

# PolarWatch FAQs

## **What is the purpose of PolarWatch?**

NOAA PolarWatch is a new joint venture between the Center for Satellite Applications and Research within the National Environmental Satellite, Data, and Information Service (NESDIS/STAR) and the Southwest Fisheries Science Center (SWFSC) within the National Marine Fisheries Service (NMFS) that started in the Fall of 2016 and will provide a user-driven information portal for accessing multi-sensor physical, biological and biogeochemical ocean remote sensing data in support of a broad suite of applications and research in the Arctic and Antarctic.

## **There are many existing Arctic observation groups out there, so why do we need PolarWatch?**

The primary goal of PolarWatch is to make it simpler for users to find and use existing high-latitude datasets through a common service, and to make these data accessible to broader audiences in the necessary formats and data types. The existence of multiple Arctic data portals is testament to the great interest in this region; PolarWatch will not duplicate the efforts of these groups and aims to provide these portals additional ocean remote sensing data. Our goal is to build upon existing relationships with NOAA's NCEI Arctic Team and the National Snow and Ice Data Center to help ensure PolarWatch is a complimentary service to existing national polar data services and portals. While there are many groups actively focused in the Arctic, there aren't many groups in the U.S. focused on the Southern Ocean. In addition to providing Arctic data, PolarWatch will also provide data coverage of Antarctic waters and the broader Southern Ocean.

## **Who is working on this project?**

PolarWatch builds upon and leverages the existing NOAA CoastWatch/OceanWatch program. The following personnel comprise the core group for PolarWatch: Dr. Sinead Farrell, the Project Scientist, has expertise in remote sensing of the Earth's polar regions for marine geophysics and cryospheric investigations and also serves as Science Team lead in STAR's Satellite Oceanography and Climatology Division (SOCD); Dr. Cara Wilson, the Project PI, is the PI of CoastWatch's West Coast Regional Node (WCRN) and has expertise in increasing user engagement for satellite data; Jenn Sevadjian (Patterson), the Operations Manager, has extensive experience in web development and data management; and Dale Robinson, an active consultant to the project, is the CoastWatch WCRN operations manager and has experience with satellite observations in the polar regions.

A broader team of ocean remote sensing experts in STAR/SOCD (e.g., for sea surface height, sea surface temperature, ocean color et al.), led by Dr. Paul DiGiacomo, are involved in the development of data sets for PolarWatch. Dr. DiGiacomo is the overall Program Manager for CoastWatch/OceanWatch (as well as PolarWatch) and the capabilities of these complementary programs will be significantly leveraged as well.

## **Are you working with other polar data groups?**

Our goal is to develop collaborative, synergistic relationships with existing programs working in the polar regions. We plan to leverage existing collaborations with NOAA's NCEI Arctic Team and members of the National Snow and Ice Data Center to ensure PolarWatch is a complimentary service to existing national polar data services and portals. In this pilot effort, we will engage with users to determine data needs. Identified key users include NOAA Fisheries Antarctic Ecosystem Research Division (AERD), which is part of the SWFSC), the Alaska Fisheries Science Center (AFSC) and the National Ice Center. We also look forward to working with others engaged in polar data distribution and integration to help ensure PolarWatch provides needed data and that data are interoperable with their data systems.

## **How are you going to increase access to data?**

PolarWatch will provide a 'one stop shopping' location for a suite of Arctic and Antarctic oceanographic satellite data products. The products will be available in file formats that are well suited for modern analysis tools, accessible via a common protocol, and fully documented following established metadata standards. Examples describing data access and productivity tools will be created for new users and those not accustomed to working with satellite remote sensing data. PolarWatch will draw off the successful experiences the WCRN has had distributing satellite and other data products to a wide variety of users. [More information about the PolarWatch data system.](#)

## **Why is PolarWatch hosted out of the SouthWest Fisheries Science Center (SWFSC) in California?**

The SWFSC has a long association with groups serving the polar regions and with the NOAA CoastWatch/OceanWatch program based in NESDIS/STAR. The Antarctic Ecosystem Research Division (AERD) is part of SWFSC. The CoastWatch West Coast Regional Node is housed within the SWFSC in the Environmental Research Division. The regional responsibilities of the WCRN have expanded in recent years to include the polar and subpolar seas surrounding Alaska, creating opportunities to work with the Alaska Fisheries Science Center. NESDIS/STAR will support PolarWatch by providing foundational, multi-sensor ocean remote sensing products for high latitudes; these products will be modified, enhanced and distributed by PolarWatch as driven by user needs. In addition to Fisheries users, PolarWatch will also work with other NOAA line offices, (Office of Oceanic and Atmospheric Research, National Ocean Service and National Weather Service) as well as managers and researchers outside of NOAA to identify and serve their needs.

## **How will you decide what data to include?**

The data included will be determined by the needs of PolarWatch users, in particular working with our liaisons at the AERD (Christian Reiss), the AFSC (Mike Sigler), and the NIC (Sean Helfrich). Generally, data will be provided for both the Arctic and Antarctic regions and will include historical and near-real-time data. A list of potential data and data products to be included in PolarWatch can be [found here](#). While our initial targeted users are from NMFS and

STAR, we hope to serve a much wider user base and welcome feedback from all potential users. If you have additional available data you would like to recommend please [send us your suggestions](#).

### **What parameters will be included?**

Initially, parameters will include sea surface temperature (SST), wind speed, sea ice concentration, sea ice thickness, sea ice velocity, sea ice type, and ocean color. Parameters included will not be limited and will be determined by user need and data availability. A preliminary list of potential data and data products to be included in PolarWatch can be [found here](#).

### **Will you be focused on serving near-real-time data?**

Based on diverse user needs, PolarWatch will serve both near-real-time data and science quality (i.e., delayed mode) data. Whenever possible, we will include the full temporal range of the science quality dataset. The data system will include data updated in the range of hours to months to years, depending on the data product. Minimizing data latency in all products will remain a priority.

### **What will the geographic coverage area be?**

Data will be provided for both the Arctic and Antarctic regions with the spatial boundaries determined by user needs. Data visualization products in polar projections can extend as far as 45° (both N and S) so we are considering using this as an outer threshold for data served through PolarWatch, but we expect to focus on bringing in higher latitude data first, based on user needs. In the case of global datasets, PolarWatch will provide links to data providers for data access and visualization outside of this domain.

### **What map projections will you be using?**

We will be able to accept both unprojected data and data in any projection. We will display data in web maps with specific Arctic and Antarctic projections. Data will be distributed in a variety of projections based on user needs.

### **What data product levels will be part of PolarWatch?**

Initially, PolarWatch will serve gridded data products (Level 3 and Level 4). Additional data product levels included will be determined on a case by case basis based on user requests, and may potentially include Level 2 data. [Learn more about product levels](#).

### **Will you serve more than satellite data?**

The primary focus of PolarWatch will be on remote sensing data relevant to the polar oceans and coasts. However, this scope could expand in the future to include associated and ancillary data, such as model output, climatologies and in situ data for validation et al., based on the needs of the PolarWatch user community.

### **Will you be building new data products?**

A goal of PolarWatch is to provide data access which will enable product development. We hope that early engagement with users will help determine critical data product needs. PolarWatch plans to provide temporally composited data products, e.g. generating multi-day or monthly averaged datasets from daily data. We also plan to engage with users in 2017 to evaluate product needs and plan to move forward with user-driven product development as funding allows in future years.

## Relevant Groups and Links

- National Snow and Ice Data Center
  - [nsidc.org](http://nsidc.org)
  - <http://nsidc.org/data/masie>
  -
- US National Ice Center
  - [www.natice.noaa.gov](http://www.natice.noaa.gov)
- NOAA's NCEI Arctic Team
  - [www.nodc.noaa.gov/arcticteam.html](http://www.nodc.noaa.gov/arcticteam.html)
- Alaska Ocean Observing System
  - [www.aos.org](http://www.aos.org)
- Arctic Observing Network
  - [www.arcus.org/search-program/aon](http://www.arcus.org/search-program/aon)
- NOAA's Arctic Program
  - [arctic.noaa.gov](http://arctic.noaa.gov)
- US Antarctic Marine Living Resources (AMLR) program
  - <https://swfsc.noaa.gov/aerd/>
- Ocean and Sea Ice Science Application Facility (OSI SAF):
  - <http://osisaf.met.no/p/ice/index.html>
  
- EOSDIS Worldview
  - [https://worldview.earthdata.nasa.gov/?p=arctic&l=MODIS\\_Terra\\_CorrectedReflectance\\_TrueColor\(hidden\),MODIS\\_Aqua\\_CorrectedReflectance\\_TrueColor,Reference\\_Labels\(hidden\),Reference\\_Features\(hidden\),Coastlines\(hidden\)&t=2017-01-19&v=null](https://worldview.earthdata.nasa.gov/?p=arctic&l=MODIS_Terra_CorrectedReflectance_TrueColor(hidden),MODIS_Aqua_CorrectedReflectance_TrueColor,Reference_Labels(hidden),Reference_Features(hidden),Coastlines(hidden)&t=2017-01-19&v=null)
- Polar View
  - <http://www.polarview.aq/arctic>
- Sea Ice Remote Sensing Database, Uni. Bremen
  - <https://seaice.uni-bremen.de/sea-ice-concentration/#Arctic>
  - <https://seaice.uni-bremen.de/databrowser/>