SiDroForest

Siberian Drone mapped Forest inventory

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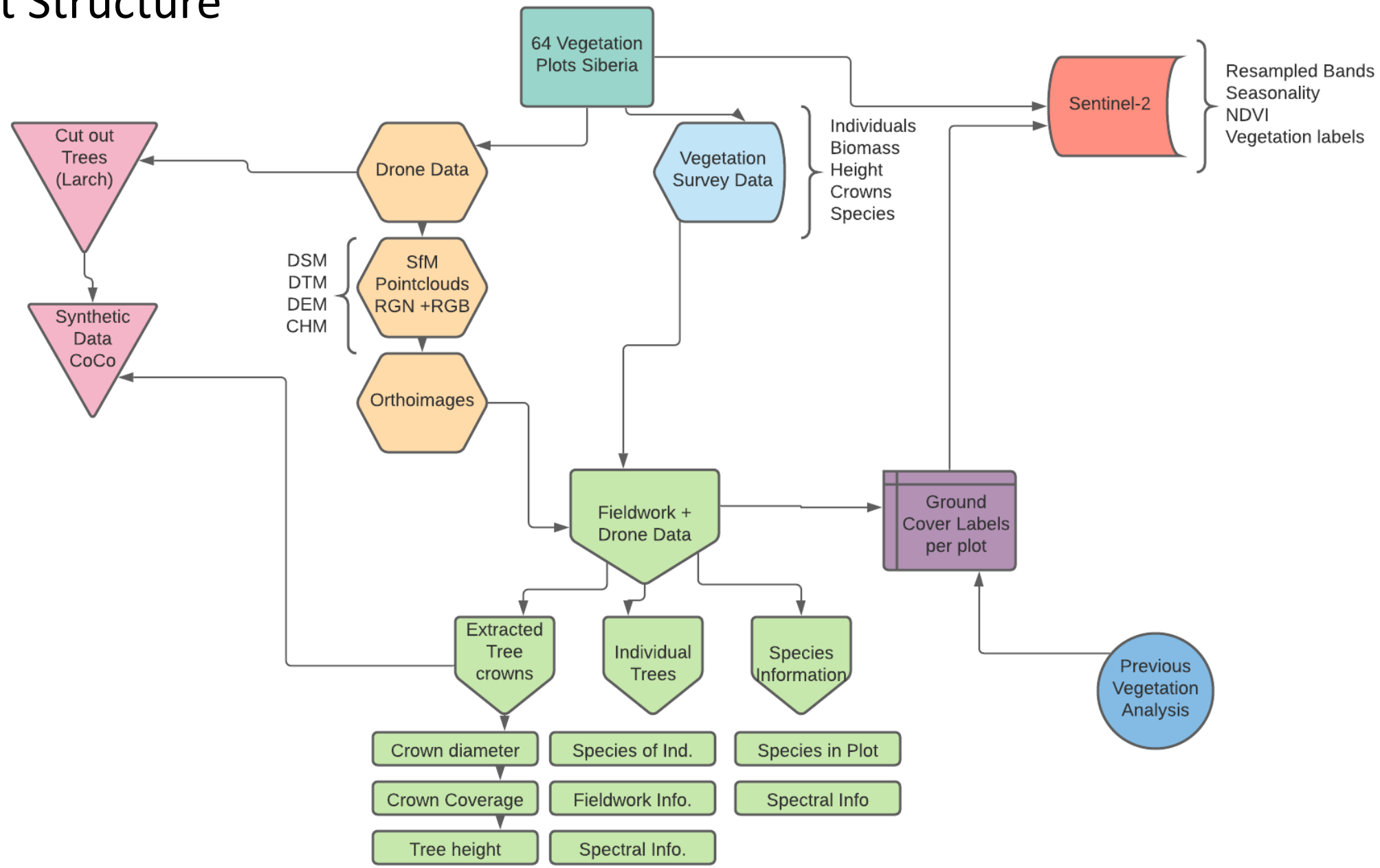
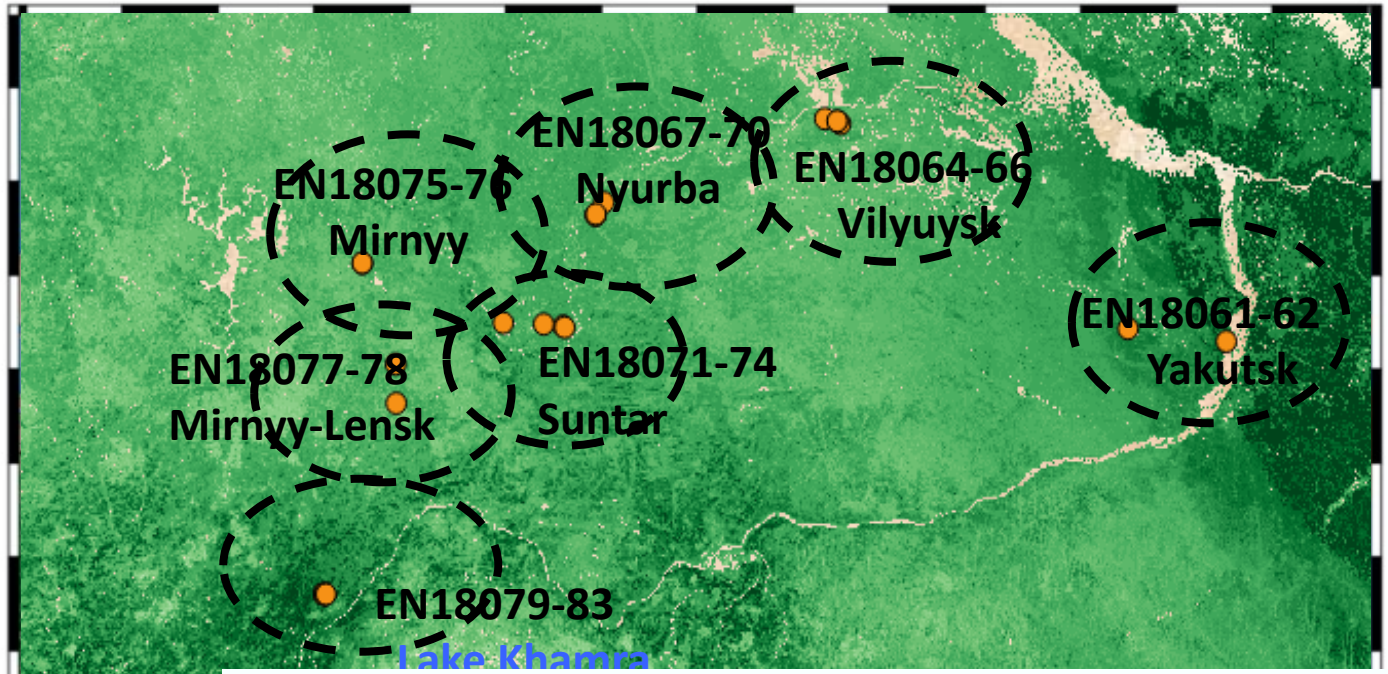
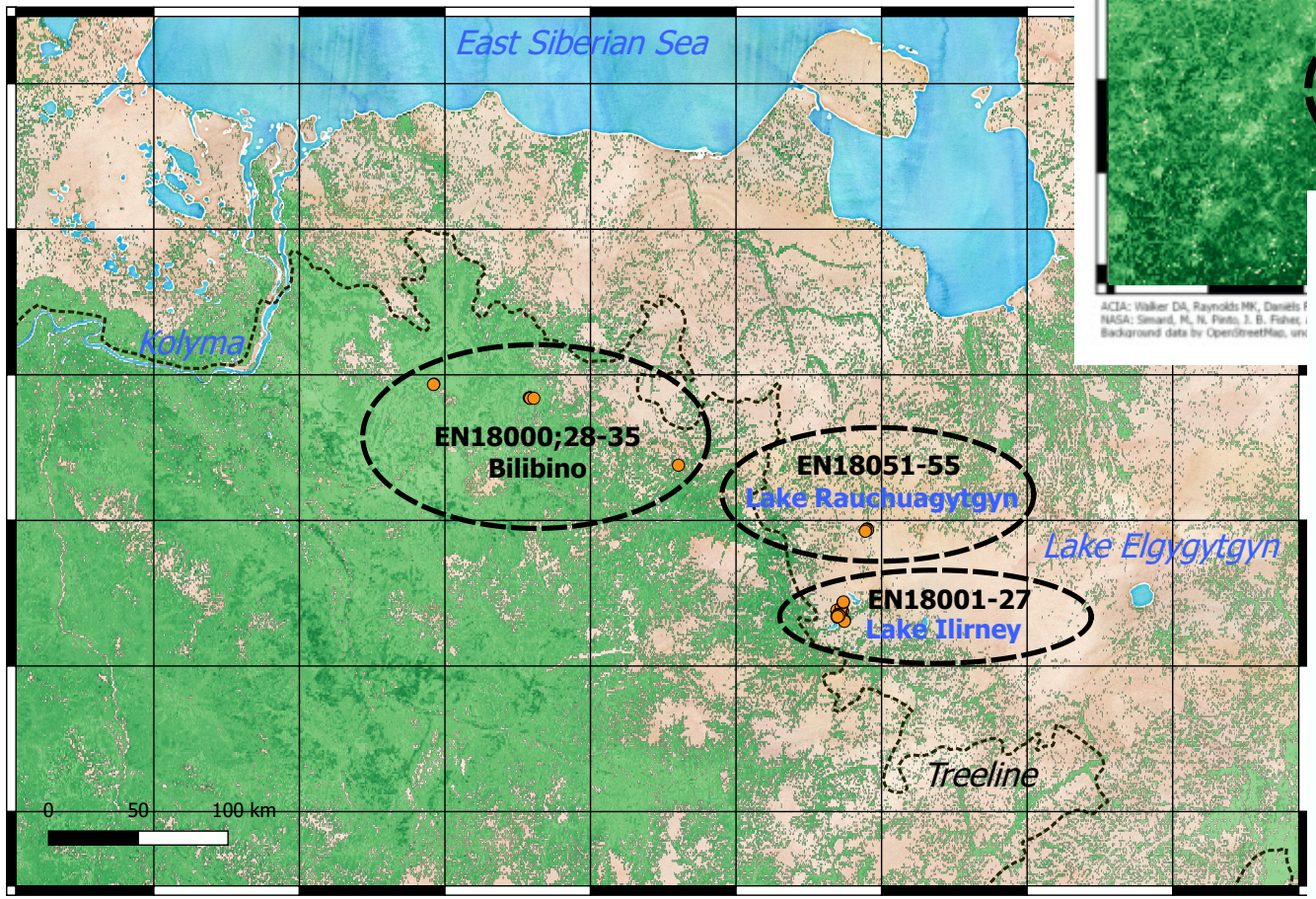
Dataset Structure

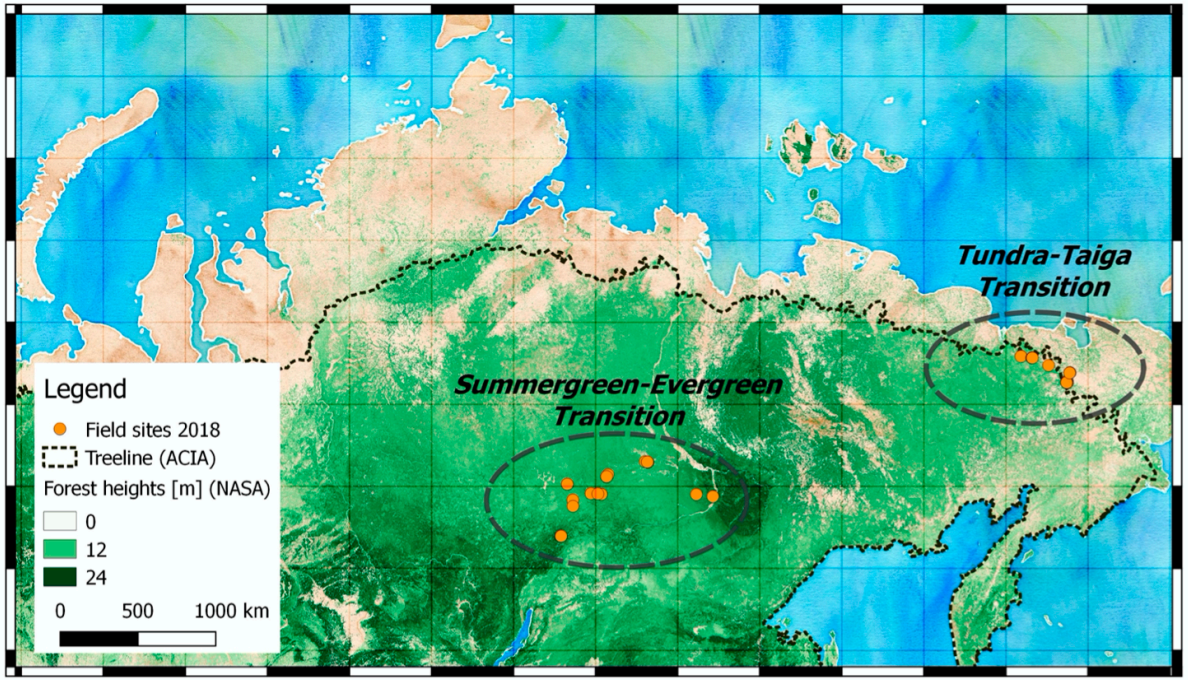


Locations

64 Locations
Chukotka and Central Yakutia (Russia)
10 sub regions
Diverse Vegetation Cover
2 Transition zones



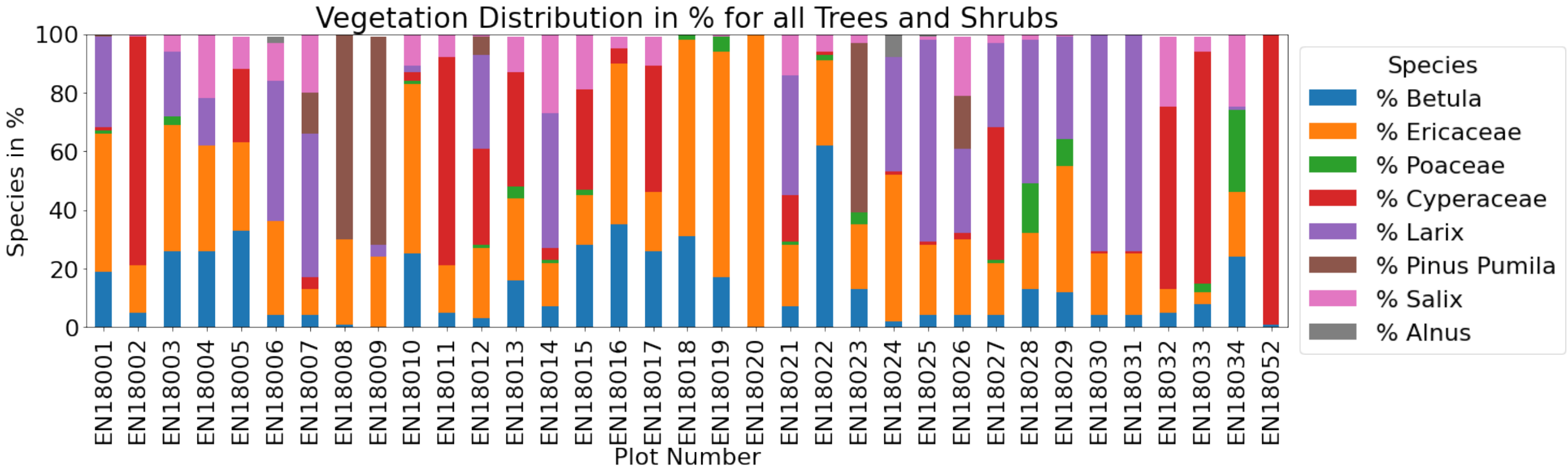




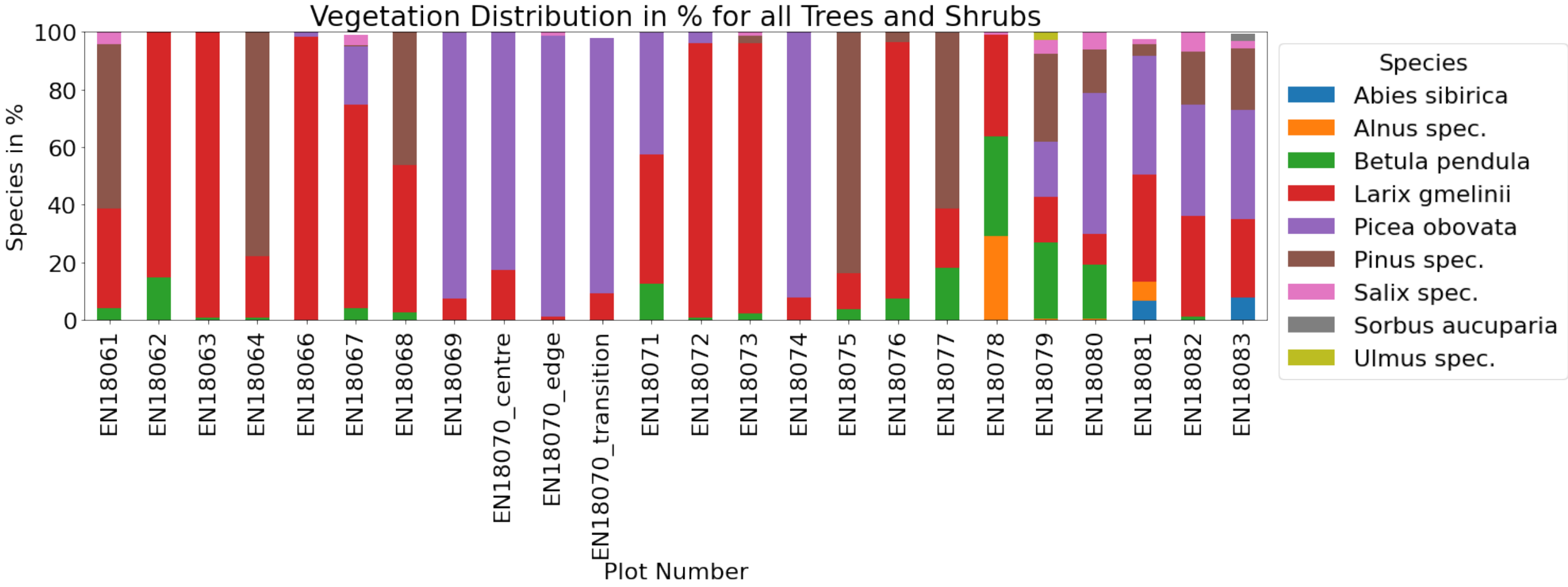
ACIA: Walker DA, Raynolds MK, Daniëls FJA et al. (2005) The circumpolar Arctic vegetation map. Journal of Vegetation Science, 16, 267–282.
NASA: Simard, M., N. Pinto, J. B. Fisher, and A. Baccini (2011), Mapping forest canopy height globally with spaceborne lidar, J. Geophys. Res., 116, G04021, doi:10.1029/2011JG001708.
Background data by OpenStreetMap, under CC BY SA https://creativecommons.org/licenses/by-sa/3.0/

map created by Stefan Kruse

Diverse Vegetation (Chukotka)

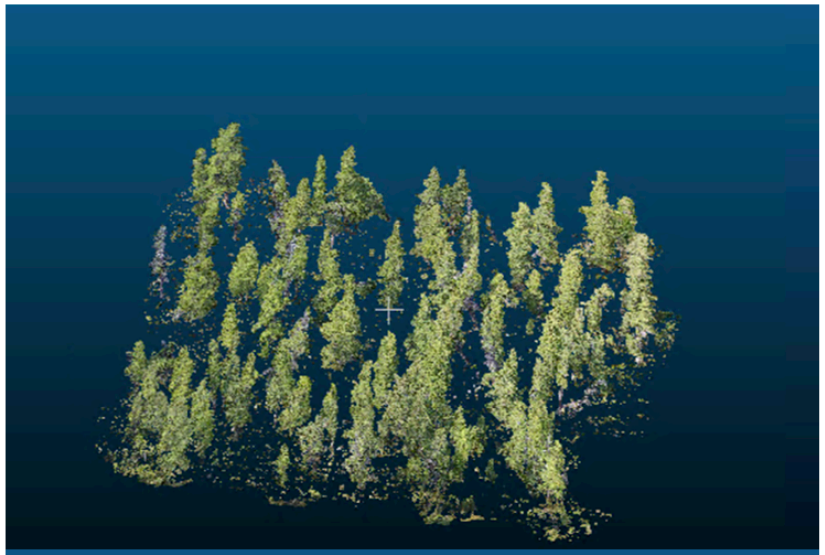


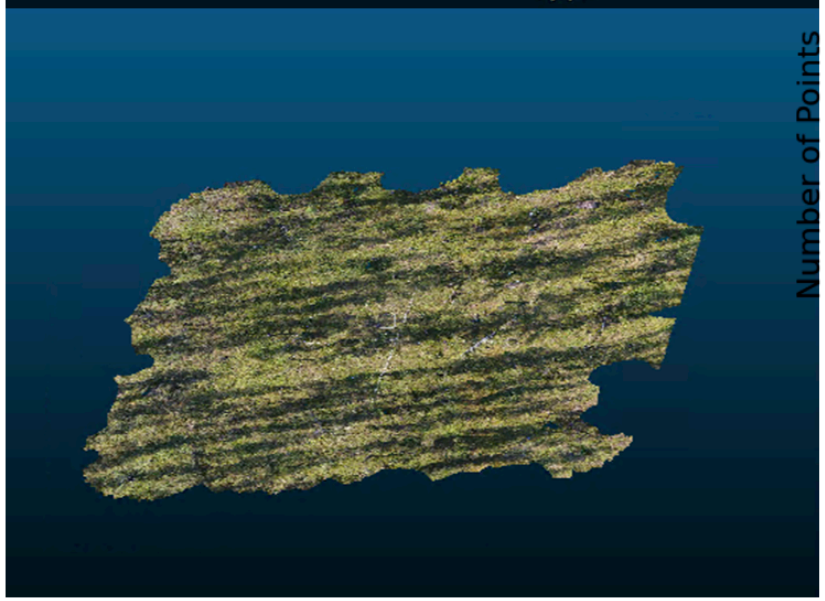
Diverse Vegetation (Yakutia)



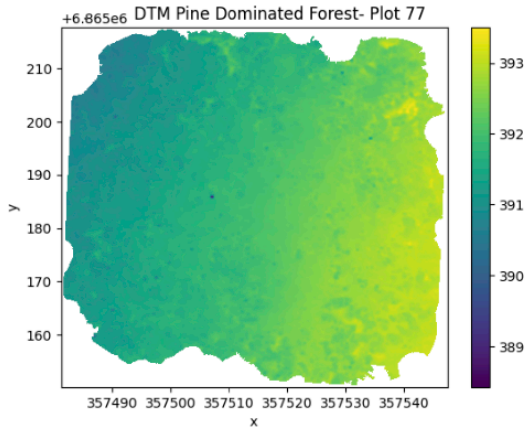
Pointclouds

Segmented to Ground and Above Ground

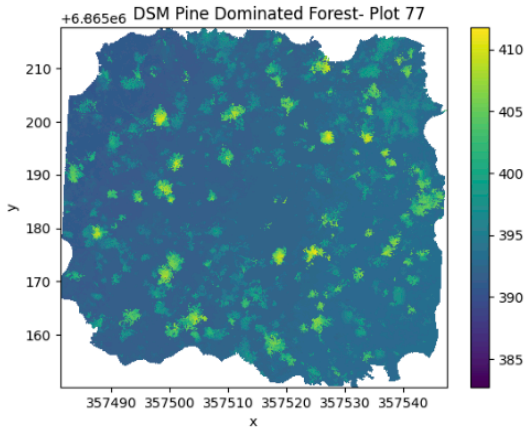




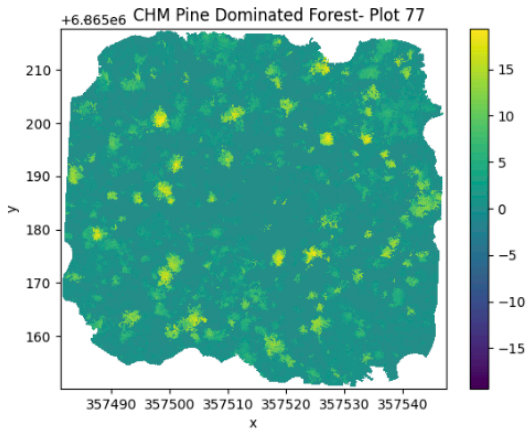
DTM

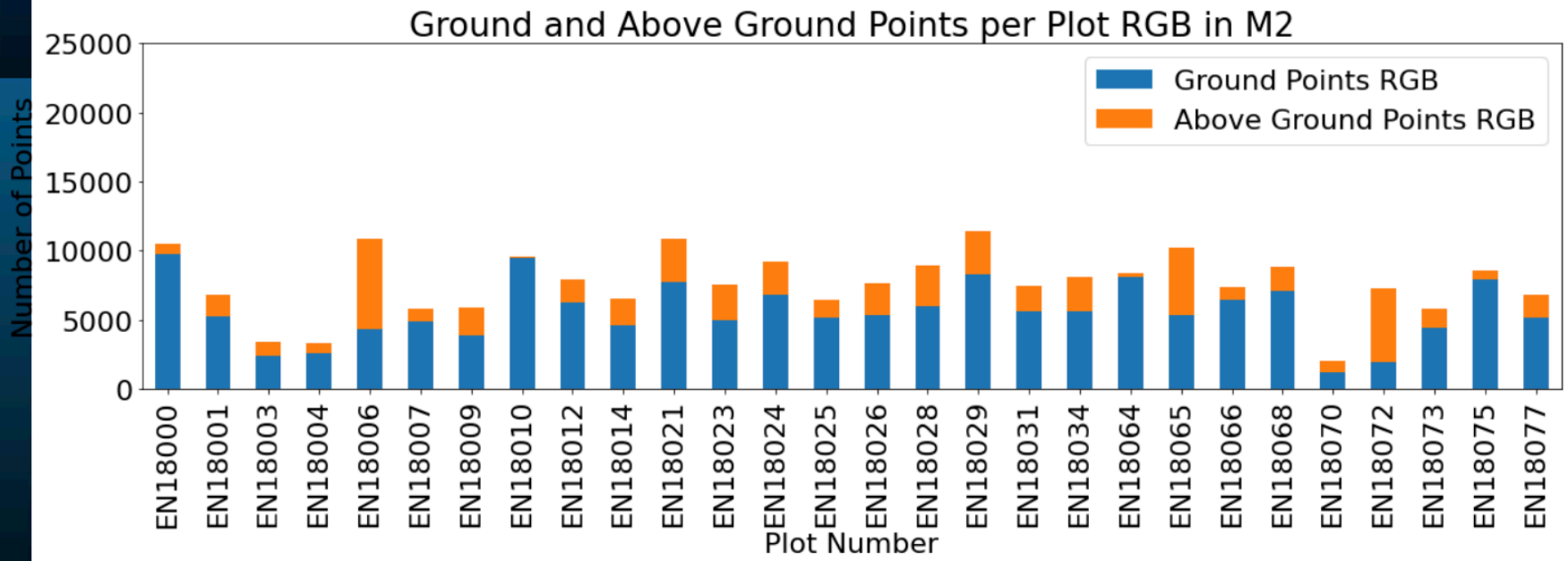


DSM



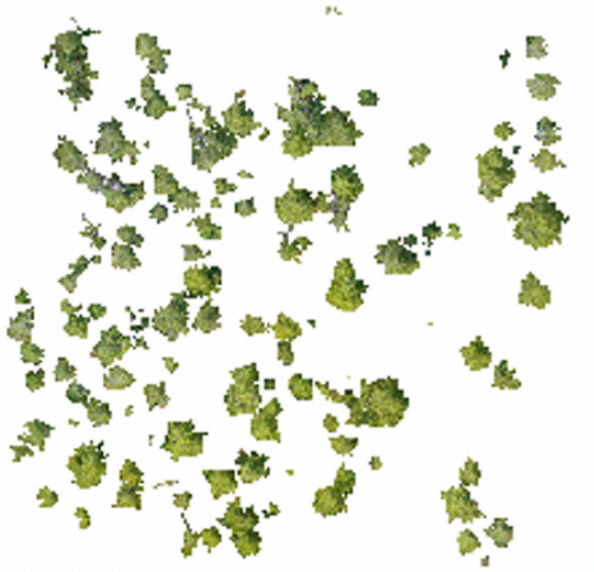
CHM

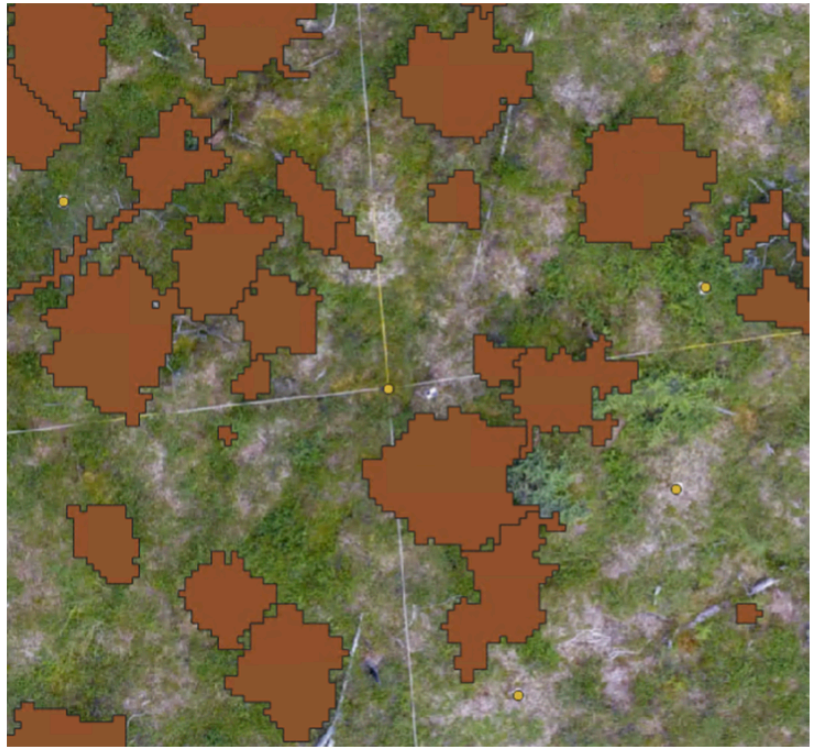




Orthoimages

RGB and RGN
Individual Polygons
Individual Points
Species Information
Extracted Crowns





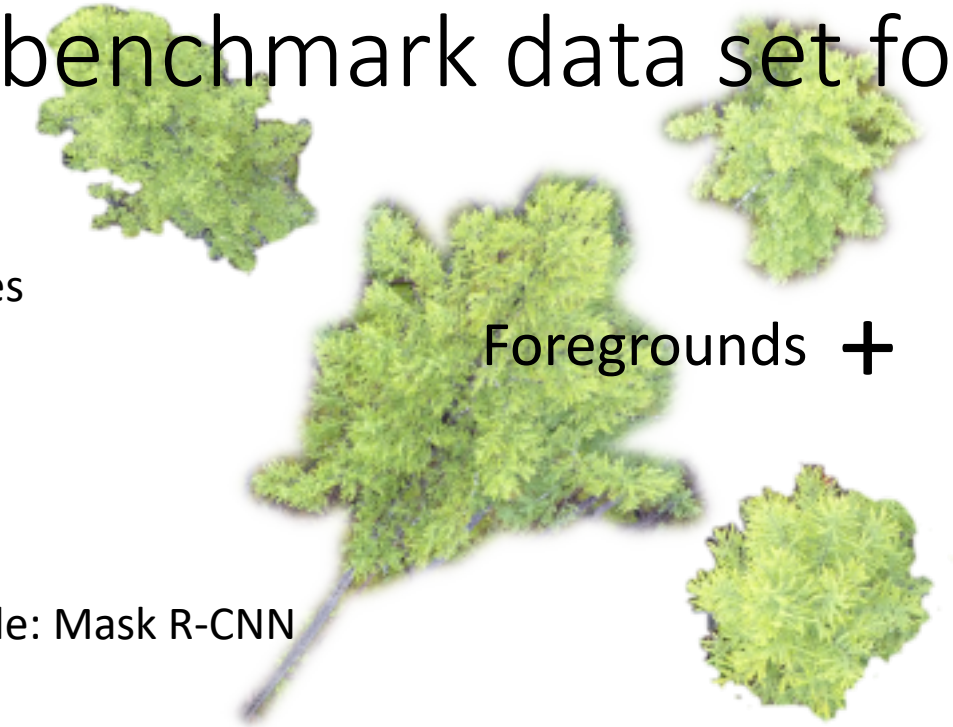
Synthetic data: benchmark data set for machine learning

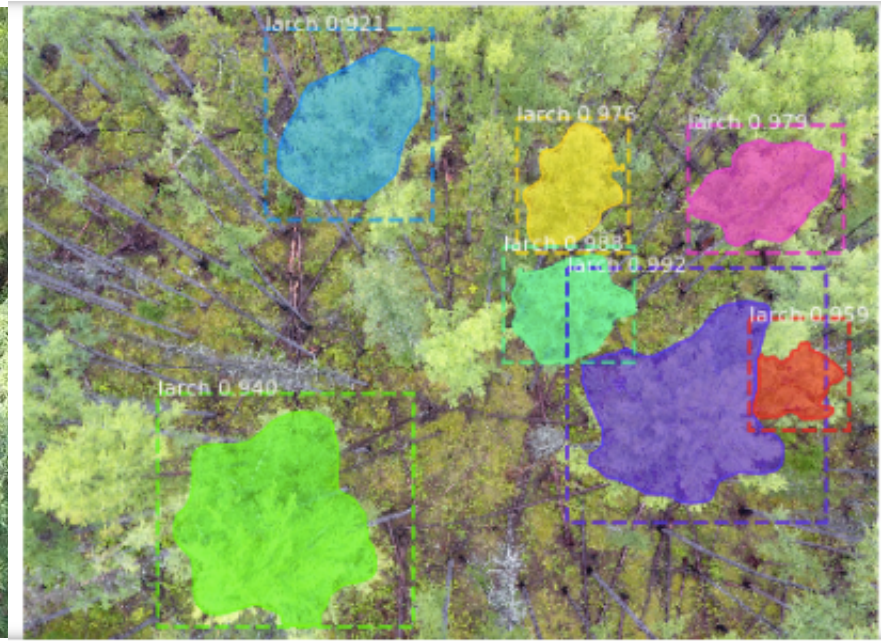
Cut out Trees + Drone Flight images

Saved in the CoCo Format

10 000 images

Used for Object Detection example: Mask R-CNN



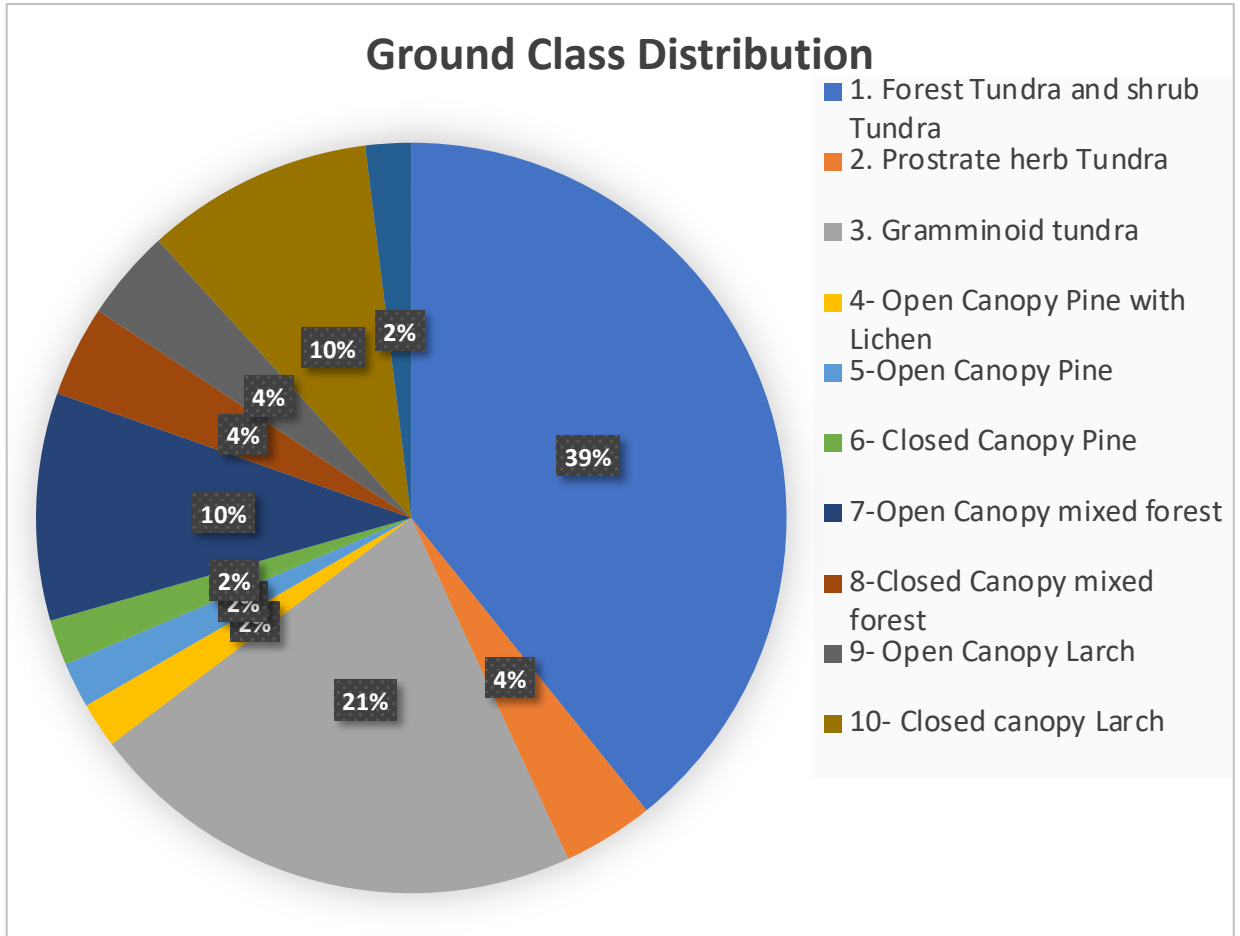


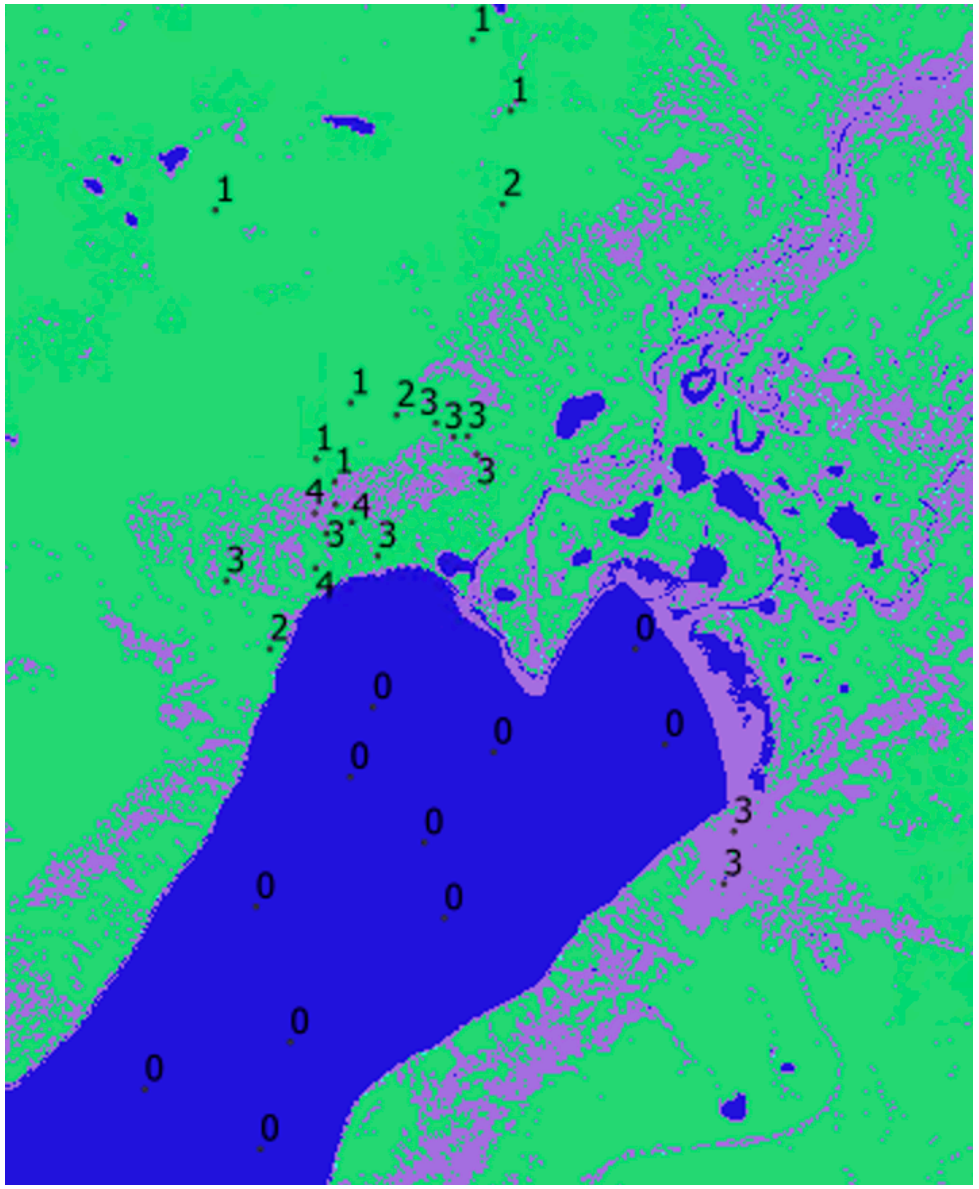
Sentinel-2

Three Time Stamps per Plot: Early Summer, Peak Summer, Late summer

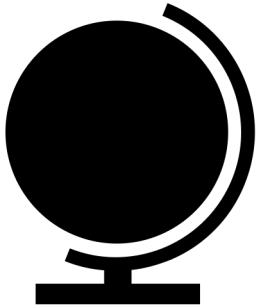
Bands Resampled, Atmospherical Correction, NDVI

Labelled 50 by 50 meter buffers that can be used for classifcation of Sentinel-2





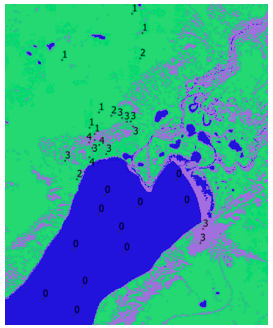
Why do we need SiDroForest?



Remote Locations

Two Transition Zones

Diverse Vegetation



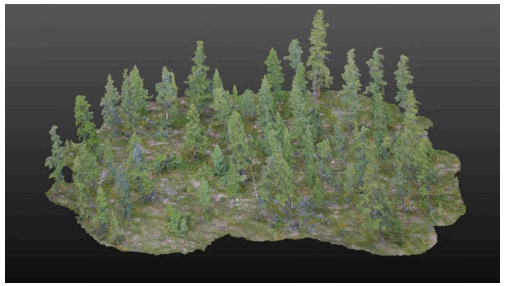
Ground Truth Data

Upscaling

Seasonality

Individual Measurements Trees

Biomass/height



3D Forest information

Forest Structure

Synthetic Data Tree Crowns

Automatic Crown Detection

Thank you for your attention ☺