

National Environmental Satellite, Data, and Information Service (NESDIS) June 2015 Newsletter



Operations – Ocean Color

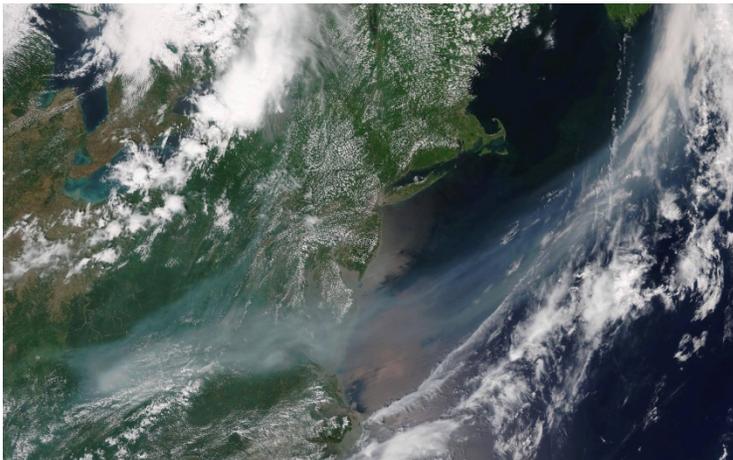
New Analysis of Ocean Color Data from VIIRS



Scientists at NOAA's [Center for Satellite Applications and Research](#) have developed a new ocean color product using data from the VIIRS instrument on board the Suomi NPP satellite. Scientists around the world use ocean color data for a variety of purposes, from monitoring the food supply for marine animals, to analyzing the physical dynamics of our oceans that affect weather and climate, to tracking algal blooms that could be dangerous to people and animals. The image above shows average global phytoplankton concentrations, or "ocean color," for the month of May 2015. Blue areas have low amounts of phytoplankton, and green areas have high concentrations, and are often areas that support large animal populations, since phytoplankton are the base of most oceanic food webs. This product continues ocean color monitoring missions that began in the 1990's. Global and regional VIIRS ocean color product images, as well as some extensive validation results, can be found at the [VIIRS ocean color data monitoring site](#).

Image of the Month

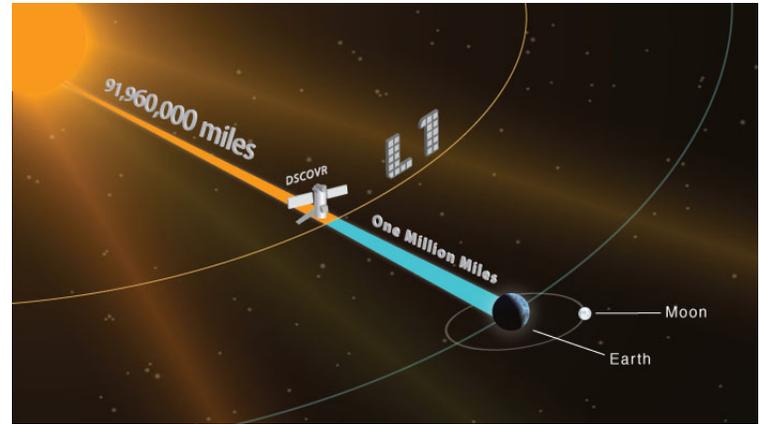
Canada Wildfire Smoke over Eastern United States



The 2015 wildfire season has gotten off to a brisk start. The smoke that blanketed parts of the eastern US in mid-June traveled over 2200 miles from wildfires burning in central Canada and covered a swath of approximately 1000 miles. The image above was captured on June 10 by the VIIRS instrument on the Suomi NPP satellite and generated by the Cooperative Institute for Meteorological Satellite Studies at the University of Wisconsin in Madison. It depicts the smoky haze as it travels over the mid-Atlantic region and Atlantic Ocean.

Spotlight – DSCOVR Reaches Final Orbit

Satellite Expected to Begin Operations this Summer



More than 100 days after it launched, NOAA's Deep Space Climate Observatory (DSCOVR) satellite has reached its orbit position about one million miles from Earth. Once final instrument checks are completed, DSCOVR will be the nation's first operational space weather satellite in deep space. The image above depicts the orbit position between Earth and the sun at Lagrange point 1 (L1), which gives DSCOVR a unique vantage point. DSCOVR will provide improved measurements of solar wind conditions to enhance NOAA's ability to warn of potentially harmful solar activity. Data from DSCOVR will enable NOAA's space weather forecasters to provide early warnings of geomagnetic storms that have the potential to bring major disruptions to power grids, aviation, telecommunications, and GPS systems.

Message from Dr. Stephen Volz

Assistant Administrator for NESDIS

Not only was the official hurricane season kicked off on June 1, but the month of June has seen an array of extreme weather around the country. There has been flooding in Texas, tornadoes in the Midwest, and severe storms along the east coast. The National Centers for Environmental Information (NCEI) has updated the popular NOAA Extreme Weather Information Sheets (NEWIS) for 2015. NEWIS provide phone numbers and websites for contacting government officials and monitoring information resources before, during, and after potentially life-threatening weather situations.

- Sheets are available for coastal Alabama, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Texas, as well as all of Florida, Hawaii, Puerto Rico, and the U.S. Virgin Islands.
- Get yours today: [Download them from our website](#) or via a free app in the iTunes Store, which is compatible with the iPhone, iPod Touch, and iPad.
- Put a NOAA Extreme Weather Info Sheet in your emergency kit, home, auto, boat, school, and place of employment. Be prepared! Users should always heed warnings from local emergency managers, National Hurricane Center and their local NWS Forecast Offices first, and use NEWIS sheets for supplementary information. We wish you a safe and happy summer!

Polar Follow On (PFO): What You Need to Know

PFO is critical to continuing NOAA's polar weather satellite observations after JPSS-2.

What is PFO?

- PFO consists of two satellites, JPSS-3 and JPSS-4.
- Polar weather satellites operate in the low earth orbit, approximately 540 miles from the surface of the Earth.
- Polar weather satellites provide the primary input (more than 80%) of the global data needed for NOAA's Numerical Weather Prediction models for weather forecasting.
- Development of the PFO needs to begin now to ensure adequate coverage in the polar orbit after JPSS-2 and to minimize the risk of a gap between JPSS-2 and JPSS-3.
- Commitment to start PFO now is needed to support the protection of life, property, and ensure national security through the late 2030s.

Why PFO?

- A highly reliable, stable, fault tolerant polar observing system needs to be established as quickly as possible to ensure delivery of critical weather observations.
- PFO provides a cost-effective and low risk path to robustness.*
 - **Low risk** – identical performance requirements for JPSS-2 and PFO (JPSS-3 and JPSS-4)
 - **Cost effective** – instrument block buy (versus purchasing one at a time), spacecraft bus competition, efficient build cadence, and produces a consistent data flow for the end-to-end weather and forecast systems.
 - **Schedule effective** – eliminates gap vulnerability at earliest practical time

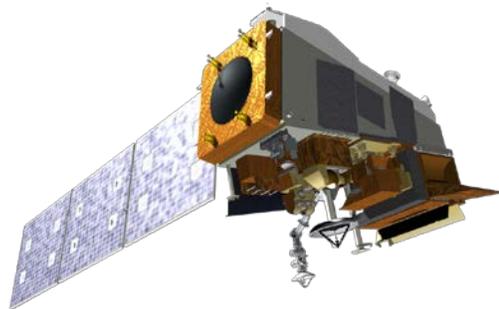
*Robustness and fault tolerant for the polar system are defined as 1) two failures must occur to create a gap in polar observations, and 2) can return to a "two failure to a gap" system in a timely fashion.

When would PFO be ready to launch?

- The goal is to have two operational polar satellites in the afternoon orbit at all times, and to have replacement satellites available prior to their mission life (of seven years) expiring.
- Current PFO plans would have JPSS-3, the first satellite in the PFO program, ready to launch in the second quarter of FY 2024.
- The second PFO satellite, JPSS-4, would be ready to launch in the third quarter of FY 2026.
- Assuming full funding of the FY 2016 President's Budget request, this development sequence takes advantage of block buys for instruments at significant cost savings and builds needed robustness in the satellite constellation.

What happens if NOAA does not receive funding for PFO in FY 2016?

- Funding for PFO in FY 2016 is critical to the long-term stability in the polar satellite system.
- A delay in development of PFO will drive up the cost, risk, and time to achieve a fault tolerant polar observing system.
- Should a gap in polar observations occur, there will be a decrease in the quality of weather forecasts.
- Please support the FY 2016 President's Budget request!



National Centers for Environmental Information (NCEI) Highlights

Drought-related Activity

NCEI Western Regional Climate Service Director led the recently released [NOAA California Drought Service Assessment](#) which identifies tactics and strategies NOAA can take to better provide California and regional decision makers with the scientific data and tools they need to lessen the impacts of extreme drought.

- The service assessment contains numerous findings and recommendations which may lead to improved or more tailored data products and tools, such as weather forecasts, streamflow forecasts, seasonal predictions, and climate models.
- The report also examines NOAA's coastal stewardship mandates and ecosystem research services, noting best practices and identifying areas for partnerships and collaboration, as well as research questions NOAA scientists should consider pursuing.
- The report's findings underscore NOAA's important role in providing businesses and communities with the environmental intelligence--or timely, reliable, and actionable information--to remain resilient to extreme events.

For additional information, please contact Sierra Jones at (202) 482-6140, or at Sierra.Jones@noaa.gov

Activities in the Northeast

NCEI has six regional climate services directors serving the various regions around the country. Looking at the Northeast, some select regional climate activities include:

- NCEI and partners are releasing [climate impact and outlooks](#) as well as a [dashboard of recent and real-time climate data](#) and resources for both the Eastern Region and the Gulf of Maine Region. We are working with the [Gulf of Maine Council's Climate Network](#) on several cross-border initiatives relating to the delivery of climate information at state and local scales including Maine, New Hampshire, and Massachusetts.
- With the repository of climate information from NCEI, the Eastern Regional Climate Services Director (RCSD) is also a key player in the development and population of state-level climate information clearinghouses including the [NJAdapt website](#) and the New York climate clearinghouse currently under development.
- The Eastern RCSD is co-hosting state-level roundtables on Federal products and services for climate-related activities aimed at state employees from fish and wildlife, coastal zone management, forests and agriculture, public health, and transportation. Two already occurred in Maine and Vermont and planning is underway for one later this year in Delaware.