Mission

The NATIONAL ENVIRONMENTAL SATELLITE, DATA AND INFORMATION SERVICE (NESDIS) is dedicated to providing timely access to global environmental data from satellites and other sources to promote, protect and enhance the Nation’s economy, security, environment and quality of life. To fulfill its responsibilities, NESDIS does the following:

- acquires and manages the Nation’s operational environmental satellites,
- operates the NOAA National Data Centers,
- provides data and information services including Earth system monitoring,
- performs official assessments of the environment, and
- conducts related research.

Economy and Jobs

95% of U.S. international trade moves through the Nation’s ports and harbors—a $1,163 BILLION INDUSTRY IN THE U.S. Accurate ocean models, derived from NOAA satellite data provide real-time oceanographic data to promote safe and efficient navigation within U.S. waters.

Saving Lives

The Search and Rescue technology on NOAA satellites help save around 235 LIVES PER YEAR IN THE U.S.—that’s 7,300 U.S. lives since 1982 and over 35,000 rescues worldwide. Satellite data also help emergency managers prepare for tsunami and other dangerous coastal flooding events.

Weather

Improved satellite data has increased hurricane forecast accuracy over the last 10 years. Hurricane tracks can be predicted FIVE DAYS BEFORE LANDFALL giving coastal populations MORE TIME TO PREPARE OR EVACUATE from storms. A recent study shows that without information from polar-orbiting satellites, Hurricane Sandy’s track would have been hundreds of miles off.

Defending Our Defenders

A global defense force requires global weather information. On-the-ground commanders require accurate 2–10 day weather forecasts and real-time situational awareness. SATELLITES PROVIDE 93% OF THE DATA used in global weather models along with global live data feeds around the clock.

Environment

Data from NOAA’s satellites MONITORS the crucial ozone layer of our atmosphere, PROVIDES the first signals of when El Niño or La Niña emerge, IDENTIFIES wildfires before they get out of control, and provides air quality alerts to those with respiratory problems.

www.nesdis.noaa.gov
Two Orbits
NOAA maintains two primary constellations of environmental satellites: polar-orbiting and geostationary satellites.

GEOSTATIONARY SATELLITES orbit 35,800 km (22,300 miles) above the Earth at speeds equal to Earth’s rotation, which means they maintain their position and provide continuous coverage.

POLAR-ORBITING SATELLITES make regular orbits around the Earth’s poles from about 833 km (517 miles) above the Earth’s surface. The Earth constantly rotates counterclockwise underneath the path of the satellite making for a different view with each orbit.

Next-Generation Satellites
NOAA is preparing to launch next-generation satellites with new instruments that will significantly improve observational capabilities that directly affect public safety, protection of property, and our nation’s economic health and prosperity.

GOES-R is the NEXT-GENERATION GEOSTATIONARY SATELLITE that will launch in 2016. It is a four-satellite program that will extend the availability of the operational GOES satellite system through 2036.

Its new capabilities include an imager that will provide THREE TIMES MORE SPECTRAL INFORMATION, FOUR TIMES THE SPATIAL RESOLUTION and MORE THAN FIVE TIMES FASTER COVERAGE. It also features the first ever lightning mapper flown from geostationary orbit that will map total lightning continuously day and night, providing information that may improve tornado warning lead time.

JPSS-1 is the NEXT-GENERATION POLAR-ORBITING SATELLITE that will launch in 2017. The first satellite in the program, Suomi NPP, launched in 2011 and has been successfully improving severe weather forecasting and environmental hazard assessments, as well as providing a host of new imagery products.

JPSS will build on Suomi NPP’s success. Its new capabilities include a 22-channel imager that provides TRUE COLOR IMAGERY and advanced infrared and microwave sounders that will SUPPORT NUMERICAL WEATHER PREDICTION MODELS at NOAA’s National Weather Service.