The National Geophysical Data Center

(NGDC) provides scientific data stewardship, products, and services, which support the research and understanding of space, ocean, and coastal environments. Skilled staff use state of the art technologies and services to provide long-term archives and to enable the easy discovery of geophysical and environmental data. NGDC is dedicated to serving a broad range of users with high quality data and products.

One of three NOAA national environmental data centers, NGDC manages over 600 types of data ranging from the core of the earth to the surface of the sun. NGDC works within the National Environmental Satellite, Data, and Information Service (NESDIS), as part of the National Oceanic and Atmospheric Administration (NOAA) of the Department of Commerce (DOC).

NGDC operates the World Data Center for Geophysics and supports international data exchange and stewardship.

OUR VISION To be the world's leading provider of geophysical and environmental data, information, and products.

OUR MISSION To provide long-term, scientific, data stewardship for the Nation's geophysical data, ensuring quality, integrity, and accessibility.

NGDC works closely with contributors of scientific data to prepare documented, reliable data sets. We welcome cooperative projects and exchanges of data with other government agencies, nonprofit organizations, and universities. The Data Center continually develops data management programs that reflect the changing world of geophysics. We value your input to our programs and look forward to supplying your data needs.

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data & Information Service
National Geophysical Data Center

CONTACT INFORMATION

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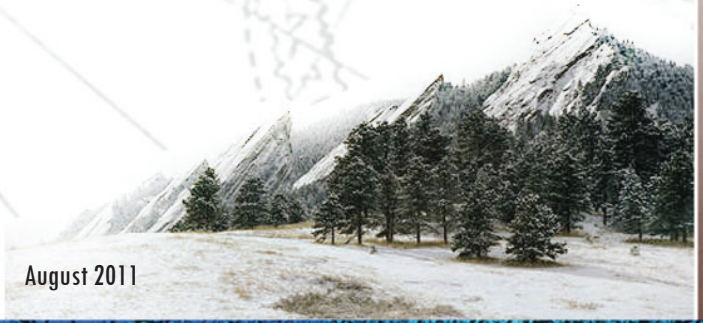
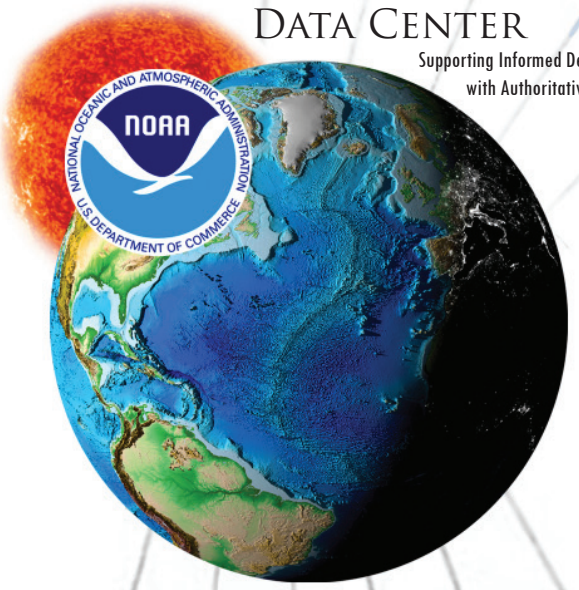
NGDC is located in the David Skaggs Research Center at the base of the Boulder Flatirons.



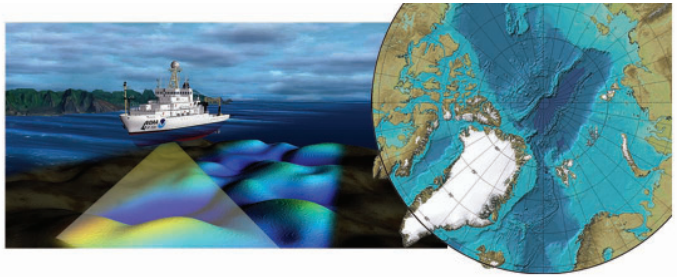
August 2011

The NOAA National Geophysical Data Center

Supporting Informed Decisions with Authoritative Data



NGDC
Facts & Information



MAP ONCE, USE MANY TIMES

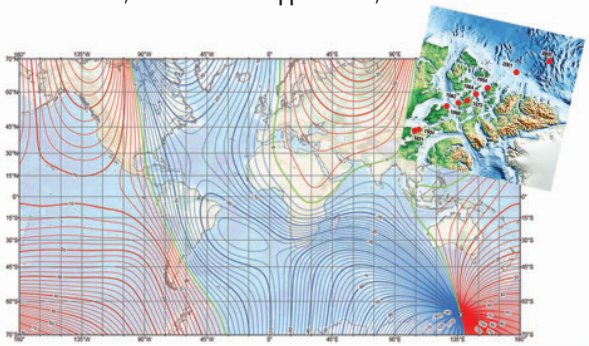
Ocean Mapping and Law of the Sea

NGDC provides scientific stewardship of the Nation's bathymetric and hydrographic data, from global to local scale. Comprehensive management enables improved planning and reduced costs of acquiring ocean and coastal mapping (OCM) data. Utilizing standards-based metadata and web services, NGDC improves the discovery and delivery of OCM data, including data acquired to support U.S. efforts to determine the U.S. Extended Continental Shelf in accordance with the United Nations Convention on the Law of the Sea. The potential U.S. Extended Continental Shelf area likely totals at least one million square miles with natural resources worth millions of dollars.

GEOMAG

Magnetic Modeling and Navigation

Internationally recognized experts at NGDC model the direction and strength of the Earth's magnetic field, which constantly changes with time and location. The NGDC team produces, distributes, and supports the World Magnetic Model (WMM), the standard for safe navigation. The WMM is embedded in GPS systems, cell phones, and ship, aircraft, and military navigation systems. NGDC product-oriented services deliver information from this model to many, varied customers via online calculators, mobile device applications, and web services.



SATELLITE DATA

Earth Observations from Space

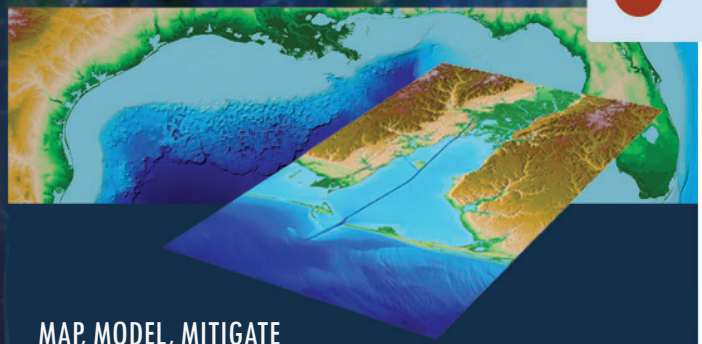
NGDC provides the long-term archive for all of NOAA's satellite data, through the Comprehensive Large Array-data Stewardship System (CLASS), as well as stewarding data from the U.S. Air Force Defense Meteorological Satellite Program (DMSP). Global Nighttime Lights Earth imagery, produced by NGDC from DMSP, is used for monitoring urbanization, mapping spatial patterns of economic change, estimating poverty and electrification rates, understanding the impact of mankind on coral reefs and parks and reserves, estimating global gas flaring volumes, and supporting regional recovery from high-impact natural disasters such as tropical storms and tsunamis.

NGDC archives, stores, and manages over 600 data types - from the core of the Earth to the surface of the Sun!

SPACE ENVIRONMENT

Space Weather and Solar Events

NGDC manages the Nation's operational space environmental datasets and derived information. This includes operational space weather data from NOAA and U.S. Air Force satellites and from globally distributed solar observatories and ionospheric sounders. These data and the modeled space climatologies help NOAA forecast space weather events and improve our ability to mitigate impacts on communications, satellite operations, and electrical power transmission.



MAP, MODEL, MITIGATE

Coastal Resiliency and Hazards

The first step in understanding coastal vulnerability is to examine the record of past hazards to gain insight into what might happen in the future. NGDC catalogs information on global historical tsunamis and uses these data to produce qualitative tsunami hazard assessments at regional levels. NGDC builds and distributes high-resolution, coastal digital elevation models (DEMs) and coastal relief models (CRMs) that integrate ocean bathymetry and land topography. These DEMs are used to model coastal processes such as tsunami inundation, storm surge, sea-level rise, and contaminant dispersal. Understanding the history of coastal hazards and modeling the coastal flooding support improved community resiliency.

CLIMATE CHANGE

The National Snow and Ice Data

The National Snow and Ice Data Center offers more than 500 data products to researchers, commercial applications users, and others world-wide. Their efforts help track patterns in global sea ice extents along with glacial changes. NSIDC supports research into the frozen realms of Earth: the snow, ice, glaciers, frozen ground, and climate interactions that make up Earth's cryosphere.