapes*, edited by Anderson and Nuttall, 124-135. New York, Oxford: Berghahn Books.
- Bjørklund, Ivar. 2013. “Gruvedrift og reindrift—om nordområdesatsing, folkerett og trojanske hester i Sápmi/ Mining and Reindeer Husbandry—on Northern Area Strategies, Human Rights and Trojan Horses in Sápmi.” In *Hvor går Nord-Norge? Bind 3—Politiske tidslinjer*, edited by Svein Jentoft, Jens-Ivar Nergård and Kjell Arne Røvik, 417–428. Stamsund: Orkana akademisk forlag.
- Bjørklund, Ivar. 2016. “Fra formynder til forhandler: Om inngrep, konsekvensanalyser og ‘balansert sameksistens’/ From Guardian to Negotiator: About Encroachments, Impact Assessments, and ‘Balanced Co-Existence’”, in *Samisk reindrift, norske myter/ Sámi Pastoralism, Norwegian Myths*, edited by Tor A. Benjaminsen, Inger Marie Gaup Eira, and Mikkel Nils Sara, 177–193. Bergen: Fagbokforlaget, 2016.
- Bjørklund, Ivar and Harald Eidheim. 1997. “Om Reinmerker: Kulturelle sammenhenger og norsk jus i Sápmi/ On Reindeer Marks: Cultural Connections and Norwegian jurisprudence in Sápmi.” *Tidsskrift for samfunnsforskning* 4: 562-578.
- Blanchon-Caillet, Bernadette, Kamni Gill, Karsten Jørgensen, Bianca Maria Rinaldi and Kelly Shannon. 2013. “Landscape architecture in an expanded field.” *Journal of Landscape Architecture*, 8:1, 4-5, DOI: 10.1080/18626033.2013.798916
- Blix Hagen, Rune. 2016. “Historien om folkene under de syv plogoksene, Olaus Magnus og hans historieverk om Norden fra 1500-tallet” Online article 1997-2017, updated October 10, 2017, retrieved August 23, 2016. URL: <http://ansatte.uit.no/rune.hagen/olaus.htm>
- Bore, Kristina Ketola. 2017. “Kunnskapsbygging/ Building Knowledge” *Arkitektur N, the Norwegian Review of Architecture* 99 (1): 74-83.

- Boutsalis, Kelly. 2018. "Indigenous architects design a sovereign future." *NOW Magazine*, Toronto, October 18, 2018. <https://nowtoronto.com/lifestyle/education/indigenous-architecture-unceded>
- Brattland, Camilla, Britt Kramvig and Helen Ruth Verran. 2018. "Doing Indigenous Methodologies: Toward a Practice of the "Careful Partial Participant." *ab-Original: Journal of Indigenous Studies and First Nations and First Peoples' Cultures* 2 (1): 74 - 96. doi.org/10.5325/aboriginal.2.1.0074
- Briet, Suzanne. 2006. *What Is Documentation?: English Translation of the Classic French Text*. Original text from 1951 translated and edited by Ronald E. Day and Laurent Martinet with Hermina G. B. Anghelescu. Lanham: Scarecrow Press.
- Butler, Andrew. 2016. "Dynamics of integrating landscape values in landscape character assessment: the hidden dominance of the objective outsider." *Landscape Research* 41 (2): 239–252. <http://dx.doi.org/10.1080/01426397.2015.1135315>
- Butler, Andrew. 2017. "Landscape analysis: investigating the potentials of space and place", *Landscape Research*, 42 (7): 806-807, DOI: 10.1080/01426397.2017.1364506
- Carmack, Eddy and Paul Wassmann. 2006. "Food webs and physical–biological coupling on pan-Arctic shelves: Unifying concepts and comprehensive perspectives." *Progress in Oceanography* 71, 446–477.
- Carstens, Halfan. 2016. "Han fant Malmen/ He found the Ore." *GEO* 365, Norsk geologisk forening.
- Cattoor, Bieke and Chris Perkins. 2014. "Re-cartographies of Landscape: New Narratives in Architectural Atlases." *The Cartographic Journal* 51 (2): 166–178.
- Cogos, Sarah, Marie Roué, and Samuel Roturier. 2017. "Sami place names and maps: transmitting knowledge of a cultural landscape in contemporary contexts." *Arctic, Antarctic, and Alpine Research* 49 (1): 43–51. DOI: <http://dx.doi.org/10.1657/AAAR0016-042>

- Corner, James. 1999. "The Agency of Mapping: Speculation, Critique and Invention." In *Mappings*, edited by Denis Cosgrove, 213-52. London: Reaktion.
- Cosgrove, Denis. 1985. Prospect, Perspective and the Evolution of the Landscape Idea, *Transactions of the Institute of British Geographers, New Series* 10 (1) 45-62. URL: <http://www.jstor.org/stable/622249>
- Council of Europe (CoE). 2000. *European Landscape Convention and reference documents*. <http://rm.coe.int/CoERMPublicCommonSearchServices/DisplayDCTMContent?documentId=090000168059ab04>
- Corkery and Arnold. 2018. "Message from AILA President and CEO" in *Australian Institute of Landscape Architects Reflect Reconciliation Action Plan June 2018-June 2019*. https://www.aila.org.au/imis_prod/documents/AILA%20Reflect%20RAP%202018-19%20-%20RA%20endorsed.pdf
- Crampton, Jeremy W. 2001. "Maps as Social constructions: Power, Communication and Visualization." *Progress in Human Geography* 25: 235-252. SAGE Journals Online. <http://phg.sagepub.com>
- Crampton, Jeremy W. 2010. *Mapping. A critical introduction to cartography and GIS*. Chichester: Wiley- Blackwell.
- Crampton, Jeremy W. and John Krygier. 2006. "An Introduction to Critical Cartography," *ACME: An International E-Journal for Critical Geographies* 4, no. 1, 11-33. <https://www.acme-journal.org/index.php/acme/issue/view/50>
- Dahl, Knut Eirik, Kjerstin Uhre, Espen Røyseland, and Øystein Rø. 2012. "Fields of Exploration, Limits of Exploitation. (Master landscape architects studio, Oslo School of Architecture and Design, AHO)" <http://fieldsofexploration.blogspot.no/>
- Dale, Brigit. 2016. "Governing resources, governing mentalities. Petroleum and the Norwegian integrated ecosystem-based management plan for the Barents and Lofoten seas in 2011" *The Extractive Industries and Society* 3 (1): 9–16. Elsevier.
- Dale, Brigit and Berit Kristoffersen. 2018. "Post-Petroleum Security in a

Changing Arctic: Narratives and Trajectories Towards Viable Futures” *Arctic Review on Law and Politics* 9: 244–261. <http://dx.doi.org/10.23865/arctic>.

Dale, Brigit Ingrid Bay Larsen and Berit Skorstad (eds). 2018. *The Will to Drill - Mining in Arctic Communities*. Cham, Switzerland: Springer.

Danbolt, Mathias. 2018. “Kunst og kolonialitet” *Kunst og Kultur* 101 (3): https://www.idunn.no/kk/2018/03/kunst_og_kolonialitet

Dannevig, Halvor and Brigit Dale. 2018. “The Nussir Case and the Battle for Legitimacy: Scientific Assessments, Defining Power and Political Contestation.” In *The Will to Drill - Mining in Arctic Communities*, edited by Brigit Dale, Ingrid Bay Larsen and Berit Skorstad. Cham, Switzerland: Springer.

Deneault, Alain and Sacher, William. 2012. *Imperial Canada inc. Legal Haven of Choice for the World Mining Industries*, Vancouver, British Columbia: Talonbooks.

Denzin, Norman K. and Yvonna S. Lincoln. 2011. *The Sage Handbook of Qualitative Research*, 4th edition. Thousand Oaks: Sage.

Didriksen, Thor-Arthur. *Nussir ASA. Reguleringsplan med konsekvensutredning for planlagt gruvedrift i Nussir og Ulveryggen i Kvalsund kommune/ Zoning Plan with Impact Assessments of planned mining in Nussir and the Wolf Ridge in Kvalsund Municipality*. Sweco-rapport nr. 02, March 06, 2011

DIIS, Danish Institute for International Studies. 2019. <https://www.diis.dk/en/event/truth-and-reconciliation-in-the-arctic>

Dunin-Woiseth, Halina. 2011. “Some notes on mode 1 and Mode 2: Adversaries or Dialogue Partners?” In *The Routledge Companion to Research in the Arts*, edited by Michael Biggs and Henrik Karlsson, 64-81. *The Routledge Companion to Research in the Arts*. London: Routledge.

Dyrssen, Catharina. 2011. “Navigating in Heterogeneity, architectural thinking and art-based research.” In *The Routledge Companion to Research in the Arts*, edited by Michael Biggs and Henrik Karlsson, 223-239. London: Routledge.

- Egoz, Shelley. 2016. "The right to landscape and the argument for the significance of implementation of the European landscape convention." In *Mainstreaming Landscape through the European Landscape Convention*, edited by Jørgensen, Karsten, Morten Clementsen, Kine Halvorsen Thorén, and Tim Richardson, 111-118. London and New York: Routledge.
- Egoz, Shelley Karsten Jørgensen and Deni Ruggeri (eds.). 2018. *Defining Landscape Democracy A path to spatial justice*, Cheltenham, UK, Northampton, MA, USA: Edward Elgar Publishing.
- Eilertsen, Kita. 2010. "Lykkes vi kommer hele verden etter/ If we Succeed, the World will Follow." *Altaposten*, November 4, 2010. <http://www.altaposten.no/lokalt/nyheter/article403895.ece>
- Eilu, Pasi (ed.). 2014. *Mineral Deposit and metallogeny of Fennoscandia, Geological Survey of Finland, Special Paper 53*. Espoo: Tammerprint.
- Eira, Rávdná Biret Márjá. 2012. "Using Traditional Knowledge in Unpredictable Critical Events in Reindeer Husbandry. The case of Sámi reindeer husbandry in Western Finnmark, Norway and Nenets reindeer husbandry on Yamal peninsula, Yamal-Nenets AO, Russia" Master Thesis, The Arctic University Of Norway, UiT.
- Eira, Inger Marie Gaup, Oskal, Anders, Hansen-Bauer Inger, and Dish Mathiesen Svein. 2018. "Snow cover and the loss of traditional indigenous knowledge", *Nature Climate Change* 8 (November). URL: https://www.nature.com/articles/s41558-018-0319-2.epdf?author_access_token=gZZfWouaQKTNCyAhqQg-69RgN0jAjWel9jnR3ZoTv0NLNhCpcK3gTcR7LI7HSxRc-WaHM4UGafLSZgliGKyESfdk-yscSH07P4yu7bXruBL0Yg-Vo0yO5KWqxevwN55pgnAIF_6GhkxzTSPmeHegnaw%3D%3D
- Encyclopædia Britannica, <https://www.britannica.com/topic/high-seas>
- Erikstad, Lars, Stefan Blumental, Vegar Berteussen and Rune Halvorsen. 2016. "Landskapstypkartlegging som verktøy til overvåkingen av arealbruksendringer." *NINA rapport 1006*. URL: <https://pdfs.semanticscholar.org/a277/f425153cdfb466509b91ab8d07eadc8de9a9.pdf>
- Erikstad, Lars, Lars Andre Uttakleiv and Rune Halvorsen. 2015. "Characterisation and mapping of landscape types, a case study from Norway"

in *Belgeo, Revue belge de géographie*, 3, paysages, participation et expertise scientifique. <http://belgeo.revues.org/17412>

- Espiritu, Aileen A. 2015. "Kautokeino and Kvalsund Compared: Rejection and Acceptance of Mining in Communities in Northern Norway", *The Northern Review* 39 (2015): 53-65.
- Etkind, Alexander. 2011. *Internal Colonization Russia's Imperial Experience*, Cambridge, UK: Polity Press.
- Fauchald, Ole Kristian. 2014. "Regulating Environmental Impacts of Mining in Norway," *Nordic Environmental Law Journal* 1: 53-65.
- Finley, Susan. 2011. "Critical Arts-Based Inquiry: The Pedagogy of Performance and Radical Aesthetic." In *Handbook of Qualitative Research*, Edited by Norman Denzin and Yvonna Lincoln, 4th Edition, 435-450. Thousand Oaks: Sage.
- Fiskevold, Marius. 2016. "Analysing the landscape potential in everyday areas." In *Mainstreaming Landscape through the European Landscape Convention*, edited by Karsten Jørgensen, Morten Clementsen, Kine Halvorsen Thorén, and Tim Richardson, 141-148. London and New York: Routledge.
- Forland, Kristine. 2016. "Gruvegründeren." *NRK Finnmark* Oct 22, 2016. <https://www.nrk.no/finnmark/xl/gruvegrunderen-1.13174288>
- Fosså, Jan Helge, Lars Asplin, Jan Aure, Sonnich Meier and Terje van der Mehren. 2011. Institute of Marine Research, "Høring—reguleringssplan med konsekvensutredninger for planlagt gruvedrift i Nussir og Ulveryggen i Kvalsund Kommune/ Consultation statement—zoning plan impact assessment for planned mining operation at Nussir and Wolf Ridge in Kvalsund Municipality," September 15, 2011.
- Frilund, Gunn and Trond Simensen. 2011. *Mining: Ulveryggen and Nussir, Kvalsund Municipality, Finnmark: Impacts on Landscape, outdoors life, and biodiversity on land and in fresh water/ Gruvedrift: Ulveryggen og Nussir, Kvalsund kommune, Finnmark. Konsekvenser for landskap, friluftsliv og biologisk mangfold på land og i ferskvann*, Sweco, Trondheim 2011

- Frøberg, Jonas. 2018. "Svidande kritik mot Sverige – Ge samerna inflytande." *Sveriges Dagblad, Näringsliv*, 2018-09-22.
- Førde, Anniken. 2004. "Svaler som gjer nye somrar. Kreative kvinnepraksisar i provencalsk og nordnorsk landbruk." PhD diss., The Arctic University of Norway, UiT.
- Førsund, Anne-Line Thingnes. 2014. "Foredrag om Hvorfor vi sier nei til gruveavfall i Førdefjorden og Repparfjorden." <https://naturvernforbundet.no/finnmark/gruvedrift/stor-oppslutning-om-folkefest-for-repparfjorden-article31498-2023.html>
- Gammelsæter, Elisabeth. 2013. Answer to question in panel at a meeting on the Norwegian Strategy for the Mining Industry arranged by Polyteknisk Forening, Oslo, May 10, 2013.
- Gaski, Harald. 2004. "Indigenous Interdisciplinary Internationalism: The Modern Sami Experience, with Emphasis on Literature." In *Circumpolar Ethnicity and Identity*, edited by Takashi Irimoto and Takako Yamada, *Senri Ethnological Studies*, no 66, 371-387.
- Gatson, Sara. 2011. "The Methods, Ethics, and Politics of Representation in Online Ethnography." In *Handbook of Qualitative Research*, Edited by Norman Denzin and Yvonna Lincoln, 4th Edition, 513-527. Thousand Oaks: Sage.
- Geelmuyden, Anne Katrine. 2015. "Kommentar til fagseminar om i Bodø 4. og 5. November 2015 om Landskap i Norge: Status og utvikling - Kartlegging og analyser." *Arkitektnytt*, (11): 30-33.
- Geelmuyden, Anne Katrine. 2016. "Landscape assessments as imaginative (poetic) landscape narratives: Contemporary pastorals." In *Mainstreaming Landscape through the European Landscape Convention*, edited by Karsten Jørgensen, Morten Clementsen, Kine Halvorsen Thorén, and Tim Richardson, 141-148. London and New York: Routledge.
- Geonorge. 2017. "Object register, SOSI general object catalogue." Accessed May, 5th 2020. https://objektkatalog.geonorge.no/Pakke/Index/EAPK_7F63A1B3_6D60_4766_B6C4_77752C6034E1?id=EAPK_7F63A1B3_6D60_4766_B6C4_77752C6034E1&type=datatype

- Ginsberg, W.B. 2006. *Printed Maps of Scandinavia and the Arctic, 1482-1601*. New York: Septentrionalium Press.
- Giro, Christophe. 2016. *The Course of Landscape Architecture: A Natural History of Our Designs on the Natural World, from Prehistory to the Present*. London: Thames & Hudson.
- Government of Norway. 2013. "Political platform for a government formed by the Conservative Party and the Progress Party (English version)." Sundvolden: October 7, 2013.
- Government Offices of Sweden, *Sweden's Mineral Strategy*. Swedish Ministry of Enterprise, Energy and Communications, 2013. www.government.se/contentassets/78bb6c6324bf43158d7c153ebf2a4611/swedens-minerals-strategy.-for-sustainable-use-of-swedens-mineral-resources-that-creates-growth-throughout-the-country-complete-version
- Grant Elizabeth, Kelly Greenop, Albert L. Refiti L. Albert and Daniel Glenn. 2018. *The Handbook of Contemporary Indigenous Architecture*. Singapore: Springer Nature.
- Greneren, Geir, Kjell Kemi and Steinar Nilsen. 2016. "Landscapes as Documents – the relationship between traditional Sámi terminology and the concepts of document and documentation" in *Journal of Documentation* 72 (6): 1181-11196. DOI 10.1108/JD-01-2016-0010
- Greve, Anniken. 2014: "Reopening Our Original Openness – Reflections on Landscape, Perception, and Art." in *Sámi Stories*, 69-87. Stamsund: Orkana akademisk forlag.
- Grorud, Christian, Grorud Rasmus Reinvang, Simen Pedersen, John Magne Skjelvik. 2013. Vista Analyse rapport, *Sektoranalyse av mineralnæringen I Nord-Norge: Status og potensial mot 2030. Rapport for Nærings- og handelsdepartementet* (Ministry of Trade and Industry, Oslo 2013). <http://vista-analyse.no/no/publikasjoner/sektoranalyse-av-mineraln-ringen-i-nord-norge-status-og-potensial-mot-2030/>
- Hage, Ingebjørg Elin Haugdal and Sveinulf Hegstad (eds.). 2015. *Hager mot Nord* Stamsund: Orkana Akademisk Forlag.

- Haraway, Donna. 1988. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective." *Feminist Studies*, 14 (3): 575-599.
- Haraway, Donna. 2016. *Staying with the Trouble, Making Kin in the Chthulucene*. Durham and London: Duke University Press.
- Harley, J.B. 2002. *The New Nature of Maps*, Virginia: The John Hopkins University Press.
- Harris, Leila M. and Helen D. Hazen. 2006. Power of Maps: (Counter) Mapping for Conservation. *ACME: An International E-Journal for Critical Geographies*, 4 (1), 99-130.
- Haugdal, Elin. 2018. "It's Meant to Decay: Contemporary Sámi Architecture and the Rhetoric of Materials" In *The Handbook of Contemporary Indigenous Architecture*, edited by Grant Elizabeth, Greenop Kelly, Refiti L. Albert and Glenn Daniel, Singapore: Springer Nature, 805-827.
- Henriksen, Christina. 2014. "Nordkloden – Erna og Siv i godteributikken?" Nordlys, November 20, 2014. <https://nordnorskdebatt.no/article/nordkloden-erna-siv-i>
- Healey, Patsy. 1988. "The british planning system and managing the urban environment." *Town Planning Re-view*, 59, 397-415.
- Hellström Reimer, Maria. 2012. *Scapelands of the North – roots, rights, routes*. In *Vínculos del frío - Latitud norte: Ética y estética del habitar*. Centro de Investigación Arte y Entorno Universitat Politècnica de València, 2012, 427- 438.
- Highnorthnews. 2016. (Editorial). "Sjødeponi i Repparfjorden: Uvisst når klagene er ferdigbehandlet." *Highnorthnews*, November 17 2016. <http://www.highnorthnews.com/sjodeponi-i-repparfjorden-uvisst-nar-klagene-er-ferdigbehandlet/>
- Hillier, Jean. 2007. *Stretching Beyond the Horizon: A Multiplanar Theory of Spatial Planning and Governance*, London: Ashgate.
- Holm, Arne O. 2014. "Nærmere Kobberdrift" *High North News*, February 14, 2014. <http://www.highnorthnews.com/naermere-kobberdrift/>

- Hongslo, Eirin. 2017. "Background information or future vision? Mapping wild reindeer landscapes in a planning process", *Landscape Research* 42 (4): 349-360.
- Howard, Peter, Ian Thompson, Emma Waterton (eds.). 2013. *The Routledge Companion to Landscape Studies*. London New York: Routledge.
- Huse, Tone. 2015. "*The Car, the Citizen and the Climate*." PhD diss., The Arctic University of Norway, UiT.
- Ibenholt, Karin, Ingeborg Rasmussen and John Magne Skjelvik. 2016. "Gruvedrift ved Repparfjorden gjennomgang av utredninger om samfunnsmessige konsekvenser/ Mining by Repparfjorden Fjord review of assessments of societal impacts" *Vista Analyse, Report 2016/26* <https://www.vista-analyse.no/no/publikasjoner/gruvedrift-ved-repparfjorden-gjennomgang-av-utredninger-om-samfunnsmessige-konsekvenser/>
- ILO Convention (No. 169) concerning Indigenous and Tribal Peoples in Independent Countries (1989).
- Ingebretsen, Berit. 2008. "Metaforbassert tegning – undersøkt som billedspråkssystem gjennom avistegninger av Finn Graff og Saul Steinberg med kognitiv metafor-teori som hovedredskap." PhD diss., Oslo School of Architecture and Design.
- Ingold, Tim. 1993. "The Temporality of the Landscape." *World Archaeology* 25, no. 2, 151-174.
- Ingold, Tim. 2011. *Being Alive. Essays on movement, knowledge and description*. London and New York: Routledge.
- Ingold, Tim. 2018. "Toward A New Humanism, One world anthropology." *Journal of Ethnographic Theory* 8 (1/2): 158–171.
- Isaksen, Torbjørn Røe. 2019. "Verden trenger kobber." *GEO 365*, February 19 2019. <https://geo365.no/bergindustri/verden-trenger-kobber>
- Jakobsen, Tore and Vladimir K. Ozhigin. 2011. *The Barents Sea, Ecosystems, Resources, Management. Half a century of Russian-Norwegian cooperation*. Trondheim: Tapir Academic Press.

- Johnsen, Kathrine Ivsett. 2016. "Land-use conflicts between reindeer husbandry and mineral extraction in Finnmark, Norway: contested rationalities and the politics of belonging." *Polar Geography*, 39:1, 58-79.
- Johnsen, Kathrine Ivsett, Svein D Mathiesen and Inger Marie Gaup Eira. 2017. "Sámi reindeer governance as competing knowledge systems: a participatory study." *Ecology and Society* 22 (4). DOI: <https://doi.org/10.5751/ES-09786-220433>
- Joks, Solveig. 2015. "Laksen trenger ro" Tilnærming til tradisjonelle kunnskaper gjennom praksiser, begreper og fortellinger fra Sirbmá-området. PhD diss., The Arctic University of Norway, UiT.
- Joks, Solveig, John Law and Liv Østmo. 2019. "Verbing Meahcci: no beginning, no end." *Heterogeneities.net*, 10th June 2019: <http://www.heterogeneities.net/publications/JoksLawOstmo2019VerbingMeahcci.pdf>
- Jones, David, Low, Darryl Choy, Grant Revell, Scott Heyes, Richard Tucker and Susan Bird. 2017. *Re-casting terra nullius blindness: empowering Indigenous protocols and knowledge in Australian university built environment education*, Office for Learning and Teaching, Commonwealth Department of Education and Training, Canberra, A.C.T.
- Jones, Michael and Audhild Schanche (eds.). 2004. *Landscape, Law and Customary Rights*, Dieđut 3/2004, Guovdageaidnu/ Kautokeino: Sámi instituhtta/ Nordic Saami Institute.
- Jones, Michael. 2004. "Seasonal landscapes in Northern Europe." In *Landscape, Law and Customary Rights*, edited by Michael Jones and Audhild Schanche, Dieđut 3, 11-38. Guovdageaidnu/ Kautokeino: Sámi instituhtta/ Nordic Saami Institute.
- Jones, Michael. 2008. "The 'Two Landscapes' of North Norway and the 'Cultural Landscape' of the South." In *Nordic Landscapes. Region and Belonging on the Northern Edge of Europe*, edited by Michael Jones and Kenneth R. Olwig. Minneapolis: University of Minnesota Press.
- Jones, Michael and Marie Stenseke (eds.). 2011. *The European Landscape Convention: Challenges of Participation*. Dordrecht: Springer. DOI: <https://doi.org/10.1007/978-90-481-9932-7>

- Jones, Michael. 2016. "Landscape Democracy and Participation in a European Perspective," in *Mainstreaming Landscape through the European Landscape Convention*, edited by Karsten Jørgensen, Morten Clementsen, Kine Halvorsen Thorén, and Tim Richardson, 119-128. London and New York: Routledge.
- Jørgensen, Jens Ulf and Per Andersen. "landskabslove." In *Den Store Danske*, Gyldendal. Retrieved October 5th 2017 from <http://denstoredanske.dk/index.php?sideId=114332>
- Jørgensen, Karsten, Morten Clementsen, Kine Halvorsen Thorén and Tim Richardson. 2016. *Mainstreaming Landscape through the European Landscape Convention*. London and New York: Routledge.
- Kampevold Larsen, Janike and Peter Hemmersam (eds). 2018. "What is the Future North" in *Future North: The Changing Arctic Landscape*, edited by Janike Kampevold Larsen and Peter Hemmersam, 3-15. New York: Routledge.
- King, Nagel and Harrocks, Christine. 2010. *Interviews in Qualitative Research*, London: Sage.
- KLD. 2016. Klima og Miljødepartementet. "Avgjørelse av klager på tillatelse etter forurensningsloven til gruvedrift i Nussir og Ulveryggen med deponering av avgangsmasser i sjødeponi i Reppartjorden" Letter of 19.12.2016
- Klo, Allan. 2011. "Flere Gigantindustrier til Kvalsund." *NRK Troms*, March 31, 2011. <https://www.nrk.no/troms/flere-gigantindustrier-til-kvalsund-1.7573462>
- Klo Allan. 2017. "Nussir velger trolig Markopneset/ Nussir chooses probably Markopneset." *NRK Finnmark*, March 13, 2017. <https://www.nrk.no/finnmark/nussir-velger-trolig-markopneset-1.13423260>
- Kløcker Larsen, Rasmus, Kaisla Raitio, Per Sandström, Anna Skarin, Marita Stinnerbom, Jenny Wik-Karlsson, Stefan Sandström, Carl Österlin and Yann Buhot. 2016. *Kumulativa effekter av exploateringer på renskøtsel – Vad behöver göras inom tillståndsprocesser?/Cumulative effects of exploitation on reindeer husbandry - What needs to be done within permit processes?* Naturvårdsverket/ Swedish Environmental Protection Agency. Bromma: Arkitektkopia.

- KMD. 2011. Kommunal- og moderniseringsdepartementet/Ministry of Local Government and Modernisation, *Statlige planretningslinjer for differensiert forvaltning av strandsonen langs sjøen/ The government plan's guidelines for differentiated management of the beach zone*, March 25, 2011. <https://www.regjeringen.no/no/dokumenter/differensiert-forvaltning-strandsonen/id636763/>
- KMD. 2014a. Ministry of Local Government and Modernisation, “Kvalsund kommune—innsigelse til reguleringsplan for Nussir og Ulveryggen. Brev av 26.03.2014 fra Kommunal og Moderniseringsdepartementet til Fylkesmannen i Finnmark/ Kvalsund Municipality—objection to zoning plan for Nussir and the Wolf Ridge.” *Letter of March 26, 2014 from the Ministry of Local Government and Regional Development to the County Governor of Finnmark*. <https://www.regjeringen.no/no/dokumenter/Kvalsund-kommune---innsigelse-til-reguleringsplan-for-Nussir-og-Ulveryggen/id753930/>
- KMD. 2014b. The Ministry of Local Government and Modernisation, “Regulations on Environmental Impact Assessment for plans pursuant to the Norwegian Planning and Building Act pursuant to the Act of 27 June 2008 No. 71, section 7.” https://www.regjeringen.no/contentassets/f25837cb4dd045738e091f093ab06ccc/regulations_environmental_impact_assessment_for_plans.pdf
- Kramvig, Britt and Anniken Førde. 2012. “Utforskning og improvisasjon – hvordan studere stedlig innovasjon/ Exploration and Improvisation – how to Study Place Based Innovation.” In *Å finne sted – Metodologiske perspektiver i stedsanalysen/ To Find Place, Methodological Perspectives in Place Analysis* edited by Anniken Førde, Britt Kramvig, Nina Gunnerud and Britt Dale, 63-76. Oslo: Akademika Forlag, Oslo.
- Kramvig, Britt and Anne Britt Flemmen. 2018. “Turbulent indigenous objects: Controversies around cultural appropriation and recognition of difference.” In *Journal of Material Culture*, Sage UK. [Sagehttps://doi.org/10.1177/1359183518782719](https://doi.org/10.1177/1359183518782719)
- Kramvig, Britt and Margrethe Pettersen. 2016. “Living land – Below as Above.” In *Living Earth, Fieldnotes from the Dark Ecology Project*, edited by Belina, Mirna with Arie Altena, Gideon Kiers, Lucas van der Velden, Anette Wolfsberger and Mark Poysden, 131-141. Amsterdam: Sonic Act Press.

- Kristensen, Vidar. 2012. "Nøler med å gi klare råd/ Hesitant to give clear advice." *Altaposten*, December 25, 2012. <https://www.altaposten.no/lokalt/nyheter/article6861975.ece>.
- Kristoffersen, Berit. 2016. "Drilling Oil into Arctic Minds." PhD Diss., The Arctic University of Norway, UiT.
- Kress, Gunther. 2011. "Multimodal discourse analysis." In *The Routledge Handbook of Discourse Analysis* edited by James Paul Gee and Michael Handford. (Abingdon: Routledge, 16 Nov 2011), accessed 12 September, 2018, Routledge Handbooks Online. <https://www.routledgehandbooks.com/doi/10.4324/9780203809068.ch3>
- Kress, Gunther and Theo van Leeuwen. 2001. *Multimodal Discourse: The Modes and Media of Contemporary Communication*. Oxford UK: Oxford University Press
- Kurvits, Tiina, Christian Nellemann, Björn Alftan, Aline Kühl, Peter Prokosch, Melanie Virtue and Janet F. Skaalvik. 2011. *Living Planet: Connected Planet—Preventing the End of the World's Wildlife Migrations through Ecological Networks. A Rapid Response Assessment*, ed Tiina Kurvits and Christian Nellemann, *United Nations Environment Programme*, Arendal: GRID Arendal.
- Kvalsund Municipality. 2004. "Kvalsund Municipality Council's area plan 2004–2016, map." April 27, 2004.
- Kvalsund Municipality. 2017. "Hovedutskrift, Naturforvaltningsutvalget, møte nr 5/2017." June 30, 2017.
- Kvalsund Municipality. 2018. "Møteprotokoll KS Kvalsund, møte nr 7/2018" December 13, 2018.
- Kveseth, Magne. 2009. "Frykter gruve-konsekvensene/ Fearing impacts from mining." *Altaposten*, November 14, 2009.
- Lango, Ann Catharina. 2017. "Uttalelse til høring av søknad fra Nussir ASA om driftskonsesjon på Repparfjord kobberforekomst i Kvalsund Kommune/ Consultation Statement to Application for Mining Concession for the Repparfjord Copper Occurrence," Áisaroaivi, September 11, 2017.

- Langørgen, Ståle and Marianne Tønset. 2010. "100 mill. til Gulljakt/ 100 millions to Gold Hunt." *Aftenposten*, October 2, 2010. <https://www.aftenposten.no/norge/i/1BxWl/100-mill-til-gulljakt>
- Lassila, Maija. 2018. "Mapping mineral resources in a living land: Sami mining resistance in Ohcejohka, northern Finland." *Geoforum* 96 (November): 1-9. <https://doi.org/10.1016/j.geoforum.2018.07.004> .
- Latimer, Quinn. 2019. "Core desires, Counter Prospects", New Mineral Collective, Tromsø 2019. This text is part of the *Exhibition Erotics of Counter Prospecting* and available at Tromsø Kunstforening.
- Law, John. 2003. "Making a Mess with Method." The Centre for Science Studies, Lancaster University.
- Law, John. 2009. "Actor Network Theory and Material Semiotics." In *The New Blackwell Companion to Social Theory, 3rd Edition*, edited by Bryan S. Turner. Oxford: Blackwell, 141–158.
- Law, John. 2015. "What's wrong with a one-world world?" *Distinction: Scandinavian Journal of Social Theory*, 16:1, 126-139. DOI: 10.180/1600910X.2015.1020066
- Law, John, Geir Afdal, Kristin Asdal, Wen-Yan Lin, Ingunn Moser, and Vicky Singelton. 2014. "Modes of Syncretism. Notes on Noncoherence", in *Common Knowledge* 20 (1): 172-192. DOI 10.1215/0961754X-2374817
- Law, John and Liv Østmo. 2017. "On Land and Lakes: Colonizing the North." In *Technosphere Magazine*, <https://technosphere-magazine.hkw.de/p/On-Land-and-Lakes-Colonizing-the-North-9A4jWt7o4F-gCDSxZmTvjKz>
- Law, John and Wen-yuan Lin. 2017. "The stickiness of knowledge: Translation, postcoloniality, and STS." In *East Asian Science, Technology, and Society* 11 (2): 257-269. <https://doi.org/10.1215/18752160-3823719>
- Lawrence, Rebecca and Rasmus Kløcker Larsen. 2017. "The politics of planning: assessing the impacts of mining on Sami lands." *Third World Quarterly* 38 (5): 1164-1180. DOI: 10.1080/01436597.2016.1257909

- Lee Peluso, Nancy. 1995. "Whose Woods Are These? Counter-Mapping Forest Territories in Kalimantan, Indonesia." *Antipode* 27 (4): 383–406.
- Lie, Svein Anders Noer. 2019. "Kom igjen, la oss fortsette med å sage over beina på elefanten for å redde snabelen" *Nordlys*, February 22, 2019. https://nordnorskdebatt.no/article/nussir-gronne-skiftet?fbclid=IwAR1rqBfrmQw__mBKPb-U3McfC4wM-AvN3SOV8sKytubcT1wRYhUQWTf8ttA
- Lindhjem, Henrik, Rasmus Reinvang and Marianne Zandersen. 2015. *Landscape Experiences as a Cultural Ecosystem Service in a Nordic Context, Concepts, Values and Decision-Making*. Nordic Council of Ministers. Denmark: Rosendahls-Schultz Grafisk.
- LMD. 2016. 2016. "Ressursregnskap for Reindriftsnæringen for reindriftsåret 1. April 2015—31. Mars 2016/ Resource Accounting for the Reindeer husbandry industry for the reindeer husbandry year April 1, 2015—March 31, 2016." Report no. 24 / 2016.
- LMD. 2017. Norwegian Agriculture Agency, Retningslinjer for utforming av reinmerker for Vest-Finnmark reinbeiteområde - godkjent av Reindrifststyret 6.2.2017-1. <https://www.landbruksdirektoratet.no/no/reindriften/for-siidaandeler/reinmerker/skjema/nye-retningslinjer-for-utforming-av-reinmerker>
- LMD. 2018. Landbruks og mat departementet/ Norwegian Agriculture Agency, *Meld. St. 32 (2017-2018) Reindrift. Lang tradisjon – unike muligheter [Reindeer Husbandry. Long Traditions – Unique Possibilities]*
- Lovdata. 2007a. FOR 2007-06-11, no 738: Sametingets retningslinjer for vurderingen av samiske hensyn ved endret bruk av meahcci/utmark i Finnmark (Sametingets retningslinjer for utmarksvurdering) [The Sami Parliaments Guidelines for Outfield Assessment.]. https://lovdata.no/dokument/SF/forskrift/2007-06-11-738#KAPITTEL_1
- Lovdata. 2007b. LOV 2007-06-15, no 40: Lov om reindrift (reindriftsloven) [Law about Reindeer Husbandry]. https://lovdata.no/dokument/NL/lov/2007-06-15-40/KAPITTEL_5#KAPITTEL_

- Lovdata. 1957. LOV 1957-06-28, no 16: Lov om friluftslivet (Frilufsloven). [Law about Outdoor Recreation]. <https://lovdata.no/dokument/NL/lov/1957-06-28-16?q=Lov%20om%20friluftslivet>
- Lovdata. 2008. LOV 2008-06-27, no 71, Lov om planlegging og byggesaksbehandling (plan- og bygningsloven) [Plan and Building Act]. <https://lovdata.no/dokument/NL/lov/2008-06-27-71>
- Lund, Svein. 2015. *Gull, gråstein og grums, bind 1 [Gold, Common Stones and Sludge, I]*. Karasjok: Davvi Girji.
- Lundström, Jan-Erik. 2012. "Legend I-V (1999)." In *Tupilakosaurus*, Odense: Kuratorisk Action.
- Lykkja, Hanne, Lars A Uttakleiv, Christoffer Knagenhjelm and Morten Clemetsen. 2014. *Landskapstyper i Nordland,- verdisetting / Landscape types in Nordland – valuation*. Aurland Naturverkstadrapport 6-2014. Nordland Fylkeskommune, Aurland/Harstad, 30.11.2014.
- Løvø, Gudmund. 2010. "Ekstrasatsing kan utvikle mineralnæringen." NGU, Framsenteret. <http://www.framsenteret.no/ekstrasatsing-kan-utvikle-mineralnaeringen.4826657-141503.html#.Wpl6HUtG1E4>
- Mandal, Roger. 2013. "Gollegiisá—Skattkammeret/The Treasure Shrine, TV Documentary." *NRK Sápmi*. https://www.nrk.no/video/PS*99127
- Maran, Timo. 2013. "Enchantment of the past and semiocide. Remembering Ivar Puura." *Sign System Studies* 41 (1), 146-149.
- Marcus, George. 1995. "Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography." *Annual Review of Anthropology* 24, 95-117.
- Mathisen, Hans Ragnar. 1991. "Samiske kart." In *Sámi kulturmuittut: báikenammačoaggima giehtagirji/Samiske kulturminner: håndbok i stedsnavnregistrering: med rapport fra to seminarer*, edited by Hans Ragnar Mathisen, 41-57. Tromsø/Romssa: Keviselie forlag.
- Mathisen, Hans Ragnar. 2010. 'Tanker om kart.' In *Filosofi i et nordig landskap: Jakob Meløe 70 år*, edited by Anniken Greve and Sigmund Nesset, 120-133. Tromsø: Universitetsbiblioteket i Tromsø.

- McGowan, Jérémie. 2012. "Architecture and Fieldwork." Lecture at the Oslo School of Architecture and Design (AHO).
- Mels, Tom. 2016. "The trouble with representation: landscape and environmental justice." *Landscape Research* 41 (4): 417-424.
- Mels, Tom and Don Mitchell. 2013. "landscape and justice." In *The Wiley-Blackwell Companion to Cultural Geography*, edited by Johnson, Nuala, Richard Schein, and Jamie Winders, 209-224. Sussex: Blackwell Publishing.
- Mels, Tom and Gunhild Setten. 2007. "Romance, practice and substantiveness: what do landscapes do?" *Geografiska Annaler: Series B, Human Geography* 89 (3): 197 - 202.
- Meløe, Jacob. 1988. "The Two Landscapes of Northern Norway." *Inquiry: An Interdisciplinary Journal of Philosophy*. 31 (3): 387-401.
- Meløe, Jacob. 1992. "Words and Objects." *Working Papers No. 5* edited by Henry Paul and Utaker Arild, (1992): 109-141. Available at *Publications from the Wittgenstein Archives at the University of Bergen* 17 (2005). <http://wittgensteinrepository.org/agora-wab/issue/view/191>
- Meløe, Jacob. 2006. Lecture, September 27, Bodø. "Om Praktisk Kunnskap. Del 2/2/ About Practical Knowledge. Part 2/2" Published online May 15, 2015. Accessed May 10, 2016. <https://www.youtube.com/watch?v=suCPQ9f9SW0>
- Menon and Kunnskapsparken Bodø. 2014a. "Nord-Norge I verdensklasse—en mulighetsstudie/North-Norway in World Class—A feasibility study," *Agenda Nord-Norge*, 2014, summary. <https://docplayer.me/7506259-Nord-norge-i-verdensklasse-en-mulighetsstudie.html>
- Menon and Kunnskapsparken Bodø. 2014b. "Nord-Norge I verdensklasse—en mulighetsstudie/North-Norway in World Class—A feasibility study," *Agenda Nord-Norge*, 2014, 2014, (<http://agendanordnorge.no/nord-norge-i-verdensklasse/>)
- Miljødirektoratet. 2016. "Oversendelse av tillatelse til virksomhet etter forurensningsloven—Nussir ASA. Brev av 15.01.2016 fra Miljødirektoratet til Nussir ASA"/Submission of permission for activities under the

- Pollution Control Act—Nussir ASA. Letter of January 15th, 2016 from the Environment Directorate to Nussir ASA.
- Miljøverndepartementet. 2001. Veiledning, Kommuneplanens arealdel. Revidert utgave pr. 01/11/01. Guide, Municipal Plan Area Section, Revised November 1 2001.
- Miljøverndepartementet. 2009. Lovkommentar til plandelen av plan- og bygningsloven (2009) Brosjyre/ veiledning/ Legal commentary on the planning part of the Planning and Building Act (2009) Brochure / guide. <https://www.regjeringen.no/no/dokumenter/lovkommentar-til-plandelen-i-/id554282/>
- Mordt, Gerd. 2008. *Norge i 1743, 5*, Riksarkivet. Oslo: Solum forlag.
- Mortensen, Robin. 2016. “Gruveindustrien kan bare glemme Finnmark.” *NRK Finnmark*, November 16, 2016, https://www.nrk.no/finnmark/_-gruveindustrien-kan-bare-glemme-finnmark-1.13230591
- Morrison, Andrew (ed). 2010. *Inside Multimodal Composition – New dimensions in computers and composition*. New York: Hampton Press.
- Morrison, Andrew and Birger Sevaldson. 2010. “‘Getting Going’ – Research by Design”, *FORMakademisk* 1 (3): 1-7.
- Moutka Silje Karine. 2019. “Vil svekke tradisjonelle reinmerker med tvangsinnføring av øreklips.” *Nordlys*, March 5, 2019. <https://nordnorskdebatt.no/article/vil-svekke-tradisjonelle>.
- Måsø, Nils, Kjell Are Guttorm and Klemet Anders Sara. “Er Nordnorge et ødeland?” *NRK Sápmi*, 12.11.2014. http://www.nrk.no/sapmi/_-er-nord-norge-et-odeomrade_-1.12039078]
- Nadasdy, Paul. 2003. *Hunters and Bureaucrats. Power, Knowledge, and Aboriginal- State Relations in the Southwest Yukon*. Vancouver: UBC Press.
- Nergård, Jens Ivar, 2006. *Den Levende erfaring. En studie i samisk kunnskapstradisjon*, J. W Cappelen Akademisk Forlag AS, Oslo.
- Nergård, Øystein and Sigrd Grøm Bakken. 2014. “Utlendinger sikrer seg

- norske verdier.” *NRK Nordland*, October 7, 2014. <http://www.nrk.no/nordland/utlendinger-sikrer-norske-verdier-1.11971664>
- NGU. 2011. “Varsler ny mineralstrategi I 2012” *NGU News*, May 6, 2011 <https://www.ngu.no/en/node/2912>
- NGU. 2011. “Mineralressurser i Norge 2011. Mineralstatistikk og bergindustriberetning/ Mineral Resources in Norway, Statistics.” <https://www.ngu.no/side/mineralstatistikk>
- NGU. 2012. “Mineralstatistikk og bergindustriberetning/ Mineral Resources in Norway, Statistics”. Trondheim: The Geologic Survey of Norway.
- NHD. 2013. Nærings- og handelsdepartementet/Royal Norwegian Ministry of Trade and Industry, *Strategy for the Mineral Industry*. https://www.regjeringen.no/contentassets/3fe548d142cd496ebb7230a54e71ae1a/strategyfortheminerindustry_2013.pdf
- Nilsen, Ragnar. 2003. “From Norwegianization to Coastal Sami Uprising.” In *Indigenous Peoples: Resource Management and Global Rights*, edited by Svein Jentoft, Henry Minde and Ragnar Nilsen, 163-184. Utrecht: Eburon Academic Publishers.
- Nordnytt, November 11, 2016 , <https://tv.nrk.no/serie/distriktsnyheter-nord`nytt/DKTR99111016/10-11-2016#t=7m51s>
- Norwegian Mineral Industry. 2015. “Norsk Bergindustri publiserer nye retningslinjer for sjødeponier.” *Norsk Bergindustri News*, March 2015, <http://www.norskbergindustri.no/nyheter/nyhet?key=80327>
- Norwegian Parliament. 2010. Minutes from Parliament Meeting Tuesday June 15, 2010, Agenda (no. 96): Case # 6 (1:04:29 p.m.) <https://www.stortinget.no/no/Saker-og-publikasjoner/Publikasjoner/Innstillinger/Stortinget/2009-2010/inns-200910-308/?lvl=0>
- Nussir ASA. 2017. “Søknad om driftskonsesjon på Repparfjord kobberforekomst i Kvalsund Kommune / Application for mining concession for the Repparfjord Copper Occurrence,” Kvalsund 2017.
- Nygård, Oddvar. 2014. “Erna på «stand by»”, Chronicle in Nordlys, Tromsø, published November 10, 2014. <https://nordnorskdebatt.no/article/erna-pa-stand>

- Nygaard, Vigdis. 2016. "Do indigenous interests have a say in planning of new mining Projects? Experiences from Finnmark, Norway." *Journal of Extractive Industries and Society* 3 (1): 17-24. <http://dx.doi.org/10.1016/j.exis.2015.11.009>
- O'Faircheallaigh, Ciaran. 2007. "Environmental agreements, EIA follow-up and aboriginal participation in environmental management: the Canadian experience." *Environmental Impact Assessment Review* 27(4): 319-342.
- O'Faircheallaigh, Ciaran. 2013. "Extractive industries and indigenous peoples: a changing dynamic?" *Journal of Rural Studies* 30: 20–30.
- Oles, Thomas. 2017. "The course of landscape architecture: a natural history of our designs on the natural world, from prehistory to the present." Review of *The course of landscape architecture: a natural history of our designs on the natural world, from prehistory to the present*, by Christophe Girot. *Landscape Research* 42 (3): 334-335.
- Olwig, Kenneth. 1996. "Recovering the Substantive Nature of Landscape", *Annals of the Association of American Geographers* 86 (4): 630-653.
- Olwig, Kenneth R. and Don Mitchell. 2018. "Foreword. The landscape path to spatial justice: questioning, rather than fixing, the definition of landscape democracy." In *Defining Landscape Democracy: A Path to Spatial Justice*, edited by Shelley Egoz; Karsten Jørgensen; Deni Ruggeri, xv-xxi. Cheltenham, UK, Northampton, MA, USA: Edward Elgar Publishing.
- Oskal Nils. 2000. "On nature and reindeerluck". *Rangifer* 20 (2/3): 175–180. DOI: <http://dx.doi.org/10.7557/2.20.2-3.1511>.
- Palmer, Mark H. 2009. "Engaging with *indigital* geographic information networks" in *Futures* 41, no. 1 (February): 33-40.
- Pauls, Karen. 2017. "Indigenous communities in Canada finally on Google Maps." *CBC News*, June 21, 2017. <https://www.cbc.ca/news/canada/manitoba/indigenous-communities-map-1.4169515>
- Pedersen, Steinar. 2008, *Lappekodisillen i nord 1751-1859, Fra grenseavtale og sikring av samenes rettigheter til grensesperring og samisk ulykke/ Lapp Codicil in the far north 1751-1859, From a Border Agreement*

and the Recognition of Sami Rights to Closing of the Border and Sami Discontent, DIEDUT, 3/2008. Guovdageaidnu/Kautokeino: Sámi allaskuvla.

Peräkylä, Anssi and Johanna Ruusovuori. 2011. "Analyzing Talk and Text." In *The Sage Handbook of Qualitative Research*, 4th edition, edited by Denzin and Lincoln, 529-544. Thousand Oaks: Sage.

Polland, Brita. 2017. *Slik den ene sammen har fortalt til den andre sammen. Stemmer fra den gamle kulturen/Thus the one Sámi Have Told the Other Sámi. Voices from the Ancient Culture*. Oslo: Emilia Press.

Ponte, Alessandra. 2014. *The House of Light and Entropy, Architecture words*. London: AA Publications.

Porsanger, Jelena. 2011. "The Problematisation of the Dichotomy of Modernity and Tradition in Indigenous and Sámi contexts." In *Working with Traditional Knowledge: Communities, Institutions, Information Systems, Law and Ethics, Writings from the Arbediehtu Pilot Project on Documentation and Protection of Sami Traditional Knowledge, Dieđut 1/2011*, edited by Jelena Porsanger and Gunvor Guttorm. Guovdageaidnu/Kautokeino: Sámi allaskuvla.

Pratt, Mary Louise. 2017. "Coda." In *Arts of Living on a Damaged Planet*, edited by Anna Tsing, Heather Swanson, Elaine Gan and Nils Bubandt. USA: University of Minnesota Press.

Primdahl, Jørgen and Lone S. Kristensen. 2016. "Landscape strategy making and landscape characterisation—experiences from Danish experimental planning processes." *Landscape Research* 41 (2): 227-238. DOI: 10.1080/01426397.2015.1135322

Primdahl, Jørgen, Lone Søderkvist Kristensen, Finn Arler, Per Angelstam, Per, Andreas Aagaard Christensen and Marine Elbakidze. 2018. "Rural landscape governance and expertise: on landscape agents and democracy." In *Defining Landscape Democracy: A Path to Spatial Justice*, edited by Shelley Egoz, Karsten Jørgensen, Deni Ruggeri, 153-164. Cheltenham, UK, Northampton, MA, USA: Edward Elgar Publishing.

Prno, J. and Slocombe, D.S., 2012. "Exploring the origin of social license

- to operate in the mining sector: perspectives from governance and sustainability theories”. *Resour. Policy* 37, 346–357.
- Pulk, Åse. 2015. “Reinmerkeregisteret stengt.” *NRK Sápmi*, June 18, 2015. <https://www.nrk.no/sapmi/reinmerkeregisteret-stengt-1.12415320>
- Puura, Ivar. 2013. “Nature in our memory.” *Sign System Studies* 41 (1): 150–153.
- Qvigstad, Just. 1928. *Lappiske eventyr og sagn*, Oslo: Aschehoug, 1927–29, 2, Instituttet for sammenlignende kulturforskning (trykt utg.), Serie B Skrifter, 10. Lappiske eventyr og sagn. 10: Lappiske eventyr og sagn fra Troms og Finnmark <https://www.nb.no/nbsok/nb/9fd276155456c5c70e0646144f9e036c?index=1#485>
- Ramirez-Llodra Eva, Hilde C. Trannum, AnitaEvenset, Lisa A. Levin, Malin Andersson, Tor Erik Finne, Ana Hilario, Belinda Flem, Guttorm Christensen, Morten Schaanning, Ann Vanreusel. 2015. “Submarine and deep-sea mine tailing placements: A review of current practices, environmental issues, natural analogs and knowledge gaps in Norway and internationally.” *Marine Pollution Bulletin* 97 (1/2): 13–35.
- Ramnefjell, Geir. 2018. “Fjorden, baby.” *Dagbladet*, March 10, 2018, <https://www.dagbladet.no/kultur/fjorden-baby/69594547>
- Ravna, Øyvind. 2019. *Same- og reindriftsrett*, Oslo: Gyldendal.
- Reinert, Erik. 2012. “Mineraler og rein/ Minerals and Reindeer” *Klassekampen*, October 8, 2012.
- Ringholm, Toril. 2007. “Tverrfaglighet - en eremitt-tilværelse? – om risikoen ved tverrfaglighet.” In *I disiplinenes grenseland - tverrfaglighet i teori og praksis*, edited by Torill Nyseth, Svein Jentoft, Anniken Førde and Jørgen Ole Bærenholdt, 88–100. Bergen: Fagbokforlaget.
- Røyseland, Espen and Øystein Rø (eds). 2009. *Northern Experiments: The Barents Urban Survey*. Oslo: 0047 Press.
- Sámediggi/ the Sámi Parliament. 2015. “Uttalelse til rapport om forenkling av utmarksforvaltningen/ Consultancy Statement to the report on Sim-

- plification of the Land Management of Outlying Fields” 26, 02, 2015. <https://www.regjeringen.no/contentassets/c302636dcd0841e585de3ed-2bdeab67c/sametinget.pdf?uid=Sametinget>
- Sara, Mikkel Nils. 1999. *Reinen – et gode fra vinden, reindriftens tilpassningsformer i Kautokeino/The Reindeer – a blessing from the wind, reindeer husbandry adaptations in Kautokeino*. Guovdageaidnu/ Kautokeino: Davvi Girji.
- Sara, Mikkel Nils. 2003. “Reindriftssamiske verdier.” In *Árvvut/Árvo/Vierhtie/Samiske verdier*, edited by Edel Hætta Eriksen, Árvokommišuvdna/Verdikommisjonen, Kárášjohka/Karasjok: Davvi Girji.
- Sara, Mikkel Nils. 2009. “Siida and Traditional Sámi Reindeer Herding Knowledge.” *The Northern Review* 30, (Spring 2009): 153–178.
- Sara, Mikkel Nils. 2011a. “Land Usage and Siida Autonomy.” *Arctic Review on Law and Politics* 2 (2): 138–158. <https://arcticreview.no/index.php/arctic/article/view/25>
- Sara, Mikkel Nils. 2011b. “Høringsuttalelse angående reguleringsplan med konsekvensutredninger for planlagt gruvedrift i Nussir og Ulveryggen i Kvalsund Kommune/ Consultation statement regarding a zoning plan impact assessment for planned mining operation at Nussir and Wolf Ridge in Kvalsund Municipality”, Letter of September 7 2011.
- Schanche, Audhild. 2002. “Meahcci, den Samiske utmarka/ Meahcci, The Sámi Outfields.” *Samiske Landskap og Agenda 21. Kultur, næring, miljøvern og demokrati/ Sámi Landscapes and Agenda 21, Industry, environmental conservation, and Democracy, Dieđut 1/2002*, edited by In Andersen, Svanhild, 156-170. Guovdageaidnu/ Kautokeino: Sámi Instituhitta/ Nordic Saami Institute.
- Schanche, Audhild. “Horizontal and Vertical Perceptions.” In *Landscape, Law and Customary Rights*, Dieđut 3/2004, edited by Michael Jones and Audhild Schanche, 1-10. Guovdageaidnu/ Kautokeino: Sámi instituhitta/ Nordic Saami Institute.
- Schimanski, Johan, 2018, “Reading the Future North” in *Future North: The Changing Arctic Landscape*. edited by Janike Kampevold Larsen and Peter Hemmersam, 16 - 25. New York: Routledge.

- Scollon, Ron and Suzie Wong Scollon. 2004. *Nexus Analysis: Discourse and the Emerging Internet*. London and New York: Routledge.
- Scott, Felicity. 2016. *Outlaw Territories*, New York: Zone Books.
- Setten, Gunhild. 2006. "Fusion or exclusion? Reflections on the practices of landscape and place in human geography." *Norsk Geografisk Tidsskrift* 60 (1): 32-45.
- Setten, Gunnhild. 2010. "Til fots – et metodeblikk på landskap og praksis/ By Foot, a Methods Gaze on Landscape and Practice." In *Å finne sted – Metodologiske perspektiver i stedsanalysen/ To Find Place, Methodological Perspectives in Place Analysis*, edited by Anniken Førde, Britt Kramvig, Nina Gunnerud, and Britt Dale, 93 - 107. Oslo: Akademika Forlag.
- Sevaldson, Birger. 2010. "Discussions and movements in design research: asystems approach to practice research in design." *FORMakademisk*, 3 (1): 8-35.
- Sheppard, Lola and Mason White. 2017. *Many Norths: Spatial Practice in a Polar Territory*. New York, Barcelona: Actar Publishers.
- Simensen, Trond. blog, accessed November 2015. <http://naturoglandskap.blogspot.no/2013/07/forgreinet-elvelp.html>
- Škarnulytė, Emilija and Busse, Tanya. 2013. *Hollow Earth*. Tromsø Academy of Contemporary Art.
- Škarnulytė, Emilija and Busse, Tanya. 2014. "Hollow Earth - Prospecting for Speculative Pleasure." *Bladet Vesterålen*. Sortland: Nordahls Trykkeri.
- Skogvang, Susann Funderud. 2013. "Legal questions regarding mineral exploration and exploitation in indigenous areas." *Michigan State International Law Review* 22 (1): 321- 344.
- Skålnes, Sunniva. 2003. "Bustad og beiteland – på spor etter faktorar som forma den samiske bustaden på 1990-tallet [Dwelling and pastures - on the track of factors that shaped the Sámi dwelling in the 1990s." Dr.ing Diss. Norwegian University of Science and Technology (NTNU).

- Skålnes Sunniva. 2015. "Ein plass for alle meahcce-tinga – Hagetypar I Kautokeino." In *Hager mot Nord* edited by Ingebjørg Hage, Elin Haugaland and Sveinulf Heggstad, 349-383. Stamsund: Orkana Akademisk Forlag.
- Smith, Linda Tuhiwai. 1999. *Decolonizing Methodologies: Research and Indigenous Peoples*, twelfth impression, 2008. London and New York, and University of Otago Press, Dunedin: Zed Books Ltd.
- Solberg, Erna. 2014. Opening speech "Agenda Nord-Norge", Published 11.11. 2014 at the Norwegian Prime Ministers Office Website at <https://www.regjeringen.no/no/aktuelt/Agenda-Nord-Norge/id2340334/>
- Stahlschmidt, Per, Simon Swaffield, Jørgen Primdahl, and Vibeke Nellemann. 2017. *Landscape analysis: investigating the potentials of space and place*. London: Routledge.
- Steinberg, Philip and Berit Kristoffersen. 2017. 'The ice edge is lost . . . nature moved it': mapping ice as state practice in the Canadian and Norwegian North." *Transactions of the Institute of British Geographers.*, 42 (4). pp. 625-641.
- Stien, Kirsten, Kramvig, Britt and Brox Liabø, Rebekka. 2015. "To be or not to be: når å skrive er å skrive seg inn I fellesskap." In *Metodefestival og øyrblikksrealisme*, edited by Otterstad, Merete and Anne B Reinertsen. Bergen: Fagbokforlaget.
- Storfjell, Troy. 2013. "The Ambivalence of the Wild: Figuring Sápmi and the Sámi in Pre-Colonial and Colonial Dis-course to the Eighteenth Century." In *L'Image du Sápmi. Vol. II. Humanis-tica Oerebroensia. Artes et linguae 16*. edited by Kajsa Andersson, 540 - 575. Örebro: Örebro University Press.
- Storholm Linda. "Nussir har blitt enda større/ Nussir has Become Even Bigger." *Highnorthnews*, September 30, 2014. <http://www.highnorthnews.com/nussir-har-blitt-enda-storre/>
- Storr, Robert. 1994. *Mapping*. The Museum of Modern Art, New York: H.N. Abrams. URL: https://assets.moma.org/documents/moma_catalogue_436_300293631.pdf

- Sundquist, Björn Ilmari Haapala, Jens Morten Hansen, Geir Hestmark, and Sigurdur Steinthorsson (2008) “History of Geology in Norden”, *Episodes* 31 (1): 185-192. <http://www.episodes.co.in/www/backissues/33igc/25-r.pdf>
- Sveen, Erik Hind. 2016. “Reindrifstutøver oppdaget Nussirs oljesøl/ Reindeer herder detects Nussir’s Oil Spill.” May 6, 2016. <https://www.nrk.no/finnmark/reindrifstutøver-oppdaget-nussirs-oljesol-1.12934193>
- Sveriges Televisjon, 2017, *Samernas tid/ Time of the Sámi, episode 3*.
- Thorén, Kine Halvorsen and Karsten Jørgensen. “European Landscape Convention Today.” In *Mainstreaming Landscape through the European Landscape Convention*, edited by Karsten Jørgensen, Morten Clementsen, Kine Halvorsen Thorén, and Tim Richardson, 141-148. London and New York: Routledge, 2016.
- Torgersen, Espen, Giulio Viola and Jan Sverre Sandstad. 2015. “Revised structure and stratigraphy of the northwestern Repparfjord Tectonic Window, northern Norway.” *Norwegian Journal of Geology* 95 (3/4): 397-422. <http://dx.doi.org/10.17850/njg95-3-06>
- Tsing, Anna Lowenhaupt. 2013. “More-Than-Human-Sociality, A call for Critical Description.” In *Anthropology and Nature*, edited by Kirsten Hastrup, 27-42. London: Routledge.
- Tsing, Anna Lowenhaupt, Heather Swanson, Elaine Gan and Nils Bubandt. 2017. *Arts of Living on a Damaged Planet*. USA: University of Minnesota Press.
- Tsing, Anna Lowenhaupt. 2012. “On Nonscalability: The Living World is not Amenable to Precision-Nested Scales.” *Common Knowledge* 18 (3): 505-524.
- Turi, Ellen Inga. 2013, “Challenges of Arctic Transformations for Reindeer Pastoralism.” *Northern Findings*, Tromsø, unpublished.
- Turi, Ellen Inga and Inger Marie Gaup Eira 2016. “Bruk av tradisjonell kunnskap i miljø- og arealforvaltning i Norge/ Use of traditional knowledge in environmental and area management in Norway”. In *Perspektiver til fremtidig areal- og miljøpolitikk i Sápmi/ Perspectives*

for Future Area and Environmental Policy in Sápmi, edited by Ellen Inga Turi and Inger Marie Gaup Eira. Alta: Bjørkmanns. 97-113.

- Turi, Johan. 2012. *An Account of the Sámi*, (original title, 1910: *Muitalus Samiid birra*). Kárášjohka/ Karasjok: ČálliidLágádus.
- Turnbull, David. 2007. "Maps Narratives and Trails: Performativity, Hodology and Distributed Knowledges in Complex Adaptive Systems – an Approach to Emergent Mapping." *Geographical Research* 45(2):140–149. doi.org/10.1111/j.1745-5871.2007.00447.x
- Turpin, Etienne (ed). 2013. *Architecture in the Anthropocene Encounters Among Design, Deep Time, Science and Philosophy, First edition*. Open Humanities Press. URL: <http://dx.doi.org/10.3998/ohp.12527215.0001.001>
- UD. 2011. Meld. St. 7 (2011–2012) Nordområdene: Tilråding fra Utenriksdepartementet 18. november 2011, godkjent i statsråd samme dag. (Regjeringen Stoltenberg II)/ Meld. St. 7 (2011–2012) The High North: Recommendation from the Ministry of Foreign Affairs 18 November 2011, approved by the Council of Ministers on the same day. (Stoltenberg II Government)
- Uhre, Kjerstin. 2014. "Ambassadør for det ufødte liv." *Tidsskrift for Jordmødre* 120 (7): 12-17.
- Uhre, Kjerstin, 2015 "Sápmi and the Fennoscandian Shield, On and Off the Map." In *The Postcolonial Arctic*, edited by Graham Huggan and Roger Norum. Special issue of *Moving Worlds*, 15 (2) 81-92.
- Uhre, Kjerstin and Knut Eirik Dahl. 2017. "Envisioning dialogues of new urban landscapes in Nuuk." In *Creative Approaches to Planning and Local Development. Insights from Small and Medium-Sized Towns in Europe*, edited by Abdelillah Hamdouch, Torill Nyseth, Christophe Demazière, Anniken Førde, José Serrano and Nils Årseter. New York: Routledge.
- Uhre, Kjerstin. 2018. "The Perforated Landscape." In *Future North: The Changing Arctic Landscape*, edited by Janike Kampevold Larsen and Peter Hemmersam, 142-164. New York: Routledge.

- United Nations. 1966. *Convention on Civil and Political rights*, <http://www.ohchr.org/en/professionalinterest/pages/ccpr.aspx>
- Vermes, Thomas. 2016. “Stort arkitekturprosjekt avdekker gruveindustriens nye makt/A Big Architecture Project Reveals the New Power of the Mining Industry.” *ABC Nyheter*, April 12, 2012. <http://www.abcnyheter.no/nyheter/2012/04/12/149381/stort-arkitekturprosjekt-avdekker-gruveindustriens-nye-makt>
- Vidal, John. 2014. “Conservationists slam plans to dump mining waste into Norwegian fjord” *The Guardian*, November 19, 2014. <http://www.theguardian.com/environment/2014/nov/19/conservationists-slam-plans-to-dump-mining-waste-into-norwegian-fjord>
- Viklund, Urban. 2016. “Kvarglömde jærnrør vid gamla borrhål läcker/ Left-behind Iron Tubes by Old Drillholes are Leaking.” *Lokaltidningen Vilhelmina*, April 13, 2016.
- Vistnes, Ingunn, Philip Burgess, Svein D. Mathiesen, Christian Nellemann, Anders Oskal, and Johan Mathis Turi. 2009. “Reindeer Husbandry and Barents 2030. Impacts of Future Petroleum Development on Reindeer Husbandry in the Barents Region. Report for Statoil Hydro Barents 2030 Scenario Programme. International Centre for Reindeer Husbandry Report 1:2009. Alta: Fagtrykk Idé AS.
- Vistnes, Ingunn Ims and Christian Nelleman. 2011. “Foreslått utbygging av Nussir gruver i reinbeitedistrikt 22 Fiettar –Konsekvenser for reindriften i 22 Fiettar og 20 Fálá / Proposed Development of Nussir mines in reindeer grazing district 22 Fiettar –impact on reindeer pastoralism in 22 Fiettar and 20 Fálá.” *Norut Report 2011: 2. Áltá*.
- Vogt, Craig. 2014. “International Assessment of Marine and Riverine Disposal of Mine Tailings Study commissioned by the Office for the London Convention and Protocol and Ocean Affairs, IMO, in collaboration with the United Nations Environment Programme (UNEP) Global Programme of Action” URL: <http://www.imo.org/en/OurWork/Environment/LCLP/newandemergingissues/Documents/Mine%20Tailings%20Marine%20and%20Riverine%20Disposal%20Final%20for%20Web.pdf>

- Wilson, Emma and Florian Stammler. 2016. "Beyond extractivism and alternative cosmologies: Arctic Communities and extractive industries in uncertain times." in *The Extractive Industries and Society* 3 (1) 1–8.
- Winge, Nikolai Kristoffersen. 2013. *Kampen om arealene. Rettslige styringsmidler for en helhetlig utmarksforvaltning (The Battle for Land. Legal steering resources for a comprehensive management of outlying fields)*. Oslo: Universitetsforlaget.
- Winge, Nikolai Kristoffersen and Eva Falleth. 2014. "Forenkling av utmarksforvaltningen /Simplification of land management of outlying fields." <https://nmbu.brage.unit.no/nmbu-xmlui/handle/11250/278507>
- Willumsen, Liv Helene. 2019. "De ti vanskeligste trolldomsprosessene i nord." *Arkivverket*, 15.8.2019. <https://www.arkivverket.no/utforsk-arkivene/eldre-historie--1814/de-ti-vanskeligste-trolldomsprosessene-i-nord?fbclid=IwAR2hlxwalmDtJewS6DwCunOnNFseLcUvo0yjBpa48hrSIRbZQqgh-hNMX4g>
- Wood, Denis, with John Fels, and John Krygier. 2010. *The Power of Maps*, New York: The Guilford Press.

Kjerstin Elisabeth Uhre

THE PERFORATED LANDSCAPE

A study on contested prospects in Sápmi

Mineral prospecting perforate landscapes both physically and discursively. Bringing landscape theory in conversation with critical cartography this monograph emphasis the landscape dimension in interrelated research fields discussing indigenous livelihoods, land rights and environmental governance. Methodologically the thesis adapts a counter prospective approach with an interactive movement back and forth between ethnography inspired field studies and multimodal discourse analysis.

The empirical study follows the Nussir copper mine prospect in West Finnmark from being an anticipated showcase in the Norwegian strategy for the mining industry, via drilling campaigns in reindeer calving grounds, to the environmental controversy of using Reppafjorden/ Riehpovuotna as a mining waste deposit. The author's encounters with Sámi reindeer pastoralists in the everyday landscapes of the Fiettar reindeer grazing district, mining prospectors, environmentalists, coastal fishers and residents are described as a learning experience in the Sámi outfield – the *meahcci*.

Perforated landscapes draw attention to their own futures. Discussing the hegemony of mineral and energy prospecting politically and in the public discourse, the thesis calls for prospective responsibility in landscape architecture to counteract the exclusion of Indigenous peoples' landscape relations in landscape management and design.

Kjerstin Elisabeth Uhre is an assistant professor in the Master Program of Landscape Architecture at UiT the Arctic University of Norway. She graduated from the Bergen School of Architecture in 1994 and has studied Philosophy at the University in Bergen. She is a partner in Dahl & Uhre architects in Tromsø/Romsa. The practice has been awarded for their cooperative works in the conjunction between architecture, urbanism and participatory planning. Arctic policies in Norway and Fennoscandia facilitating for extractive industries that perforate landscapes motivated her study on contested prospects and outfield practices.

ISBN 978-82-547-0337-3
ISSN 1502-217X