

Land cover and biometry measurements

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1. Introduction

What did we do?

We observed the land cover and collected data from two different sites near Varemurru, Pärnu county.

Why did we do this?

To compare satellite data with real conditions (on the ground).

To Test GLOBE Data Entry (app) new Data sheets.

To Determine area's MUC code using MUC field guide.

1. Introduction

05.08.2021 Sentinel2 No clouds/scattered



31.07.2021 Sentinel2 Heavy clouds



Studied sites

Site 1 was the beach

Site 2 was the forest



2. Hypothesis

1. The plant species on our selected sites are typical in the area.
2. Measurements made in the forest overlap the measurements made by the other group in the same exact site.

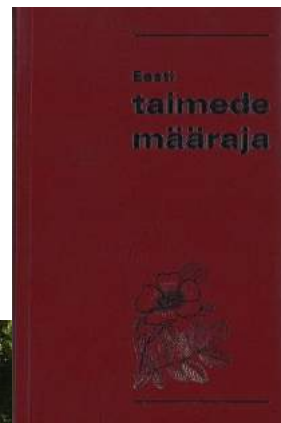
3. Tools and materials

- 100 m measuring tape
- Clinometer
- MUC Field Guide
- Densimeter
- Datasheets



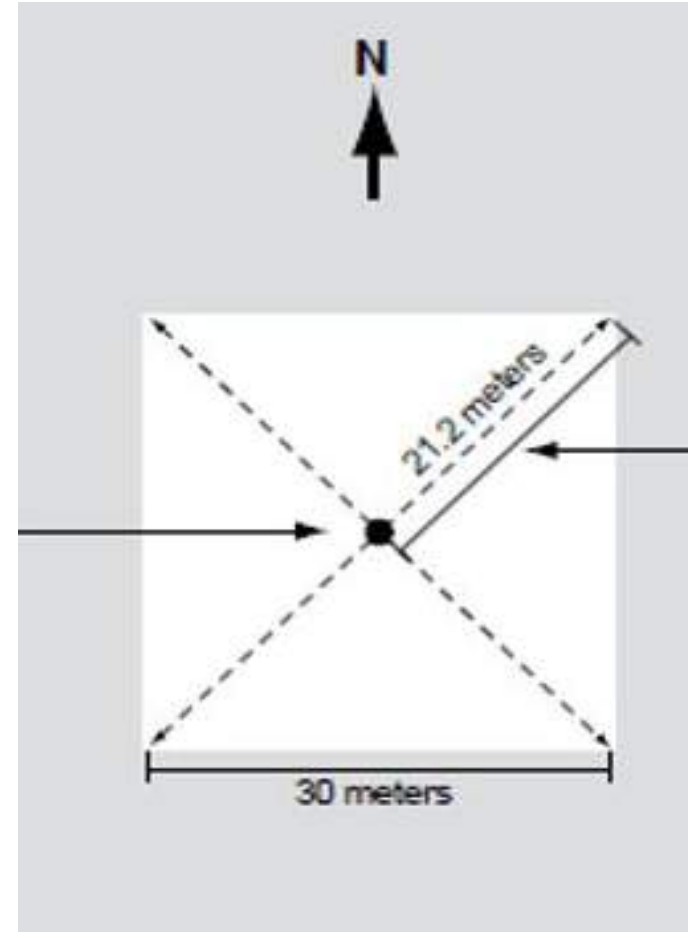
3. Tools and materials

- Krall, H. *et al.* (2010)
Eesti taimede Määraja.
Tartu: Eesti Maaülikool.
- Eesti Loodusfoto, 447 lk.

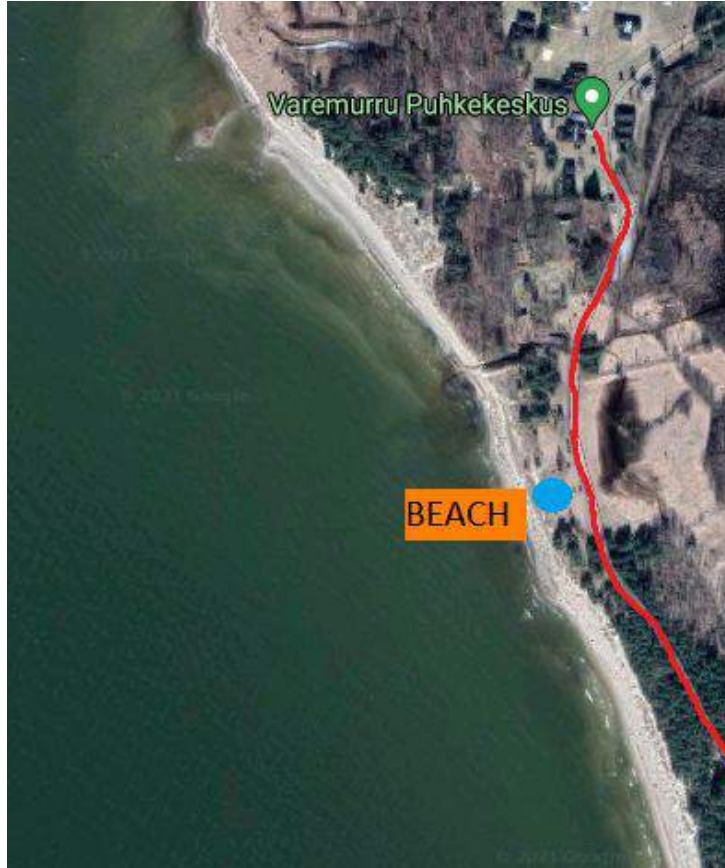


4. Methodology

- Required 30x30m area = 1 pixel on standard satellite image.
- 21,2m diagonals used for canopy and ground cover measurements.
- Photos from every arc (north, south, east, west), upwards and downwards.
- In case of a forest site dominant tree height and circumference measurements are done.



Site 1 - Beach



Beach

Coordinates: N 58,374961° E 23,734063°

Description: flood meadow, a few trees, 20 meters from the sea

Elevation from the sea level is 3m.



Beach - Dominant Species

- *Aasoblikas, Rumex thyrsiflorus, thyrses sorrel*
- *Aruhein, Festuca pratensis, meadow fescue*
- *Harilik raudrohi, yarrow, Achillea millefolium*
- *Metsõunapuu, European crab apple, Malus sylvestris*
- *Seahernes, vetchlings, Lathyrus*
- *Põldohakas, creeping thistle, Cirsium arvense*
- *Harilik kassitapp, field bindweed, Convolvulus arvensis*
- *Aasristik, red clover, Trifolium pratense*
- *Tara-seatapp, hedge bindweed, Calystegia sepium*
- *Loodtimut, Boehmer's cat's-tail, Phleum phleoides*
- *Arukask, silver birch, Betula pendula*
- *Kadakas, common juniper, Juniperus communis*
- *Harilik mänd, Scotch pine, Pinus sylvestris*
- *Harilik kuusk, European spruce, Picea abies*
- *Kassisaba, spiked speedwell, Veronica spicata*

Site 2 - Woodland



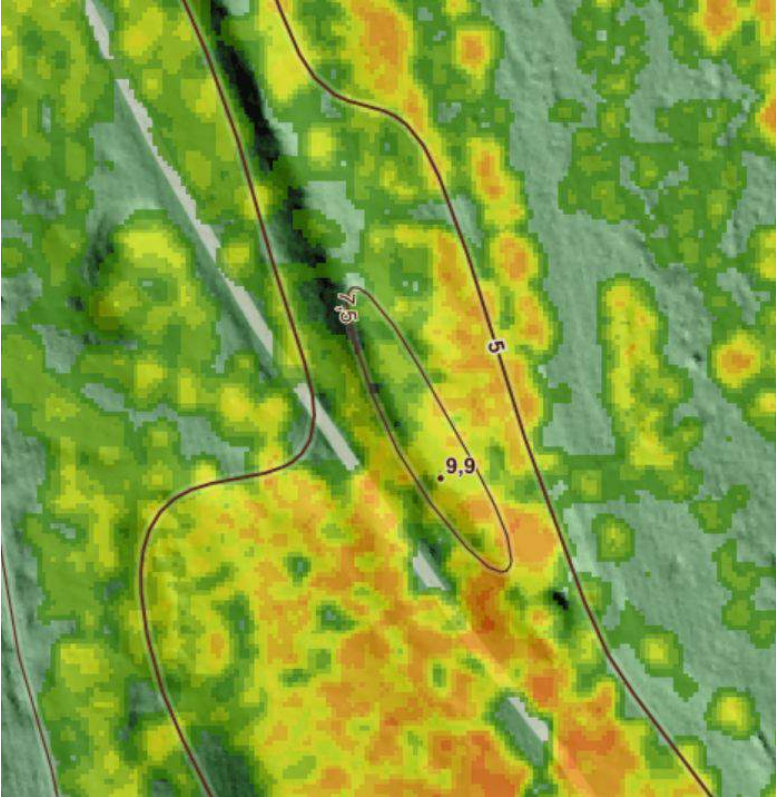
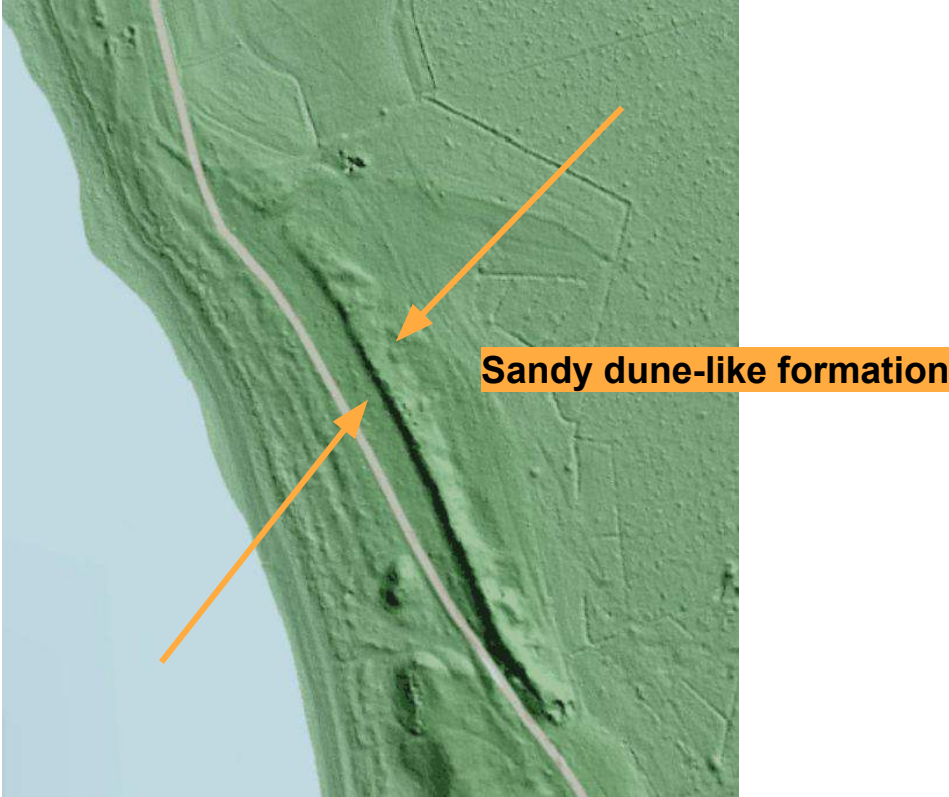
Woodland

Coordinates: N 58.372016° E 23.737736°

Description: 9 meters above sea level, pine forest grown on a sand dune



Woodland topography



Woodland - Dominant Species

- Laiuv Sõnajalg, spreading wood fern, *Dryopteris expansa*
- Magesõstar, mountain currant, *Ribes alpinum*
- Tamm, common oak, *Quercus robur*
- Vaher, Norway maple, *Acer platanoides*
- Metsvaarikas, raspberry, *Rubus idaeus*
- Toomingas, bird cherry, *Prunus padus*
- Sarapuu, common hazel, *Corylus avellana*
- Paluhärghein, common cow-wheat, *Melampyrum pratense*
- Piibeleht, lily of the valley, *Convallaria majalis*
- Paakspuu, alder buckthorn, *Frangula alnus*
- Angerpist, dropwort, *Filipendula vulgaris*
- Harilik kõrvenõges, stinging nettle, *Urtica dioica*
- Kuslapuu, honeysuckle, *Lonicera*
- Mägiristik, mountain clover, *Trifolium montanum*
- Laanik, glittering woodmoss, *Hylocomium splendens*
- Kassisaba, spiked speedwell, *Veronica spicata*
- Hobumadar, yellow bedstraw, *Galium verum*
- Harilik laanelill, Arctic starflower, *Trientalis europaea*
- Mets härghein, cow wheat, *Melampyrum pratense*

6. Comparicent - measurements

	Team 1	Team 2
MUC code	1121	1121
Land coverage (%)	71	75
Canopy coverage (%)	69	75
Average tree height (m)	16,44	17,9
Avg. tree circumference (cm)	105,1	143,33



Comparicent - plant species

- **Overlapping :**

Magesõstar - *Ribes alpinum*

Metsvaarikas - *Rubus idaeus*

Piibeleht - *Convallaria majalis*

- **Differences:**

Verev kurereha - *Geranium sanguineum*

Aasosi - *Equisetum pratense*

Sarik - *Ornithogalum umbellatum*



7. Conclusions

1. The plant species on our selected sites are typical in the area.

The hypothesis was correct, because the dominant species are common for the west coast of Estonia.

2. Measurements made in the forest match the measurements made by the other group in the same exact site.

The hypothesis was mostly correct because the measurements were within the acceptable differences except the slight difference in circumference.

Group photo



Thank you
for your
attention!

