



LITHUANIAN
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LIFE AUKSTUMALA and other LIFE+ projects for restoring raised bogs in Lithuania





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I. LIFE + projects on restoration of peatlands

**II. *Sphagnum* reintroduction in exploited parts of
Aukštumala peatland**

Dr Jūratė SENDŽIKAITĖ^{1,2}

Dr Leonas JARAŠIUS^{1,2}

Prof. Dr Romas PAKALNIS^{1,2}

Nerijus ZABLECKIS²

¹Nature Research Centre (Vilnius, Lithuania)

²Lithuanian Fund for Nature



Restoration of raised bog of Aukštumala in Nemunas Delta Regional Park Aukštumala LIFE12 NAT/LT/000965

Coordinating beneficiary: Lithuanian Fund for Nature
Duration: 01/09/2013 – 30/06/2017

2013–2017 m.
733 077 EUR

Main objective

to restore and maintain the favourable conservation status of the "7110 Active Raised bog" habitat within the Aukštumalės Telmological Reserve.

- damming old drainage ditches in the raised bog, thus raising the water table in the project area and increasing *Sphagnum* growth.
- Large-scale removal of invading bushes and trees from overgrown high moor areas will complement the damming action.
- Foreseen conservation actions will also support other Annex II habitat types ("3160 natural dystrophic lakes") and species (e.g. black grouse (*Tetrao tetrix*) and wood sandpiper (*Tringa glareola*)).



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The Aukštumala raised bog occurs in the western part of Lithuania, in the interstream area of the rivers Nemunas and Minija.



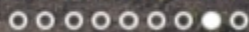
Nemunas Delta Regional Park



LT EN

LIFE Aukštumala LIFE12NAT/LT/000965

„Aukštumalės aukštapelkės atkūrimas Nemuno Deltos regioniniame parke“



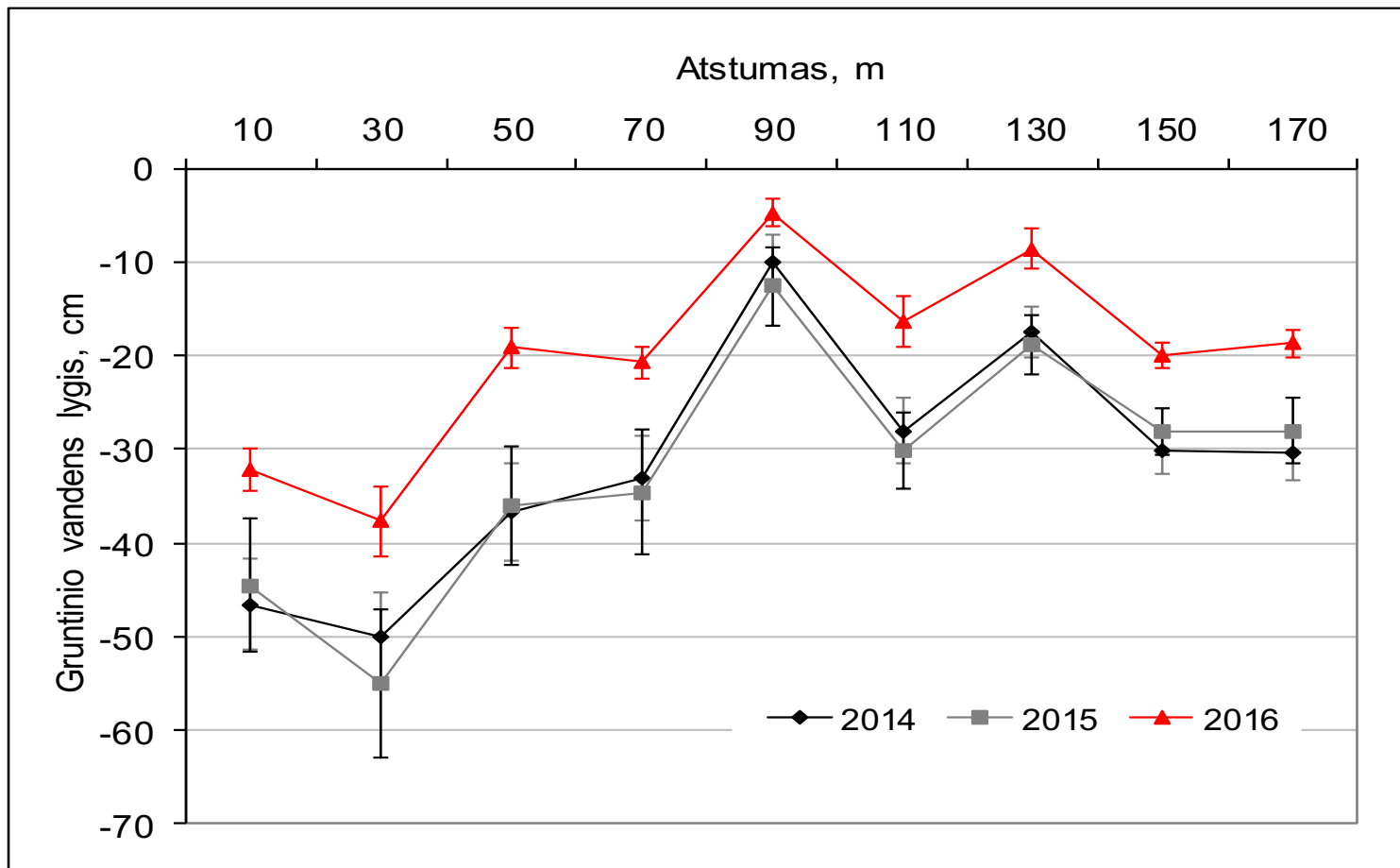


LT EN

LIFE Aukštumala LIFE12NAT/LT/000965

„Aukštumalės aukštapelkės atkūrimas Nemuno Deltos regioniniame parke“





After daming water table in the bog increased from 5 to 15 cm , and did not fall bellow 30 cm





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LIFE PEAT RESTORE

LIFE15 CCM/DE/000138

Reduction of CO₂ emissions by restoring degraded peatlands in Northern European Lowland



TALLINN UNIVERSITY

LIFE Peat Restore

PROJECT COUNTRIES: Germany, Poland, Lithuania, Latvia, Estonia

Budget:

Project value : 6,010,517 €

Lithuanian value – 1.180.298 €

Duration 01/06/2016 – 30/06/2021

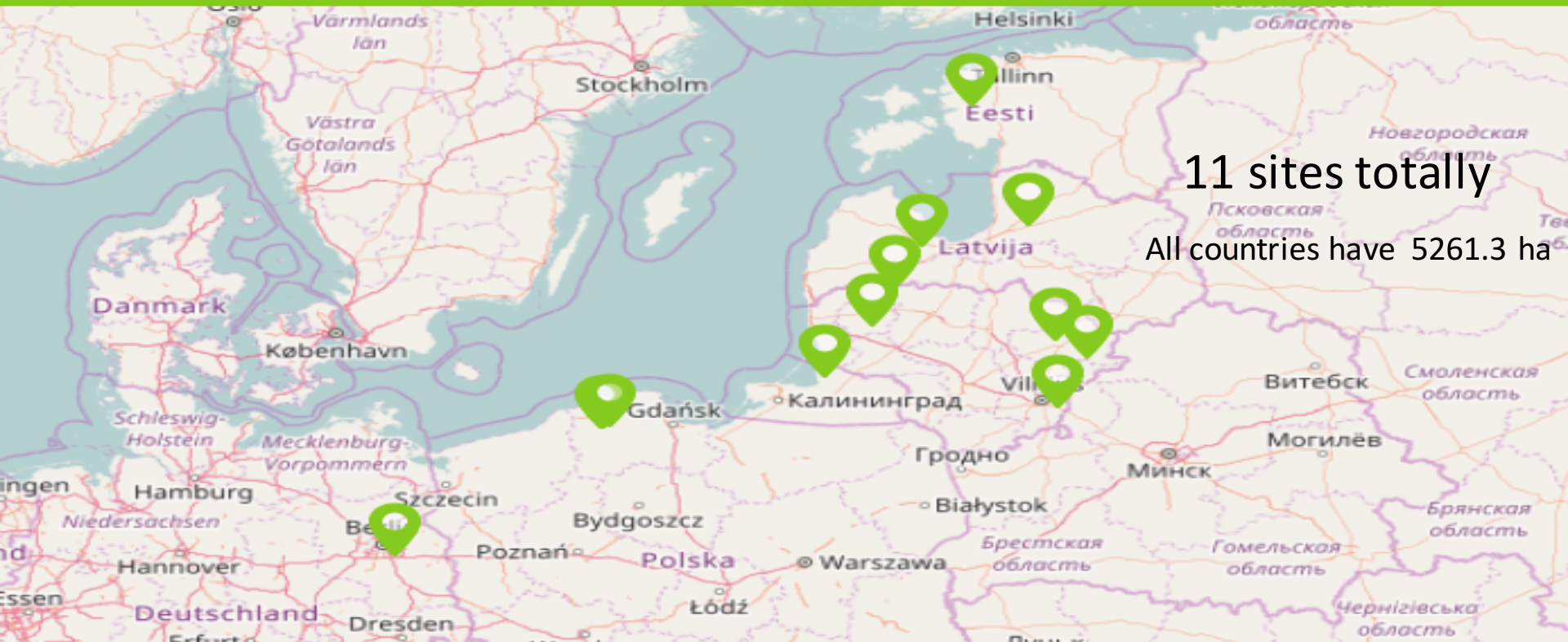


EU LIFE % : 59,72 %

Co-financiers

Landkreis Barnim (administrative district Barnim)
 Latvian Environmental Protection Fund
 Administration
 Ministry of Environment of the Republic of Lithuania
 Narodowy Fundusz Ochrony Środowiska i
 Gospodarki Wodnej
 Environmental Investment
 Centre/Keskkonnainvesteeringute Keskus





LIFE PEAT RESTORE



Plinkšių Peatland



Sachara peatland



Pučšios telmological reserve



Aukštumala peatland: exploited part

Amalvas peatland in the Biosphere Reserve of Zuvintasdurpynas



All together Lithuanian sites cover about 400 ha;



GEST - Gas Emissions based on Site Type

The GEST approach assigns CO₂ and CH₄ emission values to regionally elaborated vegetation types (KOSKA 2007), based on associated mean annual water tables, vegetation composition and land use. A matrix of all possible vegetation types allows for extra- and interpolation of emission values along the various axes of site parameters.”

Results of measurements indicate a correlation to water level

Different plants require or accept different grades of moisture (again water level)

They form particular vegetation types and vegetation is linked to emissions.



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Sphagnum spreading in Aukštumala peatland: lessons and new plans

Dr Jūratė SENDŽIKAITĖ^{1,2}

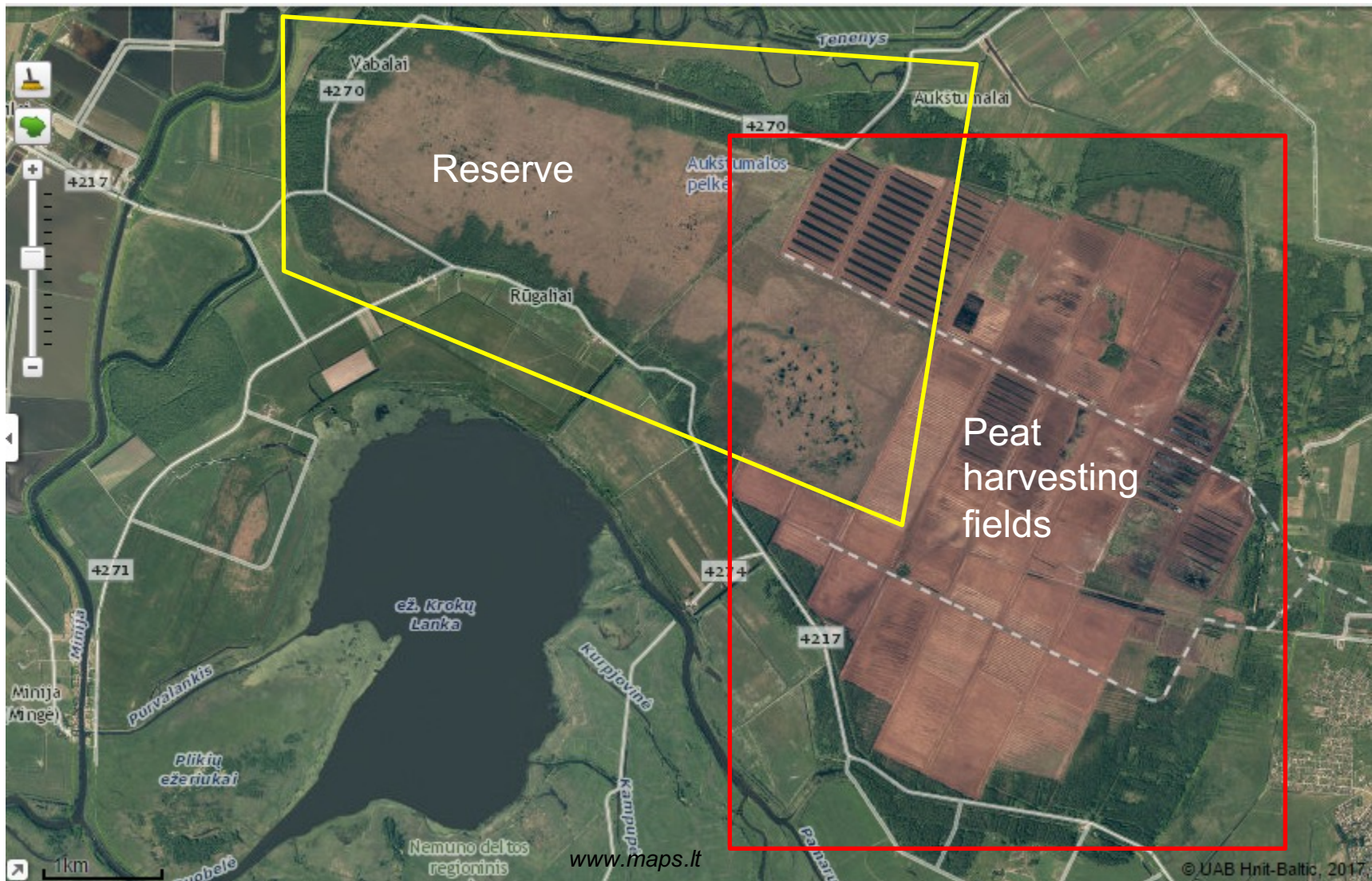
Dr Leonas JARAŠIUS^{1,2}

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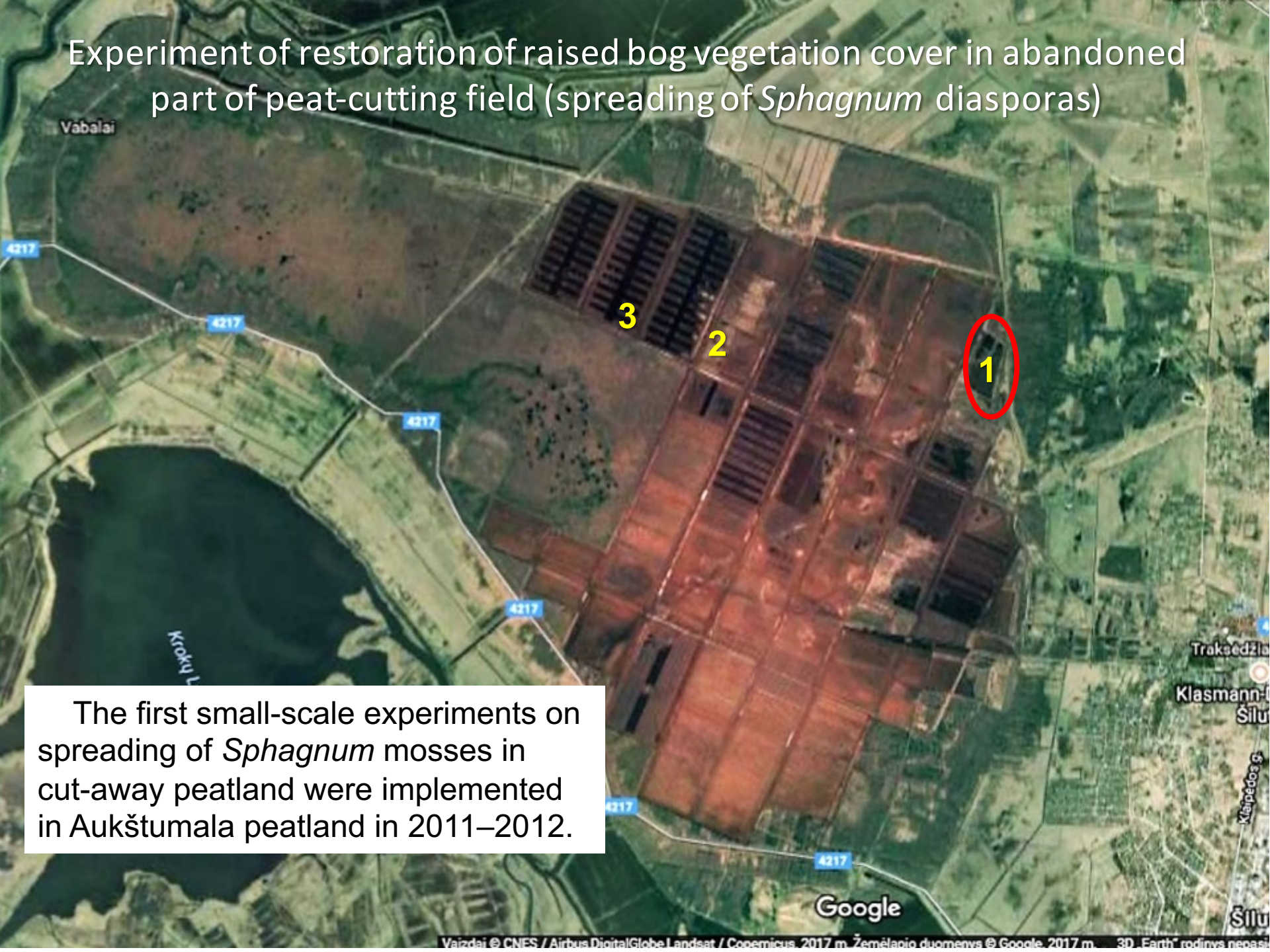
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- 1993: wetland of international importance (Ramsar Convention)
- 1995: Aukštumala Telmological Reserve
- 2004: Nemunas Delta – NATURA 2000 site

Experiment of restoration of raised bog vegetation cover in abandoned part of peat-cutting field (spreading of *Sphagnum* diasporas)



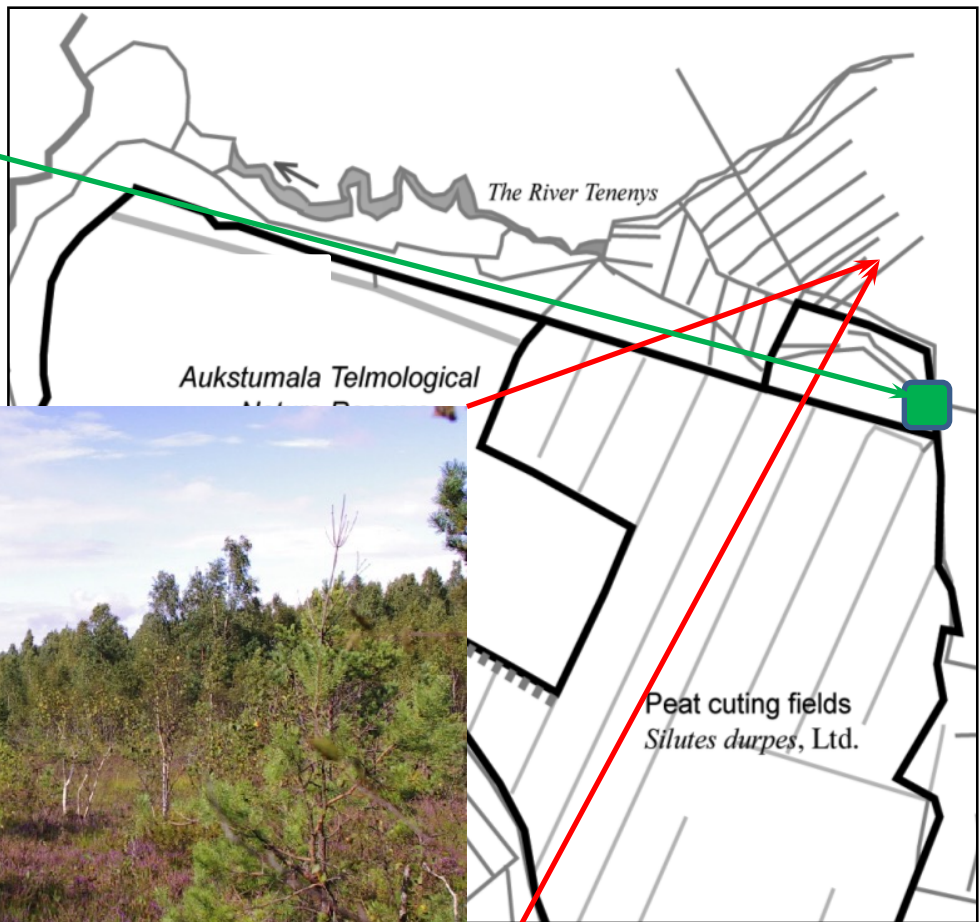
The first small-scale experiments on spreading of *Sphagnum* mosses in cut-away peatland were implemented in Aukštumala peatland in 2011–2012.

Experiment of restoration of raised bog vegetation cover in abandoned part of peat-cutting field (spreading of *Sphagnum* diasporas) - 1

KLASMANN-DEILMANN ŠILUTĒ, LTD



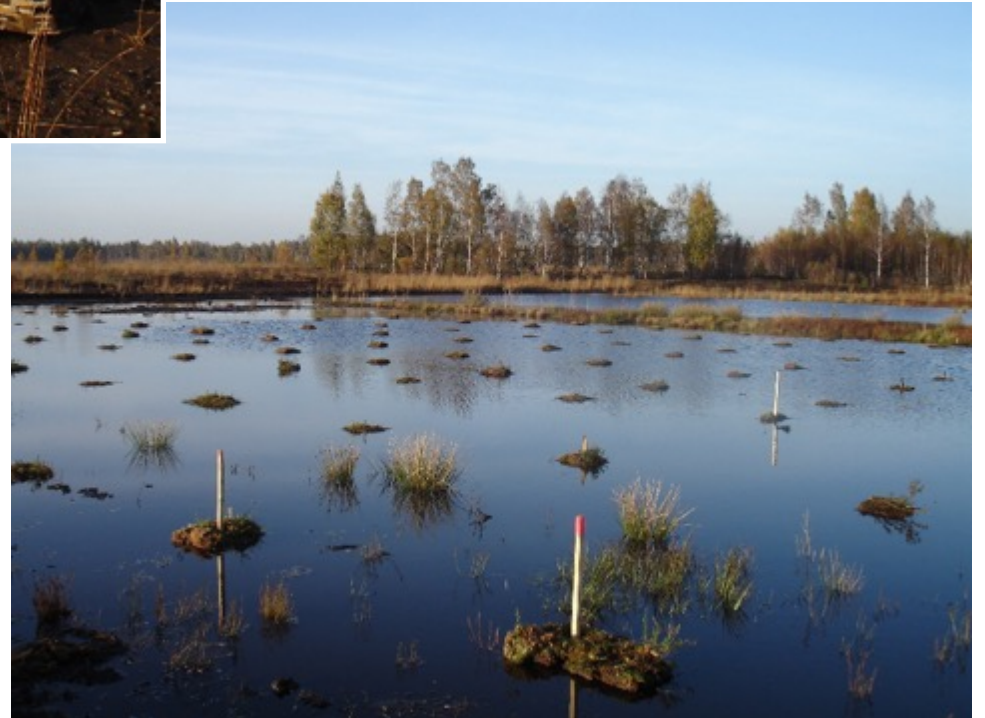
0.4 m x 0.4 m x 0.07 m
Sphagnum cover



Donor site

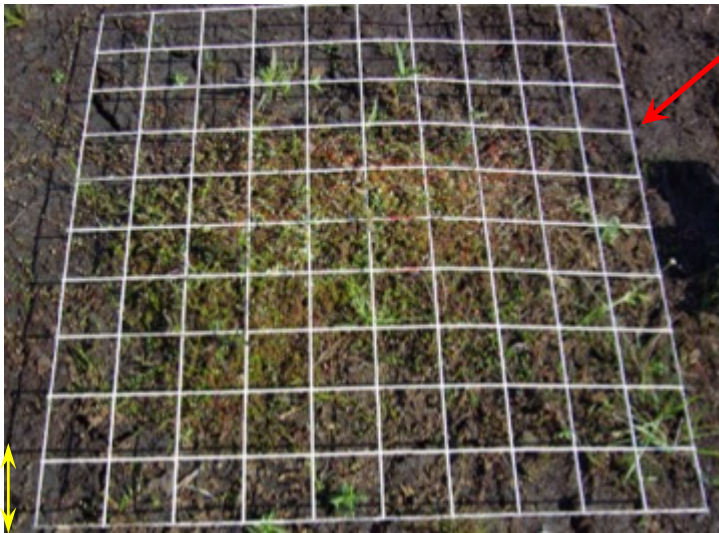
2011 and 2012





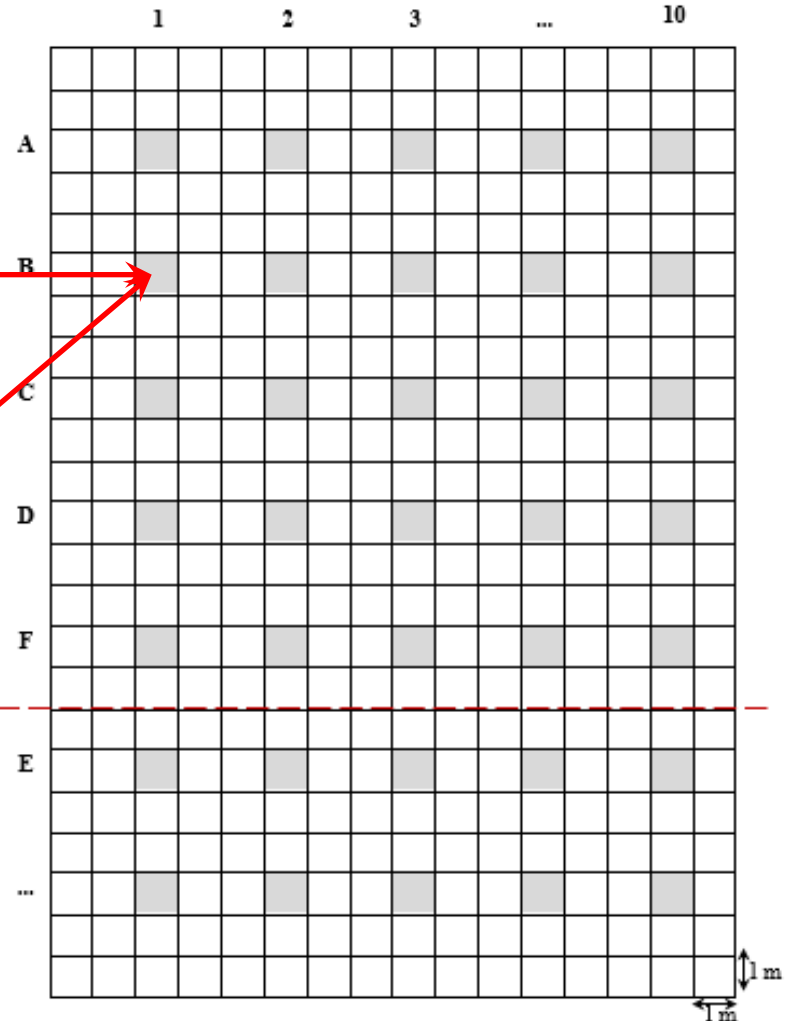
Vegetation monitoring scheme

1 demo plot



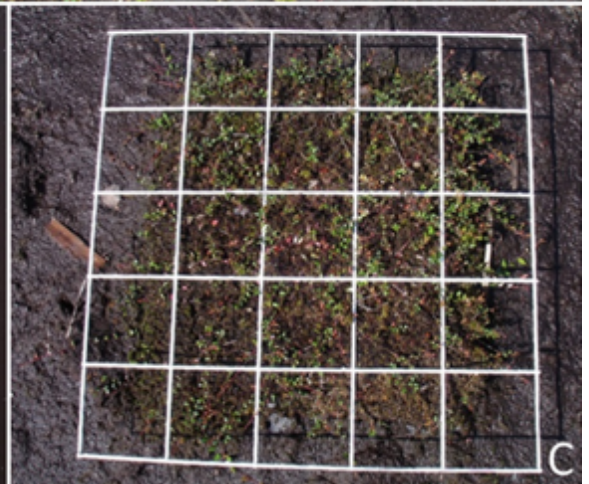
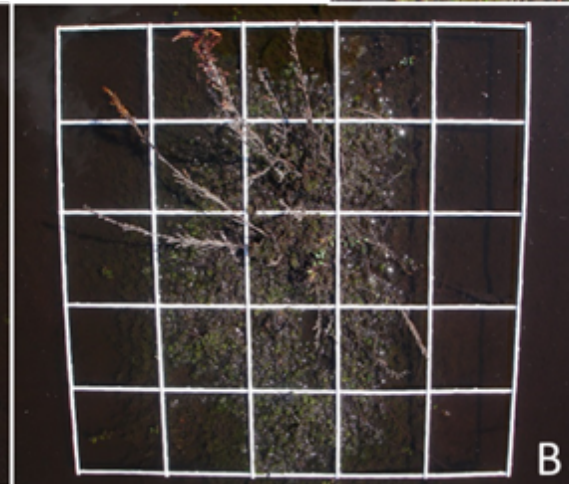
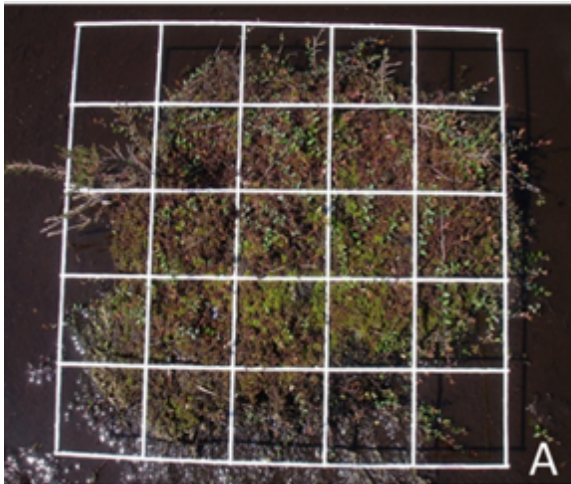
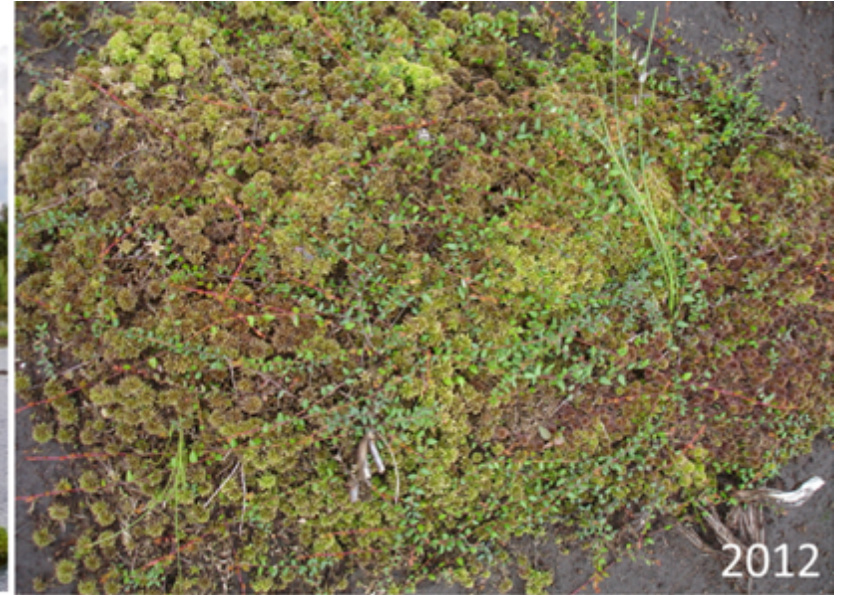
10 cm

EXPERIMENTAL FIELD



Trial plots (A1, A2, ..., A10)

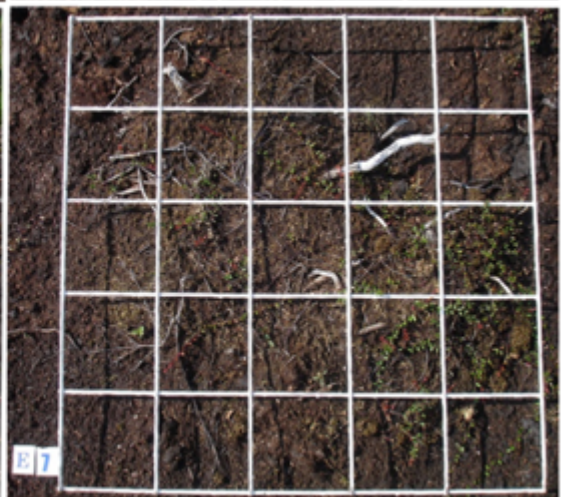
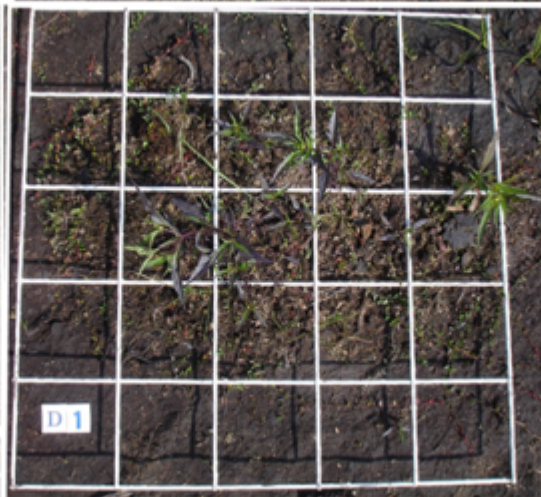
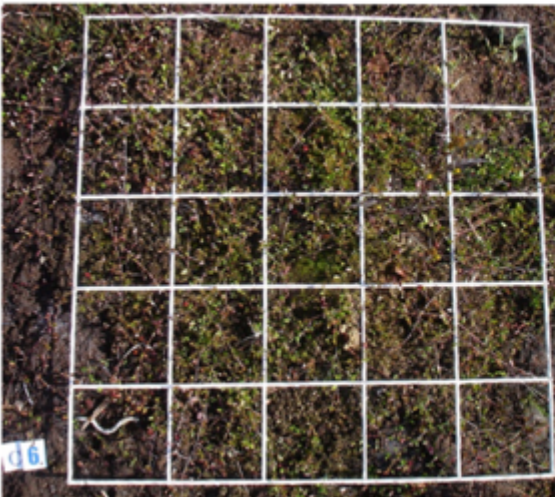
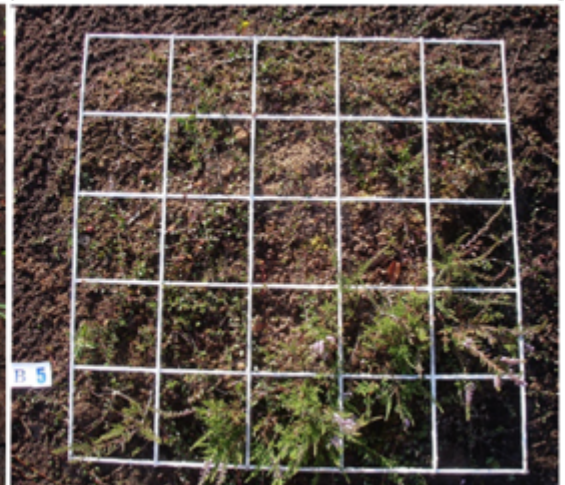
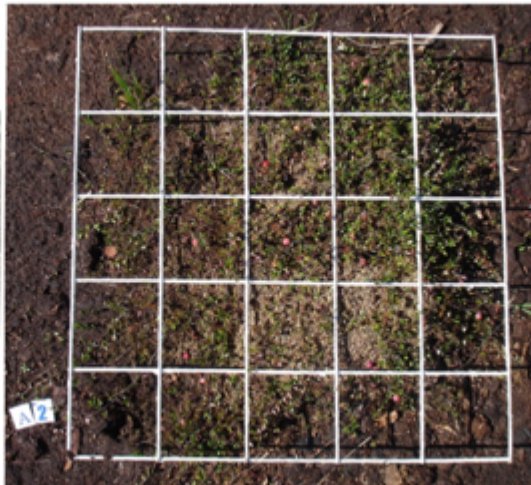


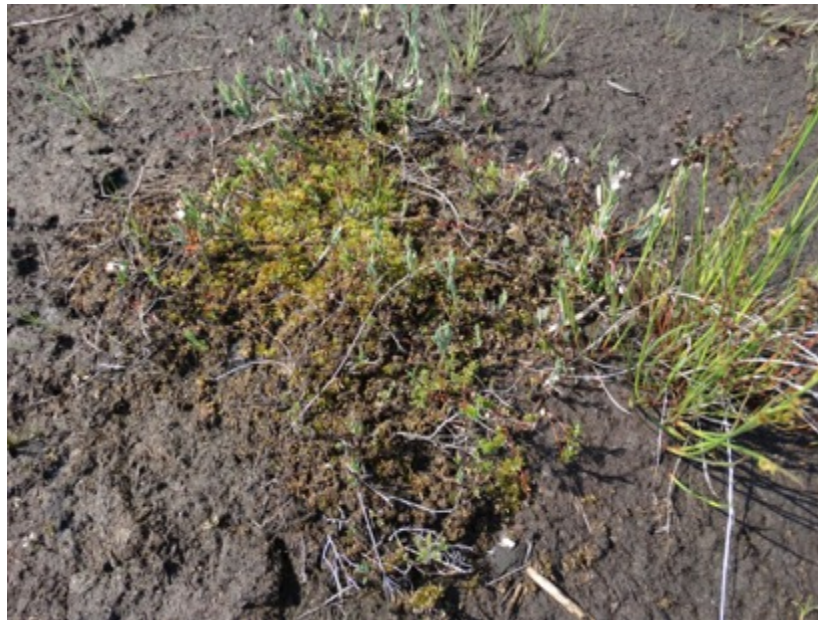


Within the first years of vegetation planting, 93% of all donor fragments of raised bog vegetation cover successfully established; *Sphagnum* spp. was dominant species (up to 53% of all plant cover)



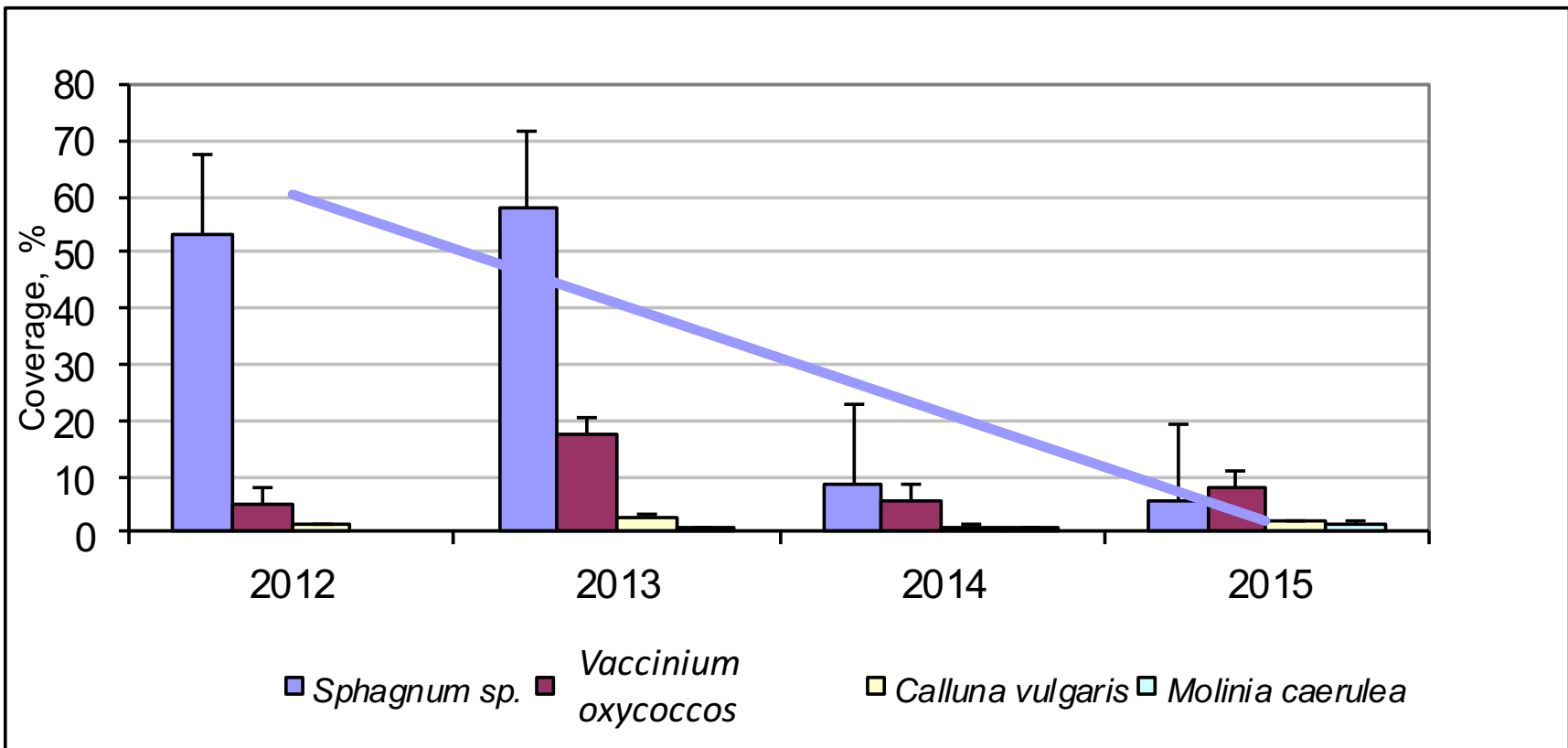
2013

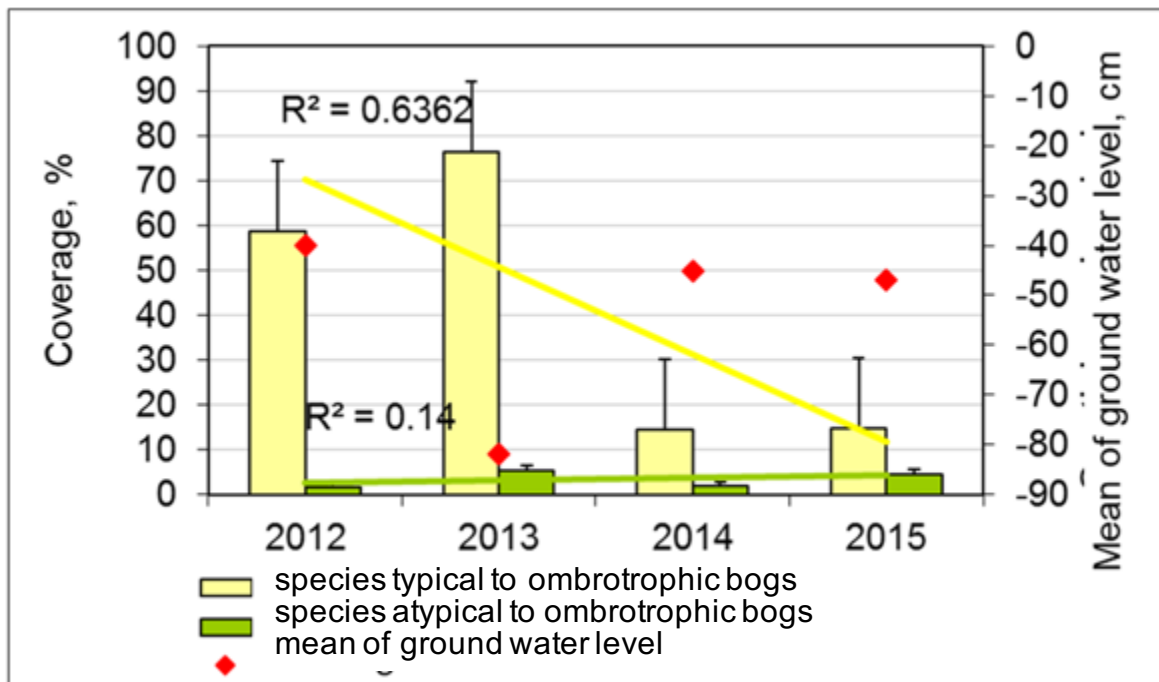




2015 07

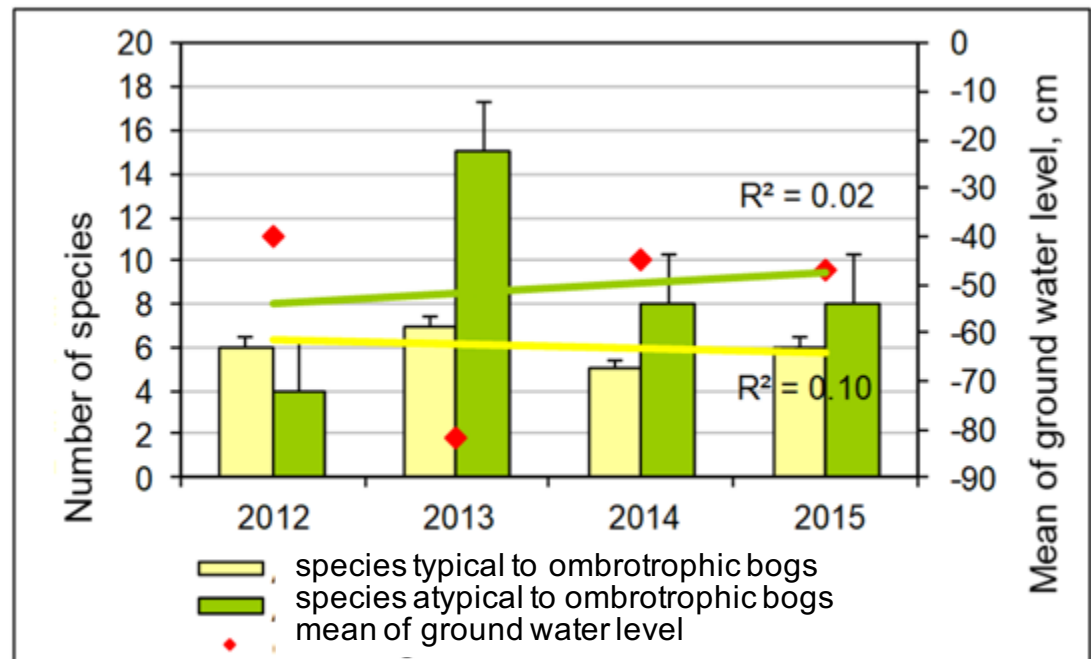






pH 4.6–5.0

Due to unfavourable hydrological conditions at the experimental site (ground water level depth during the vegetation period varied from -45 to -82 cm) and dry growing seasons in the last three years, the coverage of typical ombrotrophic plant species decreased from 58 (in 2012) to 14% (in 2015).



2nd demo plot



3rd demo plot

Established in 2014

Area – 1,8 ares



2015 08





Activities in Klasmann-Deilmann managed peatland in LIFE PEAT RESTORE

10 ha of sphganum to be reintroduced again

Installed automatic loggers TD Divers to monitor water level

Drained the site to get “initial” stage of the site

Detailed topography measuring ongoing, technical proposals for establishment of the site ready for sphagnum to be ready in autumn 2018.

Sphagnum spreading to start autumn 2018/spring 2019.





Thank you for attention

