NOAA's
Ocean Prediction Center

The Mariner's Weather Lifeline...

OUR MISSION: The Ocean Prediction Center (OPC), a part of the National Weather Service (NWS), strives to be recognized as the mariner's weather lifeline through exceptional products and customer service. OPC issues marine warnings, forecasts, and guidance in text and graphical and gridded format for maritime users.

LOCATION: NOAA Center for Weather and Climate Prediction in College Park, MD

STAFF: 27 federal employees, 2 contracted employees, 1 NOAA Corps officer

BACKGROUND: OPC origins can be traced to the sinking of the RMS Titanic in 1912. In response to this tragedy, an international commission was formed to determine requirements for safer ocean voyages. In 1914, the commission's work resulted in the Safety of Life at Sea Convention (SOLAS); the United States was one of the original signatories. The National Weather Service (NWS), through OPC, partially fulfills the U.S. obligation to SOLAS by issuing warnings and forecasts for large portions of the North Atlantic and North Pacific oceans. The OPC, then Marine Prediction Center, was established in 1995 as one of the National Centers for Environmental Prediction's (NCEP's) original six centers.

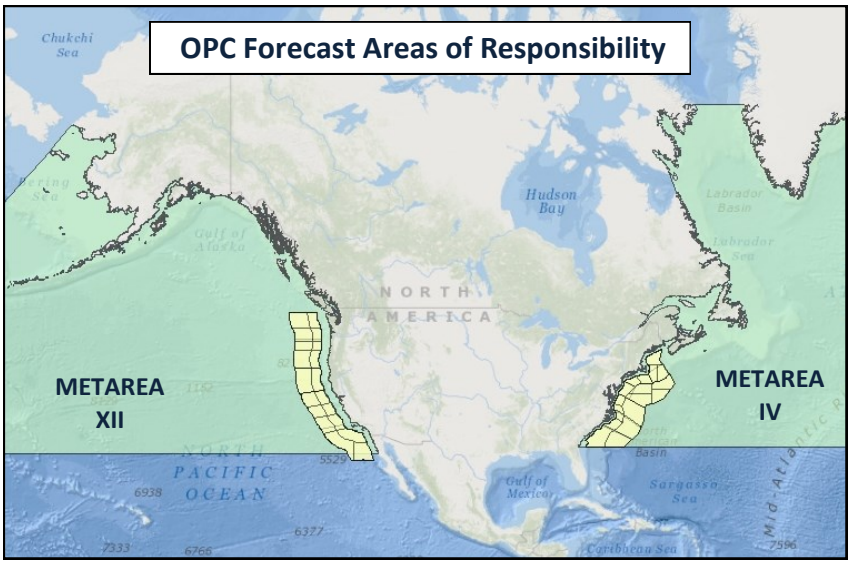
WHAT WE DO

- Monitor and forecast weather and sea conditions 24 hours per day, 365 days per year
- Issue marine warnings including gale, storm, and hurricane force wind warnings, heavy freezing spray warnings, and volcanic ashfall advisories
- Create five-day forecasts in text, graphical, and gridded formats for marine weather and significant wave heights
- Disseminate more than 150 products daily
- Perform quality control on global marine observations before assimilation into weather forecast models
- Electronically display ocean current forecasts and provide sea surface temperature analyses and forecasts online
- Analyze storm surge potential for extratropical storms and provide storm surge guidance within Marine Weather Discussions
- Ensure the latest science is reflected in new products and services, including upcoming GOES-R satellite products and gridded marine data
- Collaborate with other NOAA offices to enable ecological forecasts

"The international shipping industry is responsible for the carriage of around 90% of the world trade. Shipping is the life blood of the global economy."

- International Chamber of Shipping

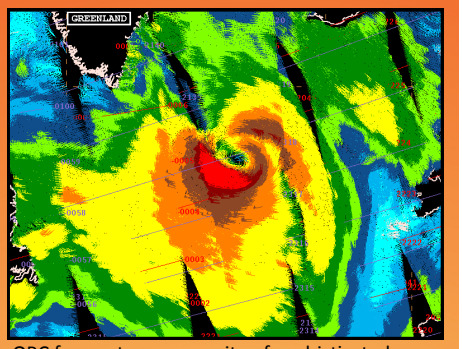
More About OPC



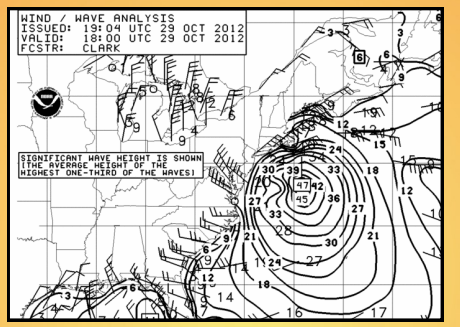
OPC's forecast areas of responsibility include portions of the North Atlantic and North Pacific oceans. The offshore zones, shaded in yellow, cover the nation's Exclusive Economic Zone extending approximately 250 nautical miles from the coast. The high seas forecast areas, shaded in green, correspond to Metareas XII and IV. Metareas are geographical regions of the sea designated under the jurisdiction of the World Meteorological Organization. These areas were created for coordinating the transmission of meteorological information to mariners on voyages through international and territorial waters.

Noteworthy OPC Facts and Information

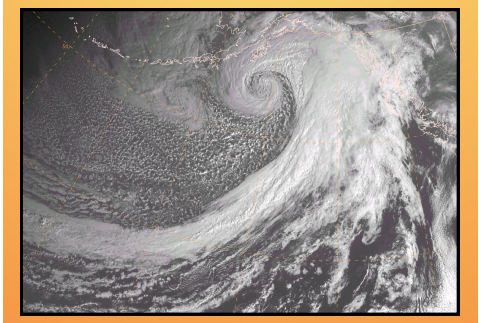
- OPC provides year-round marine forecasts in the Arctic and special support for Antarctic research expeditions on the National Science Foundation's R/V *Nathaniel B. Palmer* icebreaker.
- OPC supports emergency response efforts. Previous specialized forecasts include: the Fukushima Daiichi tsunami disaster response, Deep Water Horizon oil spill, and United States Coast Guard search and rescue operations.
- Across the high seas Metareas in 2014 alone, OPC issued 7,173 gale warnings, 2,583 storm warnings, and 529 hurricane force wind warnings.



OPC forecasters use a suite of sophisticated tools to assist in marine prediction. In the image above, the scatterometer flying aboard the EUMETSAT METOP satellite measures sea surface roughness, a proxy for ocean surface wind speed and direction. The bright red vectors indicate hurricane force winds; brown storm force; and yellow gale force winds.



Hurricane Sandy's impact on the marine environment is evident in this sea state analysis valid 18Z October 29th, 2012. Significant wave heights were analyzed to 47 feet (14 meters) across OPC waters.



Without radar and regular observations over the ocean, OPC forecasters rely on remotely sensed data and models to compose their forecasts. Visible imagery from NOAA's geostationary satellites provides insight into a weather system's structure, movement, and strength.

www.opc.ncep.noaa.gov

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