

This is the Quarterly Report from the EROS Data Center (EDC) for the second quarter of FY 2004. It is not designed nor intended to be a comprehensive report of all activities at the EDC. Rather, it is intended to be a reporting of significant events, agreements, publications, progress or results. Current plans call for this report to be prepared for the first three quarters of each fiscal year. An Annual Report, which will be a much more inclusive document intended to capture the overall annual activity of the EDC, will be produced following the fourth quarter of the fiscal year.

Table of Contents

Featured Activity

Conversion of Landsat Processing Systems	1
Cooperative Topographic Mapping	2
Visualization Research	2
Fire Science	
National Park Service Burn Mapping	2
Fire Danger Monitoring	2
Landfire	2

Land Remote Sensing

SRTM Data	2
Global Visualization	3
AmericaView	3
EOS Support Program	3

Communications and Outreach

South Dakota Geographic Bee	3
Lewis and Clark Exhibit	4
Blue Cloud Abbey	4

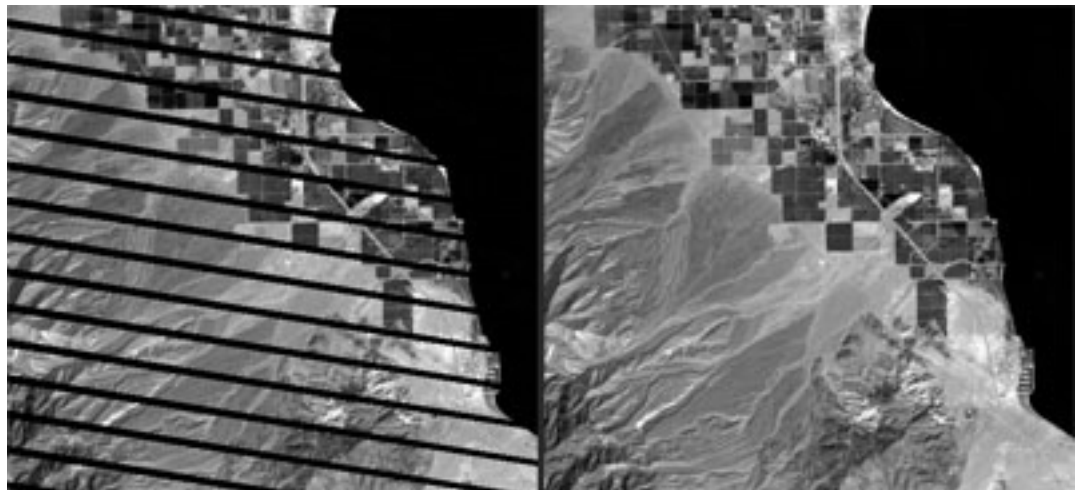
Questions regarding individual reports should be addressed to the contacts listed at the end of each report. Questions or comments regarding the overall Quarterly Report should be addressed to Dennis Hood at 605-594-6547, or hood@usgs.gov

Featured Activity

Conversion of Landsat Processing Systems

Landsat Project staff are working on new data products that will fill the missing

data resulting from the Scan Line Corrector (SLC) failure. These new data



Landsat 7 scene collected on September 17, 2003 showing the data gaps due to the failure of the SLC (Left); same scene with data gaps filled using anniversary Landsat 7 scene collected on September 14, 2002 (Right).

products will require more systems resources during processing. The new Linux solution will allow the project to increase capacity at a much lower cost than with the previous computer hardware configuration. The emerging new data products will produce a Landsat 7 scene with no data gaps by using a scene collected before the failure. A future release will allow customers to choose two current scenes, which the systems will merge into a single product with no data gaps. (Contact: Kristi Kline, 605-594-2585)

Cooperative Topographic Mapping

Under the CTM Map and Data Service Task, the Web Mapping Team created a new seamless interface that facilitates the ordering of multi-temporal and multi band datasets. The team developed software to reproject and resample raster datasets on the fly.

In support of the National Synthesis Project, the team made significant progress in helping additional states implement *The National Map*. In cooperation with the state of New Jersey, high-resolution orthoimagery (~1 Terabyte of data) covering the entire state was loaded and developed. The team began delivery of Mr. Sid compressed data and provided technical assistance on server design.

Visualization Research

Installed GeoWall-2 Display system at the EROS Data Center, funded by National Science Foundation. Gave several GeoWall technology demonstrations at national and international conferences.

Invited by the Department of the Interior to participate in inter-agency Geographic Information Systems (GIS) Day at Environmental Protection Agency Headquarters, demonstrating GeoWall GIS technology.

Fire Science

National Park Service Burn Mapping

Burn Mapping has been completed for over 20 fires in 13 National Parks. In February National Park Service and U.S. Geological Survey collaborators met to review past and plan future activities. A

FY2004 Venture Capital Fund Proposal entitled "Modeling Post-Fire Spatial Heterogeneity Effects on Forest Regeneration and Debris Flow Susceptibility: Ecological and Economic Trade-Offs of Mitigation" was accepted for funding. The Principal Investigators are from the Fort Collins Science Center and the EROS Data Center. (Contact: Stephen Howard, 605-594-6027)

Fire Danger Monitoring

Improvements were made to the time-series greenness mapping data set to enable better measurement of changes in vegetation condition that affect fire danger conditions. The calculations of departure from average and relative greenness, two important metrics used to predict fire danger, will be more sensitive to changes in vegetation condition. The improved products are in place for the 2004 fire season. (Contact: Jeff Eidenshink, 605-594-6028)

Landfire

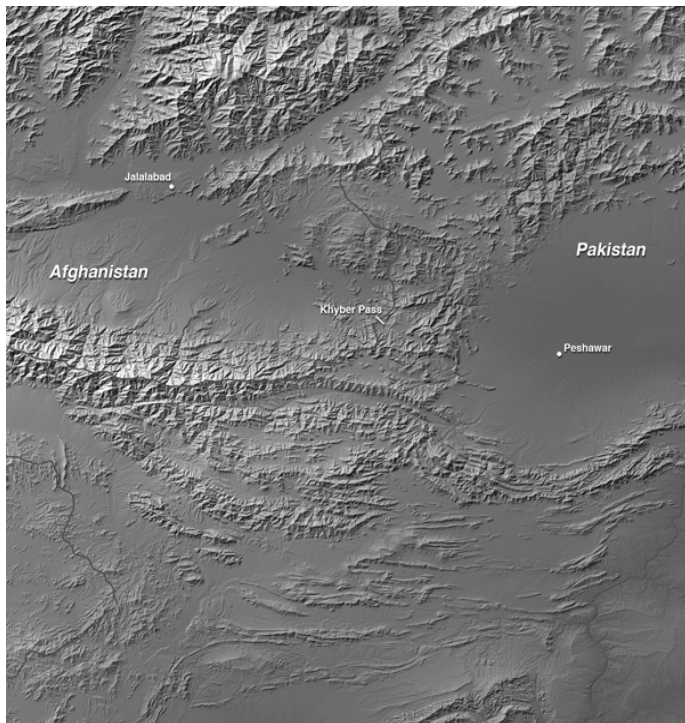
The Wildland Fire Leadership Council sought and approved an accelerated national implementation schedule. With it, we have a signed national budget that increased from 12.3 to 14.7M for the USGS. The budget included increased funding to the National Land Cover Data project to reach the funding level necessary to complete the important land cover mapping project. Technical accomplishments include delivery of preliminary results for mapping zones 16 and 19, establishment of a national vegetation classification working group in cooperation with the Federal Geographic Data Committee, and establishment of working relationship with Student Conservation Association to collect supplemental rangeland data starting this summer through the next two years. The EDC provided software engineering support to the U.S. Forest Service Missoula Fire Lab that significantly improved the efficiency of several landscape and fire models. (Contact: Zhiliang Zhu, 605-594-6131)

Land Remote Sensing

SRTM Data

On January 22, 2004, the Shuttle Radar Topography Mission (STRM) 3-arc second (90 meter) data were released to production and made available to the public. This was followed by the release of the 1-arc second (30 meter) elevation data on

March 24, 2004. Both data sets can be obtained in two formats: Shuttle Radar Topography Mission (SRTM) Digital Terrain Elevation Data (DTED) and a USGS EDC derived SRTM format created from the DTED. An SRTM information sheet has been updated to include 1-arc second data. Currently, the USGS EDC has received 6,918 3-arc second finished data cells out of the estimated total of 14,353. These data can be searched and ordered from: <http://edcsns17.cr.usgs.gov/srtmtdted2> or <http://edcsns17.cr.usgs.gov/srtmbil2>. (Contact Wayne Miller, 605-594-6084)



3-arc second SRTM data of Khyber Pass

Global Visualization

The USGS Global Visualization team released two updates to the system during this quarter. The first one, Release 4.0, occurred on January 29, 2004 and included adding historical Landsat related data collections to the system. The second release (4.1) occurred at the end of March and provided improvements to the Java applet and support for displaying the Landsat 7 ETM+ SLC-off data set (<http://glovis.usgs.gov>). (Contact Karen Zanter, 605-594-6945)

AmericaView

AmericaView Inc. and the USGS's Land Remote Sensing Program hosted a Congressional reception on February 12, 2004. The reception was held in the Rayburn Congressional office building in

Washington, D.C. The event included exhibits that featured applications of remote sensing in each of the member states. AmericaView Inc. also presented an award to Ohio Congressman Ralph Regula in recognition of his support for AmericaView. (Contact Karen Zanter, 605-594-6945)

EOS Support Program

The Land Processes Distributed Active Archive Center at the USGS EDC continues to ingest, archive, and distribute massive amounts of earth science data. Over the last quarter almost 150 terabytes of data from NASA satellites via Japan and NASA's Goddard Space Flight Center were ingested, with a record of 2.5 terabytes in one twenty-four hour period. As a result of almost 20,000 orders from users, the staff distributed 845,000 products this quarter, over 66 terabytes of data via File Transfer Protocol (FTP), and a thousand pieces of media.

Despite a consistently heavy workload of engineering, tuning, repairing, and upgrading of computer systems to meet these extraordinary demands, the computer systems continued to be available to users almost full time. In fact, March was the first month with zero unscheduled downtime. In addition, demand continues to grow; not only are orders steadily increasing, but the number of people who visit the web site is also climbing. Over 30,000 individual users visited the web site at least once in the quarter. (Contact Thomas Kalvelage, 605-594-6556)

Communications and Outreach

South Dakota Geographic Bee

The USGS EROS Data Center hosted 300 4th to 8th grade geography teachers, students, and their parents for the 2004 South Dakota Geographic Bee. The competition is sponsored by the National Geographic Society and ING U.S. Financial Services. In South Dakota, the finals are coordinated by the South Dakota State University (SDSU) Department of Geography. Student participants, their parents, and educators were invited to arrive two hours before the competition for a series of demonstrations involving practical USGS geography activities. (Contact Mark Barber, 605-594-6176)



From Left to Right, Otis Clark (2nd) and Nicholas Truelson (1st) of Sioux Falls, placed at the top of the 2004 SD Geographic Bee.

Lewis and Clark Exhibit

To commemorate the 200th anniversary of Lewis and Clark's Corps of Discovery, staff at the USGS EROS Data Center designed an exhibit featuring satellite and elevation data that traces the Lewis and Clark route from St. Louis, Missouri to the Pacific Coast. The exhibit, titled "The Voyage of Discovery Continues: Another View of the Journey of Lewis and Clark", is on display in the Visual Arts Center of the Washington Pavilion, Sioux Falls, South Dakota, March 12 - June 6. The exhibit features two



USGS Lewis and Clark exhibit at the Visual Arts Center – Washington Pavilion, Sioux Falls, South Dakota

types of imagery: Landsat 7 satellite data and digital elevation model (DEM) data. USGS elevation data from *The National Map* shows the topographic relief across the entire route, from St. Louis to the Pacific Coast. The exhibit also features 22 Landsat 7 images that highlight significant points of interest along the Lewis and Clark route. (Contact Mark Barber, 605-594-6176)

Blue Cloud Abbey

Native American dancers in traditional dress, Tribal police officers, and Native American couples posing on their wedding day are just a few of the photographs depicting the lives of Native Americans in the northern Great Plains during the late 1800's and early 1900's. These photographs were on display in the rotunda of the Russell Senate Office Building February 23-27.

USGS scientists at the EROS Data Center rediscovered the photographs when they went to the Blue Cloud Abbey in Marvin, SD in search of historical photographs to commemorate the 200th anniversary of the Lewis and Clark expedition. The historical photographs can be viewed online at: http://www.usgs.gov/features/native_americans.html (Contact Gene Napier, 605-594-6088)



The mission of the EROS Data Center is to promote new uses, ensure ready access, and safeguard and expand our archive of remotely sensed land data.