# DISTRIBUTION MODEL OF SELECTED VEGETATION TYPES IN THE BOREAL ARCTIC ZONE

**Peter Horvath,** PhD Candidate, Department of Geosciences & NHM
Supervisors: Anders Bryn, Frode Stordal, Hui Tang

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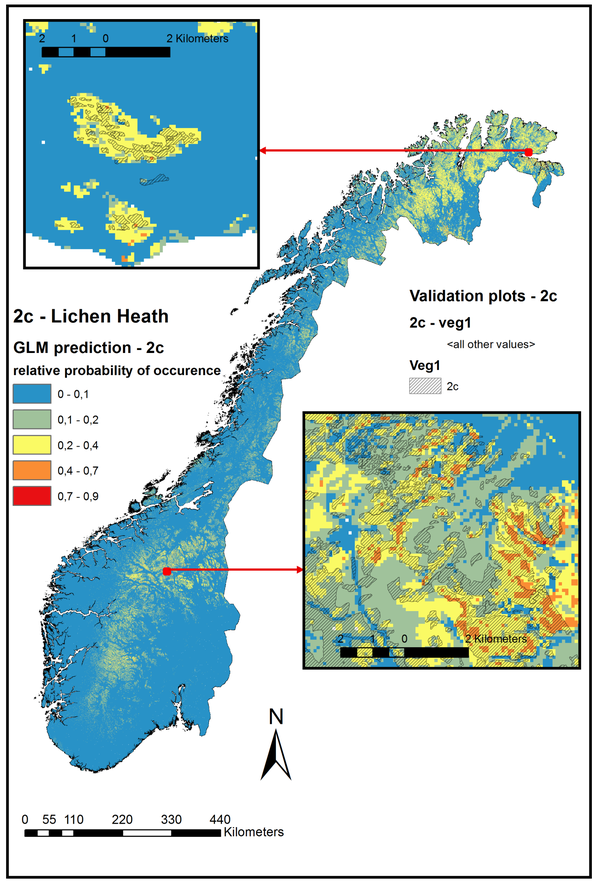
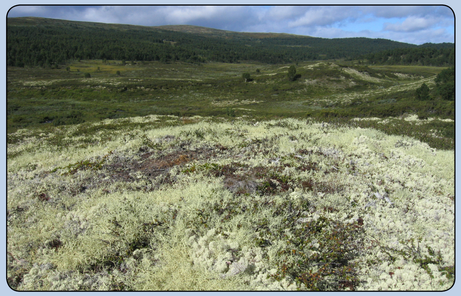



**AIM:** Climate change models incorporating vegetation modules, are currently missing high resolution vegetation maps that would be used for validation of regional climate change simulations. To provide such information, we are using distribution modelling (DM) for predicting the current distributions of vegetation types in Norway.

**METHODS:** DM is a framework used to predict potential geographical occurrence of targets in places where it has not been mapped, by relating its present location to environmental variables. As target data, we are using the Norwegian area frame survey of land cover and outfield land resources (AR18X18), which is a systematic sampling technique with 0.9 km2 sample plots at 18 km intervals. The basic nomenclature of this system consists of 57 vegetation types, out of which we model 33 chosen types.
We are providing our models with high-resolution wall-to-wall environmental data (100 x 100m). Using statistical method of GLM, an automatic forward model selection based on MIAmaxent R-package, and independent validation datasets, we predict selected vegetation types for Norway.

**RESEARCH QUESTIONS**:
- Can some vegetation types be better predicted than others?
- Are some geographical parts within the models better predicted than others?
- Is abundance of vegetation types an important factor for accuracy of modelled maps?
- What are the most important environmental factors predicting the occurance of vegetation types?

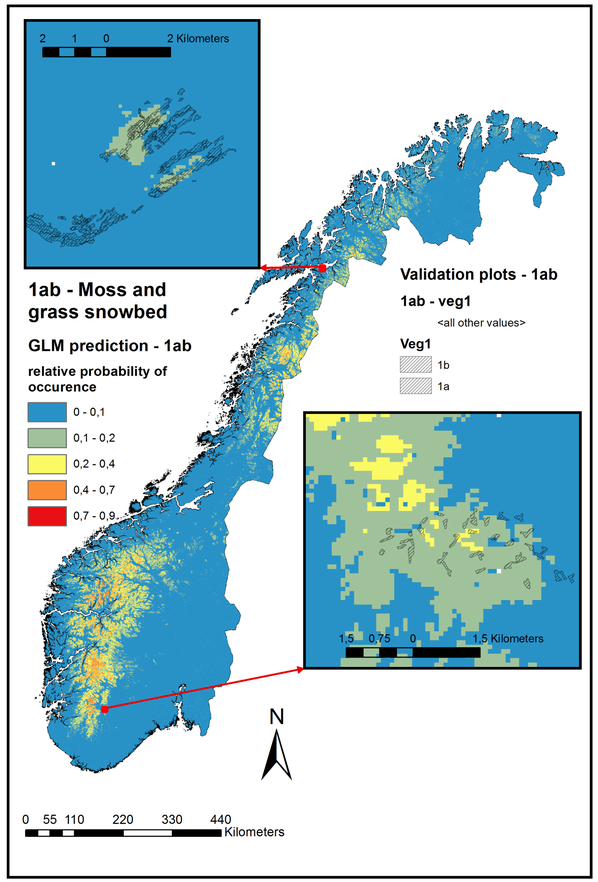


**Vegetation type 2c - Lichen heath**
Mainly occurs in dry, low-alpine continental areas with thin snow cover and low productivity.

Picture: Londalen, Vingelen; Anders Bryn

**Vegetation type 1a - Moss snowbed**
Occurs in areas with longest snow duration and shortest vegetation season.
Picture: Sandskardelva, Hattfjelldal, Nordland ; Anders Bryn

**FURTHER STEPS :** Our further aims are to compare outputs from our Distribution model with a different vegetation-modelling approach, Dynamic vegetation modelling (DGVM), and then suggest possible ways of improving the parameterizations of dynamic global vegetation model in the boreal vegetation.




## LICHEN HEATH - 2c

**Environmental variables in the model:**

AR50 - vegetation,
Annual precipitation,
Visible sky,
Curvature,
Topographic wetness index,
Terrain ruggedness index,
Proximity to coast,
Proximity to lakes

## MOSS / SEDGE AND GRASS SNOWBED - 1a/b

**Environmental variables in the model:**

AR50 - vegetation,
Snow water equivalent in April,
Digital elevation model,
Proximity to rivers,
Vertical distance to channel network,
AR50 - forest productivity,
Mean temperature of the wettest quarter,
Minimum temperature in September,
Maximum temperature in June