

**MONITORING SIBERIAN WETLANDS WITH SATELLITE RADAR DATA -
POTENTIAL AND LIMITATIONS**

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Siberia spans over tundra, boreal and steppe environment. This wide range of biomes is reflected in diversity of wetland types. Not only snowmelt related inundation patterns also the distribution of permafrost and its sensitivity to climatic variability is of high importance. Furthermore, direct human impact such as the creation of reservoirs is changing the hydrologically in these environments.

Satellite images provide coverage for large areas but there are constrains by spatial and temporal resolution, sensor features and lifetime. These limitations are discussed for central Siberia. The study area spans from the Taimir Pensinsula in the north to Lake Baikal in the south and covers approximately 3 Mio km². This research is related to the MISAR project which focuses on the potential of multi-incidence angle ScanSAR data (financed by the Austrian Science Fund) and the Siberia-II project which is a shared-cost action financed through the 5th Framework Program of the European Commission and deals with multisensor concepts for greenhouse gas accounting in northern Eurasia.

Examples employing spaceborne microwave data (C-band) are presented. ENVISAT ASAR Wide Swath data are available for Summer 2003 and 2004 and have a spatial resolution of 150m. Seasonal inundation patterns in relation to wetlands are investigated and permanently inundated basins identified. The latter are compared with global and national databases. The ENVISAT based water bodies which have been derived for the entire study area are of considerably higher detail than the global databases and provide up-to-date information. Comparisons with historic maps allow the identification of changes over longer time spans.