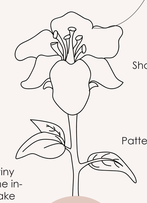
BUMLE - Pollinator Passage

What is pollination?
Pollination is the act of transferring pollen grains from the male anther of a flower to the female stigma. The goal of every living organism, including plants, is to create offspring for the next generation. One of the ways that plants can produce offspring is by making seeds. Seeds contain the genetic information to produce a new plant.

Pollination



Electrical signals that tell exactly how long it has been since the last insect visited.

Colour

Fragrance

Nectar as Reward

Shape of the petal

Patterns on the petal

Dust carriers with tiny pollen grains that the insects can eat or take home.

Pollination: Attracting insects

Wind pollination

What is a pollinator?
A pollinator is an animal/Insect that moves pollen from the male anther of a flower to the female stigma of a flower. This helps to bring about fertilization of the ovules in the flower by the male gametes from the pollen grains.

Insect pollination

Insects are the only pollinators in Norway

Pollination process

-Insect visit flower
-Nectar as Reward
-Pollen grain from the male part of the flower attaches to the insect
-Insect leave and moves on
-Insect visit next flower
-Pollen grain is transfered to female part of the flower
-Nectar as Reward
-The fertilized flower produce seeds
-Flower starts to reproduce and/or form fruit.

Norwegian bee Family

Bees

Butterflies

Beetle

Melittidae
4 Species in Norway

Andrenidae
41 Species in Norway

Hylaeus
19 Species in Norway

Halictidae
35 Species in Norway

Megachilidae
41 Species in Norway

Apidae

Xylocopidae family
1 species in Norway

Halictidae family
26 species in Norway

Andrenidae family
40 species in Norway

Melittidae family
3 species in Norway

Megachiliade family
40 species in Norway

Anthophoridae family
25 species in Norway

Colletidae family
19 species in Norway

The solitary bees are often more specialized than the social bees for host plants. Around 20% of the species is considered oligolectic, which means that they only collect pollen from a few plant species.

Solitary bees

7 are solitary bees

Social bees

28 are Social bees

Bombus "Humle"
35 species in Norway

Most endangerd

Bombus subterraneus
Sláttehumle

Bombus distinguendus
Kløverhumle

Young queens freez at winter/ Hibernation after mating with males

Old queens die at winter

-Wakes up from hibernation in April
-Finds first food from Salix caprea (goat willow)
-Drinks nectar from Salix caprea so they get energy to fly
-Later in the spring other flowers bloom
-Gets food for the season

Queen

-Lays eggs in hollow spaces
-Seal the egg and leave it.

Old wood

Insect hotel

Sand

Needs

Home for breeding/ Hybernating

Shelter from predtors

Food

Queen

-Makes and takes care of eggs
-All eggs at spring are female
-Eggs at fall are male

Mouse hives

Hollow space

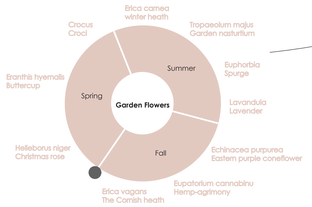
Empty bird box

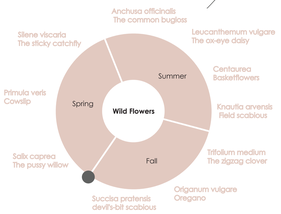
Building nests

-Pollen is placed in the bees Pollen-basket (corbicula)
-Uses legs to collect pollen
-Fying to habitat
-Kicks of the pollen in the habitat
-After many rounds she can lay eggs
-Separates wax from the body
-Builds a basket
-Fills basket with honey
-Builds a small wax basket on the pollen ball

Laying eggs

(4 weeks) –
-Lays 10 eggs in the basket
-Settles for hatching the eggs
-Eggs turn to small larvae
-Larvae lives inside the pollen
-When they are bigger they spin a cocoon
-Cocoon turns to a pupa
-Then undergoes a complete transformation
-Eggs are hatched





Today, one of three bee species is on the Norwegian red list, which means that they are at risk of extinction. 12 of our 208 bi-species have probably disappeared for good.

30%
of the food we eat are dependent on bee pollination

80 %
of the wild plants in Norway are dependent on insect pollination

Decreasing bee population

Habitat

FLOWERS

WATER

DRENATION

ENTERANCE

ISOLASJON

SAND

Wood

SOIL/DIRT

Challenges

Invasive alien species

Pesticides, environmental toxins and chemicals

Climate change

Land use and changes in land use

Disease and parasites

Reduced opportunities to find good nesting sites may also be a reason for the limited occurrence of species that start the season late, as they perform poorly in competition with species that have started earlier in the season.

National Pollinator Strategy

Communication

Increasing knowledge

Good habitats

Pollinination process | **Pollinators** | **Needs** | **Challenges** | **Strategy**