



ClimEco project

Mechanisms, pathways and patchiness of the Arctic ecosystem responses and adaptation to changing climate

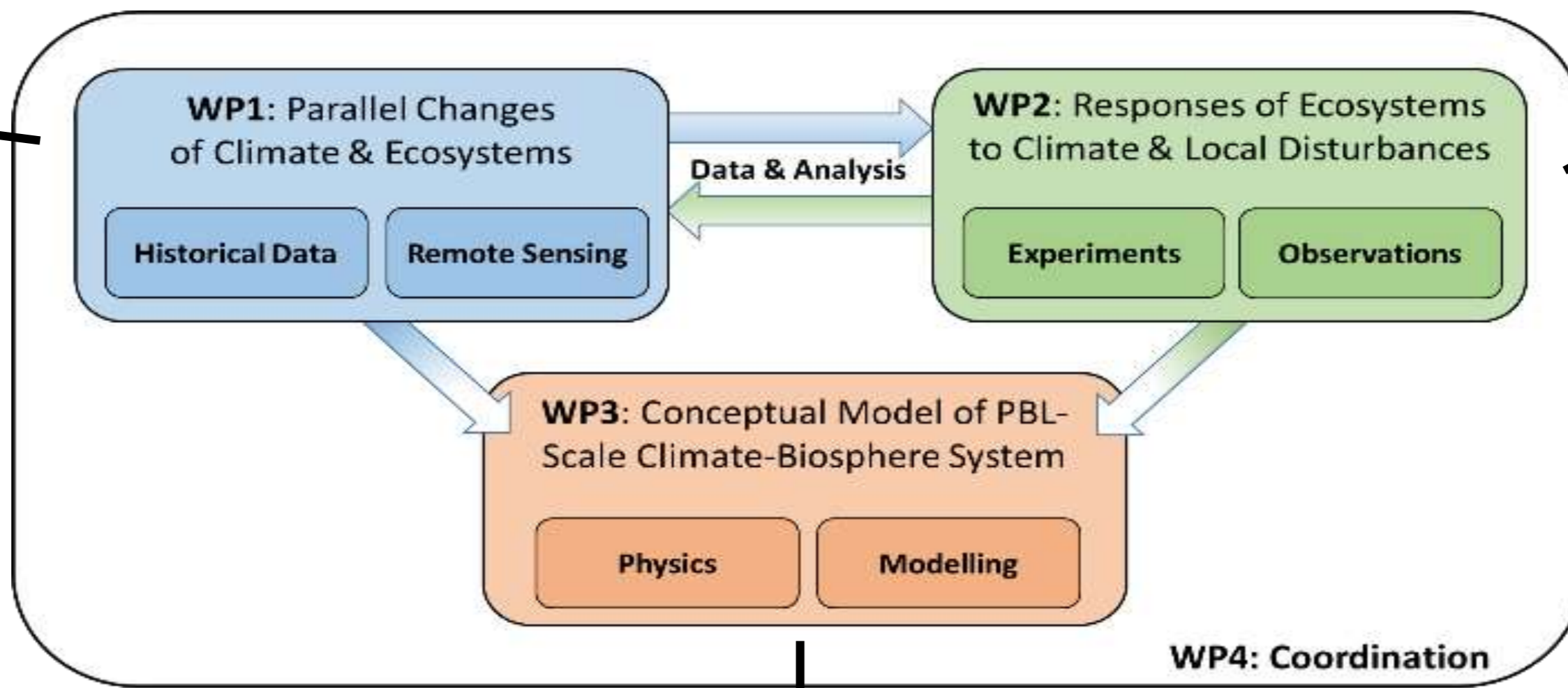
University of Helsinki, Finland
University of Tyumen, Russia
Moscow State University, Russia

The Finnish Meteorological Institute, Finland
The Russian Academy of Sciences, Russia
Nansen Environmental and Remote Sensing Centre, Norway

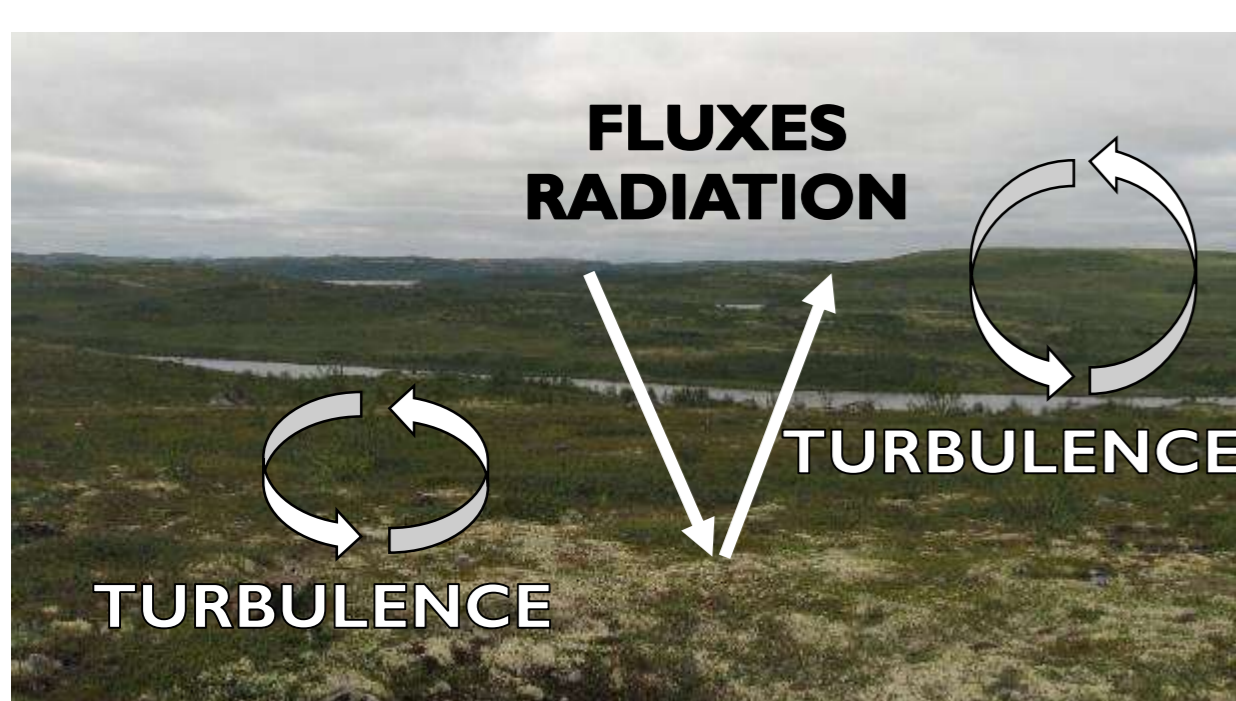
The ClimEco project is a cross-disciplinary collaboration linking physics of climate, ecology and biogeochemistry in the Arctic. Project aims to quantify the major ecosystem-microclimate feedbacks and, thus, open prospects for better-grounded seamless climate-biosphere modelling and projections of ecosystem replacement under the warming Arctic climate.

The project is structured into four workpackages. Here are some examples of ongoing activities in each of them:

We collect and analyze multiyear datasets from Arctic weather stations to identify micro-climatic Earth surface heterogeneity and the corresponding variability in ecosystem properties. E.g. we look for hot spots and try to see how they are reflected in vegetation structure and function.



To supplement existing datasets, we plan an expedition to the vicinity of Nadym, Yamal area, for summer 2019. We aim to collect detailed vegetation data in disturbed and pristine ecosystems, e.g. vegetation temperature data to be used in turbulence modelling. Both Finnish and Russian researchers will participate the expedition.



The conceptual modelling of Arctic climate-ecosystem interactions via atmospheric boundary layer dynamics proceeds. The surface layer turbulence will be comprehended and parameterized. The physics and parameterization of the drag and heat/mass transfer will be refined. In later phases, the data from field observations will be included in the modelling.

Study areas:



More info on the project website:
<https://www.atm.helsinki.fi/peex/index.php/climeco>

