

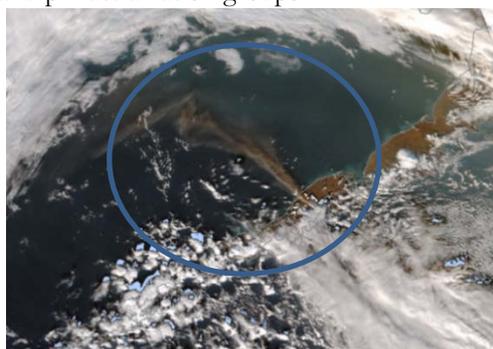
National Environmental Satellite, Data, and Information Service (NESDIS) November 2014 Newsletter



Operations – Monitoring Volcanic Activity

Eruption of the Pavlov Volcano in Alaska

The eruption of the Pavlov Volcano began on November 13, 2014. The image below, as viewed by the Visible Infrared Imaging Radiometer Suite (VIIRS) on the NOAA/NASA Suomi NPP polar-orbiting satellite, depicts the ash cloud from the volcano on November 14. The ash cloud had a maximum height of 55,118 ft. This satellite-derived information was used to provide aviation advisories to avoid contact with the plume, as ash can cause severe damage to jet engines. The Pavlov Volcano is on the Aleutian Range on the Alaska Peninsula and is one of the most active volcanoes in the United States. NOAA's operational weather satellites provide continuous surveillance to enable rapid dissemination of advisories and warnings by the National Weather Service (NWS) Aviation Weather Center and the Federal Aviation Administration to commercial and private aviation groups.



Spotlight – Argos Data Collection System

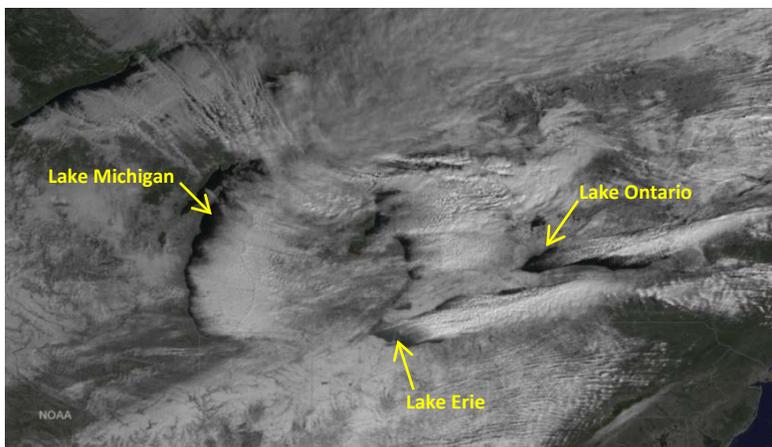
International User Conference on Wildlife Applications

A conference on Argos was held from November 18-20 with representation from academia, government, and industry; from North and South America, Europe, Asia, and New Zealand. NOAA was represented by personnel from NESDIS, the Office of Oceanic and Atmospheric Research, and the National Marine Fisheries Service (NMFS). NOAA's Chief Scientist, Dr. Richard Spinrad, was a distinguished speaker.

Scientific sessions were very diverse, with interests in avian, marine, and terrestrial species. Examples of session topics are: using Argos as a tool, conservation and policy applications, how to communicate results, and sustaining the future of Argos wildlife tracking.

Of the 22,000 active Argos platforms currently deployed around the world, over 8,000 of these are for wildlife monitoring applications. These include [NMFS monitoring programs](#) for polar seals; marine turtles; the Marine Mammal Program; the Billfish, Swordfish, Tuna, and Turtle Tagging Program; and the Antarctic Marine Living Resources Predator Ecology program. Other key Argos applications include collection of global meteorological ocean data from drifting and moored surface buoys and subsurface floats, fisheries management, and anti-piracy operations. Data is relayed via the Data Collection System sensors aboard NOAA's polar-orbiting satellites.

Image of the Month



Heavy Lake Effect Snows for Great Lakes Region

Downstream effects of one of the most intense extratropical cyclones ever recorded in the North Pacific caused a major lake effect snowfall event, which can occur when cold arctic air flows across still-warm water of Lake Erie and Lake Ontario, as evidenced in this image taken by the GOES-East satellite on November 18, 2014. Storm total snowfall amounts were as high as 65 inches in Erie County, New York, and snowfall rates were as high as 4 inches per hour at some locations in Buffalo. Please visit [here](#) for more information.

Message from Dr. Steve Volz

Assistant Administrator for NESDIS

On November 2, it was my honor to join the National Oceanic and Atmospheric Administration. I come to NESDIS after 12 years with NASA's Earth Sciences Division, where I had the pleasure of both working with and leading the development and launch of a number of missions which are closely linked with NOAA's services and which many of you are no doubt familiar with.

It's a privilege for me to work at NESDIS. NESDIS is the backbone of NOAA's environmental intelligence enterprise—it's NESDIS that operates the satellites and develops the science that our partners in the Weather Service, across government, and around the world use to make critical forecasts and warnings. We are the stewards of NOAA's environmental information and we enrich society's understanding of the world with cutting-edge science, data products, and services. NESDIS is recognized nationally and internationally for its excellence in operations and science, and for sharing its information and expertise with the world.

I'm excited to dive right in, and I look forward to meeting all of you. Please contact Sierra Jones if you are interested in setting up a meeting. You may find my full biography [here](#).

www.nesdis.noaa.gov

JPSS Proving Ground

Reducing Risk and Looking to the Future

Every generation of NOAA's satellites operates faster and with more accuracy than the last. But those technological advances are only effective if users are prepared for them. How does this happen, you may ask? NOAA uses "Proving Grounds" to develop and test new applications for future systems. The JPSS Proving Ground is a collaborative effort between the JPSS Program Office, NESDIS, NOAA Cooperative Institutes, the National Weather Service (NWS), the National Ocean Service, the National Marine Fisheries Service, NASA, and the Department of Defense.

The JPSS Proving Ground provides an environment where new products can be demonstrated through testing and evaluation within a user facility – such as the NWS Weather Forecast Offices. Feedback from the community results in further optimization of research and applications, with the primary objective being to maximize the benefits and performance of JPSS data, algorithms, and products for operational and research users, and ultimately, for the greater public good. This is being done through:

- Detailed characterization of data attributes such as uncertainty (accuracy and precision) and long-term stability. Engaging users to enhance their applications and develop new ones by working together to facilitate optimal utilization of JPSS data, algorithms, and products in combination with other data sources through testbeds, experimental data streams, and intercomparisons of enhancements with baselines.
- Education, training, and outreach.
- Facilitating transition of improvements to operations.

Key products and services that the JPSS Proving Ground works to enhance are weather forecasting, forest fire warnings, drought assessments, ocean/coastal ecosystem assessments, Arctic access and resource management, tropical cyclones, flooding, severe weather and aviation applications, and air quality, to name a few.

For more information on the JPSS program, please [visit](#). Two specific examples of the JPSS Proving Ground are:

Flood Events – near Evans and Garden City, Colorado

BEFORE

AFTER

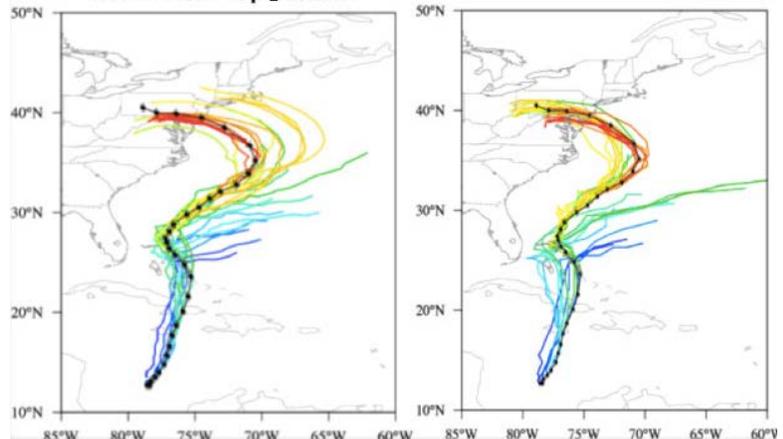


Data and imagery from the Visible Infrared Imaging Radiometer Suite (VIIRS) instrument aboard the Suomi NPP satellite illustrate the extent of a 2013 flooding event. While VIIRS has a resolution of 375m, it was enhanced to a 30m resolution by applying a spatial elevation map, and that layer was applied to Google Earth. The purple/blue colored areas display flooding. This experimental product was done in collaboration with George Mason University.

Improving Tropical Storm Forecasts

HWRf-NCEP Operational

Modified with ATMS



Hurricane Weather Research Forecast (HWRf) models are getting more accurate as satellite technology improves. The left plot shows the five-day track forecast models used at the time of Hurricane Sandy in 2012. The image on the right shows a clear improvement in the projected forecast accuracy when data from the Suomi NPP satellite Advanced Technology Microwave Sounder (ATMS) instrument is incorporated.

Highlights

National Climatic Data Center (NCDC)

- **The Climate Resilience Toolkit** was made publically available on November 17, as requested by the Office of Science and Technology Policy. The Toolkit was developed by the National Climatic Data Center's Climate.gov team.
- **The NOAA Radar Reanalysis project** completed the radar-only processing of quantitative precipitation estimates. This was in collaboration with the National Weather Service's National Severe Storms Laboratory and represents a reprocessing effort of approximately 150 terabytes and several years of work towards a quality 12-year precipitation dataset.

Search and Rescue

Between November 6-10 there were three rescue events resulting in 10 rescues:

- November 6, northwest of Fort Lauderdale, Florida. Four people were rescued by the Wildlife Rescue Service of Florida following an airboat tipping over in the swamp.
- November 10, southwest of Anchorage, Alaska. Five people were rescued on Skilak Lake and were transported to shore by helicopter.
- November 10, in Grand Canyon National Park, Arizona. There was an injured hiker who required rescue by the National Park Service.

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