

Protecting the Health of Our Lands and Waters

Fisheries and Habitat Conservation Program



Above: USFWS biologists work with a variety of partners to ensure fish and wildlife resources are protected in development plans.



Above: USFWS specialists work to ensure the health of America's fish and wildlife populations..



Above: Clean water is an important component of healthy fish populations.

- *Balancing Sustainable Development with Fish and Wildlife Conservation*
- *Preventing and Controlling Invasive Species*
- *Providing Technical Assistance and Solutions to Water Quality Problems*
- *Ensuring the Health of Aquatic Organisms*
- *Identifying and Solving Pollution Problems*
- *Helping Others Protect Habitat*
- *Developing and Providing Wetlands Information*



For more information about the Fisheries and Habitat Conservation Program, contact:
U.S. Fish and Wildlife Service
Dr. Mamie Parker, Assistant Director - Fisheries and Habitat Conservation
202/208 6394
<http://www.fws.gov>



U.S. Fish & Wildlife Service

Balancing Sustainable Development with Fish and Wildlife Conservation

Fisheries and Habitat Conservation Program



Above: Great blue heron. Planning can balance natural resource benefits and development.



Above: Increasing infrastructure to accommodate population growth can impact natural resources.



Above: Sustainable development of aquatic resources must be balanced with fish and wildlife habitat needs.



Above: Pre-development planning ensures conservation of resources while streamlining the development process.

The nation's watersheds and aquatic resources are under ever-increasing pressures as the human population grows and requires more land and water to sustain itself. As the population grows, there is a proportional increase in demand for infrastructure such as roads, homes and recreational facilities.

Increases in water-related development create formidable challenges to the conservation of fish and wildlife and other aquatic resources. Visionary, interdisciplinary planning is the smart way to provide for sustainable development while keeping communities livable.

What does this program do?

- Ensures that habitat important to fish and wildlife is taken into consideration when designing development projects.
- Allows agencies and the public to work together amicably to accommodate societal growth while conserving fish and wildlife.

How do we do it?

- Provide technical assistance to developers to ensure that fish and wildlife resources and their public benefits are considered during planning.
- Identify opportunities to enhance fish and wildlife resources for public benefit while accomplishing other project purposes.

What have we done already?

- Ensured environmentally sensitive development.
- Created public understanding of the benefits of natural landscapes.
- Identified alternative designs that accomplish project purposes while minimizing adverse impacts to fish and wildlife.
- Identified ways to compensate for unavoidable impacts.
- Facilitated compliance with environmental laws and regulations.

How does the public benefit?

- Streamlining and shortening of the planning and permitting processes.
- Minimization of natural resources conflicts among agencies, groups, and individuals.
- Minimization of adverse impacts to fish and wildlife.
- Enhancement or restoration of fish, wildlife and their habitats.
- Clean water for drinking, swimming, fishing and boating.
- Economic benefits of fish- and wildlife-based recreational and commercial activities.

What more can we do?

- Expand our capability to participate in project planning.
- Increase U.S. Fish and Wildlife Service participation in interagency and public groups that coordinate watershed planning, to ensure the balance between development and resource conservation.

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Preventing and Controlling Invasive Species

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Above: Brown Tree Snakes on Guam have devastated native bird populations.



Above: Zebra mussels clog intake pipes and smother native mussels.



Above: Round gobies are poised to enter the Mississippi River basin from the Great Lakes.



Above: Chinese Mitten Crabs impact water supply facilities in CA and could have human health impacts if eaten.

Invasive species are causing significant economic and ecological problems throughout North America and the world. Non-native plants and animals that become invasive transform our natural areas, damage our crops and threaten native species. Over 50,000 non-native species are now established in the U.S. and although many cause no problems, the impacts of those that do have risen, costing over \$100 billion annually.

In 1990, Congress passed the Nonindigenous Aquatic Nuisance Prevention and Control Act, designating the Service as the co-chair of the Aquatic Nuisance Species (ANS) Task Force and directing the U.S. Fish and Wildlife Service and other Federal agencies on the Task Force to develop a program to prevent, control, detect and monitor aquatic invasive species. Additionally, restoration of habitat degraded by invasive plants is critical to ensure healthy populations of fish and wildlife.

What does this program do?

- Assists States in the development of State ANS Management Plans.
- Supports Regional Panels to address regional ANS problems.
- Restores habitat affected by invasive species.
- Prevents the introduction of new invasive aquatic species through development of new technologies to treat pathways such as ballast water.
- Controls aquatic invasive species such as the Eurasian Ruffe.

How do we do it?

- Provide grants to States to implement State ANS Management Plans and grants to private landowners to control invasives and restore native habitats.
- Conduct prevention, control and restoration activities in partnership with State resource agencies and other groups.
- Provide outreach and technical assistance.

What have we done already?

- Provided scientific leadership through the ANS Task Force.
- Launched the 100th Meridian Initiative to slow the spread of invasives to the western U.S.
- Led cooperative programs to control Eurasian Ruffe, Chinese Mitten Crabs, Brown Tree Snakes, Asian Swamp Eels and other invasive species.

How does the public benefit?

- Reduced economic impacts.
- Restored habitat for fish and wildlife and decreased loss of biodiversity.

What more can we do?

- Aggressively prevent new introductions through outreach and education efforts.
- Evaluate high risk species being imported to the U.S. and take measures to prevent their spread.

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Providing Technical Assistance and Solutions to Water Quality Problems

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Above: Sharon Steel, Utah.

The waters that we all enjoy and that fish and wildlife depend on are also used to dispose of wastes from our growing society.

What does this program do?

- Provides data and interpretation of those data to protect water quality.
- Works with industry, Native Americans, States and the public to ensure protection of water quality.
- Assists in restoration of the Nation's waters through water quality improvements.
- Improves water quality at National Fish Hatcheries.

How do we do it?

- Assist States and Native Americans in identifying waters that are polluted.
- Assist States, Native Americans, industry, and the public in identifying wetlands that are important to maintaining water quality.
- Work with the U.S. Environmental Protection Agency to establish Water Quality Criteria for toxic pollutants that will protect fish and wildlife.
- Identify problems with incoming water and effluents at National Fish Hatcheries.



Above: A frog with a malformed leg.

What have we done already?

- Provided the USEPA and States with Water Quality Standards that protect fish and wildlife in addition to human health.
- Worked with States, industry and other Federal agencies to develop plans to improve water quality in areas where pollution exists.
- Identified and provided remedies for areas on National Wildlife Refuges where pollutants were affecting waters of the refuge.
- Worked cooperatively with and provided funds to private citizens to restore areas that were causing pollution.
- Developed award-winning water re-use technology for hatchery operations.



Above: A healthy adult leopard frog.

How does the public benefit?

- The public has greater opportunity to hunt, fish and enjoy natural areas.
- Fish and wildlife populations are able to sustain increased public recreation.
- Fish and wildlife that are taken during recreation can be consumed safely.

What more can we do?

- Work more closely with States, Native Americans, the public and Federal agencies to ensure water remains safe for humans and fish and wildlife.
- Leverage available funding to ensure that we make the most out of our opportunities to safeguard water quality.
- Improve National Fish Hatcheries facility operating conditions and produce more fish.



Above: Bassfishing, Missouri.

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Ensuring the Health of Aquatic Organisms

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Above: Apache trout



Above: Examining Atlantic sturgeon eggs at Lamar Fish Technology Center.



Above: Checking Coaster brook trout reared at Pendills Creek National Fish Hatchery, Michigan.

As the U.S. population grows, greater demands are placed on our natural resources for food and recreation. Aquatic resources tend to suffer under these pressures unless precautions are taken. Degradation in the health of fish and other aquatic resources sometimes occurs as a result. Appropriate actions can minimize impacts on these resources and maintain a healthy environment for people, fish and wildlife.

What does this program do?

- Provides science-based information on the health of aquatic ecosystems.
- Determines the prevalence and distribution of pathogens in wild and hatchery fish.
- Fosters a cooperative approach to prevent catastrophic losses and diseases of fish.
- Aids the well-being of all aquatic species within ecosystems.
- Lessens adverse impacts to commercial, recreational and subsistence fishing.

How do we do it?

- Conduct fish health inspections and diagnose fish health problems.
- Control importation of potentially hazardous fish and fish pathogens.
- Conduct training and demonstration programs at nine Fish Health Centers within the National Fish Hatchery System.
- Educate the public on benefits of healthy aquatic ecosystems.

What have we done already?

- Developed watershed plans to reduce pollutants and improve habitats.
- Established a national State/Federal research center for disease control.
- Developed the National Wild Fish Health Survey to enhance restoration and recovery actions.
- Developed cooperative Federal fish health diagnostic criteria for national and international standards.

How does the public benefit?

- Healthy fish and wildlife.
- Fewer fish die-offs and fish-kills as a result of detecting health problems early.
- Improved economic benefits from consumptive use of resources.

What more can we do?

- Provide public Internet access to the Wild Fish Health Survey Database.
- Improve our capabilities to assist the U.S. and international aquaculture communities.
- Improve coordination with other Federal agencies on international importation and exportation of aquatic species.
- Promote partnerships to enhance the health of aquatic resources.
- Review importation regulations for clarity and simplicity.

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Identifying and Solving Pollution Problems

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Above: Oil pollution, Martime NWR.



Above: Fish kill due to industrial discharge.



Above: Chemical sample preparation.



Above: Restoring Kenai River bank stability.

What does this program do?

- Provides data on pollution at specific sites.
- Provides technical assistance to partners about solutions to pollution problems.
- Protects fish and wildlife during and after cleanup of polluted sites.

How do we do it?

- Investigate areas where pollution is believed to be a problem, by sampling water, soil/sediment and fish and wildlife.
- Interpret data resulting from investigations to determine if there is a pollution problem, where it occurs and the severity.
- Use the data and interpretations to define the impact area, the source and its impact on trust resources.
- Assist States, Native Americans, the public and other Federal agencies in designing cleanup solutions that protect fish and wildlife.

What have we done already?

- Provided technical assistance at Superfund sites that has saved millions of dollars and protected fish and wildlife.
- Produced and analyzed data that has led to the cleanup of areas of the National Wildlife Refuge System that were polluted.
- Worked with States, Federal agencies and industry to reduce and eliminate mortalities of migratory birds in oil pits and at mines using cyanide.
- Worked with States and other Federal agencies to eliminate pollution that caused the death of migratory birds in agricultural areas.
- Provided native fish and wildlife species for stocking in areas that have been cleaned.

How does the public benefit?

- The cost of cleanup of Superfund sites is reduced while still protecting fish and wildlife.
- Fish and wildlife resources are protected or enhanced providing more resources for public enjoyment.
- Pollution problems are identified early in assessing problems and are dealt with efficiently.

What more can we do?

- Expand participation of USFWS field offices in addressing contaminant problems.
- Share our abilities with our partners.
- Provide more data to States, Tribes, industry and the public.
- Expand our ability to acquire and analyze new information in a constantly changing area of science.

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Helping Others Protect Habitat

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Above: Endangered roseate tern on an island acquired for Petit Manan National Wildlife Refuge, Maine.



Above: Protected salt marsh habitat in the lower Kennebec River in Maine provide valuable habitat for wading birds, migratory waterfowl, and anadromous fish.



Above: Longleaf pine seedlings at a restoration site on Sandy Island, South Carolina. Restoration of longleaf pine communities is improving the health of the South Atlantic Coastal Plain ecosystem.

The Fisheries and Habitat Conservation Program encourages local partnerships and provides important habitat information that helps landowners protect and restore fish and wildlife habitat. As proud as we are of our 96 million acre National Wildlife Refuge System, we realize that the vitality of fish and wildlife populations cannot depend solely on the Refuge System.

Our Program provides habitat information, mapping resources, restoration assistance, and land management assistance to local landowners. We foster partnerships that enable landowners to identify and protect important habitats such as nesting islands along the coast, estuaries that serve as nurseries for fish, wetlands critical for wintering habitat for migratory waterfowl and shorebirds, native grasslands essential to grassland nesting birds, and stream corridors necessary for fisheries and songbirds.

What does this program do?

- Works with land trusts and other conservation partners to protect and restore high priority fish and wildlife habitat.

How do we do it?

- Provide communities and land trusts with scientific information about the location of existing and restorable habitats.
- Connect organizations that have funding with individuals willing to sell easements.
- Provide data and interpretation to ensure that contaminated lands are not purchased or that the costs of cleanup are known.
- Maintain a database of wetlands and other habitats of the U.S.
- Monitor and assess water quality and fishery resources.

What have we done already?

- Developed innovative partnerships with local and statewide land trusts to identify and protect nearly 100,000 acres of coastal habitat since 1994.
- Identified essential fish habitat and recommended land purchases.

How does the public benefit?

- Restored and enhanced fish, wildlife, and ecosystems.
- Increased opportunities for fishing, hunting, and eco-tourism.
- Enhanced local economies.

What more can we do?

- Develop additional partnerships.
- Help protect priority lands and waters on our waiting list.

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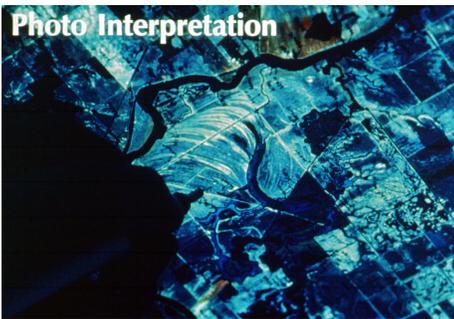
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Developing and Providing Wetlands Information

Fisheries and Habitat Conservation Program



Above: Wetlands occur across the landscape.



Above: Information is gathered from aerial photography.



Above: A national map standard is used to identify wetlands.



Above: Up-to-date wetland maps help solve quality of life issues.

Wetlands are the cornerstone of many important ecosystems. They provide society with numerous ecological and economic benefits. Effective conservation of our Nation's remaining wetlands requires consistent, reliable information about their location, characteristics and values. Wetlands maps produced by the **National Wetlands Inventory** are tools used to manage, protect, and restore natural resources.

What does this program do?

- Generates wetland information used by Federal and State agencies, Tribes, Congress, industry, resource professionals and the general public.
- Assists in the protection, restoration and management of wetlands resources.
- Coordinates the development and distribution of wetland maps.

How do we do it?

- Gather wetlands information from high-altitude aerial photography.
- Generate consistent, reliable information about wetland location, characteristics and values.
- Build partnerships with Federal and State agencies, Tribes, industry, local governments and private organizations to develop current wetlands information.

What have we done already?

- Produced paper maps showing wetland locations and their characteristics for about 91 percent of the conterminous United States and 33 percent of Alaska.
- Provided more than 27,000 wetland maps in digital format over the Internet.
- Produced three National reports on wetland status and trends.
- Provided the public with dozens of regional, State, and local reports on wetland status and trends.
- Increased opportunities for the public to gain access to paper and digital maps by establishing 30 Regional and State-run map distribution centers.
- Produced software that allows anyone with a computer to produce customized wetland maps for select areas.

How does the public benefit?

- Providing information for developing wetland conservation policies and programs.
- Increased access to wetlands information for use in decision-making.
- Enhanced quality of life through sound natural resource planning.

What more can we do?

- Maintain the value of wetlands information by updating maps in areas of the Nation experiencing substantial development of natural resources.
- Identify areas in watersheds where wetlands can be restored to enhance the quality of local environments.
- Provide information on the maps about man-made and natural factors that affect the quality of remaining wetlands.

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