Ecosystem Priorities

FY 2014 President's Proposed Budget
Total request is $65,847,000 (+$16,571,000 from FY 2012 enacted level)

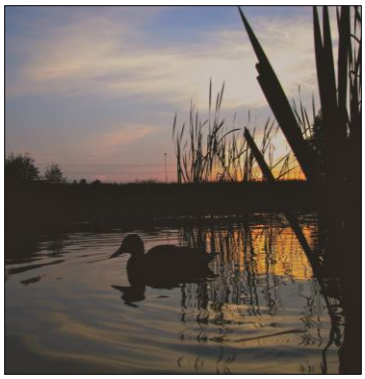
The USGS is working with partners to deliver the complex science needed to improve conservation and restoration of healthy ecosystems, which are critical to human existence. USGS science enables resource managers to make informed decisions, to help resolve and prevent resource management conflicts, and to support DOI's public trust stewardship responsibilities for the Nation's lands and waters. Funding proposed for FY14 would specifically support research in the California Bay-Delta, the Chesapeake Bay, the Columbia River, the Everglades, the Klamath Basin, and Puget Sound. It would also support critical invasive species research, including research on Asian carp control in the Great Lakes and the Upper Mississippi River Basin.

California Bay-Delta

The California Bay-Delta is a threatened ecosystem that supports unique native species and their tidal and wetland habitats, while also being a critical source of water for millions of people. This system is faced with multiple human-induced stressors including altered water resources, environmental contaminants, and invasive species. Degraded environmental conditions for the federally threatened delta smelt serve as an indication of the level of risk to the ecosystem. Proposed funding increases would allow the USGS to augment an existing network of real-time flow-monitoring stations to help determine causes, rates, and impacts of decreased sediment supply. Funding would also expand overall USGS research to understand interactions between stressors and the environment and develop advanced models that provide decisionmakers a more comprehensive and realistic ecosystem risk assessment.

Chesapeake Bay

The USGS provides leadership expertise to support the strategy outlined in the President's Chesapeake Bay Executive Order, including efforts to restore water quality, recover habitat, sustain fish and wildlife, conserve lands, and increase public access in the Nation's largest estuary. The proposed funding increase would allow the USGS to expand science to restore populations of brook trout and their habitats, as well as to forecast the effects of land change and sea-level rise on black ducks. Funding increases would also support research to explain changes in water quality as well as a broader look at how climate change and land-use practices impact stream and water conditions. The USGS would expand and build upon bureau-wide efforts regarding ecosystem health assessments with efforts to identify endocrine-disrupting compounds and other contaminants affecting fish and human health.



Columbia River

The Columbia River sustains tribal, commercial, and recreational fisheries while also providing water for irrigation and power production. Human-induced changes in the Columbia River Basin have altered flows, introduced contaminants, fostered the establishment of invasive species, and reduced native fish populations. The decline of salmon species is of specific concern. The USGS proposes to provide information on forage fish vital for sustaining bird, fish, and mammal species in the estuarine food web. The USGS would continue research on how climate change and flow alterations from dams affect habitats, including potential alterations prescribed by a new Columbia River Treaty with Canada. The USGS would determine conditions in the river system that increase the risk of invasive species and identify early detection factors for these species.

Everglades

South Florida, and in particular the Everglades ecosystem, is vulnerable to ecological damage from invasive plants and animals. Exotic species already expanding their distribution in this ecosystem include water hyacinth, which clogs waterways and alters water temperature and chemistry; melaleuca, a tree that has infested 400,000 acres of the Everglades; old world climbing fern, whose spores are dispersed by the wind; and the Burmese python, which endangers native species and ecological processes. The USGS, in partnership with the Comprehensive Everglades Restoration Plan and the South Florida Ecosystem Restoration Task Force, provides science to help managers make sound science-based decisions for these and other critical issues related to sustainable use, protection, and restoration efforts in South Florida. This proposed funding increase would improve USGS efforts to document the effects of invasive species and develop methods to prevent, detect, and contain damaging species.

Asian Carp in the Great Lakes and Upper Mississippi River

The multi-billion-dollar fishing industry in the Great Lakes is at high risk from the potential establishment of Asian carp. The USGS helps provide science needed to address this problem as a charter member of the Asian Carp Regional Coordinating Committee (ACRCC). This committee brings together Federal, State, local agencies and private stakeholders to protect the Great Lakes ecosystem from an Asian carp invasion. With this proposed funding, the USGS would continue to provide the ACRCC with scientific information and methodologies to better prevent, detect and control Asian carp. USGS scientists would build upon ongoing activities such as developing a new delivery system for species-specific chemical control and improving methods to detect Asian carp DNA.

Klamath Basin Restoration Agreement

The Klamath Basin has been extensively modified by dams, agricultural diversions, and other land-use practices. The resulting water quantity and quality concerns, and the decline of fish populations such as Chinook salmon, are among the key issues that spurred the creation of the Klamath Basin Restoration Agreement. The agreement, which involves more than 50 organizations, seeks to restore and sustain fish populations and establish reliable water and power supplies for communities. Proposed funding would allow the USGS to contribute to this effort by studying conditions needed to sustain aquatic habitats, streamflows, adequate water quality, and food webs. Specific focus would be placed on populations of endangered sucker fish, the supply of plankton blooms as a food source, and the role of blue-green algae in the harmful transfer of cyanotoxins.

Puget Sound

The Puget Sound is economically and recreationally important to a growing population of over four million people. It is a treasured national resource that supports hundreds of species of sea birds, marine mammals, and fish. Human development, land-use changes, and climate change could lead to watershed and shoreline alterations that are likely to reduce critical habitat for species and reduce water quality. The proposed budget would allow the USGS to provide critical science to address risks to salmon and other forage fish populations in decline. Funding would also support USGS science to ensure the effectiveness of restoration efforts in response to the recent removal of two major dams on the Elwha River. This would include science to inform management of former submerged reservoir lands, use of hatcheries to supplement wild fish populations, and monitoring ecosystem responses to management actions.

Additional Ecosystem Funding

The above outline highlights ecosystem priority areas to receive increased funding in the President's proposed budget. There are many other ecosystem-relevant initiatives, including USGS science to understand wind energy impacts on wildlife and the effects of climate change on species and habitats across the nation.

To learn more, visit the USGS Office of Budget, Planning and Integration website: www.usgs.gov/budget