The mission of the U.S. Fish and Wildlife Service is working with others to conserve, protect and enhance fish, wildlife, plants and their habitats for the continuing benefit of the American people.
Brook trout and brown trout swim over this Cox Brook cascade, now that a dam is gone.

Vermont’s Dog River has long been recognized as an outstanding trout stream, and now the fishing stands to get better, following the removal of a small dam on the tributary Cox Brook. The U.S. Fish and Wildlife Service’s Lake Champlain Fish and Wildlife Resources Office and New England Field Office cooperated with the landowner, Trout Unlimited, Vermont Department of Environmental Conservation, and the Vermont Fish and Wildlife Department to remove the obsolescent dam near Northfield. With the dam gone now, brook trout and brown trout have another two and a half miles of connected habitat. The 1900’s-era dam, situated at the top of an impressive series of bedrock cascades, was never used for a commercial venture. But the new habitat will apparently be used: trout leap into the cascades, maneuvering through the construction site the day after the project was completed in September. The National Fish Passage Program and the Partners for Fish and Wildlife Program paid the cost of removal. The Vermont Fish and Wildlife Department will annually monitor the fishery.

Madeleine Lytle

Don’t flush your meds

You might have a cache of unwanted medications. But don’t flush them. Science shows that the therapeutics can show up in water you drink. They can also feminize fish that swim in it – that is, turn the boys into girls.

Thanks to a partnership with the LaCrosse Fish and Wildlife Conservation Office and Franciscan-Skemp Healthcare, people in WI, MN, and IA are doing the smart thing. They unload their unneeded meds at the LaCrosse County (WI) Household Hazardous Materials station. Nearly seven tons of medicines have been incinerated since collections started in 2007. To learn more about what you can do where you live, go to smartxdisposal.net. • Mark Steingraeber

American Sportfishing Association turns 75

In 2008, the American Sportfishing Association (ASA) celebrated 75 years of serving the sportfishing industry. The trade association was created in 1933 to oversee the industry. Since then the association has evolved from representing the interests of just tackle manufacturers to championing the entire sportfishing community.

As the nation’s recreational fishing trade association, ASA supports the interests of businesses, agencies and organizations and is the resource for protecting the sportfishing industry. ASA’s members include sportfishing and boating manufacturers, independent and chain outdoor retail stores, state fish and wildlife agencies, conservation organizations, federal land and water management agencies, angler advocacy groups and media.

Through advocacy, ASA and its foundations – FishAmerica and Future Fisherman – safeguard the economic and conservation values of sportfishing; keep the nation’s fisheries and waterways healthy and introduce new anglers to one of America’s most popular outdoor activities.

ASA also represents the nation’s 40 million anglers who generate more than $45 billion in retail sales with a $25 billion impact on the nation’s economy creating employment for 1 million people. • Mary Jane Williamson

BASS turns 40

For 40 years, BASS has been the voice of conservation and a source of education and tournament venues for anglers everywhere. To mark the occasion of BASS’ 40th anniversary and to salute BASS members and their passion for the sport, BASS hosted a calendar full of special events in 2008 while continuing to celebrate BASS’ accomplishments and forward-reaching impact on the sport.

BASS has been at the forefront of conservation since its inception in 1968. From its “catch and release” concept and the Clean Water Act, which guaranteed quality bass habitat for generations, to advocacy efforts to enhance fishing infrastructure and maintain access to public waters, BASS has been the angler’s best friend, ally and guardian for 40 years.

BASS continues to move forward and evolve its tournament formats. In 2009, the first woman will compete in the Bassmaster Classic as the 2008 Toyota Women’s Bassmaster Tour Angler of the Year will qualify for the premier tournament.

“It truly is remarkable to celebrate 40 years as the worldwide leader in the industry,” said Tom Ricks, vice president and general manager of BASS. “We are proud of our rich history and look forward to celebrating another 40 more years at the forefront of the sport.” • Doug Granian

FEATURED FACILITY

Maine Fisheries Complex

Where: East Orland and Ellsworth, Maine
When: Craig Brook National Fish Hatchery 1888, Green Lake National Fish Hatchery 1972, Maine Fishery Resources Office 1987
Then: By the 1860’s, the Atlantic salmon had virtually disappeared throughout its range. Logging damaged fish habitat; dams blocked passage to spawning habitat, unregulated commercial fishermen took too many. The two National Fish Hatcheries of the present-day Maine Fisheries Complex were built to raise Atlantic salmon.

Now: Craig Brook raises six Atlantic salmon stocks each one specific to Maine rivers – the Dennys, Machias, East Machias, Pleasant, Narraguagus and Sheepscot. They also capture returning Penobscot River Atlantic salmon, spawn, and then release their two million fry into the Penobscot. Green Lake raises over one million Atlantic salmon smolts and parr for the Penobscot, Narraguagus and Merrimack rivers.

Maine Fishery Resources Office biologists restore fish habitat and solve fish passage problems for Atlantic salmon, American eel and brook trout. With their breadth of expertise in science and technology, they provide fisheries management assistance to others throughout Maine. • E. Peter Steenstra

Partners for conservation

The Chaseburg Rod and Gun Club held its annual community event in September, inviting kids and families to Genoa National Fish Hatchery, WI, to come out and learn to shoot clay pigeons, load and shoot a muzzle loader, throw an axe at a target, and get involved in hunting and fishing. Over 30 kids and 20 adults participated in educational sessions provided by the Wisconsin Department of Natural Resources, and the Rod and Gun Club. Partnering up for events like this allows everyone to reach a wide crowd with varying interests, and introduces them to fish management practices, hunting and fishing ethics, and the conservation work of the National Fish Hatchery System.

Jenny Walker

Bassmaster Classic as the

BASS' accomplishments

BASS continues to move forward

BASS has been the angler's best

BASS has been at the forefront of conservation

BASS continues to move forward and

BASS has been at the forefront of conservation

BASS has been the angler's best friend

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BASS has been at the forefront of conservation
Cataloging salmon waters

They live two lives. Pacific salmon begin life in freshwater, spend most of their lifetime in saltwater, and return to freshwater to spawn. In Alaska, Pacific salmon freshwater habitat is afforded protection under state law if the habitat is listed in the Anadromous Waters Catalog (AWC). About 16,000 rivers and lakes are currently protected. But scientific surveys indicate that this number represents less than 50 percent of habitats actually used by the five Pacific salmon species.

In 2008, biologists from the U.S. Fish and Wildlife Service’s Anchorage Fish and Wildlife Field Office surveyed 31 different streams in the Matanuska-Susitna Basin, resulting in 19 nominations to the AWC. Four of those nominations were from streams previously unmapped. More nominations are expected when biologists resume field work in 2009. Extending the AWC benefits fish, people, and fishing – especially in the Mat-Su Basin – where the human population is among the fastest growing in the U.S.  Abigail Lynch

Connecting kids with catfish

For more than 10 years, Welaka National Fish Hatchery has partnered with the Florida Fish and Wildlife Conservation Commission to provide quality fishing experiences to youth in urban areas. The stocked ponds in the state’s Community Fish Management Program provide year-round fishing opportunities, and receive about 2,000 hours of fishing per acre each year. They also support many outreach events.

In 2007, more than 13,200 children participated in youth fishing activities at these sites. The program has received national recognition for providing “close-to-home” fishing opportunities.

“The long-term benefits of this type of exposure to nature are tremendous for Florida’s children,” says Welaka manager Allan Brown. “Here more than 85 percent of the population lives in urban areas, and the majority of children in the state are now from minority groups.”

The cooperative efforts begin in the spring, when the state provides Welaka NFH with fingerling channel catfish. Welaka provides the facilities and labor to grow these fish to a catchable size. When they are ready for harvest, partners work together for transport of the fish to these wonder-filled urban ponds.  Judy Toppin

New online community connects boaters, anglers

While the temperatures continue to drop, the action is heating up in a new online community that’s connecting boaters and anglers like never before! Fishington – The Fishing & Boating Capital of the Internet – was introduced in November 2008 by the Recreational Boating & Fishing Foundation. Specifically tailored for boating and fishing enthusiasts, Fishington allows members to share tips and advice, upload photos and videos, join groups and swap stories with boaters and anglers from all over the country. Anyone who is 18 years or older can join. Create your profile and start connecting at Fishington.com.  Stephanie West

Sanctuary for the Rio Grande silvery minnow

In 2009, the U.S. Fish and Wildlife Service’s New Mexico Fish and Wildlife Conservation Office (FWCO) will operate the new Rio Grande Silvery Minnow Sanctuary in Albuquerque, NM. The FFWCO, the Bureau of Reclamation, the Middle Rio Grande Conservancy District and City of Albuquerque built the outdoor facility. Its 1,300 ft of flowing waters mimic the natural flows of the Rio Grande, and will hold the endangered Rio Grande silvery minnow to protect against losses in the wild population in a river prone to dry up. The Sanctuary joins the Dexter National Fish Hatchery and Technology Center in southern NM, in rearing the fish. The Dexter facility released 500,000 minnows into the Rio Grande at Big Bend National Park in Texas in December where it had been absent for 50 years. This fish of the Rio Grande once swam from northern New Mexico to its mouth. Aside from the Big Bend stocking, the fish is confined to waters near Albuquerque, New Mexico.  Angela Carrillo

POSTCARDS

Nashua National Fish Hatchery

The Nashua National Fish Hatchery was established in 1898. Waldo Hubbard moved from the Clackamas National Fish Hatchery, OR, that year to take over as first Superintendent of the new hatchery in Nashua, New Hampshire. His son, Harry, got his start at the hatchery and later worked on rail cars transporting fish across the country. The 1898 U.S. Fish Commission report described the site near the Nashua River as possessing “in greater degree than any others examined in the State the requisites for a fish hatchery...The property is well suited for a favorable arrangement of buildings and ponds.” This favorable arrangement came to pass by 1905 when this postcard was created.  Mark Madison

Partnerships for the endangered silvery minnow help edge the fish toward recovery

The long-term benefits of this type of exposure to nature are tremendous for Florida’s children,” says Welaka manager Allan Brown. “Here more than 85 percent of the population lives in urban areas, and the majority of children in the state are now from minority groups.”

The cooperative efforts begin in the spring, when the state provides Welaka NFH with fingerling channel catfish. Welaka provides the facilities and labor to grow these fish to a catchable size. When they are ready for harvest, partners work together for transport of the fish to these wonder-filled urban ponds.  Judy Toppin

Youth across Florida enjoy catching big catfish close to home.
Jack Hemphill posed for this photo while serving as the Regional Director for the Great Lakes-Big Rivers region, headquartered in Minneapolis circa 1973.

Jack Hemphill

By Lee Allen

The “unique invention” mentioned was a Hemphill creation that had a fisheries crew drilling thousands of holes in 2,700 feet of plastic hose that was then anchored across a wide bay and connected to an air compressor on shore. When temperatures of 25 below zero brought ice-out conditions and the lake’s oxygen content dropped to a deadly 2.1 parts per million, the crew cranked up the compressor, pushing air through the hose and opening a hole in the ice that allowed the lake – and its finned inhabitants – to breathe again.

Much of Hemphill’s creativity found its way into the pages of scientific journals and ichthyology history such as his early experiments with toxaphene. Before its dangers were ultimately appreciated, the fish toxicant became the second most-used next to rotenone, as a way of controlling freshwater fish with chemicals.

As a result of his experiments, Hemphill began to publish results in a variety of publications starting in the early 1950’s like the Big Eddy Sport Fishing and Wildlife abstracts, and Transactions of the American Fisheries Society. His “Development of Sport Fishery Resources on Indian Lands in the Southwest” described early-day efforts at opening up Indian lands in the Southwest. “Problems are now being formulated in cooperation with the U.S. Fish and Wildlife Service to develop these fisheries and overcome problems encountered in that development on Indian lands,” reported the American Fisheries Society publication.

Chief among the listed successes was Hemphill’s Fort Apache Indian Reservation program. “With the support of Arizona’s highly regarded Senator Carl Hayden, Jack helped form the Aleheasy National Fish Hatchery,” says Thoesen, who worked at the nearby Williams Creek National Fish Hatchery. “Although it was long before the Endangered Species Act went into effect, we knew we had a different species of trout in these mountain top headwaters. There was no funding for propagation, but Jack and I would go up to Diamond Creek and trap them and observe them because we knew they were different.” Indeed they were – Oncorhynchus apache – initially listed under the Endangered Species Act as ‘endangered’ (subsequently downlisted to ‘threatened’), the Apache trout, one of two trout native to the state and found nowhere else in the world, is now Arizona’s official state fish.

“When it came to consideration of endangered species and trying to make sense out of a nationwide mess, it took some creative thought to ensure forward motion,” Hemphill says. “Fortunately, I had a mind of my own and realized early that you have to play your cards efficiently and lay down a basic foundation to make any progress.”

Hemphill came to work for the U.S. Fish and Wildlife Service in 1955. He efficiently applied his field experience in a foray into the national headquarters in Washington, DC, in the late 1950s where he worked for a time.

Perhaps Hemphill’s greatest contribution to the fisheries world was made then, when he created what’s presently called the Fish and Wildlife Conservation Offices. The network of FWCOs unites several hundred professionals in seven regional offices and 65 field offices in 34 states. Fisheries professionals in the FWCOs do what Hemphill did while back in Arizona, touched upon in Sports Illustrated. It’s on-the-ground and in-the-water work they do, assessing fish populations, determining what to do if a population is depleted and then getting it done. They work with salmon in the West, rare desert fishes in the Southwest, behemoth alligator gar in the South, tiny darters in the Midwest, and Atlantic salmon in the Northeast. Hemphill had the career experience of a state game and fish agency biologist and knew where the U.S. Fish and Wildlife Service could step up for conservation.

People and partnerships are the core strength of the FWCOs; they are unique in their ability to work across state lines and Indian lands. The work is generally non-regulatory and done in partnership with willing people and agencies for the benefit of fish.

“Jack got all that started,” says Thoesen. “In the early days, we didn’t have a lot of science involved. We put them where there were fishermen. Jack recognized that by managing these efforts, we could make a more economical use of the hatchery product. He worked with everybody involved to develop total management of a species rather than just dumping them where it was convenient. If you apply this to millions of fish of different species, you can see the compound effect.”

After a time in the national headquarters, Hemphill eventually moved up to become the Regional Director of the Great Lakes-Big Rivers Region, based in Minneapolis, in 1973. Retirement took him to Panama City, FL, where he presently makes a home with his wife, Norma.

If he had the chance to re-do his career, Hemphill, approaching his 85th birthday, is slow to answer the question, but when he does it’s with a firm conviction: “I might consider it if I could correct the mistakes I made, or overcome the inability to make some things happen.”

In the tradition of Jack Hemphill, biologists (l-r) Stewart Cogrell, Chuck Breese, Dale House, and John Netta, with the Green Bay Fish and Wildlife Conservation Office collect data from spawning lake trout netted in Lake Michigan near Algoma, WI. House holds an envelope with fish scales used to determine age and growth rates of the trout.
Lahontan cutthroat trout. The wet
the black-spotted bronze flanks of a
today are named for a fiction.
the last incarnate of it when he wrote
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weighed 62 pounds.
American Fishes
Winter 2008
Eddies
Vol. 1, No. 4
Reflections on Fisheries Conservation
By Craig Springer

The Lahontan cutthroat trout is one of 13 described cutthroat subspecies in the American West. The largest known specimen
weighed 62 pounds.

French Marine Corp officer, Louis Armand de Lahontan, never laid eyes on his namesake cutthroat trout. Nor did he visit the place in Nevada stamped with his name. The Frenchman voyaged no further than the upper Mississippi from his Michigan outpost. But he wandered widely when he wrote a travelogue published in Europe in 1703. Travel writer, de Lahontan, claimed he found a link to the Orient via the Longue River. Makers of maps believed it. Explorer John C. Fremont sought the last incarnate of it when he wrote about a gift of enormous trout that today are named for a fiction.
The light from the midday sun strikes the black-spotted bronze flanks of a Lahontan cutthroat trout. The wet
and flow of ice, and a fortuitous find from a true travel story.
The Lahontan cutthroat trout evolved in the ancient Lake Lahontan where at its maximum size covered about 8,600 square miles of Nevada, and parts of California and Oregon. It’s one of 13 described subspecies of cutthroat trout in the American West.
Fossils of this fish swim in stone in the lake basin bottom. As glaciers retreated north in the last ice age, the basin dried to a few isolated lakes, leaving playas and friable Great Basin dirt. With the long press of time in waters that became more alkaline, the Lahontan cutthroat trout developed into a fish able to withstand environmental extremes that today readily kill other fish species.
With the receding waters, two forms of the trout arose: one accustomed to life entirely in streams, from tiny headwaters to larger rivers that banded the margins of the ancient Lake Lahontan basin. The other form was a lake-dweller.
Present-day Pyramid and Walker lakes, the sumps of the ancient Lake Lahontan basin, held the lake-
dweller. Water only naturally leaves these lakes to slake the sun. With evaporation rates high, mineral content in the water is extremely high – and Lahontan cutthroat trout not only tolerate it, they evolved to thrive in it.
These lake-form fish had other remarkable adaptations to life in flat water. The number of filaments inside their throat called gill rakers are exceedingly high for any trout in the American West, indicating a habit of feeding on microscopic animals in lakes. Another adaptation speaks to diet; this lake-form fish has a digestive track for preying on fish – cui-ui sucker, tui chub, and cannibalizing its own.
These fish-eating lake-dwellers grew to phenomenal size. Fremont was the first writer of English to document the fish in 1844. Pyramid Lake Paiute Indians gave his party fish up to four feet long. Naturalist Henry Henshaw collected a trout on the Wheeler survey in 1876, and U.S. Fish Commission scientist, Theodore Gill, gave it a name for science in 1878. The largest known specimen tipped the scale at 62 pounds in 1916.
Talk of fish this large is largely an endeavor in history. What took the slow grind of time to create was undone by the curtive strokes of a fountain pen in 1905. This very first water development project by the Bureau of Reclamation dropped Pyramid and Walker lakes to irrigate those friable fields. All cutthroat trout, Lahontan included, must spawn in flowing water and Pyramid Lake cutthroat could no longer swim into the Truckee River to reproduce.
By simple attrition from the inability to spawn, Pyramid Lake was devoid of the leviation cutthroat trout by 1909. The fish that carried in its genes the stamp of life in harsh lake waters and the ability for tremendous growth was extinct.
So or it was thought. Fast forward to the 1970s; the Lahontan cutthroat trout came to reside on the list of species threatened with extinction, and it came to reside outside its native range. This subspecies has been stocked well outside its native range, including New Zealand and alkaline lakes in the cojole region of Washington. Trout from Pyramid Lake traveled overland into a small, fishless stream, Morrison Creek, on Utah’s Pilot Peak and that’s proved priceless. When, and who moved the trout, no one knows. A recent genetics study by the University of Nevada–Reno reveals that the trout residing on this Utah mountainside are the original lake-forming fish of Lahontan cutthroat trout.
And they have since come to reside elsewhere; Lahontan National Fish Hatchery. The fish that Bigelow wrangled from a tank is a Pilot Peak fish, or more accurately stated – a Pyramid Lake fish. It carries an ancient lexic of life in the alkaline lake and the Truckee River that feeds it.
Lahontan cutthroat trout are the only fish kept at the hatchery. U.S. Fish and Wildlife Service fish biologists carefully manage them. By design, families are kept separate, so are the family founders, and the young are frequently graded and separated to keep bigger fish from smaller fish. The need to do so speaks to that inborn, innate sense for piscivory of the lake-form fish. Even at the earliest ages they tend to want to eat fish flesh. To keep the wild in the fish, fertilized eggs from trout captured in Morrison Creek are brought to the hatchery, and infused into the broodstock.
Pyramid Lake Lahontan cutthroat trout from the hatchery are making their way back to native waters. There, they will contribute significantly to the recreational fishery managed by the Paiute Indian Tribe. Over 28,000 Lahontan cutthroat trout fry hatched in and imprinted on Truckee River water at the Marble Bluff Fish Passage Facility, operated by the U.S. Fish and Wildlife Service’s Nevada Fishery Resources Office near the river’s mouth. These young trout were stocked in headwater streams of the Truckee in 2007 where they are expected to grow and return to Pyramid Lake much as their ancestors did up to a century ago.
It’s no fiction at all that a decade from now 20-pound trout may travel through downtown Reno, up the Truckee, past an angler or two, back to ancestral spawning gravels in headwater streams.
No Trout Left Behind

The landscape-scale Western Native Trout Initiative puts trout conservation where it’s needed most

By Mike Stempel

It’s an arduous hike to get into the headwaters of the North Fork Frying Pan River, and the payoff is tremendous. Colorado River cutthroat trout swim these waters, and I’ve gone there with some frequency over the years, just over the mountain from my Denver home.

It’s a tiny creek, where wearing waders is over-dressing. Willow whips in places arch over the water; they make shade, cooling the creek, and they drop bugs into the water. Trout like that. Stealth, a three-weight rod and a bow cast is the order of the day. An Elk Hair Caddis on a #18 hook looks more like a white-winged moth that might fall from a willow on a breeze. At least that’s my reasoning pitting wits with a cutthroat trout, and pulling one in from a seam of water on the edge of an undercut.

This little brassy-green trout is stippled black, mostly on the tail and back. Their bellies are a bruised stippled black, mostly on the tail and back. Their undersides are crimson like freshly spawning. It’s then that their orange, at least when they are back. Their bellies are a bruised stippled black, mostly on the tail and back.

Catching a Colorado River cutthroat is like holding a fragment of a missing dream. About 150 pure populations of Colorado River cutthroat trout exist today—fragmented from their original and near-contiguous natural range. A range map shows they lived in a large upside-down U, from northwest New Mexico, through western Colorado and Wyoming, southward through central Utah, essentially marking tributary waters to the Colorado proper. Through that immense area, the Frying Pan, and about 150 others like it are small fragments of what once was a well-connected network of pure Colorado River cutthroat trout streams veining the higher slopes of the Colorado River basin. The Colorado River cutthroat trout lives in about 16 percent of its original range today.

The troubles of this fish I catch close to home aren’t an isolated tale. Western native trout through the 12-state West have similar stories of peril. Their habitats have been altered against their favor. Their waters were developed for irrigation, flood control, and hydropower. Non-native brown, brook and rainbow trout stocked on top of them in an age much different than ours have now displaced the native fishes. Native trouts couldn’t compete for food and space with the introduced trouts. They hybridized into mongrel fish. The exotic whirling disease found its way into cutthroat waters. Throughout the West native trouts retreated to isolated and fragmented headwater streams, and live in meager remains of their natural distribution. Nine cutthroat streams through the Rockies and Sierras, and Pacific Northwest are greatly reduced in number. Same for the desert trout—the Gila and Apache trouts of New Mexico and Arizona—and the bull trout of Northwest, and the most beautiful of all, the golden trout of California.

But help is on the way in a landscape-scale partnership, the Western Native Trout Initiative, which blurs the lines of political boundaries of states and federal and tribal lands and targets conservation resources where they are needed for the benefit of native trout. In the past, trout conservation itself has been fragmented, done piecemeal. The Western Native Trout Initiative sharpens the focus of native trout conservation with multiple partners planning and working together on a common need. The Wyoming Game and Fish Department’s chief of its Fish Division, Mike Stone, chairs the Western Native Trout Initiative. He leads an engaged and enthusiastic team of similarly placed people in the western-state fish and game agencies, as well as biologists from the U.S. Fish and Wildlife Service, the U.S. Forest Service, and the Bureau of Land Management.

The Western Native Trout Initiative is only a few years old, but it’s already paying off for native trout and the people who fish for them. A multistate grant from the Western Association of Fish and Wildlife Agencies and the National Fish Habitat Plan funded habitat restoration projects from Montana to New Mexico and Alaska to California. Closer to home for me, and the Colorado River cutthroat trout, there’s much to do with our partner, the Colorado Division of Wildlife, like assess the genetics relationships with closely related greenback and Rio Grande cutthroat trouts, the other two trout native to Colorado. We also need to remove barriers to re-connect trout habitats, while at the same time elsewhere, ensure that barriers to non-native trout colonization remain just that.

We’re making strides. But the western landscape has taken 200 years of steady degradation. We must be dedicated to a very long-term commitment to staunch the losses to native trout and turn the decline the other way.

As climate changes and people need more water, western native trout will be the “canaries” showing us that mountain ecosystems are hurting. That will hurt economies, too. Economists estimate that trout anglers in the Rocky Mountains generate $12 billion spent on travel, lodging, tackle and supplies. I don’t think twice about spending the money for a trip to the Frying Pan. The payoff is catching a brassy-green trout, and free physical and mental rejuvenation.

For more information on the Western Native Trout Initiative see: www.westernnative trout.org.

Mike Stempel is an ardent angler, mountain biker and fiddle player. He’s also the Assistant Regional Director – Fisheries, for the U.S. Fish and Wildlife Service’s Mountain-Prairie Region, based in Lakewood, CO.

Colorado Division of Wildlife biologists (l-r) Bill Atkinson, Jon Ewert, and Adam Hansen collect Colorado River cutthroat trout broodstock from Lake Nanita in the Frying Pan River, and the payoff is catching a brassy-green trout, and free physical and mental rejuvenation.

Mike Stempel is an ardent angler, mountain biker and fiddle player. He’s also the Assistant Regional Director – Fisheries, for the U.S. Fish and Wildlife Service’s Mountain-Prairie Region, based in Lakewood, CO.

Colorado Division of Wildlife biologists (l-r) Bill Atkinson, Jon Ewert, and Adam Hansen collect Colorado River cutthroat trout broodstock from Lake Nanita in the Rocky Mountain National Park.
A Scout’s Mission to Save the Mojave Tui Chub

By Bob Mazzuca

On one recent trip with a group of friends in the Florida Keys, I had the thrill of catching bone fish – a great game fish. We also caught barracuda. The memories stir deeper thoughts of fish, and the connection of fishing and conservation, and important role conservation plays in Scouting.

When I think about Scouting’s mission as we approach our 100th Anniversary in 2010, conserving our natural resources easily makes the list of our top priorities. Scouts play a huge role in conservation. Our ArrowCorps project with the U.S. Forest Service this past summer saw 5,000 members of the Order of the Arrow, Scouting’s national honor society, working more than 250,000 man-hours of service. Their efforts resulted in more than $5 million worth of improvements, conservation, and construction work at five national forests.

We also encourage our Scouts to lead individual projects to show our commitment to the outdoors and leaving things just a bit better for future generations to enjoy. I was heartened recently by a conversation I had with Kevin Anderson, an Eagle Scout with Troop 885 in Whittier, California, who saw his personal commitment turn into a wonderful conservation project at Camp Cady Wildlife Area. He is a great fan of the outdoors, has fresh air and clean water in his blood; he fishes, hikes, and hunts. Kevin’s long-time goal is to work for the California Department of Fish and Game.

Kevin is on a short-term quest to earn the Hornaday Silver Medal, a national Scouting conservation award named for the late William T. Hornaday. The medal recognizes outstanding efforts in planning, leadership, involvement of others, and opportunities taken to help others learn about natural resource conservation and environmental improvement.

As one of four conservation projects required to earn the medal, Kevin identified the need to help protect an endangered fish species, the Mojave tui chub, a minnow typically that grows no larger than eight inches long. He quickly organized an Eagle Scout project to help create a new refuge for this small, but significant minnow.

The problem for the chub was one of habitat. Once abundant in the Mojave River, the species almost disappeared when the Mojave changed course and went underground. Only a few freshwater ponds formed by the Mojave at the Camp Cady Wildlife Area kept the chub alive, and one of those emptied after a leak. Kevin identified the need to restore the empty pond to expand Camp Cady’s capacity.

Under Kevin’s direction, 25 Scouts and parents spent a July weekend cleaning debris and dead trees around the pond so it could be later filled with a clay sealant and hold water. It was a big job, and a hot one to boot. Temperatures at the work site climbed to 108 degrees. “It was really hot out there, and we couldn’t work all day, so we didn’t have much time,” Kevin told me.

On another weekend, Kevin and another team of volunteers returned to Camp Cady to plant 27 natural cover trees around the pond to provide a natural barrier to prevent erosion and wind from filling the pond with dirt and sand.

Kevin’s project at Camp Cady now gives Mojave tui chub another pond to provide for its survival, not to mention habitat for other wildlife – quail, small game, and many non-game birds and animals.

Somebody would argue that this little Mojave tui chub in these little ponds doesn’t make a big difference in the grand scheme of things. I would counter using Kevin’s words: “There are always people out there studying them, and it’s important to have fish native to the area, not just fish from other places.” The U.S. Fish and Wildlife Service’s California-Nevada Fish Health Center conducts tests on disease, and the Ventura Fish and Wildlife Office partners with others for club habitat conservation.

Kevin and his conservation efforts make all of us in Scouting very proud. Field & Stream magazine named Kevin a “Hero of Conservation.” The world needs Eagle Scouts today more than ever before, and Kevin is a great example of why. The Mojave tui chub may not be a big fish, but the efforts to preserve it are a big reason to encourage all conservation efforts, no matter the size.

I learn a lot from listening to Scouts like Kevin, and I think we all can learn Conservation and the things that we can do are first and foremost very important to us as a human species to be good stewards – we all know that in our heads, but rarely do we collectively do something about it. Whenever Scouting can do a project like ArrowCorps with such high visibility, you raise the awareness with all of those around you to the importance of these kinds of things.

We were “green” before green was a color. Scouts have always had a passion for the out-doors and the essence of Scouting’s Outdoor Code is “leave it better than you found it.” At the end of the day, it’s going to be organizations like Scouting that will help create a new generation of conservationists, and that’s exciting. And thanks to the leadership of Eagle Scouts like Kevin Anderson, we can be assured that America’s outdoor treasures will endure for future generations.

Robert “Bob” Mazzuca is Chief Scout Executive, Boy Scouts of America, in Irving, TX.
It's a family affair. Excise taxes on fishing tackle and boats fund fisheries conservation.

Celebrated waters around the country are bound together in conservation law like a blood knot binds fishing line. Whether it’s the pugnacious pull of a smallmouth bass from Dale Hollow Lake in Tennessee, a heavy-shouldered rainbow trout from Montana’s Madison River peeling a fly reel to the backing, or the dead-weight drag of a 15-pound largemouth bass from Texas’s Lake Fork, a remarkable conservation partnership ensures the well-being of these fisheries. Partnerships between anglers and fishing tackle and boating equipment manufacturers, and state fish and game agencies and the U.S. Fish and Wildlife Service guarantee the scientific management of fish and their habitats for the future of fishing across the country.

A dynamic duo of two excise taxes passed by Congress more than 50 years ago fostered the partnership. Hunters and the shooting arms industry work together under the Pitman-Robertson Wildlife Restoration Act, passed in 1937, to benefit wildlife and hunting. And anglers, they work in concert with fishing tackle and boating manufacturers under the Dingell-Johnson Sport Fish Restoration Act, passed in 1950. Both Acts embody the “user pay-user benefit” concept. Anglers pay excise taxes on equipment and anglers can expect to reap the benefits of more abundant, higher-quality fisheries and fishing opportunities.

The Sport Fish Restoration Program is a cycle of success; it is the largest and most successful fisheries conservation program in the world. How it came to be is a bit of a circuitous journey.

The story begins in 1939, when Congressman Frank H. Buck of California introduced legislation imposing a 10-percent excise tax on certain equipment related to recreational fishing. Hunters and the shooting arms industry work together under the Pitman-Robertson Wildlife Restoration Act, passed in 1937, to benefit wildlife and hunting. And anglers, they work in concert with fishing tackle and boating manufacturers under the Dingell-Johnson Sport Fish Restoration Act, passed in 1950. Both Acts embody the “user pay-user benefit” concept. Anglers pay excise taxes on equipment and anglers can expect to reap the benefits of more abundant, higher-quality fisheries and fishing opportunities.

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The story begins in 1939, when Congressman Frank H. Buck of California introduced legislation imposing a 10-percent excise tax on certain equipment related to recreational fishing. He modeled the bill on the Wildlife Restoration Act, passed two years earlier. Eventually by 1941, the federal government imposed a 10-percent excise tax on rods, reels, creels, and artificial lures. However, instead of being used to benefit recreational fisheries, these funds were put into the General Fund of the U.S. Treasury, a practice that continued after World War II.

Michigan Congressman John Dingell, Sr., sought to change that practice, and introduced his first version of the Sport Fish Restoration bill in 1947. Although it failed, it galvanized anglers around the idea of dedicated funding for better fisheries. Dingell two years later reintroduced his bill while Senator Edwin Johnson of Colorado introduced an identical Senate bill. Despite these popular bills passing quickly through both chambers, President Harry Truman vetoed it because of concerns related to commercial fisheries. Dingell and Johnson introduced a revised bill and Truman signed the Federal Aid in Sport Fish Restoration Act into law on August 1950.

The war-time excise tax already collected on fishing equipment was now earmarked to go to state fish and game agencies for sport fish management, and the new law safeguarded that fishing license fees would be for the exclusive purpose of state fish and game agency administration.

Fast-forward to 1984. There is yet another major twist in the partnership after Senator Malcolm Wallop from Wyoming and then-Congressman John Breaux from Louisiana amend the Sport Fish Restoration Act. The Wallop-Breaux Amendment expanded the excise tax to include all items of fishing tackle, as well as capturing taxes paid on motorboat and small engines fuels, and import duties on fishing tackle and boats. And it has paid big dividends for fisheries conservation. When the Wallop-Breaux Amendment took effect, monies brought in via the excises taxes went from $38 million to $122 million – over a three-fold increase.

By Joyce Johnson
In 2008, nearly $400 million in Sport Fish Restoration funds, and $133 million matched by state fish and game agencies, went towards sport fish-related projects. Of this $533 million, states agencies spent at least 15 percent on boating access and up to 15 percent for teaching aquatic ecology and management, aquatic safety, conservation ethics, and fishing skills.

The state agencies must match funds at a 1 to 3 ratio. Sport Fish Restoration funds are distributed by formula, based 40 percent on each state’s water area and 60 percent on its number of licensed anglers. Generally speaking, each fishing license sold nets an additional $10 in Sport Fish Restoration revenue, underscoring the fact that anglers do fund fisheries conservation.

Fish and game agencies use the funds to hire fisheries biologists and other technical experts. Fisheries biologists at both the state and federal level discuss common needs, but the state has the final word on how to use the funds, though the funds must be used on sport fish species. That’s not to say that non-game fishes don’t benefit; funds used to improve sport fish habitat benefits the wider fisheries resources.

Competent scientists manage fisheries. And it is those scientists at the state level that make the on-the-ground decisions – a hallmark of the Sport Fish Restoration Program’s resounding success.

The Sport Fish Restoration Program is credited with the recovery of many economically important sport fish species, and has helped develop some world-class fisheries. It unites the U.S. Fish and Wildlife Service; state fish and game agencies; the fishing tackle and boating industries; and anglers and boaters into a partnership that has achieved far more in nearly 60 years than what any could do for fisheries conservation individually – create an inheritance for the future of America’s fisheries.

An angler maneuvering with the low click and hum of a trolling motor over muskie habitat in an Indiana lake has inherited what Dingell and Johnson had in mind. Muskie anglers are the epitome of optimism and hope. A stick plug cast into the cold murk is more than an act of hope; it is an axiom. It is, irreducibly, the first act toward better fisheries in the cycle of success that is the Sport Fish Restoration Program.

Good parenting. Fishing connects children to the workings of nature like few experiences can.

Joyce Johnson is the Chief of Policy in the U.S. Fish and Wildlife Service’s Wildlife and Sport Fish Restoration Program, based in Arlington, VA.

A big bass for a little boy will resonate in memory for years to come. The Sport Fish Restoration Program ensures a conservation inheritance for anglers young and old.

Reflections on Fisheries Conservation

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Reflections on Fisheries Conservation
The Southeast U.S. harbors a vast array of aquatic habitats unparalleled in the nation. It is in a place of both exceptional natural beauty and undisputed scientific importance; its natural assets enrich our communities, supply livelihoods for our citizens, and elevate our quality of life—and the need for comprehensive conservation has never been greater.

Some of the country’s greatest aquatic assets boast a southern accent, from the Florida Everglades to the Cumberland River, the Outer Banks to the lower Mississippi River, the world-renowned largemouth bass fisheries of Texas and Florida and smallmouth bass fisheries in Tennessee, Kentucky, and Alabama, to the redfish, sea trout, and shrimp in the Gulf of Mexico and the South Atlantic. Across the southeastern landscape, more than 1,800 species of fishes, freshwater mussels, snails, turtles and crayfish, live in 70 major river basins. About 16 percent of the nation’s coastal wetlands sit on the South Atlantic coast. Nearly half of all the nation’s wetlands are in Louisiana alone, and Alabama has more native freshwater fishes than any other state—325 species—and another 100 more marine species.

But the bounty is not endless. A rapidly expanding human population and land conversion from farmland and woods to concrete and suburbia have altered aquatic habitats throughout the region. In the U.S., 34 percent of imperiled fish species and 90 percent of imperiled mussel species live in the Southeast. In recent years, human populations grew dramatically, especially on coastal areas, increasing along the Gulf Coast by 45 percent between 1980 and 2003. Atlantic coastal county populations grew by 58 percent, the largest increase during that period of any coastal region in the continental U.S. Demographers predict more growth to come, and with it will come more conservation challenges.

So how can we maintain the natural beauty, biological diversity and quality of life that have drawn so many people to the Southeast? The Southeast Aquatic Resources Partnership (SARP). Over the past three years, the unique partnership worked with state and federal natural resource agencies, local organizations and community leaders from around the 14-state region to develop habitat conservation strategies. The resulting Southeast Aquatic Habitat Plan represents a blueprint for the cooperative conservation of streams, rivers, lakes and reservoirs, estuaries, and coastal marine habitats.

That blueprint is resulting in cooperative efforts like the Southern Instream Flow Network. Water quantity and use has become a huge issue across the region as we are faced with unprecedented droughts, climate change, and population growth. The Network takes a regional approach to instream flow conservation issues, expanding on work by the national Instream Flow Council to provide information, resources, and tools to instream flow teams in each state. This effort has resulted in greater communication and collaboration among state and federal agencies, conservation organizations, and other stakeholders, on a conservation issue that has traditionally been handled by individual states acting alone or in conflict with their neighbors. The cooperative efforts of the Network are quickly leading to more effective programs to address instream flow conservation issues.

In addition to collaborative policy and science conservation efforts, SARP’s local and state partners work to implement on-the-ground or in-water projects that protect, restore, and enhance aquatic habitats. SARP was among the first partnerships recognized as a Fish Habitat Partnership under the auspices of the National Fish Habitat Action Plan (see Edies, summer 2008). The intent of SARP and the National Fish Habitat Action Plan is to focus resources where they can be most effective in comprehensive conservation of landscape-scale aquatic habitats.

Through its habitat assessment and collaborative planning efforts, SARP will identify and facilitate the most effective methods to conserve aquatic habitats throughout the Southeast. Combining the resources of multiple partners and programs often allows SARP to identify appropriate funding from multiple sources and implement priority actions in a timely manner.

One area where SARP has focused efforts is the Altamaha River watershed in Georgia. Since completing a Conservation Action Plan for the Altamaha River basin in 2005, SARP has facilitated aquatic habitat restoration projects throughout the watershed. The projects include reservoir shoreline restoration and enhancement in lakes Oconee and Sinclair in the upper end of the watershed, gravel bar restoration to enhance spawning habitat for the robust redhorse and other fish species in the main stem of the Oconee River (the largest tributary to the Altamaha), and oyster reef restoration in the Altamaha estuary.

The U.S. Fish and Wildlife Service is an active founding member of SARP and, through the National Fish Habitat Action Plan, has invested more than $1.2 million in fish habitat restoration projects identified and facilitated by SARP, including projects ranging from streambank restoration in Kentucky and Virginia to sea grass plantings and marsh restoration in the Gulf of Mexico. SARP has also become a partner in NOAA’s Community-based Habitat Restoration program, which provides funding for local community-based habitat restoration projects for marine and anadromous species that help meet the goals of the Southeast Aquatic Habitat Plan. SARP is unique among fish habitat partnerships because of its focus on all regional aquatic resources from the mountains to the sea. Marine and freshwater agencies and organizations work together to identify and implement effective conservation actions while recognizing the importance of working and communicating across traditional boundaries.

SARP’s unique approach is leading to new and more refined methods of accomplishing its mission: “With partners, protect, conserve, and restore aquatic resources and habitats throughout the Southeast for the continuing benefit, use and enjoyment of the American people.”
Turtle scientist, Dr. Day Ligon, admires a subject of his research, a young alligator snapping turtle.
Pharmaceuticals for Fish
The Aquatic Animal Drug Approval Partnership moves medicine from the theoretical to the practical

The parallel is too curious to be overlooked. James Henshall, M.D., had his home just a short walk away from his work in a Victorian two-story that still stands. There on the grounds at a national fish hatchery in Bozeman, Montana, Dr. Henshall hit his stride in the late 1800s— not practicing medicine— but directing fish culture operations as the superintendent of a fledgling federal hatchery.

Henshall, profiled by historian Todd Larson in the fall 2008 issue of Eddies, is probably best known as author of the classic Book of the Black Bass. Therein Henshall posited about the “eminently American fish” and its behavioral traits: “the arrowy rush” of the “gamefish that swims.” He waxed poetic about smallmouth bass and argued that the spotted bass did not exist as a distinct species. Henshall gave up a career as a medical doctor for distinguished work in conservation and fish culture.

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Today, modern fish culture and medicine again merge at the Bozeman station where Henshall once lived and worked. The U.S. Fish and Wildlife Service’s Aquatic Animal Drug Approval Partnership (AADAP) is based there. This national program is designed to generate, compile, and manage much of the complex information needed by the U.S. Food and Drug Administration (FDA) for one purpose—to get new aquatic animal drugs on the market and in use. No matter if the drug is to be used for treating parasitic infection in largemouth bass, gill disease in walleye, or bacterial infection in salmon and trout—fish you might find on the end of your line or under plastic at the grocery—AADAP plays a major role in generating and channeling that information to the FDA.

It’s an arduous process to get a new aquatic animal drug approved, and it can take years of research and millions of dollars. In some respects, getting new drugs approved for fish and other aquatic animals is more difficult than it is for people. Reason being, people eat fish and shellfish. New drugs must effectively target specific diseases and disease-causing pathogens. They must also be manufactured at the highest quality and be safe for the target species, the environment, and for people—and all such claims must be supported by solid scientific data.

“With any new animal drug that’s been approved by the FDA, you know it’s met the gold standard,” said Dr. Dave Erdahl, AADAP’s director. “Getting useful drugs approved and into the hands of fishery managers and fish culturists results in healthy fish and a healthy environment.”

Recent examples of new drugs are worthy of note: The FDA approved formalin for controlling external parasites in all species of fish. The new animal drug Chlorulon® enhances fish propagation; it induces spawning and plays an important role in endangered species conservation. A number of new skeletal marking products are now available. With these products fishery biologists can quickly, safely, and with low cost, mark fish en masse so that they can more effectively assess fish populations in the wild. In 2005, the FDA approved Aquaflo® for catfish—the first new oral antibacterial drug approved in over 20 years. More recently, the FDA approved Aquaflo® for use in all freshwater-reared salmonid species. In 2007, PEROX-AID® was approved to treat freshwater finfish and their eggs. This year, Terramycin® 200 was approved to control bacterial coldwater disease and columnaris, an often-fatal bacterial infection in freshwater-reared salmonids.

Inherent in its name, AADAP is a partnership, and works closely with the Association of Fish and Wildlife Agencies’ Drug Approval Working Group to prioritize work and meet the needs of fishery managers across the country. AADAP’s scientists help coordinate real-life field investigations and consolidate data generated from nearly 250 entities comprised of state and federal agencies, Native American tribes, and private companies—all set on seeing new aquatic animal drugs approved.

The parallel continues. Henshall made a mark in fisheries conservation, and certainly influenced the pursuit of what is today America’s favorite game fish. AADAP’s work resounds in fisheries managed for public good or private gain. The science is manifest in the live-well, staving off extinctions, and even on your dinner plate.

To learn more, visit: www.fws.gov/fisheries/aadap. ✶


This year’s effort spanned a distance of nearly 100 miles of the Mississippi watershed in Illinois from Alsip downstream to Peru, and included portions of the Calumet-Sag Channel, the Chicago Sanitary and Ship Canal, the Des Plaines River and the Illinois River.

“In some places of the Mississippi watershed, species like Asian carp and round goby represent the largest amount of living matter,” said Pam Thiel, LaCrosse FWCO supervisor. Asian carp have been found in a few isolated areas of the Great Lakes, but not yet in abundance in Lake Michigan. In 2004, the U.S. Army Corps of Engineers built a permanent electric fish barrier in the Chicago Sanitary and Ship Canal to prevent Asian carp from spreading into the Great Lakes. The Chicago Sanitary and Ship Canal is the solitary water link between Lake Michigan and the Mississippi River watershed.

According to Greg Sass, Field Station Director and large river ecologist for the Illinois Natural History Survey, Asian carp have been caught less than 50 miles from Lake Michigan.

Each year, the Illinois Natural History Survey places nets around the dispersal area to see if Asian carp are advancing their range. “We know in our longer-term monitoring, we are continually collecting them farther south in the Illinois River. But, up until this summer, we haven’t seen any further expansion north,” Sass said. The Illinois Natural History Survey, record-keeper of Illinois’ biological resources, is just one of the many partners dedicated to this annual invasive species initiative.

“I think the partnerships are critical. It’s an opportunity for communication and helps form a network perspective. We are able to develop more questions, formulate needs, and find out what information we don’t have. Our participation helps our research program by understanding what managers need as far as the science,” Sass said.

Fishery biologists with the U.S. Army Corps of Engineers, and Illinois Department of Natural Resources, annually electrofish the Dresden Island Pool on the Illinois River in Grundy County to monitor Asian carp movements. By implanting ultrasonic transmitters into the fish and releasing them, they can retrieve data on movement and behavior, and evaluate the effectiveness of the electrical barrier.

Randy Berry, wildlife biologist with the U.S. Army’s Juliet Training Center, and Dave Wedan from LaCrosse FWCO work the downtown Joliet stretch of the sanitation canal that pours into the Des Plaines River. For 10 years, the U.S. Army and LaCrosse FWCO team have run traps and gill nets and shocked sections of the stream in the downtown area as part of the Carp Corral and Goby Roundup. “This past year we shocked up walnut, northern pike and other sport fish,” Berry said. “A few years ago it was nothing more than a bunch of carp! Now we are seeing a lot more diversity.”

Shedd Aquarium in Chicago sits at the gateway to the Great Lakes, between the Illinois Waterway and Lake Michigan. As part of its “Listen to Your Lakes” campaign which educates the public on pollution, lake levels, habitat loss and invasive species, the Shedd Aquarium offers its media relations expertise to generate public interest in the Carp Corral and Goby Roundup. “We work here and play here. It’s our own backyard, so it’s important that we use our voice at Shedd to communicate ailments affecting the Great Lakes,” said Elizabeth Latenser, Shedd Aquarium communications director and Carp Corral volunteer.

“We work with many different agencies, representative of NGOs, academia and other fields,” said Thiel. “We all have different missions but with this project we are able to work together on a common problem.” The Carp Corral and Goby Roundup allows conservation partners to monitor and evaluate the impacts of invasive species like Asian carp and round goby on native fishery resources, commercial and recreational fishing, water quality; and ecosystem health, and take preventative measures to ensure the Great Lakes and Mississippi watershed ecosystems continue to sustain and support native fishery resources.

By Ashley Spratt

United Front Against Invasives

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The sound of boat motors stimulates Asian carp to leap out of the water, a hazard to human health. They create a hazard to the health of fisheries since they compete to human health. They create a hazard to the health of fisheries since they compete...
S.H.A.R.E. Partnership in Downeast Maine
Restoring habitat for endangered sea-run Atlantic salmon

The name “Downeast” is derived from the prevailing winds of New England during the summer months, and the shipping trade that used them. The sailors coined the phrase “Headin’ Downeast,” and the name stuck to the geography east of the Penobscot River.

Downeast Maine harbors the last remaining populations of wild sea-run Atlantic salmon in the United States. In December 2000, eight Atlantic salmon river populations were listed as endangered under the Endangered Species Act. Five of the eight protected river populations occur Downeast — the Dennys, Machias, East Machias, Pleasant and Narraganset. All are historic Atlantic salmon angling rivers, all have a long heritage with the “King of Sportfish,” and all are off limits for sea-run Atlantic salmon fishing. The Maine Department of Marine Resources ceased sea-run Atlantic salmon fishing throughout the state, with the exception of a 30-day catch-and-release season on the Penobscot River.

Fisheries scientists believe sea-run Atlantic salmon, along with 11 other fish species, once made spawning runs from the North Atlantic to their home rivers of New England by the hundreds of thousands. By the mid-twentieth century, however, spawning run numbers had dramatically declined due to commercial overfishing, pollution, and habitat loss particularly from commercial overfishing, pollution, had dramatically declined due to

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Atlantic salmon fly fishing on the Downeast rivers is storied in annual fishing trips by baseball legend Ted Williams and “The Crooner” Bing Crosby. Perhaps the most notable event was the “Presidential Salmon” tradition, when each year the first salmon caught in Maine was presented to the President of the United States at the White House. The tradition began in 1912 with President Taft, and ended with President George Bush in 1992.

Extensive logging operations in Downeast Maine have produced a network of dirt roads – three miles of road for every square mile of area – to move logs to the mills. These roads crisscross the five rivers and their tributaries over hundreds of culvert road crossings. Improperly placed road crossings produced severe erosion and sedimentation. Loose rocks important to fish for food and spawning became imbedded. Long-abandoned log drive dams slow water flow and sediments settling there bury spawning habitat. Perched culverts installed too high above stream level deny upstream fish passage, hindering migrations. Some culverts are too small to move high volumes of water with heavy rain, and present a barrier to migration because of high-velocity water jetting over the narrow culverts. The problem is compounded by a beaver population burgeoning with hardwork re-growth after logging. All these things create obstacles to migration for endangered Atlantic salmon as well as for countless other species.

To overcome these obstacles, in 1994, a coalition of private companies, organizations, individuals, and state and federal agencies established Project Salmon Habitat and River Enhancement (S.H.A.R.E.) “to conserve and enhance Atlantic salmon habitat and populations in Downeast Maine.” In its 14 years of existence, S.H.A.R.E. has become a prime partner in U.S. Fish and Wildlife Service Atlantic salmon population recovery efforts in Maine. Executive Director Steve Koenig works closely with Scott Craig of the U.S. Fish and Wildlife Service Maine Fishery Resources Office. Together, they identify Atlantic salmon habitat problem sites and seek remedies. Just in the past three years Koenig and Craig and S.H.A.R.E. staff have surveyed 500 logging road crossings, conducted over a hundred fisheries assessments, and installed 36 new arched culverts that let fish pass upstream.

Arched culverts are excellent for migratory fish passage. They are adequately engineered to pass heavy rain and snowmelt. Culvert bottoms are completely open, installed at the natural stream grade, and filled with natural habitat, providing habitat connectivity throughout their length. In addition to a reopened passage for endangered Atlantic salmon, arched culverts allow turtles, crayfish, frogs, salamanders, and invertebrates easy passage up and downstream.

True to its partnership form, the USDA’s Natural Resources Conservation Service’s Wildlife Habitat Improvement Program, the U.S. Fish and Wildlife Service’s Fish Passage Program, and the Maine Department of Environmental Protection have worked collaboratively with S.H.A.R.E. to complete a number of project parts, agencies, and landowners together.

The state of Maine and the Maine Fishery Resources Office assess newly restored areas as potential stocking sites for Atlantic salmon for sea-run Atlantic salmon fishing throughout the state, with the exception of a 30-day catch-and-release season on the Penobscot River.

Endangered Atlantic salmon river populations were listed as endangered under the Endangered Species Act. Five of the eight protected river populations occur Downeast — the Dennys, Machias, East Machias, Pleasant and Narraganset. All are historic Atlantic salmon angling rivers, all have a long heritage with the “King of Sportfish,” and all are off limits for sea-run Atlantic salmon fishing. The Maine Department of Marine Resources ceased sea-run Atlantic salmon fishing throughout the state, with the exception of a 30-day catch-and-release season on the Penobscot River.

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Extensive logging operations in Downeast Maine have produced a network of dirt roads – three miles of road for every square mile of area – to move logs to the mills. These roads crisscross the five rivers and their tributaries over hundreds of culvert road crossings. Improperly placed road crossings produced severe erosion and sedimentation. Loose rocks important to fish for food and spawning became imbedded. Long-abandoned log drive dams slow water flow and sediments settling there bury spawning habitat. Perched culverts installed too high above stream level deny upstream fish passage, hindering migrations. Some culverts are too small to move high volumes of water with heavy rain, and present a barrier to migration because of high-velocity water jetting over the narrow culverts. The problem is compounded by a beaver population burgeoning with hardwork re-growth after logging. All these things create obstacles to migration for endangered Atlantic salmon as well as for countless other species.

To overcome these obstacles, in 1994, a coalition of private companies, organizations, individuals, and state and federal agencies established Project Salmon Habitat and River Enhancement (S.H.A.R.E.) “to conserve and enhance Atlantic salmon habitat and populations in Downeast Maine.” In its 14 years of existence, S.H.A.R.E. has become a prime partner in U.S. Fish and Wildlife Service Atlantic salmon population recovery efforts in Maine. Executive Director Steve Koenig works closely with Scott Craig of the U.S. Fish and Wildlife Service Maine Fishery Resources Office. Together, they identify Atlantic salmon habitat problem sites and seek remedies. Just in the past three years Koenig and Craig and S.H.A.R.E. staff have surveyed 500 logging road crossings, conducted over a hundred fisheries assessments, and installed 36 new arched culverts that let fish pass upstream.

Arched culverts are excellent for migratory fish passage. They are adequately engineered to pass heavy rain and snowmelt. Culvert bottoms are completely open, installed at the natural stream grade, and filled with natural habitat, providing habitat connectivity throughout their length. In addition to a reopened passage for endangered Atlantic salmon, arched culverts allow turtles, crayfish, frogs, salamanders, and invertebrates easy passage up and downstream.

True to its partnership form, the USDA’s Natural Resources Conservation Service’s Wildlife Habitat Improvement Program, the U.S. Fish and Wildlife Service’s Fish Passage Program, and the Maine Department of Environmental Protection have worked collaboratively with S.H.A.R.E. to complete a number of project parts, agencies, and landowners together.

The state of Maine and the Maine Fishery Resources Office assess newly restored areas as potential stocking sites for Atlantic salmon for sea-run Atlantic salmon fishing throughout the state, with the exception of a 30-day catch-and-release season on the Penobscot River.
What’s in a Name

By Howard Frank Mosher

Author Howard Frank Mosher is at home on Labrador’s wild waters, where he had “a father’s and a fisherman’s epiphany.”

“Name children some names and see what you do.” — Maple – Robert Frost

It was the summer of 1969, and I had just made a monumentally foolish mistake. Imagining that there were shortcuts to learning how to write and publish fiction, I accepted a creative writing fellowship at the University of California at Irvine and lit out with no job, no prospects. There were two days later, we were back in northern Vermont. I had no writing degree, no job, no prospects. There were two small consolations. We’d gotten home just in time for the fall brown trout run, and the brook trout fishing in the beaver bogs was just starting to pick up again.

“Have you done for work before?” Jake Blodgett asked me on the morning after my somewhat less than triumphant return to New England.

Standing on the falling-in door stoop of the tall, white-haired logger and former whiskey runner, feeling his pale-blue stare cut through me like a knife, I admitted that all I’d ever done was to teach school, but hearing that he needed a helper, I was hoping to get some “real-life” experience.

Jake thought about this proposition. Then he said, “Well, schoolteacher: How much would you want to pay?”

Now it was my turn to think. Finally, I said that I’d never worked in the woods before, and suggested that Jake try me out for a few days, then pay me what I was worth to him.

“That wouldn’t be much,” he said, and it wasn’t. But for the rest of that fall and on into the winter, I worked with Jake, up in the mountains near the Canadian border, skidding the logs he cut out to a clearing with his ancient lumbering horse.

After work and on Sundays, we fished the brooks and rivers of the border country. When the lakes froze, we went ice fishing. Over lunch in the woods, and on our fishing expeditions, Jake told me stories of his wild, Prohibition-era days, running Canadian booze, making moonshine, outwitting game wardens. He was the best fisherman I’d ever known, with a sixth sense of where trout lay and how to entice them to strike, and a sixth sense, too, for telling a good story. During the course of that fall and winter, the Vermont woods became my graduate school, Jake Blodgett my literary mentor.

One day in a snowstorm he asked me if I’d ever write about his life. I told him yes.

Jake nodded. “Well, schoolteacher,” he said, “you better get on with it.”

I love Labrador. I love its big, wild lakes, its unexplored whitewater rivers, its northern lights flaring up pink and silver and blue across the entire night sky. Most of all, I love its brook trout. In 1992, my 20-year-old son, Jake, and I stood by a nameless Labrador river we’d walked over a nameless mountain to reach. I was upstream from Jake a hundred yards or so, and we were both catching brookies from three to five pounds, as fast as we could land them.

“What have you got on there?” I called out to Jake over the rapids. “A whale?”

“No, a two-pound brook trout,” he called back.

“That’s no brook trout. That fish you’re fighting is huge.”

“Oh, that,” Jake said. “That’s the twenty-pound lake trout that has my two-pound brook trout in its mouth and won’t let go.”

Thinking how much my son’s logger-whiskeyrunner-fisherman namesake would have enjoyed being here to see this, I began to laugh. Jake, in the meantime, handed me his fly rod, and shipped it out of the rushing water, with the brook trout still in its jaws.

At that moment, I had a father’s, and a fisherman’s, epiphany. I realized, standing in the last wilderness of eastern North America, one hundred miles from the nearest settlement, that like his namesake, my son was attuned and connected to big woods and wild rivers, and the wild animals and fish that lived in them, in a way I could only marvel at. That, too, would have delighted my old bootlegger-fisherman namesake.

“Put them back where they belong and fish some more,” Jake said, and that of course, is just what we proceeded to do. ✪

Howard Frank Mosher is the author of 10 books, including Disappearances and Where the Rivers Flow North, which have been made into motion pictures. His Civil War-era novel, Walking to Gatlinburg, is due out in 2009. He still lives in Vermont.

“I’m from Vermont, too. Go home while you still can.”

Eddies

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Reflections on Fisheries Conservation
New Animal Drugs

Investigational New Animal Drug (INAD) exemptions allow for the legal use of specific unapproved drugs by fisheries managers. The U.S. Food and Drug Administration grants INAD exemptions only after determination that no potential use-related safety concerns exist. INADs are an essential tool used by fisheries biologists across the U.S. to help meet fishery management objectives.

The U.S. Fish and Wildlife Service’s (USFWS) National INAD Program (NIP) allows other federal, state, tribal and private aquaculture facilities throughout the U.S. to use certain drugs under USFWS-held INAD exemptions. To date, over 500 aquaculture facilities have participated in the NIP. Typical annual participation includes nearly 250 facilities in over 40 states. Not only has the NIP provided numerous fisheries management programs needed access to a number of specific drugs, it has also generated a wealth of important drug efficacy and safety data necessary to support several new aquaculture drug approvals.

* Dave Erdahl

For more information visit: www.fws.gov/fisheries/aadap/home.htm.