

Earth Resources Observation and Science (EROS) Center

Who We Are and What We Do

Will scarce rainfall in Ethiopia this year mean a famine next year?

How likely is it that a California forest will succumb to devastating wildfires?

Could a bulge in the heart of a volcano in Indonesia signal that it's about to erupt?

The more than 600 people at EROS work in diverse ways to help answer questions like these. The answers affect millions of people worldwide.

To understand our planet at local, regional, national, and global scales, people need information about Earth's land surfaces and how they are changing. Land remote sensing is the key to gathering this information. Satellites that capture detailed images of Earth's continents, islands, and coastlines are and have been EROS' primary source of remotely sensed data since the Center opened in 1973. EROS is probably best known as the USGS receiving station for Landsat satellite images. However, we acquire data and images from many other satellites, as well as from other kinds of remote sensing instruments.

Roughly 1.5 terabytes* of information arrive at EROS every day to become part of the largest civilian archive of remotely sensed land data in the world. The archive represents a perfectly preserved 70-year record of Earth's land surfaces and serves as an invaluable resource for documenting how they have changed over time.

*One terabyte = 1,000 gigabytes

Acquiring information is very important, but so is making information easily available to those who need it. Every day, EROS supplies—primarily via the Internet—nearly a terabyte worth of current and historical land data to scientists, natural resource managers, urban planners, government decision makers, and other users around the world.

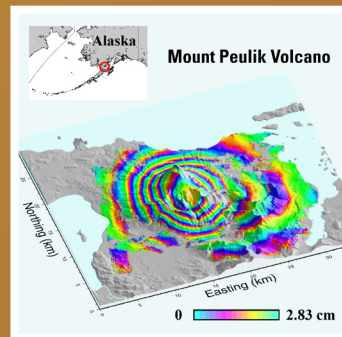
EROS is also recognized for its expertise in developing new ways to analyze, visualize, and utilize remotely sensed land data for studying diverse aspects of Earth's terrestrial environment. We use satellite and other data to study the carbon cycle and simulate the effects of climate change, explore the causes and effects of wildfires, aid in disaster response activities, monitor drought, provide early warning of famines, investigate ecological changes and their effects, and improve the prediction of volcanic eruptions.

Understanding the exchange of carbon between the land and the atmosphere is critical to better predict how Earth's climate system will respond to changes in carbon dioxide concentrations in the atmosphere.

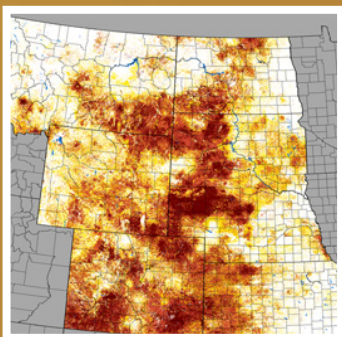


We also create data sets that deal with land cover (for example, the types of vegetation found in a place) and land surface features such as topography. People use these data sets to answer questions and solve problems in many different countries and settings. Finally, EROS conducts training classes worldwide on how to use satellite data and geographic information.

Earth's land surfaces include areas that are changing rapidly, with significant repercussions for populations, economies, and the environment. By acquiring, distributing, and developing new approaches to using remotely sensed land data, EROS plays a pivotal role in helping people everywhere understand these changes and their implications.



Scientists using radar technologies can detect slight bulges in the ground on or near active volcanoes that may indicate an imminent eruption.

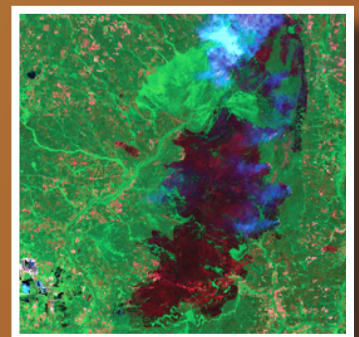


Projects that monitor droughts in the United States and those that provide early warning of conditions that may precede famines in foreign countries rely on satellite images and data sets developed at EROS to analyze vegetation throughout a single growing season or across multiple seasons.



Since 1972, the USGS/EROS archive has compiled and preserved a diverse collection of current and historical imagery and data. This unique collection is a comprehensive, permanent, and impartial record of our planet's changing land surface.

EROS is a unit of the U.S. Geological Survey (USGS). Created by an act of Congress in 1879, the USGS stands as the primary science agency for the Department of the Interior. It is sought out by thousands of partners and customers for its natural science expertise and its vast earth and biological data holdings. The USGS is the science provider of choice for accessing the data and information required to help resolve complex natural resource problems across the Nation and around the world.



EROS researchers develop new ways to use remotely sensed data to help investigate the effects of wildfires, monitor how landscapes recover after fires, and develop strategies for better predicting fires and dealing with their consequences.

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