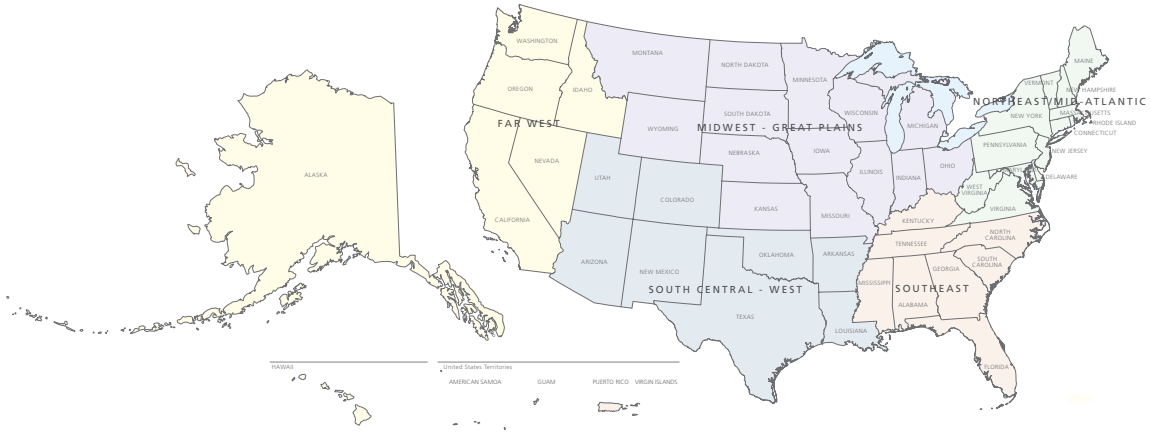


National

Projects with multiple locations throughout the United States



American Chestnut Restoration

Restoring the “Redwood of the East”

Location: National (Primarily Eastern Forests)

Project Summary: Using new technologies and a strong partnership, blight resistant strains of American Chestnut are being used to restore the tree to its former range.



American chestnut, showing exposed seed.

Resource Challenge

American chestnut trees were once an important part of the Nation's eastern forests, making up one out of four trees in many places. Known as the “Redwood of the East,” their nuts were important food for people and wildlife, and their timber was ideal for furniture and other products. Around 1900, a foreign fungus called chestnut blight swept through eastern forests, and by the 1950s, more than four billion American chestnut trees were gone.

Occasionally, someone found a live tree. A persistent few would not give up on the chestnut. Around 1904, the U.S. Department of Agriculture (USDA) and the Connecticut Agricultural Experiment Station began programs to develop a blight-resistant strain. Efforts failed, and the USDA discontinued their program in 1960. Nobody knew then that some of their strains would indeed become important parts of the modern breeding program.

Armed with a new understanding of genetics, scientists and supporters renewed their efforts in the 1980s, which saw the formation of a non-profit organization called the American Chestnut Foundation (TACF). The organization established research farms with several cooperators.

Examples of Key Partners

The American Chestnut Foundation (TACF), USDA Forest Service, USDA Agriculture Research Service, Connecticut Agricultural Experiment Station, University of Pennsylvania, foresters, and outdoor enthusiasts.

Innovation/Highlight

The persistence, dedication, and cooperation of a few people over the course of decades is starting to bear fruit for the future of the American Chestnut.

Results and Accomplishments

The USDA Forest Service State and Private Forestry, National Forest System, Agriculture Research Service, Connecticut Extension, and several others have been working with TACF to restore chestnut trees to the landscape. The breeding program crosses Chinese chestnuts, naturally resistant to the blight, with their American cousin. The program has produced blight resistant trees with 98 percent American genes. TACF expects the first seeds to be ready for test planting by 2006, and trees with the characteristics needed to survive in their former range a few years after that.

To assure genetic diversity in the restored population, several resistant strains will be needed. During the last eight years the USDA Forest Service has been locating new trees in the wild to add to the breeding population. The USDA Forest Service Research station has identified genetic markers that indicate resistance, which will speed up the breeding program.

In 2004, the Forest Service and TACF signed a Memorandum of Understanding. As the centerpiece, the Forest Service will plant TACF-bred seedlings on National Forest System lands.

Project Contact

Marshal Case
President and CEO
The American Chestnut Foundation
802-447-0110
chestnut@acf.org

Website: www.acf.org/default.htm



Amphibian Research and Monitoring Initiative

Tracking Amphibian Populations to Assess Ecosystem Health

Location: Nationwide

Project Summary: The Amphibian Research and Monitoring Initiative is a partnership among public and private organizations to determine trends in amphibian populations.



USGS Field Technician Cheryl Brehme conducting daytime surveys for Arroyo Toad (*Bufo californicus*) habitat and larvae.

Resource Challenge

The growing number of malformed frogs has been making global headlines. Amphibian populations in general have dropped worldwide during the past 20 years, often because of habitat loss and alteration. Amphibians are excellent environmental quality indicators because contaminants readily enter their bodies through the skin and accumulate more quickly than in other animals.

Scientists need to know why amphibian populations are declining and what is causing the increased rate of malformation in frogs. The U.S. Geological Survey (USGS) developed the Amphibian Research and Monitoring Initiative (ARMI) in 2000 to monitor amphibian population trends on U.S. Department of the Interior (USDI) lands, and to study the causes of declines. By working with other federal agencies, researchers hope to mitigate or correct problems, stabilizing amphibian populations.

The ARMI offers a better way to describe, model, and monitor interactions between the environment and amphibians. It overcomes the inherent difficulty of reliably estimating populations in species that easily elude detection by swimming away or blending in with their environment. This new predictive model and web-based tool will help field biologists locate potential amphibian habitats, and help land managers make decisions about conserving critical habitat.

A new broad-scale technique called Proportion Area Occupied (PAO) measures the presence or absence of amphibian species at specific sites over time. By collecting and analyzing whether amphibians are present or absent, ARMI describes population trends across large

areas. While PAO is not unique to ARMI, this program is among the first to employ it on such a large geographic scale. The ARMI also has encouraged further development of existing PAO methods.

Examples of Key Partners

USGS, Savannah River Ecological Laboratory, Arizona State University, Smithsonian Institution, National Wildlife Federation, International Association of Fish and Wildlife Agencies, USDI Fish and Wildlife Service, USDI National Park Service, and others.

Results and Accomplishments

The ARMI has a Steering Committee which includes federal agencies and non-government organizations to guide and assist the program. The ARMI is incorporating data from the NWF Frogwatch USA program, which trains volunteers to observe and collect data on the distribution of frogs and toads in their vicinity. The NWF and ARMI will use Frogwatch data in ARMI databases and population analyses, further enhancing ARMI's population assessments.

The tools and models are at an early stage of development, and do not include all the data as yet. Interest in using the program is growing rapidly among government scientists, land managers, university scientists, and conservation organizations.

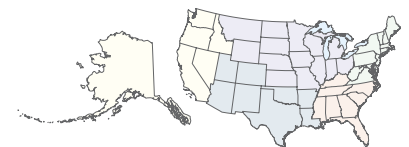
Innovation/Highlight

The first nationwide assessment of the current distribution and status of amphibians, which are valuable indicators of ecosystem health.

Project Contact

Rick Kearney
ARMI National Coordinator
U.S. Geological Survey
703-648-5719
rkearney@usgs.gov

Website: <http://armi.usgs.gov>



Appalachian National Scenic Trail

Conserving a 2,175-Mile Ribbon of Public Land

Location: Maine, New Hampshire, Vermont, Massachusetts, Connecticut, New York, New Jersey, Pennsylvania, Maryland, West Virginia, Virginia, Tennessee, North Carolina, Georgia

Project Summary: The eighty year-old public/private partnership manages the 2,175 mile-long Appalachian Trail from Maine to Georgia.

PHOTO BY APPALACHIAN TRAIL CONSERVANCY (JOHN WRIGHT)



Volunteers and crew leaders of the Mid-Atlantic Trail Crew move stringers into place at Duell Hollow in New York.

Resource Challenge

The Appalachian Trail is a continuous footpath along the Appalachian Mountains from Maine to Georgia. It was conceived in 1921, completed in 1937, and designated as the first National Scenic Trail in 1968. It is the nation's longest, most accessible National Park, passing through or near more than 100 communities along the eastern seaboard and serving nearly four million hikers a year. Its 2,175-mile stretch makes partnership and collaboration a necessity in the Trail's management and upkeep.

Following more than three decades of land protection by state and federal agencies and private land conservancies, the Appalachian Trail corridor now forms a slender greenway that connects more than 75 public land areas in 14 States. It is a haven for biological diversity, protecting more than 2,000 occurrences of rare plant and animal species.

Examples of Key Partners

Seven National Parks, eight National Forests, one National Wildlife Refuge, Tennessee Valley Authority, Smithsonian Institution, 60 state agencies and private partners, coordinated by the nonprofit Appalachian Trail Conservancy (ATC).

Results and Accomplishments

In 1984, the USDI National Park Service (NPS) entered into an unprecedented agreement, delegating most responsibilities for management of NPS lands along the trail to the non-profit ATC. This cooperative agreement, which was renewed in November 2004, serves as the cornerstone of the decentralized, volunteer-based ATC

Management System. The NPS and ATC have entered into similar agreements with the U.S. Department of Agriculture (USDA) Forest Service, the 14 states through which the Trail passes, and ATC's 30 Trail-maintaining clubs.

Through long-standing collaboration, the managing partners have successfully conserved the trail and its corridor, providing opportunities for millions of visitors to experience and enjoy the Appalachian Mountains. Recent accomplishments include:

- Some 5,000 volunteers in 30 clubs contribute 200,000 hours of labor each year to maintain, manage, and protect the Appalachian Trail.
- Agreements with more than 100 public and private management partners ensure consistent Trail management across many jurisdictions.
- A 12-year project inventoried more than 2,000 occurrences of threatened, endangered, and sensitive species.
- The Ridgerunner Program, staffed by volunteer hikers, educates visitors about appropriate use of the Trail.
- A new volunteer-based conservation program helps monitor rare plant species, water quality, air quality, forest health, and social impacts to the Trail.
- Dozens of shelter renovations, footpath relocation and rehabilitation projects, footbridges, and other projects are completed every year.

Innovation/Highlight

The private non-profit Appalachian Trail Conference coordinates maintenance of the 2,175-mile trail through the use of volunteers.

Project Contact

David N. Startzell
Executive Director
Appalachian Trail Conservancy
304-535-6331 x 116
dstartzell@appalachiantrail.org

Website: www.appalachiantrail.org



Corporate Wetlands Restoration Partnership

Environmentally Aware Companies Give Back to Communities

Location: National

Project Summary: The Corporate Wetlands Restoration Partnership (CWRP) gives businesses a structure in which to support federally-funded coastal and other aquatic restoration and protection projects.

PHOTO BY TEXAS CWRP



The San Jacinto National Monument Project—Texas CWRP Partners contributed to marsh restoration efforts.

Resource Challenge

Coastal areas contain habitat essential for birds, fish and other wildlife. These areas also are vital to people, supporting maritime industries, providing recreation, and supporting towns and communities. The CWRP is one of several tools of the Coastal America Partnership, a joint venture between federal agencies and the Executive Office of the President working in collaboration with state and local partners. The CWRP was created to facilitate voluntary corporate involvement in restoring the Nation's critical aquatic habitats in cooperation with governments and other organizations.

The CWRP began in Massachusetts in 1999 through the initiative of The Gillette Company, the Massachusetts Executive Office of Environmental Affairs (EOEA), and a key Coastal America partner, the U.S. Environmental Protection Agency (EPA). Through CWRP, companies can donate matching funds or in-kind services for federally-supported projects to improve wetlands and other aquatic habitats. State CWRPs support projects that have been endorsed by Coastal America Regional Implementation Teams. Corporate participation in the CWRP is not a substitute for corporate compliance with federal or state requirements, however.

Examples of Key Partners

Coastal America federal partnership, corporations, state, tribal, and local governments; academia, National Level Management Committee, Regional Advisory Councils, State Advisory Boards, Duke Energy, The Gillette Company, and National Association of Manufacturers.

Innovation/Highlight

The partnership facilitates corporate donations to match federal, state, and local funds.

Results and Accomplishments

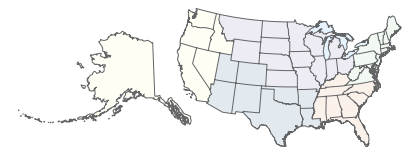
Now in its fifth year, the CWRP has more than 225 corporate partners and 100 other non-federal partners. Fifty projects have been completed and another 60 are in progress. More than 5,000 acres of wetlands and almost 500 miles of stream habitat have been restored. The CWRP Chapters have formed in 13 states, Canada and Mexico, with more to come.

Examples of projects with CWRP support include:

- The Lonsdale Marsh Restoration Project restored 17 acres by removing an abandoned drive-in theater in an urban watershed, creating a continuous wooded riparian buffer.
- The San Jacinto National Monument Project in Texas is returning the San Jacinto battleground/marshland to its original 1836 appearance and restoring more than 200 acres of tidal marsh habitat.
- The East Machias Dam Removal Project in Maine removed an abandoned dam as part of a military training exercise, opening more than 300 stream miles for Atlantic salmon.
- The Barn Island Project in Connecticut added 144 acres of private property, once permitted for a golf course, to the 869-acre Barn Island Wildlife Management Area.
- The Bridge Creek Project in Massachusetts installed culverts under an active railroad bed and a road, restoring tidal exchange to 40 acres of saltmarsh.

Project Contact

Patmarie Nedelka
CWRP Coordinator/
Deputy Director for Policy
Coastal America
202-401-9928
Patmarie.Nedelka@usda.gov



Website: www.coastalamerica.gov/text/cwrp.html

FireWise Communities

Protecting Life and Property from Wildfire

Location: Nationwide

Project Summary: FireWise Communities is a national initiative helping communities and their residents design, build, and maintain fire resistant properties.



Clearing sage cactus to reduce the threats of wildfires to property owners.

Resource Challenge

During the past century, America’s population nearly tripled, with much of the growth flowing into rural areas. This trend has created a patchwork of development and open land known as the “wildland/urban interface,” where lives, property, and natural resources are at greater risk from wildland fire. More than 30,000 homes and other structures have been destroyed by wildfires since 1970.

Firewise Communities is a national initiative that encourages homeowners, community leaders, planners, developers, and others to act before a fire starts by designing, building, and maintaining fire resistant properties. It is an outgrowth of the National Fire Plan, which was released in 2000 after an especially severe fire season.

Examples of Key Partners

National Association of State Foresters (NASF), International Association of Fire Chiefs, National Association of State Fire Marshals, National Emergency Management Association, National Fire Protection Association, USDA Forest Service, USDI Bureau of Indian Affairs, USDI Bureau of Land Management, USDI Fish and Wildlife Service, USDI National Park Service, Federal Emergency Management Agency (FEMA), Society of American Foresters, and the U.S. Fire Administration.

Results and Accomplishments

The centerpiece of the Firewise Communities Program is its community workshops. Wildland fire staffs from federal, state, or local agencies work directly with communities, providing information tailored to the specific locale. Workshops help community leaders and fire service professionals recognize wildland/urban interface fire

hazards, make homes and landscapes safer, educate residents, and incorporate Firewise planning into existing and new developments. Workshops feature interactive discussions, mapping, and wildfire simulations. As part of the program, the community assesses its risk, creates a network of cooperating homeowners, agencies, and organizations, and identifies and implements its own solutions. The program works especially well with small communities, developments, and neighborhood associations.

Since 1999, more than 3,000 people have attended Firewise Community Workshops, many of whom have gone on to sponsor their own local or regional workshops using materials supplied by the program.

In addition to its workshops, the Firewise program has an educational website with extensive information for homeowners, communities, and professional firefighters. Website visitors can view streaming video, download documents, browse its extensive links, and use a searchable library of national, state, and local documents on a wide range of wildland fire safety issues.

The Firewise Communities program is continuously developing new information, including a newsletter, landscaping and home construction checklists, mini-documentaries, CD-ROMs, school education projects, and more.

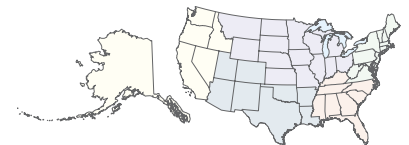
Innovation/Highlight

A coordinated national program uses federal, state, and local experts to help communities develop their own strategies for lowering wildland fire risks.

Project Contact

Jim Smalley
National Fire Protection
Association
617-984-7483
jsmalley@nfpa.org

Website: www.firewise.org



Fish and Wildlife Service Fish Passage Program

Breaking Barriers to Healthy Fish Habitat

Location: Nationwide

Project Summary: The Fish Passage Program works with public and private partners nationwide to restore fish habitat by removing local barriers to natural water flows.

PHOTO BY MARK GODFREY/TNC



The Cuddebackville Dam on the Neversink River in New York prior to its removal.

Resource Challenge

Today there are more than 2.5 million artificial barriers, including dams greater than six feet in height, in America’s rivers and streams. Many no longer serve their original purpose, and were abandoned years ago. Nonetheless, they severely impede the movement of native fish, walling off essential aquatic habitat and threatening the health of numerous fish species.

The Fish Passage Program was established as a voluntary, cooperative program to assist State agencies, local governments, conservation organizations, and private landowners in restoring aquatic habitat by removing dams and other barriers obstructing the flow of natural waters and the movement of native fish.

Examples of Key Partners

USDI Fish and Wildlife Service and hundreds of partners, including state and local governments, non-government organizations, and private landowners.

Results and Accomplishments

Since its inception, the National Fish Passage Program has worked with more than 140 partners to remove or bypass 287 barriers, restoring access to approximately 3,500 miles of stream habitat and restoring more than 70,000 acres of aquatic habitat. At least 20 federally-listed or candidate species have directly benefited from these actions. Local examples include:

Cuddebackville Dam Removal–In 2003, anglers, local conservation groups, and Fish Passage removed the Cuddebackville Dam on the Neversink River in New York, opening 40 miles of spawning and rearing habitat for key fish species, improving habitat for the federally endangered dwarf wedgemussel, and enhancing angling opportunities.

Leopard Darter Recovery–The Little River system in the Red River basin of Oklahoma and Arkansas is home to commercial forestry operations and the listed leopard darter fish. Fish Passage, the Weyerhaeuser Corp., and the John Hancock Corp. are working together to install box culverts beneath low water road crossings to allow annual migration of leopard darters to their spawning riffles. In all, 16 low water road crossings will be bypassed by culverts, 30 miles of streams opened, and two miles of riparian habitat improved.

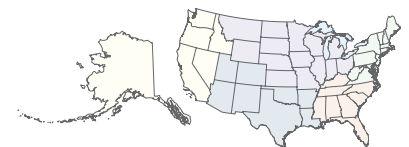
Silver Salmon Creek Fish Passage Restoration Project–A road crossing on Salmon River Creek blocked critical fish species from eight miles of streams. A 2002 flood added a second barrier to migration of juvenile anadromous fish. The Alaska Department of Fish and Game, the Kenai Watershed Forum, and Fish Passage replaced the existing culvert with a larger one and restored 400 feet of stream channel, opening eight miles of critical spawning and rearing habitat.

Innovation/Highlight

The only national program designed and dedicated to assist local partners, on a voluntary basis, in the removal of barriers and dams restricting natural water flows.

Project Contact

Steven Moyer
Vice President
Government Affairs & Volunteer Operations
Trout Unlimited
703-284-9406
smoyer@tu.org



Website: www.fws.gov/fisheries/FWSMA/fishpassage/

GeoMAC

Wildfire Locations and Interactive Internet Mapping

Location: National

Project Summary: GeoMAC provides the public and wildland fire managers Internet access to interactive maps with current wildland fire locations and perimeters.



Close-up view showing the perimeter of the Cave Creek Complex fire for July 5, 2005.

Resource Challenge

The 2000 wildfire season was one of the worst on record: by mid-August, 64,000 fires had burned an estimated 4.5 million acres and hundreds of structures. More than 25,000 firefighters, 900 fire engines, 200 helicopters, and all available air tankers were deployed.

Interagency Fire Coordination Centers set priorities for deploying fire-fighting resources based on human safety, protecting property, and natural resource values. Using printed maps and situation reports limited the information available to make these decisions. As the 2000 fire season wore on, fire managers asked for real-time geographic information on wildfire status, location, and proximity to life, property, and infrastructure to help them send resources where they were needed most.

Examples of Key Partners

National Interagency Fire Center, USDI Bureau of Land Management (BLM), USDA Forest Service (USFS), USDI Bureau of Indian Affairs, USDI Fish and Wildlife Service, USDI National Park Service, U.S. Geological Survey (USGS).

Results and Accomplishments

The Geospatial Multi-Agency Coordination (GeoMAC) Group developed an Internet based mapping tool which allows online access to maps of wildfire locations and perimeters. Using a standard web browser, fire personnel and the public can view information to pinpoint fire areas. Users can manipulate maps, zoom in and out, and print copies for dispatch offices, coordination centers, and briefings. Users can also display information on individual fires such as the name and current acreage.

Innovation/Highlight

GeoMAC improves the distribution of wildland fire information by providing on-line interactive maps, displaying detailed information about where wildland fires are burning, and sharing the latest wildland fire information.

Sponsored by the National Interagency Fire Center, the USGS Rocky Mountain Geographic Science Center developed and maintains the application. The fire perimeter data is provided by on-site wildfire personnel and is updated daily. The USFS Remote Sensing and Applications Center provides thermal satellite data. Situation report data comes from the USFS server in Kansas City. Weather data comes from several agencies including the National Weather Service.

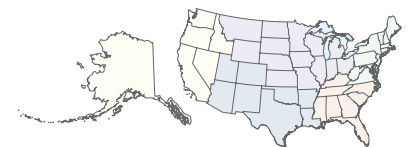
In addition to providing on-line data, GeoMAC has a data repository of the perimeter and point fire locations that is available to resource managers, burned area rehabilitation teams, researchers, scientists, and academia. Overall use of GeoMAC has risen sharply: in 2001, the first year GeoMAC collected user statistics, there were 1.8 million requests; as of July 2005, there have been 7.4 million requests.

Following on GeoMAC's success, the California Department of Forestry and Fire Protection has partnered with the BLM and the USDA Forest Service to develop a similar site for California fire planning.

Project Contact

Elizabeth Lile
Cartographer
USGS Rocky Mountain Geographic Science Center
303-202-4326
ellile@usgs.gov

Website: www.geomac.gov



Grass Roots Source Water Protection Program

Locals Promote Voluntary Action to Curb Groundwater Pollution

Location: Nationwide

Project Summary: The grassroots outreach and education program encourages voluntary conservation by landowners, farmers, and ranchers to prevent drinking water pollution.



Demonstrating the effectiveness of proper ground cover for reducing erosion, resulting better quality drinking water resources.

Resource Challenge

Drinking water is one of our nation's most precious natural resources. Across the country, 44,000 communities depend on ground water as their primary source of drinking water. Another 11,000 community water systems rely on lakes, reservoirs, and rivers to supply their 160 million customers. Finally, more than half a million rural homes depend on individual wells.

The Grass Roots Source Water Protection Program is a relatively new partnership between the USDA Farm Service Agency (FSA) and the nonprofit National Rural Water Association (NRWA). It is designed to help keep surface and groundwater water pollution from affecting drinking water, relying primarily on education and outreach to encourage farmers, ranchers, and producers to take voluntary action to prevent drinking water pollution.

Examples of Key Partners

USDA Farm Services Agency, USDA Natural Resources Conservation Service (NRCS), NRWA, and 32 State Rural Water Associations.

Results and Accomplishments

FSA provided almost \$4 million and the NRWA hired a full-time Rural Source Water technician for each of the 33 participating states. Technicians work with FSA directors and state conservation specialists to identify priority areas for preventing local pollution.

Working with State Rural Water Associations, technicians also help organize local citizen teams from diverse federal, state, local, and private interests. Teams develop Rural Source Water Protection plans outlining voluntary measures that farmers, ranchers, and other

producers can install to prevent source water pollution. Measures could include more secure storage of herbicides, pesticides, and other chemicals or relocating waste lagoons. Steering committees evaluate voluntary practices implemented by local producers. The FSA monitors overall program performance.

By working at the grassroots level, local team members inform and educate producers about source water protection measures that benefit their neighbors and communities.

The program is currently available in: Alabama, Alaska, Arizona, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Iowa, Kansas, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, Nevada, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, Vermont, Washington, and Wisconsin.

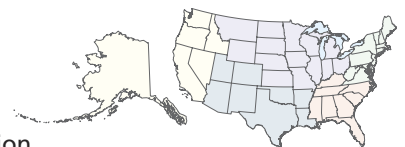
To date, these teams have developed 67 Rural Source Water Protection plans to support clean ground water.

Innovation/Highlight

The Program uses voluntary actions recommended by local interests to protect groundwater.

Project Contact

Brendan Murphy
National Rural Water Association
580- 251-9080
nrwajb@nrwa.org



Website:
www.fsa.usda.gov/pas/publications/facts/html/sourcewater04.htm

LANDFIRE

Mapping Tool Targets Areas for Hazardous Fuels Reduction

Location: Nationwide

Project Summary: LANDFIRE is a multi-organization partnership to identify and prioritize areas for, and improve coordination on, hazardous fuel reduction.



Discussing mapping techniques during the Rapid Assessment Modeling workshop in Little Rock, Arkansas.

Resource Challenge

The Landscape Fire and Resource Management Planning Tools Project (LANDFIRE), is a 5-year, multi-partner project to map ecosystems and wildland fire fuels. It is an outgrowth of the National Fire Plan, which moves the Nation toward reducing the number of wildland fires by controlling excessive vegetation and fuels that feed destructive fires.

LANDFIRE began after federal land agencies asked for maps to identify and prioritize areas for hazardous fuel reduction. LANDFIRE will provide consistent, nationwide fuel and vegetation data to help:

- Identify areas at risk from excessive fuels and vegetation.
- Prioritize hazardous fuel reduction projects.
- Improve fuels treatment coordination between agencies.
- Monitor completed projects.

LANDFIRE data and models can be used at the national, regional, and local levels. Principle investigators are located at the USDA Forest Service Rocky Mountain Research Station Fire Sciences Laboratory in Missoula, Montana and at the U.S. Geological Survey (USGS) National Center for Earth Resources Observation and Science in Sioux Falls, South Dakota. The Nature Conservancy and other organizations are providing field data and valuable scientific expertise and technology transfer skills. Sponsored by the Wildland Fire Leadership Council, LANDFIRE operates primarily from USDA Forest Service and USGS funding.

Examples of Key Partners

U.S. Geological Survey, USDA Forest Service, USDI Bureau of Indian Affairs, USDI Bureau of Land Management, USDI Fish and

Wildlife Service, USDI National Park Service, Federal Emergency Management Agency, The Nature Conservancy, Student Conservation Association, NatureServe, Systems for Environmental Management., SANBORN, EarthSat, Science Application International Corp., National Association of State Foresters, National Association of County Officials.

Results and Accomplishments

The LANDFIRE team is currently developing geographic data on vegetation cover types and structure characteristics, biophysical settings such as elevation and slope, wildland fuel models, fire history, and fire regime condition classes. As of March 2005, the project team had compiled data contributed by various agency and non-governmental cooperators from more than 230,000 field plots.

Ultimately, LANDFIRE will deliver more than twenty geospatial layers for the entire United States, which will be readily available over the Internet. LANDFIRE maps will be available for the entire U.S., showing:

- Wildland fuel.
- Fire regime condition classes.
- Existing vegetation.
- Biophysical settings.

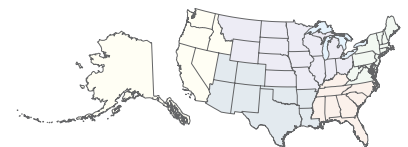
The Southern Utah Color Country Fuels Assessment is currently working with the first data to be included as a part of the national implementation of LANDFIRE. Vegetation modeling and technology transfer workshops for field personnel will begin this year.

Innovation/Highlight

LANDFIRE integrates remote sensing, geographic information systems, databases, and applied science to help land managers assess and prioritize fuel treatments to help prevent wildfires.

Project Contact

Dan Crittenden
LANDFIRE Business Lead
USDA Forest Service
202-239-9379
dcrittenden@fs.fed.us



Website: www.landfire.gov/index.html

Multi-Resolution Land Characteristics Consortium

High-Tech Maps Cover the Entire US

Location: National

Project Summary: A consortium of federal agencies produced a comprehensive spatial database for user-specified mapping of 21 types of land cover anywhere in the U.S.



Multi Resolution Land Characteristics (MRLC) Consortium Partners meeting in Denver, Colorado in February 2005.

Resource Challenge

Until recently, the Nation lacked a detailed, nationally consistent land-cover map and database. Land-cover maps show the physical nature of the land, including vegetation, soil, rock, and manmade structures. Data can come from either aerial photography or satellite images. These maps are used for hundreds of purposes, including assessing ecosystem status and health, modeling nutrient and pesticide runoff, seeing spatial patterns of biodiversity, land use planning, developing land management strategies, and more.

The Multi-Resolution Land Characteristics Consortium (MRLC) is a group of federal agencies who began collaborating in 1993, pooling resources to assemble satellite imagery for the lower 48 United States. They developed a comprehensive database called the National Land Cover Datasets (NLCD), mapping 21 types of land cover that seamlessly covers the U.S. Each of the 66 mapping zones can also be looked at independently using common tools and techniques.

Examples of Key Partners

U.S. Geological Survey (USGS), U.S. Environmental Protection Agency, National Oceanic and Atmospheric Administration, NASA, USDA Forest Service, USDA Natural Resources Conservation Service, National Agricultural Statistical Service, USDI Bureau of Land Management, USDI National Park Service, USDI Fish and Wildlife Service, LANDFIRE, State of Illinois, State of Kentucky, State of Maine.

Results and Accomplishments

The NLCD system uses the “Database” approach to land-cover mapping. Instead of mapping specific land-cover types such as

natural vegetation, agriculture, and developed areas, USGS scientists developed a procedure that identifies all of the physical characteristics of each satellite pixel, which are tiny squares of the land surface that, when put together, make up the image. The characteristics include visible and near-infrared reflected light, land elevation, slope, aspect, soil moisture, percent canopy density, percent impervious surface, and others. With these characteristics stored in a spatial database, users can specify the particular map they need.

The NLCD data are used by Consortium partners for many environmental, land management, and modeling applications, such as evaluating patterns of landscape change and mitigation of future impacts to ecosystems. In addition, NLCD data are an invaluable national resource used in a large number of applications ranging from commercial sector (locating cell-phone towers), scientific activities (quantifying potential pollution removal), education (landscape visualization), and government organizations (emergency response).

The NLCD website delivers a standard map showing all 21 datasets. Alternatively, users can specify which data sets and data set parameters they want. The LANDFIRE Program uses this feature to add tree species and canopy structure information to produce fire fuel maps.

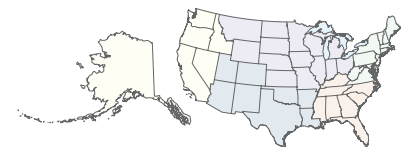
Innovation/Highlight

“Database” land use maps allow users to specify which combination of 21 land characteristics they want to identify and acquire.

Project Contact

Nick Van Driel
USGS
605-594-6007
vandriel@usgs.gov

Website: www.mrlc.gov



Presidential Quail Initiative

Restoring Habitat for the Northern Bobwhite Quail

Location: National (35 States)

Project Summary: The U.S Department of Agriculture (USDA) Farm Service Agency (FSA), the Conservation Reserve Program (CRP), and natural resource management agencies and groups developed a national, habitat-based recovery plan to reverse decline in bobwhite quail populations.



Native grass buffers provide good nesting and chick-rearing habitat for northern bobwhite quail.

Resource Challenge

Bobwhite quail populations have dropped from an estimated 59 million birds in 1980 to 20 million birds in 1999, primarily due to loss of habitat as abandoned farmlands grew into forests or were developed. Other upland birds with similar habitat requirements, including many songbird species, have also suffered significant declines. Unless action is taken to restore habitat for these species, wildlife scientists expect this downward trend to continue.

The populations of some birds, for example, wild turkeys, have been successfully restored through large-scale conservation initiatives. These successes have given wildlife conservationists reason to be optimistic that, with an effective, collaborative approach, they may be able to reverse the bobwhite decline as well.

Examples of Key Partners

USDA Farm Services Agency, Southeast Quail Study Group of the Southeast Association of Fish and Wildlife Agencies, Mississippi State University Department of Wildlife and Fisheries, Quail Unlimited, State Fish and Wildlife agencies in 35 states, International Association of Fish and Wildlife Agencies, Congressional Sportsmen's Foundation, Partners In Flight, local farm producers, and others.

Results and Accomplishments

In August 2004, President Bush announced the Quail Initiative, committing an estimated \$125 million to the project. The initiative is expected to create more than a quarter million acres of habitat for the northern bobwhite quail and other upland bird species, primarily through the Conservation Reserve Program (CRP).

The CRP's enrollment authority has been set at 250,000 acres for the initiative. To date, more than 48,000 acres have been enrolled. Quail populations are expected to increase by 750,000 birds annually across the 35-state region.

Innovation/Highlight

The Quail Initiative identified an effective management practice using existing conservation infrastructure, incorporated it into modern agricultural production systems, and delivered it on a broad scale.

Project Contact

Donald McKenzie
Northern Bobwhite
Conservation Initiative Coordinator
501-941-7994
wmidm@ipa.net



Website:
www.fsa.usda.gov/pas/publications/facts/html/quail04.htm

Return of the Wild Turkey in North America

The Wild Turkey Makes Tracks to Recovery

Location: North America

Project Summary: The National Wild Turkey Federation worked with its partners to restore wild turkeys to all suitable habitat across North America.



Releasing wild turkeys into suitable habitat was key to restoring these majestic game birds.

Resource Challenge

Wild turkeys were part of the American landscape long before European settlers arrived. This great game bird helped feed a growing nation as pioneers swept westward and settled the land. However, as the Nation grew, lack of conservation nearly wiped out the wild turkey forever.

Although state and federal agencies began wild turkey restoration 70 years ago, the Making Tracks partnership put the process on the fast track. Laws regarding the sale and transportation of wildlife made moving wild turkeys from state to state a challenge. Wild turkey biologists and researchers from each state joined together on the National Wild Turkey Federation (NWTf) Technical Committee, which coordinated interstate transport of the birds. The NWTf helped work out a process to reimburse donor states for trapping costs, and also has been coordinating agency efforts, providing funds for research, and trapping wild birds and releasing them on National Forests and elsewhere.

Examples of Key Partners

All USDA Forest Service regions in the continental U.S., other federal agencies, state and provincial wildlife agencies, hunters, National Wild Turkey Federation (NWTf) Technical Committee, and its more than 525,000 members.

Innovation/Highlight

The National Wild Turkey Federation and its partners overcame barriers to interstate transportation of turkeys and helped reimburse states for trapping costs, putting wild turkey recovery on the fast track.

Results and Accomplishments

Wild turkey populations have increased from a low of 1.3 million birds in 1973 to nearly 7 million birds across North America today.

The number of turkey hunters has increased along with the number of turkeys. America's three million turkey hunters spend an estimated \$2 billion annually, much of it boosting local economies and benefiting conservation through license fees and Federal Aid in Wildlife Restoration excise taxes.

With the support of its corporate partners, NWTf has given wildlife agencies more than 135,000 wild turkey transport boxes, which have been used to transport more than 186,000 birds.

The NWTf and its cooperators have spent more than \$202 million on restoration and habitat improvement projects, benefiting the wild turkey as well as many non-game, threatened and endangered species.

The NWTf, state wildlife agencies, and the USDA Forest Service have completed 1,100 projects on National Forests since 1986.

The NWTf provided seed money for the USDA Forest Service's Challenge Cost Share Program, providing matching dollars through the Hunting Heritage Super Fund, corporate sponsors, and other donors

Project Contact

Rob Keck
Chief Executive Officer
National Wild Turkey Federation
803-637-3106
pgoad@nwtf.net

Website:
www.nwtf.org/all_about_turkeys/history_of_hunting.html



Western Regional Air Partnership

Improving Visibility in Western Parks and Wilderness

Location: Western U.S.

Project Summary: The Western Regional Air Partnership (WRAP) produces technical analyses, policies, and integrated consensus solutions for addressing regional haze in the West.



Monument Valley, Navajo Tribal Park, Utah

Resource Challenge

Regional haze obstructs scenic vistas across the western states, thus impairing the aesthetic and economic value of parks and wilderness areas. As this haze diminishes visibility, it diminishes the resource and recreational value of public lands and harms local communities whose economies depend on tourism. Haze-forming pollutants have also been linked to respiratory illness and impaired lung function. Particles such as nitrates and sulfates contribute to acid rain. This presents a challenging problem for federal, state, and tribal regulators because the haze is generated by the cumulative emissions of numerous sources over a very wide geographic area.

Examples of Key Partners

Thirteen western states, western tribes including Nez Pierce, Hopi, Northern Cheyenne, Pueblo of Acoma and others; National Tribal Environmental Council, environmental groups, industry, U.S Environmental Protection Agency (EPA), U.S Department of the Interior (DOI), USDA Forest Service (USDA-FS), and others.

Results and Accomplishments

The WRAP is a voluntary organization of western states, tribes, and federal agencies which develops data, tools, and policies for states and tribes to improve visibility in parks and wilderness areas across the West. The successor to the Grand Canyon Visibility Transport Commission, it is working to implement the recommendations of that Commission.

The Partnership’s many committees and forums are researching, gathering, and sharing data on a variety of air and haze-related

topics such as wind-blown dust, sulfur dioxide, ammonia, and fire emissions. Scientific findings and policy options are presented to policy makers and the public for discussion and comment. The Partnership’s committees and forums seek consensus among stakeholders, including government partners, large and small businesses, academia, environmental groups, and other public interest representatives. The WRAP is committed to bringing together all those who may contribute to or be affected by poor air quality.

The WRAP work accomplishments include:

- The first comprehensive inventory of haze-causing air emissions in the West, including a comprehensive emissions tracking and forecasting system.
- A voluntary, market-based program to reduce sulfur dioxide from industrial sources.
- Regional air quality modeling.
- Guidance for states and tribes regarding both the pollutant source types and regions that are contributing to visibility impairment in national parks and other federally-protected Class 1 areas.
- Identifying and filling gaps in air quality data for tribal lands.
- Developing measures to reduce the effects of prescribed fires, and developing a tracking system for fire emissions.

Innovation/Highlight

The Partnership recognizes that solutions are best reached and implemented at the local, state, tribal or regional level with public and stakeholder participation.

Project Contact

Patrick Cummins
WRAP Co-Director
Air Quality Program Manager,
Western Governors Association
303-623-9378
pcummins@westgov.org



Website: www.wrapair.org