



USGS EROS Center

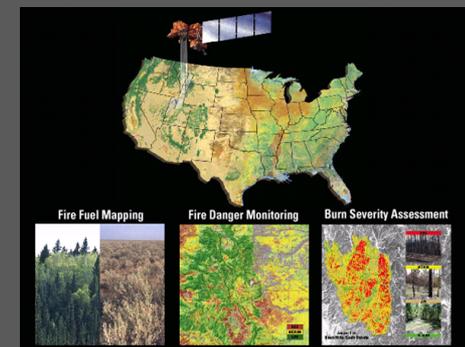
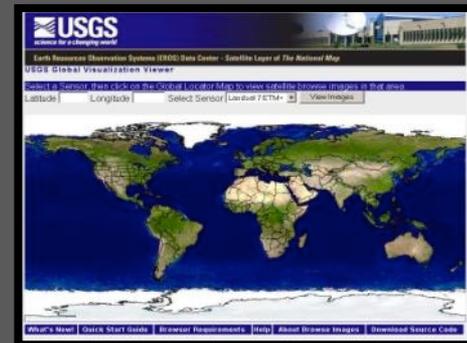
Science and Applications



U.S. Department of the Interior
U.S. Geological Survey

Key EROS Mission Functions...

- **Data Acquisition, Archiving and Access:** Expand and safeguard the archive and ensure that anyone, anywhere and at anytime have ready access to land information
- **Development and Operations of Ground Systems:** Satellite mission ground system designer, developer and operator.
- **Science:** Conduct research and develop applications and promote knowledge and use of land information to better understand the Earth



SAB Organization

52 USGS Staff, 6 Teams, 32 Projects, 84 Tasks

- Land Characterization and Trends Team
- Fire Science Team
- Topographic Science, Elevation, and Lidar Team
- Landscape Dynamics and Global Change Team
- Ecological Carbon Sequestration Team
- Early Warning, Environmental Monitoring, and Hazards Mitigation Team

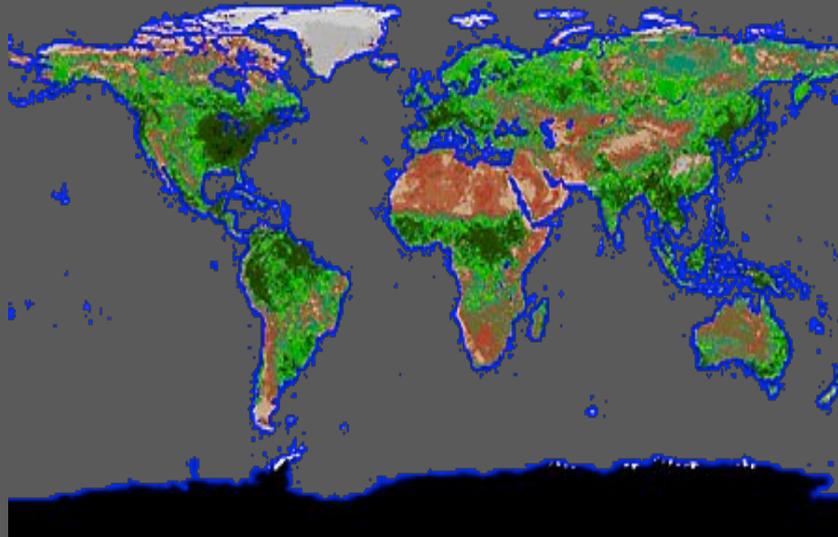
Understanding a Changing Earth

Land Change Monitoring Grand Challenge

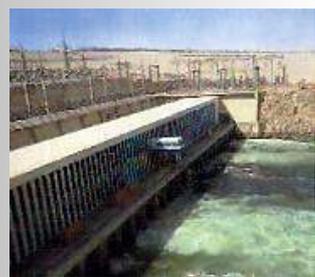
Understanding patterns, processes, and consequences of land change, as it occurs, using a framework that is globally consistent and locally relevant – and that meets the needs of decision makers.



**POPULATION /
LANDCOVER**



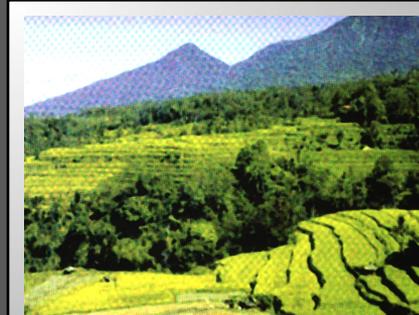
HUMAN HEALTH



**WATER
RESOURCES**



BIODIVERSITY



AGRICULTURAL / FOREST



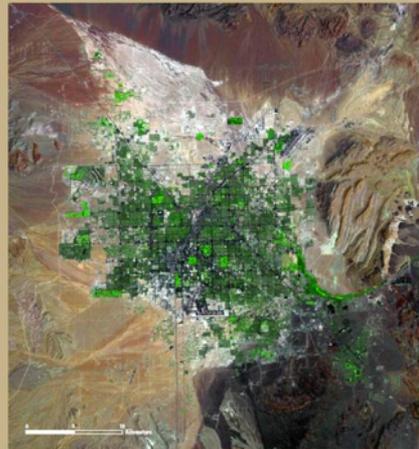
**NATURAL DISASTER
MANAGEMENT**

Landsat: A 40-year Record of Change Monitoring Urban Growth

Urban Growth of Las Vegas, Nevada



May 1973
Population 358,400



June 1991
Population 937,261



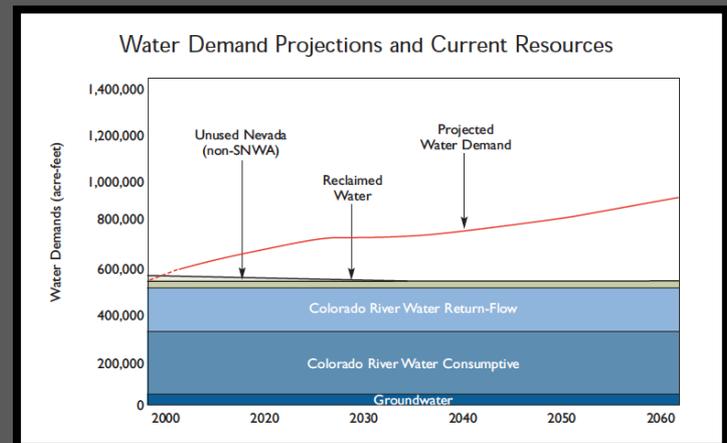
May 2000
Population 1,563,282



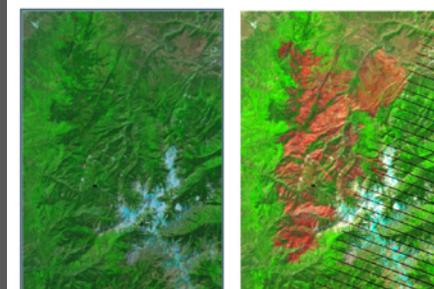
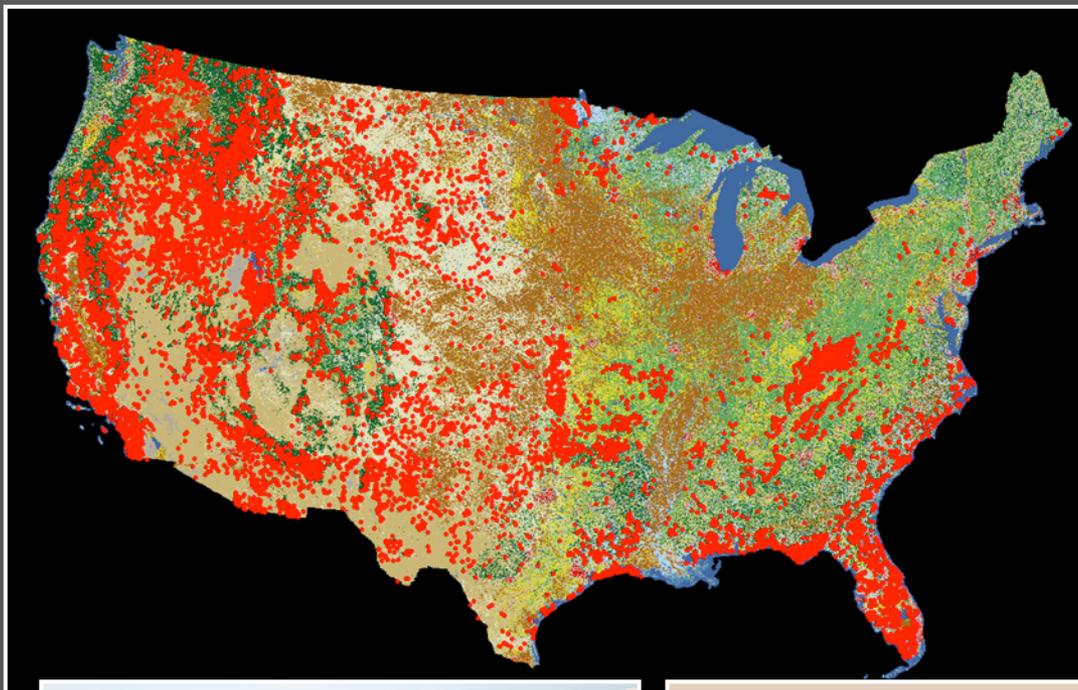
February 2006
Population 2,013,267

Critical Issues

- Water
- Economic Diversification
- Land Use
- Transportation
- Resource Conservation
- Changing Demography

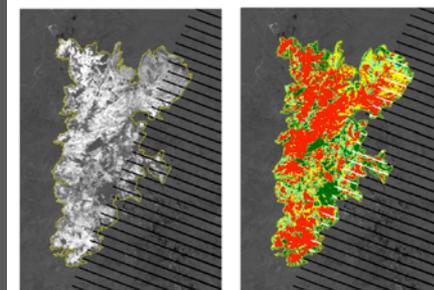


Monitoring Trends in Burn Severity



Pre-fire (Landsat 5, July 3, 2010)

Post-fire (Landsat 7, July 14, 2011)



Differenced Normalized Burn Ratio and Perimeter

Burn Severity Assessment



Science, Society, Solutions *Wildland Fires: After the Smoke Clears*

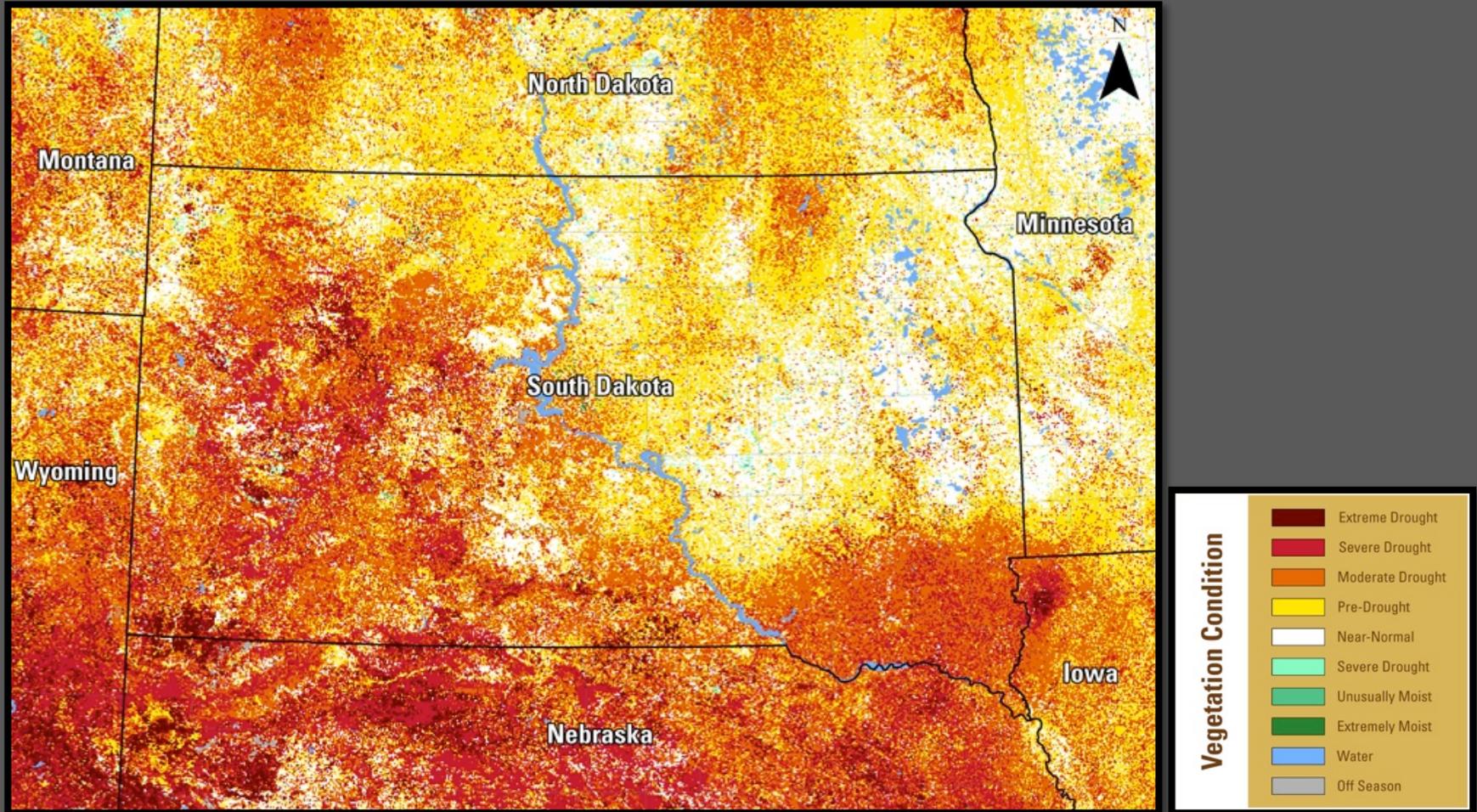


- Landslides
- Debris Flows
- Erosion
- Sedimentation
- Water-Quality
- Invasive Species
- Wildlife
- Ecosystem
- Human Impact



South Dakota Drought Conditions

September 30, 2012



Lake and Wetland Changes in Northeast SD

Day County, South Dakota



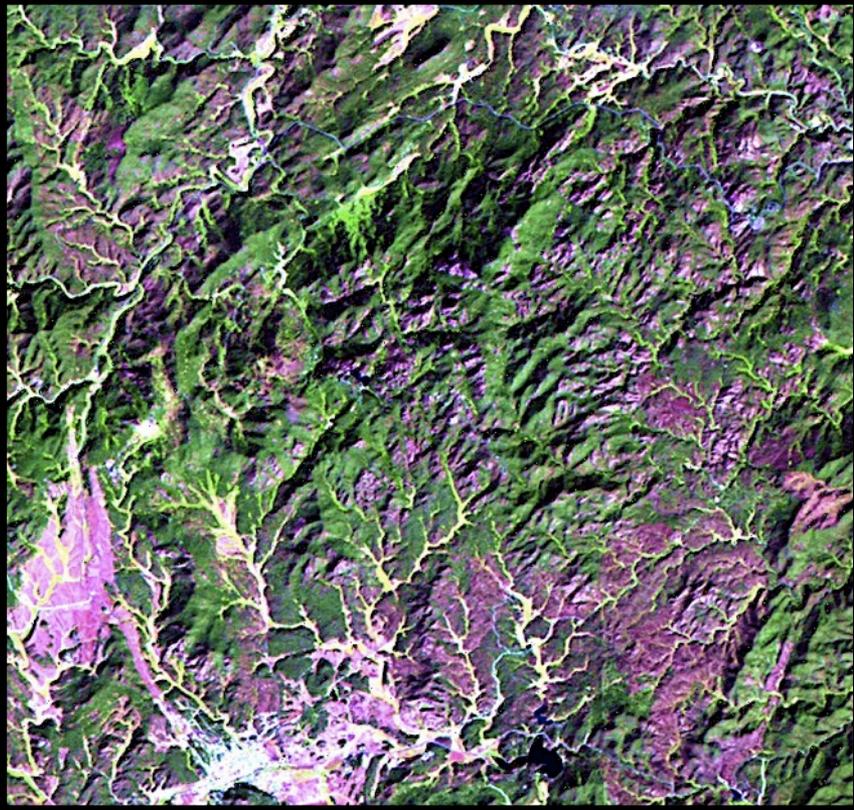
October 11, 1991



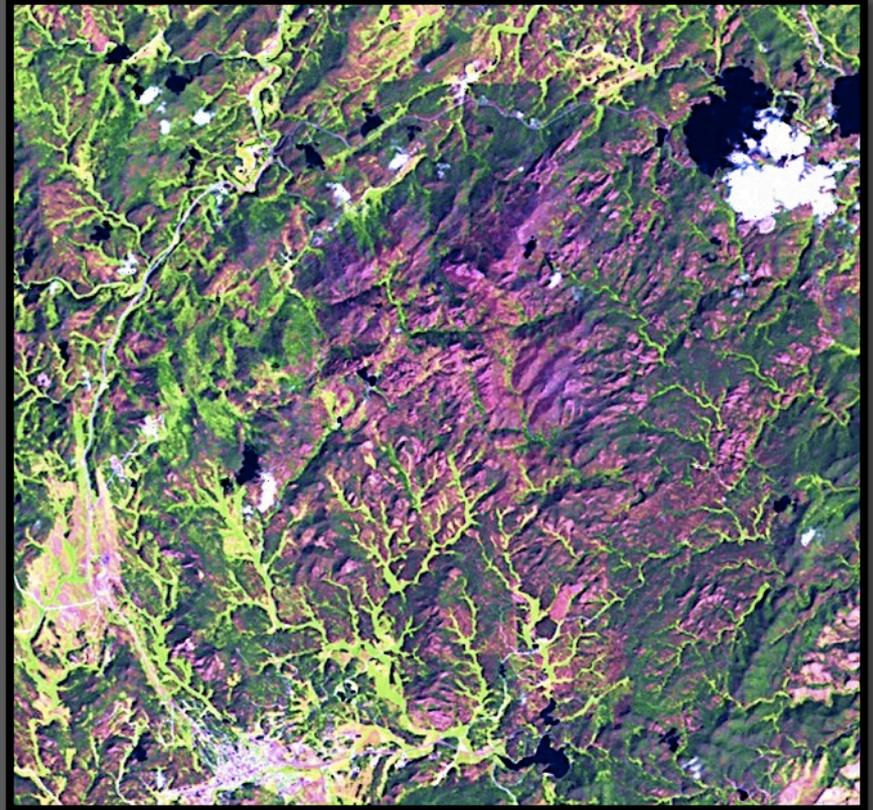
October 2, 2011

Mountain Pine Beetle Infestation

Black Hills, South Dakota



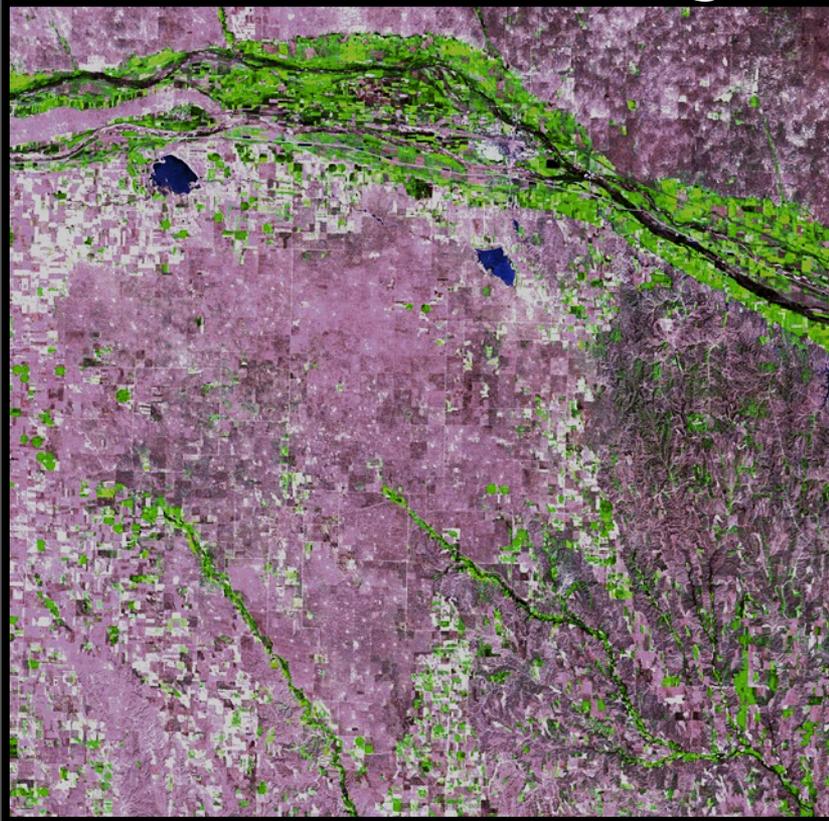
September 13, 1985



August 17, 2010

Grassland to Agriculture

Nebraska Sandhills Region



August 17, 1972



August 22, 2011