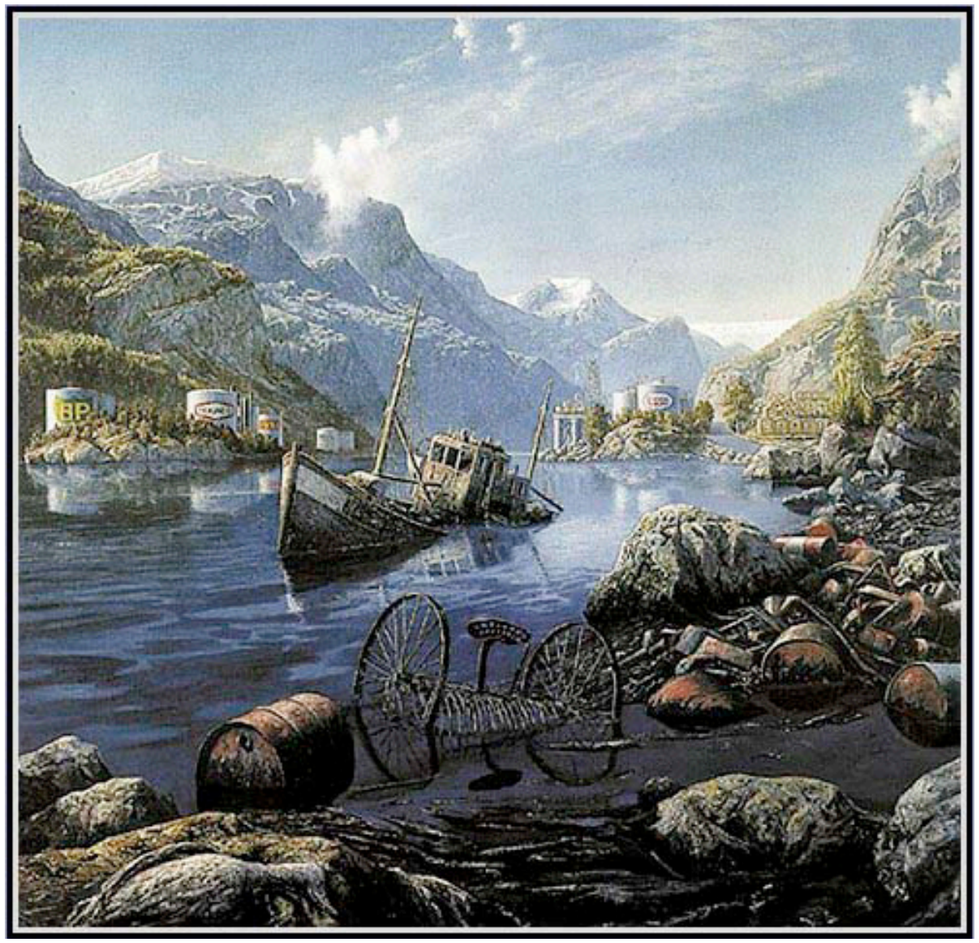
The Wildcards

Transforming (post) oil landscapes

THE OIL LANDSCAPE



Rolf Groven
“Oil painting”
1975

Adolf Tideman og Hans Gude
The Bridal Procession in Hardanger;
1848

Adolf Dehl
Oil wells in Lake Maracaibo, Venezuela
1944

Shipyards

Kværner Verdal
Nearest city: Levanger
Shipyard/Base

63°47’12.60”N 11°27’0.37”E

Shipyards

Kværner Verdal
Nearest city: Levanger
Shipyard/Base

63°47’12.60”N 11°27’0.37”E

Bases

Nordsea, Risavika
Nearest city: Sola
Base

58°55’50.16”N 5°35’25.66”E

Shipyards

Kværner Verdal
Nearest city: Levanger
Shipyard/Base

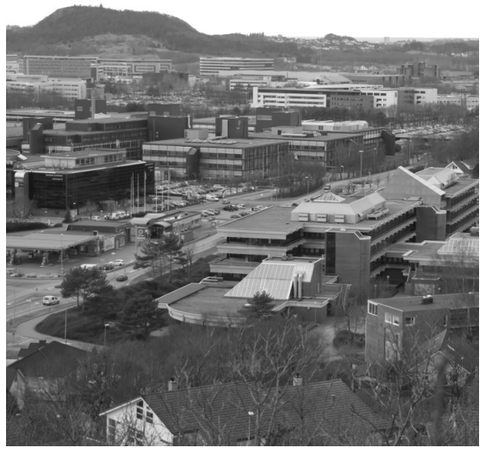
63°47’12.60”N 11°27’0.37”E

Bases

Nordsea, Risavika
Nearest city: Sola
Base

58°55’50.16”N 5°35’25.66”E

Business districts



Stjørdal
Nearest big city: Trondheim
Business district

63°28’38.05”N 10°53’24.45”E

Shipyards

Kværner Verdal
Nearest city: Levanger
Shipyard/Base

63°47’12.60”N 11°27’0.37”E

Bases

Nordsea, Risavika
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Base

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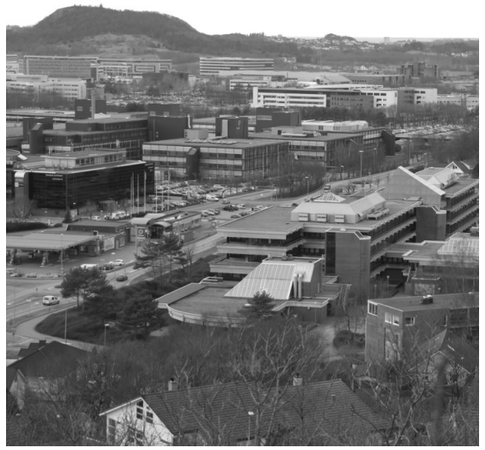
Business districts



Stjørdal
Nearest big city: Trondheim
Business district

63°28’38.05”N 10°53’24.45”E

Refineries

Kårstø, Tysvær
Nearest city: Haugesund
Refinery

59°16’30.25”N 5° 30’51.63”E

	Oil city	OIL BASE	OIL COMPANIES AND ORG.	SHIPYARD AND SUPPLY INDUSTRY	REFINERY	INTERNATIONAL NETWORK TO OIL CITIES	CENTRAL CONTROL	PETROLEUM EDUCATION SCIENTIFIC - RESEARCH
1.	STAVANGER	+	+	+	+	+	+	+
2.	OSLO		+	+			+	+
3.	BERGEN	+	+	+	+			+
4.	TRONDHEIM / STJØRDAL		+	+				+
5.	KRISTIANSUND	+	+	+	+			
6.	HARSTAD		+	+			+	
7.	HAMMERFEST	+	+	+	+			
8.	KONGSBERG			+				
9.	KRISTIANSAND			+				
10.	FLORØ	+	+	+				+

LEGEND

WILDERNESS WITHOUT MAJOR INFRASTRUCTURE DEVELOPMENT

Untouched Wilderness

U.W ZONE 1. 3-5 KM

U.W ZONE 2. 1-3KM

OFFSHORE

1 Quadrant 12 Blocks

Petroleum reservoirs Oil, gas and condensat

Pipe lines: Oil, gas and condensat

ONSHORE

Oil City

Base

Refinery

Shipyard

Climate zones From mild to harsh

Zone 1 - 3

Apple
Pear
Plum
Grapes

Temperature change by 2100 Increase 2,0 - 2,5º RCP 4.5 values (B2)

Growing season by 2100 Increase 30-60 days RCP 4.5 values (B2)

Sources:
Maps and GIS:
- Wilderness without major infrastructure development: *http://www.miljødirektoratet.no/no/Tema/Miljoovervakning/Inngrepsfrie-naturomrader-i-Norge-/Fylkeskart/*
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- Temperature projections 2100: *http://www.miljostatus.no/kart/*
- Increasing growing seasons: *http://www.miljostatus.no/tema/klima/klimainorge/klimainorge-2100/*

Litterature and diagram:
- Gjerde, K. Ø, *Oljebyer i Norge in Norsk Oljemuseum Årbok 2011, (2011) http://www.norskolje.museum.no/wp-content/uploads/2016/02/3398_426a5f5a6f2a43d2ad6fde43ec5814c4.pdf*
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0 100 200 Km

1 : 3 900 000

The Oil Landscape of Norway

0°0'0"

58°0'0"

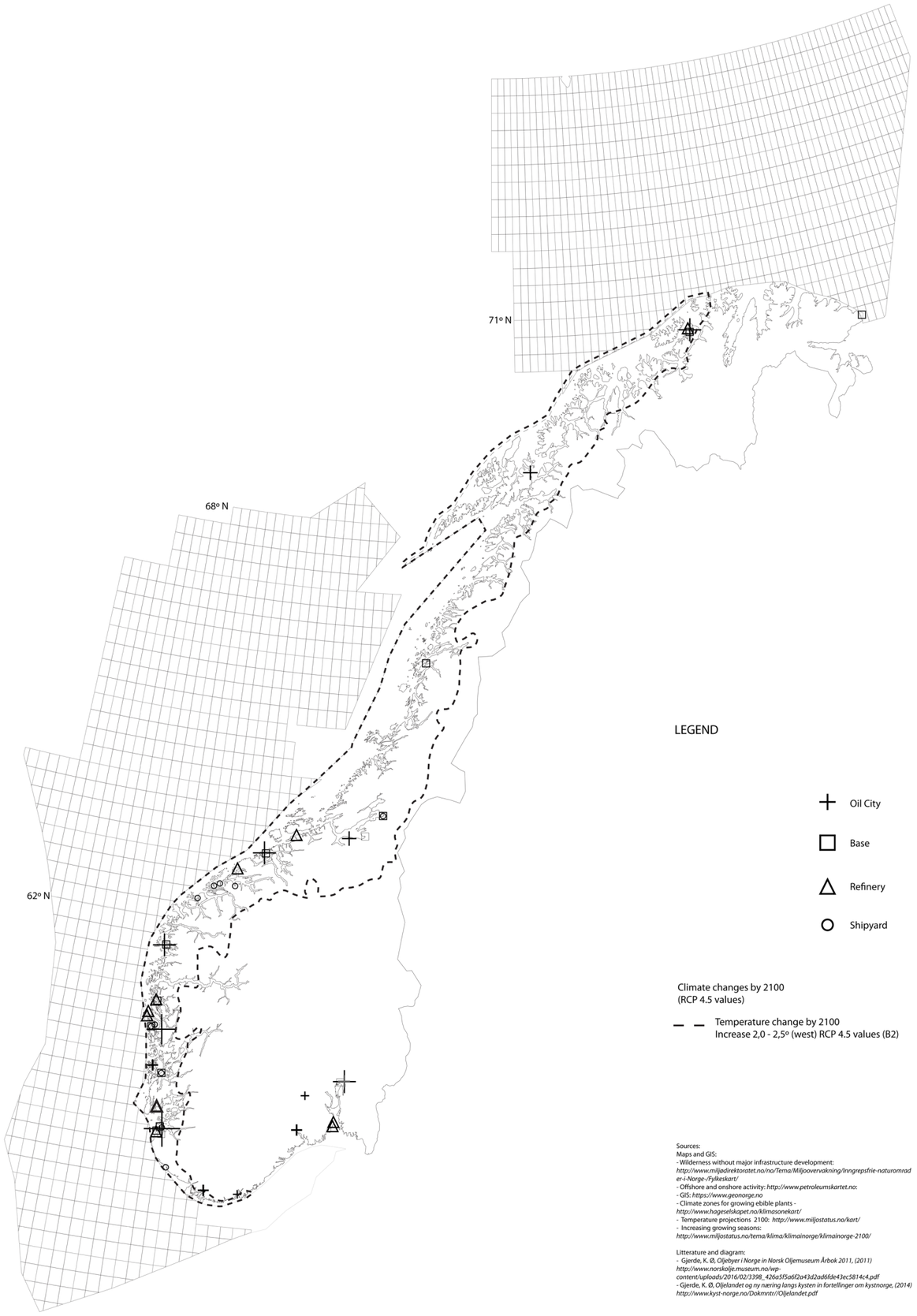
KÅRSTØ
59°16'30.25"N 5°30'51.63"E

EUROPE

1:30 000 000

NATIONAL PROJECTIONS ON GLOBAL WARMING
by 2100

Source: The State of Environment Norway/
The Norwegian Environmental Agency



LEGEND

- Oil City
- Base
- Refinery
- Shipyard

Climate changes by 2100
(RCP 4.5 values)

Temperature change by 2100
Increase 2,0 - 2,5° (west) RCP 4.5 values (B2)

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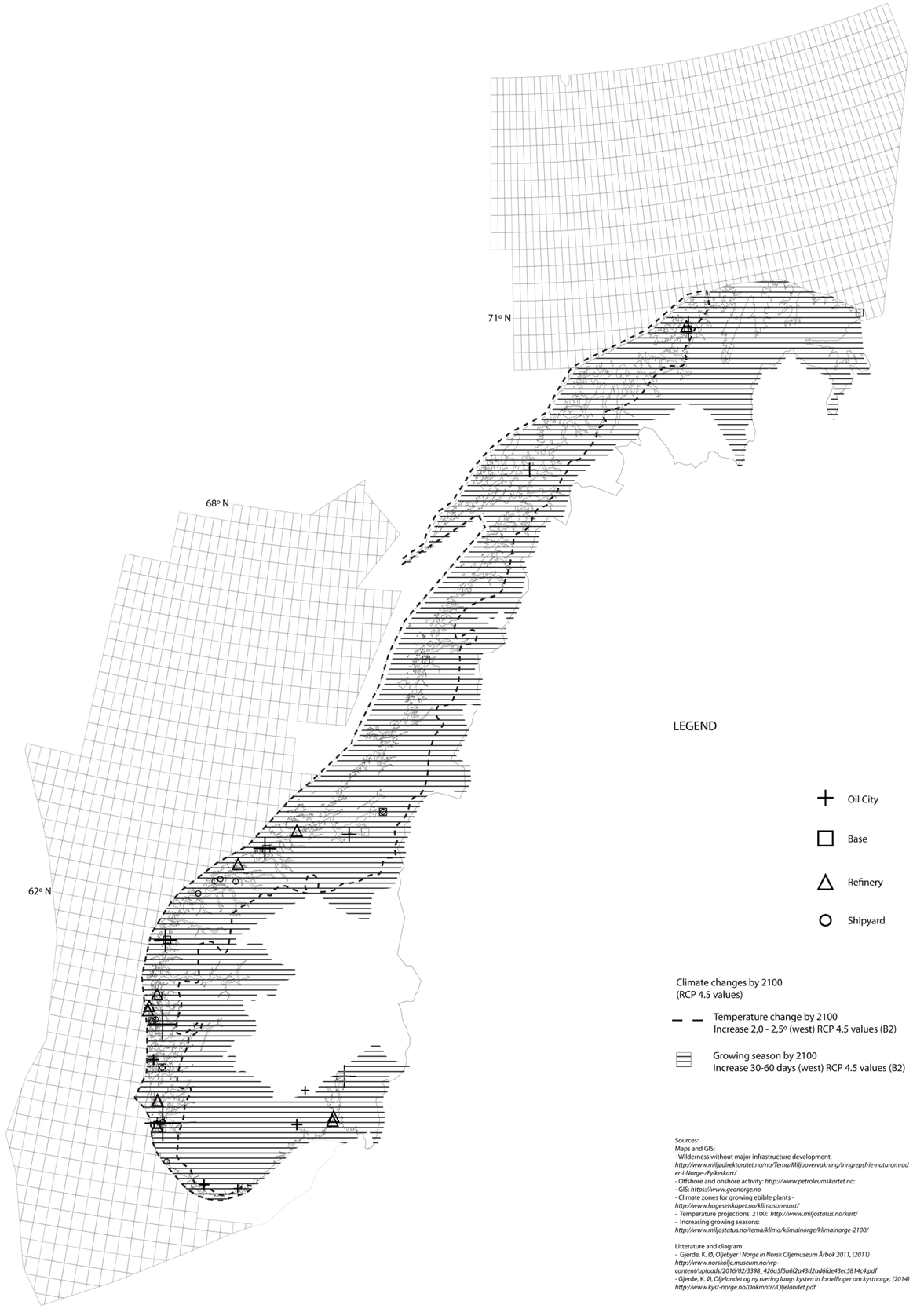
0 100 200 Km 1 : 3 900 000

Climate zones and climate change



LEGEND

- Oil City
- Base
- Refinery
- Shipyard

Climate changes by 2100
(RCP 4.5 values)

Temperature change by 2100
Increase 2,0 - 2,5° (west) RCP 4.5 values (B2)

Growing season by 2100
Increase 30-60 days (west) RCP 4.5 values (B2)

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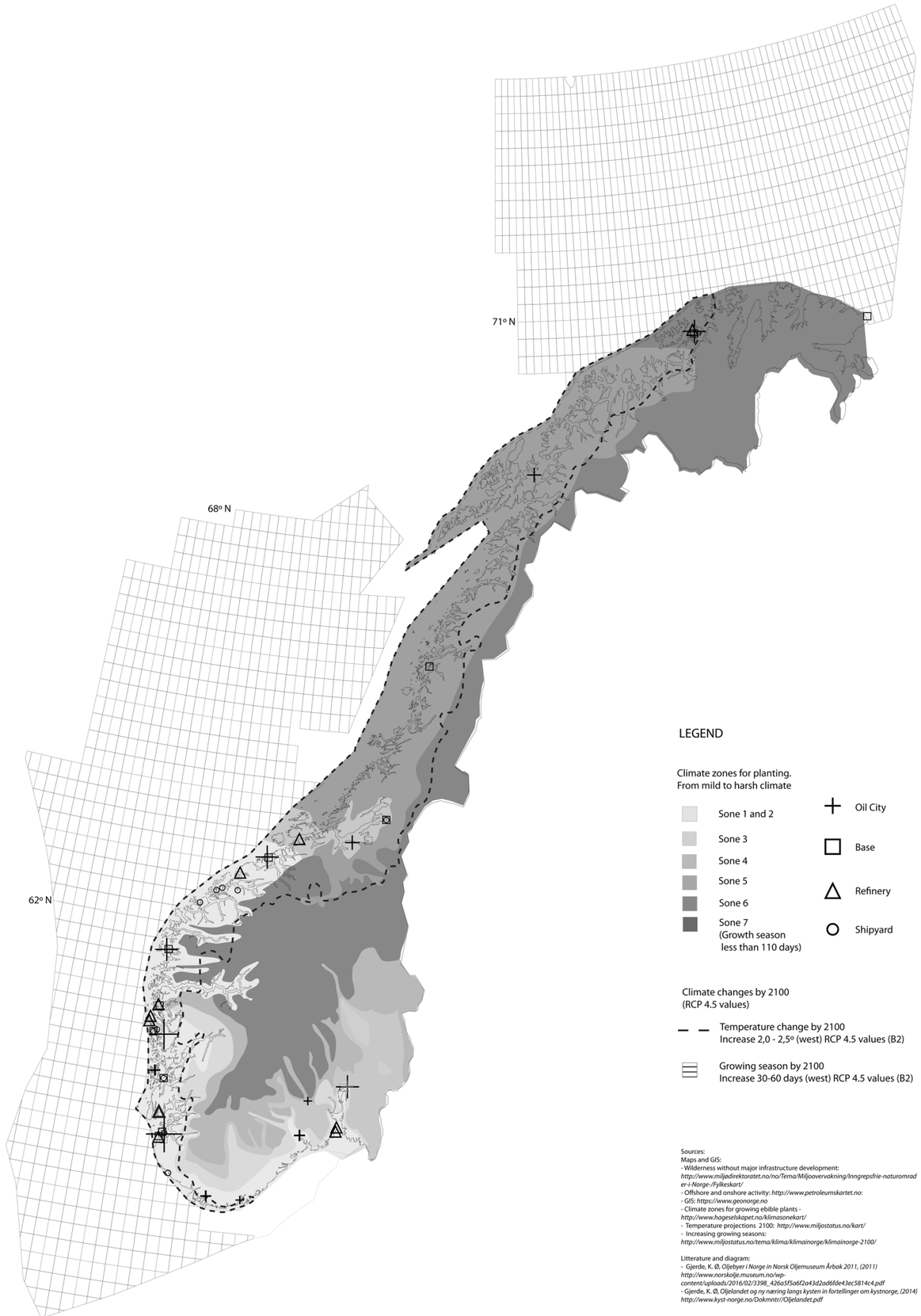
http://www.kyst-norge.no/Dokmntr/Oljelandet.pdf

Climate zones and climate change

0 100 200 Km

1 : 3 900 000



LEGEND

Climate zones for planting.
From mild to harsh climate

- Sone 1 and 2
- Sone 3
- Sone 4
- Sone 5
- Sone 6
- Sone 7 (Growth season less than 110 days)

- Oil City
- Base
- Refinery
- Shipyard

Climate changes by 2100
(RCP 4.5 values)

- Temperature change by 2100
  Increase 2,0 - 2,5° (west) RCP 4.5 values (B2)
- Growing season by 2100
  Increase 30-60 days (west) RCP 4.5 values (B2)

Sources:
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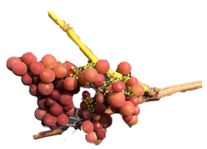
0 100 200 Km

1 : 3 900 000

Climate zones and climate change

0°0'0"

58°0'0"



GRAPE

PEACH

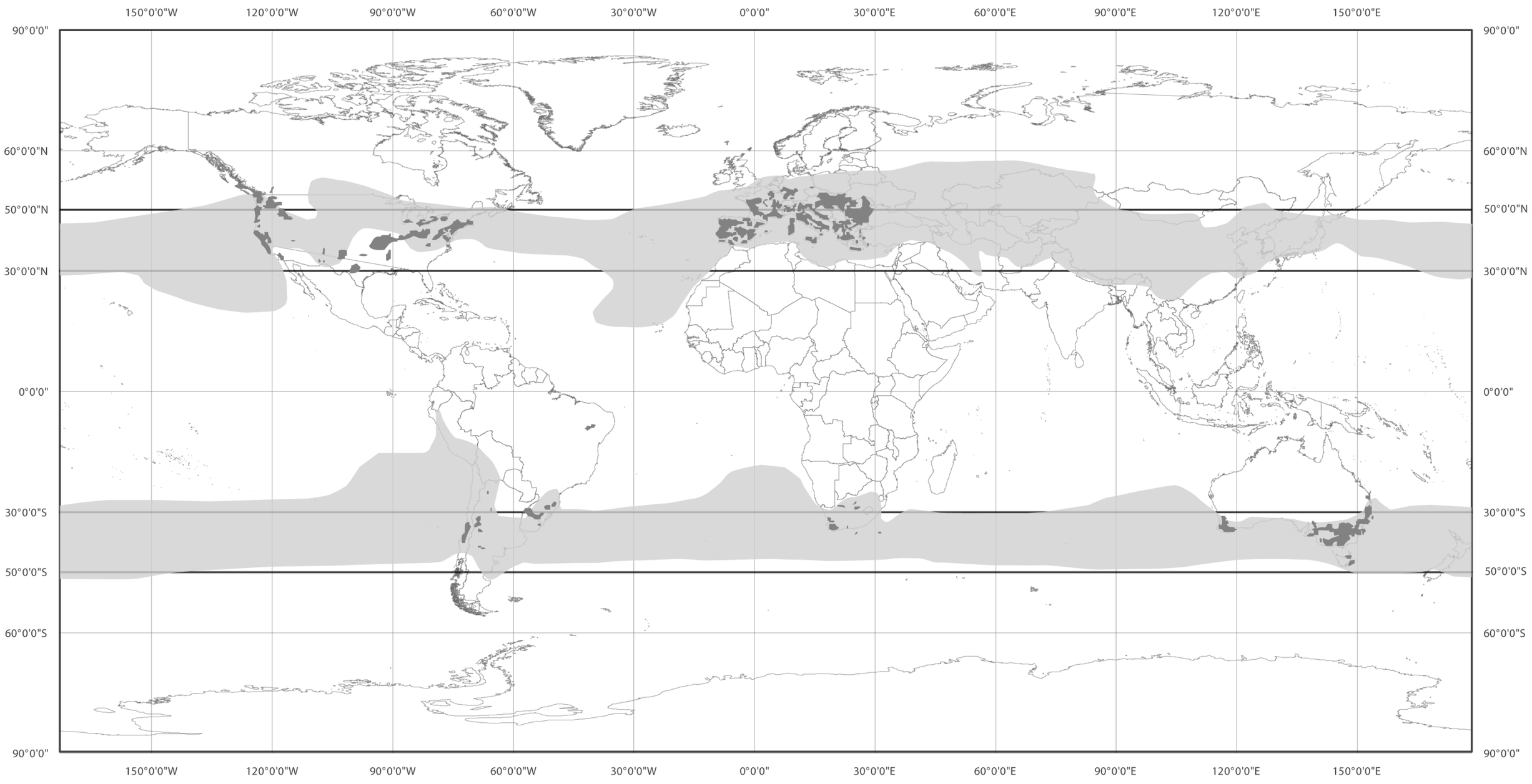
APRICOT

EUROPE

1:30 000 000

GLOBAL PROJECTIONS ON GLOBAL WARMING
by 2100

Source: United States Environmental Protection Agency
and IPCC



Changing suitability for grape production

0 375 750 1 500 2 250 3 000 Miles

1:150 000 000

Longitudinal "sweet spot" moves latitudinal towards the poles.

Wine producing regions

2000

12-22 % Growing Season Isotherms
Northern Hemisphere Apr. - Oct.
Southern Hemisphere Oct. - Apr.

Source map and figures: http://www.academicwino.com/2015/06/climate-change-global-wine-industry-somm-journal.html/
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doi:10.1073/pnas.1210127110

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California	−60 (−42, −55, −66, −73)	29.8 (2.8)	10 (2, 5, 11, 27)
Chile	−25 (0, −17, −29, −55)	0.8 (0.05)	0 (−38, −25, 38, 50)
Mediterranean Europe	−68 (−39, −61, −78, −86)	2.4 (1.8)	342 (125, 263, 392, 525)
Cape floristic region	−51 (−41, −44, −54, −66)	46.0 (2.5)	14 (9, 11, 15, 19)
Australia (Med)	−73 (−61, −67, −76, −87)	44.0 (15.1)	−5 (−16, −8, 0, 6)
Australia (non-Med)	−22 (−15, −19, −23, −31)	40.9 (13.8)	2 (0, 2, 5, 11)
Northern Europe	99 (58, 83, 118, 149)	1.1 (2.5)	191 (−10, 10, 291, 618)
New Zealand	168 (104, 124, 216, 264)	6.6 (0.1)	126 (98, 103, 152, 174)
Western North America	231 (96, 201, 259, 338)	44.1 (4.9)	16 (2, 12, 23, 28)

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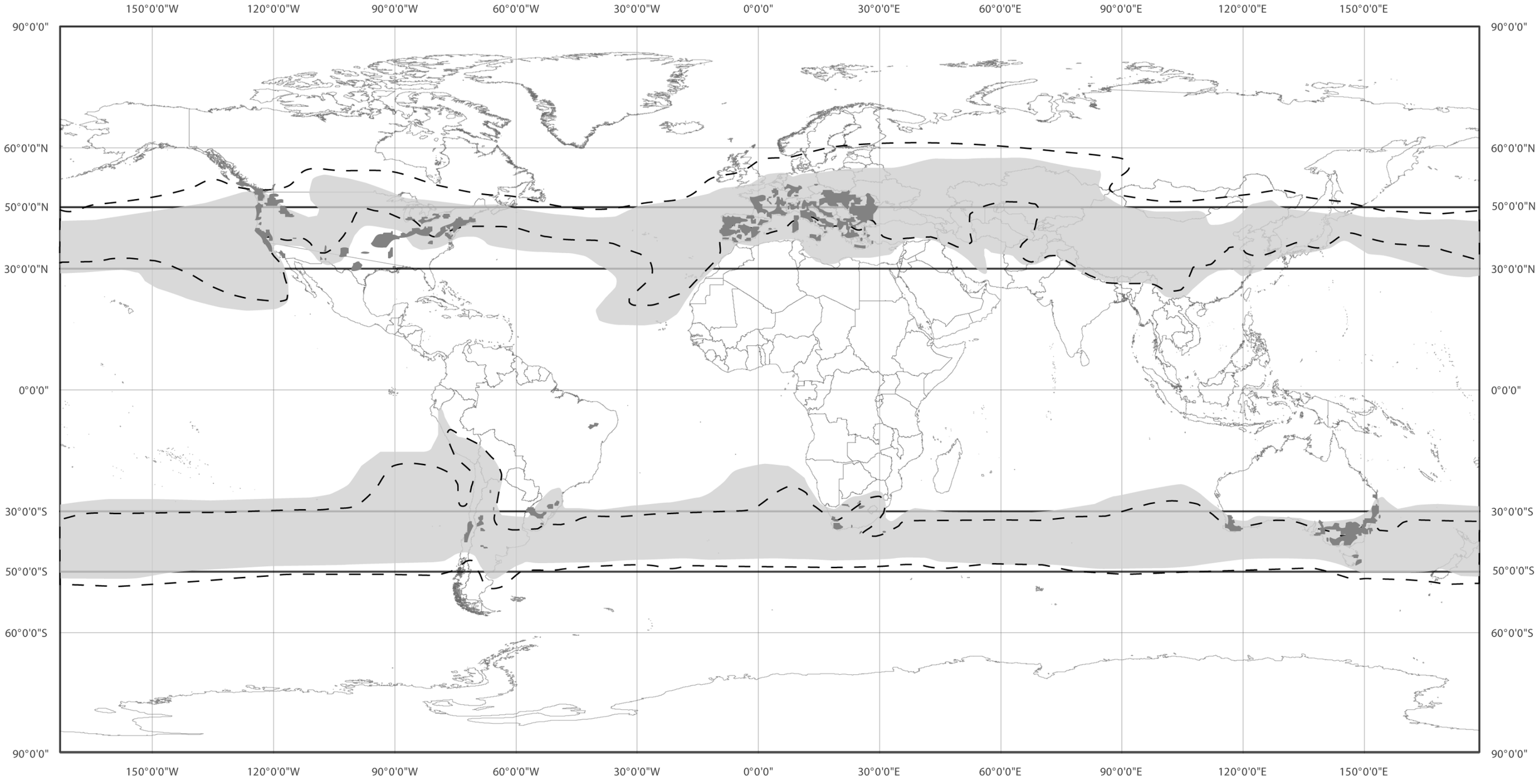

Changing suitability for grape production

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1:150 000 000

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2100

2000

Wine producing regions

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Southern Hemisphere Oct. - Apr.

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Mediterranean Europe	−68 (−39, −61, −78, −86)	2.4 (1.8)	342 (125, 263, 392, 525)
Cape floristic region	−51 (−41, −44, −54, −66)	46.0 (2.5)	14 (9, 11, 15, 19)
Australia (Med)	−73 (−61, −67, −76, −87)	44.0 (15.1)	−5 (−16, −8, 0, 6)
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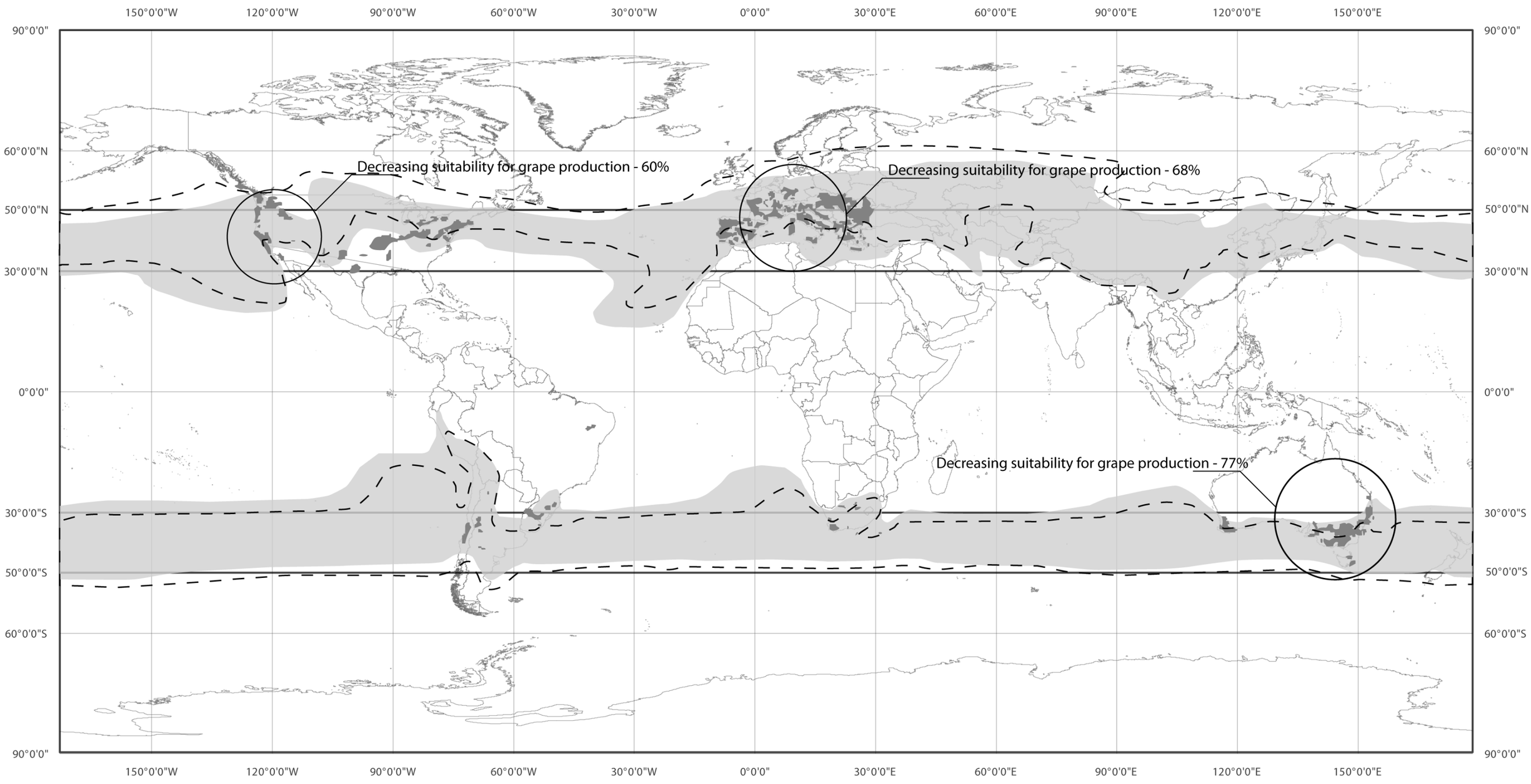

Changing suitability for grape production

0 375 750 1 500 2 250 3 000 Miles

1:150 000 000

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- 2100
- 2000

12-22 % Growing Season Isotherms
Northern Hemisphere Apr. - Oct.
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Wine producing regions

Regions loosing grape production due to global warming
- Burgund and Alsace (France), Oregon, Napa and Santa Barbara (US)

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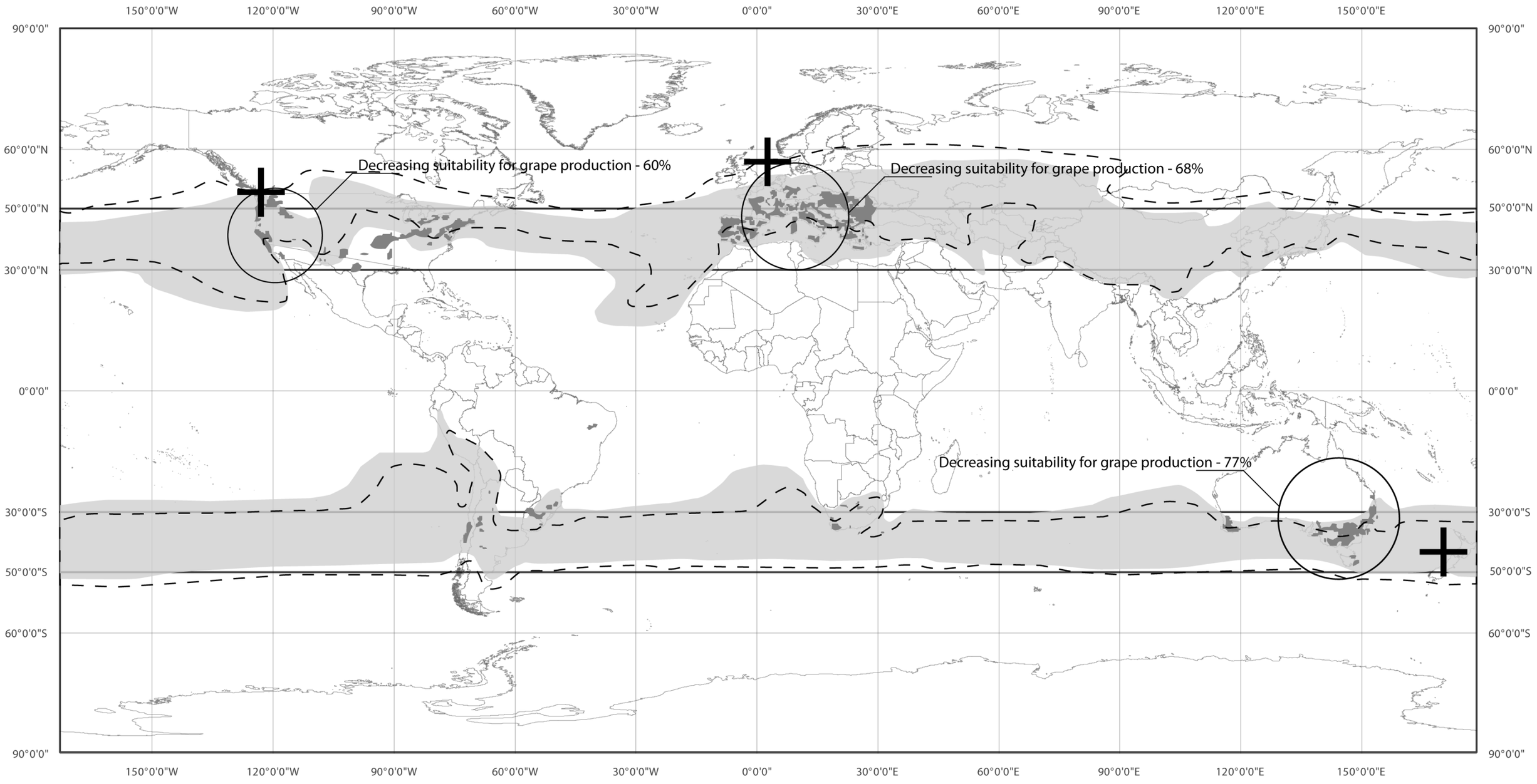

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New suitable regions for wine production, North European - (England, Denmark, Sweden), New Zealand and Western North America

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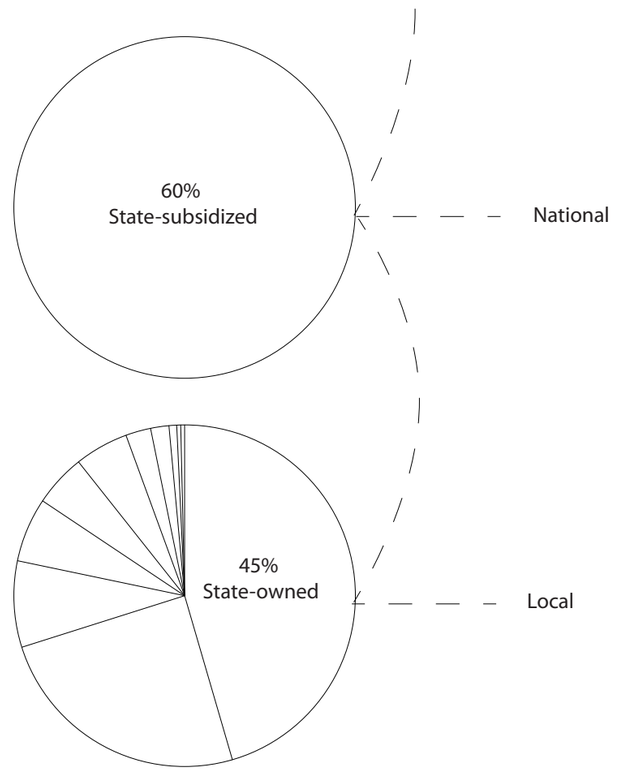
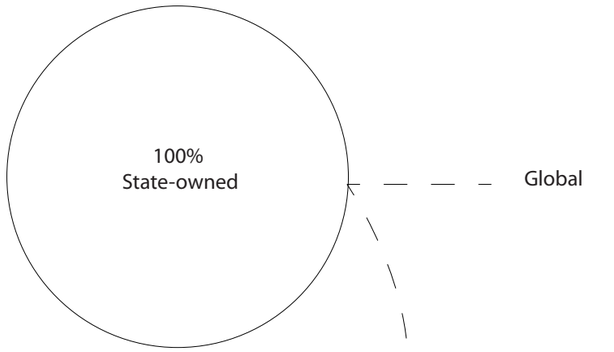
Photo: Øyvind Sætre/Gassco

The Norwegian Farmer
Agricultural support:
60% of the farmers income is
state subsidized.
(https://data.oecd.org/agrpolicy/agricultural-support.htm)



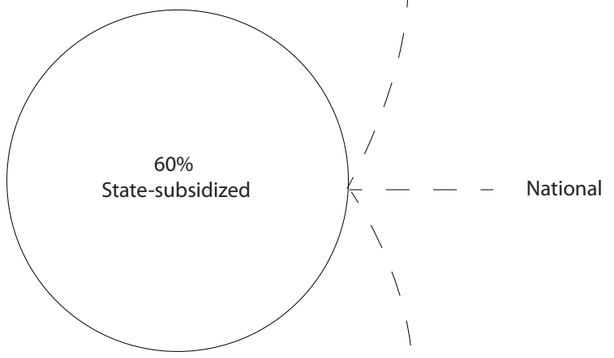
Kårstø refinery
The state has since 2003 been the
largest owner of Kårstø, with assets
of 45%.

Vinmonopolet
Import and distribution.
Vinmonopolet has since 1939 been a state-owned entriprice. Vinmonopolet have the exclusive rights to retail sales of wine, spirits and strong beer.
Purchase margin tax:
Strong beer: 74% tax
Wine: 79% tax
Spirits: 89% tax
(https://snl.no/AS_Vinmonopolet)



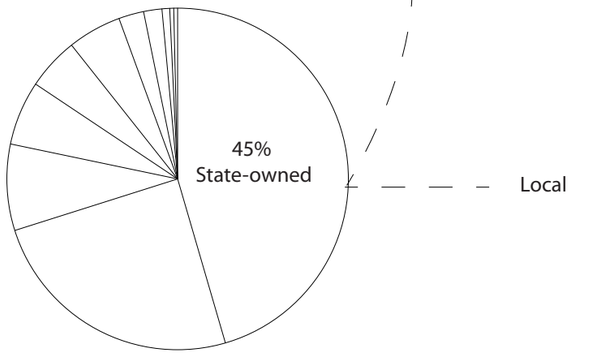
Global

The Norwegian Farmer
Agricultural support:
60% of the farmers income is state subsidized.
(https://data.oecd.org/agrpolicy/agricultural-support.htm)



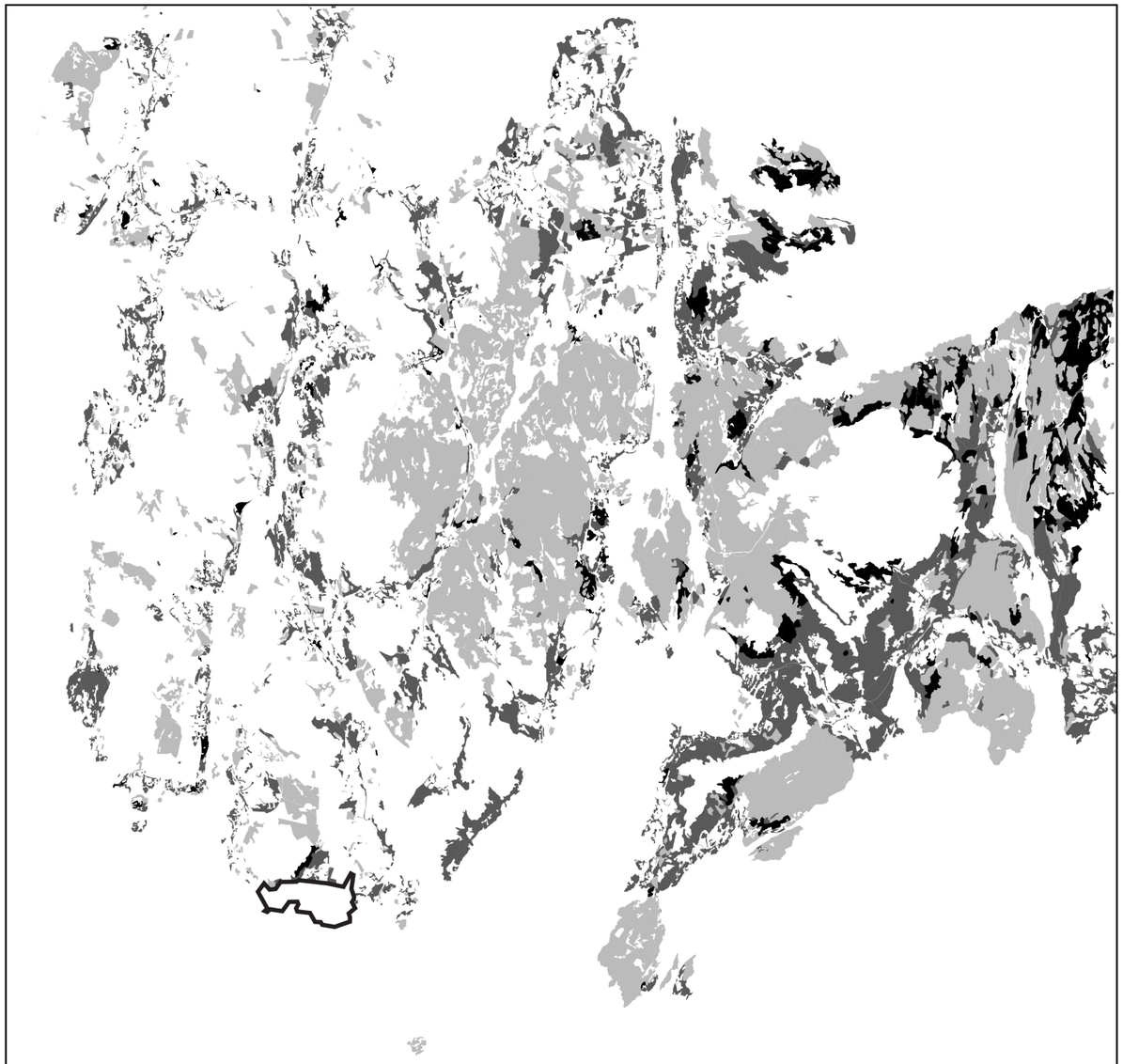
National

Kårstø refinery
The state has since 2003 been the largest owner of Kårstø, with assets of 45%.



Local

THE HINTERLAND



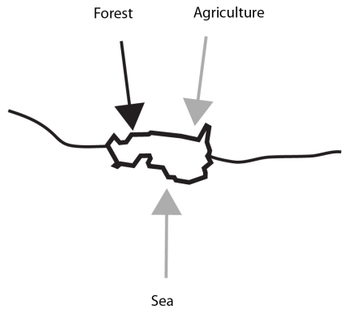
1:100 000

0 2,5 5 7,5 10 km

Temperate coastal mixed forest

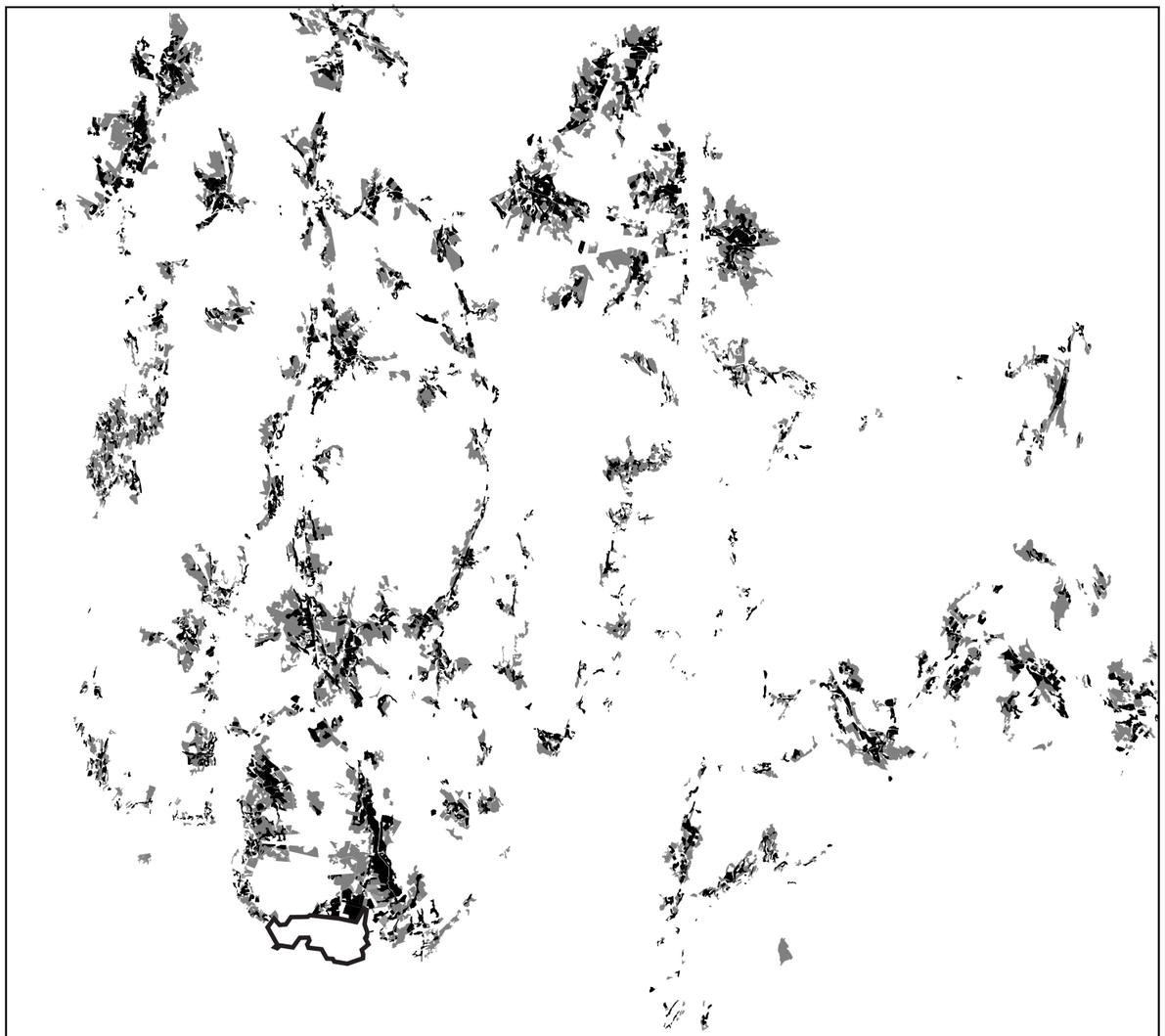
Legend

- Coniferous
- Broadleaved
- Mixed forest



Kårstø
176 ha
59°16′30.25″N 5°30′51.63″Ø

Source: GIS, https://www.geonorge.no



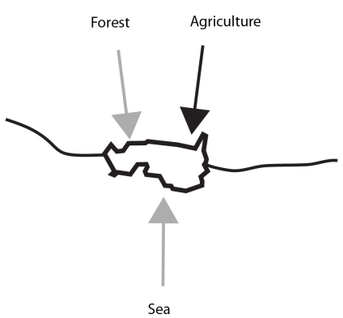
1:100 000

0 2,5 5 7,5 10 km

Agriculture

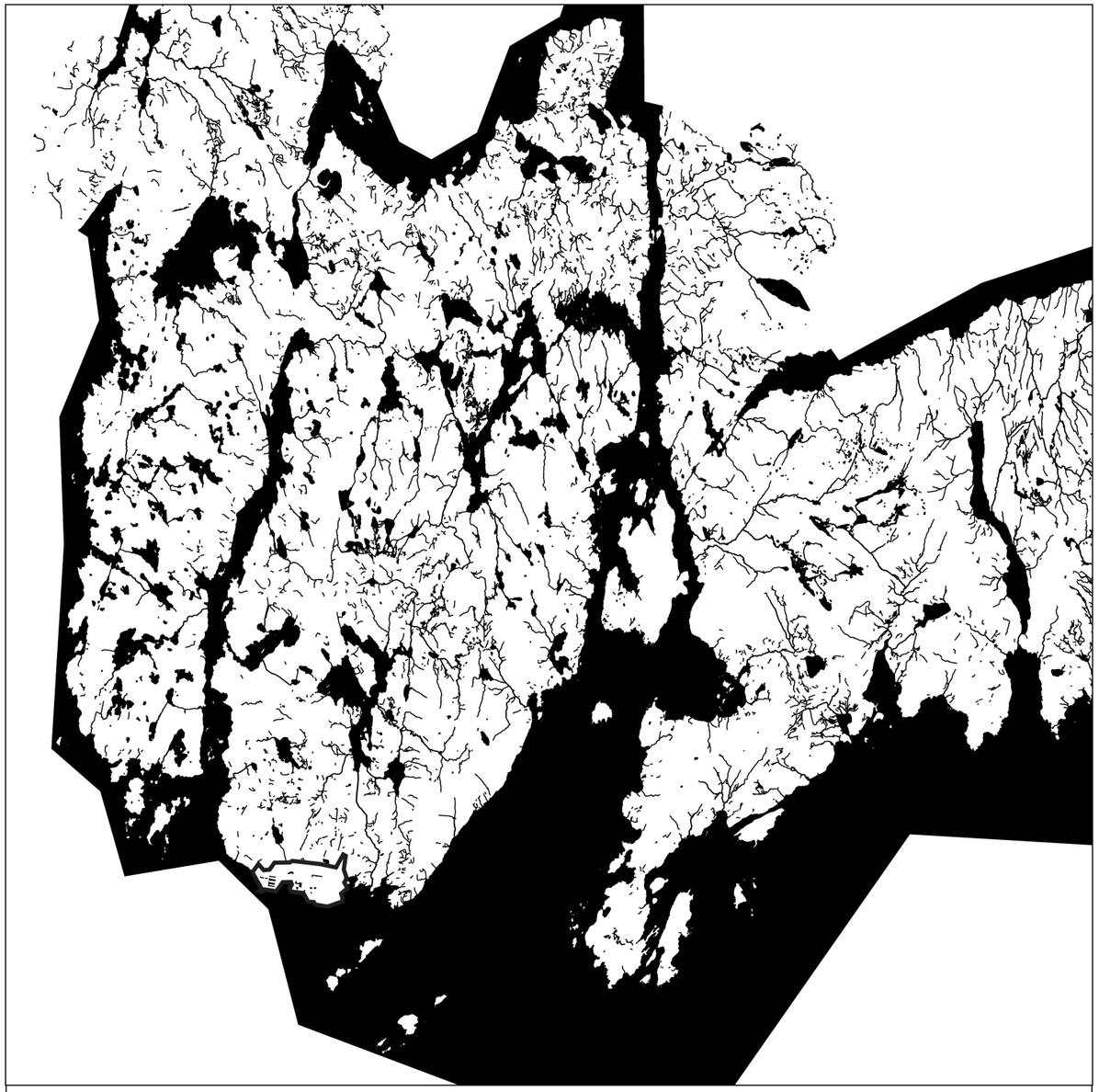
Legend

- Agricultural field crops or meadow
- Pastures (mechanical harvesting)
- Pastures (no mechanical harvesting)



Kårstø
176 ha
59°16′30.25″N 5°30′51.63″Ø

Source: GIS, https://www.geonorge.no



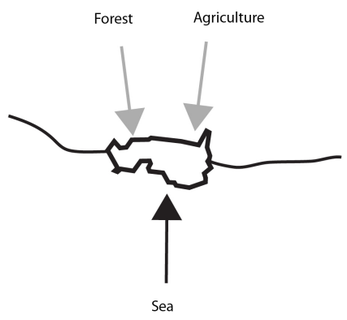
1:100 000

0 2,5 5 7,5 10 km

Water

Legend

Water



Kårstø
176 ha
59°16'30.25"N 5°30'51.63"Ø

Source: GIS, https://www.geonorge.no

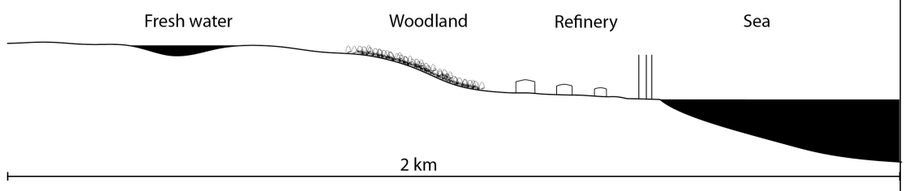
1:100 000

0 2,5 5 7,5 10 km

Topography

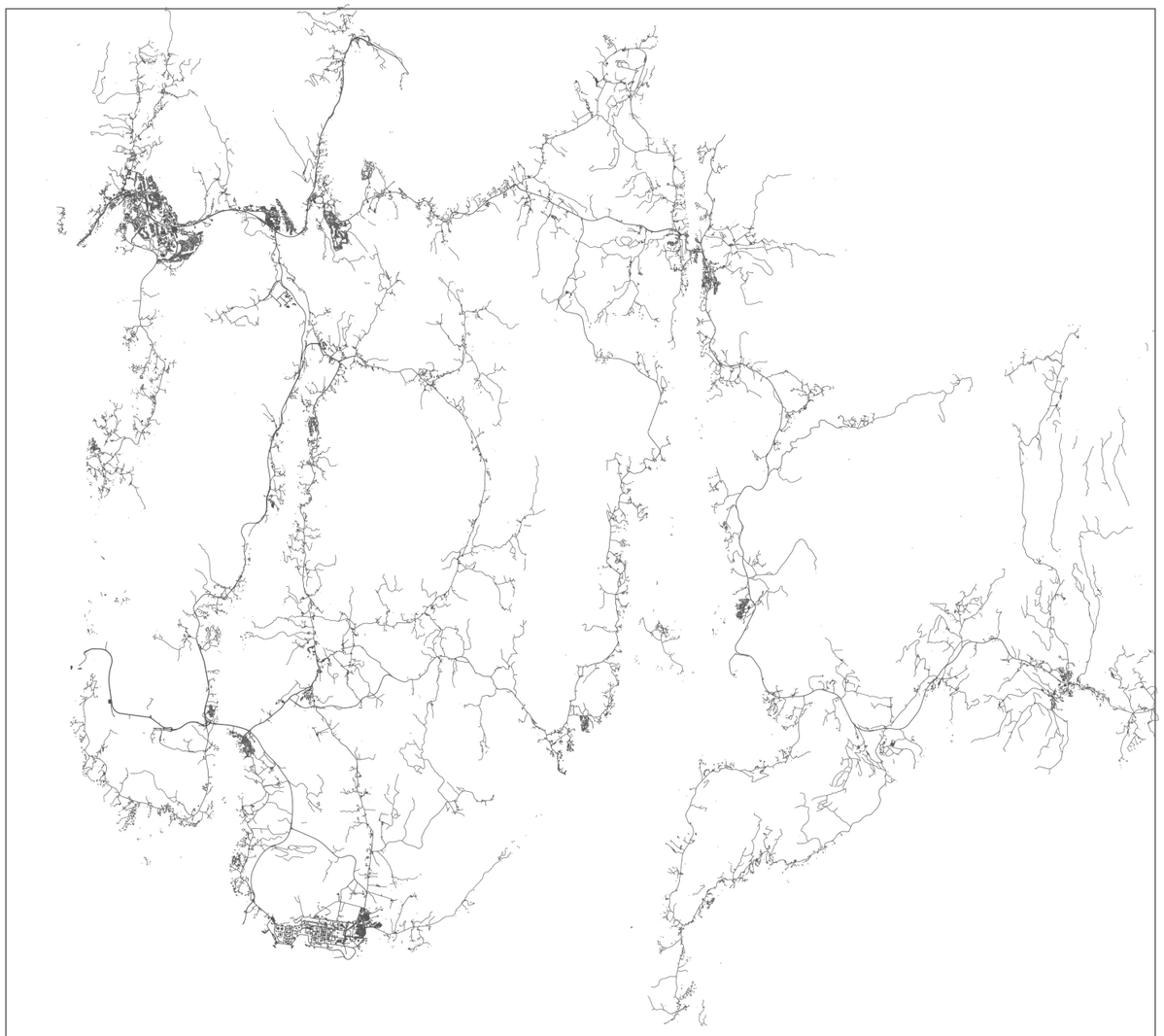
Legend

5 m contour



Kårstø
176 ha
59°16’30.25”N 5°30’51.63”Ø

Source: GIS, https://www.geonorge.no



1:100 000

0 2,5 5 7,5 10 km

Built and Roads

Legend

Built

Roads

Kårstø
176 ha
59°16’30.25”N 5°30’51.63”Ø

Source: GIS, https://www.geonorge.no

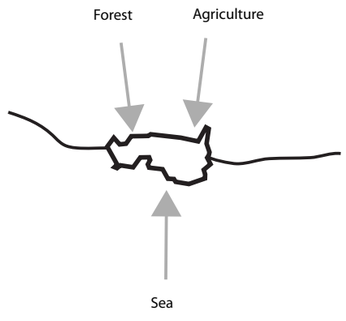
1:100 000

0 2,5 5 7,5 10 km

Reclaiming overgrown fields

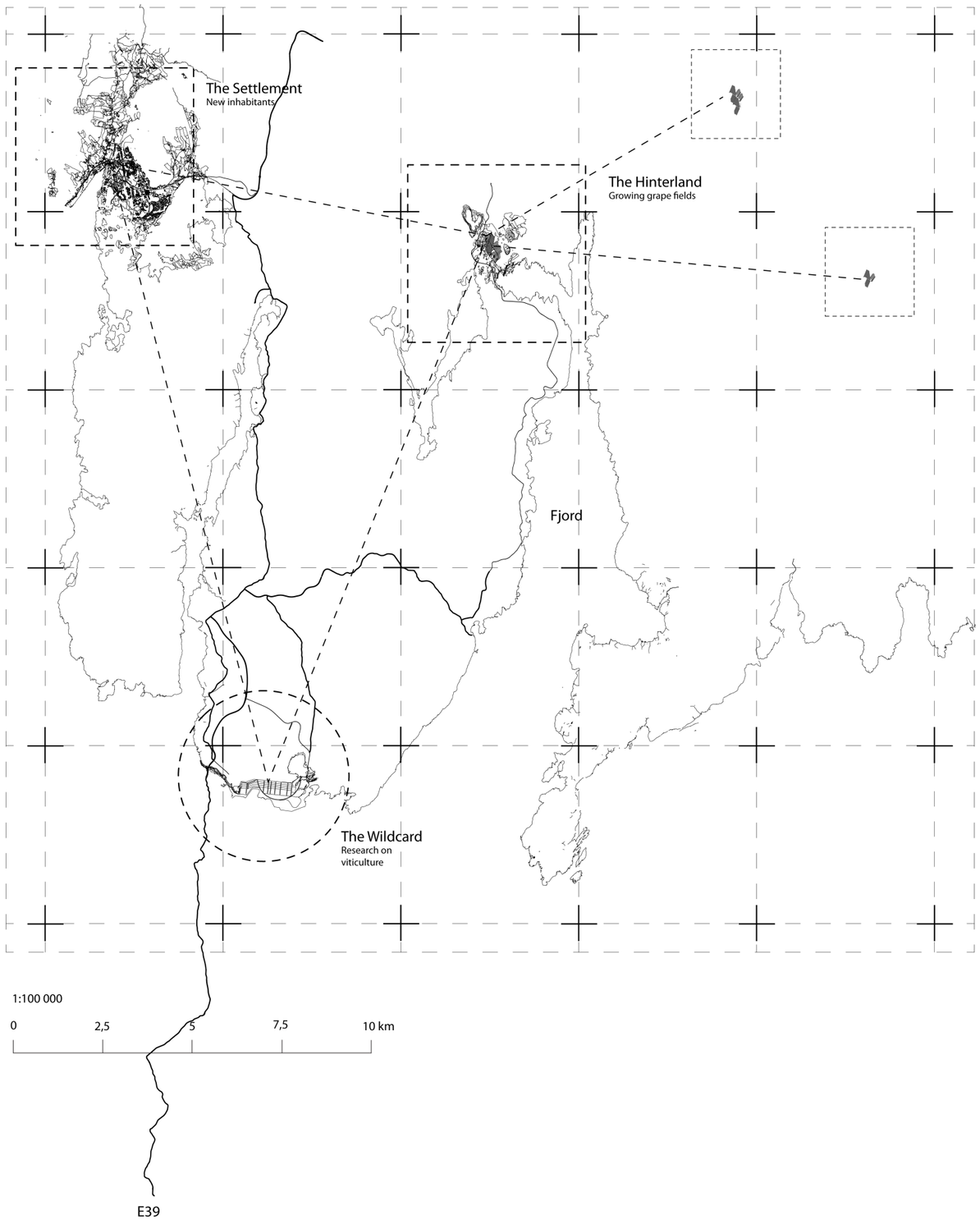
Legend

Overgrown

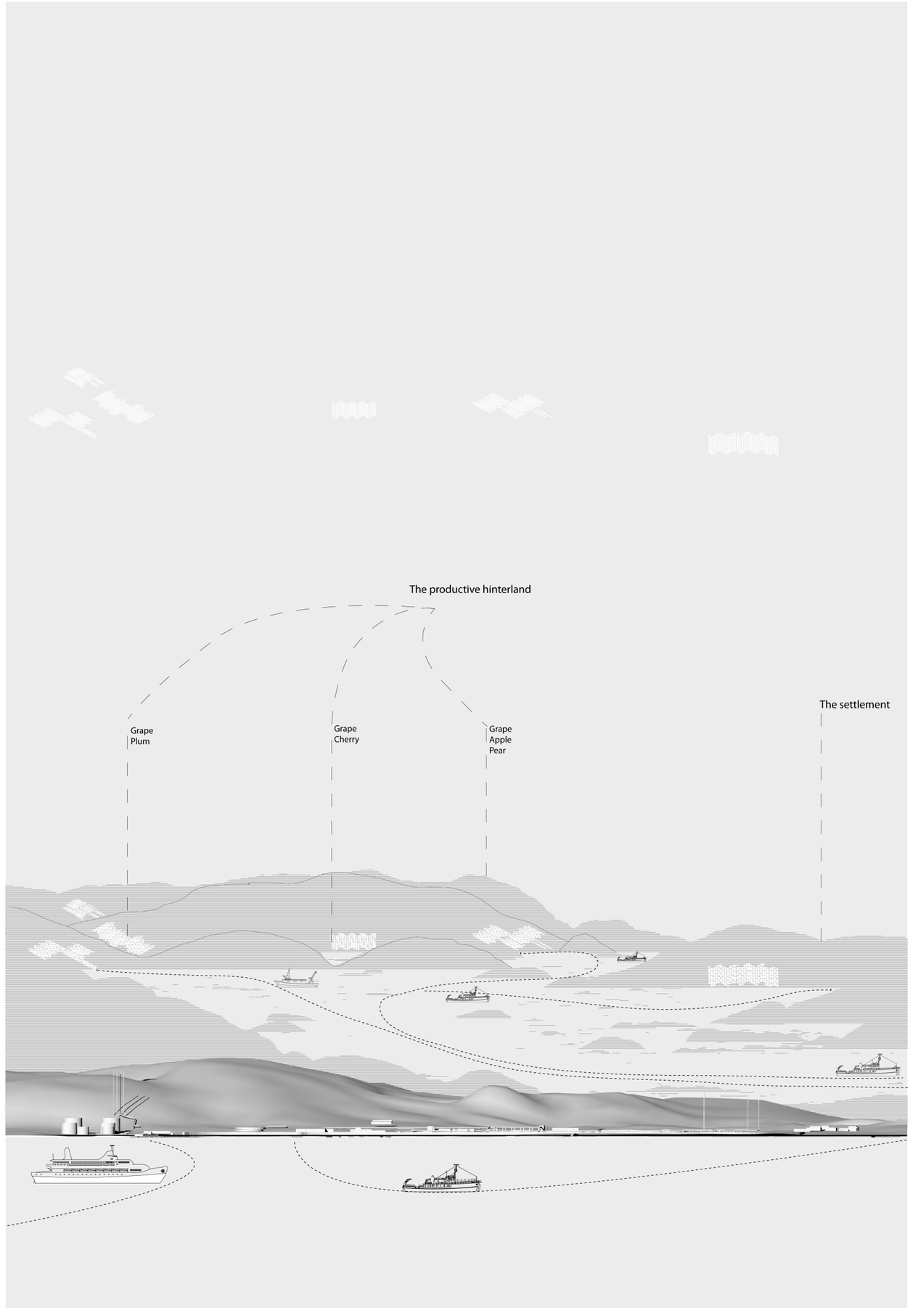


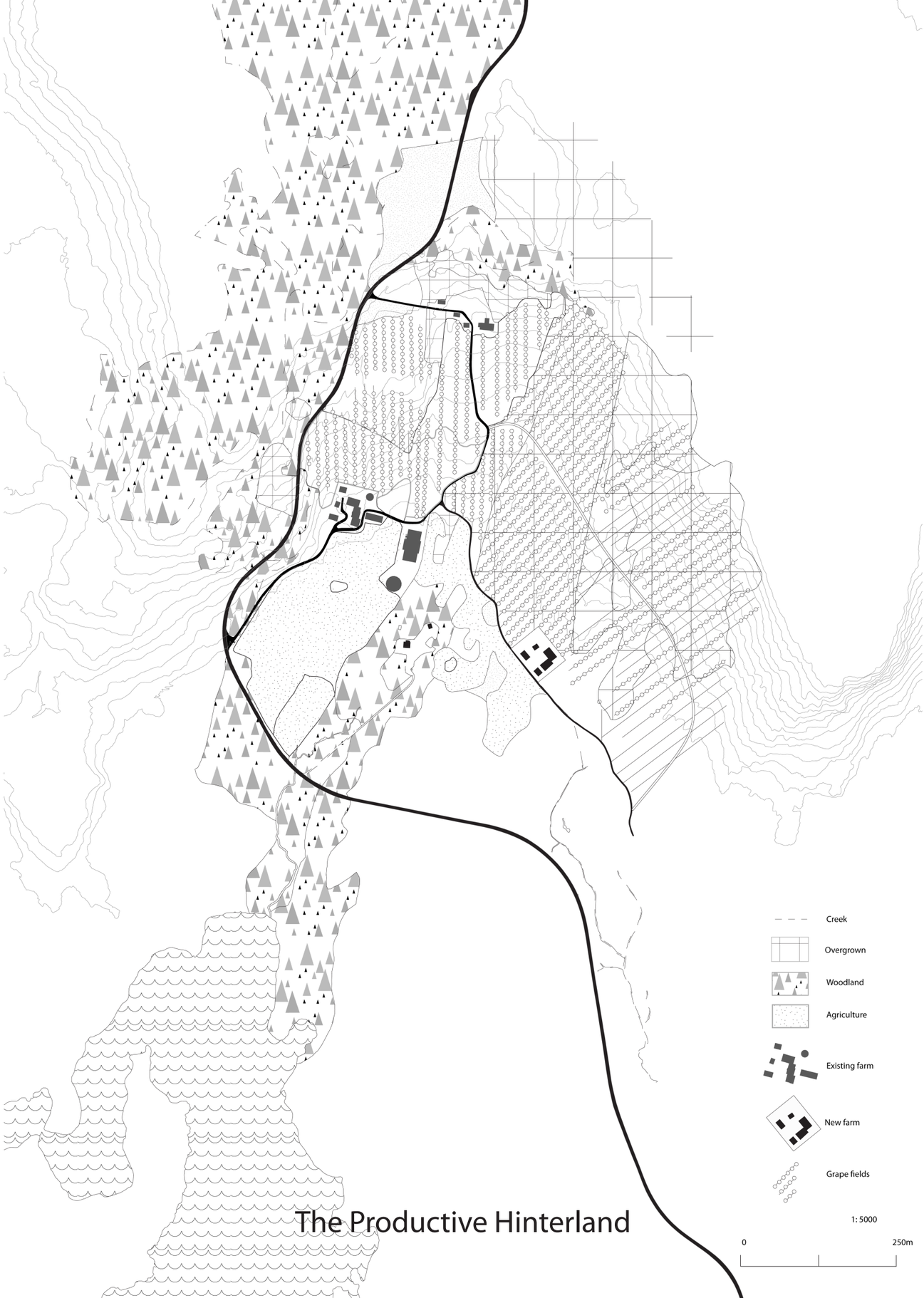
Kårstø
176 ha
59°16'30.25"N 5°30'51.63"Ø

Source GIS: http://www.skogoglandskap.no/artikler/2015/nedlasting_gjengroing



59°16’30.25”N 5°30’51.63”E


The productive hinterland
Grape
Plum
Grape
Cherry
Grape
Apple
Pear
The settlement



The Productive Hinterland

GRAPES OF THE NORTH

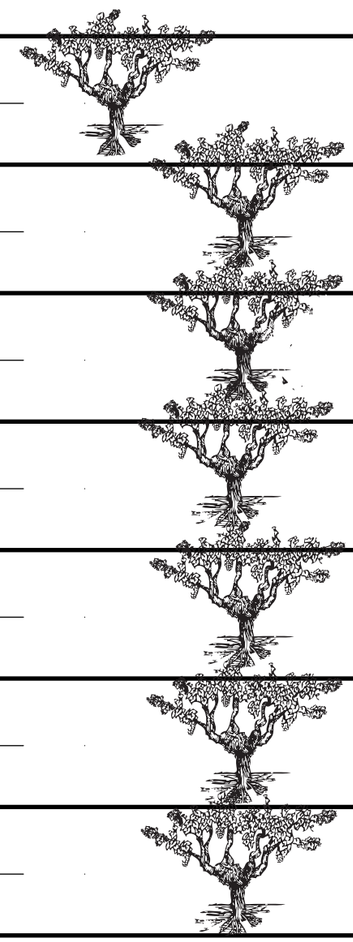
HASANSKY SLADKI

GUNA

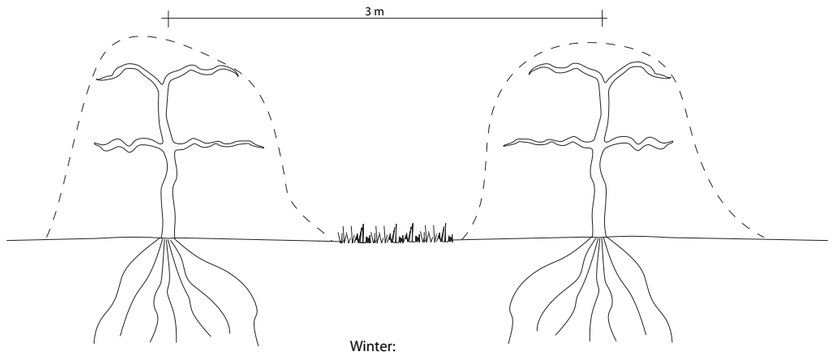
SOLARIS

Grapes

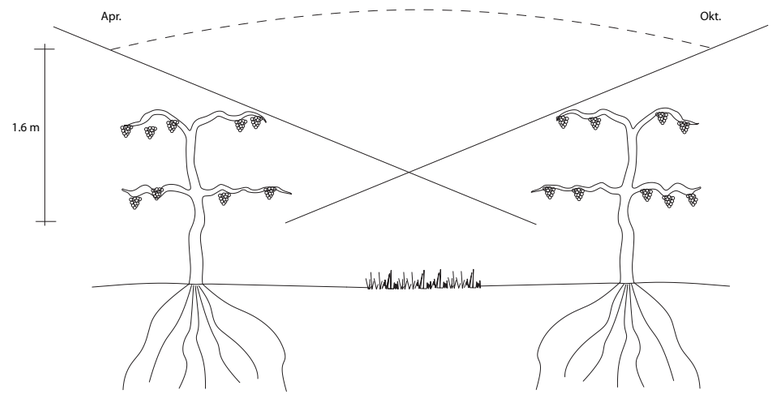
Hasansky Sladki Russian Rosewine			Cold-hardy. -25-35ºC							Harvest - early September.				
Skandia Minnesota, USA			Cold-hardy. -20-35ºC							Harvest - late September.				
Guna Latvia			Cold-hardy. -20-30ºC							Harvest - late September.				
Solaris German White wine			Cold-hardy. -16-22ºC							Harvest - late September.				
Somerset Seedless USA			Cold-hardy. -30-35ºC							Harvest - late September.				
Zilga Latvia			Cold-hardy. -30-40ºC							Harvest - late September.				
Supaga Latvia			Cold-hardy. -30-35ºC							Harvest - late September.				



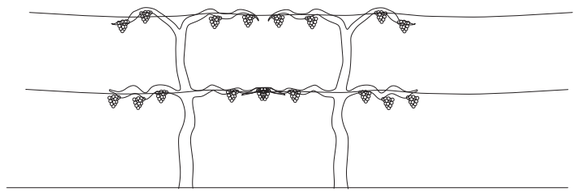
Month **March** **September**



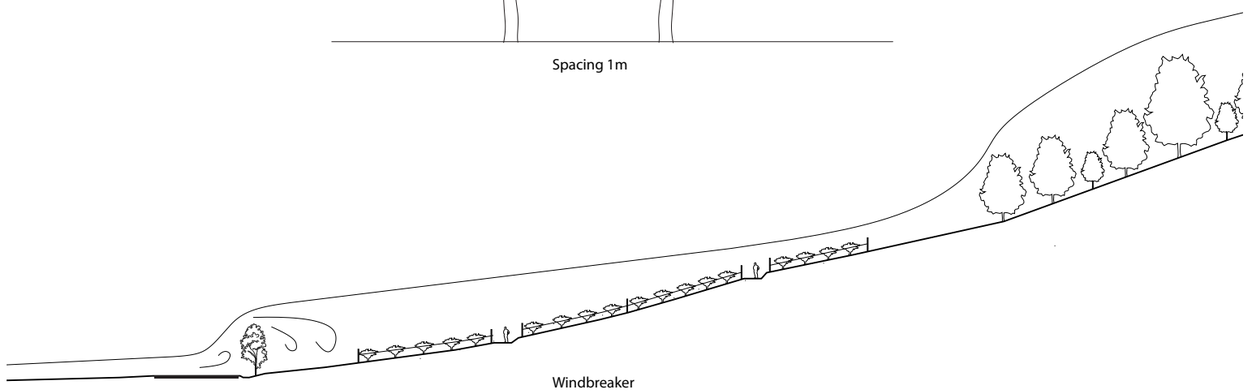
Winter:
Cover for snow



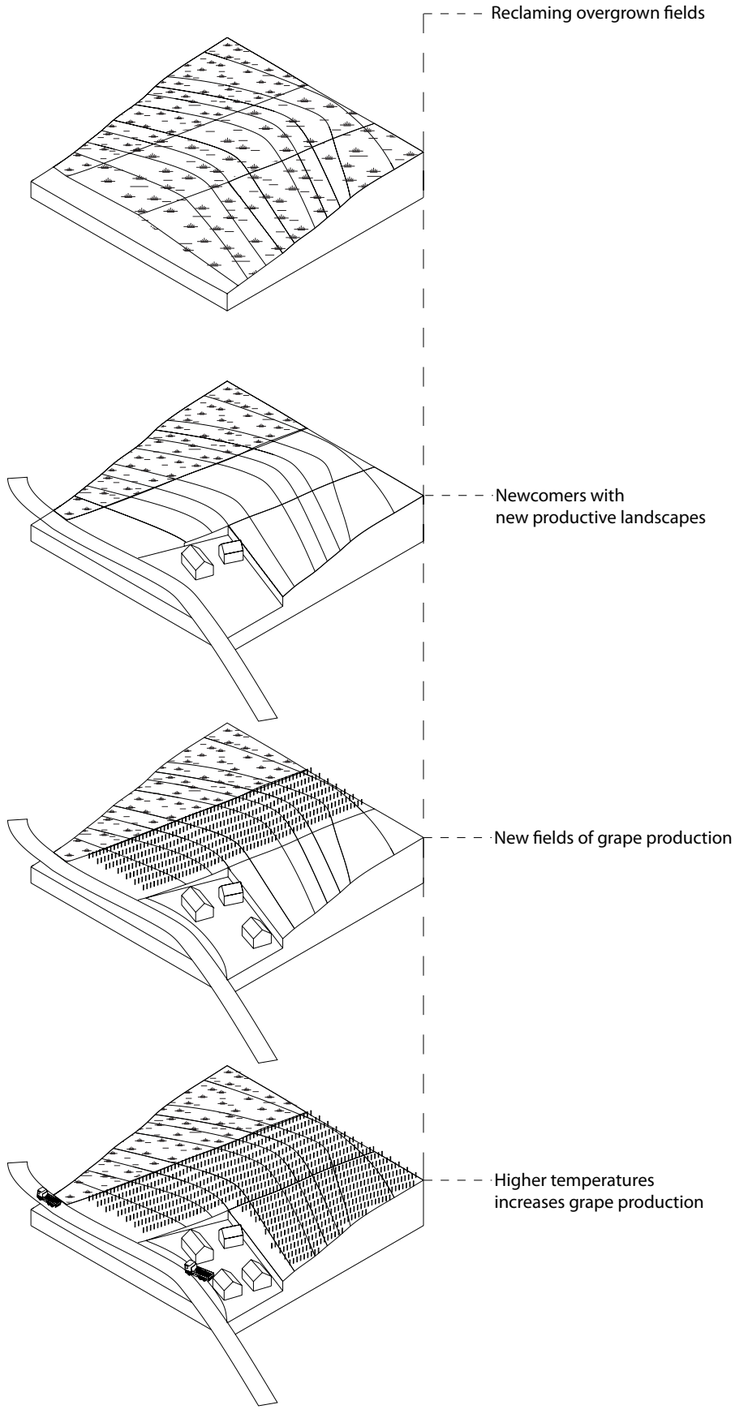
Spacing 3m

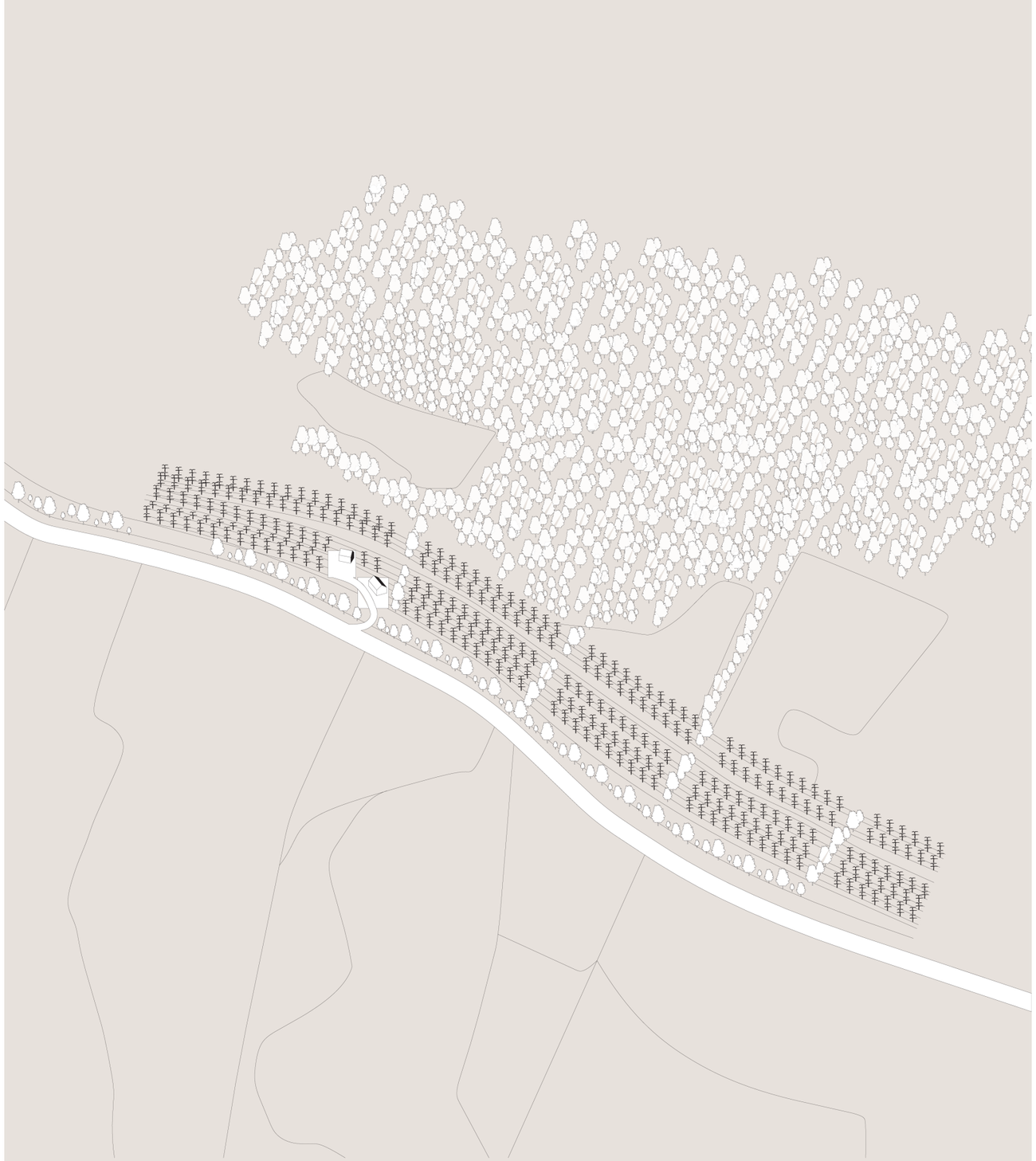


Spacing 1m

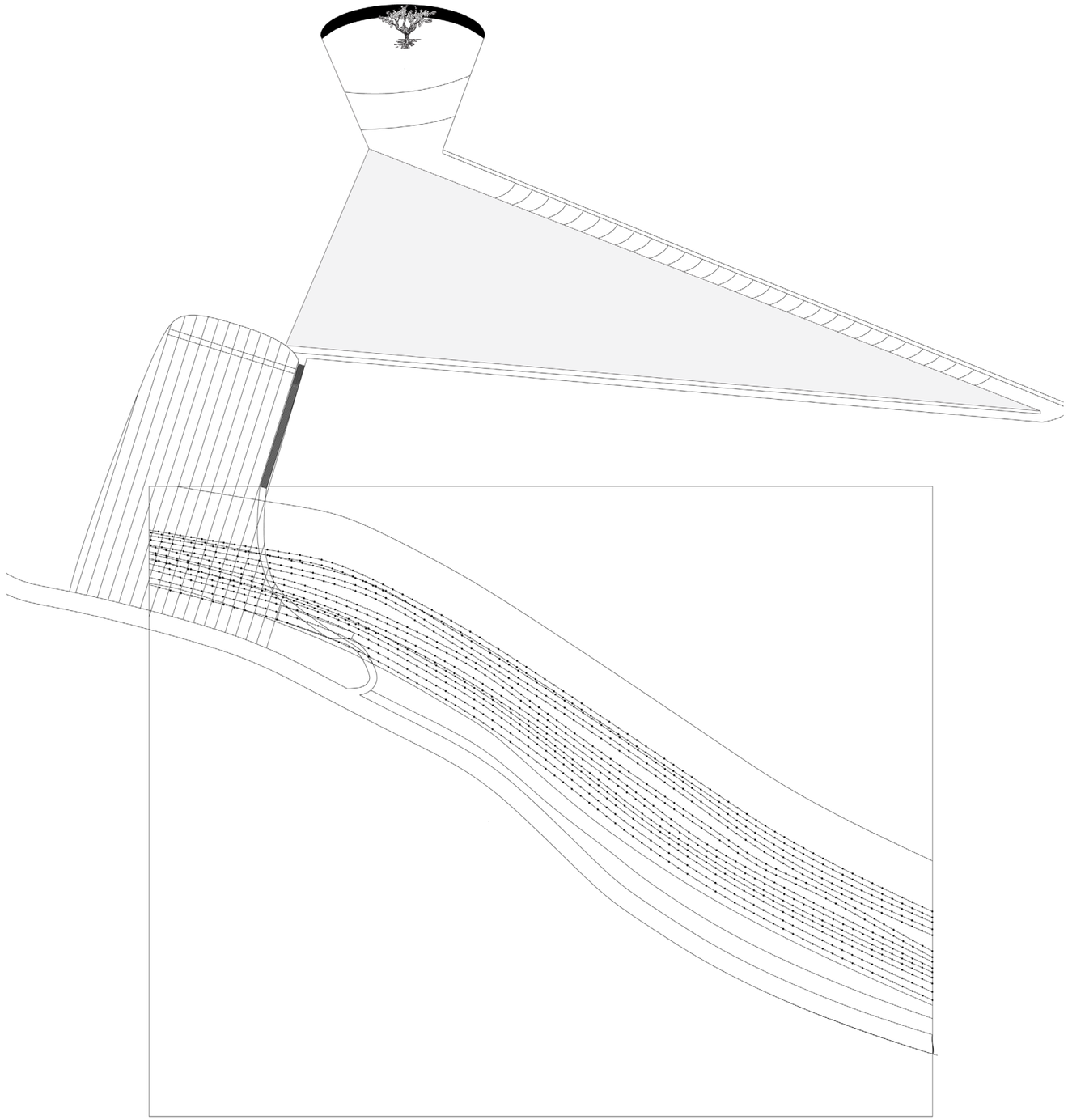


Windbreaker

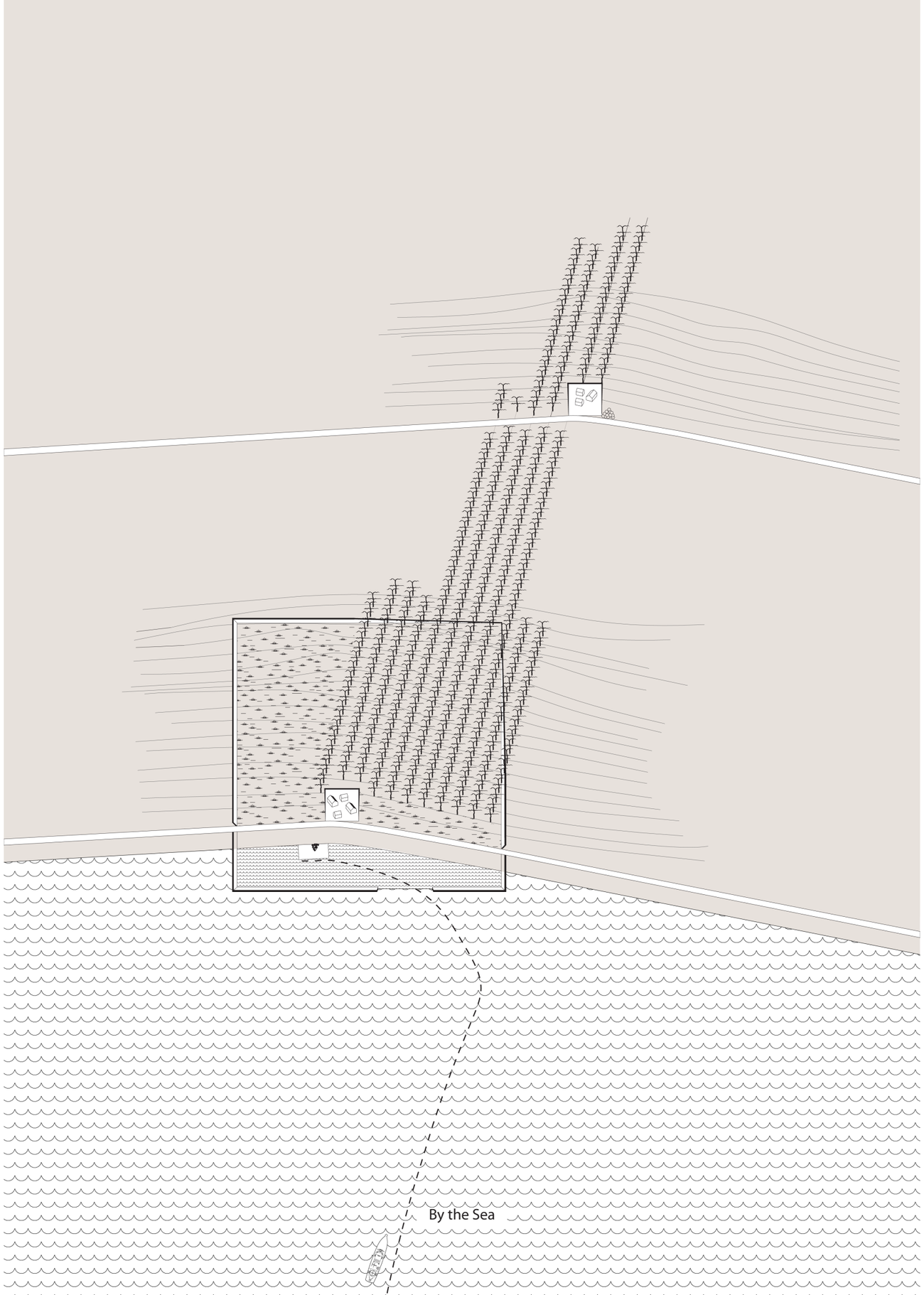

Reclaming overgrown fields
Newcomers with
new productive landscapes
New fields of grape production
Higher temperatures
increases grape production

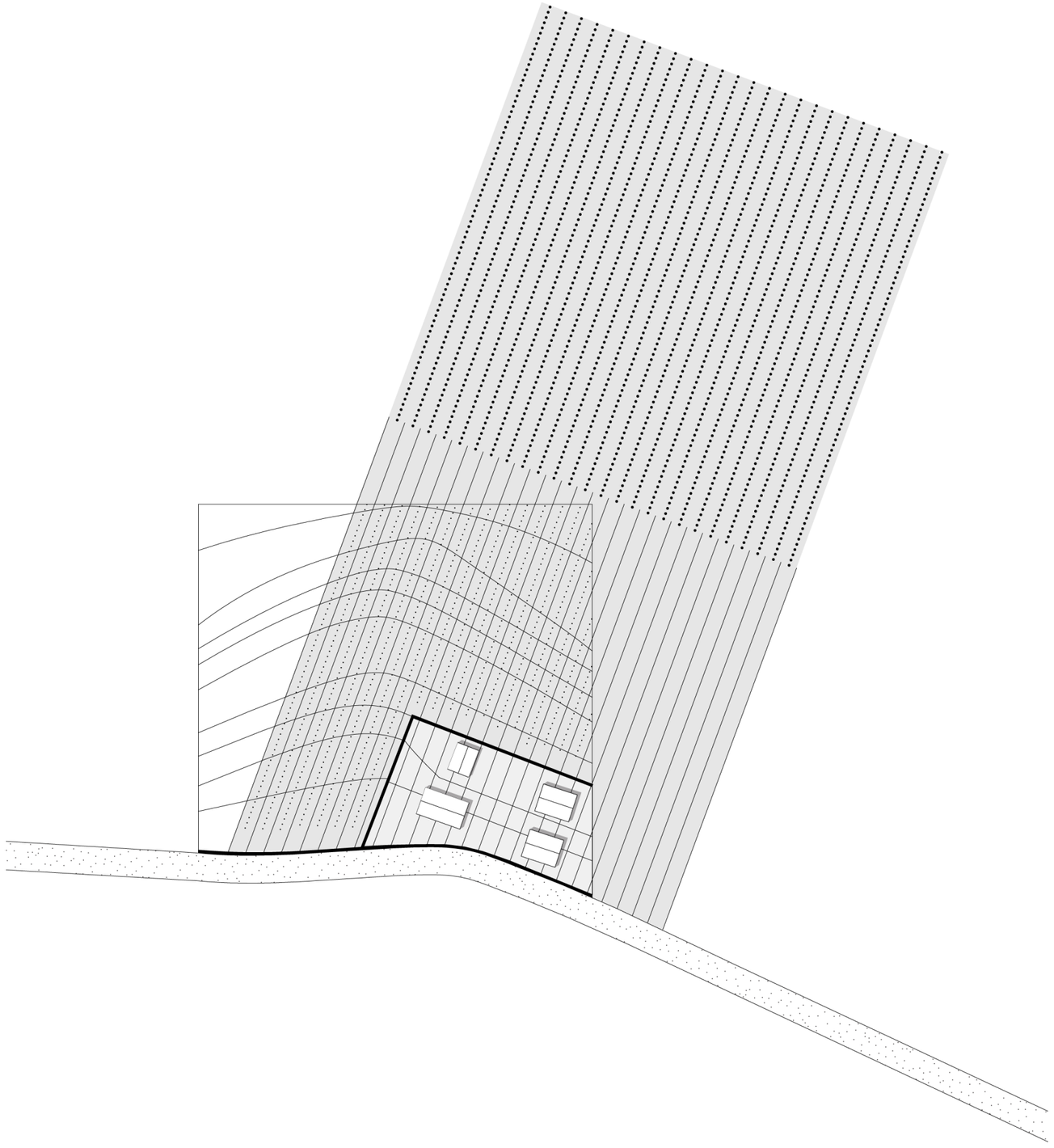


Along the Road



Layout contour

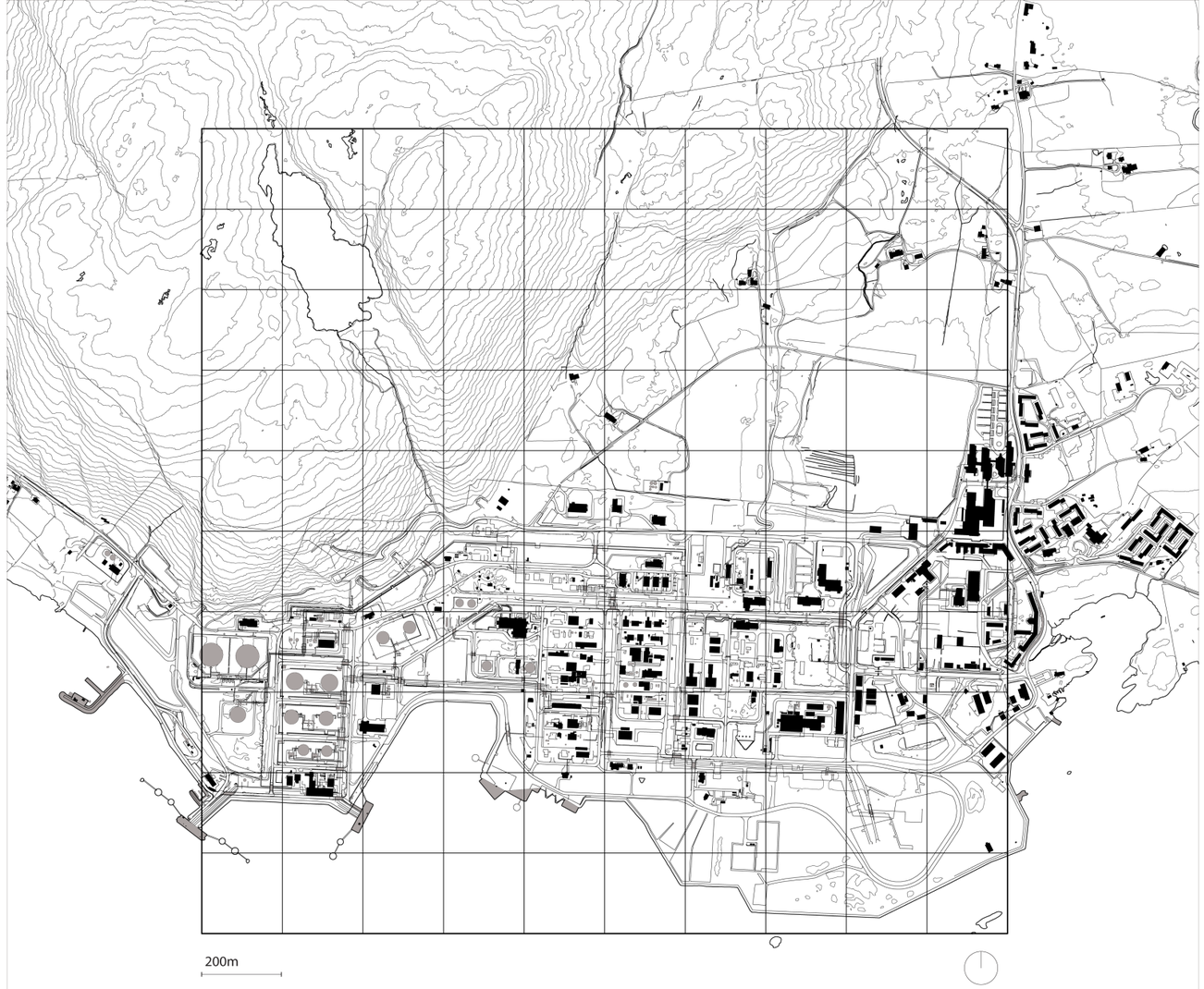

By the Sea



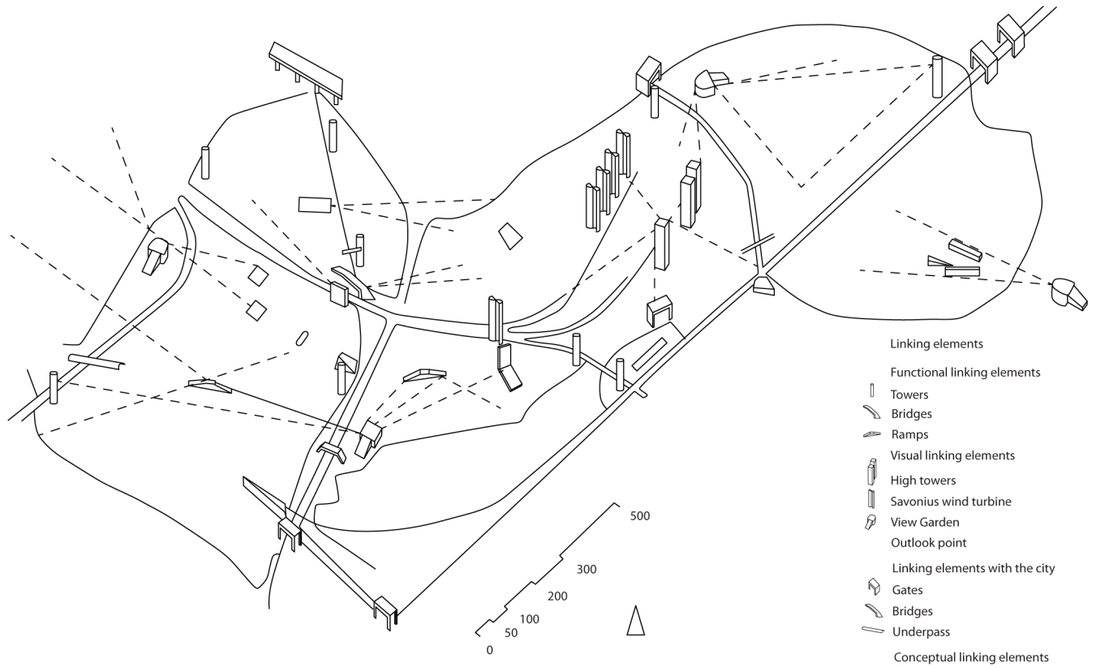
Layout rectangle 3x1m

THE WILDCARD

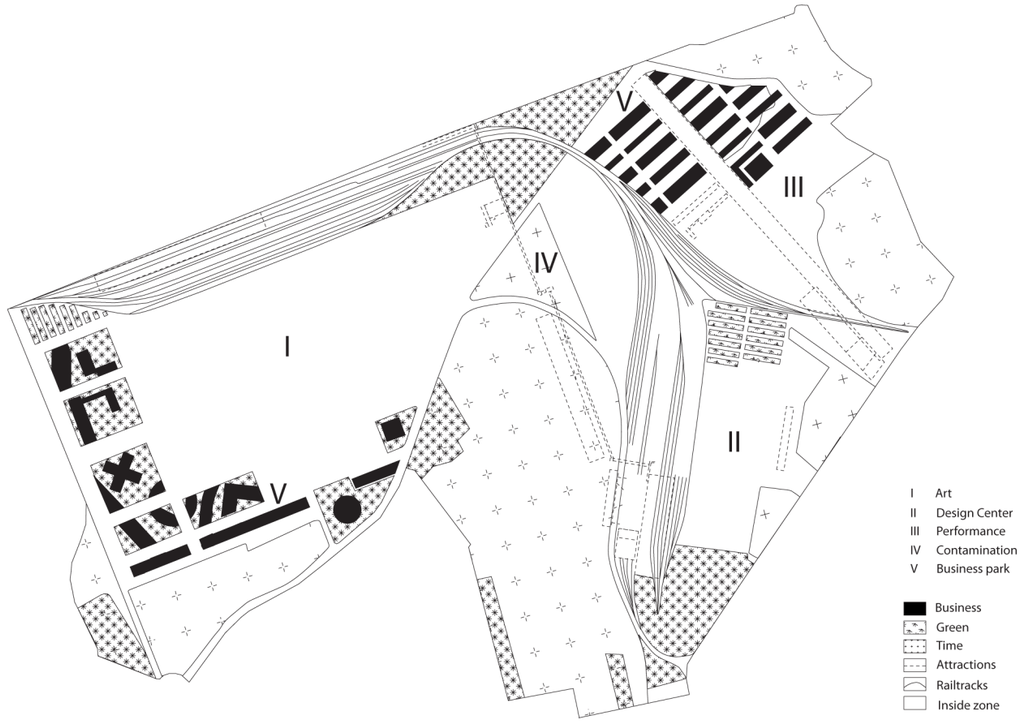
KÅRSTØ 8 AM



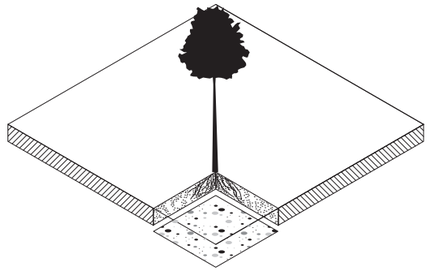
Refinery
Kårstø, Tysvær
174 ha
59°16’30.25”N 5°30’51.63”Ø



Redrawing
Duisburg - Nord Landscape Park
Peter Latz + Partner
230 ha
Year: 1991



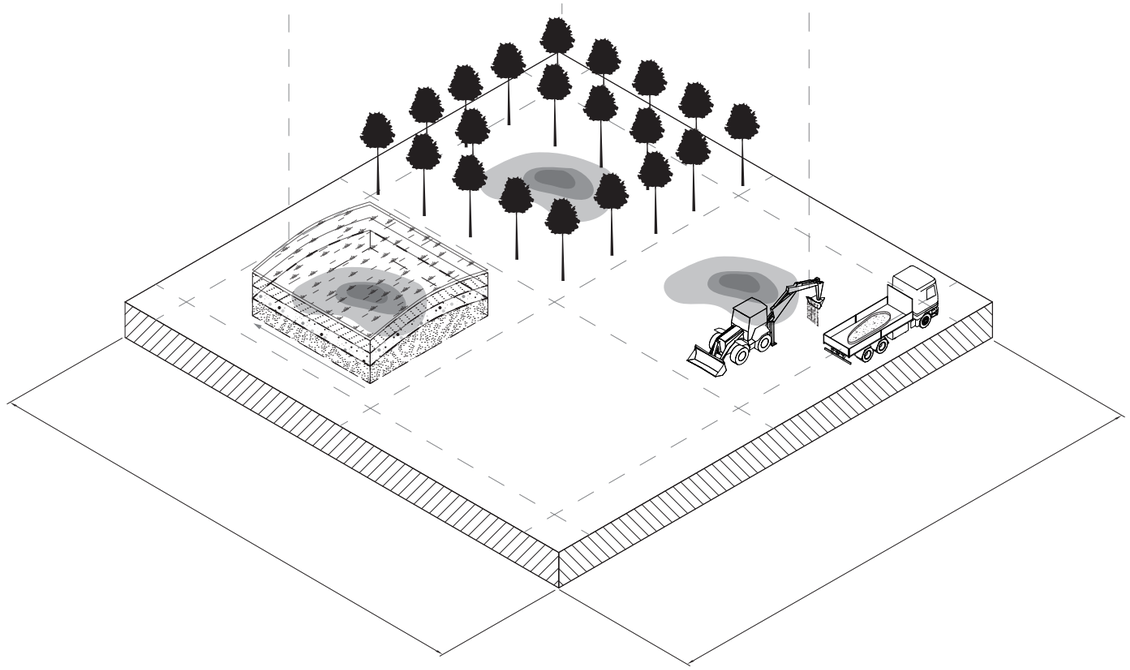
Redrawing
Zollverein Masterplan
OMA
100 ha
Year: 2001-2010



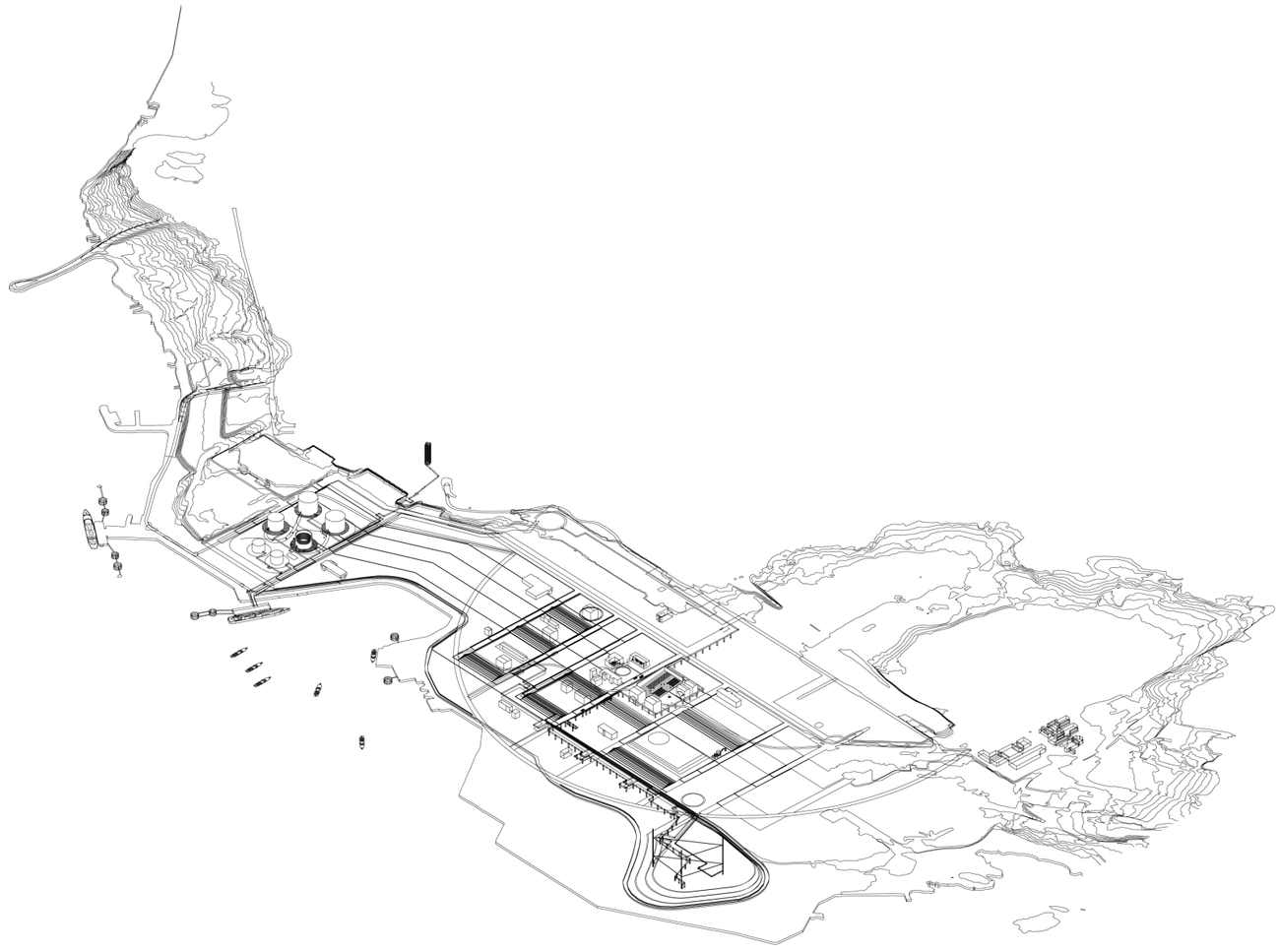
Phytoremediation

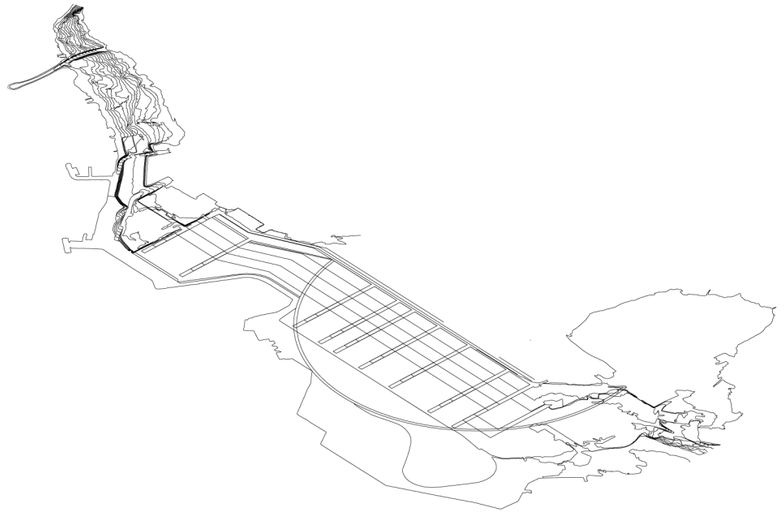
Cap

Excavation and thermal treatment

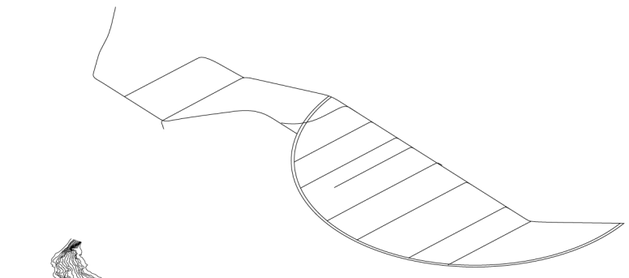


Clean-up operations

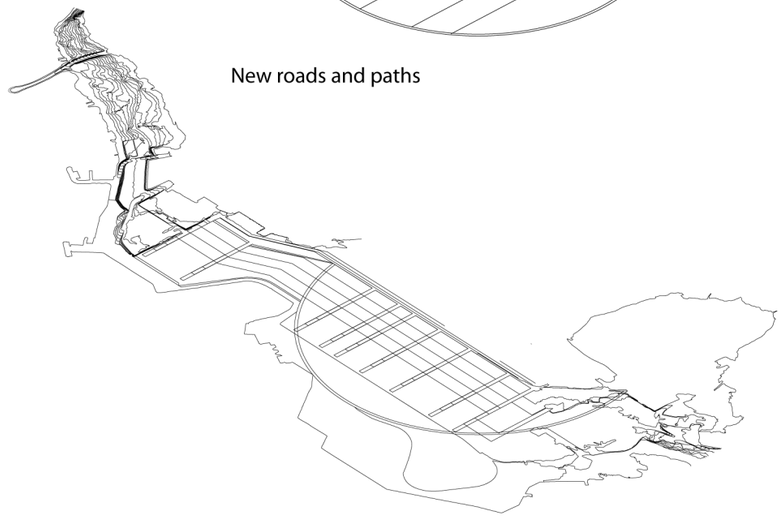




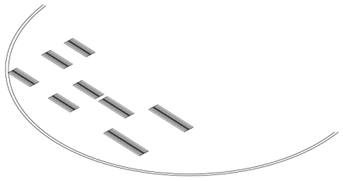
Re-shaping topography



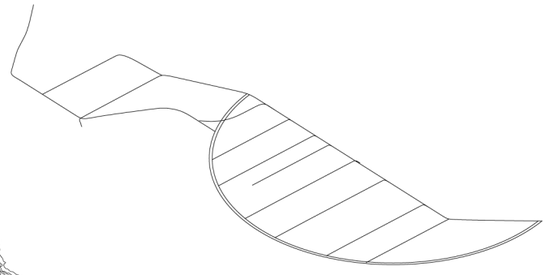
New roads and paths



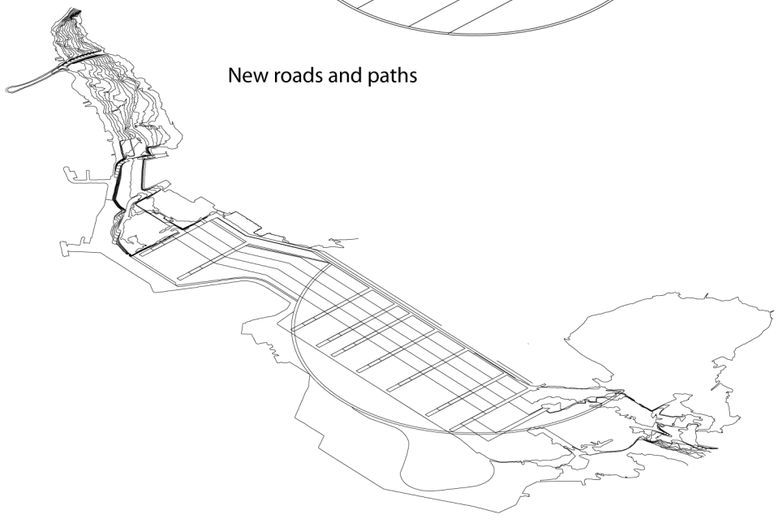
Re-shaping topography



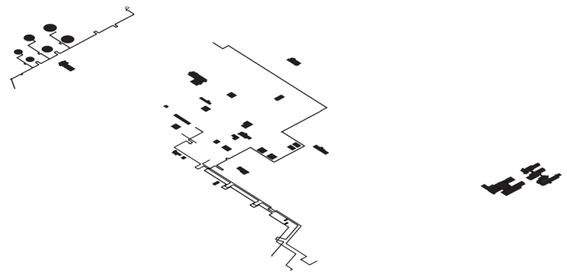
New berms



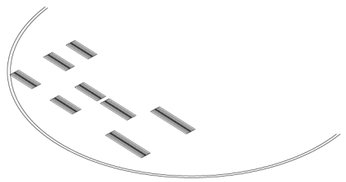
New roads and paths



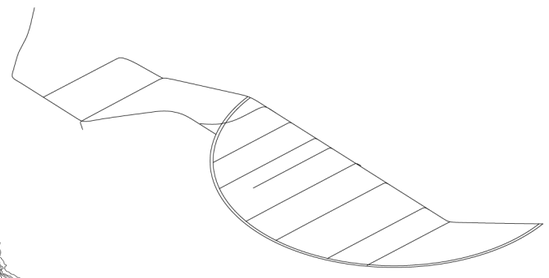
Re-shaping topography



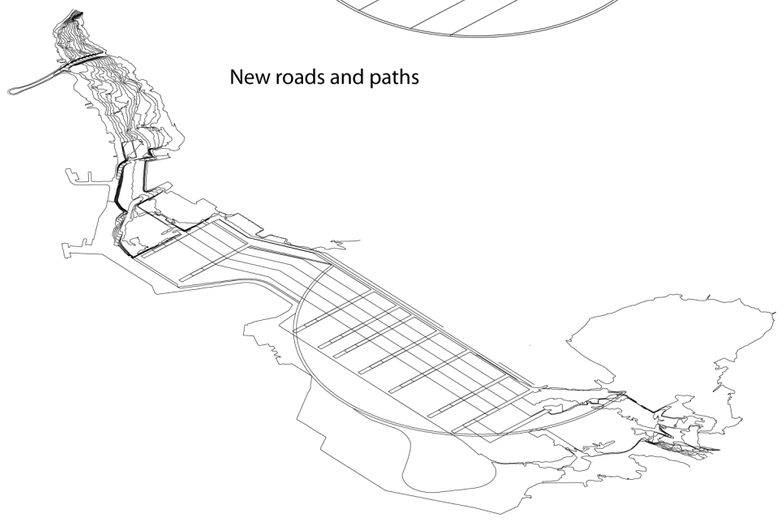
Built



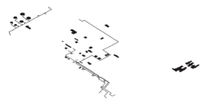
New berms



New roads and paths



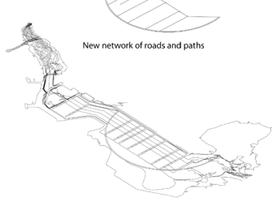
Re-shaping topography



Reusing built structure

New burms forming test sites

New network of roads and paths



Re-shaping topography

Transformed and reused layers

1

2

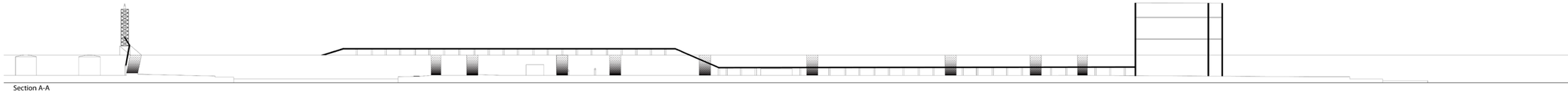
3

The Wildcard - Kårstø

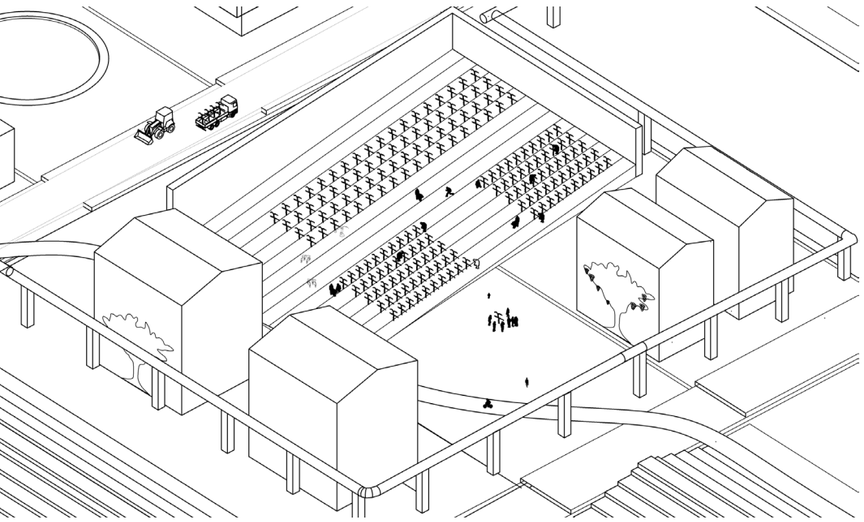
1. Showcasing area
2. Viticulture - Scientific research on grape
3. Indoor nursery

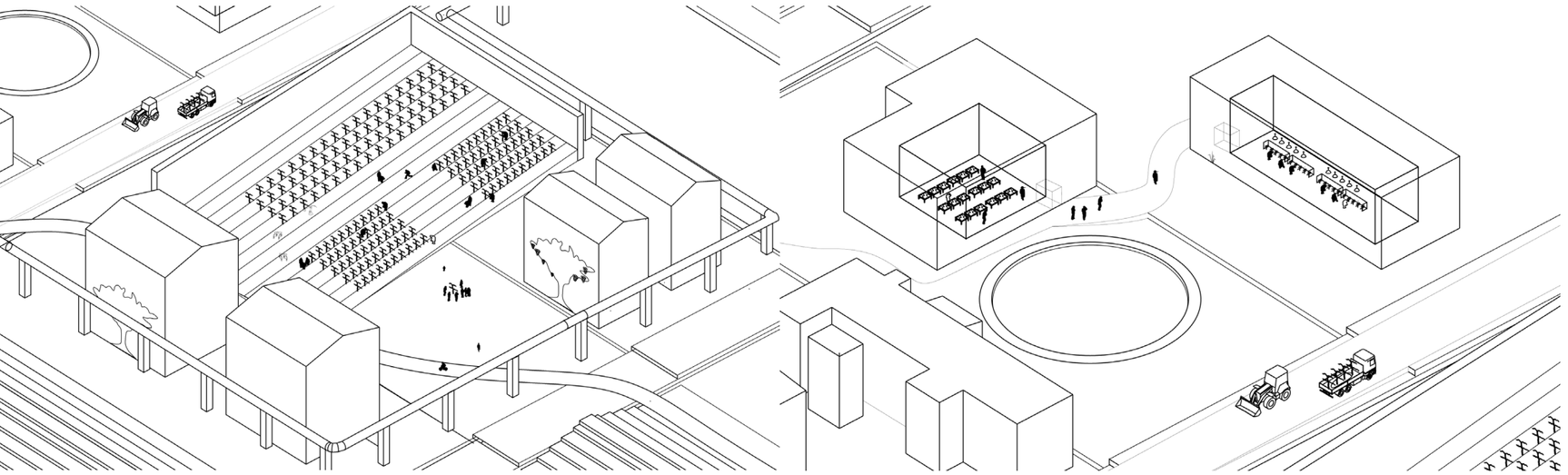
0 100 200 m

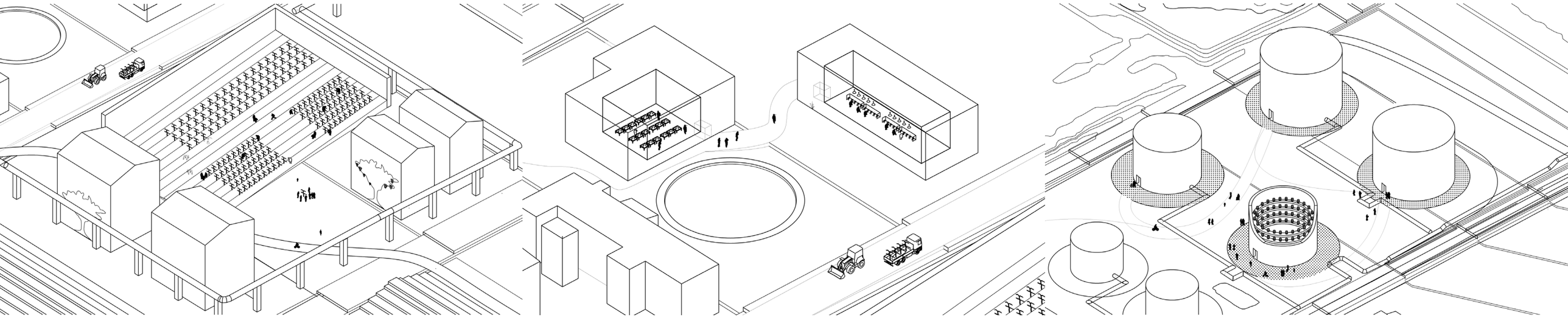
1:3000



Section A-A







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(2013). Climate change, wine, and conservation. Robert E. Dickinson, University of Texas at Austin, Austin, TX, (2013) doi:10.1073/pnas.1210127110

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Refering to pages.

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