# USGS EROS Interdisciplinary Science Collaboration with BRD, GD, GIO, and WRD

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<th>Project</th>
<th>Description</th>
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<tr>
<td><strong>Afghanistan Reconstruction Project</strong></td>
<td>Provides geospatial data management services, as well as participation in modeling and monitoring studies of snow pack, irrigation, and flood hazards.</td>
<td>*USAID Afghanistan, WRD, GD</td>
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<td><strong>Asian Tsunami &amp; Mangrove Forest</strong></td>
<td>Monitors deforestation and degradation of mangrove forests from 1970 to 2005, investigates the impacts of tsunami on mangrove forests, and identifies the role of mangrove forests in saving lives and protecting property.</td>
<td>*BRD, Colorado State University</td>
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<td><strong>Burn Severity Mapping</strong></td>
<td>Monitors burn severity and vegetation recovery, conducts research on post-fire analysis and monitoring, and studies the link between burn severity and landslide hazards.</td>
<td>*BRD, GD, NPS</td>
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<td><strong>GOES Backup for WRD National Water Information System (NWIS)</strong></td>
<td>USGS supports WRD’s GOES Data Collection System (DCS) by installing a Direct Readout Ground Station which will receive data directly from the GOES satellites. This will provide an alternate source of GOES data in case of failure at the Wallops Island facility.</td>
<td>*WRD</td>
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<td><strong>Land Cover Trends</strong></td>
<td>Conducts a national analysis of the rates, causes, and consequences of land use and land cover change.</td>
<td>*BRD, NASA, EPA, South Dakota State University, State University of New York - Environmental Science and Forestry, University of Southern Mississippi</td>
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<td><strong>Landslide Modeling with SRTM</strong></td>
<td>Joint development of topographic data layers to support GD’s Prompt Assessment of Global Earthquakes for Response (PAGER) system in order to evaluate the susceptibility to landsliding resulting from earthquakes worldwide.</td>
<td>*GD</td>
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<td><strong>National Integrated Drought Information System (NIDIS)</strong></td>
<td>Contributes remote sensing and mapping capabilities to the establishment of NIDIS, a comprehensive drought information system that supports decision makers at multiple levels of government, agriculture, business, and industry.</td>
<td>*WRD, NOAA, University of Nebraska</td>
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<td><strong>National Land Cover Database</strong></td>
<td>Develops a database of current land cover information for the entire United States.</td>
<td>*WRD, BRD, EPA, NOAA, USFS</td>
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<td><strong>Tribal College Forums</strong></td>
<td>Offers the opportunity to share USGS spatial data, training, and services with the 32 Tribal colleges across the Nation. The annual 2-day events have been held since 2001.</td>
<td>*32 Tribal Colleges, Water Resources, Geography, and GIO</td>
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<td><strong>Wide Area Networking</strong></td>
<td>Member of the GeoNet3 Team that manages the USGS WAN. Actively involved in the planning and implementation of the integration of the USGS backbone network into the DOI Enterprise Secure Network (ESN).</td>
<td>*GIO</td>
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Modernization of Hydrological Network in Brazil
Identifies items of technical cooperation and proposal preparation.
*GD, WRD, WMO, World Bank

Famine Early Warning (FEWS)
Coordinates FEWS NET climate monitoring to enhance the flow of information between regional and local levels in Africa, Central America and Afghanistan.
*WRD

Study of Volcanoes with InSAR
Volcano studies with InSAR Imagery.
*GD, NASA

Global Land Ice Measurements from Space (GLIMS)
Maps the location and spatial extent of land-based glaciers, and monitors changes in their areal extent.
*GD, various international collaborators

Study of Vegetation and Flood Dynamics with SAR Imagery
Uses SAR data and InSAR data to map vegetation and water levels over coastal regions.
*BRD

Invasive Species: A U.S.-China Case Study
Investigates potential distribution in the U.S. of selected invasive plants from China through use of GIS, remote sensing, and ecological modeling.
*BRD

Watershed Boundaries Dataset
Provides EDNA data, GIS procedures, and consultation to State and Federal collaborators to enable them to produce the Watershed Boundaries Dataset.
*WRD

Tampa Bay Integrated Science Study
Studies anthropogenic effects on the ecology of the Tampa Bay estuary.
*GD, WRD, BRD

Flood Information System for Asian Countries
Improves river forecasting for the Mekong River Commission and technical cooperation with foreign counterparts.
*WRD, NOAA

Study of Great Earthquakes with InSAR
Detects and maps precursory inter-seismic or pre-seismic strain accumulation before large earthquakes.
*GD

Multi-Resolution Land Characterization 2001
A consortium of Federal agencies developing a Landsat database for the United States.
*BRD, GD, BLM, EPA, NASA, NOAA, NPS, NRCS, USFWS, USFS

Study of Land Subsidence
Maps land subsidence and aquifer systems and associated building movements with InSAR imagery both national and international.
*WRD

LANDFIRE
Applies Landsat data to map and model vegetation composition and structure, and characterize fire fuels and risks nationwide.
*BRD, USFS, TNC

USGS Advisory Group on Remote Sensing
Provides advice and guidance to the Land Remote Sensing Program (LRS)
*GD, BRD, WRD

Breeding Birds and Habitat Change in the Intermountain West
Compares a 30-year analysis of habitat change interpreted from Landsat data to breeding bird population statistics from the Breeding Bird Survey (BBS) database to identify the extent land use change affects intermountain western bird populations.
*BRD
Remote Sensing Collaboration between EROS and UMESC
Co-location of a USGS EROS scientist with the Upper Midwest Environmental Science Center (UMESC) in LaCrosse, Wisconsin.
*BRD

Role of Wetlands in Greenhouse Gas Storage
Evaluates differences in carbon storage among various wetland types and how carbon production varies with climate change.
*WRD, BRD, GD, USDA-ARS

IT Security
Participates in the Technology Security Committee, the IT Security Operation Team, and the Computer Security Incident Response Team.
*GIO

Mapping of Land Vulnerable to Sea-Level Rise
Development and dissemination of maps of land at risk from the effects of sea-level rise. Products are based on high-resolution coastal lidar data collections.
*GD, BRD

Hurricane Rita Storm Surge Mapping
Visualization of storm surge propagation through time, derived from data collected by in-situ water level sensor network.
*WRD

Yukon River Basin and the IPY: Integrated Simulation Modeling, Remote Sensing, and Discipline Studies
Integrates numerous projects to achieve an understanding of ecosystem changes and carbon budgets in an area showing profound ecological changes as a result of changing climate. Climate feedbacks, permafrost thawing, increasing fires, coastal impacts, and human livelihoods are studied.
*WRD, GD, BRD, LTER sites, Alaska Science Center, Alaska Science Center

Water Modeling with EDNA
Provides Elevation Derivatives for National Applications (EDNA) topographic layers in support of WRD’s modeling and NAWQA efforts, and in the development of Watersheds Boundary Dataset.
*WRD

Data Storage
Leads and represents USGS on the DOI Storage Investigation Team. Seeking Department level opportunities for data storage initiatives.
*GIO

Enterprise Architecture
EROS serves as USGS representative for DOI Enterprise Architecture activities including Department Enterprise Architecture Repository (DEAR) and the Bureau Enterprise Architecture Repository (BEAR). Also involved with Bureau efforts with Geospatial Line of Business effort from OMB.
*GIO

Texas Border Health
http://borderhealth.cr.usgs.gov
The major issues surrounding the U.S.-Mexico border involve economics and population growth that present challenges to environmental management and natural resource planning. This site provides the ability to monitor trends and analyze the stresses to the environment, through biannually integrated baseline.
*BRD, GD, WRD, NMD
Center for LIDAR Information Coordination and Knowledge (CLICK)
Provides data collection coordination, processing and analysis information, and unfiltered raw data access for scientific research.
*BRD, WRD, GD, USFS, NRCS, FEMA

Inundation Mapping
Develops and tests automated GIS methods for deriving inundation patterns from digital elevation models, with validation against conventional manual methods.
*WRD

Low-Head Dam National Power Potential Assessment
Conducts a National analysis of low-head dam power potential using the Elevation Derivatives for National Applications (EDNA) database and climate data.
*WRD

Geoservers and Spatial Data for IABIN Development Grant
Develops and tests automated GIS methods for deriving inundation patterns from digital elevation models, with validation against conventional manual methods.
*BRD, TNC, NASA, 14 agencies in Central America, AID, WB

Stream Flow Modeling
Develops methodologies for data integration with the National Hydrography Database, EDNA, and National Water Information System to build parameters for large area SPARROW modeling efforts by EPA and others.
*WRD, EPA

Southern California Hazards Demonstration Project
USGS EROS Chief Scientist is a member of planning team.
*All USGS

Topographic/Bathymetric Data Integration
Develops merged elevation datasets at the coastal land/water interface for multiple applications.
*GD, WRD, NOAA

ANSS - Advanced National Seismic System
USGS EROS is the site for one of a nationwide network of over 7000 earthquake sensor systems that will provide real-time earthquake information for emergency response personnel, engineers, and scientists.
*GD

NativeView
Develops prototype applications based on scientific and traditional descriptors of tribal landscapes.
*WRD, BRD, GD

Amphibian Research and Monitoring Initiative (ARMI)
Provides expertise in remote sensing, GIS, geostatistics, environmental modeling, and geographic integration across spatial scales.
*WRD, BRD, and non-USGS ARMI cooperators

The Seamless Server
Distributes map services and online downloads of orthoimagery, elevation, landcover, and other USGS data sets in support of The National Map and Geospatial One Stop.
*GIO

*Indicates USGS Collaborator