SMHI
www.smhi.se

Polar View
www.polarview.org

10-day Ice and SST Forecasts for the Baltic Sea

During the last ten years, the marine traffic in the Baltic Sea has increased by over 30% and the trend is expected to continue. Safe and efficient ship operations has been possible due to better ice monitoring, where use of satellite data has become increasingly more important as icebreakers need detailed ice information for route planning. In this regard, Polar View's sea ice information service provided by the Swedish Meteorological and Hydrological Institute (SMHI), offers 10-day forecasts of sea surface temperature (SST), sea ice concentration, ice drift, level ice thickness, ridged ice thickness, ice ridge density, ice ridge sail height, ice divergence and convergence during the Baltic Sea ice season.

To calculate the forecasts, the 3D ocean circulation model HIROMB is used. This model assimilates sea ice concentration data derived by the University of Bremen from observations of the spaceborne passive microwave sensor AMSR-E, as well as ocean salinity and temperature profiles. The data set is complemented by operational ice charts, which contain data from Radarsat-1, Envisat and in situ observations.

The forecasts are presented as maps and can be accessed at **www.smhi.se/polarview**.

Service Provider

SMHI, the Swedish Meteorological and Hydrological Institute, operates under the auspices of the Swedish Ministry of Sustainable Development and uses its meteorological, hydrological and oceanographic expertise to promote efficiency, safety and a better environment in various areas of the society.

SMHI's products are designed to meet the needs of customers in various sectors. General forecasts and severe weather warnings are processed to provide forecasts tailored to meet the specific needs of different sectors of the society. The services are made available in different forms, including consulting assignments and expert opinions. SMHI's meteorological, hydrological and oceanographic expertise is used in extensive analyses and surveys.

http://www.smhi.se

Geographical Coverage

The Baltic Sea.

Current Users

Icebreakers (Finnish, Swedish), Swedish Maritime Administration, Swedish Arm Forces and Swedish Coast guard. The Polar View information can be used for navigational and planning purposes.

Benefits and Impacts of the Service

Timely and variable information on sea ice conditions is essential for all marine operations in ice-covered areas. The safety and efficiency of sea transportation, off-shore operations, fisheries and other activities in regions covered by sea ice have been the motive for establishing operational sea ice monitoring and forecasting services in many countries. SMHI's ice forecasts support both safe shipping and route planning during the Baltic Sea ice season.

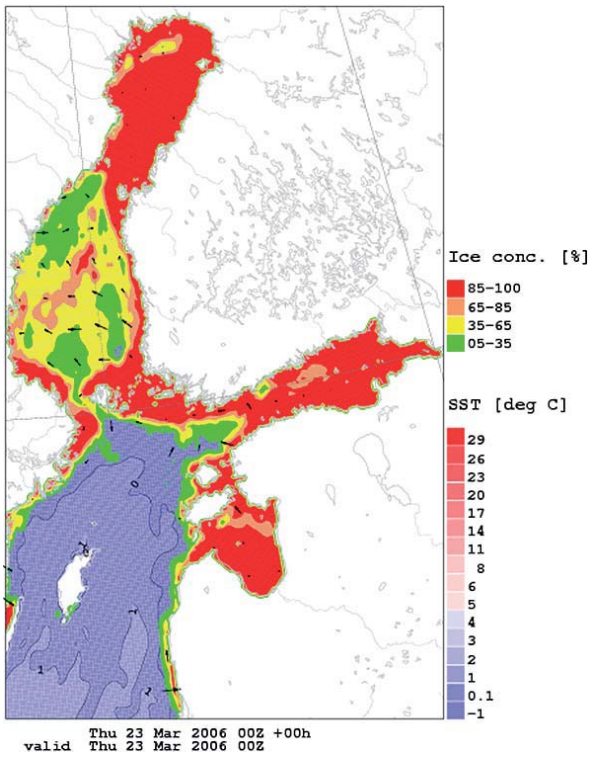
Although national ice services are providing ice information on a daily basis, there is an additional requirement for higher resolution data as well as forecasts. Polar View's ice forecasting service provides this enhanced information on both an hourly and daily basis. This information can be delivered directly to the ship or accessed via the Internet.

Training Available

Training is available to the Swedish Maritime Administration, and Swedish Coast Guard. Others can be trained on request.

Technical Specifications

Sensor: Radarsat-1, Envisat, AQUA AMSR-E
Spatial Coverage: Baltic Sea area (latitudes 53-66 deg., longitudes 6-30 deg.)
Spatial Resolution: 3 nautical miles
Availability of Data: once a day about 14.30 UTC
Duration of Season: Baltic Sea ice season (December to May)



Example of ice concentration, ice drift and SST forecast.

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

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