

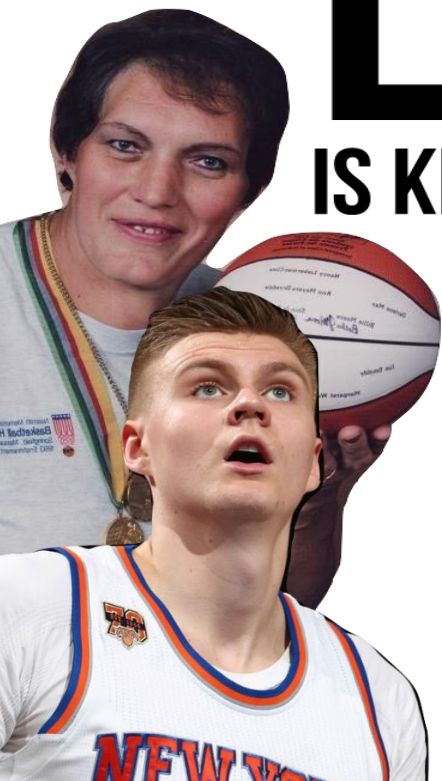
ERASMUS+KA2 PROJECT
'WATER UNITES US'
OLAINE, LATVIA 2017





LATVIA

IS KNOWN WORLDWIDE NOT
ONLY FOR ITS
ATHLETES



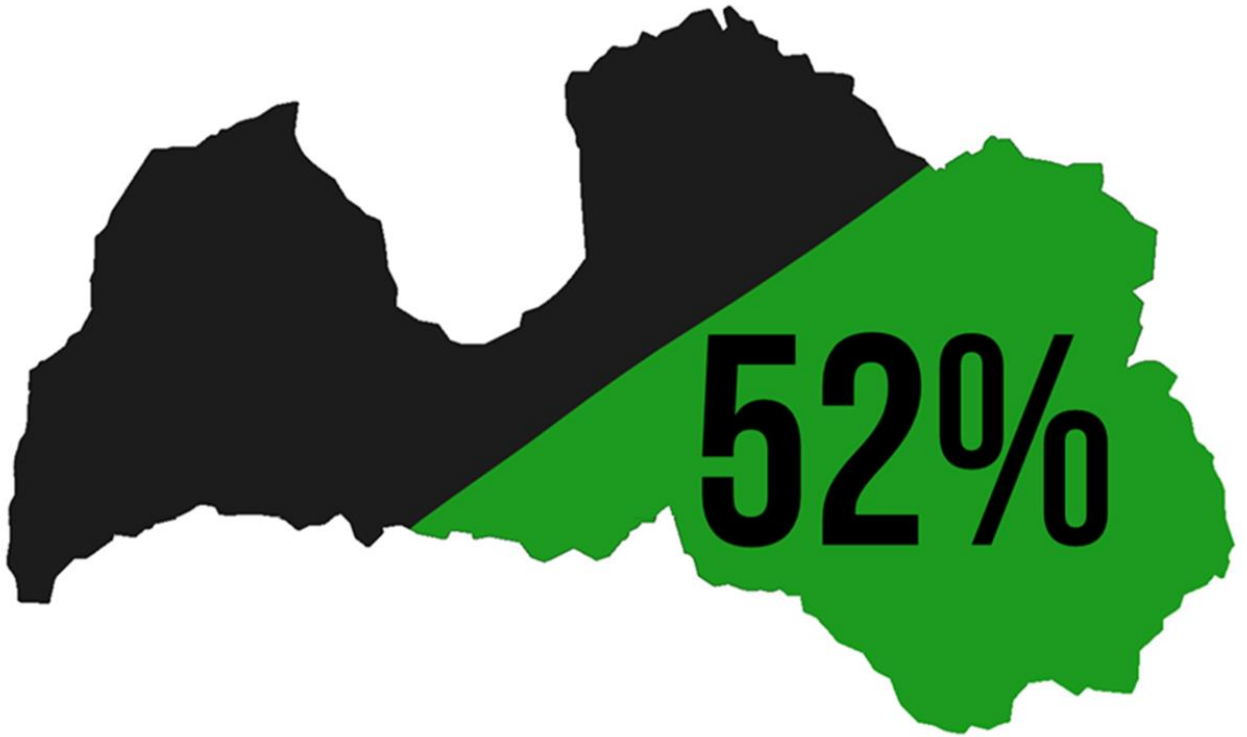
BUT ALSO FOR ITS GREEN GOLD -

FORESTS



The image features two lush green trees, one on the left and one on the right, with their canopies framing the central text. The background is a plain, bright white.

FORESTS
IN LATVIA TOOK UP
3.383 MILLION
HECTARES OF LAND



OF THE COUNTRY'S TERRITORY

LATVIJAS FINIERIS



LATVIJAS VALSTS MEŽI



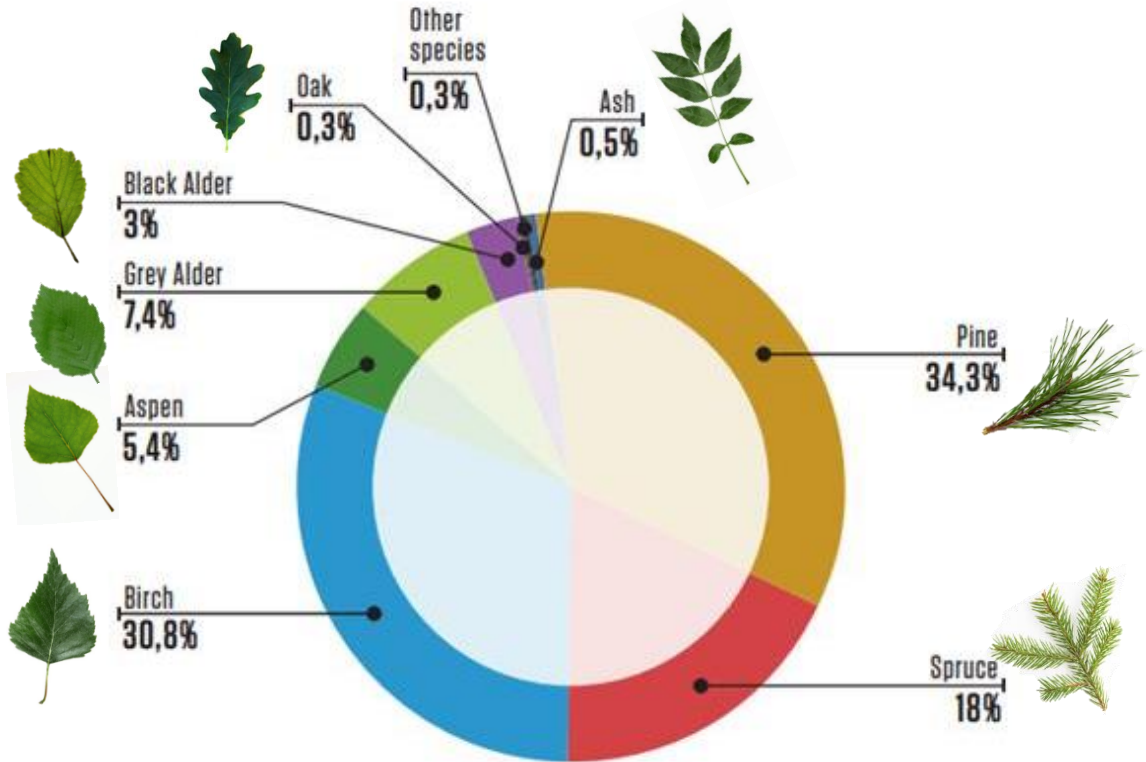
THE FORESTRY SECTOR IN LATVIA EMPLOYS ABOUT 83,000 PEOPLE



**THE FOREST OF LATVIA
BELONG TO THE
TEMPERATE DECIDUOUS FORESTS
&
TEMPERATE CONIFEROUS FORESTS**



FOREST AREA BY DOMINANT SPECIES.



ANIMALS

EXAMPLES OF ANIMALS THAT DOMINATE IN THE FOREST:

- DEER
- ELK
- MOOSE



ANIMALS

**ANIMALS LIVING IN THE TEMPERATE DECIDUOUS FORESTS
MUST BE ADAPTED TO COLD WINTERS.**

COMMON SPECIES:

- **BROWN FOX**
- **WOLF**
- **HAWKS**
- **WOODPECKER**
- **MOOSE**
- **BUNNY**
- **LYNX**



TEMPERATE CONIFEROUS FOREST

EVERGREEN CONIFERS DOMINATE IN THESE FORESTS. DUE TO THE HIGH LEVELS OF PRECIPITATION AND MODERATE TEMPERATURES, THERE IS A LONG GROWING SEASON AS A RESULT THEY GROW VERY TALL.



LATVIAN MEADOWS



Meadows

- Meadows are one of Latvian ecosystems
- Meadow is a perennial herb world
- Meadow is formed as a result of harvesting and grazing
- Approximately 50% of the protected plant species are found in the meadows



About meadows

- They cover approximately 1% of the territory of Latvia
- There are different types of meadows in Latvia:
 - Dry meadows
 - Moderately humid meadows
 - Wet meadows



Dry meadows

- Located in dry places - in the dunes, sands and cliffs
- Surface is covered with grasses
- Plants do not cover the whole soil



Hoopoe (*Upupa epops*)

Moderately humid meadows

- The most popular meadow type in Latvia
- The meadow is fertile
- It is seasonally wet
- Plants grow in different floors
- The high diversity of species



Crested lark (*Galerida cristata*)

Wet meadows

- They are located close to the lakes or rivers
- Dominant plant - sedges
- Almost all year water is above the soil
- Birds can hide and get water supplies
- It is the smallest by territory



Corn crane (*Crex crex*)

Types of plants which are in the meadows

- Approximately 1/3 of all Latvian plant types



Red clover



Poppy



Oxeye daisy



Burdock



Broad-leaved dock

Animal types in the meadows

- In the meadows there live two different animal types:
 - ▣ vertebrate animals
 - ▣ invertebrate animals



Vertebrate animals



Invertebrate animals



The protection of meadows

- The meadows are the most protected biotope in Latvia
- Meadows must be protected from fire
- Meadows must be protected from overgrowing
- The natural area of meadows is sharply reducing



WETLANDS AND SWAPS



Wetlands



- These are eco-systems which constantly or periodically collect water.
- Wetland or mire is the territory or biome which is too humid or covered with a shallow water layer. Swamps, rivers, lakes, streams are considered wetlands



The Significance of Wetlands

Wetlands are marvellous and very valuable eco-systems –

- ▣ they perform water treatment
- ▣ supply the groundwater with water
- ▣ helps to soften the climate changes
- ▣ reduce the amount of flood
- ▣ are used in the extraction of materials and tooa
- ▣ are the habitat for a huge number of species of plants and animals



The Areas of Wetlands in Latvia

- The most significant areas of wetlands in Latvia are formed by more than 12 400 rivers and 2256 lakes which are bigger than one hectare.



What is the swamp?

The swamp is the upper part or plot of the ground which has some typical features:

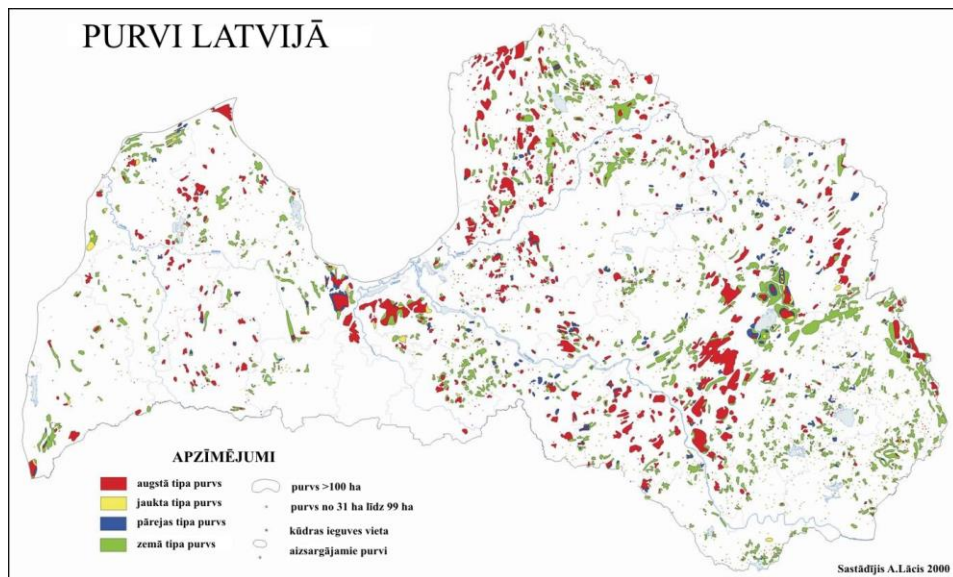
- ❑ Constant or continuous periodical wetness;
- ❑ Specific flora;
- ❑ Accumulation of peat moss.



The swamp can be formed by the area that turns into the swamp or overgrowing the water body.

The Area of Swamps

Swamps occupy 10% of the territory of the country but only 4.9% are undamaged swamp areas. The others are the territories with industrially usable peat moss reserves, some territories for growing the types of wet forest conditions.



Classification of Swamps

- **Low or grass swamp** – historically, it is the first stage of the development of swamps. Such a swamp is fed on ground waters which contain dissolved mineral substances that are needed for the plants.



brown Bog-rush



common Butterwort

Grass swamps are mainly developed on the banks of the lakes, in the flood-lands of the rivers, in the hollows. They are rich in plant species that require a lot of humidity, and are dominated by various kinds of sword grass.

- **Transitive swamps** – are developed from grass swamps, it is the inter-transitive stage between the high and low swamp; it contains the features of both types of swamps.



cotton Deergass



bog Orchid



Hartman Sedge

Transitive swamps are developed on the banks of the lakes, on the filling margins of moss swamps or they interchange with the moss swamp biotopes in declines of terrain and on the edges of puddles.

- **High of moss swamp** – is developed from the transitive swamp and is the final degree of the swamp development. Such type of swamps obtains water and nutrients only from rainfall.



Sphagnum



Heather

Moss swamps are the poorest of all kinds of swamps in species. Only docile species of plants, which grow in nutrient poor environment, can survive there.

Influence of Beaver on ecosystems in Latvia



Beavers, building dams, flood large areas.



WATER ECOSYSTEMS



Water ecosystems



Sea

Baltic sea



Gulf of Riga





Plaice



Sea Life

Moon Jellyfish



Brill



Otter



Grey Seal



Sea Gull



Broad Nosed Pipe Fish



Blue Mussel



Reed



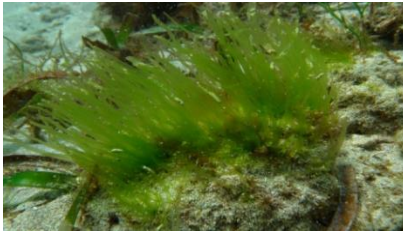
Sphacelaria Artica



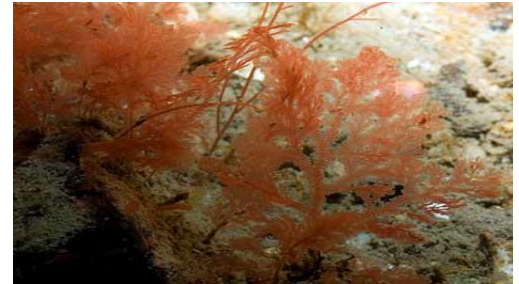
Halosiphon Tomentosus



Enteromorpha Prolifera



Pterothamnion plumula



Bladder Wrack



Stackhouse Frond



Claspingleaf Pondweed



Lakes

Laukezers



Rāznas lake



Lubānas lake



Talsu lake



Drīdzis lake



Slokas lake



Engures lake



Burnieku lake



Glušņas lake



Rivers

Rivers – watercourses, which flows in selfmade riverbed and takes surface and underground water from its own pool.

The longest rivers in Latvia:

Gauja



Lielupe



Daugava



Venta



Ogre



Waterfall

Venta Rapid in Kuldīga is the widest waterfall in Europe and a natural monument of Latvia.



Alekšupītes waterfall is the highest waterfall (4,2m) in Latvia.

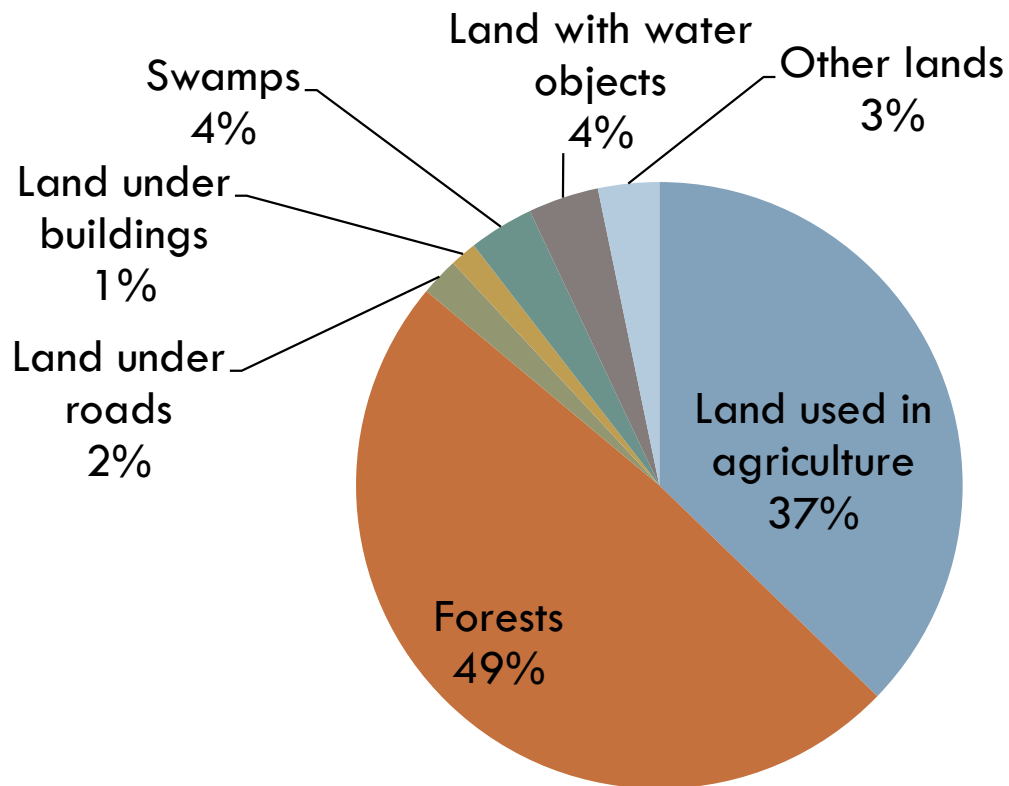


AGROCENOSIS



- Biocenosis is a combination of plants, animals, mushrooms and microorganisms.
- If biocenosis isn't naturally formed, but it is made by people, it is called agrocenosis.
- For example: root garden, greenhouse, etc.





Agriculture

- Nowadays, agricultural land in Latvia is about 2.5 million ha or 38% of the territory of the country.



Use of agricultural land (thousand hectares)

Arable - 1 288

- Grain crops - 716
- Fodder, horticultural crops – 334,5
- Technical culture – 105,3
- Legumes – 41,8
- Potatoes – 23,3
- Fallow – 53,5
- Other – 13,6

Meadows and pastures – 635,1



Cultivated grasslands

- In cultivated grasslands (meadows and pasture) soil properties are changed by intensive fertilize, periodic plowing and drainage using deep ditches.



- Cultivated grasslands take about 90% of all grassland areas in Latvia;



- Natural grasslands take only about 10% of all grassland area or 0,7% of the territory of Latvia.



Swamp drainage



- Swamps are rich in peat and to get peat swamps have to be drained.
- Peat is used as fuel and as a material in agriculture.





Peat is extracted only from 3% of all swamps in Latvia.

All together in Latvia there are about 1,5 billion tons of peat.



Olaine

- Originally the territory of Olaine was all swamp;



Olaine

- Thanks to the development of the peat extraction close to Olaine, the swamp was drained off and Olaine city started to develop.



Thank you for attention!

