

# Decision Support for Resource Management

Every day, resource managers in parks, wildlife refuges, and regional planning organizations make complex decisions about land-use planning, environmental remediation, resource allocation, and economic development. The USGS helps these resource managers by developing computer models and decision support systems that describe interactions in the natural world, providing a better understanding of how our Earth works. The first areas of focus for these efforts will be the desert Southwest, including the U.S./Mexico border region and Grand Canyon area, the Lower Mississippi, and the Lewis and Clark corridor.

This increase is part of the Administration's Lands Legacy initiative, State Planning Partnerships program. The additional funding will support the Lands Legacy's objectives, and in particular, will

help States and communities preserve local lands and habitat. The increase of \$10 million in FY 2001 for this initiative will provide the means to develop decision support tools for public and private resource managers charged with addressing high-priority resource issues. Specific activities include the following:

- Contribute to the Lewis and Clark Expedition Bicentennial Commemoration by producing visualizations of the Missouri River's changing landscape over time and of the river's present economic contributions and future potential.
- Develop decision support systems for river and wetland environments in the Lower Mississippi region to help farmers, local officials, and natural resource planners to implement the best management practices for

addressing fertilizer, pesticide, and erosion problems in heavily farmed areas of the floodplain.

- Provide a characterization of land parcels in a manner similar to but more expansive than the recent Gap Analysis pilot study conducted on the segment of the Missouri River between Fort Peck Dam and Great Falls, Montana. This will support policy decisions on long-term land acquisition strategies aimed at protecting views, key wildlife habitats, and historic and recreation sites along the corridor.
- Conduct a pilot study in the Grand Canyon Corridor, in coordination with other Federal agencies, integrating remotely sensed and other geospatial data.
- Collect, integrate, and interpret a variety of scientific data to develop a Habitat Conservation Plan for the U.S./Mexico border region for resource managers on both sides of the border.
- Develop predictive models and data standards that make it easier for scientists to integrate a wide range of data and information to support decision makers. Emphasis will be placed on integrating and modeling land surface and urban growth information with other physical, cultural, and historic information for the subject areas.

Data and information from the USGS provide the basis for understanding both

(Dollars in Thousands)	
National Mapping Program	
Mapping Data Collection and Integration	+\$ 400
Geographic Research and Applications	+\$ 2,000
Geologic Hazards, Resources & Processes	
Geologic Resource Assessments	
Mineral Resources	+\$ 1,200
Water Resources Investigations	
Water Data Collection and Management	
Water Information Delivery	+\$ 2,700
Biological Research	
Biological Research and Monitoring	+\$ 1,200
Biological Information Management and Delivery	+\$ 2,500
<b>TOTAL</b>	<b>+\$10,000</b>

historic and future growth and development of the Nation. Technologies are now available that permit true integration of many data types, from many sources, allowing users to query and display data in ways that answer very specific questions. The requested funds will allow USGS to work with scientists in academia and private industry to establish standards for predictive models, computer simulations, and scientific visualizations so that they can be used in many different decision support systems. Work will also be undertaken with industry representatives to develop standards for decision support models and data that are compatible with standards for geographic data endorsed by the Federal Geographic Data Committee.

As the nation's largest water, earth and biological science and civilian mapping agency, the USGS works in cooperation with more than 2000 organizations across the country to provide reliable, impartial, scientific information to resource managers, planners, and other customers. This information is gathered in every state by USGS scientists to minimize the loss of life and property from natural disasters, contribute to sound economic and physical development of the nation's natural resources, and enhance the quality of life by monitoring water, biological, energy, and mineral resources.