



U.S. Fish & Wildlife Service - Midwest Region

Fisheries & Aquatic Resources Program

Fish Lines

Annual Lake Sturgeon
Release Ceremony

100 lbs of Asian
Carp...MMMM Good!

Whittlesey Creek Brook
Trout

Attempt to Verify
Presence of Asian Carp

Partnership Produces
Data on Key Forage
Species in Lake Huron



Vol. 10 No. 11



U.S. Fish & Wildlife Service
Fisheries, Midwest Region

Conserving America's Fisheries



Vol. 10 No. 11

In this Issue

Field Focus

Alpena, Michigan Fish & Wildlife Conservation Office

Partnership Produces Needed Data on Key Forage Species in Lake Huron....[Read More](#)

2012 Issues

Current Edition PDF

- [Vol. 10 No. 9 - Sept 2012](#)
- [Vol. 10 No. 8 - August 2012](#)
- [Vol. 10 No. 7 - July 2012](#)
- [Vol. 10 No. 6 - June 2012](#)
- [Vol. 10 No. 5 - May 2012](#)
- [Vol. 10 No. 4 - April 2012](#)
- [Vol. 10 No. 3 - March 2012](#)
- [Vol. 10 No. 2 - February 2012](#)
- [Vol. 10 No. 1 - January 2012](#)

Archive

- [2012](#) [2011](#) [2010](#) [2009](#) [2008](#)
- [2007](#) [2006](#) [2005](#) [2004](#) [2003](#)

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Fish Tails

"Fish Tails" refers to articles that are entered by field staff in the U.S. Fish and Wildlife Service's Field Notes website, but are not published in the current edition of Fish Lines. These articles provide examples of the diverse work that the Service's Midwest Fisheries Program and partners perform on behalf of our aquatic resources and for the benefit of the American public. To view these articles, click on the links below. Enjoy!

1. [Improving Propagation Techniques for Freshwater Mussels](#)
2. [Alpena Fish and Wildlife Conservation Office Conducts 2012 Fishery Independent Juvenile Lake Trout Survey in Lake Huron](#)
3. [Students Tour Hatchery](#)
4. [Sullivan Creek National Fish Hatchery Upgrades Intake System](#)



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Fisheries, Midwest Region

Conserving America's Fisheries

Little River Band of Ottawa Indians Holds Annual Lake Sturgeon Release Ceremony

BY KEVIN MANN GREEN BAY FWCO

On September 22, 2012 the Little River Band of Ottawa Indians held their 9th annual Nme' (lake sturgeon) release ceremony, returning fish they reared in their facility back into the Big Manistee River in Michigan. The tribe has operated their lake sturgeon streamside facility since 2004 and has released fish every year since it began.

The U.S. Fish and Wildlife Service's Green Bay Fish and Wildlife Conservation Office (FWCO) has been a strong supporter and partner to the tribe in their goal to rehabilitate the small, naturally reproducing population of lake sturgeon that calls the Big Manistee River home.

Streamside rearing involves the collection of eggs and larvae from the wild that are then raised streamside in a mobile hatchery. During their first few months, they are allowed to imprint to river water while growing six to ten inches in length before they are released back into the river where they were originally collected. Unlike fish raised in hatcheries that are miles away from the lakes and rivers that they will be released into, the juvenile sturgeon in the streamside rearing unit are in constant contact with their natal water source in an attempt to facilitate imprinting. When these fish become mature enough to spawn, they should return to their natal river because of imprinting as a young fish.



Releasing a lake sturgeon into the Big Manistee River, MI.
Credit: Kevin Mann, USFWS



Artistic sturgeon carvings celebrating the 9th annual lake sturgeon release. Credit: Kevin Mann, USFWS

This particular release ceremony had special meaning for the Service as biologists from Green Bay FWCO were called upon to help the tribe throughout the spring and summer. In April, biologist Kevin Mann assisted the tribe in collecting eggs for the facility and returned again in May with fellow biologist Rob Elliott to help collect larvae. In late August, Kevin was once again asked to return to Manistee to help tribal employees set up a water recirculation unit as well as spend a few days running the facility. Kevin was extremely pleased to attend the release ceremony and see fish returned to the river for which he had a part in collecting and rearing.

Many of the tribal and local community members have been coming to the release ceremony every year since the beginning, so the rainy weather did not discourage them from attending this year's events. After tribal leaders gave a collection of speeches recognizing the hard work of the tribe and Service staff, families were each given a bucket with a sturgeon and asked to walk down to the river and release their fish. As the last fish swam away, another rearing season came to an end and Service biologists were thrilled to have been part of its success. We look forward to continuing this partnership with the Little River Band of Ottawa Indians into the future.



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Fisheries, Midwest Region

Conserving America's Fisheries

Non-Traditional Methods Used in Attempt to Verify Presence of Asian Carp in Lake Erie

BY TIMOTHY STRAKOSH, GREEN BAY FWCO

Another round of traditional gear sampling in Sandusky Bay and River is being initiated after eDNA samples tested positive for silver carp. The traditional sampling of boat electrofishing and gillnetting that occurred in August 2012 did not find any Asian carp. However, Asian carp are notoriously difficult to catch with most conventional sampling gears. Fortunately some research that has been conducted by both the U.S. Geological Survey (USGS) and the U.S. Fish & Wildlife Service in Columbia, Missouri has found some methods to be more promising in catching the wily fish.

Tim Strakosh, fish biologist from the Green Bay Fish and Wildlife Conservation Office (FWCO), took the lead on trying to design a sampling plan that would employ some of these non-traditional methods. Working Alpena FWCO's project leader, Scott Koproski and Jeff Tyson from the Ohio Department of Natural Resources, Strakosh started to explore some of these options.

"In China there are fisheries for Asian carp in large reservoirs and the techniques they use focus on herding the fish into huge trapnets," Strakosh said, "we decided that because Asian carp are so difficult to catch and we are trying to find fish in low numbers, if they are present at all, we needed to give ourselves the best possible chance." After consulting with Duane Chapman from the USGS Columbia Environmental Research Center, the decision was made to try a combination of boat electrofishing and gillnetting.

The combined gear sampling strategy involves setting gillnets and using electrofishing boats to drive fish into those set nets. Gillnets (up to 1,524 meters in length) would be set in constriction areas (e.g., points or bays) or perpendicular to shore depending on the habitat. Nets must be set in depths that are shallow enough for the net to cover the entire water column or Asian carp may swim under or over the net. The nets set along the shore would be set in a "U" or "L" shape to reduce the possibility Asian carp may swim around them.



Looking for Asian carp in Sandusky Bay while electrofishing.
Credit: Anjanette Bowen, USFWS

ambush technique was chosen because of the sensitivity of Asian carp to the electric field. During standard electrofishing electricity is applied for 10 to 15 minutes and Asian carp can sense this field from quite a distance and will quickly leave the area.

"With the ambush technique we are hoping to have the advantage of surprise on our side," stated Strakosh. The ambush electrofishing technique would be executed 12 times within each block. The ODNR tested this technique on the Sandusky



Fish biologists Tim Strakosh with Green Bay FWCO (right) and Stephen Hensler with Alpena FWCO (left) pull a gillnet used in the "herding" technique in Sandusky Bay, while Ohio DNR fish biologist Travis Hartman maneuvers the boat.
Credit: Anjanette Bowen, USFWS

After gillnets are set, two electrofishing boats would then work in tandem to push fish into the set gillnets while electrofishing. The gillnet boat would join the electrofishing boats to herd the fish into the block nets. After electrofishing, the gillnet boat would start hauling and picking the block nets looking for any trapped Asian carp. The eight sampling blocks that were previously established in Sandusky Bay were again used in combined gear sampling strategy. Within each block site selection would follow a probabilistic design and one site per block would be selected.

Immediately after the combined sampling of electrofishing/gillnetting electrofishing crews would conduct spot or ambush electrofishing surveys within the same block using a probabilistic design. The ambush electrofishing technique is executed by bringing the boat up on or near plane for a random amount time then quickly powering down, drifting for a few seconds and then electroshocking in the immediate area.

River prior to the assessment and found they were able to catch larger individuals of bigmouth and smallmouth buffalos than the usual method.

The combined gear strategy was also chosen for sampling on the Sandusky River within river reaches with positive detections. Gillnets would be set from a dedicated gillnet boat in constriction areas within the river. Electrofishing crews would start at a distance dictated by the individual site characteristics to maximize the use of habitat and increase capture probability. Additionally, electrofishing boats would conduct at least one "head-to-head" sample in each reach were the two boats would shock towards each other to help increase the probability that fish would be pushed into one of the electric fields. This technique would be used in constricted and narrow channel areas. The final sampling design was reviewed and approved by all parties involved and was implemented the week of September 17th, 2012.

To date, no Asian carp have been found in the Sandusky River where fish sampling has occurred.



U.S. Fish & Wildlife Service

Fisheries, Midwest Region

Conserving America's Fisheries

100 lbs of Asian Carp...MMMMM Good!

BY BRITTANY ACKERLAND CARTERVILLE FWCO

Walleye, yellow perch, bluegill, invasive Asian carp....What do these fish all have in common? Delicious, flaky, white meat!



Assistant Project Leader Sam Finney waiting anxiously to hear the opinion after the first bite of some Asian Carp! Credit: USFWS

This is the message the Carterville Fish and Wildlife Conservation Office (FWCO) has been sending at the Southern Illinois Hunting and Fishing Days and it is starting to catch on.

The Carterville FWCO staff broke out the frying gear again this year and set up an educational booth at Hunting and Fishing Days providing 100 pounds of Asian carp to fry up for the public. Around 25,000 people attend the event annually, and this year being the 25th anniversary was no different. This is the largest celebration of the National Hunting and Fishing Day in the Nation.

The Carterville FWCO has begun a nontraditional approach to educating the community on the invasive Asian carp species that threaten our fisheries. The office is encouraging fishermen and boaters to keep, clean, and eat the fish by hosting Asian carp fish fries. One hundred pounds were cooked and offered during this year's Hunting and Fishing Days in an effort to increase the public's knowledge about not only the detrimental effects, but also tastiness of these invasive fish. Many people compare it to the taste of walleye, salmon, tuna, or crappie. Published blind taste tests have shown that Asian carp meat beats some of these other species in flavor. Silver carp and bighead carp are the two most farm raised fish in the world- which shows that citizens in foreign countries already know how good they are to eat.

Reactions from the crowd were interesting and varied. Some folks wanted to try a new food, and a few wanted nothing to do with eating carp. Of the over 300 people that tried Asian carp, almost everyone had a positive reaction to its flavor and texture. The fish and the event were such a hit, we ran out of samples in just a few short hours. But while we had fish, it was great to see so many positive reactions! Many people remarked that it was some of the best tasting fish they had ever eaten. A few returning visitors that remembered us from the previous year, told us how they have since begun keeping Asian carp and enjoying them at home with family. This is what the Carterville FWCO hopes many people will start doing after getting a chance to taste the carp.

After trying the carp, almost everyone wanted to know how to clean them. Many concerns about the "Y" or "broom" bones in the fish arose and although these bones are present in the meat, there is an easy and time efficient way to clean the carp, allowing the meat to be pulled right off the bone. (Good videos are easily found on the internet for those interested!). Once the fish is cleaned it can be easily battered and fried just like any other fish.

The event was a great success and the Carterville FWCO plans to continue to participate in events like these by holding Asian carp fish fries. It is important to our office to spread the word on all aspects of Asian carp, and participating in events like Southern Illinois Hunting and Fishing Days allows us to do that. The fish fry helped us draw in the attention of the public and from there we were able to encourage everyone to get more interested and involved in the protection and use of our fisheries resources- we will just need to bring more fish next time!



Biologist Jeff Stewart providing some information on the negative effects Asian carp continue to have on our fisheries resources.. Credit: USFWS



U.S. Fish & Wildlife Service

Fisheries, Midwest Region

Conserving America's Fisheries

Local Partners Team Up to Recover Whittlesey Creek Brook Trout

BY MICHELE WHEELER, ASHLAND FWCO



A beautiful Whittlesey Creek brook trout. Credit: Michele Wheeler, USFWS

Brook trout boast their status as perhaps the most colorful of trout found in local streams, and certainly are the only original stream dwelling trout species along the south shore of Lake Superior. Some brook trout, deemed coasters, spend a portion of their lives in the big lake as well. They used to be plentiful and widespread throughout streams and along the shores of Lake Superior, but not so much anymore.

"A combination of substantial harvest, habitat degradation and competition with introduced trout and salmon have led to declines in the number of brook trout," explains Henry Quinlan, fisheries biologist with the U.S. Fish and Wildlife Service's Fish and Wildlife Conservation Office (FWCO) in Ashland, Wisconsin.

Whittlesey Creek used to support lake-run coasters. The Ashland FWCO has teamed up with local partners to re-establish the fish there. "The spring fed waters that stay in the low 40s Fahrenheit

provide key habitat for resident and coaster brook trout," says Quinlan. "Unfortunately for brook trout, the coho salmon and introduced trout like it there too."

The Ashland FWCO and Wisconsin Department of Natural Resources began tracking numbers of brook trout, coho salmon, rainbow trout and brown trout in Whittlesey Creek in 2001. They found thousands of young coho (measuring 4 inches or less), during fall surveys, compared to dozens of young brook trout.

Recognizing that brook trout needed a boost to build the coaster population up to self-sustaining levels, the Ashland FWCO partnered with the Wisconsin DNR, Iron River National Fish Hatchery and Whittlesey Creek National Wildlife Refuge to conduct a three-phase experiment that involved regulation changes, habitat restoration and stocking of coaster strains of brook trout. Partners stocked eggs, fingerling, yearling and adult brook trout into Whittlesey Creek from 2003 through 2008.

Monitoring to determine the effectiveness of these efforts was conducted prior to, during and post stocking. Each fall, the Ashland FWCO and Wisconsin DNR team up with other partners to estimate the population size of brook, brown and rainbow trout, and coho salmon. During fish surveys, crews mark all fish that they capture with a temporary/partial fin clip. On the next step, the same stretch of stream is resampled and all fish captured are checked for marks. Biologists can then use the ratio of marked to unmarked fish in calculations to estimate the population size.

This fall, the Ashland FWCO and Wisconsin DNR were joined by other volunteers from Northland College and the Wild Rivers Chapter of Trout Unlimited interested in catching thousands of fish. Also participating in the surveys for the first time was Ian Meeker from the University of Wisconsin extension office in Bayfield County. As the coordinator for youth activities, Meeker tagged along to scout out opportunities for area youth to participate in important projects. "My goal is to link interested youth with hands-on field monitoring experiences that currently take place in our community. The opportunity to work side by side with professional scientists in the field can be a life changing experience for youth and compliments the mission government agencies have to share their work with the community," said Meeker.

Although the crews captured over 6,000 fish during the four day survey, catches this fall were relatively low. Glenn Miller,



Partners perform electrofishing surveys to collect data on the Whittlesey Creek brook trout population. Credit: Michele Wheeler, USFWS

fisheries biologist with the Ashland FWCO, has sampled Whittlesey Creek every year since 2001. "There were years when we worked from sunrise to sunset out on Whittlesey," recounts Miller "and handled over 5,000 fish per day."

Miller notes few of these small fish survive to adulthood and that it is not uncommon for the number of young fish to vary substantially from year to year. He also states that low numbers this year may be a result of the heavy rains in the western part of the Lake Superior basin this spring that led to significant flooding in some areas, including Whittlesey Creek. "The timing of these storms, when young-of-the-year are vulnerable to displacement or mortality due to high flows, may have affected 2012 year class strength," says Miller.

As expected, when brook trout were stocked the number of brook trout increased substantially and there was no noticeable change in other fish species. However, in the three years since stocking has ceased the number of brook trout has declined dramatically and returned to pre-stocking levels. Monitoring will continue as agencies continue to track population changes and experiment with ways to re-establish the world renowned coasters that once flourished in Lake Superior streams.



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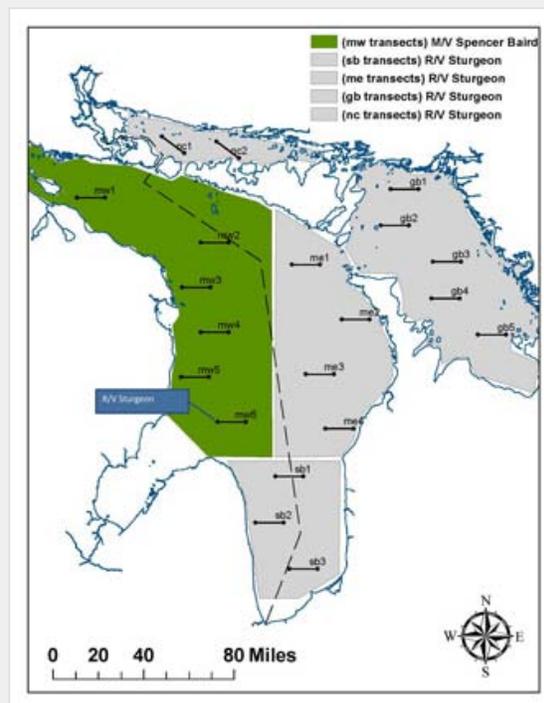
Partnership Produces Needed Data on Key Forage Species in Lake Huron

BY STEPHEN LENART, ALPENA FWCO

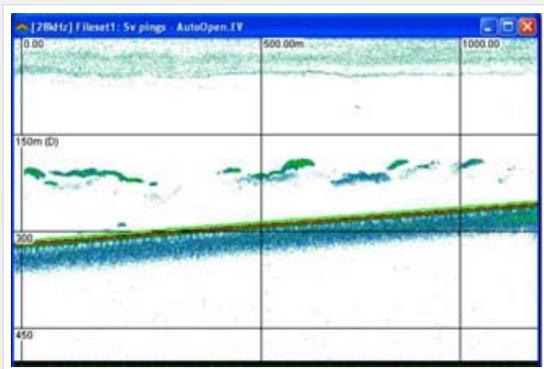
Staff from the Alpena Fish and Wildlife Conservation Office (FWCO) and the crew of the vessel Spencer F. Baird (M/V Baird) partnered with the United States Geological Survey (USGS) Great Lakes Science Center to conduct an acoustic forage (prey fish) survey on Lake Huron during September and October 2012, marking the second year of a scientific partnership with USGS.

This forage survey has been conducted by USGS on Lake Huron since 2004, the objective of which is to provide information to managers and researchers regarding the status of key prey fish stocks, including exotics such as alewife and rainbow smelt, and native species such as bloater "chubs". Utilization of the M/V Baird over the past two years has increased the likelihood that the partners will attain adequate survey coverage in the three distinct areas of Lake Huron: the Main Basin, Georgian Bay, and the North Channel.

The survey combines acoustic technology (high-tech "fish finders") to estimate fish densities (the number of fish within an area) and mid-water trawling to determine species and size composition. The survey design included twenty acoustic transects, distributed across five distinct areas of interest. These transects, each 20 kilometers (12.5 miles) in length, are conducted at night, when prey fish species are suspended in the water column, making them detectable by acoustics. Fish targets are detected when they deflect and return a signal to a transducer, which emits a pulse of mechanical energy, or a "ping". The strength of the return signal is relative to the size of the target, though numerous physical factors influence the signal as it travels through the water column. These signal returns are logged and mapped as the vessel travels along a transect, creating an "echogram" that can be analyzed with specialized software to calculate acoustic density estimates.



Lake Huron Acoustic "Prey Fish" Survey Transect Locations
Credit: U.S. Geological Survey



A View from the top a sample echogram (www.echoview.com)

The M/V Baird completed five such transects, all in the western portion of Lake Huron's main basin. Seven mid-water trawls were conducted by the M/V Baird, with rainbow smelt the most numerous species captured. Other species captured included bloater, emerald shiner, and stickleback species.

Data collected by the U.S. Fish & Wildlife Service will be combined with those collected by USGS to calculate lakewide biomass estimates for our key forage species. Such information is crucial to understanding the basic predator-prey relationship in Lake Huron, part of the world's largest freshwater system. This collaboration supports the FWCO's dedication to improving long-term relationships with partner agencies and using advanced science initiatives in support of native species restoration.

Midwest Region Fisheries Divisions

National Fish Hatcheries

The Region's National Fish Hatcheries primarily focus on native fish restoration/rehabilitation by stocking fish and eggs, such as pallid and lake sturgeon and by developing and maintaining brood stocks of selected fish strains, such as lake trout and brook trout.

Hatcheries also provide technical assistance to other agencies, provide fish and eggs for research, stock rainbow trout in fulfillment of federal mitigation obligations and assist with recovery of native mussels and other native aquatic species.

Fish and Wildlife Conservation Offices

Fish and Wildlife Conservation Offices conduct assessments of fish populations to guide management decisions, perform key monitoring and control activities related to invasive, aquatic species; survey and evaluate aquatic habitats to identify restoration/rehabilitation opportunities; play a key role in targeting and implementing native fish and habitat restoration programs; work with private land owners, states, local governments and watershed organizations to complete aquatic habitat restoration projects under the Service's Partners for Fish and Wildlife and the Great Lakes Coastal Programs; provide coordination and technical assistance toward the management of interjurisdictional fisheries; maintain and operate several key interagency fisheries databases; provide

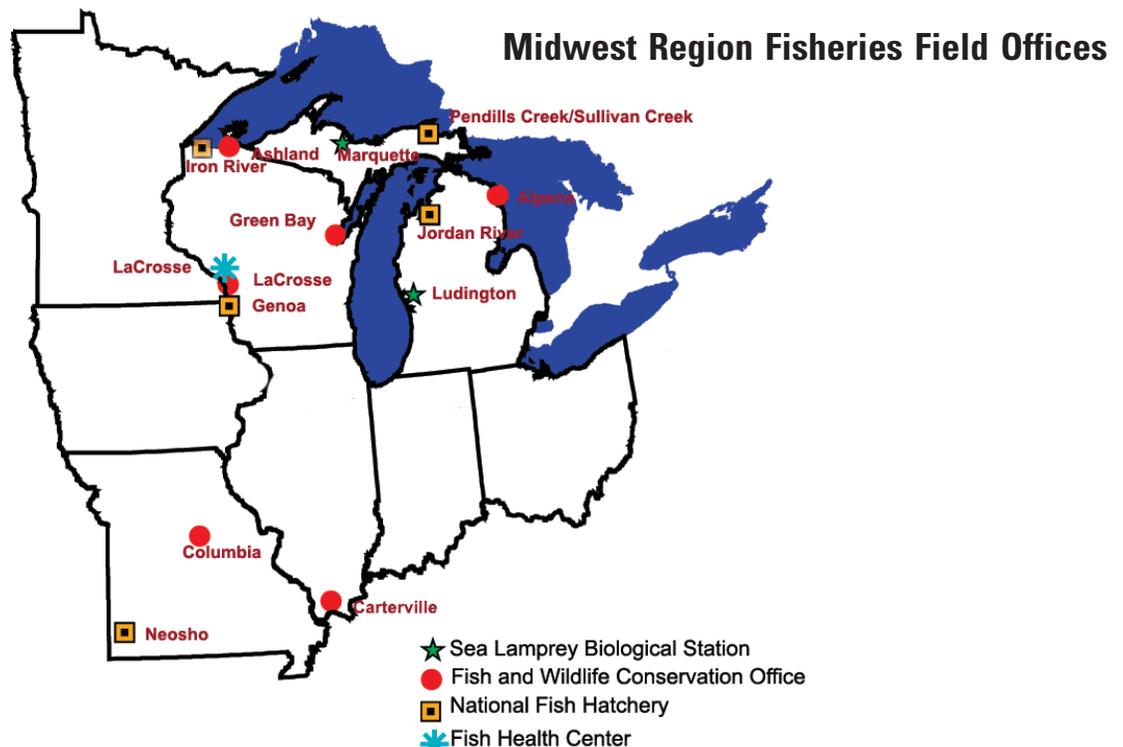
technical expertise to other Service programs addressing contaminants, endangered species, federal project review and hydro-power operation and relicensing; evaluate and manage fisheries on Service lands; and, provide technical support to 38 Native American tribal governments and treaty authorities.

Sea Lamprey Biological Stations

The Fish and Wildlife Service is the United States Agent for sea lamprey control, with two Biological Stations assessing and managing sea lamprey populations throughout the Great Lakes. The Great Lakes Fishery Commission administers the Sea Lamprey Management Program, with funding provided through the U.S. Department of State, U.S. Department of the Interior, and Fisheries and Oceans Canada.

Fish Health Center

The Fish Health Center provides specialized fish health evaluation and diagnostic services to federal, state and tribal hatcheries in the region; conducts extensive monitoring and evaluation of wild fish health; examines and certifies the health of captive hatchery stocks; and, performs a wide range of special services helping to coordinate fishery program offices and partner organizations.



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