Fishers & Farmers Partnership for the Upper Mississippi River Basin

Winter 2016 Highlights
Fishers & Farmers Partnership has answered a national call to improve U.S. waters and fisheries through the National Fish Habitat Partnership. 
Fishhabitat.org

Fish Habitat Partnerships consist of state, federal, and tribal agencies, non-governmental organizations, corporations and private individuals. They are self-identified, self-organized, and self-directed communities of interest formed around geographic areas, keystone species, or system types. There are five that focus their efforts all or in part in the Midwest Region of the U.S. Fish and Wildlife Service. These include the Driftless Area Restoration Effort, Midwest Glacial Lakes Partnership, Great Lakes Basin Fish Habitat Partnership, Ohio River Basin Fish Habitat Partnership, and the Fishers and Farmers Partnership of the Upper Mississippi River. Fish Habitat Partnerships are the working units of the National Fish Habitat Partnership.

The mission of the National Fish Habitat Partnership is to protect, restore and enhance the nation’s fish and aquatic communities through partnerships that foster fish habitat conservation and improve the quality of life for the American people.
The National Fish Habitat Action Plan (NFHAP/NFHP) is one of the current success stories in trout habitat conservation. The NFHAP idea began in 2001 as an attempt to address the nationwide crisis of fish habitat loss and degradation. Modeled after the North American Waterfowl Management Plan, NFHAP was signed in 2006 and currently works to create strong local and regional partnerships to address important fish habitat issues. NFHP is administered by the U.S. Fish & Wildlife Service, and a key role is to provide funding to Fish Habitat Partnerships for on-the-ground (and water) projects to benefit fish and their aquatic habitat.

Fish Habitat Partnerships are the workhorses of NFHP and there are currently 19 of them across the United States. Some were formed around important aquatic habitats and geographic areas, and others around species of fish (think trout!) Here in Wisconsin we have four Fish Habitat Partnerships: the Driftless Area Restoration Effort, the Great Lakes Basin Fish Habitat Partnership, the Midwest Glacial Lakes Partnership, and the Fishers & Farmers Partnership for the Upper Mississippi River Basin.

Trout anglers in Wisconsin and readers of Trout Unlimited’s quarterly publication,
TROUT, are perhaps familiar with the Driftless Area Restoration Effort. DARE is a Fish Habitat Partnership formed under NFHP to address the loss and degradation of coldwater stream habitat in the Driftless Area. Other trout-centric Fish Habitat Partnerships include the Eastern Brook Trout Joint Venture and the Western Native Trout Initiative. The Fishers & Farmers Partnership addresses trout as well as other stream fishes. In 2010 I volunteered to represent Wisconsin DNR Fisheries on the steering committee of Fishers & Farmers. I currently serve as co-chair of the Partnership along with Rod Ofte, who is a 4th generation farmer, a Wisconsin Grass-fed Beef Cooperative general manager, and a Wallace Pasture Project consultant.

Rod Ofte, Coon Valley, WI

Ofte owns a ranch in southwest Wisconsin where he practices and advocates for rotational grazing as a clean water solution for improving soil and strengthening rural economies. And the Partnership is in large part held together by the service of our coordinator, Heidi Keuler, of the U.S. Fish & Wildlife Service.

Fishers & Farmers is unique among the Fish Habitat Partnerships in that representatives of natural resource agencies and agricultural communities sit at the table as equals to work towards our mission of healthy farms, healthy streams, and healthy fish.

Agriculture is important in our region. About two-thirds of land in the region is used for agriculture. Fishers & Farmers recognizes that sustaining both farms and fish requires finding common ground, and the Partnership offers a way towards that goal. This is what drew me to the Partnership: a chance to connect with farmers, to learn about their perspectives on land use and conservation, and to collaborate in achieving our goal of helping farms and fish thrive together.

Fishers & Farmers provides a number of services towards meeting our goals of healthy farms, streams, and fish in our region. We have a science team led by Alex Prentice (Missouri) that has provided project monitoring assistance and regional mapping tools to support conservation and project decision making. Our communications efforts, led by Nancy North (Minnesota), include outreach through stakeholder engagement.
Mile Creek in Minnesota, which supports a brown trout fishery. Also in Minnesota, water management drainage structures, strip-tilling, buffers and cover crops were used to reduce sediment and nutrient runoff into Rice Creek, which supports a brook trout fishery. And in Wisconsin, the Kickapoo River Watershed received project funding to establish a demonstration site for best farm management practices, to host landowner discussions about the economic benefits of best practices, to restore 30 acres of tilled floodplain to permanent cover, and to conduct water quality monitoring. We also anticipate funding a new Wisconsin project in 2017 that will further improve farming practices that will benefit trout and smallmouth bass.

Fishers & Farmers is very much a work in progress, and it has been exciting to see the Partnership grow and reach out to agricultural landowners across the Upper Mississippi River Basin. The Basin is big and the footprints of our projects are relatively small. But farmers and fishers are making connections, sharing conservation success stories, and helping to support farms that support healthy fisheries.

Fishers & Farmers projects have benefited waters ranging from warm rivers to cold streams, with some explicitly helping trout. Water storage systems and bioreactors were installed to reduce ravine erosion, sedimentation, and nutrients entering Seven-
You can have both healthy streams and economic growth.

It takes local leaders with diverse expertise working together, with understanding of local conditions and markets: farmers, crop consultants, agriculture retailers, bankers, fishermen, biologists, mapping professionals and soil scientists. Striking a balance that benefits all is a delicate one that means building working relationships between partners. In upper Midwest communities now, farming landowners and their agricultural support networks are stepping up to change practices on the land, and invite others to consider the options.

In southwest Wisconsin’s Kickapoo River area, Tom Lukens and family plan to convert vulnerable, marginally productive agricultural acres to reduce input costs, reduce soil erosion and protect water quality. Tom also has an interest in talking with others about the benefits of strategically placed native grass strips, and hopes to spark conversation locally by installing signs that explain the practice where his fields meet well-traveled roads.

Shelly Brenneman, director of Valley Stewardship Network, has worked with the Lukens family and others to develop plans, find partners, and seek cost share funding. “Demonstrations like this can help us learn how to make the most of productive land, while protecting soil and streams. Both native grass strips and cover crops keep soil and nutrients in the field, and richer soil and lower input costs can increase net farm income.”

Those practices and others can be used to advantage almost anywhere, but in southwest Wisconsin, where slopes are steep, they are vital. Land management here is tied closely to the general health of local economies, and successful collaborations have played a strong role in building stability over time.

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Collaboration Produces Benefits On and Off the Farm In Southwest Wisconsin

When there has been good habitat, little erosion, and a healthy ecosystem, vibrant industries have flourished in the watershed where Lukens and Brenneman live, particularly farming and angling. In this hilly region that spills from Wisconsin into corners of Iowa, Minnesota, and Illinois, fishing generates more than $1 billion annually for the local economy. In southwest Wisconsin alone, more than eleven thousand miles of meandering Class 1 and 2 streams have good water quality and provide habitat to sustain populations of wild trout.

Concurrently, small to medium-sized family farms have been strengthened in recent decades by alliances with local dairy co-ops such as Westby Creamery and Organic Valley, as well as artisan cheese makers. A growing market for grass-fed beef is adding value to livestock while reducing tillage and input expenses for farmers.

Overall, when diversified farms with livestock thrive, hay and grain crop rotations and learned conservation measures that protect slopes and ridge tops have continued. These diversified farmers maintain contour strips in fields, and stand ready to advise newcomers on how to manage around vulnerable sinkholes, avoid nutrient runoff into bedrock aquifers, or use effective methods like terraces, cover crops, and managed grazing to keep soil in place.

Building On a Legacy Of Collaboration & Restoration

Working together for local solutions is an old story in the Coon Valley watershed, just ten miles west of the Kickapoo River Valley. In the 1800s, when the region’s native prairie and oak savannah landscape was altered by farming practices brought from Europe, exposed soil on steep slopes and uplands eroded severely. Tons of topsoil moved from fields to valleys, impacting streams, fish habitat and farmers’ ability to retain a vital resource and support themselves.

After the Dustbowl, in the 1930s, many landowners sought a better solution. Faced with both a threat and an opportunity, they stepped away from old farming methods to work alongside Aldo Leopold and soil scientists to find new ways to farm ridges and slopes. Terraces and contour strips constructed then helped turn the farm economy around, and their use spread beyond Coon Valley to the rest of this hilly region. Many of those structures are still assets for successful farming today, with some even protected forever for agriculture by conservation easements.
In the late 1900s—when federal financial incentives supported planting more cash crops like corn—some practices on slopes that kept soil in place were discontinued. Vernon County lost an estimated fifty percent of its conventional family dairy farms between 1980 and 2005. At the same time the demand for hay and oats to feed dairy livestock decreased, as did the use of contour strips. A noticeable decrease was also seen in stream quality and fish populations.

New Challenges

Today, collaboration and innovation are still needed to sustain farming and its supporting industries, a diverse landscape, recreation, and strong local communities.

New farm and recreational landowners, absentee landowners, conventional and organic producers, and residents who have lived and learned lessons of the past now hold the future, together. Established farming practices offer insight and common ground from which to build: three- to five-year rotation systems, terraces and contour strips where non-erosive crops alternate with cash crops, cover cropping, and managed grazing. All have helped protect soil and farm incomes.

More frequent flood events are increasing soil erosion and damage, requiring new solutions. Many years of tillage have compacted some soils and made them clay-like, moving water, nutrients, and topsoil quickly off fields to streams. Other soils are porous and underlain by crevices, cracks and sinkholes in limestone bedrock that allow runoff to get into aquifers below. Solutions are tricky and require planning and a variety of skills.

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Streams and fish also need protection. Jeff Hastings, of Trout Unlimited, hopes the work that’s been done to restore streams in southwest Wisconsin will continue to be positive for landowners, wildlife, and people who love the outdoors. For many years Hastings has facilitated collaborative stream restoration projects involving landowners, local contractors, and members of Trout Unlimited. He also organizes the Driftless Area Restoration Effort Symposium annually, to bring collaborators together for friendship, learning, and action.

Management Strategies: Cover Crops, Contour Strips, and Native Grass Strips

All can keep vital soil resources in tilled fields where terrain is hilly.

**Cover crops** minimize the amount of time tilled soil is exposed and vulnerable. They increase organic and nutrient content in soil, and thus can help produce better crop yields.

**Contour strips** were designed to alternate with another crop, like corn, in a fixed width along the contours of a hill. The alternated strip usually has plants with deeper roots, like oats or alfalfa (for livestock feed), and water retention capacity to soak up and reduce runoff.

**Native grass strips** originated as an experiment at Iowa State University, and are appearing as a viable option for tilled fields in upper Midwest states. The Iowa State model, called STRIPS (Science-based Trials of Row crops Integrated with Prairie Strips), customizes strips to the land with a goal of treating all runoff leaving the field. Strip widths vary depending on quantity of water to be intercepted. They are wider where more water is flowing down-slope, and narrower where less water is flowing. They are placed where filtering and absorption capacities are greatest—on slopes, at the foot of slopes, and near streams. Prairie STRIPS function much like contour strips, with the added benefits of vital habitat for native pollinators like the decreasing population of honeybees and grassland birds like the eastern meadowlark and bobolink. Streams and fish benefit, too, when runoff is more effectively captured.

Soil Health For Strong Rural Communities

According to Iowa State University, if a watershed primarily consisting of row crops plants just ten percent of land in native prairie, strategically located on the contours and foot slope, sediment transport is reduced by ninety-five percent.

Why is this important, particularly here and now? **First, run-off matters in a landscape with sinkholes and fractured bedrock, which allow nitrate and surface liquids to run quickly into aquifers where drinking water exists.** In southwest Wisconsin this condition exists nearly everywhere. In other states bordering the Mississippi River cracked bedrock exists too, particularly in river bluff areas.

**Second, growers need to hold onto nutrients and topsoil.** The deep roots of a mix of prairie plants increase soil organic matter and improve water infiltration, and the stems of native forbs and grasses are sturdy and slowdown surface runoff to hold soil in place during rain events. According to Iowa State, water quality improves with 60% reduced overland run-off and 90% reduced transport of nitrogen and phosphorus.
Action Driven By Local Knowledge, Decisions

Recently, farmer leaders and community partners from watersheds throughout the Upper Mississippi River Basin strategized together about what is effective for profitable farms and healthy streams. They met to address pollution in the Mississippi River and its watershed. One take-away? Each community has its own special conditions and landscape considerations. Universal tools exist, but there is no one-size-fits-all answer. Recommended practices to protect soil, water, and communities must be sensitive to each particular landscape. And, if widespread adoption of practices is a goal, farmer-led conversations are important.

Jeff Pape, a farmer leader in the Hewitt Creek Watershed near Dyersville, Iowa, shared stories at the gathering about his community’s successful work to reduce nutrient runoff and protect soil—their most important resource. When talking with neighboring farmers, he asks: “What amount of soil loss is tolerable?” From there erosion prevention strategies can be found, often in conversation with others who know the local landscape.

For Dick Sloan, land management decisions are about both sustaining his Buchanan County, Iowa farm operation and adding diversity and habitat to corn and soybean fields. He learned about STRIPS at Iowa’s Leopold Center, and constructed them in his fields. "STRIPS,” he says, “do indeed cut the soil loss, along with my no-till. Plus they offer benefits for the birds, bees, beetles, and other beneficial insects that can help control crop pests like cutworm and armyworm.” In addition, Dick enjoys receiving a regular conservation payment that supplements current low revenues from crops.

Brenneman and Lukens, southwest Wisconsin collaborators, see the benefits of these and other soil protection practices like cover crops for their area. Says Brenneman, “A Natural Resources Conservation Service (NRCS) Mississippi River Basin Initiative (MRBI) grant of $5.3 million is making cover crops and other soil protection and nutrient management practices hot topics in the Kickapoo River region now.” This special opportunity provides funds to farmers and landowners (resident and absent) with ag lands in twelve selected subwatersheds of the Kickapoo River basin, for farm practices that reduce phosphorus runoff. Sixty-four funded practices include, but are not limited to: intensive rotational grazing plans, waste storage facilities, conservation cover, grassed waterways, grade stabilization structures, filter strips, nutrient management, and writing conservation activity plans such as comprehensive nutrient and grazing management plans. The application deadline for projects in the Kickapoo River area is June 2, 2017. Contact your county conservation office to apply.

Mississippi River Basin Initiative funds are available in selected areas of all five states of the Upper Mississippi River Basin including: Iowa, Illinois, Minnesota, Missouri, and Wisconsin. To see if your area is eligible for MRBI funds, or to apply for other cost share funding for on-farm practices, contact your county NRCS office.
Rock Creek has a 70 square mile watershed and is a tributary to the Cedar River, an Upper Mississippi River Basin Initiative watershed. Thirty-two fish species inhabit Rock Creek, which include Smallmouth Bass, Rock Bass and nine species of greatest conservation need, including two state threatened species (American Brook Lamprey and Black Redhorse). This modification consisted of creating a low water crossing for the land owner using 3-6-inch washed stone. Below the crossing, the existing riffle was rearranged and weir stones were brought in to create a vortex weir. This created a lower slope than the existing riffle to promote fish passage. The weir also keeps the washed stone in the crossing from mobilizing. Thanks to IA DNR Staff -Martin Konrad, Mike Siepker, George Scholten, Mitchel County -Andy Taets, and of course, the landowner.