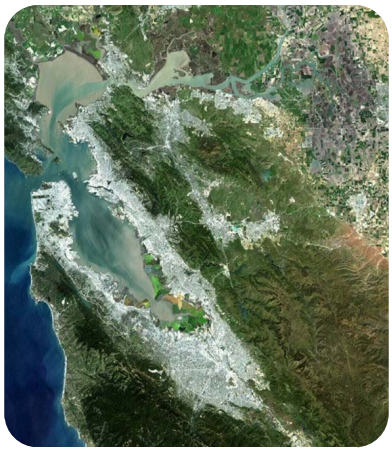
Restoring, Protecting, and Managing Ecosystems

FY 2015 President's Proposed Budget
Total request is $51.1 million ($12.4 million above FY 2014 enacted level)

The USGS works with partners to deliver the multi-disciplinary science needed to improve conservation and restoration of healthy ecosystems critical to people. This science enables managers to make informed decisions, resolve and prevent resource management conflicts, and supports DOI's public trust stewardship responsibilities for the Nation's lands, waters, and species. 2015 proposed funding will support research in the California Bay-Delta, Chesapeake Bay, the Columbia River, Puget Sound, and the Upper Mississippi River. It will support critically needed research on emerging invasive species of concern as well as for brown tree snakes in Guam, invasives in the Everglades, and Asian carp control in the Great Lakes and the Upper Mississippi River Basin. This budget request will enable development of essential ecosystem services tools to allow agencies to assess resource management decisions. Other areas proposed for increases include declining pollinators, wildlife health, energy future and wildlife sustainability, and Outer Continental Shelf ecosystem decisions.


San Francisco Bay

California Bay-Delta
The USGS will use additional funding to further understand the Sacramento – San Joaquin – San Francisco ecosystem, specifically the response of plants and animals to managed and natural flow changes and habitat restoration. USGS scientists will build on existing data sets and evaluate biological observations in light of physical changes to the system, especially drought conditions, changing salinities, and potential pollutant increases. A USGS model under development will better assess the effects of flow regimes and management actions on water levels, velocities, and distributions; salinity; water temperature; and habitat throughout the Delta.

Chesapeake Bay
The USGS provides scientific expertise to support 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 budget will allow the USGS to expand science needed to restore brook trout and black duck populations and habitats and forecast effects of land change and sea-level rise on black ducks. Increases will also support research on water-quality changes and how climate change and land-use practices impact water conditions. Research will also build on USGS ecosystem health assessments and help identify endocrine-disrupting compounds and other contaminants affecting fish and human health.

Columbia River
The Columbia River sustains tribal, commercial, and recreational fisheries and also provides water for irrigation and power. Changes in the Basin have altered flows, introduced contaminants, fostered invasive species, and reduced native fish populations; declining salmon species are of special concern. These funds will allow the USGS to provide information on the forage fish vital for sustaining bird, fish, and mammal species. The USGS will 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 will evaluate emerging invasive species and identify early detection factors for these species.

Puget Sound
Puget Sound is not only economically and recreationally important to over four million people but also a treasured national resource supporting hundreds of species of seabirds, marine mammals, and fish. Human development, land-use changes, and climate change could lead to watershed and shoreline alterations likely to reduce water quality and critical species habitat. Proposed funding will allow the USGS to provide science to address declining salmon and other forage fish populations. It will also help ensure the effectiveness of restoration efforts following the recent removal of two major dams on the Elwha River. This will 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.

Upper Mississippi River
The Basin contains a diversity of landscape types, including major agricultural operations and major urban areas, which can harm aquatic ecosystem health of the Mississippi River and connecting rivers. The funding will build upon existing USGS programs to better understand water quality and resources using critical streamflow measurement stations. The USGS will continue to collect data on contaminants of concern and examine their effects on aquatic life.

Brown Tree Snakes
Shortly after World War II, the brown tree snake (BTS) was accidentally transported from its native range to Guam, a formerly snake-free island. Because of abundant prey and the lack of natural predators, BTS populations reached extraordinarily high numbers, resulting in the extinction of most of Guam's native birds, as well as thousands of power outages affecting private, commercial, and military activities. Funding increases will be used to develop landscape-scale methods to suppress or eradicate the snakes on Guam and to detect and eradicate incipient snake populations accidentally transported to other islands such as Hawaii and the Northern Marianas.

Everglades
South Florida, particularly the Everglades ecosystem, is vulnerable to significant ecological and economic damage from invasive species. Economically and ecologically harmful exotic species already expanding in this ecosystem include water hyacinths, melaleuca, old world climbing fern, and Burmese pythons. The USGS, with Federal, State, and local partners, provides the research managers need to make sound science-based decisions for these and other critical issues related to sustainable use, protection, and restoration efforts. This funding increase will improve USGS efforts to document invasive species' effects and to develop methods to prevent, detect, and contain damaging species.

Burmese python

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 provides science to address this problem as part of the Asian Carp Regional Coordinating Committee, composed of Federal, State, and local agencies and stakeholders committed to helping protect the Great Lakes ecosystem from an Asian carp invasion. With the proposed funding, the USGS will continue to provide the ACRCC with scientific information and methods to better prevent, detect, and control Asian carp. The USGS will build upon ongoing activities, such as developing a new delivery system for chemical control and improving methods to detect Asian carp DNA in water bodies of concern.

New and Emerging Invasive Species of National Concern
The spread of invasive species will substantially contribute to biodiversity loss over the next century and will pose substantial risks to native species, valued ecosystem services, and human and wildlife health. Ongoing changes such as more-frequent global trade and tourism, land and water use changes, and climate change are facilitating ever-faster rates of establishment and spread of harmful, invasive species worldwide. While many invaders cause little or no ecosystem change, others can alter ecosystems in detectible and adverse ways. The USGS has the expertise needed to identify the next generation of invaders—hopefully in time to take action to prevent large-scale landscape disruption.

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