

Title: Mapping and Monitoring of Boreal Wetlands

Product Leader: Kyle McDonald

Affiliation: Jet Propulsion Laboratory, California Institute of Technology

Product Team (confirmed members only):

- Mahta Moghaddam (The University of Michigan)
- Reiner Zimmermann (Max-Planck-Institute for Biogeochemistry, Germany)

Agreement status: Waiting for KC agreement

Preferred agreement type (individual/institutional): Individual (through Caltech)

Project objective(s):

- Develop maps delineating open water in the boreal landscape.
- Develop maps delineating boreal wetland vegetation.
- Develop multi-temporal maps over prototype areas delineating seasonal changes in wetland open water and inundation.

Mapping and Monitoring of Boreal Wetlands

Prototype Area 1: Alaska

Corresponding observation plan polygon(s): F2 (all)

No. PALSAR paths/coverage: ~15 passes

PALSAR request (Year 1-3): Monthly coverage March-November

Input data (EORC products): PALSAR ScanSAR path images (HH), fine res dual pol path images

Ancillary data requests: None

Prototype Area 2: Extended BOREAS

Corresponding observation plan polygon(s): F3 (part), F4 (part), F5 (part)

No. PALSAR paths/coverage: ~15 passes

PALSAR request (Year 1-3): Monthly coverage March-November

Input data (EORC products): PALSAR ScanSAR path images (HH), fine res dual pol path images

Ancillary data requests: None

Mapping and Monitoring of Boreal Wetlands

A world map is visible in the background, rendered in a light blue color against a darker blue background. The map shows the continents and is centered on the Atlantic Ocean.

Prototype Area 3: South of Hudson Bay

Corresponding observation plan polygon(s): F5 (part)

No. PALSAR paths/coverage: 1 pass

PALSAR request (Year 1-3): Continuous coverage March-November

Input data (EORC products): PALSAR ScanSAR path images (HH)

Ancillary data requests: JERS-1 boreal mosaics

Mapping and Monitoring of Boreal Wetlands



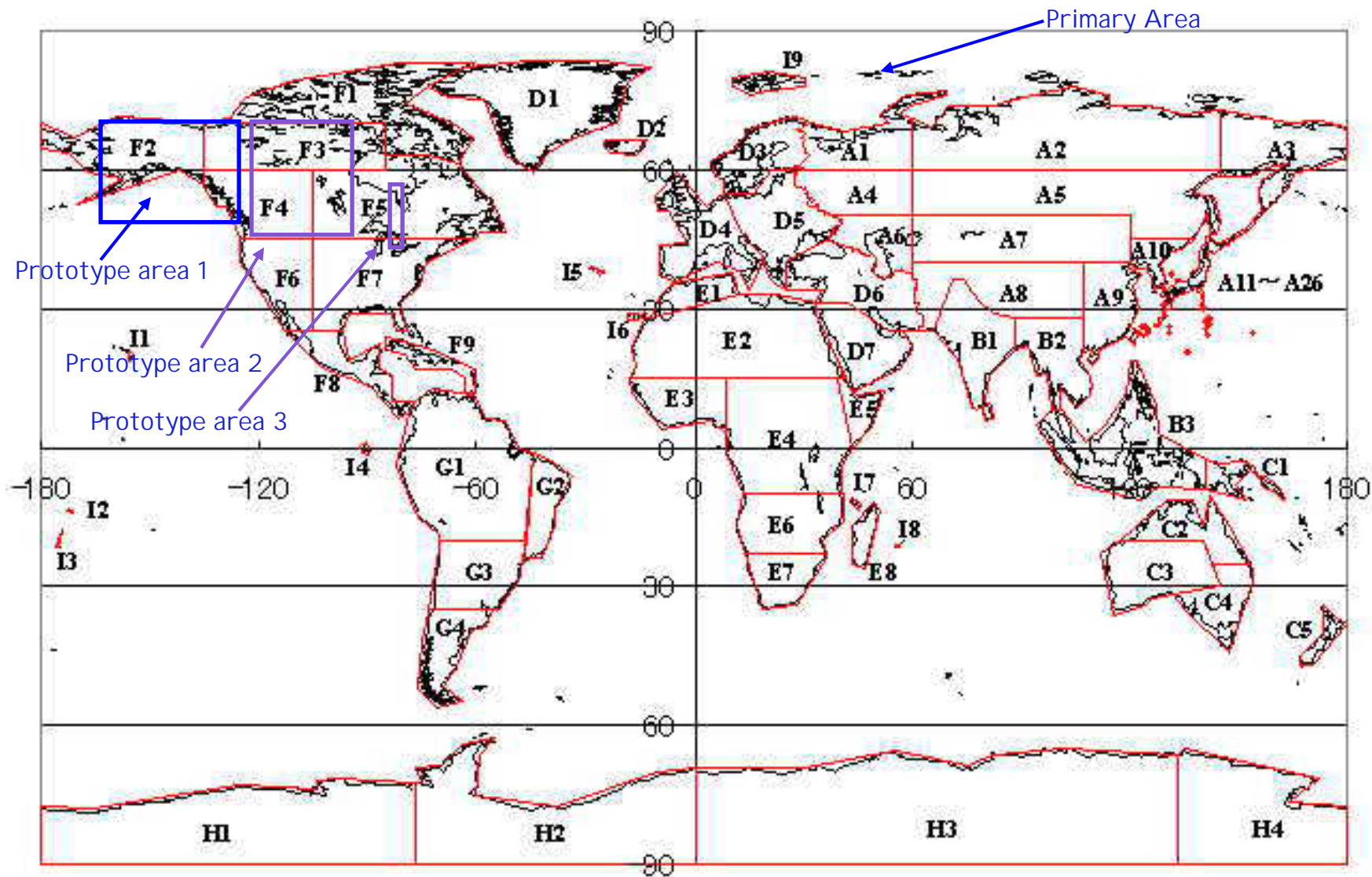
K&C Product Deliverables (before end of Year 3):

- Map of boreal open water regions.
- Map of boreal wetland vegetation
- Multi-temporal map of variation in open water
- Multi-temporal map of variation in boreal wetland inundation

Prospects for Years 4-6 (assuming agreement extension)

- Continuation of this effort with a pan-boreal scope

Mapping and Monitoring of Boreal Wetlands



Location of Prototype Areas

Title: Monitoring of Boreal Landscape Freeze/Thaw Status

Product Leader: Kyle McDonald

Affiliation: Jet Propulsion Laboratory, California Institute of Technology

Product Team (confirmed members only):

- Martti Hallikainen (Helsinki University of Technology)
- Reiner Zimmermann (Max-Planck-Institute for Biogeochemistry, Germany)

Agreement status: Waiting for KC agreement

Preferred agreement type (individual/institutional): Individual (through Caltech)

Project objective(s):

- Develop annual maps of landscape freeze/thaw state within the prototype areas, using dual-pol ScanSAR data, non-mosaicked path images.
- Provide estimates of thaw onset, and freeze-up to within the temporal fidelity allowed by ScanSAR coverage.

Monitoring of Boreal Landscape Freeze/Thaw Status

Prototype Area 1: Alaska

Corresponding observation plan polygon(s): F2 (all)

No. PALSAR paths/coverage: ~15 passes, as many overlapping swaths as possible

PALSAR request (Year 1-3): One coverage March-June, September-December;

One coverage January; One coverage July

Input data (EORC products): PALSAR ScanSAR path images (HH)

Ancillary data requests: In conjunction with frequent scatterometer data acquisitions

Prototype Area 2: Extended BOREAS

Corresponding observation plan polygon(s): F3 (part), F4 (part), F5 (part)

No. PALSAR paths/coverage: ~15 passes, as many overlapping swaths as possible PALSAR request (Year 1-3):
one coverage March-June, September-December;

One coverage January; One coverage July

Input data (EORC products): PALSAR ScanSAR path images (HH)

Ancillary data requests: in conjunction with frequent scatterometer data acquisitions



Green Box: North-Eastern Europe

(Sweden, Finland, Russia, Baltic states, Poland)

Many Met-Stations and Experimental sites (Finland & Sweden)

Covers temperate, maritime boreal to arctic environments

Grey Box: Central Siberian Transect (TCOS-Siberia Project, IGBP)

(Runs N-S Along Yenisei River incl. West Siberian Samps & Central Siberian Mts.)

Several long term observational sites of TCOS centered at 60N, 90E. Also center point of Central Siberian Tall tower project (atmospheric long distance transport).

Covers from semi-arid steppe transition to continental boreal to arctic environments

Red Box: Eastern Siberia

Permanent climate & carbon observation site (US and E.U.) near Cherskii (not currently in data acquisition plan)

Covers boreal (maritime and extreme) to arctic environments

A world map is visible in the background, rendered in a light blue color against a darker blue background. The map shows the continents and is centered on the Atlantic Ocean.

Monitoring of Boreal Landscape Freeze/Thaw Status

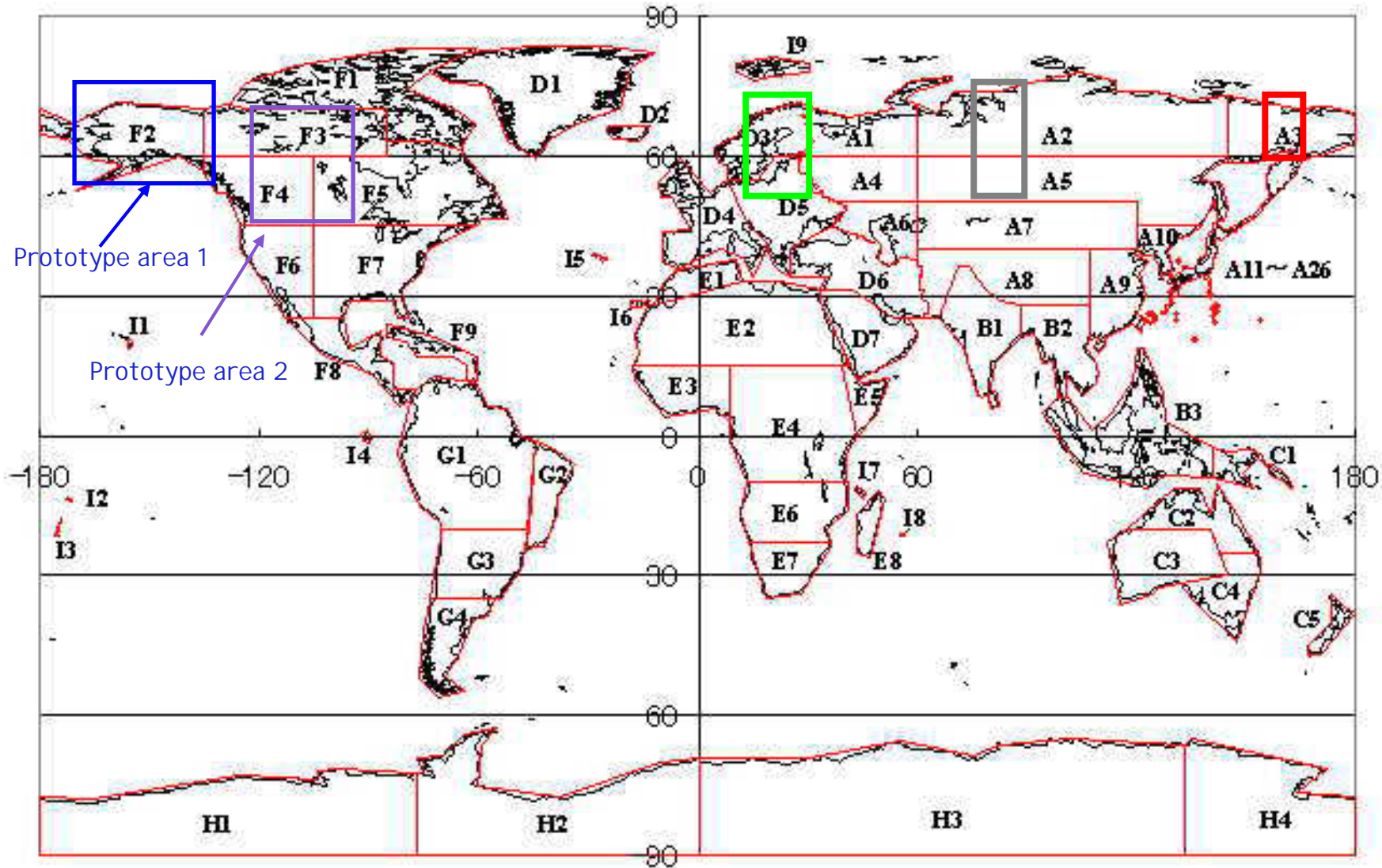
K&C Product Deliverables (before end of Year 3):

- One freeze/thaw state maps for prototype areas
(Years 1&2)

Prospects for Years 4-6 (assuming agreement extension)

- More intense temporal sampling of prototype areas
- Extension to other pan-boreal regions as allowed by data availability

Monitoring of Boreal Landscape Freeze/Thaw Status



Location of Prototype Areas