

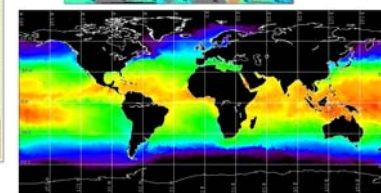
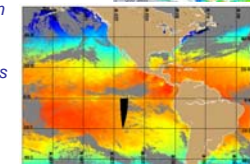
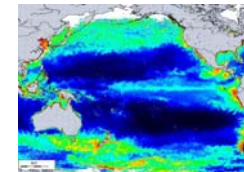


NOAA CoastWatch: Applications of Remote Sensing

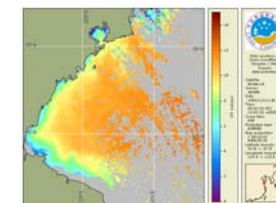
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OceanWatch is the expansion of CoastWatch by providing coverage on a global scale. Efforts include the Central Pacific Node providing data for the entire Pacific Basin, GOES merged products, and GOES/POES blended products. In addition, it includes working with international communities to provide similar datasets for their region, such as China CoastWatch.



The CoastWatch mission is to provide and ensure timely access to near real-time satellite data to protect, restore, and manage U.S. coastal ocean resources, and understand climate variability and change to further enhance society's quality of life. Our primary users include Federal, State, and local marine scientists, resource managers and the general public.

ABSTRACT: NOAA CoastWatch is an operational program that evolved from a harmful algal bloom (red tide) incidence along the East Coast of the US in 1987. It began as a weekly program of sea surface temperature (SST) analysis from the Advanced Very High Resolution Radiometer (AVHRR) and the surface wind field and advection forecasts. Through the leadership of the senior author, CoastWatch continues to develop and expand in areas and parameters of coverage.

Processing of remote sensing data and additional meteorological and oceanographic parameters is being done at the CoastWatch office at the NOAA Science Center in Camp Springs, Maryland. Data are available to the different CoastWatch nodes in the US. Users of the information then connect to the node responsible for their local area. We have applied up to date processing algorithms, conducted calibration/validation of the data, and provide processing tools to regional nodes and other users. We will be presenting the products and services that the program provides. Similar programs are being hosted in other areas of the world in collaboration with NOAA CoastWatch.

BACKGROUND: CoastWatch began in 1987 by providing near real-time SST for the Mid-Atlantic following several outbreaks of Harmful Algal Bloom (Red Tide) along the coast of North Carolina. CoastWatch has evolved from providing high resolution data from the NOAA's Polar Orbiter satellites to providing data from multiple satellites from different government organizations. Regular funding (research) was established for CoastWatch in 1990 under the Coastal Ocean Program. NOAA CoastWatch became operational in 1991. The Program became part of the NESDIS base budget in FY1995 and continued operations with complete national coverage. Full and open access to CoastWatch was enhanced with the passage of the Freedom of Information Act in 1997. It has been managed under different offices in NESDIS – NODC ('87-'92), OSDPD ('92-'00) and STAR/ORA ('00-present), all the time under the direction of the senior author. Efforts are ongoing to expand CoastWatch into OceanWatch.

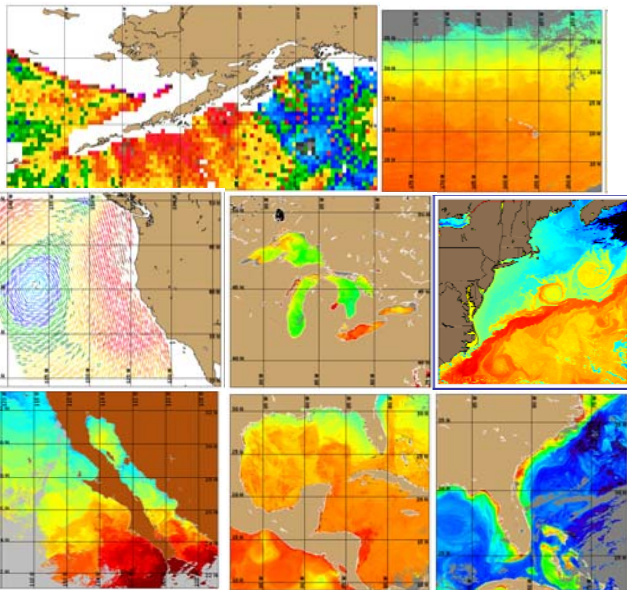
Collaborative Projects with National Center Partners include the Harmful Algal Bloom Forecasting Project with the Coastal Services Center, the National Centers for Coastal Ocean Science, and the Center for Oceanographic Operational Products and Services of NOS. Another project is the Sea Nettles Now-cast for the Chesapeake Bay with the Cooperative Institute for Climate Studies within NESDIS.



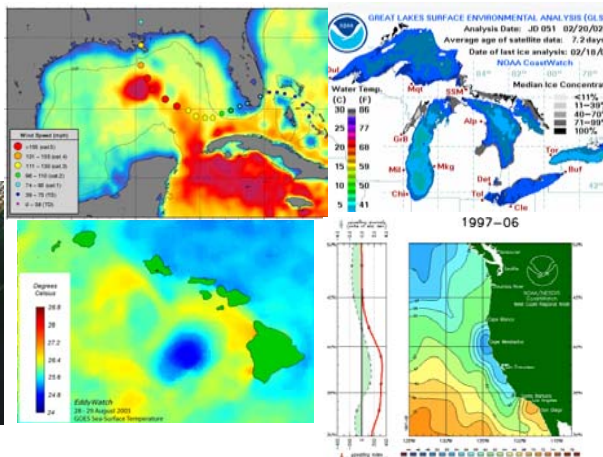
Data are distributed nationally through Central Operations and six regional nodes co-located with NOAA's Line Office Partners: NOS, NMFS, OAR, and NWS

Satellite Ocean Remote Sensing Products

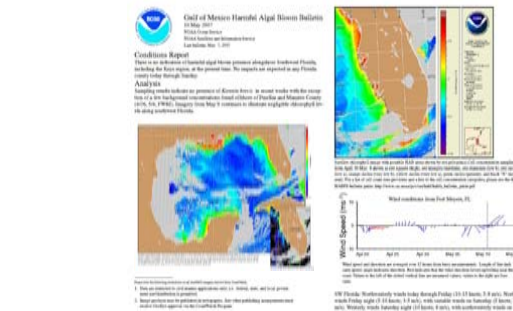
- Sea Surface Temperature: POES/ AVHRR, GOES/ Imager
- Ocean Color: GeoEye/ SeaWiFS and Aqua and Terra/ MODIS
- Ocean Surface Winds: DMSF SSM/I and QuikSCAT/ SeaWinds



All Nodes tailor products to the needs of their regional users. Examples include True Color images, Tropical Cyclone Heat Potential, Ice Extents, Eddy-SST images, and El Nino Reports.



Mapping Sea Nettles in the Chesapeake Bay



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