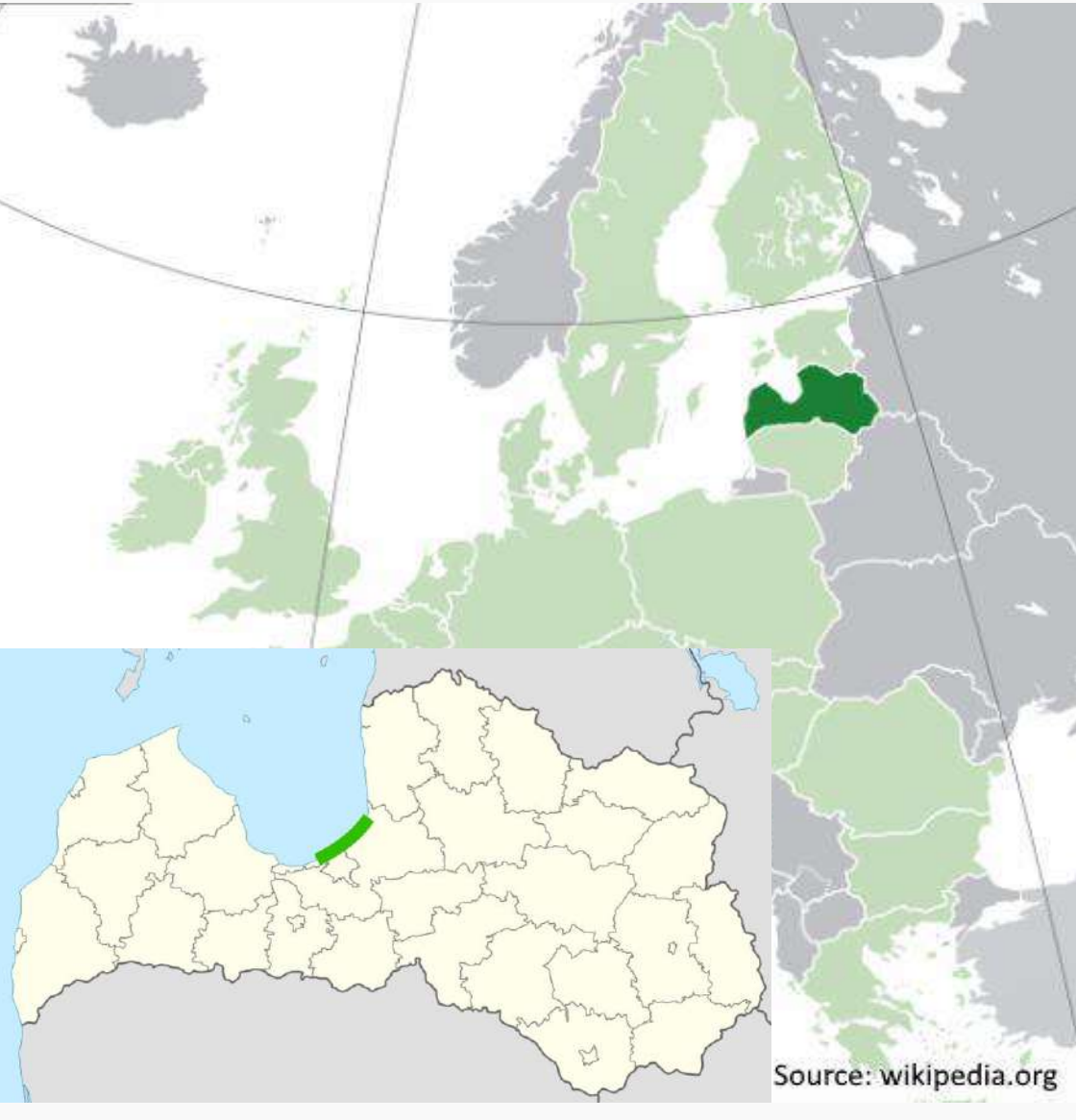


## Coastal Habitat Conservation in Nature Park "Piejūra"

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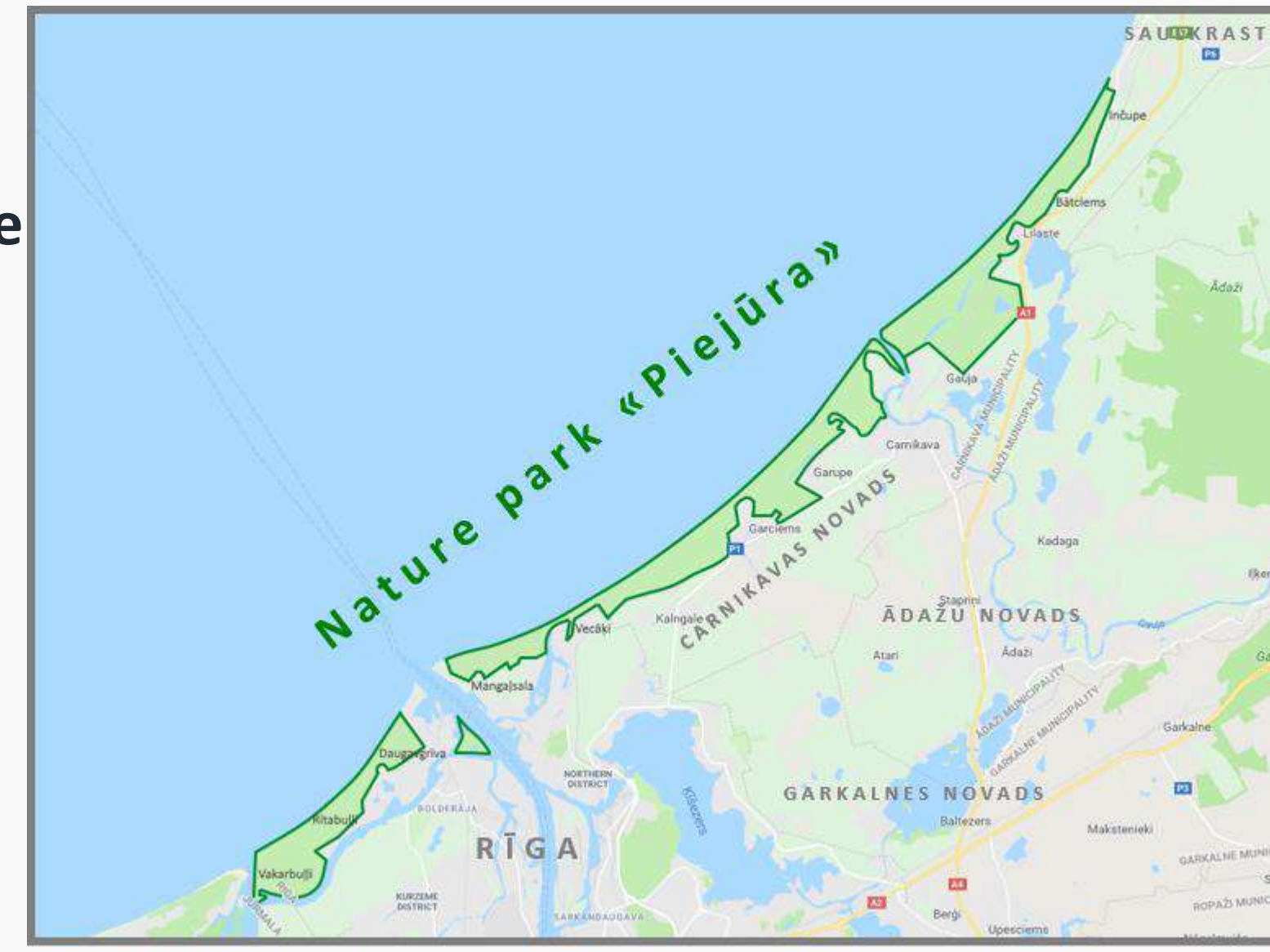


Today's greatest challenge in preserving coastal biodiversity is maintaining the balance of ecological processes and recreational resources. This is particularly the case for areas which have been subject to long-term human influence and are very sensitive to changes in environment. Nature Park "Piejūra" is one of those territories.



### Nature Park "Piejūra"

- Natura 2000 site
- 24 habitats and 82 species of the Boreal region and EU importance
- total area 4142 ha
- is located in 3 municipal territories - Rīga city, Carnikava county, Saulkrasti county
- overlap interests of different sectors - nature protection, culture, recreation, tourism, forestry, education
- huge anthropogenic pressure
- the habitat quality is rapidly decreasing
- lack of habitat management and recreational infrastructure



LIFE CoHaBit – Mitigation of the heavy anthropogenic pressure and restore the vulnerable coastal habitats in Nature Park "Piejūra", Natura 2000 site.

- 1) Nature Management plan & Visitor management plan
- 2) Habitat conservation and restoration
- 3) Control of invasive species
- 4) Stakeholder's involvement

### Conservation and restoration – innovative and demonstrative actions

#### Restoration and management measures of wooded dunes

Latvia is one of the few countries in the EU where natural wooded dunes can be still found. The wooded dunes cover more than 50% of NP "Piejūra" area, which is 4.6% of the total wooded dune habitat area in Latvia and 2.8% of EU.

To restore wooded dunes, activities consist of complex restoration methods together forming a mosaic structure to increase the biodiversity of habitats, promote regeneration of pine forests and create favorable habitat conditions for *Dianthus arenarius*



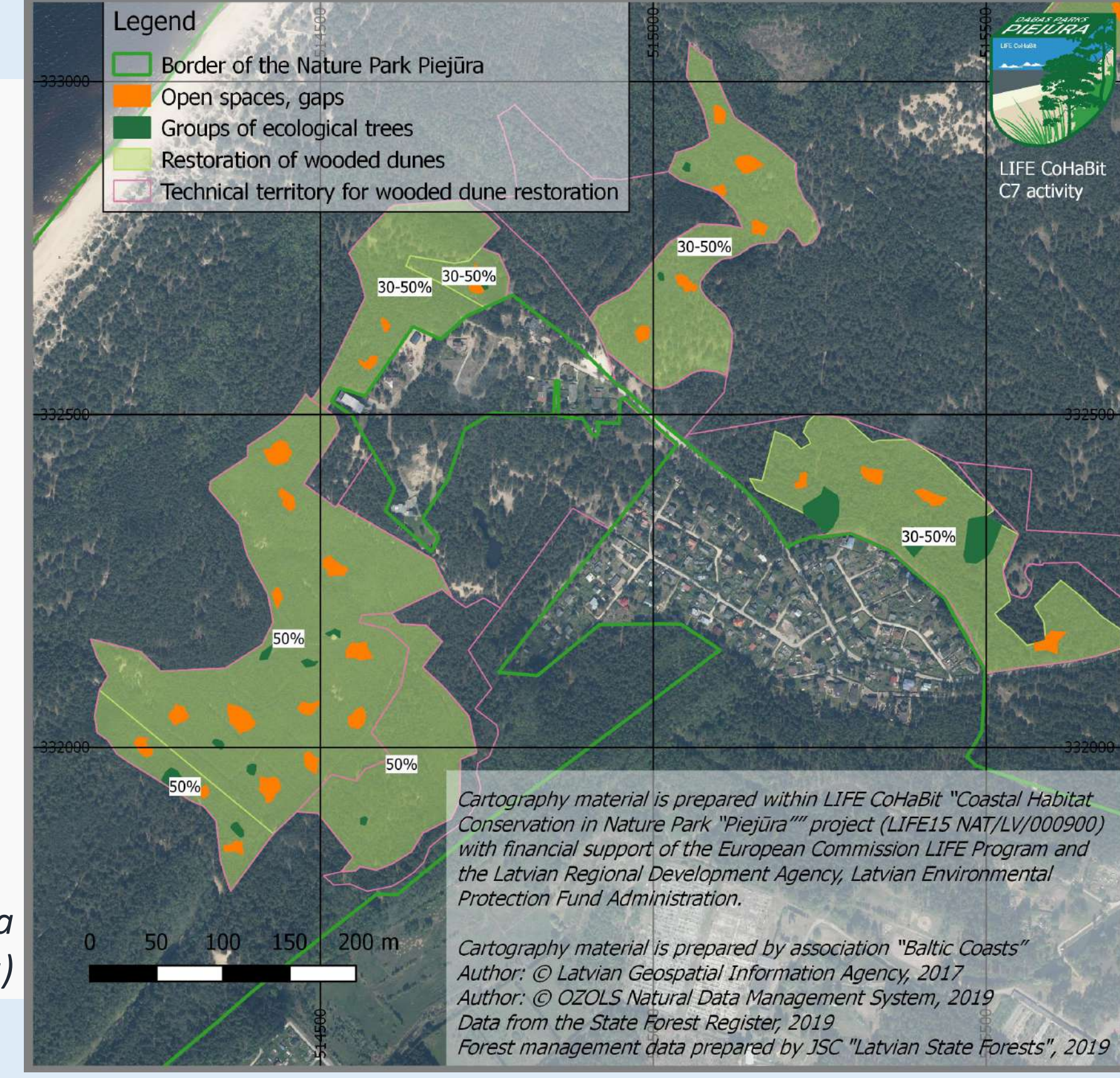
populations. Such work complex is innovative approach and is carried out for the first time in NP Piejūra and overall Latvian coast.

*Dianthus arenarius* (A.Jeņina)

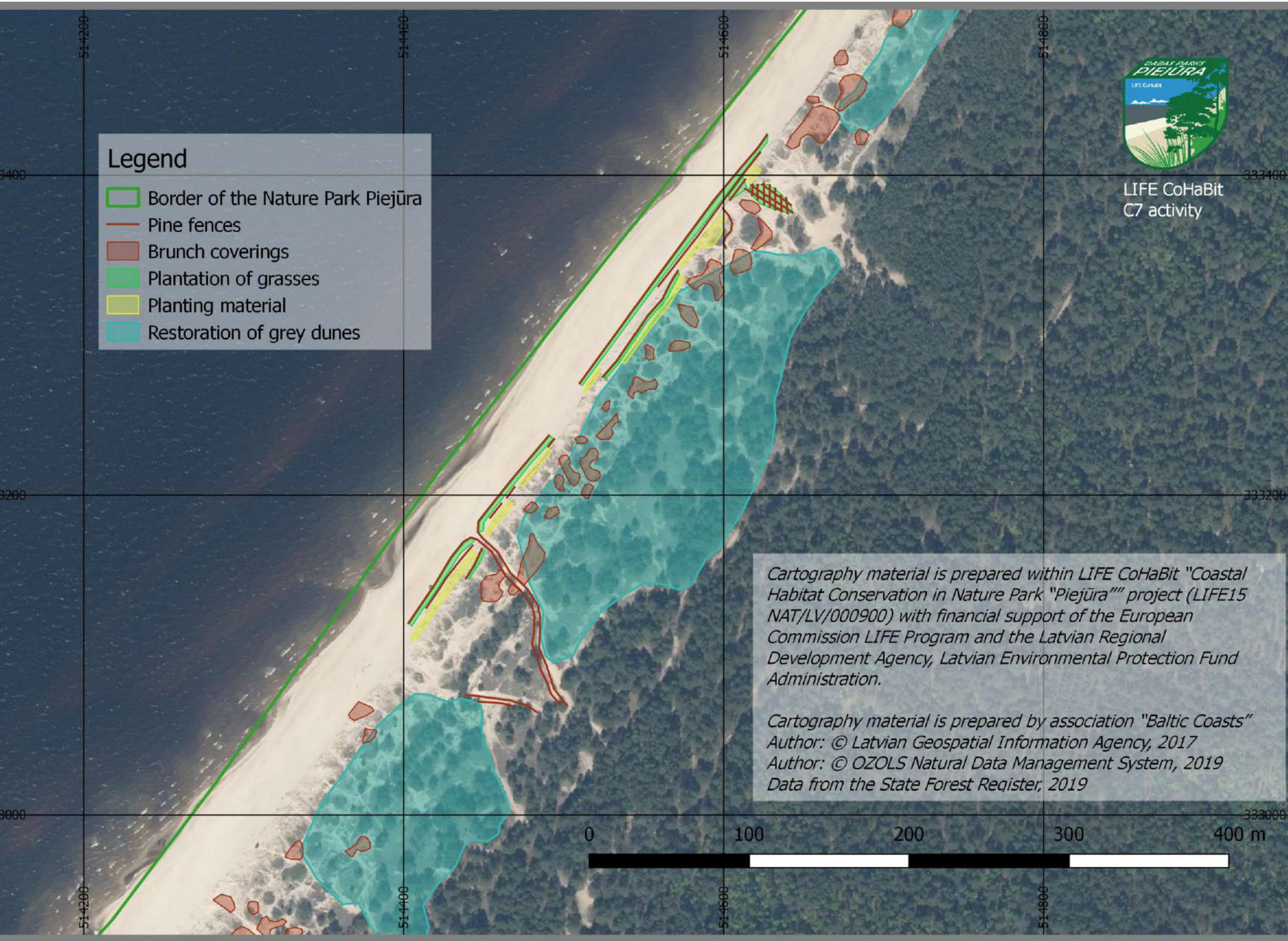
Gap creation in wooded dunes (A.Jeņina)

Woodland thinning (B.Laime)

Wooded dune restoration area in Canikava (B.Laime, I.Sufelaks, A.Jeņina)



#### Reduction of anthropogenic impact on foredune and grey dunes



NP "Piejūra" is one of the few places on the Latvian coast where wide foredunes can be found. The stability and ability to self-regenerate after storms is difficult due to high anthropogenic pressure. Main methods for erosion reduction are branch coverings, plantation of *Leymus arenarius* or *Ammophila arenaria* and set up of fences to prevent erosion. An innovative and demonstrative aspect of coastal erosion reduction is the use of reeds for fence installation.



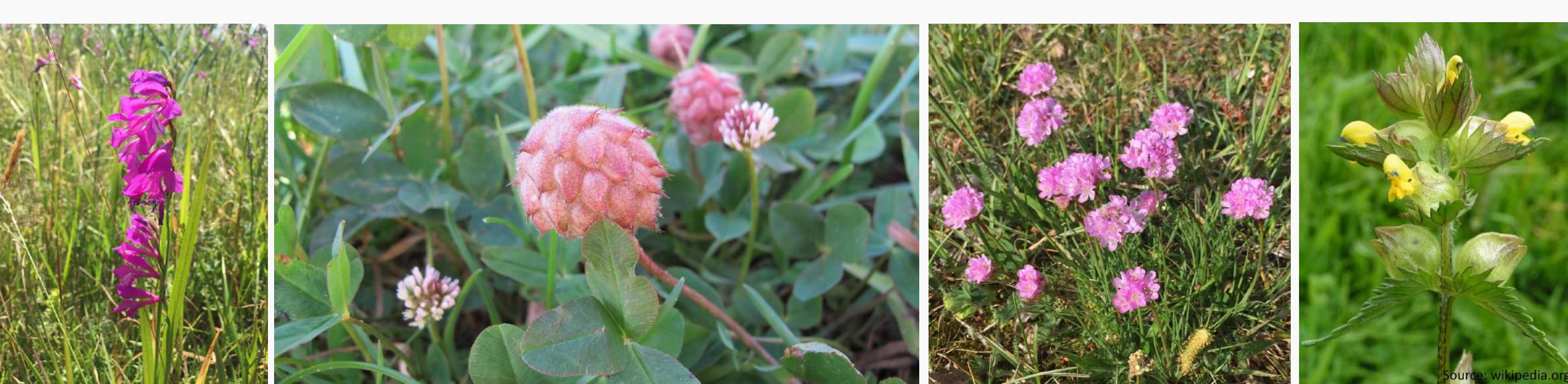
Newly installed reed fences in 2018 and after one year in 2019 in Carnikava (L.Ose)



Pine branch coverings (G.Ulme) Pine branch fences and fences closeup after 3 month of installation in Mangalsala (A.Jeņina)

#### Restoration measures of Boreal Baltic coastal meadows

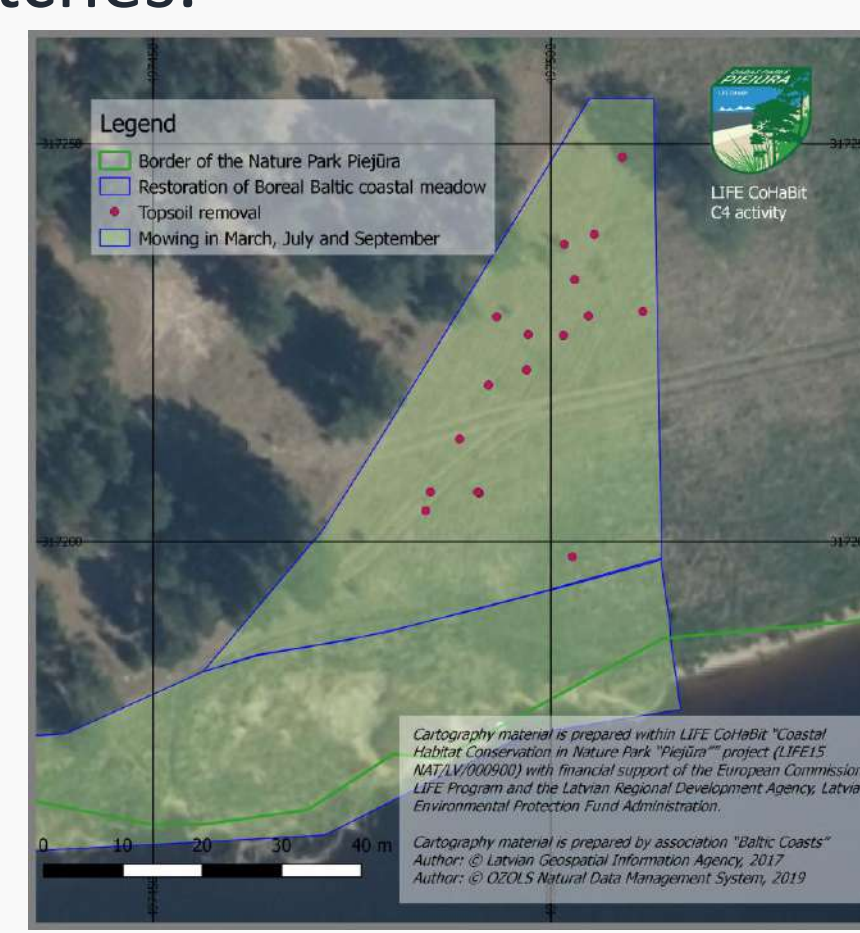
Boreal Baltic coastal meadows habitats are very rare in Latvia. NP "Piejūra" is third most important Natura 2000 site in Latvia for the conservation of coastal meadows. The purpose is to restore these grasslands in NP "Piejūra". Not only mowing is used, but also grass harvesting and creation of bare soil patches. Such works is done for the first time in the NP "Piejūra".



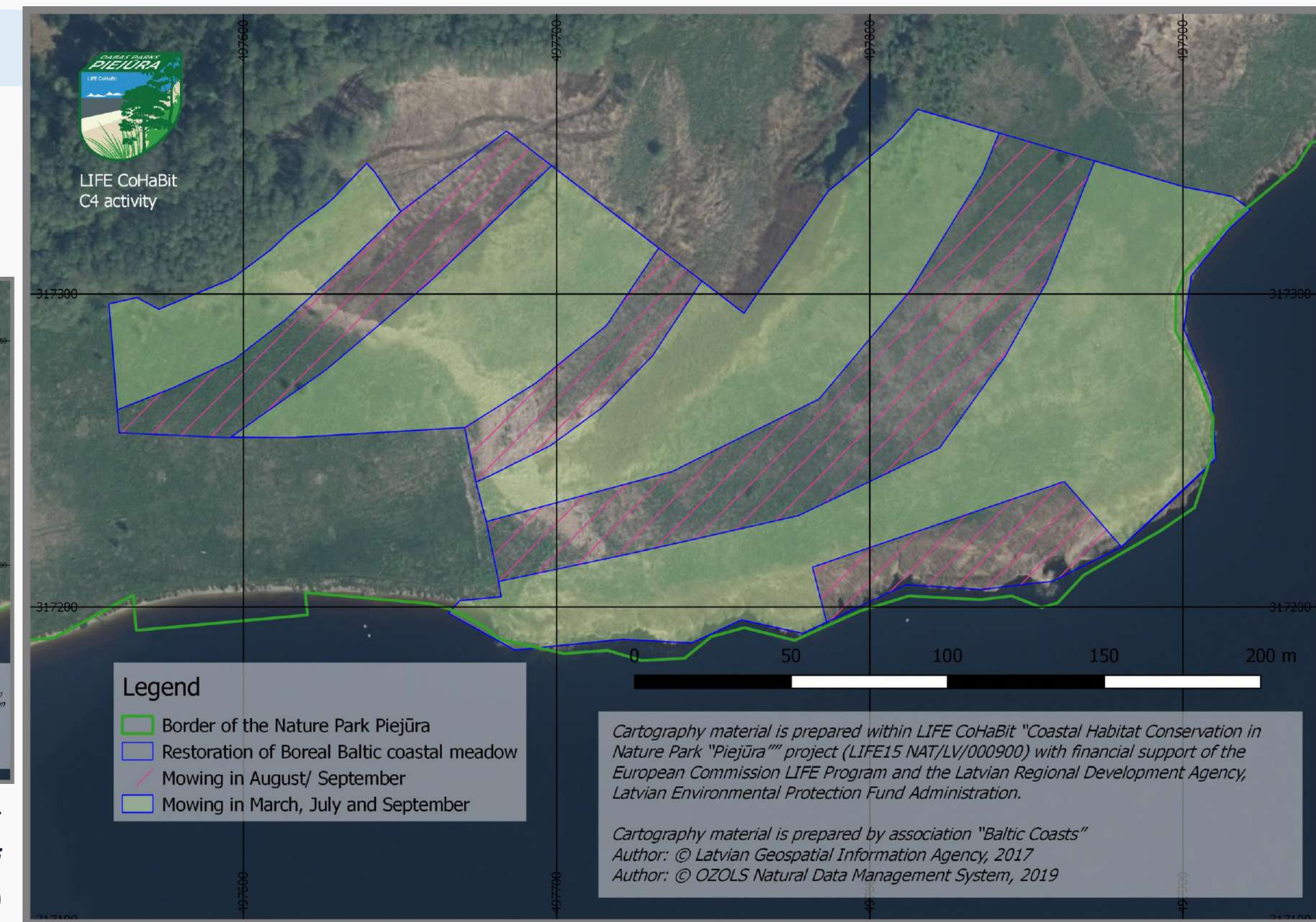
*Gladiolus imbricatus* *Trifolium fragiferum* (B.Laime) (A.Jeņina)

*Armeria maritima* (A.Jeņina)

*Rhinanthus* spp. (wikipedia.org)



Boreal Baltic coastal meadows restoration in Vakarbūļi (B.Laime, A.Jeņina)



The main innovation is based on the creation and application of a new management model: in the meadow is identified several areas where mowing takes place at different times, taking into account the ecology of protected species (part of meadow is mowed in June, another in July or August, also some places remain untouched). In another year mowing places are changed. Late mowing also is applied to restore one of the target species *Angelica palustris*, because the seeds mature at the end of August. As a result, more favorable habitat conditions are created for habitats and rare and protected plant and bird species. In addition, to improve the vegetation structure seeds of *Rhinanthus* spp. were scattered.

LIFE Nature and Biodiversity sub-program, LIFE15 NAT/LV/000900 "Coastal Habitat Conservation in Nature Park "Piejūra"  
 Project period – 01/09/2016 - 31/08/2020. Total budget 970 067 EUR, EU contribution: 582 041 EUR.  
 Project partners: Carnikava Municipality, Nature Conservation Board, Riga City Council City Development Department, Association Baltic Coasts