Boreal Wetlands Inundation Products

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- Mapping of spatial features.

- Contiguous regional acquisitions.

Boreal Wetlands Inundatation Products

- Open water map
  Max summertime extent
- Monitoring for selected regions
  (e.g. Coastal plains, Canadian peatlands, west Siberia lowlands)

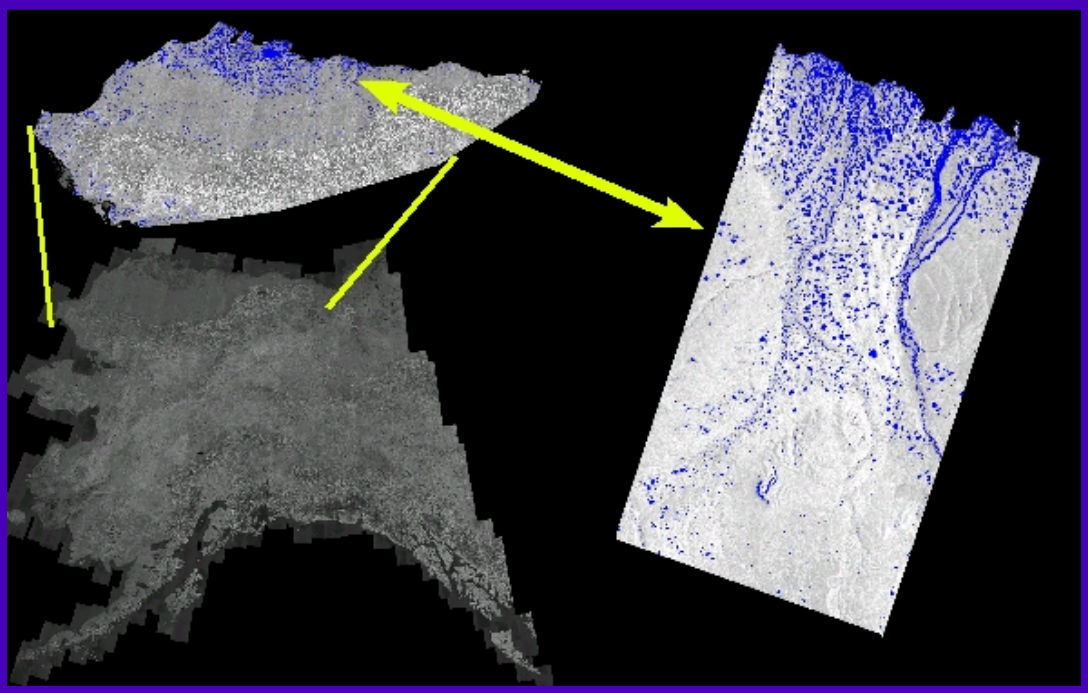
- Scientific relevance:
  CO_2, CH_4 fluxes
  source/sink identifiction, magnitude,spatial distribution and extent

- Users:
  Global and regional carbon studies

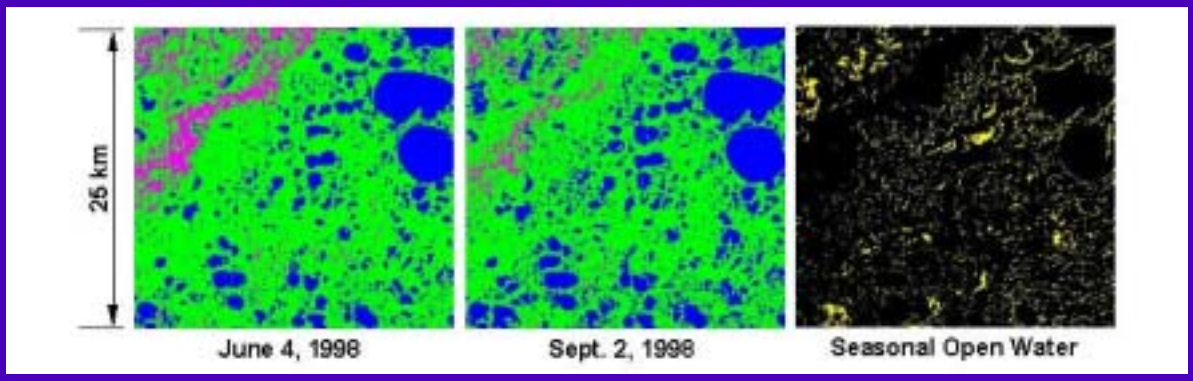
as methane production, and fix and store organic matter in the long run

- Wetlands are major natural sources of trace gases such as methane and sulfur compounds, and can have high rates of denitrification and nitrogen fixation
- The accurate assessment of spatial and temporal distributions of wetlands can have a large impact in improving the estimates of the global net Carbon exchange

Boreal Wetlands: Open Water Extent JERS-1 Prototyping



Map of open water area of Alaska's North Slope (top left) and detailed view



Seasonal change in open water area observed by JERS SAR. Imagery of the Yukon Delta National Wildlife Refuge, Alaska, acquired during the 1998 growing season delineate regions of open water (blue), and varying amounts of emergent and inundated vegetation (green/magenta), for two dates. The difference between these dates elucidates the amount of seasonal change in open water area, shown at far right in yellow. The seasonal difference in open water area represents approximately 8% of the region.

Boreal Wetlands Products

- Requirements for realization:
  - NASA funding(?; TBD)
  - Early summer maps for max inundation (as a minimum)
  - Late June or July coverage (optimum)

- Level of Ambition: Pan-boreal
  - One year for baseline
  - Multiple acquisitions during growing season for variability (selected regions)
  - Subsequent years for annual variability (perhaps selected regions)

- Minimum requirement is 100 meter ScanSAR (HH)
  Dual-pol HH, HV preferred for higher resolution