

Life Mires Estonia

Marko Kohv
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LIFE Mires Estonia; LIFE14 NAT/EE/000126



Total budget: 2,815,576 EUR,

Duration: 01.09.2015 – 31.12.2021

Partners: ELF, University of Tartu, MTÜ Arheovisioon

www: soo.elfond.ee

Unmanned aerial systems for monitoring

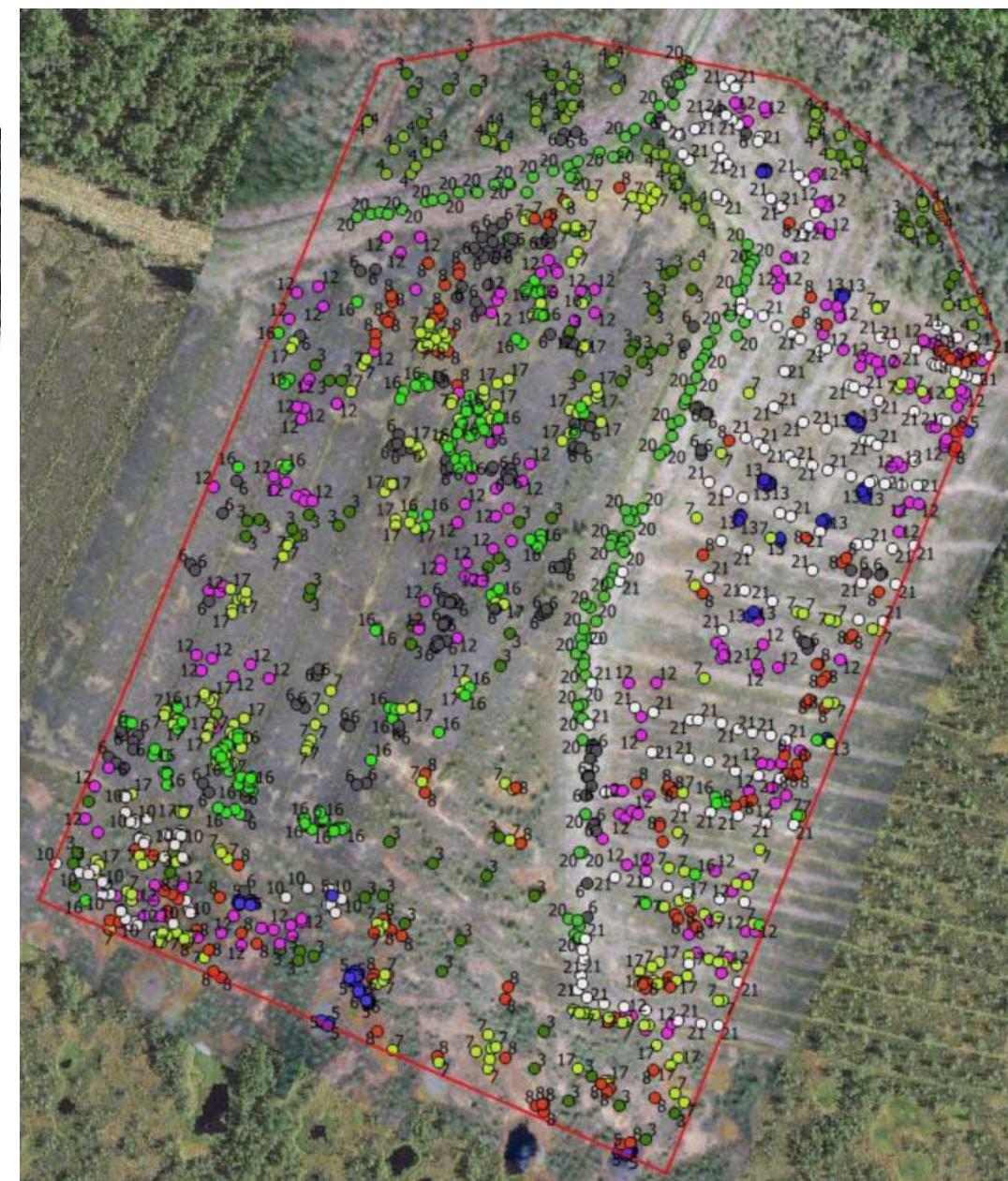
- **Platforms**
 - Multirotors
 - Fixed-wing
 - VTOL fixed wing



- **Sensors**
 - RGB cameras
 - Multispectral camera
 - Thermal + RGB camera



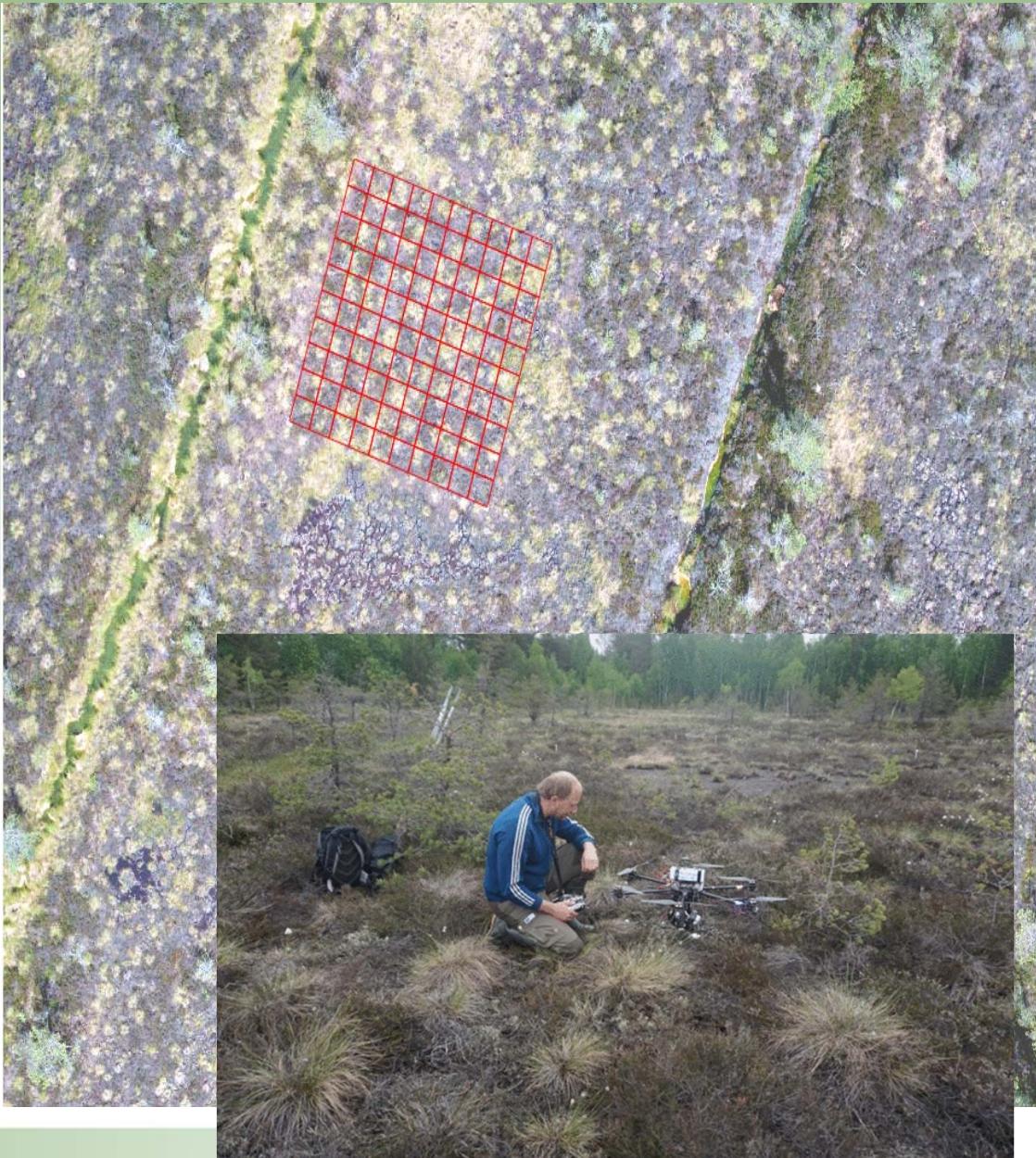
Vegetation mapping: 15-25 ha



Vegetation mapping

Ground truth

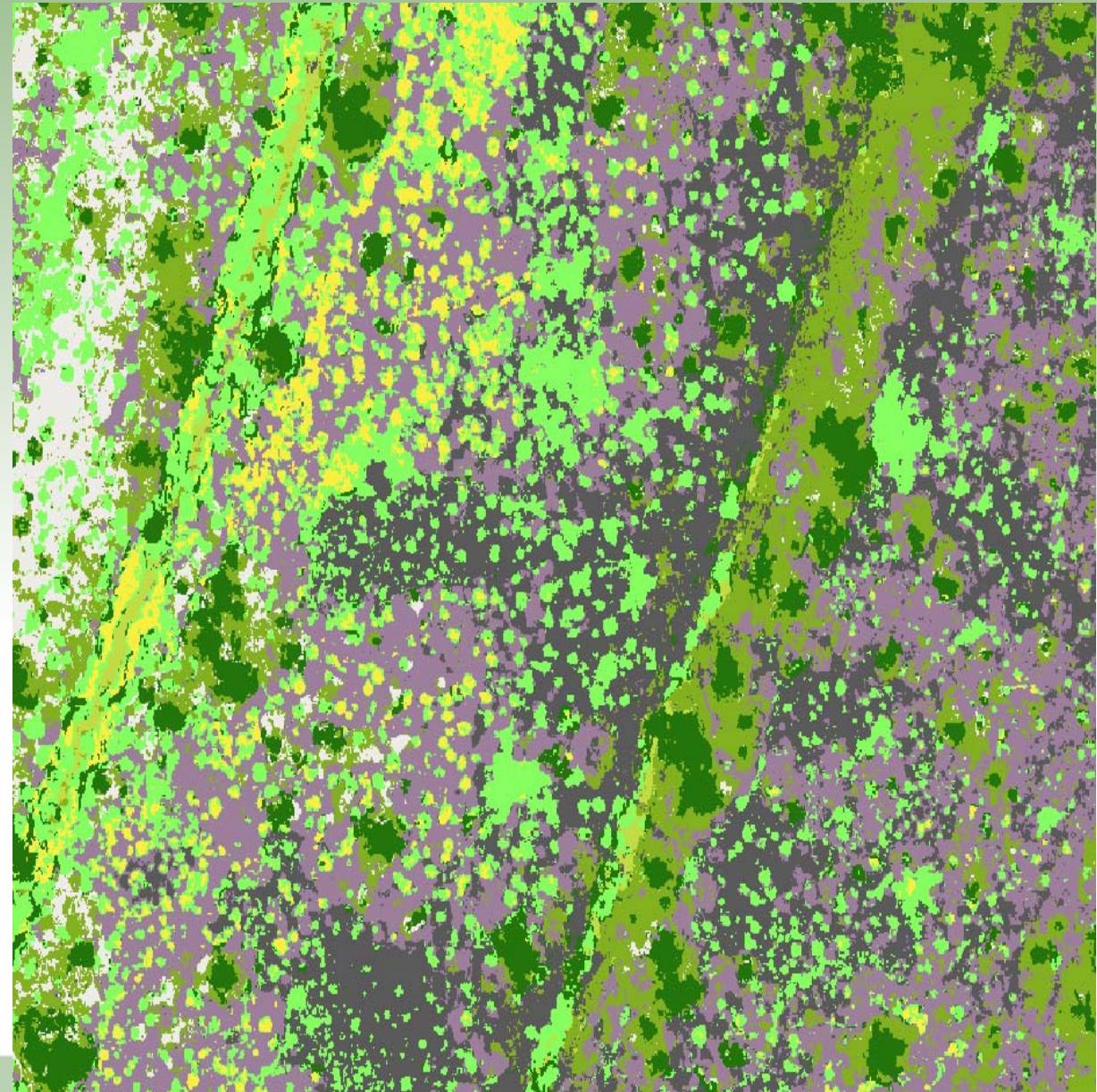
- Ground control points (RTK GNSS) – ca 10 per site
- Vegetation plots 10x10m,
 - 100 1x1 subplots
- Radiometric calibration



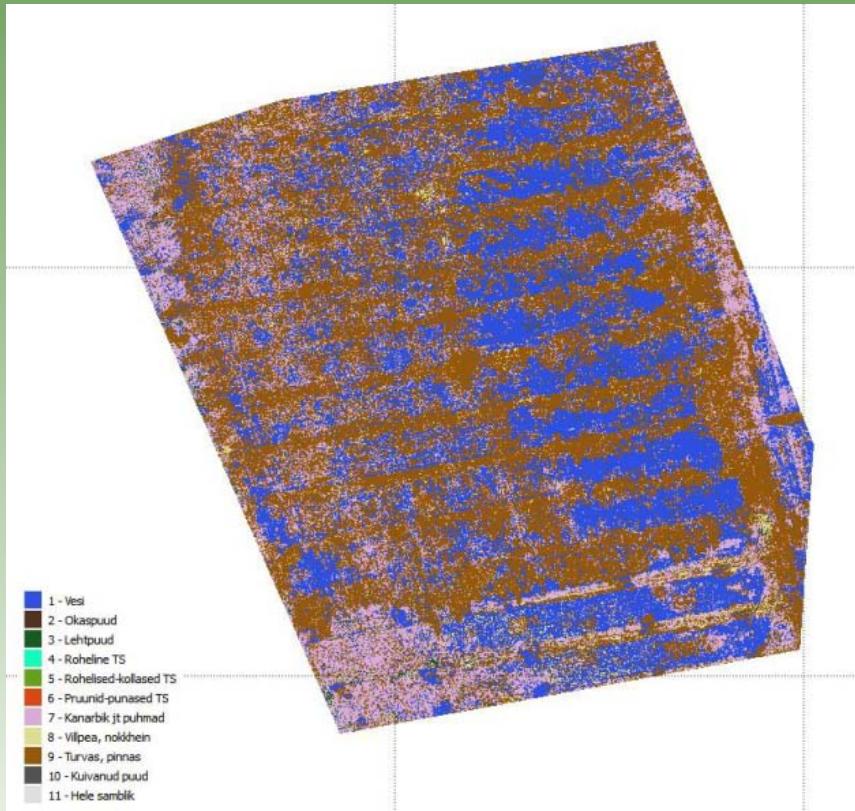
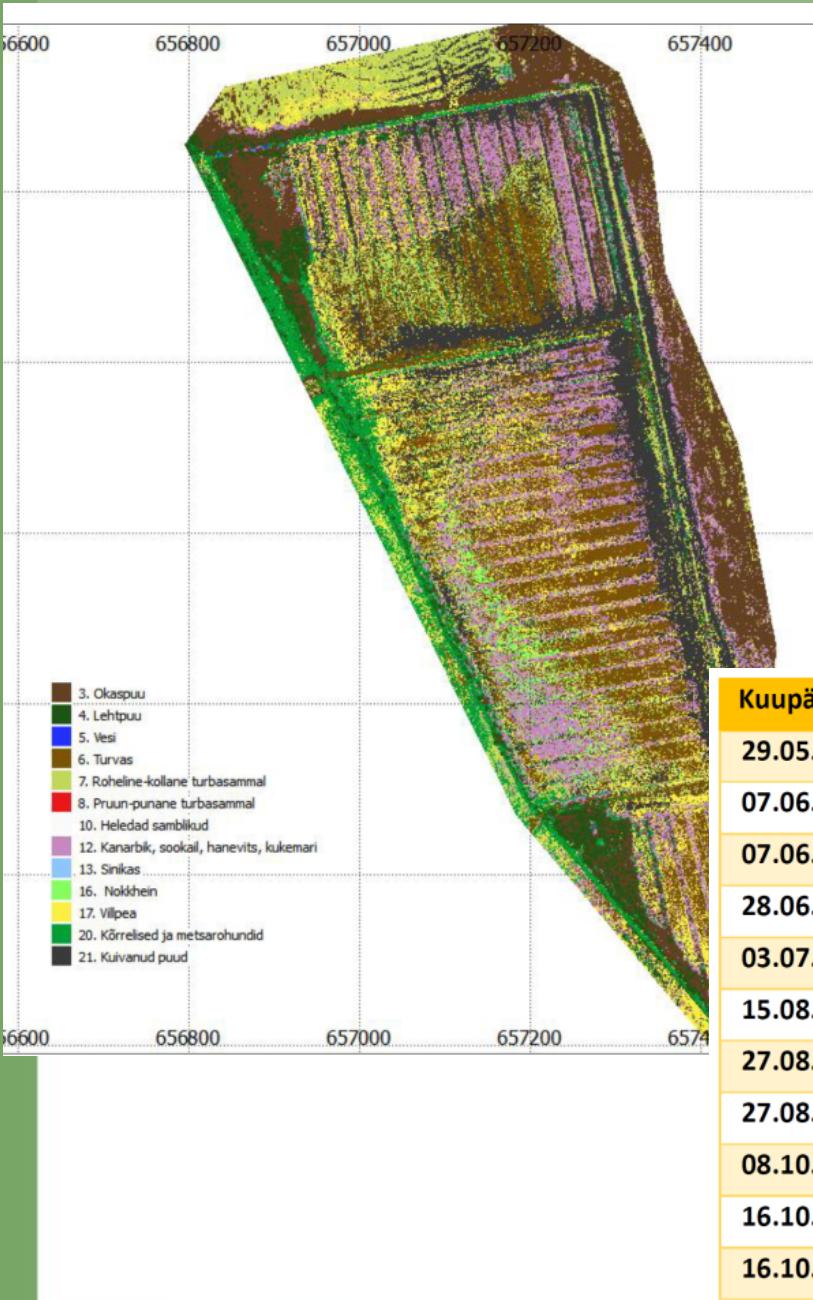
Classification – Random Forest

Classifiers:

- RGB photo (3 channels)
- MS 5 channels:
RGB RE NIR
- Digital surface model
- Digital terrain model
- Vegetation indexes:
 - NDVI, NDRE, TGI, SAVI
- Vegetation height
- Typical resolution 5 cm



Results



Kuupäev	Koht	Treeningandmeid (tk)	Kontrollandmeid (tk)	Täpsus (%)	Kappa
29.05.2018	Soosaare (multispektraal)	1191	298	80,4	0,78
07.06.2018	Laukasoo L1 - järv	1001	251	94,3	0,93
07.06.2018	Laukasoo L2	558	139	79,7	0,76
28.06.2018	Palasi (multispektraal)	1305	327	84,3	0,82
03.07.2018	Soosaare (multispektraal)	1117	278	86,4	0,85
15.08.2018	Palasi	1126	281	89,4	0,88
27.08.2018	Ohepalu Mädajärv	531	135	94,7	0,94
27.08.2018	Ohepalu Udriku	720	178	90,3	0,89
08.10.2018	Palasi	288	72	92,4	0,90
16.10.2018	Feodorisoo L1	768	192	88,9	0,87
16.10.2018	Feodorisoo L2	715	178	90,5	0,89

3D models for implementation monitoring





Thank you!

Planning

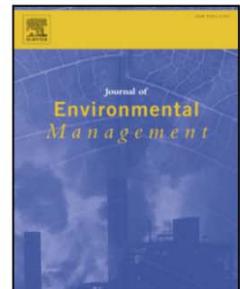
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Review

Restoration dilemmas between future ecosystem and current species values: The concept and a practical approach in Estonian mires



Liina Remm^{a,*}, Asko Lõhmus^a, Eerik Leibak^b, Marko Kohv^c, Jüri-Ott Salm^b, Piret Lõhmus^d, Raul Rosenvall^e, Kadri Runnel^{a,f}, Kai Vellak^d, Riinu Rannap^a

^a Department of Zoology, Institute of Ecology and Earth Sciences, University of Tartu, Vanemuise 46, EE-51005, Tartu, Estonia

^b Estonian Fund for Nature, Lai 29, EE-51005, Tartu, Estonia

^c Department of Geology, Institute of Ecology and Earth Sciences, University of Tartu, Ravila 14a, EE-50411, Tartu, Estonia

^d Department of Botany, Institute of Ecology and Earth Sciences, University of Tartu, Lai 40, EE-51005, Tartu, Estonia

^e Institute of Forestry and Rural Engineering, Estonian University of Life Sciences, Kreutzwaldi 5, EE-51006, Tartu, Estonia

^f Department of Ecology, Swedish University of Agricultural Sciences, Box 7044, 750 07, Uppsala, Sweden