Remote Sensing activities in PPS Arctic

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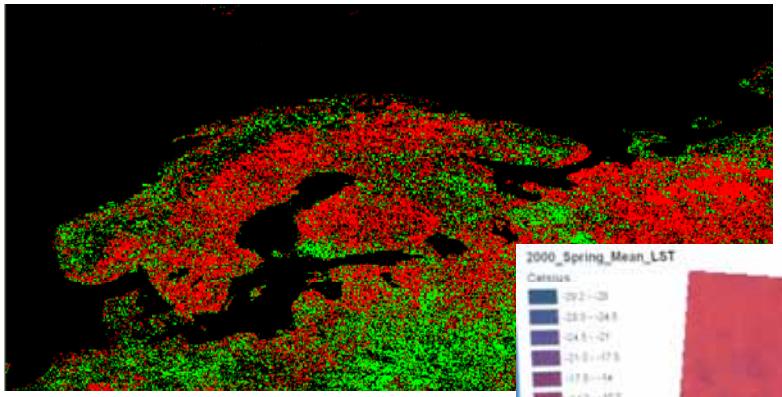
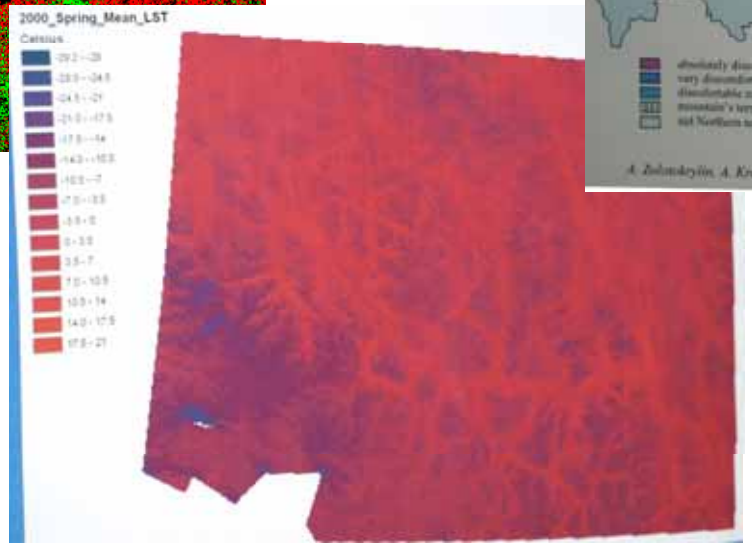
Global scale

- treeline configuration and location (Dolan & Rees) - algorithm development
- use of land surface temperature data (Williamson et al) - alg development
- use of derived products such as NDVI for landscape generalisation (Vinogradova)





Site-level

• Remote Sensing analyses, including historical aerial photographs, are providing evidence for treeline advance/retreat/stasis in various locations

• altitudinal advance in places on Kola Peninsula, ca 30 m/50 years (Mikheeva et al).

• Similar results from Norway-Sweden border area, ca 30 m advance in 30 years (Tømmervik et al)

• and from Yukon? (Danby)

• latitudinal advance ≈ 500 m in 35 years on Norway-Russia border area (Tømmervik et al)

• some evidence for densification, since 1985, on latitudinal site on Kola Peninsula but spatially variable (Kravtsova & Loshkareva)

• snowcover monitoring, Yukon (Hik)

- local human impact dominates in some areas (Shipigina & Rees)

QuickTime™ and a
BMP decompressor
are needed to see this picture.

- Vegetation hotspot through NDVI anomaly detection

(models NDVI on basis of environmental variables; identifies spatially coherent negative deviations)

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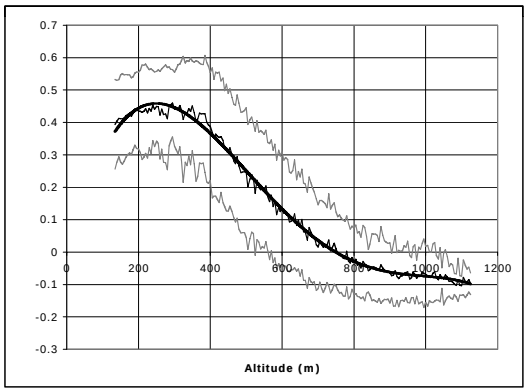
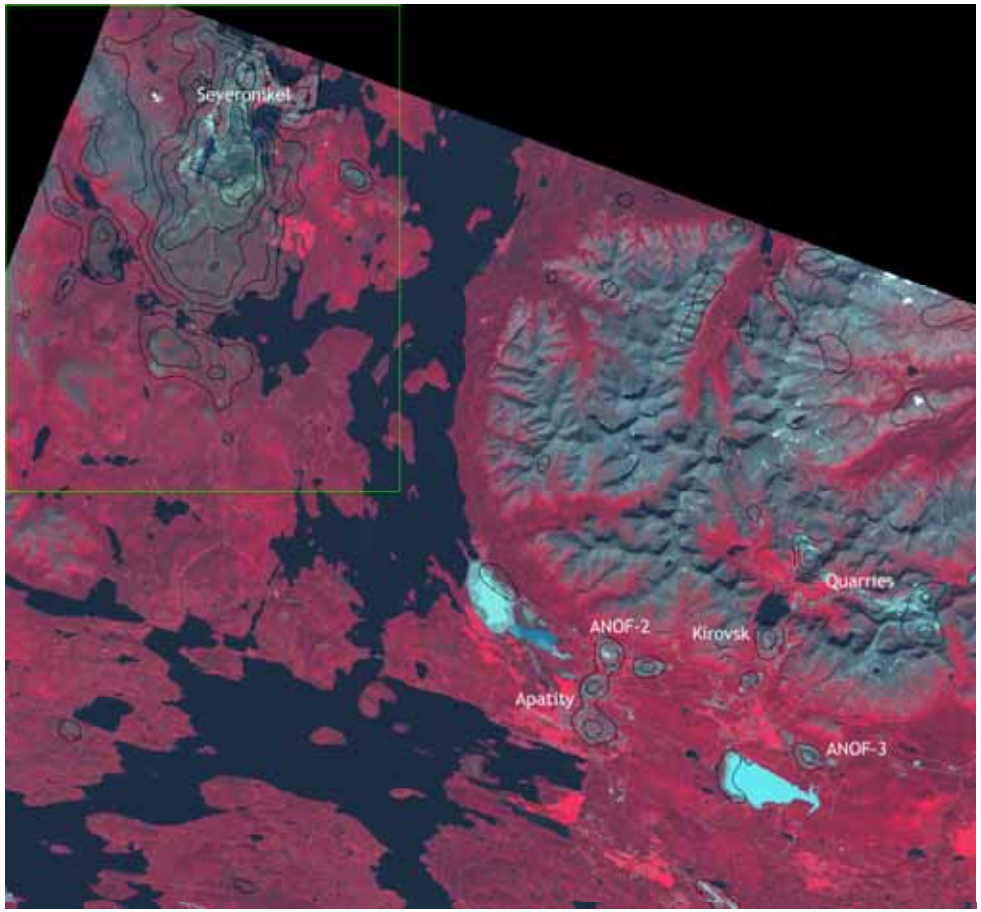
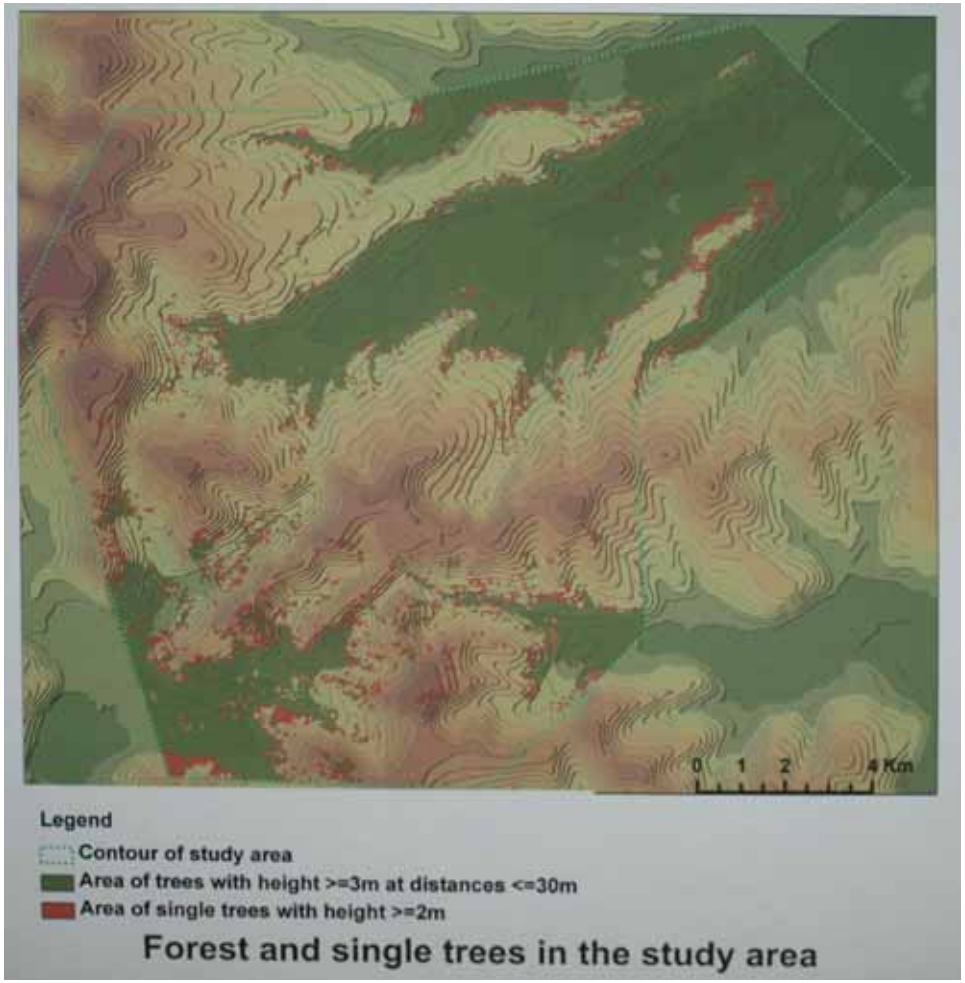




• algorithm development for forest structural parameters from sub-metre imagery (Novichikhin & Tutubalina, Tutubalina et al)



NASA Terrestrial Ecology Program:

Application to study shrub abundance and tundra biomass - formal agreement to collaborate with PPS Arctic (Sept 2008)

- has been funded though not officially announced yet