

NATIONAL FISH HABITAT PARTNERSHIP

2016 ANNUAL REPORT *A Decade of Habitat Conservation*

2016 Program Highlights

THE NATIONAL FISH HABITAT PARTNERSHIP BY THE NUMBERS

Number of projects funded = 80

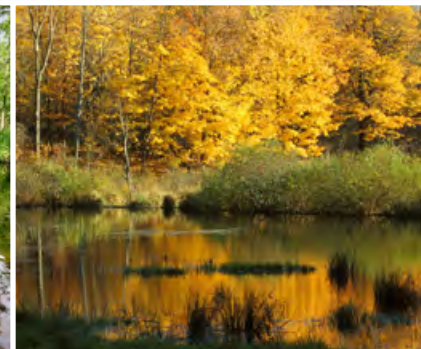
Federal Funding (U.S. FWS) = \$3,175,156

Partners funds/contributions = \$11,501,132

Total project costs = \$14,676,288

2016 NATIONAL FISH HABITAT PARTNERSHIP HIGHLIGHTS

- In March, the National Fish Habitat Partnership launched a new website which has improved user engagement and made our partnership resources more easily accessible. Check it out at www.fishhabitat.org
- April marked the National Fish Habitat Partnership's 10-year Anniversary. This momentous achievement was celebrated with the creation of a new logo and infographic (infographic on page 12) as well as an article featured in Fisheries Magazine (AFS).
- In June, the National Fish Habitat Partnership welcomed its 20th Fish Habitat Partnership into the fold: the Pacific Lamprey Partnership, which seeks to achieve long-term persistence of Pacific Lamprey and their habitats, and support traditional tribal cultural use of Pacific Lamprey



ON THE WEB



www.fishhabitat.org
www.facebook.com/nfhap
www.twitter.com/fishhabitat



throughout their historic range in the United States. Learn more here: <https://www.fws.gov/pacificlamprey/mainpage.cfm>

- In November, the National Fish Habitat Partnership released their latest Assessment Report, titled: "THROUGH A FISH'S EYE: THE STATUS OF FISH HABITATS IN THE UNITED STATES 2015." This report summarizes the results of an unprecedented, nationwide assessment of human effects on fish habitat in the rivers and estuaries of the United States and updates and revises the 2010 "Status of Fish Habitats in the United States".
- In October, the 20 Partnerships under the National Fish Habitat Partnership attended a workshop designed to help partnerships build and enhance their core operational components: science, communications, and funding, with a special focus on fish habitat assessments.
- In March, the National Fish Habitat Partnership secured a Multistate Conservation Grant for \$143,000 to implement strategic conservation actions through coordination across partnerships. This grant provided funding to support ten partnerships to accomplish advances in science and data capacity across the U.S. and leveraged significant support from State Fish and Wildlife Agencies.
- In July, Beyond the Pond launched a website and marketing platform which included an online donation page for the National Fish Habitat Partnership and the individual partner-

ships. Beyond the Pond focuses on the economic, social, and ecological importance of fish habitat conservation, as well as the work of the regional, community-based Partnerships and their successes. It is designed to assist potential corporate partners and donors in understanding how they can best help make an impact.



In addition to having testimonials from supporting organizations, and highlighting Beyond the Pond conservation goals; the site will provide global coverage of relevant conservation issues and real-life conservation stories from the 20 Fish Habitat Partnerships and our other collaborators. www.beyondthepondusa.com

- Beyond the Pond secured a \$250,000 grant through the Mid-Atlantic Fisheries Management Council for a habitat project benefitting Black Sea Bass habitat in the Mid-Atlantic region. This project, which will be completed in 2019, is being implemented by the University of Maryland (Eastern Shore) and managed by the Atlantic Coastal Fish Habitat Partnership.
- Beyond the Pond is a 501c3 organization created to complement the National Fish Habitat Partnership and help individual Partnerships connect with donors to raise additional project funding. Moving forward, Beyond the Pond will be an important component to growing and diversifying the Partnership's funding sources.



Photo: October National Fish Habitat Partnership Workshop

PARTNERSHIP UPDATES



Mat-Su Basin Salmon Habitat Partnership

Communications & Outreach

The Mat-Su Salmon Partnership was busy in 2016 working toward our its strategic goals, and bringing partners together to information share, collaborate and further our collective salmon conservation efforts. The Partnership highlighted the great work of partners through outreach efforts that included our a second annual summer site tour of projects for community leaders, partnered on our a second year in a community fish and wildlife lecture series to reach community and college age audiences, and hosted our its 9th annual Mat-Su Salmon Science & Conservation Symposium.

Science

Themed *A Future with Salmon*, Symposium keynote Dr. Daniel Schindler, professor from University of Washington's School of Aquatic Fishery Sciences, highlighted his research on the 'portfolio effect' whereby the diversity of salmon streams and salmon stocks that return to them leads to overall enhanced stability of annual salmon returns to the region. There were over 25 presenters at the Symposium with nearly 100 people each day. Presenters highlighted their efforts in 2016 including 101 miles on 53 streams gaining greater conservation protection through state law by being added to the Anadromous Waters Catalogue; replacement of two culverts that impaired fish passage and opening- up over 13 stream miles of upstream habitat, as well as numerous fish and habitat assessments that are improving our knowledge of important habitats for juvenile salmon, and effects of climate change on stream temperature.

Conservation & Restoration

Additionally, partners mapped shoreline impacts on priority waterbodies in the Mat-Su; began eradication efforts for Elodea, Alaska's first submerged freshwater invasive plant, discovered in remote Alexander Lake; and partnering on a mapping project intended to bring the updated Mat-Su Stream maps into the Anadromous Waters Catalogue in 2017. Through a cost share program partners removed 572 feet of structures detrimental to juvenile salmon and conserved and sustained 5,054 square feet of healthy nearshore fish habitat and riparian vegetation on three priority locations. In 2016 the Partnership along with other Alaska Fish Habitat Partnerships worked with the University of Alaska to support a statewide Salmon and Society workshop on long term challenges to Alaska's salmon and salmon dependent communities.

Driftless Area Restoration Effort

Communications & Outreach

The Driftless Area Restoration Effort (DARE) recently completed an "Economic Impact of Trout Angling in the Driftless Area". The NFHP-Multistate Conservation Grant funded study reveals that 6,500 jobs across the region are supported by recreational angling, and that the total spending by visiting and resident anglers has increased significantly since 2008 study. Overall, it is estimated that the total spending and economic impact of recreational angling in the Driftless area has increase from \$1.1 billion in 2008 to \$1.6 billion in 2016. Four major public events throughout the region were organized utilizing key individuals (ie. WI Congressman Kind) to announce our findings. An eight page glossy brochure was developed to summarize the results and distribute to our partners, municipalities, legislatures and more. The summary and full report can be found at <http://www.dare Restoration.com>



This past year involved a number of outreach events: Annual bus tour with over 60 of our partners of recently completed projects in Wisconsin; several state and national webinars introducing conservationists to our Nongame Habitat Guide and encouraging them to incorporate these type of practices into their projects; four major outdoor shows and an expose.

Science

DARE continues to work with universities to monitor projects, pre and post, for non-game species. This allows the Partnership to develop projects with the appropriate habitat practices and to document response of nongame numbers to habitat practices installed. DARE also started to work with the UW-Madison engineer class to develop a GIS layer that would help interested parties identify reaches of streams that might be less susceptible to washouts using the index of Stream Power.

Conservation & Restoration

Over the past twelve months the Driftless Area Restoration Effort (DARE), a Fish Habitat Partnership, has been able to accelerate long term planning for restoration projects by working with various partner groups. The Outreach Specialist has developed regional planning groups and brought together all the players involved in restoration projects to develop a three year planning strategy. By developing long term project plans DARE was able to line-up over 32 new stream restoration projects from their newly funded Regional Conservation Partnership Program award from National Resource Conservation S. These 32 projects represent almost half of the financial assistance dollars we planned to spend over the next four years. Because DARE



was so successful in spending these Farm Bill dollars, the Trout Unlimited Project Manager recently submitted another preproposal for another round of RCPP funding to start FY 2019. To help partners develop sound restoration projects and obtain all the necessary permits and designs associated with restoration projects, DARE recently hired a full-time Stream Restoration Specialist. This position will help partners to develop more projects on an annual basis, and to build the capacity of local conservation offices to work with landowners on stream projects.

DARE estimates that over 11 miles of streams were restored this past year with project partners contributing over 3.5M financial and technical assistance dollars.

Hawaii Fish Habitat Partnership

Communications & Outreach

The Hawaii Fish Habitat Partnership (FHP) provided coordination and financial support for two well-attended statewide aquatic habitat conservation symposia in 2016: the *Hawaii Stream Conservation Workshop* and the *Hawaii Anchialine Ecosystem Conservation Workshop*. Both meetings were attended by dozens of professional and community-level stakeholders who came to together to discuss progress in restoration practices, geospatial analysis, monitoring and assessment. The Hawaii FHP also supported the official closing event of World Fish Migration Day, a well-publicized awareness event that spanned the globe.



Science

The Hawaii FHP help launch a statewide assessment of anchialine pool habitats with joint funding from the FWS Pacific Islands Coastal Program and the Multi-State Conservation Grant Program.

Conservation & Restoration

Three on-the-ground conservation projects were initiated: Molokai Fishpond/Estuary Restoration; Anchialine Pool Invasive Fish Removal Trials on the Kona Coast of the Big Island; restoration of the historical waterway entering Loko Ea Fishpond on Oahu's North Shore. In addition, the Hawaii FHP continued to provide hands-on support for on-going restoration projects in priority watersheds and coastal areas across the state.

Midwest Glacial Lakes Partnership

Communications & Outreach

The Midwest Glacial Lakes Partnership hired a coordinator in 2016, filling a needed vacancy and helping the partnership to revitalize its fish habitat conservation efforts.



Science

The partnership's Science and Data team is nearing completion of its Phase II Habitat Assessment of lakes in the partnership. The assessment uses existing fish community and landscape data to predict the presence of four groups of fishes (Walleye, Northern Pike, Bluegill, and coldwater fishes) in over 40,000 inland lakes in the partnership; these data were combined with metrics of threats from shoreline development, watershed degradation, and climate change to produce fish habitat management recommendations for tailored to each lake.

Conservation & Restoration

In addition, the partnership awarded funding to further habitat assessment that will evaluate current and future oxygen and thermal habitat conditions in glacial lakes supporting Cisco and Walleye, allowing partners to focus conservation efforts in a

warming climate. The partnership also is supporting the creation of a video targeting Michigan's inland lakefront property owners that will emphasize the fish habitat benefits of natural shorelines. These outreach materials will assist the partnership in mitigating the effects of shoreline development on fish habitats in lakes.

Desert Fish Habitat Partnership

Communications & Outreach

The Desert Fish Habitat Partnership (DFHP) continues to benefit native desert fishes by bringing agencies, organizations, and the public together to work towards the recovery and conservation of imperiled species and their habitats. DFHP also continues to publish a quarterly newsletter describing progress on various program projects that is distributed to not only USFWS staff and partners, but also various other conservation program coordinators, non-governmental organizations and the general public. DFHP has also created an internal project database to more efficiently track and report on projects and outreach activities. DFHP has put a large effort and emphasis in 2016 on education and outreach activities. Through these efforts, DFHP now has; a bilingual website, brochures in both English and Spanish, Shout-Outs, project report templates, species ID Card templates, a two minute About Us video, and a Blueheads and Bonneville's Campaign Video. DFHP continues to maintain an active Facebook page where we host a weekly #DesertFishFriday to spread the word about desert fish, desert habitats, threats, and how DFHP and partners are conserving the species.

Science

The DFHP actively maintained close contact with partners and stakeholders by attending workshops and conferences such as; the National Fish Habitat Partnerships (NFHP) Science and Data



workshops, NFHPs' Beyond the Pond workshop, and the Fish Habitat Partnership workshop during the NFHP annual meeting in Panama City FL, in October 2016. DFHP continues to plan, organize, and attend meetings and is now a member of the Southern Rockies LCC Steering Committee. This new partnership will assist DFHP and the SRLCC in our joint endeavors to create stronger bonds between the fisheries community and the LCC's. The SRLCC has funded the final portion of the Rio Grande Assessment that was identified during FY 2015 as a priority assessment for DFHP.

Conservation & Restoration

DFHP funded three projects in FY 2016: The Goose Creek Allotment Pipeline Project in Idaho, the Upper Sycan River Aquatic Habitat Restoration project in Oregon, and the Bitter Creek Drop Structure in Wyoming.

Kenai Peninsula Fish Habitat Partnership

Communications & Outreach

For the past three years, the Kenai Peninsula Habitat Partnership (KPFHP) has supported efforts to conduct a successful Stream Watch program along the Kenai, Kasilof and Russian Rivers. This nationally-recognized program reaches anglers along the Russian, Kenai and Kasilof Rivers, helping to inform users about sensitive fish habitat and provide the needed feet on the ground to repair habitat fencing, collect monofilament and other harmful trash. With the help of a local wildlife artist, KPFHP partner Cook Inletkeeper produced three posters that represented different aspects of salmon habitat on the Kenai Peninsula. These were widely distributed at the 2016 Salmonfest in Ninilchik. KPFHP funds covered the printing costs. The posters and the message have been so successful - "Home is Where the Habitat Is!" that the KPFHP has adopted them for the 2017 KPFHP Science Symposium!



Science

Russian River Remote: Partnership members from the Kenai Watershed Forum and the US Forest Service assisted Cook Inletkeeper Scientist Sue Mauger with the installation of a new solar-powered remote temperature monitor along the Lower Russian River funded through NFHP. Long-term monitoring will help us know when and where we have water that is stressful for salmon.

Conservation & Restoration

Elodea canadensis, a common freshwater aquarium plant, has been infesting many of the floatplane-accessible lakes of southcentral Alaska. This highly adaptive-yet-pernicious weed congests lakes and other waterways restricting fish passage and displaces normal fish habitat. A rapid-response effort was deployed by a multi-agency and -organization group including the Kenai Peninsula Fish Habitat Partnership to detect and remove *Elodea* from several lakes of the northern Kenai Peninsula. Follow-up assessments have yet to detect any resurgence in the affected lakes but work will continue into the next several years to look at other nearby lakes and watersheds to make sure no other lakes are being affected by this habitat-choking invasive species.

Western Native Trout Initiative

Communications & Outreach

The Western Native Trout Initiative (WNTI) continues to build support for strategic and effective native trout fish habitat improvements through outreach with partners through our Campaign for Western Native Trout. In 2016, WNTI continued to build our outreach program through production of a film, an ESRI StoryMap, social media, and events.



Blueheads and Bonneville is an approximately 7 minute film about WNTI and DFHP’s collaborative work in the Weber River, Utah, with Utah Division of Wildlife Resources, Trout Unlimited, and other partners. The film serves as an anchor outreach piece for a broader *Blueheads and Bonneville* campaign celebrating our conservation work on the Weber River and broadening strategic partnerships to complete future projects that are still needed. The Weber River project was first submitted in 2012 as a NFHP Waters to Watch project; WNTI and DFHP re-submitted the project again in 2016 as legacy “Waters to Watch” project to support the celebration of NFHP’s 10th anniversary.

Science

In late 2016, the WNTI Steering Committee approved an updated strategic plan and set strategic priorities for the next seven years. Focal species for 2017-2020 include the Rio Grande Cutthroat Trout, Bonneville Cutthroat Trout, and interior Redband Trout. Updated species status reports were also completed for Apache Trout, Gila Trout, Greenback Cutthroat Trout, and Rio Grande Cutthroat Trout. WNTI continued our collaboration with the Desert Fish Habitat Partnership (DFHP) and Southern Rockies LCC and began work on an upper Rio Grande Basin aquatic assessment to assist species teams in conservation decisions.

Conservation & Restoration

In 2016, WNTI had several noteworthy accomplishments. WNTI its partners funded seven habitat restoration projects benefiting our priority species with a total of \$234,120 National Fish Habitat Partnership funds leveraged to partner matches of \$2,368,088 for a total projects value of \$2,602,208. Projects were wide ranging and diverse - from a habitat restoration project led by the Coeur d’Alene Tribe to benefit Redband Trout in Idaho, to contributing to removal of a 14 foot high hydroelectric dam to restore Bonneville Cutthroat Trout passage to Mill Creek in





Utah, to installing a Farmers Screen™ on an irrigation diversion to provide fish passage to a creek critical to production of fluvial Yellowstone Cutthroat fry for the Yellowstone River in Montana, to completing an eDNA-based inventory of juvenile bull trout habitats in the Wenatchee River basin. WNTI additionally funded 12 small projects through our Small Grants Program,

Ohio River Basin Fish Habitat Partnership

Communications & Outreach

Through the Ohio River Basin Partnership (ORBFHP), partners made 2016 another exciting year, as they began post-implementation monitoring for many projects, including: comparing effects of land management practices on water quality and hydrology in paired systems, translocating federally listed mussels to reestablish or augment populations, and providing passage around anthropogenic barriers.



Science

In Southern Indiana, a state species of conservation need (Wavyrayed Lampmussel) was propagated to augment an existing population. This project maintained native genetic integrity in the Blue River by stocking juvenile mussels that were propagated from individuals collected from this stream. Reoperation of historic navigation dams to mimic natural hydrologic flows started on the Muskingum River, which should provide ORBFHP Large River Guild Focal Species with the environmental cues they require for timing migration and spawning.

Conservation & Restoration

The Eel River, an ORBFHP priority watershed ranked #2 in the NFHP Waters to Watch, saw millions of dollars from Clean Water Act Section 319 funding, Environmental Defense Fund, Indiana Soybean Alliance, Indiana Corn Marketing Council, Mississippi River Basin Healthy Watersheds Initiative, and local soil and water conservation districts implemented in the watershed by

Manchester University. Farmers are participating in a large cooperative working group to track cultivation practices, soil organic matter and nutrient levels, soil loss, nutrient loss, water quality, and agricultural yield throughout the study watersheds and along the length of the streams. Local farmers and agricultural groups value this study and its findings, because they are active partners in the project, not just impacted constituents, and they are able to directly assess the economic and ecologic impacts of the changes in agricultural practices.

Southwest Alaska Salmon Habitat Partnership

Communications & Outreach

In 2016, the Southwest Alaska Salmon Habitat Partnership (SWAKSHP) helped sponsor the annual Southwest Alaska Interagency Meetings in Dillingham; state, federal, university and non-governmental organization biologists presented papers, discussed projects and coordinated field seasons.



Science

Support was also provided to the Bristol Bay Heritage Land Trust to complete a genetic assessment of sockeye salmon on Lake Iliamna to help identify specific populations and spawning locations.

Conservation & Restoration

The SWAKSHP invested 2016 Partnership funds in the continued implementation of a monitoring plan for key biological and water quality parameters in headwater systems in the Nushagak and Kvichak Watersheds, which are the most productive salmon watersheds in the world. The third field season was completed in 2016. The National Fish and Wildlife Foundation, World Wildlife Fund, Bristol Bay Native Association and the Bristol Bay Heritage Land Trust have also invested in the project and 2016 funds were also used to support the efforts of the Alaska Department

of Fish & Game to gauge water flows on the Kokwok River, a tributary of the Nushagak, for the purpose securing flow protection for fish.

Great Lakes Basin Partnership

Communications & Outreach

The Great Lakes Basin Partnership (GLBP) has established a working relationship with the Upper Midwest & Great Lakes Basin Landscape Conservation Cooperative to focus on Aquatic Habitat Connectivity. The partnership's experience with delivering projects will help the Aquatic Connectivity Collaborative to identify information gaps, developing or evaluating decision support tools and best management practices.



Science

The GLBP is involved in an Aquatic Connectivity Collaborative is working with other LCCs on regional and national issues involving aquatic connectivity. The decision support tools will help partners focus the restoration efforts, and where they will maximize the ecological uplift with the available funds.

Conservation & Restoration

In 2016, the GLBP requested proposals for project funding and recommended funding for a passage project, a sediment reduction project, and two instream habitat restoration projects that leveraged \$240,000 of Partnership funds with \$581,000 of other funding sources.

Southeast Alaska Fish Habitat Partnership

Communications & Outreach

2016 was a busy year filled with successful service products provided by the Southeast Alaska Fish Habitat Partnership (SEAKFHP) (www.seakfhp.org). Unlike other fish habitat partnerships, SEAKFHP does not have access to on-the-ground fish habitat project funding for our region, rather our focus and strength lies in providing support services to our partners and other stakeholders across Southeast Alaska. Here is a brief description of a few of our efforts undertaken in 2016.



Science

Also in 2016, with the help of our partners we developed a regional fish passage project inventory to access connectivity issues in the region and provide needed resources to identify and prioritize potential fish passage projects. We were able to leverage this inventory with funding resources from our partners to draft a proposal to develop fish passage construc-

tion designs for key fish passage projects in the region; as a result of additional funding being secured through our recent National Fish and Wildlife Foundation's Alaska Fish and Wildlife Fund proposal we will be able to move this effort into action in 2017.

Conservation & Restoration

In addition to these efforts, SEAKFHP partners were also busy during 2016 contributing feedback to the NFHP Science and Data Committee regarding updates to the National Fish Habitat Assessment and to regional USFS partners on the USFS Watershed Condition Assessment. Also, in the fall of 2016 SEAKFHP worked with partners across the state to support statewide meetings elevating the importance of habitat protection policies in Alaska.

Atlantic Coastal Fish Habitat Partnership

Communications & Outreach

The Atlantic Coastal Fish Habitat Partnership (ACFHP) made great strides for Atlantic fish habitat on the ground and via science, data, and communication in 2016. The Partnership spent the better part of this year updating their five-year Conservation Strategic Plan, setting new objectives and strategies based on sub-regional priority habitats and threats.



Science

After years of collaboration and analysis, ACFHP published the results of the Species-Habitat Matrix in the journal *BioScience* in April. The article, titled 'The Importance of Benthic Habitats for Coastal Fisheries,' presents the evaluation of the relative importance of coastal, estuarine, and freshwater habitat types as living space during the major life stages of over 100 fish species. The results can be used to evaluate trade-offs and develop habitat management strategies.

Conservation & Restoration

ACFHP has partnered with the U.S. Fish and Wildlife Service for the seventh consecutive year to fund one on-the-ground restoration projects in 2016. The project, located on the Pawcatuck River in Westerly, Rhode Island, will improve riverine fish habitat through the removal of the Bradford Dam. This work is being led by The Nature Conservancy and will restore access to 32 miles of spawning and nursery habitat, benefitting species such as shad, river herring, and American eel. Thanks to funding from the National Oceanic and Atmospheric Administration (NOAA), ACFHP finalized its conservation moorings project this year in Jamestown, Rhode Island. Conservation moorings reduce seagrass degradation caused by the chain sweep associated with traditional moorings.



Southeast Aquatic Resources Partnership

Communications & Outreach

In 2016, The Southeast Aquatic Resources Partnership (SARP) went through a process to refine its programmatic focus and overall activities. In an effort to streamline both the messaging around SARP and prioritization of resource allocation, feedback from our state and federal partners was solicited to determine areas of primary importance. Based on this feedback, six workgroups were identified to serve as program umbrellas for all SARP activities. These programs include In-stream flow, riparian habitat, physical habitat, Connectivity, Coastal, and Native Black Bass Initiative.



Science

Through the Aquatic Connectivity Program, SARP sponsored a state based connectivity team meeting in Georgia to continue momentum on aquatic connectivity issues and identified projects that would provide the biggest ecologic and economic lift. SARP is also working in Florida through a State Wildlife Grant to support a Florida Connectivity Team while providing technical support to partners on barrier identification, prioritization, and removal techniques. Further, SARP has worked with the North Atlantic Aquatic Connectivity Collaborative to expand culvert assessments to the Southeast Region by providing a southeast specific crossing assessment standardized protocol that can be used by any and all willing partner and data can be shared in a common database maintained by SARP.

Conservation & Restoration

Together with our partners, a number of on the ground restoration projects have been identified and funded in Texas, Florida,

and Georgia to support native black bass species and other species in the watershed including the listed and at risk mussels and fish species. Through the Aquatic Connectivity Program, SARP sponsored a state based connectivity team meeting in Georgia to continue momentum on aquatic connectivity issues and identified projects that would provide the biggest ecologic and economic lift. SARP is also working in Florida through a State Wildlife Grant to support a Florida Connectivity Team while providing technical support to partners on barrier identification, prioritization, and removal techniques

Fishers and Farmers Partnership

Communications & Outreach

The Fishers and Farmers Partnership (FFP) is using the Agricultural Conservation Planning Framework (ACPF), a LiDAR tool created by USDA to help prioritize conservation practices. The ACPF will create a “menu” of options for farmers that shows how specific practices will prevent the most soil, nutrient, and water loss, while considering the economic value of each action. Using both the ACPF and Fish Habitat Assessment tool will help inform local decisions and increase opportunities for more water quality and aquatic habitat projects.

Fishers & Farmers Partnership for the Upper Mississippi River Basin

Science

Success was shared by farmers from the Peno Creek Watershed and 35 other participants from 13 subwatersheds in 5 states that attended two Fishers & Farmers Watershed Leaders Network (WLN) Workshops in Eagle Bluff, MN, and Dubuque IA. These workshops, partially funded by McKnight Foundation, were a great way for farmers to connect with each other across state



lines and gain access to resources to help them accomplish more in their watersheds. The WLN, updated by farmers and watershed coordinators, can be accessed through Fishers & Farmers website which will assist in putting more conservation on the ground. Also in 2016, the FFP Science Team worked with the NFHP Science Team to make data consistent between NFHP and FFP, worked on social monitoring data, worked with NRCS on a Rapid Watershed Assessment, developed an interactive WebMap for the website (fishersandfarmers.org/basin) and created a story map.

Conservation & Restoration

In 2016, FFP funded four projects with \$1 14,000 NFHP funding that included over \$360,000 matching funds in priority watersheds: Hutchins Creek -IL, Boone River-IA, Root River-MN, and Spring Creek-MO. Projects include working with farmers to improve streambanks, floodplains, and riparian corridors and to reduce sediment and nutrient loading to streams. Fishers & Farmers’ priority watershed, Peno Creek in Missouri, named one of the National Fish Habitat Partnership’s 2016 “10 Waters to Watch” has shown a lot of success.

Eastern Brook Trout Joint Venture (EBTJV)

Communications & Outreach

The Eastern Brook Trout Joint Venture (EBTJV) involvement with the NALCC was centered on the development of decision support tools that will assist with prioritizing Brook Trout conservation actions within the Chesapeake Bay watershed, while the partnership with the Chesapeake Bay Program was aimed at aligning and coordinating priority Brook Trout conservation actions between our two organizations.



Science

The EBTJV worked collaboratively with the AppLCC was focused on development of a data management system for regional fish population and aquatic habitat data, decision support and web-based mapping tools, and processes for evaluating and reporting the benefits of Brook Trout conservation projects.

Conservation & Restoration

The Eastern Brook Trout Joint Venture (EBTJV), a Fish Habitat Partnership, completed its second range-wide Brook Trout status assessment, conducted at the catchment scale. The assessment results are serving as a basis for refining the partnerships strategic Brook Trout conservation priorities. The EBTJV also continued its strong collaborative working relationships with the Appalachian Land Conservation Cooperative (AppLCC), the North Atlantic Land Conservation Cooperative (NALCC), and the Chesapeake Bay Program in an effort to address mutual landscape level priority conservation needs

California Fish Passage Forum

Communications & Outreach

In 2016, the California Fish Passage Forum (CFPF) advanced FISHPass by producing results in a spatially explicit format, developing an action plan to identify high priority elements of the model to address (including key gaps that need to be addressed and funded in the future), and improving and clarifying model outputs. A baseline fish habitat layer was created to capture known anadromous and potentially anadromous reaches of streams in California – the layer is used to trace known fish passage barriers in the Passage Assessment Database, upstream, as an input to



FISHPass. A group of Forum members tested FISHPass during December 2016 for several California watersheds to identify needed improvements for 2017.

Science

The CFPF worked collaboratively with the AppLCC was focused on development of a data management system for regional fish population and aquatic habitat data, decision support and web-based mapping tools, and processes for evaluating and reporting the benefits of Brook Trout conservation projects.

Conservation & Restoration

The CFPF solicited project proposals to fund projects in 2016, and funded four projects—the Manly Gulch Coho Access and Habitat Restoration Project, the Central California Traction Company Railroad Bridge Fish Passage Improvement Project, the Pacific Lamprey Passage Assessment Database Project, and the Juvenile Fish Passage Criteria Assessment Project.

Pacific Marine and Estuarine Fish Habitat Partnership

Communications & Outreach

In 2016, The Pacific Marine and Estuarine Partnership (PMEP) began compiling a “State of the Knowledge” report on eelgrass habitats on the West Coast with support from the Nature Conservancy and NOAA. The report, due to be completed in 2017, will document extent of native eelgrass, fish use of eelgrass, and ecosystem services provided by eelgrass beds. It will also provide recommendations for a standardized protocol for future sampling of fish and shellfish use of eelgrass habitats.



Science

PMEP continues to build a spatial data framework that supports West Coast-wide comparisons of estuarine habitat and helps to assess opportunities for estuarine habitat restoration. In 2016, PMEP worked to finalize its map of the extent of West Coast tidal wetlands using extreme water level data and LiDAR (Light Detection And Ranging). These new tidal wetland maps will greatly improve and expand our understanding of West Coast estuaries, provide a solid base layer for west-coast-scale analysis of wetland losses, and assist in evaluating restoration and conservation opportunities.

Conservation & Restoration

In 2016, PMEP provided \$140,474 in funding to help support three prioritized projects focused on estuarine protection and restoration—the Poole Slough Acquisition, Assessment, and

Planning (\$40,000), Columbia Pacific-Passage Habitat Restoration at Megler Creek (\$39,864), and the Coos Bay Eelgrass Mapping Project (\$60,610).

Pacific Lamprey Partnership

Communications & Outreach

In 2016, the Pacific Lamprey Partnership convened the Policy Committee in 2016 and had over 60 representatives from the partnership participate. They identified work priorities in 2016 which included advancing Regional Implementation Plans, our strategic plans for all Regional Management Units in the U.S. range of Pacific Lamprey; implementing restoration actions; and developing our outreach plan. The Lamprey Technical Workgroup continued developing best management practices for adult passage, juvenile passage, dredging, tagging and ocean distribution.

Science

Bonneville Power Administration, through their Fish and Wildlife Program, funded entities studying lamprey limiting factors in tributaries. The Army Corps of Engineers, as part of their 10 Year Lamprey Passage Plan, funded modifications to fish ladders and lamprey passage systems on the Columbia and Snake River hydroelectric projects. The U.S. Bureau of Reclamation funded juvenile passage improvements at tributary irrigation diversions. The Yakama Nation, Umatilla and Grand Ronde Tribes continued their lamprey supplementation into areas with no or low population numbers.

Conservation & Restoration

Funding from the U.S. Fish and Wildlife Service Pacific Northwest funds, in collaboration with Columbia River tribes, tributary passage structures for adult lamprey were put in the Yakima (Yakama Nation), Warm Springs (Confederated Tribes of the Warm Springs) and Umatilla (Confederated Tribes of the Umatilla Indian Reservation) rivers. USFWS conducted distribution surveys in the mainstem Columbia River and tributaries and gathered partner



distribution data to further develop the PLFHP data clearinghouse. They discovered recolonization of the lamprey in the Big White Salmon River after removal of Condit Dam.

Great Plains Fish Habitat Partnership

Communications & Outreach

The Great Plains Fish Habitat Partnership (GPFHP) provided information developed during 2016 that will be vital to updating the strategic plan. The information combined information from the updated State Wildlife Management Plans and information derived from the Downstream Strategies Habitat Assessment to help formulate a tool to assist decisions related to optimizing conservation funding.



Science

By using the National Fish Habitat Partnership's economic calculator the GPFHP projected that their 2016 conservation projects support 29 local jobs, \$2.9 million in total sales, \$1.7 million in value added and \$1.2 million in income.

Conservation & Restoration

The GPFHP was successful in assisting with implementation of several conservation related projects during 2016. These collaborative efforts are the largely successful due to the co-involvement of the State game and fish agencies and the U.S. Fish & Wildlife Service's Fish and Aquatic Conservation program's offices and staff. Five projects were completed during the year which

expended a total of \$1,704,286 toward restoration of aquatic habitats. These projects resulted in five barriers being removed or modified and 177 miles being reconnected.

Reservoir Fisheries Habitat Partnership

Communications & Outreach

Outreach and forging partnerships were the focus of Reservoir Fisheries Habitat Partnership (RFHP) activities in 2016. RFHP and Friends of Reservoirs (FOR) reached the 55-member milestone across 22 states. These local and state-based groups/organizations are critical to leveraging local funding, in partnership with NFHP funding, to address reservoir fisheries habitat issues.



Science

The RFHP contracted with Mississippi State University to produce a reservoir habitat restoration Best Management Practices manual. RFHP and Friends of Reservoirs are working on a new website www.friendsofreservoirs.com that will be more user-friendly and better able to host the assessment and Best Management Practices manual.

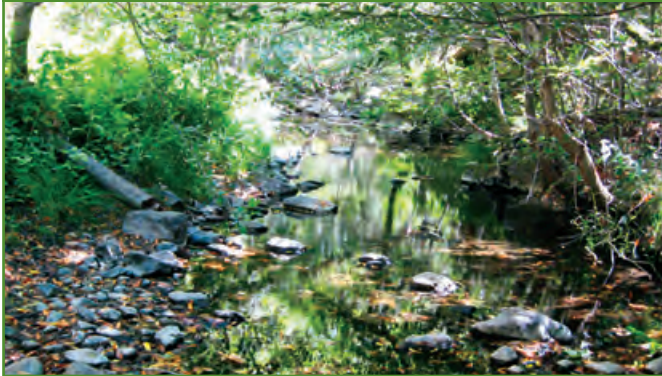
Conservation & Restoration

In 2016, the RFHP held a meeting at Big Cedar Lodge in Missouri had 75 attendees and built on previous successful celebrations in Texas and Utah. The initial "Friend of Reservoirs" award, recognizing outstanding project leaders, was given project leaders from Elephant Butte, NM, Lake Wichita, TX and Lake Livingston, TX.



2016'S TEN WATERS TO WATCH

SAN CLEMENTE CREEK POOL



EEL RIVER



1. Carmel River, California California Fish Passage Forum

The Carmel River Reroute and San Clemente Dam Project is the largest dam removal project ever to occur in California (\$83 million) and one of the largest to occur on the West Coast. It involved removal of a 106-foot high antiquated dam and implemented a watershed restoration process. The project is intended to:

- Provide a long-term solution to the public safety risk posed by the potential collapse of the outdated San Clemente Dam in the event of a large flood or earthquake, which would have threatened 1,500 homes and other public buildings.
- Provide unimpeded access to over 25 miles of essential spawning and rearing habitat, thereby aiding in the recovery of threatened South-Central California Coast steelhead.
- Restore the river's natural sediment flow, helping to replenish sand on Carmel Beach and improve habitat downstream of the dam for steelhead.
- Reduce beach erosion that contributes to destabilization of homes, roads, and infrastructure.
- Re-establish a healthy connection between the lower Carmel River and the watershed above San Clemente Dam.
- Improve habitat for threatened California red-legged frogs.

2. Eel River, Indiana Ohio River Basin Fish Habitat Partnership

The mission of the Eel River Initiative is to design and implement a holistic strategy to restore the ecological integrity of the Eel River basin within the context of human endeavors and to provide ecological research opportunities for Manchester University Environmental Studies students. The Eel River is a major tributary of the Wabash River in Northern Indiana. The Eel is a 5th order

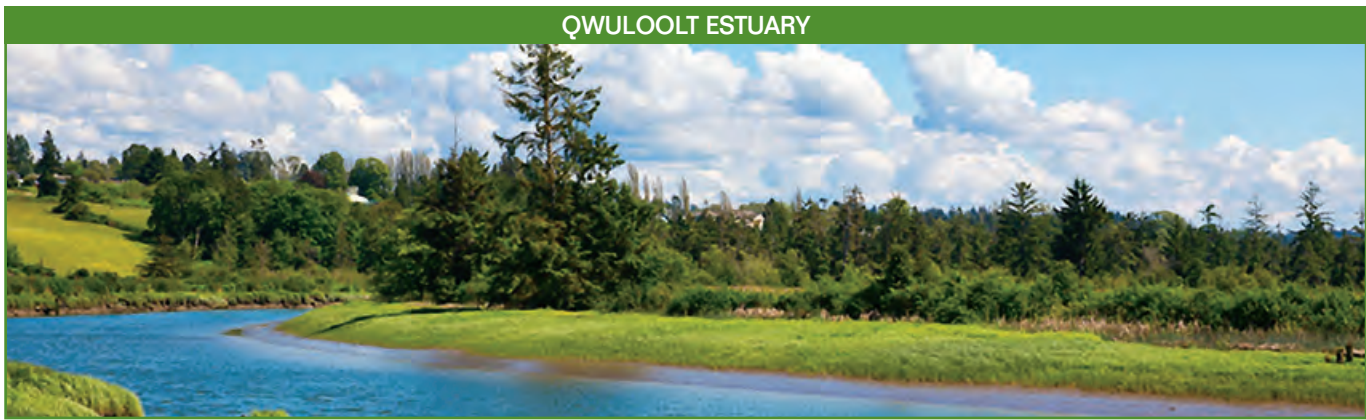
stream which has a watershed with land use nearly 80% row crop agriculture. In spite of this agriculturally dominated landscape, the Eel supports indicators of biological hope. There are bald eagles that nest along the river, nearly 60 species of fishes, over 20 species of freshwater mussels (including one federally endangered species and a recent reintroduction of an additional federally endangered mussel species), and river otters widely distributed throughout the basin. Highly regarded by anglers, the Eel also supports a strong sport fishery consisting of smallmouth bass and various panfish. In fact, the Eel River was featured on one of the early televised fishing shows in the 1960s called the "Flying Fisherman" by Gadabout Gaddis.

3. Mill Creek and Deer Creek, California California Fish Passage Forum

Both Deer and Mill creeks are considered conservation strongholds for this ESU, as well as Central Valley steelhead (*O. mykiss*), which are listed as threatened under the Federal Endangered Species Act, and fall-run Chinook salmon, listed as a State Species of Special Concern. The Final Central Valley Chinook Salmon and Steelhead Recovery Plan identi-

UPPER MILL CREEK





QWULOOLT ESTUARY

fies Deer and Mill creeks as top priority watersheds for the recovery of Central Valley spring-run Chinook salmon and Central Valley steelhead (National Marine Fisheries Service (NMFS 2014). Improving fish passage on both creeks is vital to the overall health and recovery of Chinook salmon and steelhead in California’s Central Valley.

**4. Peno Creek, Missouri
Fishers and Farmers Partnership**

Agricultural landowners in Peno Creek Priority Watershed (Salt River Basin) are voluntarily installing best management practices to meet NFHP/FFP goals through water quality improvement and habitat protection. Best management practices will reduce erosion, sedimentation, and nutrient loading. Some of these actions include installing alternative drinking sources and stream crossings, fencing cattle out of the stream, reforestation of the riparian corridor, streambank stabilization or other aquatic habitat restoration, and establishment of cover crops to improve soil health. Stakeholders will continue to be consulted to guide long-term community watershed efforts with the Missouri Department of Conservation (MDC) and the Natural Resources Conservation Service (NRCS). Practices are installed by landowners and contractors under MDC guidance and are guaranteed in place for at least 10 years.



PENO CREEK

**5. Qwuloolt Estuary, Washington
Pacific Marine and Estuarine Partnership**

The Qwuloolt (Qwuloolt means “marsh” in the Lushootseed language) Estuary is located within the Snohomish River floodplain about three miles upstream from its outlet to Puget Sound. Historically, the area was tidal marshland forest scrub-shrub habitat, interlaced by tidal channels, mudflats and streams. The project area was cut off from the natural influence of the Snohomish River and Salish Sea tides by levees, and drained by ditches instead of stream channels. Prior to the breach the area was characterized mostly by a monoculture of invasive reed canary grass instead of native estuarine vegetation, and warm water invasive fishes and amphibians. Through the cooperation of its many partners, this project has returned some of the historic and natural influences of the river and tides to the Qwuloolt area.

**6. Lake Wichita, Texas
Reservoir Fish Habitat Partnership**

Lake Wichita is the third oldest reservoir in Texas, completed in 1901. Historically Lake Wichita was known as the “Gem of North Texas”, and served as a recreation destination social mecca, a driving economic force, as a haven for the wise-use and conservation of fish and wildlife resources, and as a foundation for community growth by serving as a drinking water



LAKE WICHITA

source. Having surpassed its expected 100-year life span, Lake Wichita is no longer able to provide significant social, economic, ecological, or recreational benefits to the community. Having recently gone through a historic drought, we were able to see first-hand the fisheries habitat impairments that plague Lake Wichita. Siltation, degraded shoreline areas, loss of connectivity, excessive nutrients, lack of structural habitat, and lack of water coming from the watershed combine to cause Lake Wichita to cease to meet any of its intended purposes.

MULBERRY RIVER



**7. Cathie Brown Streambank Stabilization and Habitat Project, Mulberry River, Oark, Arkansas
Southeast Aquatic Resources Partnership**

This project seeks to stop erosion, reduce sedimentation, reduce elevated water temperatures, and restore a riparian zone of the Mulberry River, a state-designated Extraordinary Resource Waterbody and nationally designated Scenic River. Restoration will take place on private property adjacent to US Forest Service (USFS) lands. This is a cooperative community project that will restore the streambank, reestablish the riparian zone 60 feet out into the floodplain, and educate citizens on water quality and river protection.

**8. Weber River, Utah
Western Native Trout Initiative/
Desert Fish Habitat Partnership**

This project was funded to protect native fish species and improve water use efficiency for water companies in the Weber River drainage, Utah. It re-connects 17.5 river miles and allows native Bonneville Cutthroat Trout (*Oncorhynchus clarki utah*) and Bluehead sucker (*Catostomus discobolus*) to pass one mainstem diversion and two culvert barriers that had fragmented mainstem and spawning habitats in two tributaries. Both Bluehead sucker and Bonneville Cutthroat Trout have experienced extensive population declines and range contraction. In the Weber River, Bluehead sucker occur in three remaining fragmented reaches with the strongest population in the Weber River confined below

BONNEVILLE CUTTHROAT TROUT, WEBER RIVER



the diversion structure. Allowing passage around this diversion provides Bluehead sucker access to canyon habitat. Large fluvial Bonneville Cutthroat Trout have been virtually eliminated from river mainstems rangewide, but still persist within isolated mainstem segments of the Weber River, unable to migrate back to spawning grounds in tributary streams. Each reach in the Weber River supporting these two species has been fragmented by mainstem diversions threatening the population resiliency, genetic diversity and long-term persistence of both species.

**9. Harpeth River, Tennessee
Southeast Aquatic Resources Partnership**

The Harpeth River, one of the most ecologically, culturally, historically, and recreationally significant rivers in Tennessee, drains nearly 900 square miles in Middle Tennessee and flows through one of the fastest growing areas in the country. It is a state designated Scenic River in Davidson County and easily accessible from downtown Nashville.

In 2010, the Harpeth River Watershed Association (HRWA) secured support from collaborative funding programs of the U.S. Fish and Wildlife Service, Southeast Aquatic Resources Partnership, and the National Fish Habitat Partnership (NFHP) for activities that improve fish habitat and remove blockages to fish passage. This project removed the only barrier on the Harpeth River, a lowhead dam, and eliminated a 1.7-mile-long impound-

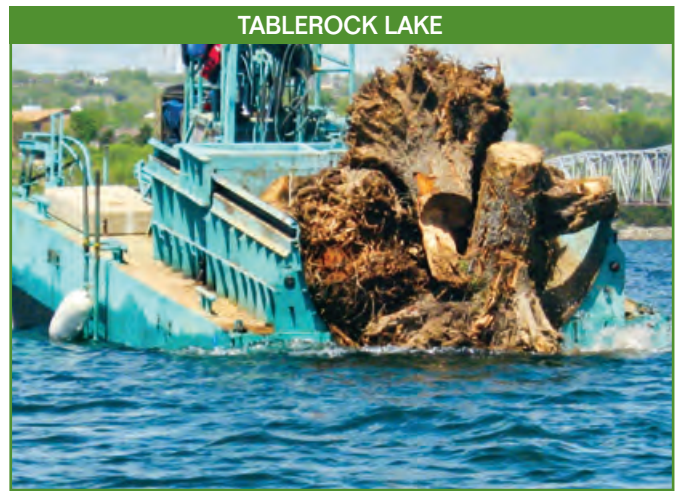
HARPETH RIVER



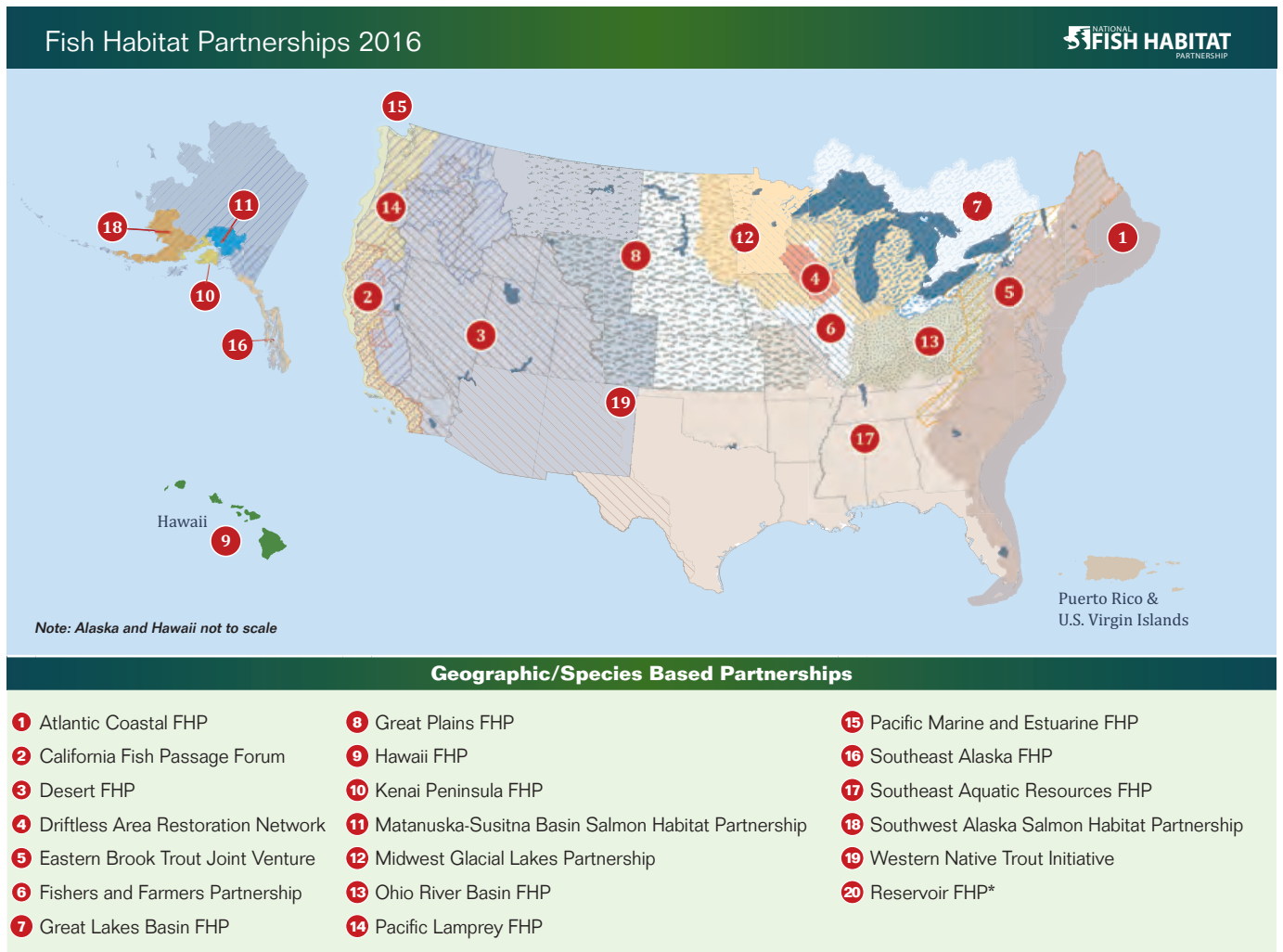
ment in order to reconnect 36 miles of river and restore riffle/run aquatic habitat that is presently submerged. The project was a collaboration between HRWA, the City of Franklin, and the TN Department of Environment and Conservation (TDEC), with a total cost of \$870,000. With the removal of the lowhead dam, the entire river system is now a free-flowing river, making the Harpeth one of only three rivers in Tennessee to achieve this status.

10. Tablerock Lake, Missouri Reservoir Fish Habitat Partnership

Table Rock Lake and Lake Taneycomo are located in the White River Hills region of the Ozark Plateau along the Missouri-Arkansas border. At conservation pool, Table Rock Lake encompasses 43,100 acres with 745 miles of shoreline, and Lake Taneycomo covers just over 2,000 acres. Table Rock Lake is the second largest of five reservoirs in the upper White River drainage basin which covers over 5,000 square miles in both Missouri and Arkansas. The U.S. Army Corps of Engineers estimates the recreational use of the lake at between 40 and 50 million visitor visits annually with



the economic value of the fishery estimated at \$41 million (1997 estimate). Along with the Branson tourism industry, Table Rock and the other White River impoundments are responsible for hundreds of millions of dollars pumped into the local economies.



*The Reservoir FHP is a system-based partnership that covers reservoirs geographically across the U.S. Includes current fish habitat partnerships, approved by the NFHP Board, June 2016.