Sustainable and responsible management and re-use of degraded peatlands in Latvia – LIFE REstore

REstore LIFE project

Establishment of a decision support system for responsible and sustainable degraded peatland re-use and management in Latvia
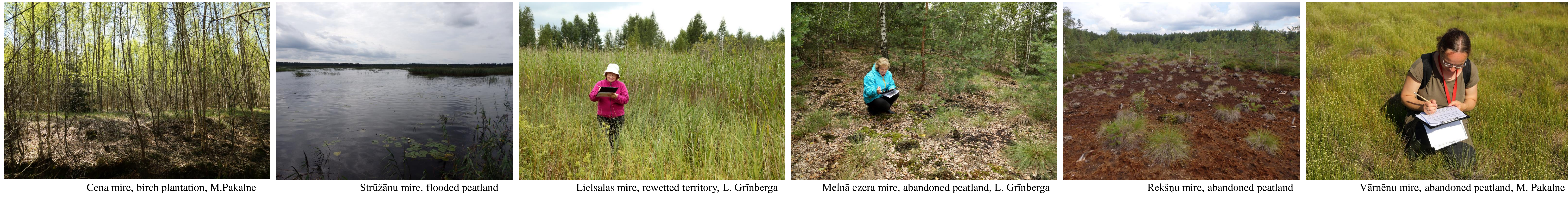
Objectives

Source: wikipedia.org

- to approbate a field measurement based methodology for accounting of the GHG emissions from managed wetlands in Latvia in accordance with the supplement to the IPCC guidelines for national GHG inventories "Wetlands";
- to perform an inventory and develop a database of the degraded peatlands in Latvia for public access and use of obtained data;
- to develop a decision support tool for land re-use planning of degraded peatland areas, providing the most optimal balance of the aspects of ecological restoration for biodiversity, benefits for economic growth and GHG emission reduction for long-term mitigation of negative climate change impacts in Latvia;
- to support policy-makers by providing a strategic framework for implementation of the developed approaches of sustainable re-use of degraded peatlands for integration in national planning documents.

Classification and inventarization

The objective of inventory for all Latvian degraded peatlands is the necessity to sustain the ecological, social and economic functions of the peatlands at present, as well as in the future.

| Develop criteria for the classification of degraded areas and define the optimal management approache | → | Obtain accurate information of the degraded peatland areas and their ecosystems | → | Identify the degraded peatland areas and their characteristics | → | Develop maps which can be used as a communication tool | → | Develop a data-base of the degraded peatlands |

Cena mire, birch plantation, M.Pakalne

Strūžānu mire, flooded peatland

Lielsalas mire, rewetted territory, L. Grīnberga

Melnā ezera mire, abandoned peatland, L. Grīnberga

Rekšņu mire, abandoned peatland

Vārnēnu mire, abandoned peatland, M. Pakalne

GHG emissions

To elaborate a gas flux measurement based emission factors for GHG (CO_2, N_2O and CH_4) emissions accounting in managed wetlands and restored peat-lands in accordance with the Supplement to the 2006 Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement). The field data will be obtained using the closed chamber methodology elaborated and approved by Universities of Tartu and Tallinn.

Study sites are established in areas where peat extraction is ongoing or has ceased at least 20 years ago. GHG emissions from following types of land use will be measured:

1. **Peat extraction sites** – milled peat extraction;
2. **Abandoned peat extraction sites** – vegetation has not emerged after the cessation of peat extraction;
3. **Abandoned peat extraction sites** – vascular plants (except the common Reed) have colonized the area;
4. **Perennial grasslands** on former peat extraction fields – grass is grazed or collected for the forage;
5. **Arable land** on former peat extraction fields – crops are;
6. **Arable land** on former peat extraction fields – vegetables are grown;
7. **Blueberry plantations** on former peat extraction fields;
8. **Cranberry plantations** on former peat extraction;
9. **≥ 20 years old Norway spruce or Scots pine stands** on the former peat extraction sites – peat layer is ≥ 30 cm;
10. **≥ 20 years old birch stands** on the former peat extraction sites – peat layer is ≥ 30 cm;
11. **Intact or relatively intact raised bog** – water table has not been intentionally regulated, and the area can be defined as a forest according to the Forest Law of Latvia;
12. **Intact or relatively intact transitional mire** – water table has not been intentionally regulated, and the area cannot be defined as a forest according to the Forest Law of Latvia;
13. Former peat extraction sites which have been **re-colonized by common Reed** *(Phragmites)*;

Soil sampling at the blueberries plantation in the Kalna mire
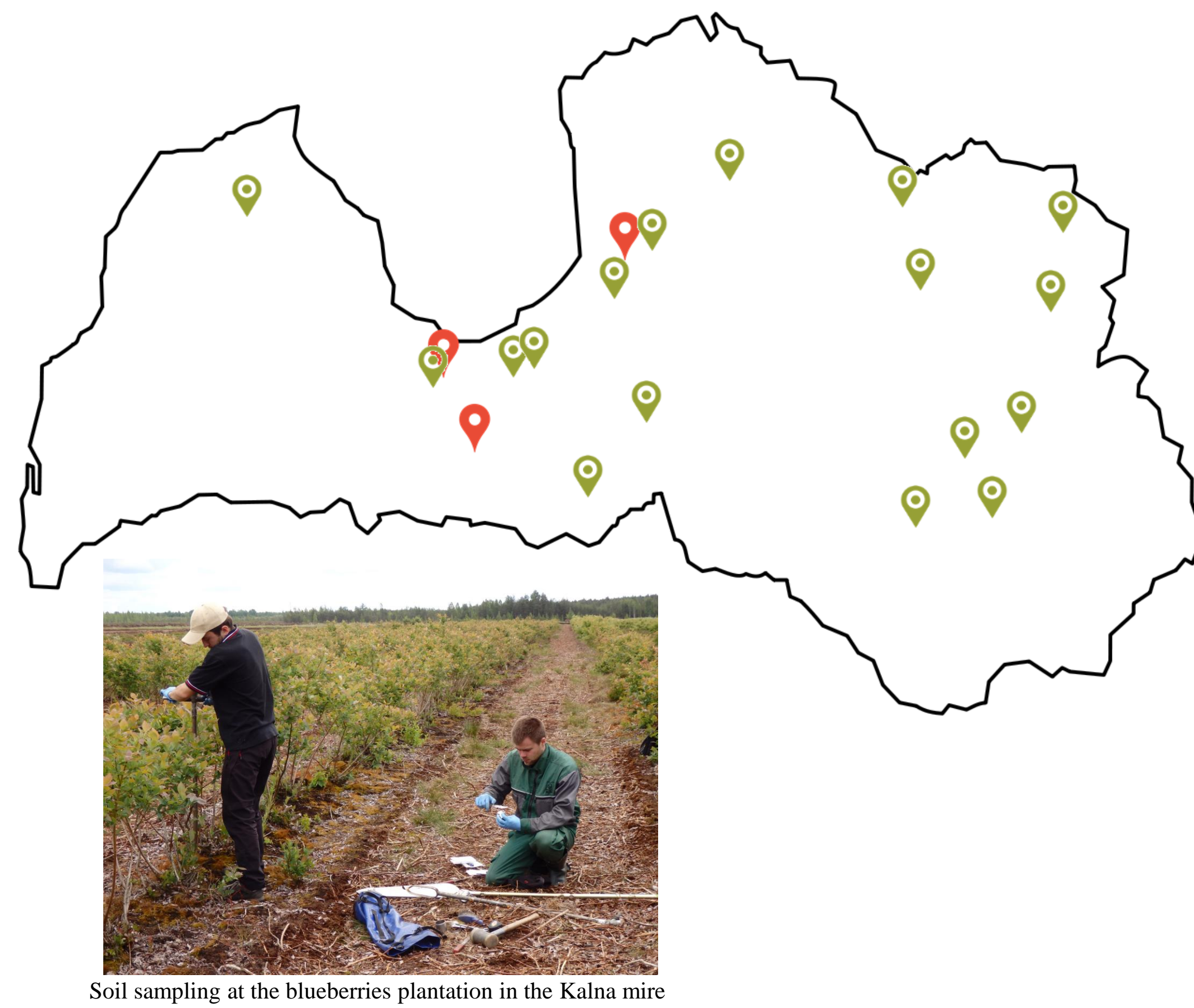
DEMO-sites

The project demonstration actions will focus on peatland restoration scenario and re-cultivation scenarios:

- Lauga Mire: restoration works
- Lauga peatland: cranberry plantation
- Ķemeru peatland: renaturalisation works
- Kaigas peatland: blueberry plantation
- Kaigas peatland: afforestation works

Degraded peatland re-use optimisation model - map based multi-criteria land use decision support tool

This model will present:
- characterisation of the interrelations between the climate and regulatory functions, use, quality and socioeconomic value of ecosystems;
- study the interrelations of the factors that influence the socio-economic value of the ecosystems;
- modelling of the scenarios and assessment of the particular protection measures and their socio-economic impacts.

These aspects mentioned above will be incorporated in the map-based multi-criteria tool - the optimisation model for supporting the decision making process for the estimation for most suitable and beneficial management scenarios for degraded peatland areas in Latvia.

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