

Southwest Fisheries Science Center  
National Marine Fisheries Service  
National Oceanic and Atmospheric Administration  
La Jolla, California

**SECTION 515 PRE-DISSEMINATION REVIEW & DOCUMENTATION FORM**  
(5/2003)

AUTHOR/RESPONSIBLE OFFICE: LTJG L. J. Spence\* (CoastWatch Operations Officer) and D.G. Foley (CoastWatch Coordinator)

\* = point of contact.

TITLE/DESCRIPTION: AMSR-E/Aqua Sea Surface Temperature

PRESENTATION/RELEASE DATE: July, 2002 - ongoing

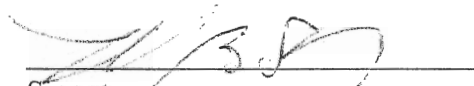
MEDIUM: Internet

**PRE-DISSEMINATION REVIEW:**

Name and Title of Reviewing Official: Dr. Franklin B. Schwing, Director, NMFS SWFSC, Environmental Research Division

(Must be at least one level above person generating the information product)

Pursuant to Section 515 of Public Law 106-554 (the Data Quality Act), this product has undergone a pre-dissemination review.

  
Signature

10/2/06  
Date

**SECTION 515 INFORMATION QUALITY DOCUMENTATION**

**I. Utility of Information Product**

**Explain how the information product meets the standards for utility:**

**A. Is the information helpful, beneficial or serviceable to the intended user?**

The satellite-derived products generated by the NOAA CoastWatch, West Coast Regional Node (WCRN), offer useful information to data customers in easily accessible formats. The products are utilized by a wide range of users including members of the scientific community, managers, fishing men and women, educators, and the interested public.

The CoastWatch WCRN offers sea surface temperature data derived from the

Advanced Microwave Scanning Radiometer (AMSR-E) onboard NASA's Aqua satellite. The AMSR-E is a 12 channel passive microwave radiometer built by Japan's National Space Development Agency (NASDA) and provided for the Aqua satellite mission as part of NASA's Earth Observing System (EOS). The AMSR-E sensor is designed to measure a number of geophysical parameters, including rain rate, atmospheric water vapor, wind speed, sea surface temperature, and sea-ice concentration. A key advantage of the AMSR-E is its ability to penetrate cloud cover, resulting in a continuous field of ocean surface measurements.

This product is used by CoastWatch in its experimental Blended SST product.

**B. Is the data or information product an improvement over previously available information? Is it more current or detailed? Is it more useful or accessible to the public? Has it been improved based on comments from or interactions with customers?**

While the presence of clouds restricts SST measurement for sensors using other spectral bands, microwave radiometers can be used to measure SST in the presence of clouds. The AMSR-E is a useful tool for SST retrieval in all oceanic areas, especially the polar oceans, where extensive cloud cover makes regular SST measurements difficult for other sensors.

All venues for accessing CoastWatch data and images include information required to contact CoastWatch personnel. Improvements are continuously being implemented based on feedback from customers, with a focus on usability and accessibility.

**C. What media are used in the dissemination of the information? Printed publications? CD-ROM? Internet? Is the product made available in a standard data format? Does it use consistent attribute naming and unit conventions to ensure that the information is accessible to a broad range of users with a variety of operating systems and data needs?**

This is an internet product, distributed via Live Access Server and THREDDS.

The product is available in formats commonly used by imaging programs (e.g., HDF, netCDF files), GIS programs (ASCII grid), and spreadsheet programs (CSV and other simple ASCII files).

All attributes are named in a manner consistent with NOAA guidelines. All units follow System Internationale (SI) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) guidelines. At the discretion of the user, data may also be displayed and distributed in the units of measurement traditionally used by mariners and marine scientists.

## II. Integrity of Information Product

Explain (Circle) how the information product meets the standards for integrity:

A. All electronic information disseminated by NOAA adheres to the standards set out in Appendix III, \_ Security of Automated Information Resources, \_ OMB Circular A-130; the Computer Security Act; and the Government Information Security Reform Act.

B. If information is confidential, it is safeguarded pursuant to the Privacy Act and Titles 13, 15, and 22 of the U.S. Code (confidentiality of census, business and financial information).

C. Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100 - Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

## III. Objectivity of Information Product

(1) Indicate which of the following categories of information products apply for this product:

- Original Data
- Synthesized Products
- Interpreted Products
- Hydrometeorological, Hazardous Chemical Spill, and Space Weather Warnings, Forecasts, and Advisories
- Experimental Products
- Natural Resource Plans
- Corporate and General Information

(2) Describe how this information product meets the applicable objectivity standards. (See the DQA Documentation and Pre-Dissemination Review Guidelines for assistance and attach the appropriate completed documentation to this form.)

## SECTION 515 INFORMATION QUALITY DOCUMENTATION

### **B. Synthesized Products**

The objectivity of synthesized products is achieved by using data of known quality, applying sound analytical techniques, and reviewing the products or processes used to create them before dissemination. For synthesized products, please document the following:

***Data and information sources are identified or made available upon request.***

The data source is identified as Remote Sensing Systems, Inc. Information on Remote Sensing Systems and their processing of AMSR-E data can be found at their website, <http://www.ssmi.com/>. Information regarding NASA's Aqua satellite mission can be found at <http://aqua.nasa.gov/>. More information regarding the AMSR-E sensor and its specifications can be found at the Japan Aerospace Exploration Agency (JAXA) website at [http://sharaku.eorc.jaxa.jp/AMSR/ov\\_amsre/index.htm](http://sharaku.eorc.jaxa.jp/AMSR/ov_amsre/index.htm).

***NOAA uses data of known quality or from sources acceptable to the relevant scientific and technical communities in order to ensure that synthesized products are valid, credible and useful.***

The source data are derived using methods acceptable to the relevant scientific and technical communities. AMSR-E measurements are processed to SST by Remote Sensing Systems, Inc. (Wentz and Meissner, 2000, Wentz et al., 2003). Information on Remote Sensing Systems' processing of AMSR-E SST data can be found at [http://www.ssmi.com/amsr/amsr\\_data\\_description.html](http://www.ssmi.com/amsr/amsr_data_description.html).

Remote Sensing Systems validates SST data by comparison with additional sources. SST is compared with in situ observations obtained from the Global Ocean Data Assimilation Experiment (GODAE), Monterey Server at the U.S. Navy's Fleet Numerical Meteorology and Oceanography Center (<http://usgodae.fnmoc.navy.mil/>). SST is also validated by comparison with Reynold's Optimally Interpolated SST v2 data (Reynolds et al, 2002).

***Synthesized products are created using methods that are either published in standard methods manuals, documented in accessible formats by the dissemination office, or generally accepted by the relevant scientific and technical communities.***

The methods employed in the mapping and image generation are consistent with techniques in the published literature. The data are mapped to an equal angle grid of 0.25 degrees latitude by 0.25 degrees longitude. The mapping uses simple arithmetic means to product composite images of various duration (3, 5 and 8-day), following the recommendations of the International Ocean-Colour Coordinating Group (Antoine et al., 2004). Graphical end products are generated using the Generic Mapping Tools software (Wessel and Smith, 1998). All datasets are all made available via live access server (LAS) and THREDDS.

***NOAA includes the methods by which synthesized products are created when they are disseminated or makes them available upon request.***

A basic description of all methods is included in the accompanying FGDC, CF, COARDS, and THREDDS ACDD-compliant metadata files. More detailed descriptions of these methods are available on-line, with links originating at the WCRN web page. A complete description of the methods, including the program code used to generate the end products from the source data, is available upon request.

***NOAA reviews synthesized products or the procedures used to create them (e.g. statistical procedures, models, or other analysis tools) to ensure their validity.***

These products are generated and distributed on an operational basis in near real time. In addition to the efforts WCRN takes to ensure data validity, users are cautioned these products may not be appropriate for many scientific applications. Users interested in scientific applications which are not time critical are referred to an appropriate data source, whenever one is available.

## REFERENCES:

Antoine, D., J. W. Campbell, R. H. Evans, W. W. Gregg, M. R. Lewis, A. Morel, C. Moulin, H. Murakami. 2004. Guide to the creation and use of Ocean-Colour, Level-3, binned data products. IOCCG Report Number 4.

Reynolds, R. W., N. A. Rayner, T. M. Smith, D. C. Stokes and W. Wang, 2002. An improved in situ and satellite SST analysis for climate. *J. Climate*, 15, 1609-1625.

Wentz, F., C. Gentemann, and P. Ashcroft. 2003. On-orbit calibration of AMSR-E and the retrieval of ocean products. *Proceedings of the 83rd American Meteorological Society Annual Meeting, Long Beach, CA*.

Wentz, F.J. and T. Meissner. 2000. AMSR Ocean Algorithm. Version 2. Algorithm Theoretical Basis Document. RSS Tech. Proposal 121599A-1.

Wessel, P. and W. H. F. Smith, 1998. New, improved version of the Generic Mapping Tools released. *EOS Trans. AGU*, 79, 579.