



## River Ice Monitoring

Polar View's river ice monitoring service delivers information about the location and extent of river ice cover to decision makers in near real-time. This information is used to assess the level of threat and to facilitate early warning and risk mitigation of potential floods.

Many northern rivers are prone to ice-related flooding. In order to assess flood risk and mitigate its impact, it is imperative to monitor the development of ice covers throughout the ice season, with particular emphasis on the freeze-up and break-up periods. The formation and decay of river ice is a highly complex process controlled by flow characteristics, temperature and precipitation. Key parameters required to assess the danger of flooding due to ice jams include location, extent and structure of the ice field. However, a systematic determination of these parameters is difficult to achieve using conventional, field-based and aerial surveillance methods. In remote and inaccessible regions, frequent surveillance can be prohibitively costly. Under these conditions, Earth Observation (EO) has emerged as an ideal tool to collect information on river ice development over large areas repeatedly and consistently throughout the ice season.

River Ice Monitoring products can be accessed at <http://geoview.dynalias.com/riverice>.

### Service Provider

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C-CORE is a global corporation providing innovative engineering solutions. Based in St. John's, Newfoundland on the East Coast of Canada, C-CORE provides advanced technology solutions to production issues and market challenges in the natural resource sectors. C-CORE's specialized engineering services are focused on technology adaptation and integration, design recommendations and engineering analyses. Our core

expertise is represented in areas including Intelligent Sensors, Geospatial Systems, Ice Engineering and Geotechnical Engineering. C-CORE serves a diverse client base, including large national and multi-national corporations, small and medium size enterprises, as well as local, national and international government agencies.

[www.c-core.ca](http://www.c-core.ca)

## Geographical Coverage

The River Ice Monitoring Service can be offered world-wide and is currently delivered in Canada, the United States and Russia.

## Current Users

Newfoundland Department of Environment and Conservation; Alberta Environment; Municipality of Wood Buffalo, Alberta; Yukon Department of Environment, Canada; Ministry of Emergency in Republic Sakha, Russia; Alaska-Pacific River Forecast Center, U.S.A.

## Benefits and Impacts of the Service

Provides critical information that helps decision makers mitigate potential impacts of ice-related flooding. The service can be provided world-wide and image acquisition is independent of sunlight and weather conditions. The service and product delivery can be customized to meet user's requirements.

## Training Available

Training in the generation and use of EO-based river ice products are available upon request.

## Technical Specifications

**Platforms:** Satellite Radar (Radarsat-1, Envisat)

**Spatial Coverage:** 50x50 to 400x400 square km

**Spatial Resolution:** 10m to 100m

**Availability of Data:** daily to weekly, depending on location and user requirements

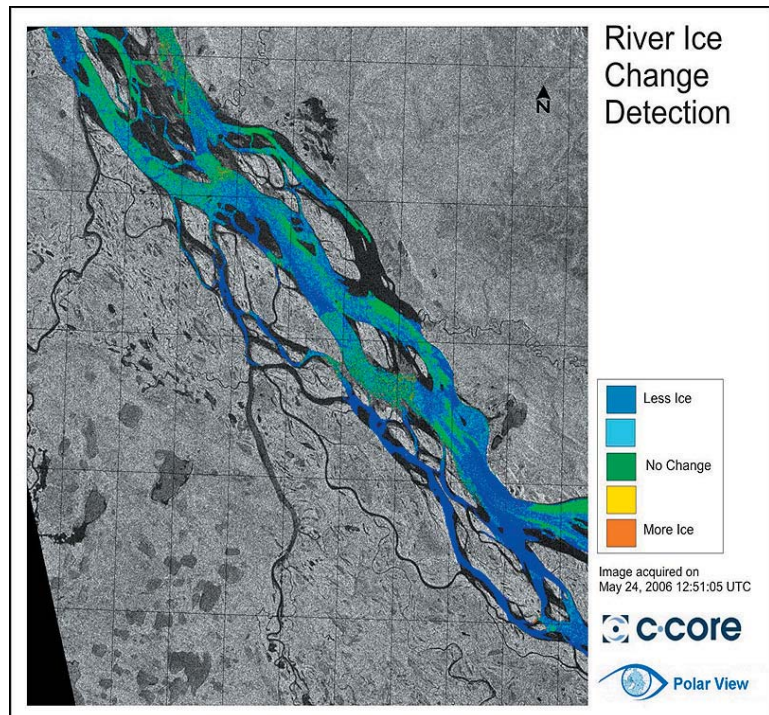
**Temporal Resolution:** 24-day repeat cycle for Radarsat-1, 35-day repeat cycle for Envisat

**Duration of Season:** January to May

## What is Polar View?

Polar View offers integrated monitoring and forecasting services in the Polar Regions as well as mid-latitude areas using satellite earth observation data to support improved decision-making, planning and adaptation to climate change. Polar View is funded by the European Space Agency (ESA) under the GSE programme, which promotes the utilization of satellites for public good and in support of public policy. Our services take the form of enhanced sea ice information (charts and forecasts), snow maps and glacier and iceberg monitoring data. We also provide monitoring services of lake and river ice, ice-edge and coastal erosion. Polar View services support safe and cost-effective marine operations, improved water management and marine environmental security.

Lena River,  
Russia



## Contact Information

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