

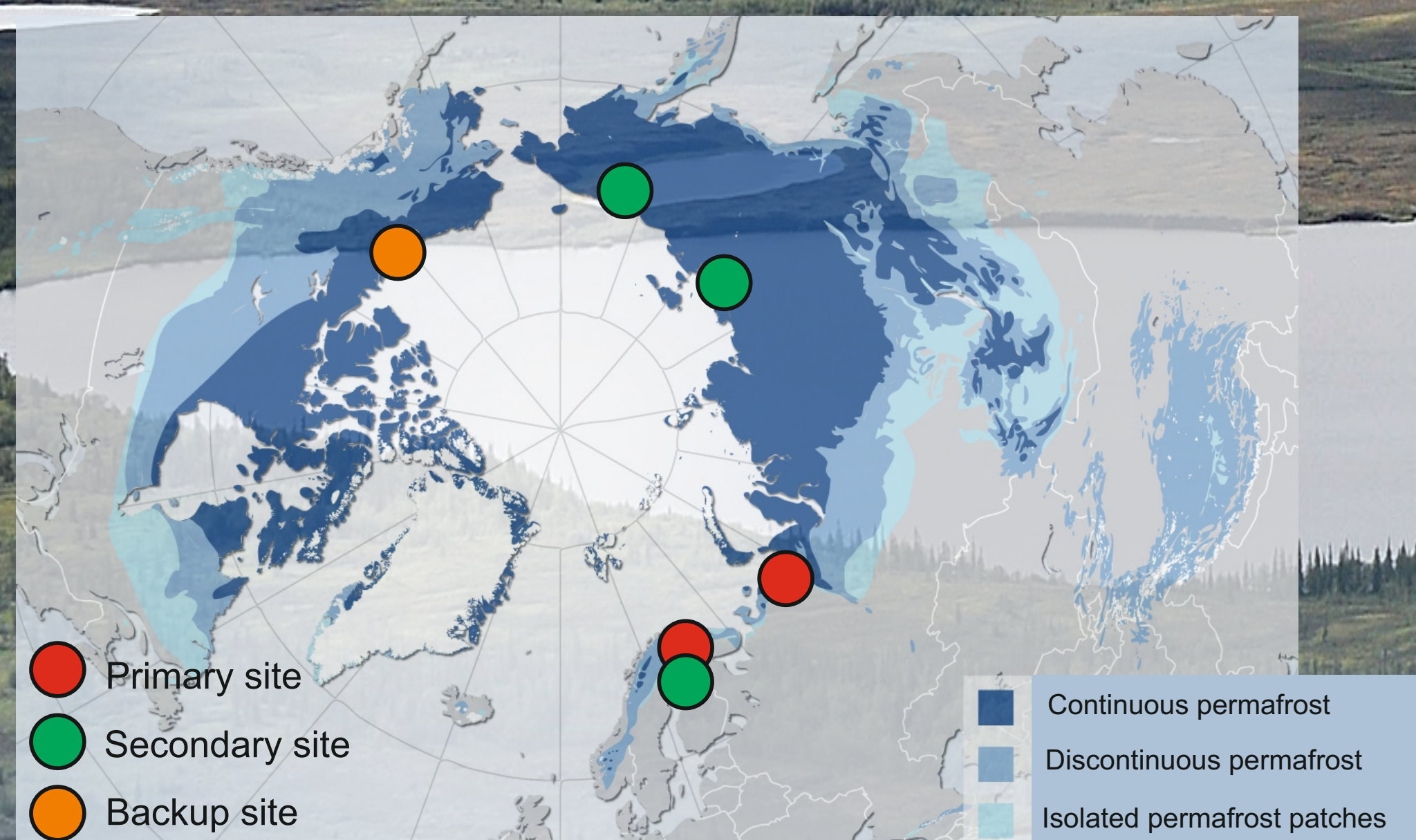
# Carbon Dynamics Across Arctic Landscape Gradients: Past, Present, and Future (CAPTURE)

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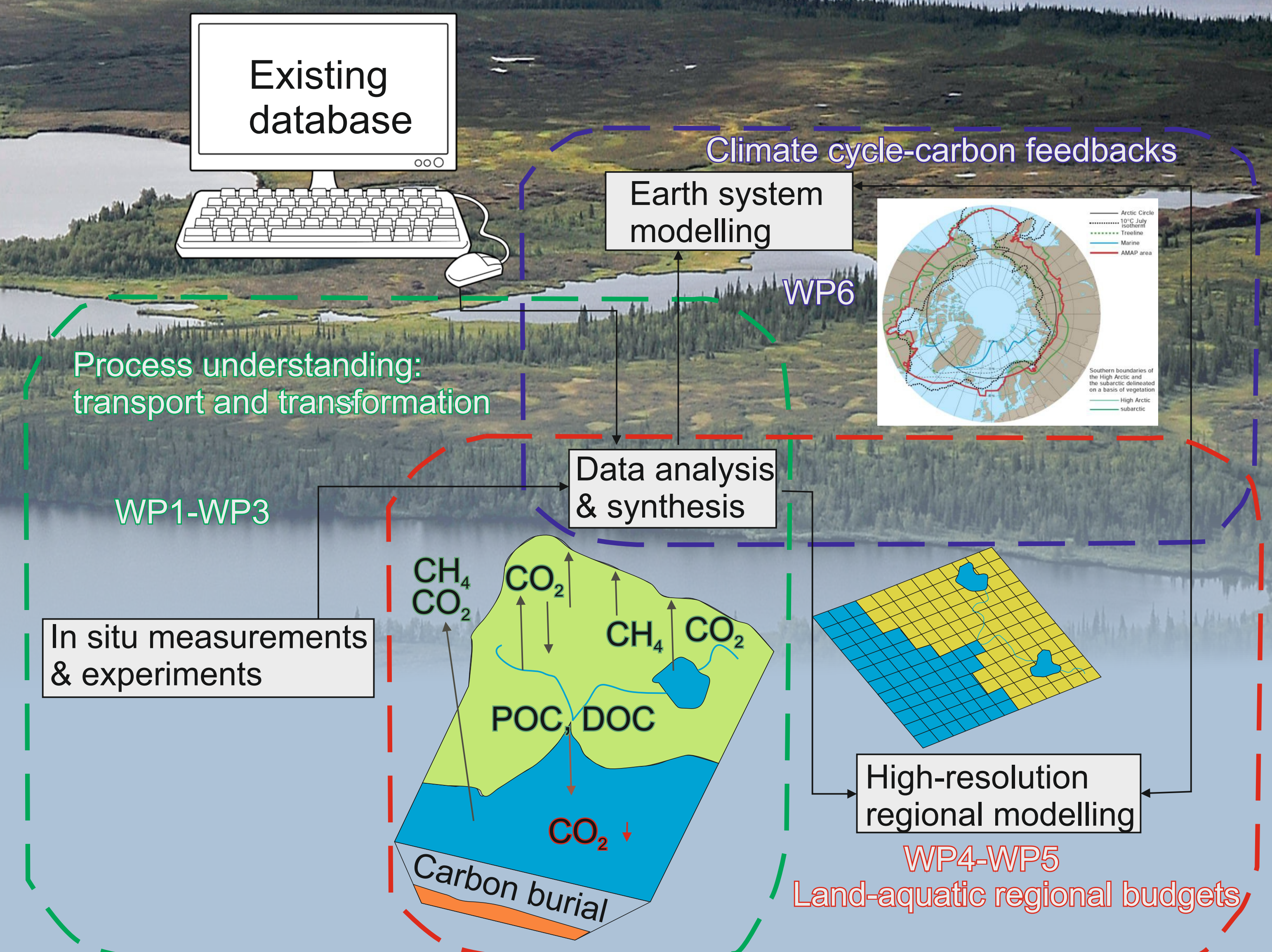
## Project overview

### Study catchments



The distribution of the study sites in the Arctic and a study catchment in Kaamanen, Finland.

*"CAPTURE aims to develop understanding of C dynamics in relation to climate variability across spatial and temporal scales. Focus is on the fate of C in the terrestrial-aquatic continuum in catchments ultimately draining to the Arctic Ocean."*



## Approaches

### In situ measurements and experiments (WP1-3)

- Vertical and lateral C fluxes and C stocks for different land-cover classes
- High-resolution peatland and lake sediment records of C accumulation, vegetation patterns and radiative forcing
- Source, quality and age of C in modern and past aquatic environment

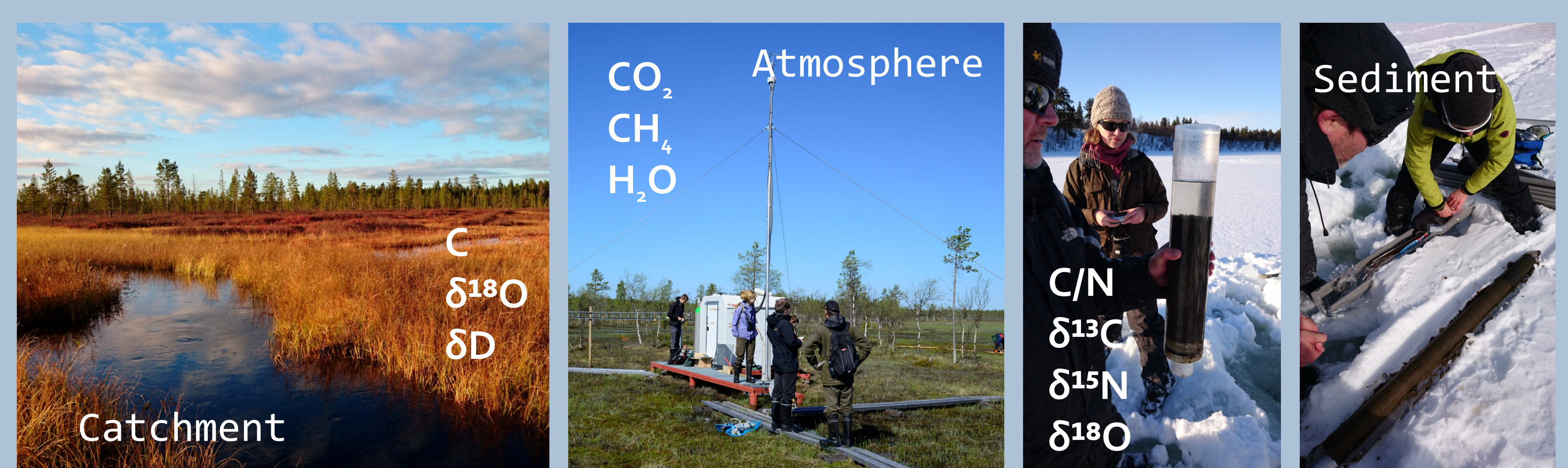
### Land-aquatic regional budgets (WP4-5)

- Ultra-high-resolution (~1m) spatial data for upscaling and modeling
- Simulations of past C exchanges using models (HPM, bLake4me model, and NEST-DNDC)

### Earth system modelling (WP6)

- A database of C fluxes and stocks
- Comparison of downscaled ESM outputs with upscaled biogeochemical model runs
- Sensitivity of the Arctic by comparing the feedbacks of past and future warming

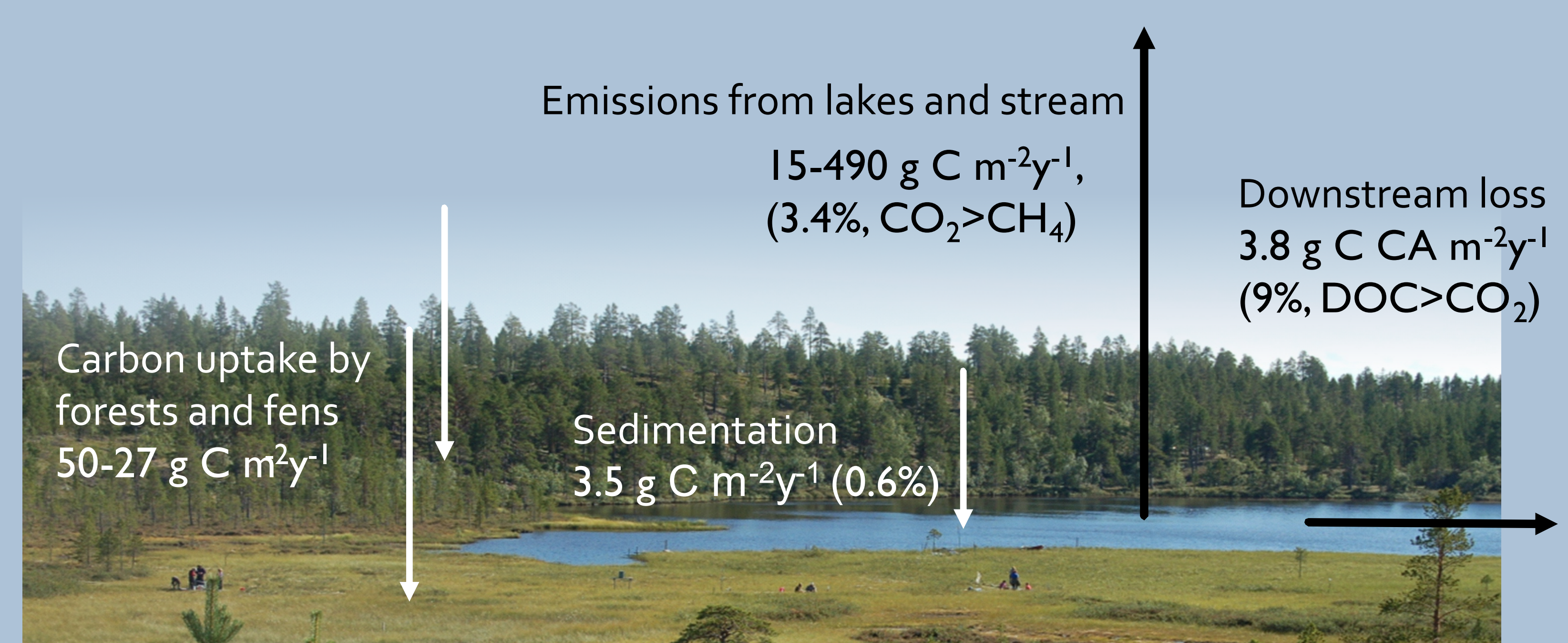
## Measurements



Field campaigns in Kaamanen, northern Finland.

## Preliminary results

A budgeting exercise from northern Finland. Proportions (%) of aquatic C transfer relative to the terrestrial uptake are indicated. Estimated aquatic C transfer equaled ~13% of the terrestrial C input (Juutinen et al. 2013).



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