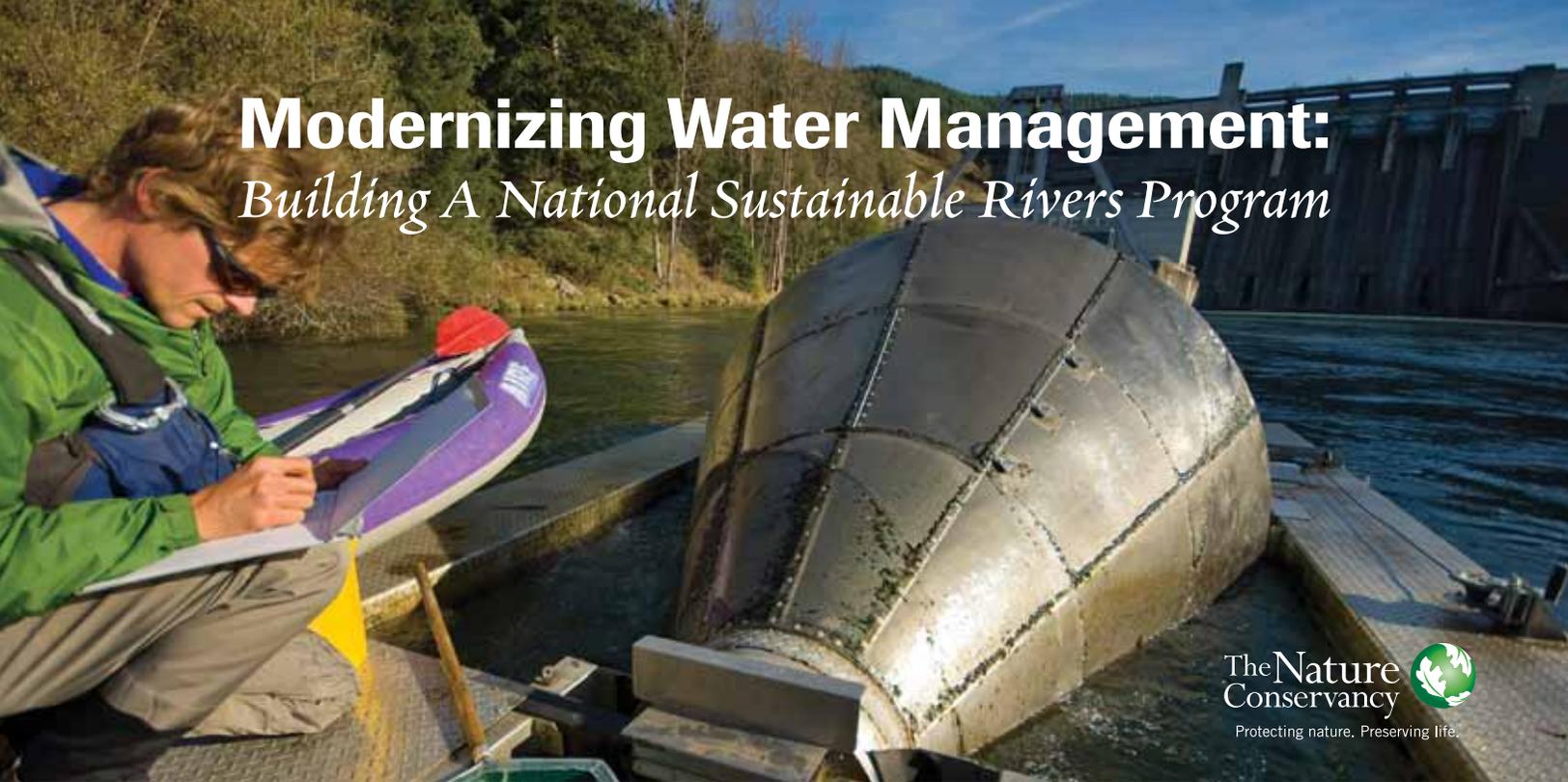


Modernizing Water Management: *Building A National Sustainable Rivers Program*



The Nature Conservancy 
Protecting nature. Preserving life.

The Conservancy and the U.S. Army Corps of Engineers are demonstrating that science-guided adjustments to dam operations and integrated floodplain management can increase benefits for people and nature. Pictured here is Oregon's Willamette River. © Bridget Besaw

An Opportunity for Change

For much of the 20th century, the United States built thousands of large dams and other water projects to meet the nation's growing need for water, food, flood protection, hydropower and navigation. But since their construction 40-80 years ago, the operations of very few public dams have been fully reviewed and updated to meet current needs and to prepare for future circumstances. We now have the opportunity to modernize the operation of these water projects to improve the social, economic and environmental benefits they provide now and for generations to come.

Higher Returns on Investments

Today, engineers better understand that operating dams as part of whole-river systems increases the benefits they provide, and managing dams in coordination with downstream flood-prone lands enables us to more efficiently meet diverse social needs. For example, while flood protection is maximized by keeping reservoirs empty, doing so minimizes their ability to provide water supplies, hydropower and recreation. Using the natural floodplain features downstream of dams to store infrequent floodwaters enables us to keep more water in reservoirs and increase the regular and consistent economic benefits from these other uses.

This approach was recently studied by the U.S. Army Corps of Engineers, The Nature Conservancy and University of California-Davis in two river basins—Georgia's and South Carolina's Savannah and California's Mokelumne. The Savannah River study found that small changes in floodplain management enable the use of up to 50% of the existing flood storage capacity for hydropower and recreation, producing a net benefit of more than \$12 million per year, without increasing flood risk and with additional benefits for water supply and the environment. The Mokelumne River study found similarly modest shifts in floodplain management frees up 25% to 50% of flood storage for public water supply—enough additional water for nearly 450,000 people—while maintaining flood protection and increasing hydropower generation and improving habitat for declining salmon.

Demonstrating Success— The Sustainable Rivers Project

The advantages of making systematic changes in dam operations to more efficiently achieve multiple benefits have been demonstrated through a decade of national collaboration between the Corps, the Conservancy, and other partners under the Sustainable Rivers Project (SRP). For example, water releases from Kentucky's Green River Dam were revised in coordination with downstream

Productive Rivers

Benefits of the SRP include:

Water Quality. Seasonal high flows into floodplains and wetlands improve water quality by allowing these areas to filter sediment and pollutants from our rivers and lakes.

Flood Protection. Coordinating dam operations with the strategic use of the most flood-prone areas can reduce flood risk for communities. Floods cause \$30-50 billion worth of damage in the U.S. every decade.

Wildlife & Recreation. Natural flow patterns trigger fish spawning and migration. They also sustain scenic natural lands and give life to floodplains and wetlands, which are among the most productive areas for fish and other wildlife. Rivers and lands that benefit from natural flows support commercial and recreational fishing and other outdoor-related recreation that generate billions of dollars each year.

A bi-partisan survey found that 78% of American voters are seriously concerned about the health of our nation's rivers and lakes.*

* A national survey of registered voters conducted in 2009 by Democratic polling firm Fairbank, Maslin, & Associates (FMM&A) and Republican polling firm Public Opinion Strategies (POS) to gauge support for increased investments in the protection of land, water, and wildlife.



The SRP currently includes work with 29 dams on eight rivers around the U.S.

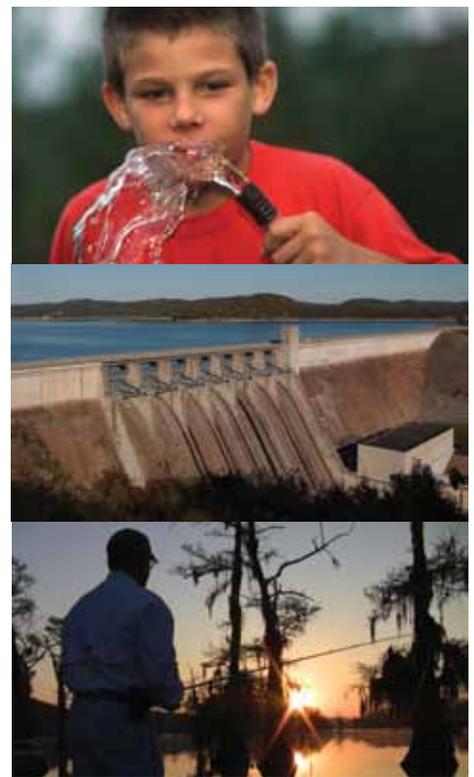
landowners who willingly changed how they used their floodplain property. The revised releases keep lake levels higher longer into the fall, thereby extending recreation six weeks each year and boosting related jobs and revenue. Moreover, the new release schedule maintains flood protection and helps improve water quality, saving cities money when treating drinking water from the Green River. On Arizona's Bill Williams River, a tributary of the Colorado River, changes in dam operations have been coordinated with dam operations on the Colorado River, which enables more water storage behind dams on the Colorado during prolonged droughts. The revised flows have also brought life back into a floodplain forest that was in steep decline, but now provides habitat for more than 350 species of birds and supports a related tourism industry that draws hundreds of thousands of people to the state each year.

Nationwide Benefits

Imagine if similar benefits could be realized elsewhere. There are 472 reservoirs in the

U.S. containing Congressionally-authorized flood storage that ranges from 32 to 48 trillion gallons—enough to meet the annual water supply needs of 900 million people. With 116 of the 472 reservoirs also actively generating hydropower, significant increases in electricity production could be realized without large investments in new infrastructure. And local communities would benefit from enhanced recreation and the improved health and productivity of tens of thousands of river miles across the country.

While the Corps has restricted authorities to modify dam operations, the agency does not have a specific program dedicated to finding opportunities to update operations in order to deliver greater benefits to society. A **national Sustainable Rivers Program**—one that can work across the Corps and with local communities across the country—will enable the Corps and its partners to revitalize our water infrastructure and provide substantial economic, social and environmental returns today and well into the future.



Adjusted flows can improve water quality, flood protection, hydropower, wildlife habitat and recreational opportunities. © Courtesy of USDA, Ark. Parks & Tourism, and Jay Harrod

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To learn more—and to watch a video about the SRP—visit nature.org/srp.