

U.S. Fish & Wildlife Service



Partners for Fish and Wildlife Program

*Midwest Region
Strategic Plan
2012-2016*

Illinois

Indiana

Iowa

Michigan

Minnesota

Missouri

Ohio

Wisconsin





*“The landscape on any farm is the owner’s
portrait of himself”, Aldo Leopold*

Photo: Jack Bartholmai



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Introduction

The U.S. Fish and Wildlife Service's (Service) mission is working with others to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people. The Partners for Fish and Wildlife Program (Partners Program) supports this mission by efficiently achieving voluntary habitat restoration and conservation on private lands, through financial and technical assistance, for the benefit of Federal Trust Species. Federal trust species include migratory birds, inter-jurisdictional fish, federally listed threatened and endangered species, and certain marine mammals. These trust species include common animals, like migratory birds and native fish (mourning doves, bluebirds and brook trout for example), and uncommon species classified as threatened or endangered, such as the Karner blue butterfly and the Topeka shiner. While our projects are designed to help those species most in need, they also help keep our common species common.

While the Service works under an array of statutory authorities and resource management programs to meet its mandates, the Partners Program serves as a bridge to the land owners and land managers to develop partnerships that directly benefit fish and wildlife. Our approach is to engage willing partners through non-regulatory incentives to conserve, restore and protect valuable fish and wildlife habitat on their property and in their communities.

We do this by providing funding, technical support and planning tools needed to make on-the-ground conservation affordable, feasible, and effective. In addition to established Partners Program funding, our biologists work with landowners to leverage other state and federal incentive programs to help fund habitat improvements on their land. We also work closely with non-government groups to restore and protect important fish and wildlife habitat.



Karner blue butterfly
Photo: P. Delphey, USFWS

The Service's Midwest Region encompasses eight states in the western portion of the Great Lakes and the upper Mississippi River drainage, including portions of the Missouri and Ohio rivers. This diverse landscape provides habitat for a rich array of fish and wildlife species as well as more than 75 species considered endangered, threatened or candidates for listing under the Endangered Species Act.

The Service manages 1.2 million acres of land in the Midwest Region and includes 54 national wildlife refuges, 12 wetland management districts, 15 fisheries stations, 8 ecological services field offices, 19 law enforcement stations, and eight state private lands/Partners for Fish and Wildlife offices. Landowner assistance through the Partners Program is available at many Service offices in the Midwest Region.

Per the Partners for Fish and Wildlife Act (Public Law 109-204), the Midwest Region's Partners Program concentrates its work in three areas: wetland restoration, grassland restoration, and stream and riparian restoration. The Midwest contains some of the richest farmland in the



Bobolink – declining grassland dependent bird species.
Photo: Jack Bartholmai

world and is a national leader in corn and soybean production. Historically, the wetlands and prairies that spread across the Midwest provided important breeding and rearing habitat for waterfowl and grassland-dependent birds, mammals, reptiles, amphibians and invertebrates. The majority of these wetlands have been drained, and the wetland basins and prairie converted to crop production or other uses. Similarly, the streams and rivers of this region provided valuable spawning and rearing habitat for a myriad of fish and aquatic species. Nearly all these waterways have become altered, degraded, and impaired.

In addition to improving habitat for Federal trust species, the Partners Program’s priorities and objectives include:

- Complement activities on National Wildlife Refuge System lands, or contribute to the resolution of problems on refuges that are caused by off-refuge practices.
- Address species and habitat priorities that have been identified through Service planning teams (with our partners), or in collaboration with State fish and wildlife agencies.
- Reduce habitat fragmentation or serve as buffers for other important Federal or State conservation lands.
- Result in self-sustaining systems that are not dependent on artificial structures.
- Provide conservation leadership and promote partnerships.
- Encourage public understanding and participation.
- Work with U.S. Department of Agriculture (USDA) to implement conservation programs.

The Partners for Fish and Wildlife Vision document identifies five goals, which we address in this, the Midwest Region’s Partners for Fish and Wildlife Program Strategic Plan:

Goal One - Conserve Habitat. Conservation, restoration, and enhancement of terrestrial and aquatic habitats for the benefit of Federal Trust Species.

Goal Two - Broaden and Strengthen Partnerships. Accomplish our work through voluntary partnerships.

Goal Three - Improve Information Sharing and Communication. Collaborate and share information and concerns with our partners, stakeholders, decision-makers, and others to protect, restore, and enhance Trust Resources.

Goal Four - Enhance Our Workforce. Develop a diverse, highly-skilled and motivated workforce which is results-focused, acts with integrity, and seeks creative solutions to the challenges of private land habitat restoration.

Goal Five - Increase Accountability. Measure, assess, and report on the effectiveness, efficiency and fiscal integrity of our habitat conservation programs and activities.

This 2012 – 2016 Strategic Plan for the Midwest Region’s Partners Program is a revision of our first strategic plan, which covered the period 2006-2011. Based on our experience with the first strategic plan we found there were many successful aspects of the plan that we carried over into this strategic plan. We also made some changes, particularly to Focus Areas, which are described in further detail below. We look ahead to continuing our exemplary conservation work with both existing and new partners.

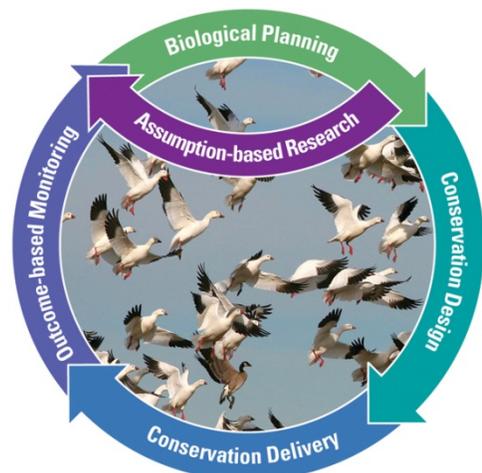
Landscape Conservation

In the 21st century we are facing unprecedented conservation challenges as a result of climate change and other stressors including habitat fragmentation, invasive species, and impaired water quality and quantity. The scope and complexity of these challenges requires that the conservation and science communities, including states, tribes, non-governmental organizations, and other stakeholders, work together to preserve our nation’s fish and wildlife heritage. The Service has instituted Strategic Habitat Conservation (SHC) and Landscape Conservation Cooperatives (LCC) as frameworks to better direct our future conservation efforts and achieve our conservation mission under these landscape-level changes (see below).

Strategic Habitat Conservation

Strategic Habitat Conservation (SHC) is a way of thinking and of doing business to ensure that we accomplish the right things, in the right places, at the right times based on sound science. It requires that we set biological goals for priority species populations, allows us to make strategic decisions about our work, and encourages us to constantly reassess and improve our actions. These are critical steps in dealing with the range of landscape-scale resource threats. SHC consists of five parts: 1) Biological Planning; 2) Conservation Design; 3) Conservation Delivery; 4) Monitoring and Adaptive Management; and 5) Research. (<http://www.fws.gov/science/shc/index.html>)

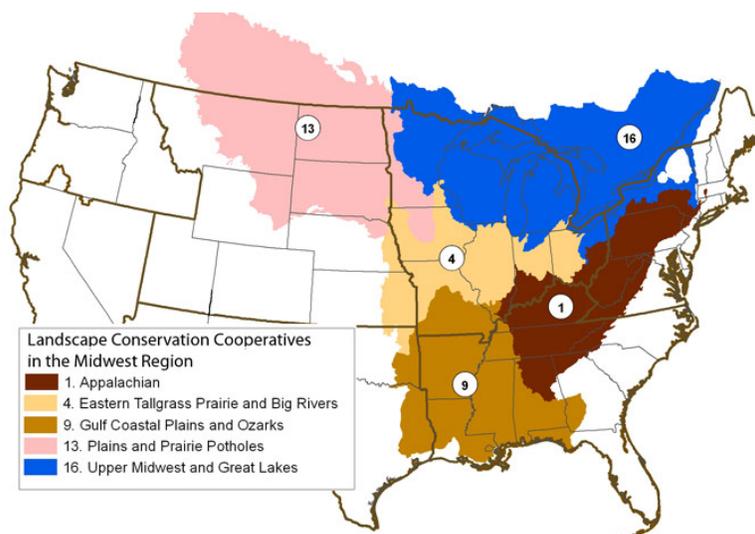
SHC provides a framework upon which the Service can work with partners to connect project- and site-specific efforts, such as those of the Partners Program, to landscape-level biological goals and outcomes. The Partners Program by law, design and FWS policy is a private lands conservation delivery program and therefore operates primarily under this element of the SHC process. However, the other elements of SHC play an important role in the conservation delivery of the Partners Program. Partners Program field staff have consistently delivered measurable biological results and conservation actions "on



the ground". In the process, Partners Program biologists have leveraged the goodwill generated from our projects to develop and expand essential partnerships and to establish a cooperative framework to address future habitat conservation challenges.

There are many biological planning and conservation design tools used in achieving conservation delivery. The Partners Program relies on published scientific literature, conservation plans, species accounts, recovery plans, and local working groups. Partners Program biologists participate on local working groups to identify key geographic areas on the landscape for habitat restoration. Some of the tools that have regional applicability include products from the Joint Ventures (Upper Mississippi River Great Lakes, Prairie Pothole, Central Hardwoods) as well as other resources including:

- North American Waterfowl Management Plan
- U.S. Shorebird Conservation Plan
- North American Waterbird Conservation Plan
- Partners in Flight Landbird Conservation Plan
- Fish Habitat Partnership Conservation Strategies
- North American Bird Conservation Initiative
- FWS Region 3 Conservation Priorities
- Endangered/Threatened Species Recovery Plans
- State Wildlife Action Plans
- Landscape Conservation Cooperatives



The final step in this adaptive management process is monitoring and evaluation. The Partners Program relies on biologists reviewing and monitoring project success and the partnerships the program has developed with academic institutions and others to assist with monitoring of restoration projects. The SHC process makes the Partners Program more efficient, transparent, and effective in restoring habitat on private land for federal trust resources.

Landscape Conservation Cooperatives

Landscape Conservation Cooperatives are a network of self-directed partnerships that provide shared science capacity to inform resource management actions addressing climate change and other stressors within and across landscapes. Landscape Conservation Cooperatives provide scientific and technical support for conservation at broad landscape scales. They support biological planning, conservation design, prioritizing and coordinating research, and designing

species inventory and monitoring programs. LCCs also have a role in helping partners identify common goals and priorities to target the right science in the right places for efficient and effective conservation. By functioning as networks of interdependent units rather than independent entities, LCC partnerships can accomplish a conservation mission no single agency or organization can accomplish (<http://www.fws.gov/midwest/climate/LCC.cfm>). The challenge for the Midwest Partners Program is to engage with the LCCs to take advantage of the bridge that LCCs provide between applied science and conservation delivery.

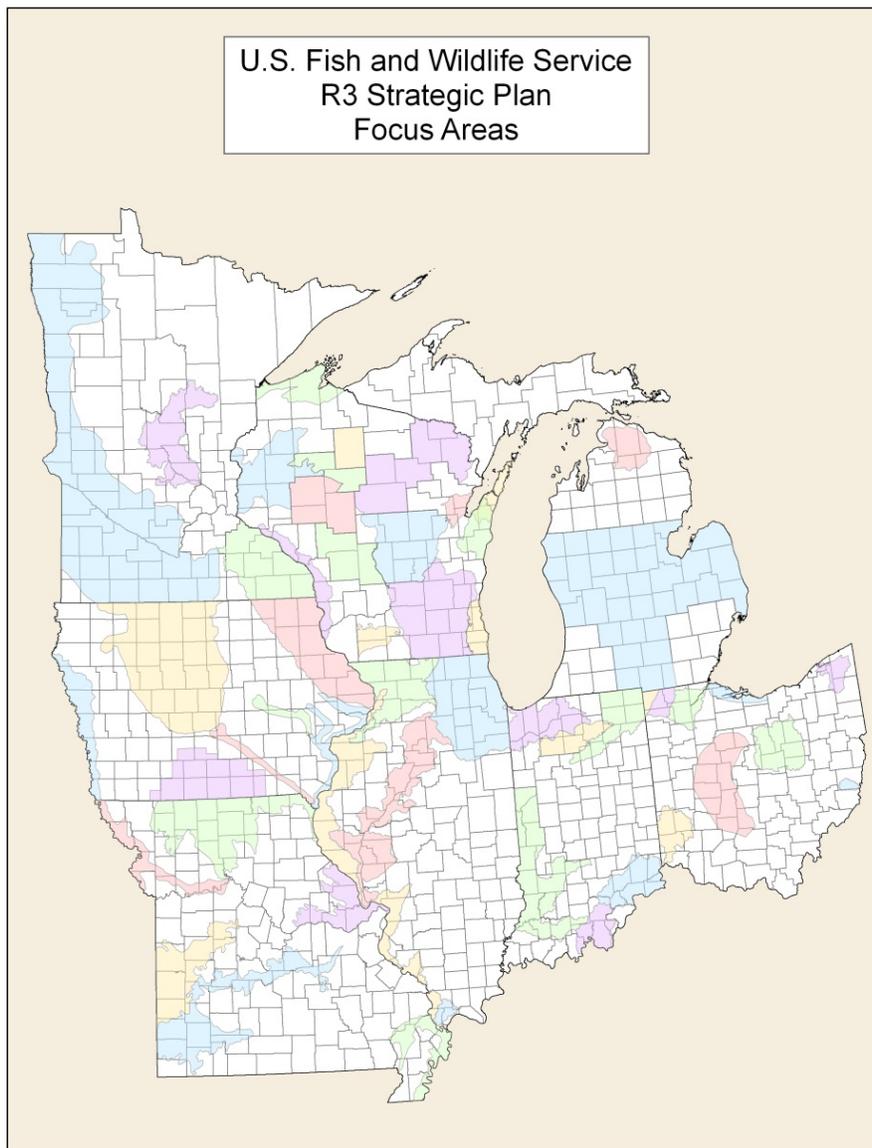
The following LCCs encompass the Midwest Region:

- Appalachian
- Eastern Tallgrass Prairie and Big Rivers
- Gulf Coastal Plains and Ozarks
- Plains and Prairie Potholes
- Upper Midwest and Great Lakes

Climate Change

One of the Service's priority actions under its Climate Change Strategic Plan is working to provide recommendations and assess progress toward promoting habitat connectivity to support species population objectives. As habitats alter and species' ranges shift as a result of climate change, habitat corridors will become even more crucial to species' migration and ultimate survival (<http://www.fws.gov/home/climatechange/strategy.html>). Private lands will be fundamental components of any habitat corridors because the majority of lands in the Midwest Region are privately owned. The Partners Program has a crucial role in the conservation of habitat corridors because we work on private lands and one of our priorities is to reduce habitat fragmentation or serve as buffers for other important Federal or State conservation lands.

Midwest Region Partners Program Goals and Focus Areas



Focus areas are the geographic areas within the Midwest Region where most of Partners Program partnership efforts will be focused over the next five years. These areas have both high priority for benefitting trust species and greatest opportunity for the Partners Program to work on private land habitat restoration. When the Midwest Partners Program first established focus areas for the 2006 – 2011 Strategic Plan, the State Coordinators and staff gathered extensive input from other Service programs, other federal and state agencies, tribal entities, non-governmental organizations and private individuals to identify focus areas. These original focus areas tended to be large because they were based on larger scale hydrologic units.

For the 2011-2016 Strategic Plan, State Coordinators were given the option of changing or adjusting focus areas if it would improve delivery of the Partners Program in their state. Changes to focus areas were informed primarily by our experience of working with partners on

the landscape on a daily basis. In this way we took into account the strengths and limitations of the Partners Program, funding limitations, future partnership opportunities, habitat restorability, resource threats and, in many cases, whether the existing focus areas were larger than the State Coordinators felt could be effectively addressed. In many cases the borders of existing focus areas were fine-tuned to more closely match the habitat types that are the emphasis of a particular focus area. In some cases the new focus areas encompass portions of previous focus areas. In some states the focus areas have been aligned to deliver conservation within particular ecoregions or priority regions of each state. In a few cases existing focus areas were withdrawn, primarily to enable resources to be concentrated on areas that had greater conservation need or opportunity.

The result of this revision has been the identification of 62 focus areas across the eight states of the Midwest Region. Appendix A: Focus Areas by State contains narrative descriptions of each focus area, five-year habitat targets, as well as species to be benefited by the restoration actions. We have identified some of the existing planning that inform our efforts in these areas. The Partners Program will expend the majority of our technical and financial assistance in these focus areas over the next five years. In setting our five year habitat targets we factored in likely budget decreases that may affect staffing and financial assistance capabilities over the next five years.

Goal One: Conserve Habitat

The conservation, restoration, and enhancement of terrestrial and aquatic habitats for the benefit of Federal Trust Species is the primary goal of the Partners Program in the Midwest Region.

In the Midwest Region, our Partners projects are primarily within three general categories: wetland restoration, upland restoration, and in-stream and riparian (stream bank) restoration, additionally, we also restore forests. The spread of invasive species is an increasing threat to habitat conservation. Therefore, efforts toward short- and long-term control of invasives will continue to be an emphasis of the Midwest Partners Program. To gain maximum wildlife benefits, Partners projects strive to complement existing habitat conservation projects in proximity to protected conservation lands, including National Wildlife Refuges, federal Waterfowl Production Areas, and state conservation lands.

Changes to natural communities have occurred incrementally over many years and we recognize the need to restore them in the same manner – one acre and one mile at a time. We also recognize that the Partners Program cannot address all of the habitat restoration needs that confront the conservation community. Therefore we have set a course to focus our efforts towards wetlands, grasslands and streams that offer the greatest potential for successful restoration and benefit to declining Federal Trust Species.

Wetlands

Spread across the prairie potholes, the corn-belt, and river bottoms throughout the Midwest, the wetlands of the central United States provide critical nesting, feeding, resting and migration habitat that waterfowl, other birds and wildlife need throughout the year.

Wetland drainage, intensive farming practices and development in the Midwest have resulted in the loss of more than 90 percent of the historical wetlands throughout the region. While many National Wildlife Refuges, Waterfowl Production Areas and state wildlife areas were established



Illinois wetland before restoration Photo: USFWS

to protect these wetlands, the vast majority remains in private ownership. For this reason, wetlands are a priority habitat of the Midwest Region's Partners Program. Working with willing landowners on a voluntary basis, our biologists bring together the knowledge, equipment and materials needed for successful wetland restorations on private lands.



Illinois wetland after restoration Photo:USFWS

While many landowners undertake wetland restorations because they wish to attract wildlife, the benefits to the ecosystem and society are actually far greater. In addition to their role as contaminant filters, wetlands also serve as important buffers against flooding and major rain events. These qualities in turn help prevent erosion and other property destruction. Wetlands not only benefit ducks and geese, but a host of other animals also benefit; wetlands provide a smorgasbord of food and nutrients for invertebrates, shorebirds, wading birds, raptors, mammals, and a long list of reptiles and amphibians. About one half of our threatened and endangered animal species depend on wetlands during some part of their life cycle.

Wetland restorations usually involve heavy construction equipment and earth moving. Typical projects include plugging drainage ditches and tile lines or constructing berms and impoundments to restore degraded wetlands.

Grasslands

While the loss of wetlands has been dramatic, native prairie in the Midwest—especially tallgrass prairie—is almost completely gone, primarily because of the conversion of native grassland to agriculture. Estimates put the loss of tallgrass prairie somewhere between 95 and 99.9 percent (Samson et al. 1998). Much of what is left now are small remnants; areas too steep to plow, degraded pastures, scattered patches along railroad grades, old cemeteries. Native prairie includes oak savanna, pine barrens, cedar glades and loess hills. Prairie restoration is also a top priority for the Midwest Region's Partners Program.



Prairie restoration, Minnesota

Photo: USFWS

As is the practice on our own Service lands, we encourage landowners to seed their upland areas with a diverse mix of native grasses and wildflowers. Research has shown that plantings that include a variety of native plant species provide better nesting cover and a better food source for wildlife than plantings that include only a single (monotypical) plant species. Once grassland habitats are established, periodic mowing or burning is used to control invasive and woody plants and to assist the growth of native

prairie plants, which evolved with wildfire. Prescribed burning is an important management tool used to break down dead plant material, provide nutrients used by native prairie vegetation, and control invasive plants. Developing more effective prescribed burning methods and educating landowners about the benefits of prescribed burning continue to be important facets of the Partners Program.

Stream and Riparian Restoration

Helping landowners protect and restore small streams and riverbanks (riparian areas) on their property is an important component of the Midwest Partners Program. Typically, these projects often involve reshaping and stabilizing stream banks and bottoms and enhancing fish habitat by strategically placing rocks or large woody debris in stream channels to scour out deep pools favored by many fish species.

In addition to supporting healthy fish populations, these projects help reduce run-off and sedimentation and increase water quality. These stream improvements have helped fish species as diverse as the endangered Topeka shiner in prairie streams to brook trout in northern cold water streams.

Another focus of the Partners Program is providing unimpeded fish passage by removing barriers. Here, the issues center on road culvert replacement and dam removal. Over time



Dam Removal Wisconsin

Photo: USFWS

culverts become plugged with debris or their outlets are perched higher than the stream. Dams, many of which have long out-lived their intended purpose, also become silted in and dangerous to recreational users. Both culverts and dams restrict water flow and fish movement.

There are thousands of these old dams and hundreds of thousands of non-functioning culverts scattered across the landscape of the Midwest, each potentially contributing to seasonal flooding, hazardous roadways and waterways, and serving as an impediment to native fishes and other

aquatic life (USFWS 2007). Working with other Service programs, landowners, and our state, non-government and other private partners, the Partners Program has taken on the challenge of stabilizing stream corridors, restoring natural stream flows, and providing a place for native fish and wildlife to flourish again.

Stream and riparian restorations involve culvert removal, bank restorations, rock weir construction, woody debris placement and other measures to create fish habitat, reduce erosion and improve water quality. Because they can involve detailed engineering and hydrology work, in-stream restorations can be expensive. For this reason, many partners and resources are leveraged to accomplish restoration goals.

The following objectives and strategies provide a blueprint for the Midwest Partners Program to follow to successfully achieve the desired goal:

Objective 1: Restore and enhance 15,720 acres of semi-permanent wetland habitat for Federal Trust Species; 12% of the remaining Upper Mississippi River Great Lakes Joint Venture (UMRGLJV) semi-permanent wetland goals for waterfowl.

Strategy 1: Work with private landowners and other conservation organizations to achieve the five-year habitat restoration targets as described in Table 1.

Strategy 2: Continue the Midwest Partners Program's role in providing expertise for the implementation of USDA wetland programs (e.g. Wetland Reserve Program) to achieve 60% of the remaining UMRGLJV goals.

Strategy 3: Follow the SHC model for planning, designing, delivering and monitoring wetland projects.

Objective 2: Restore and enhance 44, 290 acres of grassland habitat for Federal Trust Species; 4% of the remaining Upper Mississippi River Great Lakes Joint Venture (UMRGLJV) grassland habitat Goals for Bird Conservation Region 22 and 23.

Strategy 1: Work with private landowners and other conservation organizations to achieve the five-year habitat restoration targets as described in Table 1.

Strategy 2: Continue the Midwest Partners Program's role in providing expertise for the implementation of USDA grassland programs (e.g. Conservation Reserve Program, Grassland Reserve Program) to achieve 30% of the remaining UMRGLJV goals.

Strategy 3: Follow the SHC model for planning, designing, delivering and monitoring grassland projects.

Objective 3: Restore and enhance 174 miles of riparian habitat, 87 miles of stream and remove 23 structures that impede fish passage.

Strategy 1: Work with private landowners and other conservation organizations to achieve the five-year habitat restoration targets as described in Table 1.

Strategy 2: Continue the Midwest Partners Program's role in providing expertise for the implementation of conservation programs targeted towards aquatic systems (e.g. EPA Great Lakes Restoration Initiative, Trout Unlimited) to benefit Federal Trust Resources.

Strategy 3: Follow the SHC model for planning, designing, delivering and monitoring grassland projects.

Objective 4: Optimize delivery of Partners Program in 62 Midwest Focus Areas that will positively affect fish and wildlife populations.

Strategy 1: Identify and promote conservation opportunities in focus areas to contribute towards population goals of migratory birds as identified in the UMRGLJV and to enhance populations of T/E species as identified in Region 3 Recovery Plans.

Strategy 2: Work with Landscape Conservation Cooperatives (LCC's) to prioritize habitat restoration projects within focus areas.

Table 1. Midwest Region Focus Areas and five year habitat targets (2012-2016). See Appendix A for detailed information about these Focus Areas by state.

State	Focus Area	Five Year Habitat Targets				
		Wetland (acres)	Upland (acres)	Stream (miles)	Riparian (miles)	Structures (no.)
Illinois	Cache River	125	0	15	20	
	Lower Illinois River	650	650		20	
	Mississippi River	550	400		15	
	Northeast Illinois	125	215			4
	Northwest Illinois	350	400		7	5
Total		1800	1665	15	62	9
Indiana	Blue River	50	250	1.0		
	Grand Kankakee/Northwest Moraines	300	350		0.5	
	Muscatatuck Flats and Lowland	75	250		0.5	
	Northeast Pothole Region	300	550		0.5	
	Southwest River Corridors	150	350		0.5	
	Upper Tippecanoe River	150	125		1	
Total		1025	1875	1.0	3.0	
Iowa	DesMoines River Corridor	100	750			
	Driftless Area	250	500		5	
	Iowa River	250	500			
	Loess Hills	100	1500			
	Prairie Pothole	400	750			
	Southeast Iowa lowlands	100	100		2	
	Southern Iowa Driftless		8250			
Total		1200	12350		7	
Michigan	Northern Michigan Streams			20		
	Southern Michigan	1500	2500			
Total		1500	2500	20		
Minnesota	Driftless	100	370	5		
	Mississippi Headwaters	500	1250			
	Prairie Pothole	5250	11250	21	21	
Total		5850	12870	26	21	

Table 1 (continued). Midwest Region focus areas and five year habitat targets (2012-2016). See Appendix A for detailed information about these focus areas by state.

State	Focus Area	Wetland (acres)	Upland (acres)	Stream (miles)	Riparian (miles)	Structures (no.)
Missouri	Big Rivers Confluence	500	75			
	Mississippi Aluvial Lowlands	125	95	2	3	
	Northern Till Plains	375	2300	5	12	
	Osage Plains	300	2250	4	10	
	Springfield Plateau Glade	50	260	15	30	
	Upper Missouri River Loess Hills	350	150			
Total		1700	5130	26	55	
Ohio	Captina Creek	25	100		20	
	Glacial Lakes	200	200			
	Grand River	200	200			
	Lake Erie Marshes	200	100			
	Lower Great Miami	200	500			
	Oak Openings		100			
	Oak Savanna/Depressional Wetland	200	500			
	Upper Muskingum/Walhonding River	50	200		20	
Total		1075	1900		40	

Table 1 (continued). Midwest Region focus areas and five year habitat targets (2012-2016). See Appendix A for detailed information about these focus areas by state.

State	Focus Area	Five Year Habitat Targets				
		Wetland (acres)	Upland (acres)	Stream (miles)	Riparian (miles)	Structures (no.)
Wisconsin	Central Sand Plains	100	500			1
	Central Wisconsin Oak Barrens	100	500			
	Chippewa Valley	30	300			
	Coastal Wetlands & Pike Spawning	200	100			1
	Door Peninsula T/E species	100	250			1
	Driftless Area Prairies and Streams	15	300			1
	Early Successional Forest	225	700			5
	Lake Superior Clay Plain	150	100			2
	Milwaukee Riparian Corridors	50	50			1
	Monroe/Jackson	50	300			1
	Southeast Wetlands Prairies & Oak Savanna	300	500			1
	SW Grassland & Stream Conservation Area	30	2100			
	Western Prairie	300	500			
Total		1650	6200			14
MIDWEST REGION TOTALS		15800	44490	88	188	23

Goal Two: Broaden and Strengthen Partnerships

Our partners are the essential component of the Partners Program. In addition to individual landowners, our partners include all levels of government, tribes, non-profit organizations, corporations, foundations and land trusts. Without their cooperation and shared resources it would have been impossible to accomplish habitat improvements and fish and wildlife benefits we have through our program.

Partnerships are also an essential component of Landscape Conservation Cooperatives and our Strategic Habitat Conservation framework. Addressing landscape-level environmental change such as climate change, while also achieving fish and wildlife population objectives, will only be achieved through collaboration with partners.

The Partners Program has a strong reputation for efficiently delivering cost-effective habitat conservation projects and technical assistance that exceed the expectations of landowners. Because of our history of delivering successful projects, our partners know when they

collaborate with the Partners Program that we will deliver solutions that meet local and regional needs.

The Midwest Partners Program will assist state natural resource agencies to implement their State Wildlife Strategies by strengthening partnerships, providing technical assistance, and working on projects of mutual interest to help leverage resources within geographic focus areas.

As the Service works to address ever more complex, landscape-scale changes and as we face tighter budgets during these difficult economic times, it is even more imperative that we continue to seek out new partners and increase collaboration with existing partners to leverage all of our resources toward effective habitat conservation.

Objective 1: Maintain and enhance existing conservation partnerships that have developed over the past 25 years.

Strategy 1: Participate in partner organization meetings, committees, workshops, and field visits to jointly implement projects.



Partners Program biologist with NRCS staff
Photo: USFWS

Strategy 2: Keep 100% of partner organizations updated on the status of Partners Program to include funding criteria, focus areas, organizational changes, and points of contact.

Strategy 3: Increase participation in USDA conservation programs through direct interaction of field biologists and NRCS/FSA county staff. Participate in all eight state USDA State Technical Committees.

Objective 2: Establish new and innovative partnerships to increase our ability to address new challenges and opportunities.

Strategy 1: Conduct outreach with potential partner individuals/organizations through workshops, seminars, town meetings, and participation in local events.

Strategy 2: Identify key stakeholders within Focus Areas and communicate to them the goals and objectives of the Partners Program as well as their role in this important conservation effort

Strategy 3: Encourage partners to join in collaborative conservation efforts to include conservation easements, watershed initiatives, and other landscape-level conservation efforts

Objective 3: Increase funding contributions by 50% to maximize leveraging by external partners to increase our habitat restoration activities.

Strategy 1: Ensure Partners staff has access to seed money to initiate and match funds made available by partnering organizations.

Strategy 2: Actively seek funding through grant sources to support habitat restoration efforts and provide additional staff resources

Objective 4: Ensure Partners biologists are accomplished at developing partnerships.

Strategy 1: Send Partners staff to training courses that increase understanding and skills in developing partnerships.

Strategy 2: Facilitate mentoring of new biologists by experienced biologists recognized for their abilities to successfully develop and sustain partnerships.

Goal Three: Improve information sharing and communications

Effective communication is the key to engaging, recruiting, and enlisting many stakeholders and decision-makers needed for successful habitat conservation in the Midwest. Midwest Partners Program field biologists have built the Partners Program's strong reputation by demonstrating trust, respect, honesty and competency.

With continual advances in the many ways information is communicated, our challenge is to make effective use of a variety of communication techniques to reach as many landowners and potential cooperators as possible. In addition to advancing our established relationships, we will also develop new partnerships with other stakeholders who share our vision of conservation stewardship.

To address our priorities of connecting people with nature and the America's Great Outdoors Initiative we will continue to work with school groups and the public to share outdoor experiences and educate them on habitat needs of fish and wildlife through programs such as school yard habitat. To that end we will develop a variety of information products and delivery methods to reach as many landowners and potential cooperators as possible.

Objective 1: Effectively communicate the vision, role, and accomplishments of the Partners Program within the Service, with new and existing partners, and the public.



Scouts working on a Partners Project
Photo, USFWS

Strategy 1: Improve and regularly update the Midwest Partners Website

Strategy 2: Increase the use of social media by 50% over the next five years (e.g. *Facebook, Youtube, Twitter*) to share Midwest Partners Program opportunities and accomplishments.

Strategy 3: Produce a report of Midwest Region Partners Program accomplishments annually for distribution to partners, stakeholders and congressional delegates.

Objective 2: Enlist the support of our partners and the public to promote stewardship of our fish and wildlife resources and improved populations of our Federal Trust Species.

Strategy 1: Attend partner and stakeholder functions, as appropriate.

Strategy 2: Conduct outreach at events with public participation in natural resource issues

Strategy 3: Conduct outreach and promote outdoor classrooms to schools

Goal Four: Enhance our Workforce

Successful implementation of the Partners Program requires a diverse, highly-skilled and motivated workforce. The Partners Program is committed to developing employees who are results focused, act with integrity, and seek creative solutions to the challenges of private land habitat restoration.

Recognizing the likelihood of declining budgets for the near future, we will strive to provide our employees access to the technical and financial tools necessary to meet the demands of the program. We will also provide training to ensure our staff is able to provide the most scientifically sound information and optimal conservation benefits to our landowner customers. These actions will ensure that the Partners Program is positioned to address evolving resource priorities, maintain excellent customer service, and deliver a diverse array of habitat conservation projects

Objective 1: Partners Program biologists will be skilled in all facets of delivery of the Partners Program to benefit Federal Trust Species.

Strategy 1: Provide access to training opportunities to ensure Partners Program biologists are trained in emerging science and habitat restoration techniques and ideas, communication, partnership and decision analysis skills.

Strategy 2: Assign new Partners Program biologists an established mentor during their first two years in the program.

Strategy 3: All Partners staff will have up-to-date Individual Development Plans designed to direct the individual’s career goals, work performance and progress in meeting both.



Student Career Employment Program trainee surveying
Photo, USFWS

Objective 2: Develop a diverse Partners Program workforce to address changing demographics of our customer base.

Strategy 1: Utilize student interns and “Pathways Program” to recruit and provide opportunities to high caliber individuals seeking a career in the Partners Program.

Objective 3: Ensure that throughout the region the Partners Program workforce is highly effective.

Strategy 1: Reevaluate regional staffing needs annually based on workload and budget; adjust geographic staffing as necessary.

Strategy 2: Strategically locate Partners positions to focus areas with greatest potential for habitat restoration success.

Goal Five: Increase Accountability

Since its inception, the Midwest Region's Partners Program has been both extremely cost-effective and transparent; dollars spent have resulted in direct habitat gains on the ground and in the water. Historically, as is the case with other Service programs, Partners has reported annually on the number of wetland and upland acres restored and the miles of riparian lands and streams restored or enhanced. We also report on fish barriers removed and acres treated for invasive species. Additionally, Partners reports the number and type of partners and the value of contributions leveraged from non-Service sources to support each project.

An ultimate goal for the Partners Program is to achieve improved fish and wildlife populations as a result of our habitat restoration work on private lands. Documentation of population-level responses tied to Partners projects is difficult in part because of the nature of the Partners Program working acre by acre, mile by mile, and also because there are many external factors beyond our control that influence biological response. We will continue to work with our partners in the scientific community to assist us in understanding the population-level effects of habitat restoration on private lands.

Our program faces increased challenges in the near term because of budget tightening while we face complex, landscape-level changes, such as climate change. As a result, we must be ever more strategic in our work. The Midwest Region's Partners Program remains very confident of our ability to continue to work effectively and efficiently into the future and adapting due to new challenges and opportunities.

Objective 1: Ensure that all Partners Program activities and funding are consistent with Program policy and the requirements of the Partners for Fish and Wildlife Act.

Strategy 1: Conduct program reviews of activities at Partners Program offices.

Strategy 2: Track Partners Program funds to ensure that they are used for their intended purposes of habitat restoration and technical assistance with a focus on Federal Trust resources.

Strategy 3: Regularly review the delivery of the Program with internal and external partners to measure its effectiveness

Objective 2: Achieve Government Performance and Results Act (GPRA) goals identified for the Midwest Region Partners Program.

Strategy 1: Ensure GPRA goals are reasonable based on resources available.

Strategy 2: Enter complete Partners project accomplishment reports into Habitat Information Tracking System (HabITS) database annually according to current protocols.

Objective 3: Evaluate the biological outcomes/population level effects of our habitat restoration activities.

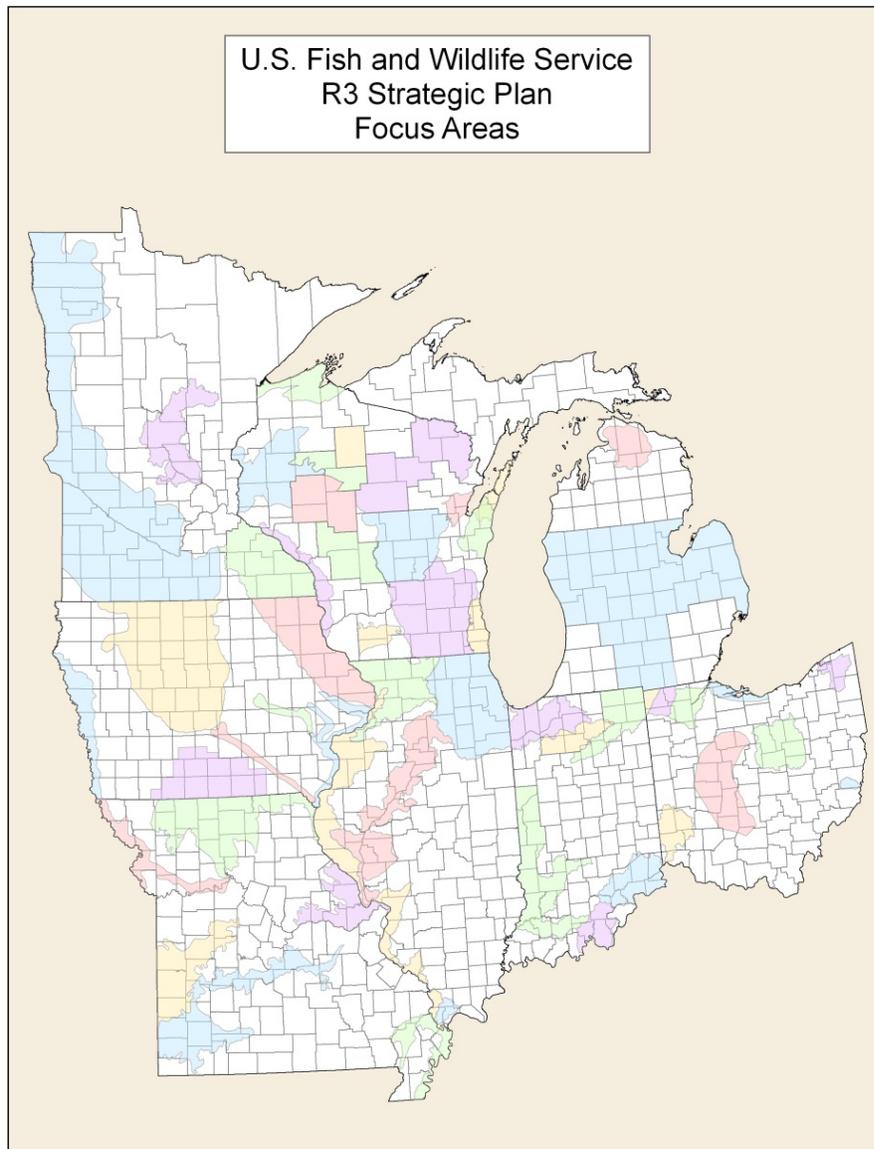
Strategy 1: Develop evaluation protocols to determine habitat value of restoration practices before and after project completion.

Strategy 2: Collaborate with scientific community to develop monitoring protocols or models to understand the effect of the Partners Program on fish and wildlife populations.

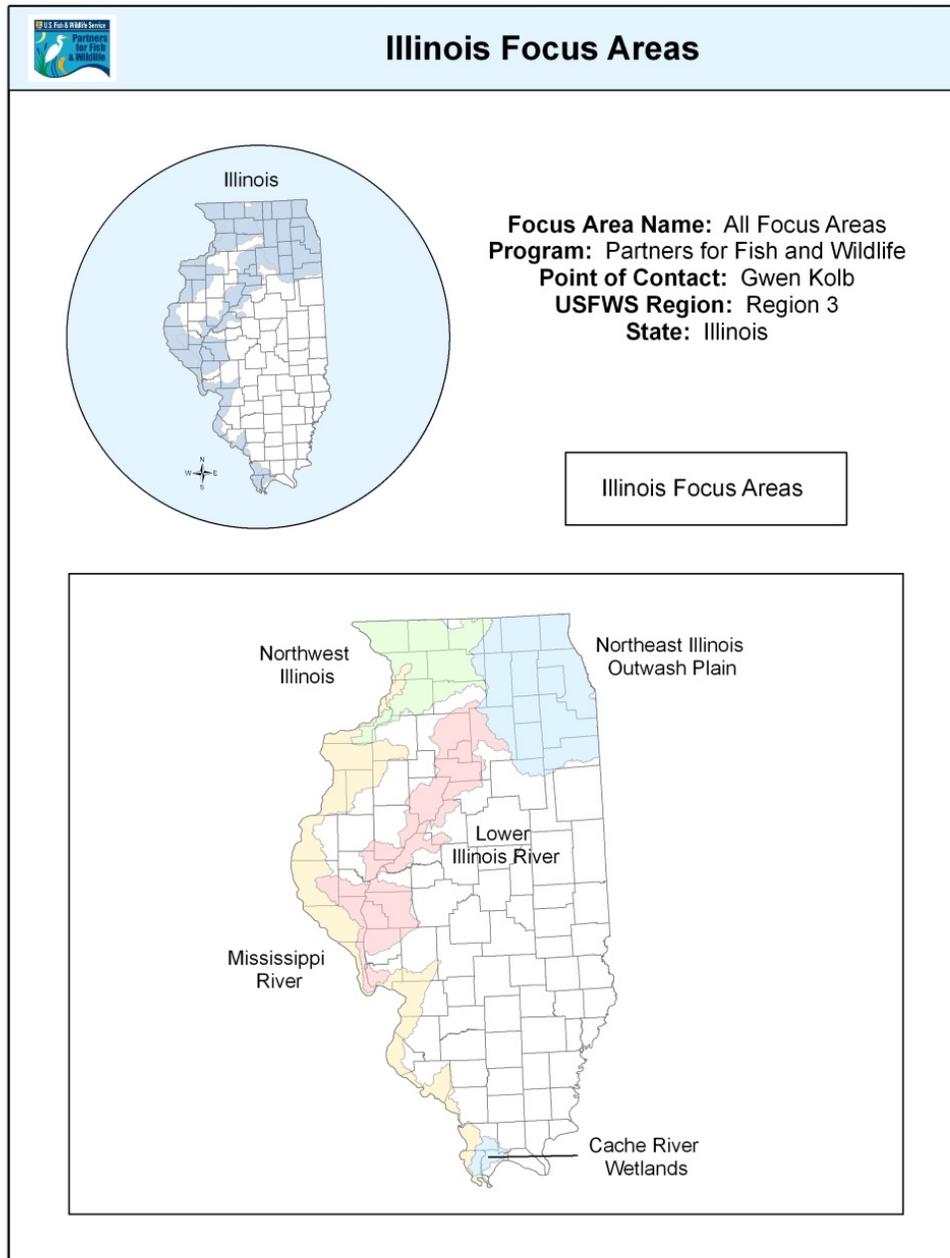
Literature Cited

U.S. Fish and Wildlife Service. 2007. Fish Passage Program Fact Sheet - "Reconnecting Great Lakes and Big Rivers Habitats."

Appendix A. State strategic plans and focus areas



Illinois



Introduction and Overview

In Illinois, 90% of the land is privately owned and 75% of that is in farmland. Illinois has lost 90% of its wetlands, 99% of its tallgrass prairie and 30% of its forests, since pre-settlement times. While these numbers represent great opportunities for restoration projects, a balance must be struck between agriculture and other land use practices. In a state that has six (6) level 3 ecoregions and fourteen (14) natural divisions and divided into 102 counties, the natural resources and ecosystem diversity are unique for just one state. The restoration of



Conservation Partners
Photo, USFWS

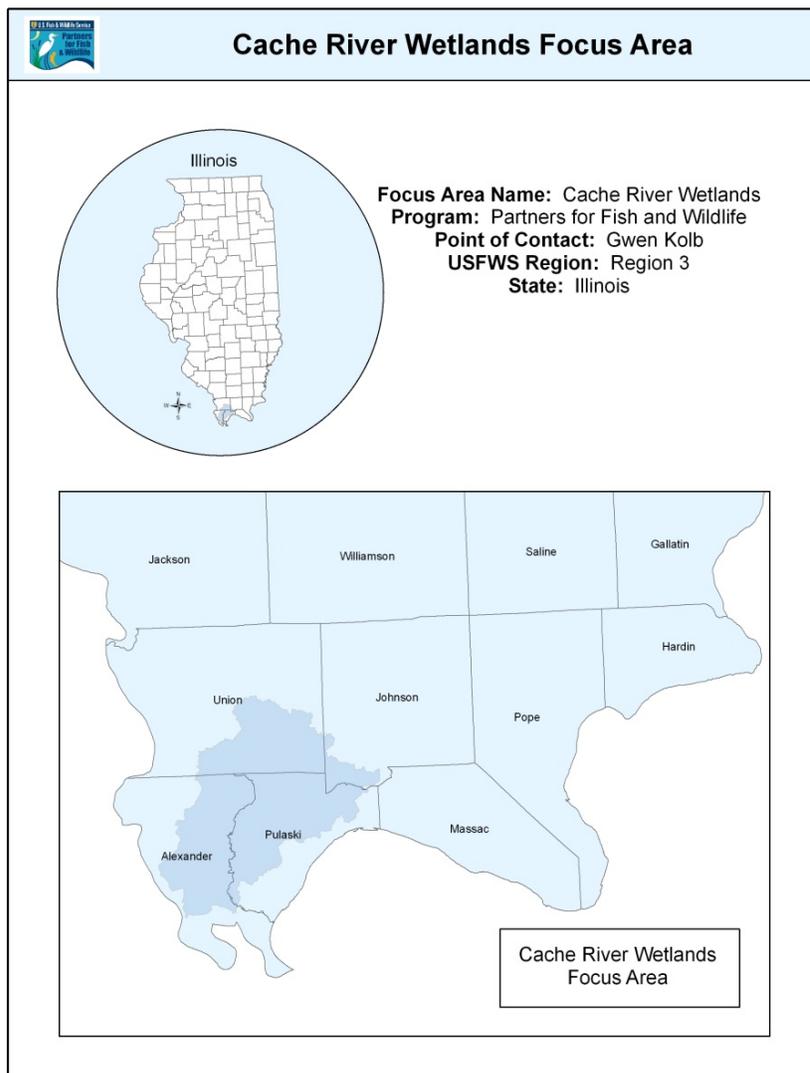
these habitats not only improves our fish and wildlife resources, but these systems are synonymous with clean water, healthy soils and clean air for all.

The Partners Program focus in Illinois includes wetland restoration, streamside restoration, bottomland forest restoration, invasive species control, prairie restoration and riparian habitat restoration projects. In a time of declining budgets and staff, IL Partners Program will continue to collaborate, facilitate and coordinate with our partners and stakeholders to enhance what we have and to restore and re-establish what we have lost for the benefit of present and future generations.

Supporting Plans for Illinois Focus Areas:

- Fish and Wildlife Resource Conservation Priorities. U.S. Fish and Wildlife Service, Region 3. January 2002. http://www.fws.gov/midwest/EcosystemConservation/conservation_species.htm/
- Illinois Wildlife Action Plan 2006
<http://dnr.state.il.us/ORC/WildlifeResources/theplan/final/>
- Upper Mississippi and Great Lakes Joint Venture Upper Mississippi Great Lakes Joint Venture Implementation plan -
[http://www.fws.gov/midwest/NAWMP/documents/WaterfowlManageImplementation Plan, 1998.](http://www.fws.gov/midwest/NAWMP/documents/WaterfowlManageImplementationPlan,1998)
- Mark Twain National Wildlife Refuge Complex Comprehensive Conservation Plan — <http://www.fws.gov/midwest/planning/marktwain/index.html#FinalCCP>
- Upper Mississippi River National Wildlife and Fish Refuge Comprehensive Conservation Plan — <http://www.fws.gov/midwest/planning/uppermiss/CCP.html>
- Illinois Wildlife Action Plan 2006 —
<http://dnr.state.il.us/ORC/WildlifeResources/theplan/final>
- Illinois River National Fish and Wildlife Refuges Complex Comprehensive Conservation Plan <http://www.fws.gov/midwest/planning/IllinoisRiver/index.html#FinalPlan>
- Illinois Wildlife Action Plan
<http://dnr.state.il.us/ORC/WildlifeResources/theplan/final/>
- U.S. Fish and Wildlife Service. 1998. Migration of Birds, Circular 16. 113pp. and Partners in Flight Bird Conservation Plan for The Prairie Peninsula —
http://www.blm.gov/wildlife/plan/pl_31_10.pd
- Upper Mississippi River National Wildlife and Fish Refuge Comprehensive Conservation Plan <http://www.fws.gov/midwest/planning/uppermiss/CCP/CCP.pdf>
- <http://dnr.state.il.us/ORC/WildlifeResources/theplan/final/>

Cache River Wetlands Focus Area



The Cache River Wetlands Focus Area was chosen because of its importance to migratory birds, specifically its importance to waterfowl, shorebirds, neotropical migrants and several federally listed species in the watershed.

The Cache River Wetlands Focus Area is one of six areas in the United States where four or more physiographic provinces intersect and their plant communities are intermingled. The provinces are the Central Lowlands, Interior Low Plateau, Ozark Plateau, and Coastal Plain. The juxtaposition of these provinces results in a highly diverse set of plant communities ranging from true cypress-tupelo swamp and extensive bottomland forest to oak barrens.

Within the focus area, nearly 90% of the land is privately owned and agriculture accounts for 50% of the land use. Significant public land ownership includes the Cypress Creek National Wildlife Refuge, the Cache River State Natural Area, and Illinois Department of Natural

Resources conservation areas. The Cache River Wetlands were designated as a RAMSAR “Wetland of International Importance” in 1994. The area was also designated as a Bioreserve by the Nature Conservancy in 1991.



Cache River Streambank Stabilization Project
Photo, USFWS

Habitat restoration is being accomplished through the Cache River Wetlands Joint Venture Partnership (Partnership), a unique public-private partnership between the Illinois Department of Natural Resources, Ducks Unlimited, The Nature Conservancy and the Service, formed in 1991. The vision and purpose of the Partnership is restoration of habitats and processes necessary to sustain the plants, animals and natural communities of the watershed. Other significant supporters of the Partnership include the Natural Resources Conservation Service, local soil and water conservation districts, and the Southernmost Illinois Tourism Bureau.

The primary habitats targeted for restoration and enhancement in this focus area are wetlands and stream/riparian corridors. Restoration of these habitats will address sedimentation and hydrologic modification that continue to be the major threats to the unique habitats in the focus area.

Cache River Wetlands Focus Area Priority Species

Sheepnose Mussel	(<i>Piethobasus cyphus</i>) Candidate
Blue-winged Teal	(<i>Anas discors</i>)
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)
Blue-winged Warbler	(<i>Vermivora pinus</i>)
Bell's Vireo	(<i>Vireo bellii</i>)
Oxbow crayfish	(<i>Orconectes lancifer</i>)
River otter	(<i>Lontra Canadensis</i>)
Alligator snapping turtle	(<i>Macrochelys temminckii</i>)

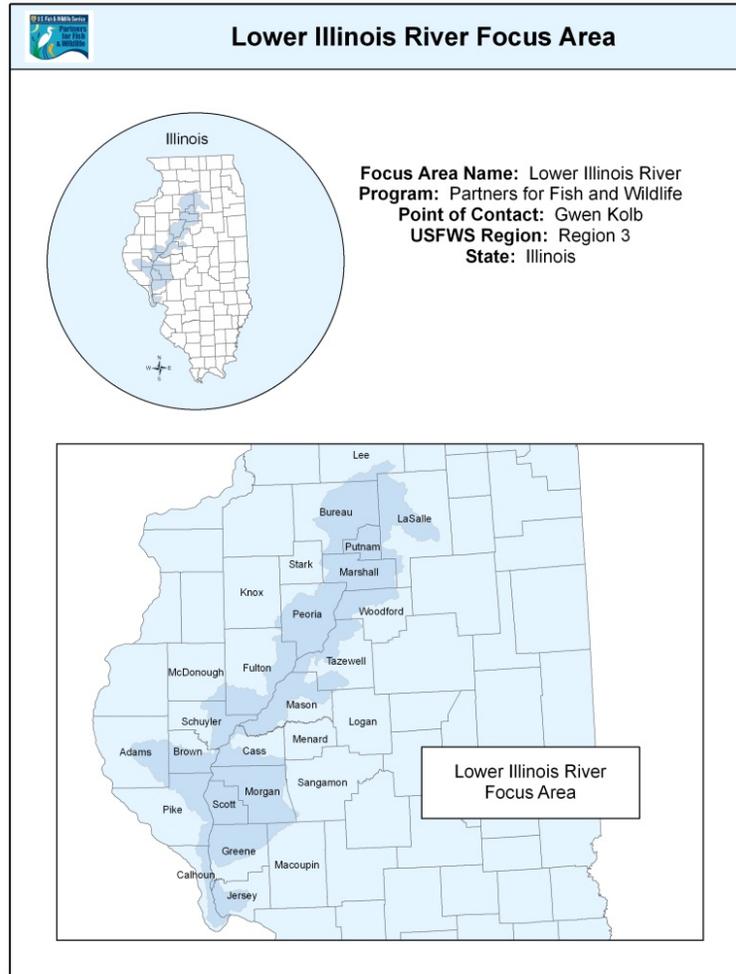
Cache River Wetlands Focus Area Five-Year Targets

Wetland Restoration/enhancement: 125 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 20 miles

Stream Channel restoration: 15 miles

Lower Illinois River Focus Area



The Illinois River, from the "Great Bend" to its confluence with the Mississippi River is synonymous with waterfowl and waterfowl hunting from prehistoric times to the present day. This reach, the original Mississippi River, more than 100,000 years ago featured skies black with waterfowl, huge commercial harvests of fish, and a large shell button industry supported by a seemingly endless freshwater mussel supply. As late as the 1950's, flocks of migrating mallards and lesser scaup reportedly numbered two million birds along the Illinois River.

Today, the Illinois River is a modern waterway that connects the Great Lakes at Chicago with the Mississippi River, complete with locks and dams. It is now a series of navigation lakes with extensive areas of the floodplain protected by levees and drained for agricultural production. A growing awareness of the natural resources of the area and activism for restoring and preserving a portion of the backwater lakes and braided channel has fostered unprecedented conservation efforts by a diverse group of Federal, State, and local agencies, and local conservation groups.

This focus area was selected because of the opportunities to complement existing Service refuges, Illinois Department of Natural Resources Wildlife Management Areas, and large

scale habitat restorations undertaken by non-government conservation organizations. The Illinois River is also the focus of the Conservation Reserve Enhancement Program, a joint US Department of Agriculture and Illinois program that has enrolled and permanently preserved more than 100,000 acres of habitat and filter strips in the watershed. Partners Program activities will also compliment ongoing work of Illinois Ecosystem Partnership groups and the Illinois Wildlife Action Plan.

The Lower Illinois River Focus Area is located within five of the Illinois Natural Divisions, including the Grand Prairie, Western Forest Prairie, Illinois and Mississippi River Sand Areas, and Bottomlands Divisions. More than 95% of the land in this focus area is privately owned, and more than 90% is used for agriculture, primarily intensive commodity row crop production. While significant attention has been directed to natural resource concerns in this focus area, continuing upland erosion and sediment deposition remain serious natural habitat degradation concerns.

Partners Program work will focus on wetland enhancement and restoration as well as upland habitat establishment and invasive species management. Both existing and new partnerships are expected to add to the significant restoration, enhancement and preservation activities of the past 25 years within this focus area.

Lower Illinois River Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalists</i>) Federally Endangered
Higgins Eye	(<i>Lampsilis higginsii</i>) Federally Endangered
Decurrent False Aster	(<i>Boltonia decurrens</i>) Federally Threatened
Sheepnose Mussel	(<i>Piethobasus cyphyus</i>) Candidate
Le Conte's Sparrow	(<i>Ammodramus leconteii</i>)
Black-billed Cuckoo	(<i>Coccyzus erythrophthalmus</i>)
Acadian Flycatcher	(<i>Empidonax virescens</i>)
Blue-winged Warbler	(<i>Vermivora pinus</i>)

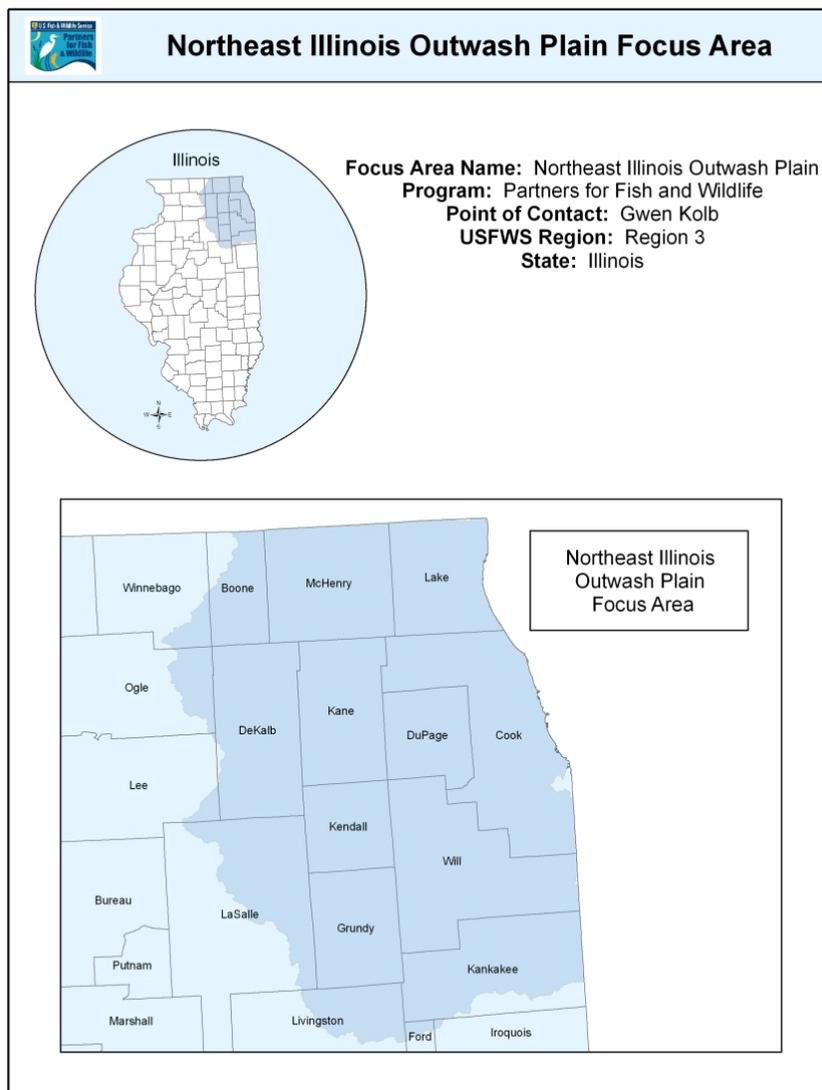
Lower Illinois River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 650 acres

Upland Restoration/enhancement/protection: 650 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 20 miles

Northeast Illinois Focus Area



The Northeast Illinois Focus Area has a wide variety of wetland and upland habitats in a unique setting of rapid urbanization with commercial and industrial development. Most of the Northeast Illinois Focus Area is the product of the Wisconsin glaciation. Despite the fact that this area is highly urbanized, constituting nearly 50% of Illinois' total urban/built up area, 22 % of the State's non-forested wetlands are found here. Glacial landforms, many types of wetlands, natural features that include prairie, savanna, river bluffs, floodplain, and beaches on Lake Michigan contribute to diverse habitats important to Federal and State species of concern.

An area of contrasts, this focus area presents a range of habitat restoration, enhancement, maintenance and protection opportunities against the backdrop of urban expansion pressure from metropolitan Chicago and its suburbs. Some rare species and communities are limited in their distribution to this area of the State, and a few are more characteristic of Canada than northeast Illinois. Despite their generally limited size, many of these habitats are ecologically

intact and functional. Like the unique habitats and rare species, the partners and partnership opportunities are distinctive in the Northeast Illinois Focus Area. County Forest Preserve Districts, Illinois Department of Natural Resources (ILDNR), local schools, and individual private landowners have been the primary partners for habitat projects. Because of development pressure, there is an emphasis on enhancement, management, and long-term or permanent protection of many of these habitats. This trend is being driven partially by grant sources and groups of individual landowners requiring or wanting permanent protection. Additional partnership opportunities exist with the U.S. Forest Service around the Midewin National Grassland in Will County as well as projects that may develop through the Chicago Wilderness initiative.



Bobwhite quail
Photo, Jack Bartholomai

Within the Northeast Illinois Focus area we will concentrate on the following watersheds that are based upon existing IDNR C2000 partnership boundaries that have potential for projects to benefit Service trust resources, both on traditional private lands and on other qualifying lands (e.g., lands held by non-government organizations or local units of government).

Fox-Kishwaukee Watersheds. The northern part of this area includes a high concentration of glacial wetlands that are critical to wetland dependent migratory breeding birds that are rare in Illinois (e.g., yellow-headed blackbird, black rail, and common moorhen). To the south and west, the Fox-Kishwaukee River Watersheds both include some of the highest quality intact stream systems remaining in northeast Illinois, and have diverse populations of inter-jurisdictional fish. This area includes several scattered populations of three federally listed species, including the threatened eastern prairie fringed orchid and prairie bush clover, and an introduced/recovery population of the endangered leafy prairie clover.

Des Plaines/Lake Michigan Watersheds. This area includes one of the greatest concentrations of federally listed species in Illinois, including the entire known range in Illinois for the endangered Hine's emerald dragonfly and Great Lakes piping plover, historic populations of the endangered Karner blue butterfly, numerous populations of the threatened eastern prairie fringed orchid, as well as several populations of the threatened lakeside daisy and Pitcher's thistle, endangered leafy prairie clover, and candidate eastern massasauga rattlesnake. In addition to listed species, there are opportunities for landscape-scale habitat projects to benefit migratory grassland and wetland birds.

Prairie Parklands-Kankakee Sands. This area includes the entire Illinois watershed of the Kankakee River, which is one of the highest quality intact stream systems in Illinois. This river and its tributaries are well-known for their diverse populations of inter-jurisdictional fish.

In addition, two river confluences (the Kankakee and Iroquois River confluence in the east and the Kankakee-Des Plaines-DuPage River confluence in the west) also mark two areas

where considerable landscape scale conservation (focused largely on migratory bird conservation) is ongoing, such as related to Midewin National Tallgrass Prairie, Goose Lake Prairie State Park and the Kankakee Sands area.

Invasive species are significant problems on many of the habitat sites we are helping to restore, with landscaping escapees such as buckthorn and bush honeysuckle along with reed canary grass and multi-flora rose comprising the most common alien list. Nearly half of the projects in recent years involved invasive species control. While development pressure represents the most significant challenge to habitat restoration, costs for planning, environmental compliance and construction are higher because of the urban setting.

The Partners Program work in this focus area might be considered "entrepreneurial" in its approach to providing partners with technical assistance, coordinating and grant writing, and leveraging limited funding. The Partners Program will continue to build existing partnerships, nurture and assist neighborhood groups with seed money and technical advice with the goal of securing permanent protection for the restored and enhanced habitats.

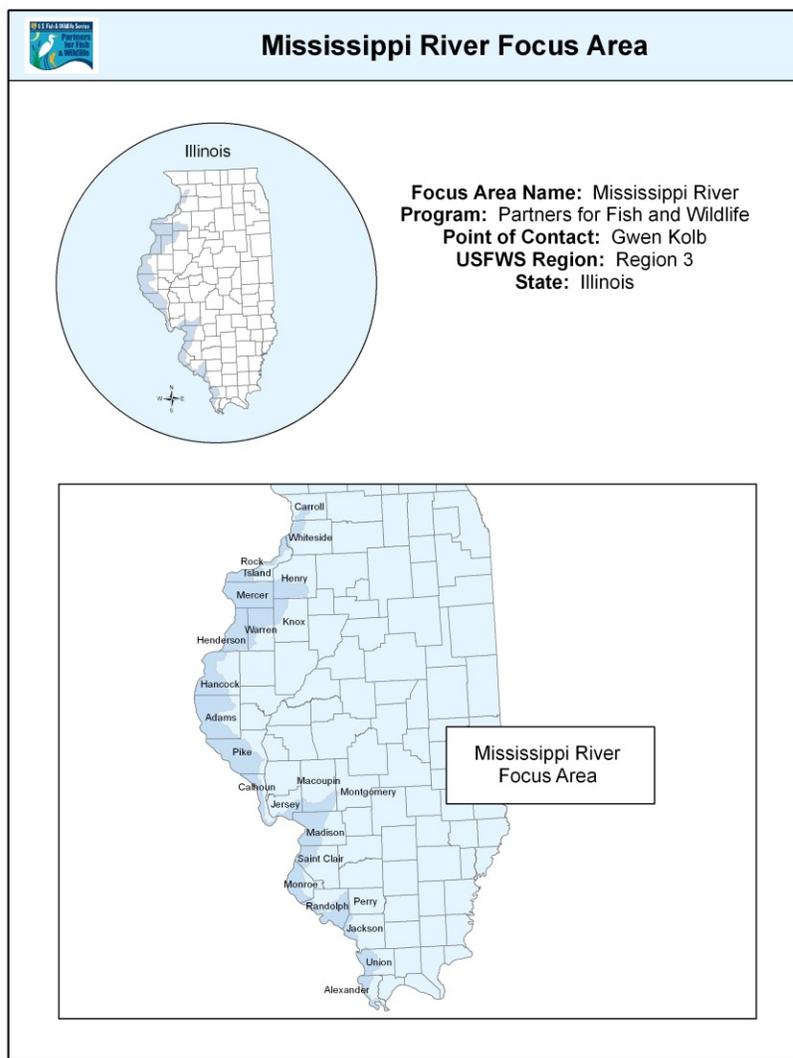
Northeast Illinois Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalist</i>) Federally Endangered
Piping Plover	(<i>Charadrius melodus</i>) Federally Endangered
Karner Blue Butterfly	(<i>Lycaeides Melissa samuelis</i>) Federally Endangered
Hines Emerald Dragonfly	(<i>Somatochlora hineana</i>) Federally Endangered
Mallard	(<i>Anas platyrhynchos</i>)
Sandhill Crane	(<i>Grus Canadensis</i>)
Kirtland's Snake	(<i>Clonophis kirtlandii</i>)
Bobolink	(<i>Dolichonyx oryzivorus</i>)
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)
Bell's Vireo	(<i>Vireo bellii</i>)

Northeast Illinois Focus Area Five-Year Targets

Wetland Restoration/enhancement: 125 acres
 Upland Restoration/enhancement/protection: 215 acres
 Aquatic Access Structures: 4 units

Mississippi River Focus Area



The Mississippi River Focus Area extends 535 miles from the mouth of the Plum River near Savanna, Illinois, to the confluence with the Ohio River near Cairo, Illinois. It consists of parts of seven watersheds and includes parts of five Illinois Natural Divisions. This area includes a diverse mix of habitats from bottomland forest, backwater sloughs, and wet meadows to sand prairie, upland forest, and hill prairies. The overarching feature of this focus area is that it encompasses multiple units of the Upper Mississippi River National Wildlife and Fish Refuge. In this context, habitat restoration and enhancement in the Mississippi River Focus Area complements the work on these refuge lands by providing additional habitat or by improving water quality from the sub watersheds.

Within the focus area, the 500-year floodplain alone is more than 1.6 million acres of a mix of side channel, backwater slough, bottomland forest, and open water intermixed with levee and drainage districts. Considering only the floodplain, agriculture represents 65 to 70% of land use and, combined with urban and commercial development, accounts for nearly 80 percent of the floodplain in private ownership. Public ownership in the floodplain is about

20% in the pooled reaches upstream of St. Louis. This ownership consists mostly of land acquired by the Army Corps of Engineers for the nine foot channel project, and land owned or managed by the USFWS and State Departments of Natural Resources between Rock Island and Lock and Dam 26 near Grafton.

In the open river area downstream of St. Louis, 95% of the floodplain is privately owned and more than 80% is protected by levees to facilitate agricultural production. Only the Kidd Lake Natural Area, in combination with Middle Mississippi Refuge holdings and a few modest restoration projects, provide protected wetland habitat for migratory waterfowl and shorebirds.

The Partners Program has many partners in this focus area, including Ducks Unlimited and Waterfowl USA, Pheasants Forever, Soil and Water Conservation Districts in much of the focus area, Illinois DNR and Ecosystem Partnerships, and Southwest Illinois Resource Conservation and Development. The challenge for the Partners Program is limited personnel at refuge stations along the river to implement the program locally.

This focus area presents significant opportunity in the form of large levee and drainage districts that could be restored at modest cost, but with the constraints that multiple landowners would likely have to agree to implement a project together. In contrast, this focus area presents the biggest challenge in recruiting cooperators because of economic factors. The Partners Program has developed a few projects in this focus area. Those projects have been completed with recreational landowners with properties located on very marginal agricultural (not farmable) bottomland forest land.

In summary, the Mississippi River Focus Area has large potential to benefit Federal trust resources and help to accomplish goals of the Illinois Wildlife Action Plan. Realistically, without a dramatic change in agricultural programs, a catastrophic flood event, or a breakthrough that significantly reduces the need for fossil and biofuels, there is limited opportunity and small chance of restoring and enhancing habitat on private land in the Mississippi River Floodplain.

Mississippi River Focus Area Priority Species

Least Tern interior population	(<i>Sterna antillarum</i>) Federally Endangered
Pallid Sturgeon	(<i>Scaphirhynchus albus</i>) Federally Endangered
Indiana Bat	(<i>Myotis sodalis</i>) Federally Endangered
Higgins Eye	(<i>Lampsilis higginsii</i>) Federally Endangered
Sheepnose Mussel	(<i>Piethobasus cyphyus</i>) Candidate
Wood Duck	(<i>Aix sponsa</i>)
Loggerhead Shrike	(<i>Lanius ludovicianus</i>)
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)

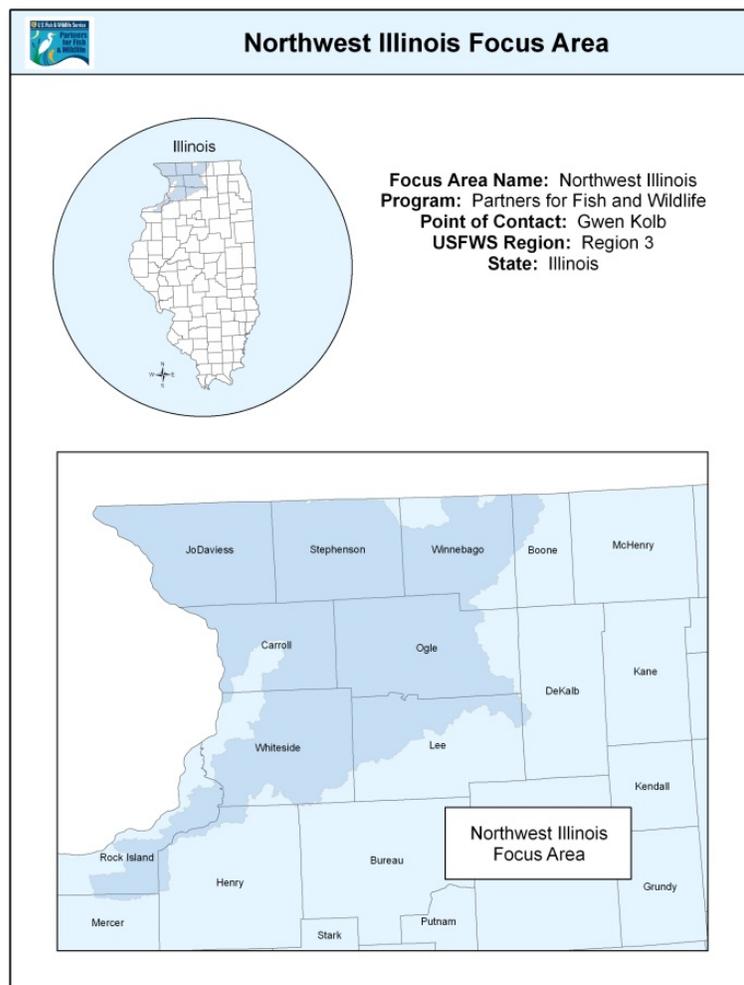
Mississippi River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 550 acres

Upland Restoration/enhancement/protection: 400 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 15 miles

Northwest Illinois Focus Area



The Northwest Illinois Focus Area is contained within the Rock River Hill Country Natural Division and the Wisconsin Driftless Division, a part of Illinois that is quite different and unique compared to the remainder of the state. These two natural divisions are significantly different largely because of their geologic origins and present different challenges and opportunities for benefiting Federal Trust Resources. Located in the Wisconsin Driftless Division, the Savanna District and Lost Mound Unit of the Upper Mississippi River National Fish and Wildlife Refuge are located on the Mississippi River, extending from the Illinois/Wisconsin border southward to Port Byron, Illinois. This focus area was selected because of opportunities to benefit federally listed threatened and endangered species, migratory birds, and existing Service lands, while forging unique partnerships with a diverse group of landowners and organizations.

The region currently has some of the most extensive riparian wetlands remaining in Illinois, with 16,000 acres of wetlands covering 3% of the Sugar/Pecatonica watershed (a slightly smaller percentage than in the state as a whole). Extensive marshes flank the lower Pecatonica River, between Freeport and Rockton, and Richland Creek from Orangeville southward to the old oxbow lake known as Ducks Misery. The bottoms of the Sugar River and Raccoon and Otter creeks harbor large tracts of marsh, floodplain forest, sedge meadow, and wet sand prairie. Shrub swamps sprout in abandoned river channels that dot the region; representative ones include the Sugar River Alder Site and the Pecatonica River Forest Preserve. More than 1,000 plant species including subspecies and varieties are found in the region, meaning that nearly 40% of Illinois native plants grow in an area that makes up less than 1.5% of its land area. Seventeen species of reptiles are known or are thought likely to occur in the region, as are 14 species of amphibians, including the state species of special concern blue-spotted salamander. The quality and uniqueness of the existing habitats are the reason that organizations like the Illinois Audubon Society, Ducks Unlimited, Natural Lands Institute, US Forest Service, and The Nature Conservancy invest significant resources in the region for habitat restoration and/or designate these areas as biologically significant areas. These initiatives and those of the local communities have resulted in more than 4,200 acres being set aside as parks and preserves in the Sugar-Pecatonica watershed, mostly operated by county governments.

Current habitat restoration and enhancement has centered in the Sugar and Pecatonica watersheds, primarily restoring hydrology to oxbows through wetland restoration and enhancement on the floodplain. Working with the Illinois DNR, Natural Lands Institute, Soil and Water Conservation District and private landowners has become a recognizable and successful entity in habitat restoration of the region. Future restoration will continue to focus on these habitat types, while incorporating the goals and objectives of the National Fish Habitat Initiative that aims to improve fish populations and fish habitat throughout the Driftless region of Illinois, Wisconsin, Minnesota and Iowa. Land ownership in this area is more than 90% private with nearly 85% of the land in agricultural use (26% grassland, 59% row crops). Challenges to habitat restoration in this focus area are the economics of the current agricultural commodity market for biofuels and the potential to return or convert marginal land to crop production.

Northwest Illinois Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalist</i>) Endangered
Iowa Pleistocene Snail	(<i>Discus macclintocki</i>) Endangered
Leafy Prairie Clover	(<i>Dalea foliosa</i>) Endangered
Higgins Eye	(<i>Lampsilis higginsii</i>) Endangered
Eastern Prairie Fringed Orchid	(<i>Platanthera leucophaea</i>) Threatened
Mead's Milkweed	(<i>Asclepias meadii</i>) Threatened
Trumpeter Swan	(<i>Cygnus buccinator</i>)
Acadian Flycatcher	(<i>Empidonax virescens</i>)
Whooping Crane	(<i>Grus Americana</i>)
Orchard Oriole	(<i>Icterus spurius</i>)

Northwest Illinois Focus Area Five-Year Targets

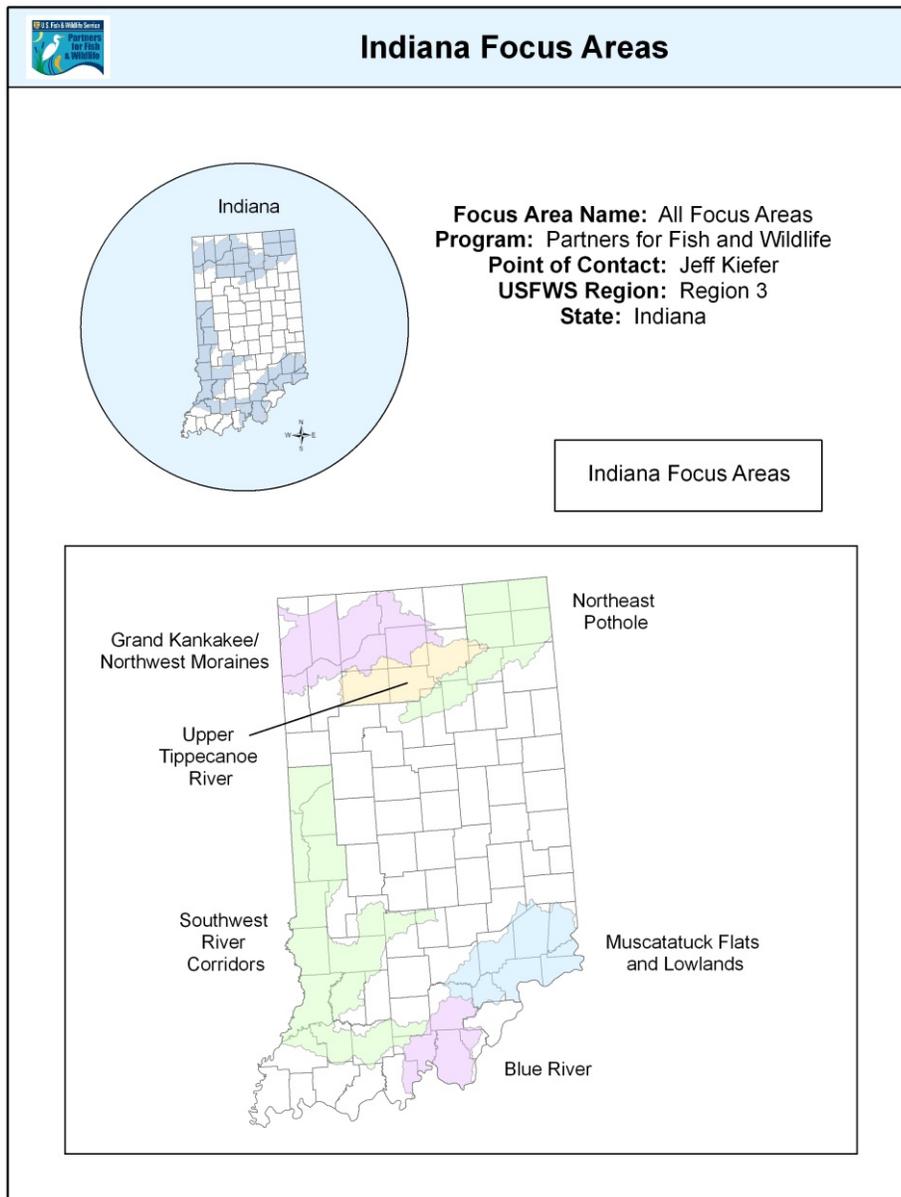
Wetland Restoration/enhancement: 350 acres

Upland Restoration/enhancement/protection: 400 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 7 miles

Aquatic Access Structures: 5 units

Indiana



Introduction and Overview

Situated within the Corn Belt region of the Midwest, Indiana is heavily dominated by agriculture, with approximately 70% of the State’s land area in farms. As a consequence, Indiana has lost more than 85% of its original wetlands and 99% of its original native prairie. However, despite the influence of agriculture and urbanization on the landscape, significant natural areas still remain, including the “pothole” region of northeast Indiana with its natural lakes and wetlands, the floodplain forested wetlands along the Wabash, Muscatatuck, Patoka,

and Kankakee Rivers, the heavily wooded hills of south-central Indiana, and the diverse aquatic resources of the Tippecanoe and Blue Rivers and Fish Creek. The State is home to three National Wildlife Refuges, which include large tracts of wetland, grassland, and forest communities, providing habitat for a diverse array of Federal trust resources. However, with 97% of Indiana's land base in private ownership, successful partnerships with private landowners will be a key component to successfully restoring the habitat that these species are dependent on.

A primary focus of the Indiana Partners Program historically has been the restoration of wetlands and associated uplands for migratory birds. In the northeast pothole region, this takes the form of emergent wetland basins surrounded by upland prairie, which provides breeding and migration habitat for waterfowl such as Mallard and Blue-winged Teal, and marsh birds such as rails, bitterns, and herons. In watersheds with large floodplain areas, such as the Wabash, Kankakee, Patoka, and Muscatatuck Rivers, the focus is more on the restoration of bottomland hardwood wetlands, which provide the primary breeding habitat for Wood Ducks in Indiana, as well as migration and breeding habitat for neotropical migrant songbirds. In addition, the federally endangered Indiana Bat utilizes riparian forests for



FWS biologist and Indiana Partner
Photo, USFWS

breeding, foraging and migration habitat. Other unique efforts include restoration work within the Fish Creek watershed in northeast Indiana, which is home to the only remaining population of the federally endangered White Cat's Paw Pearlymussel, as well as the federally threatened Copperbelly Water Snake. In addition to targeting within geographic focus areas, the Indiana Partners Program has been actively involved statewide in environmental education, working with more than 80 schools and nature centers throughout the State to restore wetlands and native prairie for use in outdoor classroom settings.

The Indiana Partners Program field staff is strategically positioned to deliver the Partners Program within the established Focus Areas. Partnerships are a key factor in accomplishing the objectives of the Partners Program in Indiana, and are fostered through a variety of means, including cooperative agreements, interagency efforts, and the location of field staff. In addition, the Partners Program staff housed at National Wildlife Refuges support the protection of refuge lands by working in partnership with adjacent landowners to conserve habitat within the larger landscape or watershed of the refuge.

Indiana Partners Program priorities are coordinated and integrated with a number of other habitat restoration and enhancement activities within the State, including North American Wetland Conservation Act (NAWCA) projects, Natural Resource Damage Assessment (NRDA) settlements, and United States Department of Agriculture (USDA) conservation

programs. Due to the large influence of agriculture in the State, working with USDA agencies through Farm Bill conservation programs is an important aspect of conserving federal trust resources in Indiana. Farm Bill programs impact hundreds of thousands of acres and provide tens of millions of dollars annually to agricultural producers for soil, water, and wildlife conservation, and insuring that these programs maximize benefits to federal trust species is a key objective of the Indiana Partners Program.

Funding partnerships with other agencies and organizations (e.g. Indiana DNR, Ducks Unlimited, The Nature Conservancy) are also pursued within the context of resource and geographic priorities. The flexibility of the Partners Program allows for a complementary approach with other private lands efforts to maximize benefits to federal trust species. Indiana Partners Program priorities are further refined through the use of the Upper Mississippi River and Great Lakes Joint Venture Implementation Plan and Habitat Conservation Strategies, Partners in Flight Bird Conservation Plans, Indiana's Comprehensive Wildlife Strategy and Statewide Forest Strategy, Recovery Plans for federally listed species, and the plans and strategies of partner organizations.

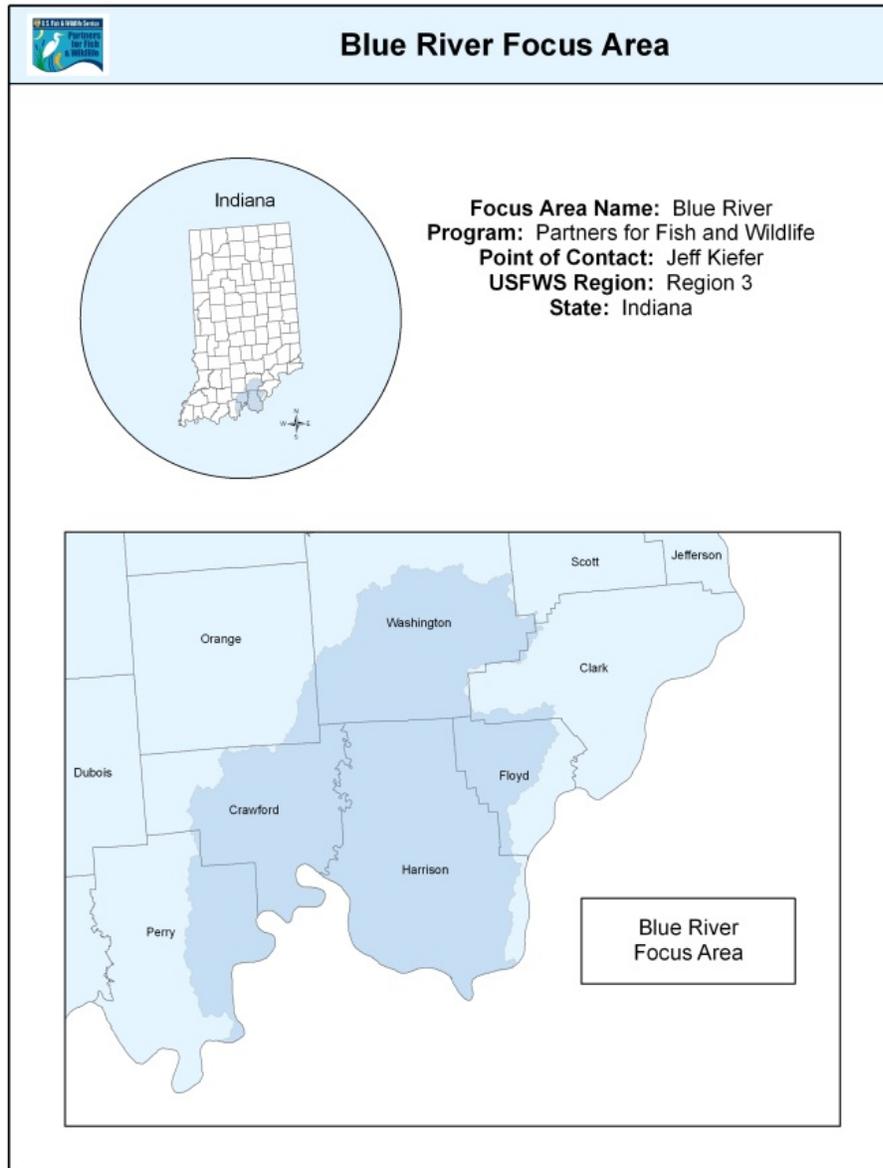
In general, the long-term goals of the Indiana Partners Program are to provide leadership and promote partnerships to implement habitat improvement projects which contribute to sustainable populations of federal trust resources on private lands, to assist in the recovery of federally endangered or threatened species and help prevent the further listing of species, and to contribute to reaching the objectives of the National Wildlife Refuge System, North American waterfowl Management Plan, and other habitat plans developed by the Service and its partners for conservation of federal trust species. This will be accomplished through fostering partnerships with landowners, agencies, non-governmental organizations, and corporations, to focus restoration efforts toward habitats and species which are most in need of assistance.

Supporting Plans for Indiana Focus Areas:

- Copperbelly Water Snake Recovery Plan, U.S. Fish and Wildlife Service, 2008
- Indiana Bat Draft Recovery Plan, First Revision, U.S. Fish and Wildlife Service, 2007
- Indiana Comprehensive Wildlife Strategy, Indiana Department of Natural Resources, Division of Fish and Wildlife, 2005
- Indiana Statewide Forest Strategy, Indiana Department of Natural Resources, Division of Forestry, 2010
- North American Bird Conservation Initiative, Central Hardwoods Joint Venture Concept Plan, 2003
- Partners In Flight Bird Conservation Plan, The Interior Low Plateaus, 2000
- Upper Mississippi River and Great Lakes Joint Venture Waterfowl Habitat Conservation Strategy, December 2007
- Upper Mississippi River and Great Lakes Joint Venture Shorebird Habitat Conservation Strategy, May 2007
- Upper Mississippi River and Great Lakes Joint Venture Landbird Habitat Conservation Strategy, June 2007
- Upper Mississippi River and Great Lakes Joint Venture 2007 Implementation Plan

- Karner Blue Butterfly Recovery Plan, 2003
- North American Landbird Conservation Plan, 2004
- Partners In Flight Bird Conservation Plan, The Upper Great Lakes Plain, 2001
- Fish and Wildlife Resource Conservation Priorities, U.S. Fish and Wildlife Service – Region 3, 2002
- Ducks Unlimited Great Lakes Ecosystem Initiative – Southeast Lake Michigan & Lake Erie Focus Area Plans, 2006
- Fish and Wildlife Resource Conservation Priorities, U.S. Fish and Wildlife Service – Region 3, 2002
- Partners In Flight Bird Conservation Plan, The Upper Great Lakes Plain, 2001
- Partners In Flight Bird Conservation Plan, The Prairie Peninsula, 2000
- White Cat’s Paw Pearly Mussel Recovery Plan, U.S. Fish and Wildlife Service, 1990
- Indiana Statewide Forest Strategy, Indiana Department of Natural Resources, Division of Forestry, 2010
- North American Bird Conservation Initiative, Central Hardwoods Joint Venture Concept Plan, 2003
- Partners In Flight Bird Conservation Plan, The Interior Low Plateaus, 2000

Blue River Focus Area



The Blue-Sinking watershed encompasses the southernmost portions of the Shawnee Hills and Highland Rim Natural Regions in south-central Indiana. It includes a diverse array of habitats, from extensive upland forests of oak and hickory to sandstone and limestone glades and some of the largest and most important cave systems in Indiana. It also contains the Blue River, a medium-sized, spring-fed, high quality stream flowing through heavily forested hills which supports a diverse assemblage of fish and mussel species, and is a tributary of the Ohio River. Land use is quite diverse, from heavily forested in the western portion of the focus area, to more intensively farmed areas (both row crop and livestock) in the central and eastern portions. The focus area is located within the Central Hardwoods Bird Conservation Region (BCR 24) as well as the Appalachian Landscape Conservation Cooperative (LCC). Both of these plans focus on forest interior and early successional bird species, such as the

Kentucky Warbler, Worm-eating Warbler, Wood Thrush, Prairie Warbler, and Blue-winged Warbler. In addition, the Appalachian LCC focuses on improving water quality for native mussel species.

This region is known for its karst topography and the abundance and diversity of cave systems, many of which harbor a unique array of species, from the state endangered Northern Cavefish to the federally endangered Indiana Bat. In fact, this focus area contains a total of 12 Indiana Bat hibernacula, including four Priority 1 hibernacula (including one critical habitat cave), harboring approximately 28% of the global population of the species. In addition, two of these caves serve as hibernacula for the federally endangered Gray Bat. With the recent confirmation of the fungus associated with white-nose syndrome in several southern Indiana caves, reducing fragmentation within this forested landscape through reforestation will enhance late summer foraging and fall swarming habitat for Indiana Bats prior to the hibernation period.

In the southeast portion of the focus area is the Harrison County Glades Conservation Area, an effort by The Nature Conservancy (TNC) to conserve the unique but threatened glades and barrens ecological communities, which extends across the Ohio River into Kentucky. The Partners Program is actively working with TNC on projects to control invasive species in these glades and barrens that will not only enhance the rare plant communities present on the sites, but also will improve habitat for a number of priority migratory bird species, including Prairie and Blue-winged Warblers, which benefit from the early successional openings in the forest. Other restoration activities through the Partners Program will target upland and bottomland reforestation along the Blue River corridor and other streams to reduce fragmentation and enhance habitat for the Louisiana Waterthrush, Acadian Flycatcher, and the federally endangered Indiana Bat.

Wetland restorations in these floodplain habitats will also benefit the Copperbelly Water Snake and Wood Duck, and also help improve water quality for aquatic species such as mussels, including the state endangered Pyramid Pigtoe and special concern Wavyrayed Lampmussel, and the state endangered Hellbender, an aquatic salamander which is found in Indiana only within the Blue River. Primary partners in the focus area include TNC, which has a major focus in the watershed through their Blue River Project Office, the Natural Resources Conservation Service, Indiana Department of Natural Resources, Quail Unlimited, local Soil and Water Conservation Districts, and private landowners.

Blue River Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalis</i>) Federally Endangered
Hellbender Salamander	(<i>Cryptobranchus alleganiensis</i>) State Endangered
Northern Cavefish	(<i>Amblyopsis spelaea</i>)
Wood Duck	(<i>Aix sponsa</i>)
Louisiana Waterthrush	(<i>Seiurus motacilla</i>)
Henslow's Sparrow	(<i>Ammodramus henslowii</i>)
Prairie Warbler	(<i>Dendroica discolor</i>)
Blue-winged Warbler	(<i>Vermivora pinus</i>)

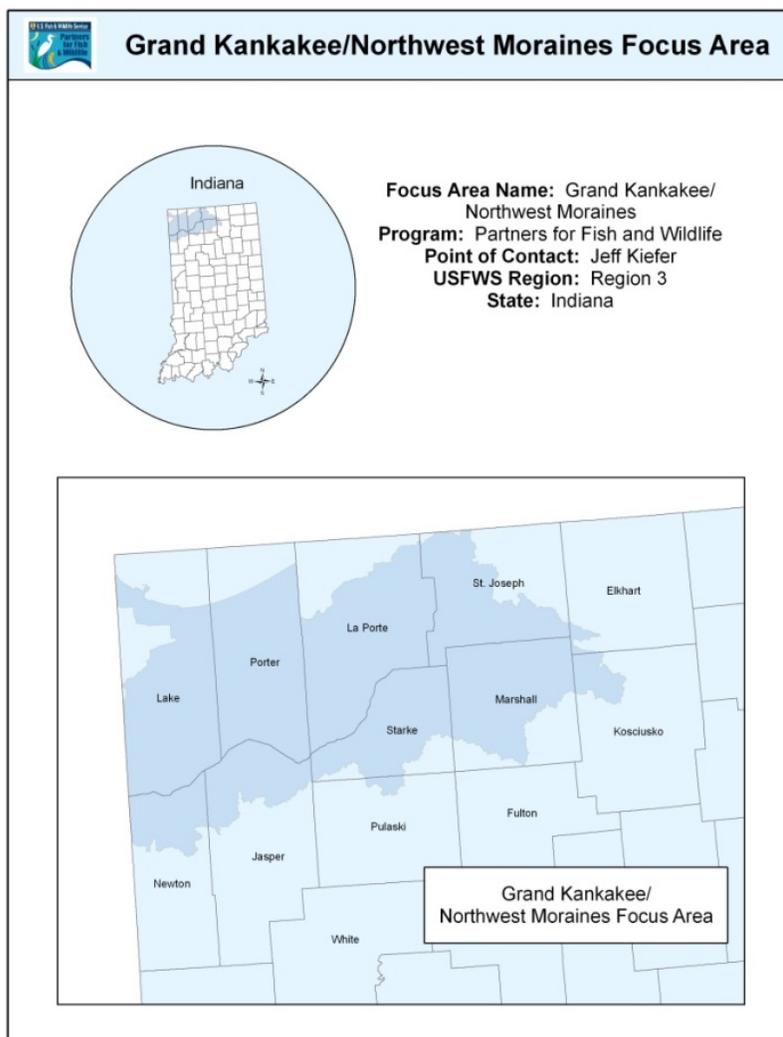
Blue River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 50 acres

Upland Restoration/enhancement/protection: 250 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 1.0 mile

Grand Kankakee/Northwest Moraines Focus Area



This focus area encompasses the Grand Prairie and Northwest Morainal Natural Regions in northwest Indiana, which contain a diverse assemblage of upland and wetland habitats for federal trust species. The Grand Prairie Natural Region once supported the famed Grand Kankakee Marsh, a vast area of marsh, floodplain forest, and wet prairie stretching across more than 500,000 acres along the Kankakee River, dotted with islands of black oak savanna and upland prairie habitats, which also dominated the sand dunes along the southern fringe of the marsh.

Historically, the Grand Kankakee Marsh was one of the premier wetland ecosystems in North America. Particularly abundant were waterfowl and other wetland game birds, which brought sport and market hunters alike from around the world to partake of the rich assemblage. However, beginning in the mid-1800's, efforts to drain the marsh began in earnest, and by the early part of the 20th century, the river was deepened and channelized, reducing its length in Indiana from 250 miles to less than 85. The resulting combination of drainage and pumping converted the majority of the landscape to intensive row crop production, which for the most part remains to the present time. However, significant remnants still remain, mostly as publicly held areas scattered throughout the basin, many of which are identified as Audubon Society Important Bird Areas (IBA), such as the Kankakee State Fish and Wildlife Area, with large concentrations of waterfowl, and the Jasper-Pulaski State FWA, which supports up to 100% of the eastern population of Greater Sandhill Cranes during migration. In addition, several large restoration efforts are located in the Kankakee River basin, including the Kankakee Sands Restoration Project through The Nature Conservancy, which at more than 7,500 acres is one of the largest restoration projects in the Midwest, and nearly 13,000 acres of USDA Wetlands Reserve Program (WRP) easements, many of which lie within the Kankakee River corridor.

The northern portion of the focus area lies within the Northwest Morainal Natural Region and is part of the Lake Michigan watershed, containing dune and swale, fen, and other important habitats for federal trust species, including the federally endangered Karner Blue Butterfly. Land use in this region varies from predominantly agricultural throughout the southern portion to heavily industrial in the north. However, despite the considerable alteration of the landscape and impacts from invasive species, this area remains one of the most floristically rich regions of Indiana, containing many plant species with more northern and Atlantic coastal affinities. Major threats to these areas include invasive species, with Phragmites, reed canary grass, bush honeysuckle, and autumn olive among the most damaging. One focus of the Partners Program in this area will be around key areas of high quality protected habitat, which will provide benefits to both upland and wetland species of migratory birds.

The focus area lies within the Eastern Tallgrass Prairie and the Prairie Hardwood Transition Bird Conservation Regions (BCR 22 and 23) of the North American Bird Conservation Initiative (NABCI), and the target species and habitats within the focus area are associated with NABCI priorities as well as those of the Upper Mississippi River/Great Lakes Joint Venture. The majority of the focus area also lies within the Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperative (LCC), which emphasizes restoration of diverse native grassland and forest ecosystems.

Restoration opportunities will focus on degraded wetlands and poorly drained agricultural lands, as well as degraded uplands such as overgrown savanna. Primary emphasis for habitat



Kankakee Prairie
Photo, USFWS

development in the focus area includes restoration of emergent and scrub-shrub wetlands and adjacent grassland habitats to benefit species such as Mallard, Willow Flycatcher, and Dickcissel, riparian and bottomland reforestation for species such as the Indiana Bat and Prothonotary Warbler, and restoration of savanna habitat to benefit the Karner Blue Butterfly and Red-Headed Woodpecker. Of particular importance will be targeting sites that will expand and connect existing core areas of protected habitat (e.g. State-owned lands, WRP easements, NGO lands) by working with private landowners adjacent to these areas wherever possible.

Major partners in this focus area include The Nature Conservancy, Ducks Unlimited, Waterfowl USA, Indiana Department of Natural Resources, Natural Resources Conservation Service, Shirley Heinze Land Trust, Lake County Parks Department, and private landowners. In addition, Service efforts through the Partners Program complements the activities of groups such as the Indiana Grand Kankakee Marsh Restoration Project, a large and diverse NAWCA-funded partnership of local, state, and federal agencies, nongovernmental organizations, and private corporations, which is focused on restoring portions of the former Grand Kankakee Marsh for waterfowl and other wetland-dependent migratory birds.

Grand Kankakee/Northwest Moraines Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalis</i>) Federally Endangered
Mitchell's Satyr Butterfly	(<i>Neonympha mitchellii mitchellii</i>) Federally Endangered
Karner Blue Butterfly	(<i>Lycaeides melissa samuelis</i>) Federally Endangered
Eastern Massasauga	(<i>Sistrurus catenatus catenatus</i>) Candidate
Wood Duck	(<i>Aix sponsa</i>)
Willow Flycatcher	(<i>Empidonax traillii</i>)
Bobolink	(<i>Dolichonyx oryzivorus</i>)
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)

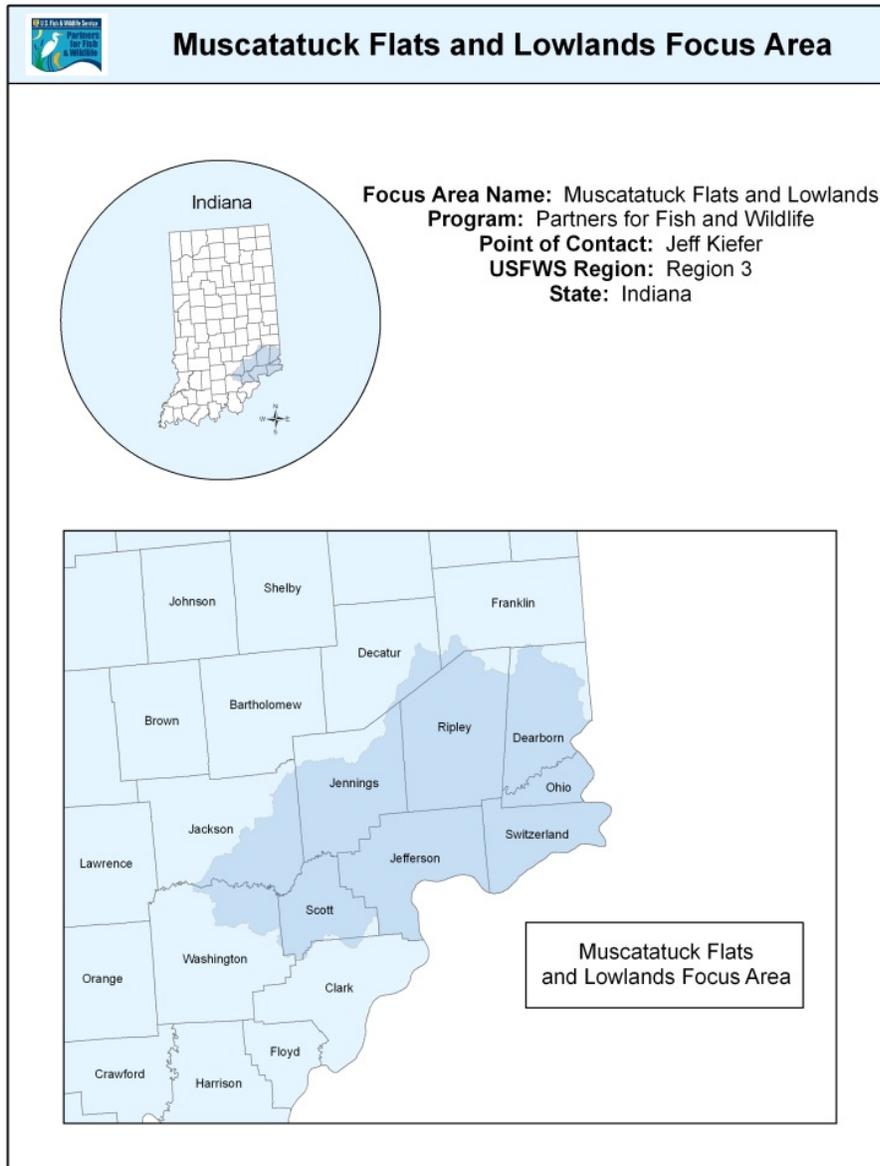
Grand Kankakee/Northwest Moraines Focus Area Five-Year Targets

Wetland Restoration/enhancement: 300 acres

Upland Restoration/enhancement/protection: 350 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 0.5 miles

Muscatatuck Flats and Lowlands Focus Area



The Muscatatuck Flats and Lowlands Focus Area encompasses the majority of the Bluegrass Natural Region of southeast Indiana, a diverse region of forested hills dissected by steep-sided stream valleys in the southeast grading into a broad, relatively level plain characterized by poorly drained flats. Also existing within this region are several wide alluvial plains that border major rivers and streams, including the Muscatatuck River floodplain, one of the most extensive areas of bottomland hardwood forest remaining in the Midwest, and also containing the Muscatatuck NWR. The floodplain forests along the Muscatatuck and other streams such as Silver and Laughery Creeks are characterized by sweetgum, swamp white oak, black gum, and shellbark hickory, and provide important breeding habitat for the Wood Duck, Acadian Flycatcher, and Cerulean Warbler. The focus area is located within the Central Hardwoods Bird Conservation Region (BCR 24) and the Appalachian Landscape

Conservation Cooperative (LCC), where a major conservation emphasis is on forest interior species such as Cerulean Warbler, Kentucky Warbler, and Wood Thrush.

Also present within this region is a unique southern flatwoods community, dominated by American beech, pin oak, sweetgum, and swamp chestnut oak. Extensive areas of flatwoods as well as a large contiguous block of upland forest associated with Big Oaks NWR provides important breeding habitat for the Cerulean Warbler as well as other forest interior birds, and represents one of the largest patches of mature forest in the region. Extensive grasslands are also present on Big Oaks NWR, and support one of the largest known populations of Henslow's Sparrow, as well as providing high quality breeding habitat for other grassland birds such as Grasshopper Sparrow and Prairie Warbler. The forested riparian areas along the Muscatatuck River and smaller streams such as Big Creek associated with Big Oaks NWR provide important summer habitat for the federally endangered Indiana bat.

Despite several large blocks of public land that are present in this region, the vast majority of land is in private ownership, with agriculture the predominant land use, comprising roughly half of the landscape, but also with a significant area of forestland remaining, particularly along the major stream drainages and in the more hilly southeast portion of the region. Extensive flooding along the major streams and rivers, especially the Muscatatuck, has encouraged many landowners to enroll their land into the USDA Wetlands Reserve Program (WRP), making this region one of the highest WRP enrollment areas in the state. In 2010, the Governor of Indiana announced the Healthy Rivers Initiative (HRI), which included the Muscatatuck Project Area, with the goal of permanently protecting 26,000 acres of land strategically targeted to connect existing lands owned by the Indiana DNR and The Nature Conservancy along the Muscatatuck River corridor.

In addition, the Indiana DNR, Division of Forestry recently completed a Statewide Forest Assessment and Strategy, identifying strategic forest patches for targeting conservation efforts. One of these is the Bluegrass Forest Patch, encompassing Big Oaks NWR and adjacent forest lands and providing a potential corridor to Muscatatuck NWR. The private lands within the watersheds of the two NWR's thus provide excellent opportunities to enhance habitat for forest and grassland-dependent migratory birds through bottomland and upland reforestation, native prairie establishment, and prescribed burning to enhance grassland habitats. These sites will be among the highest priority for targeting within the focus area, with the emphasis on expanding existing blocks of forest and grassland habitat, decreasing fragmentation along riparian corridors, and increasing the connectivity between the NWR's. Reforestation projects will also enhance habitat for early successional forest species such as the American Woodcock and Blue-winged Warbler, as well as federally endangered species such as the Indiana Bat.

In addition to involvement through WRP, the Partners Program has worked closely in this region with the Natural Resources Conservation Service to assist with projects under the Wildlife Habitat Incentives Program (WHIP), and numerous partnership opportunities exist to integrate the Partners Program with USDA Farm Bill programs to maximize benefits for federal trust resources. The Service is actively involved in the Southern Indiana Cooperative Weed Management Area (SICWMA), which emphasizes a targeted approach to controlling invasive species.

In addition, local Soil and Water Conservation Districts are actively involved in promoting the Partners Program with area landowners. There are also several land trusts in this region that provide opportunities to expand on existing conservation efforts, including the Oak Heritage Conservancy, which is dedicated to protecting and restoring the native habitats and landscape of southeast Indiana. Another emphasis in the focus area is on working with local schools to develop habitat in association with outdoor labs, where students can learn hands-on about native habitats and the natural world.

Muscatatuck Flats and Lowlands Focus Area Priority Species

Indiana Bat	<i>(Myotis sodalis)</i> Endangered
Copperbelly Water Snake	<i>(Nerodia erythrogaster neglecta)</i> Threatened
Wood Duck	<i>(Aix sponsa)</i>
Solitary Sandpiper	<i>(Tringa solitaria)</i>
Henslow's Sparrow	<i>(Ammodramus henslowii)</i>
Prairie Warbler	<i>(Dendroica discolor)</i>
Louisiana Waterthrush	<i>(Seiurus motacilla)</i>

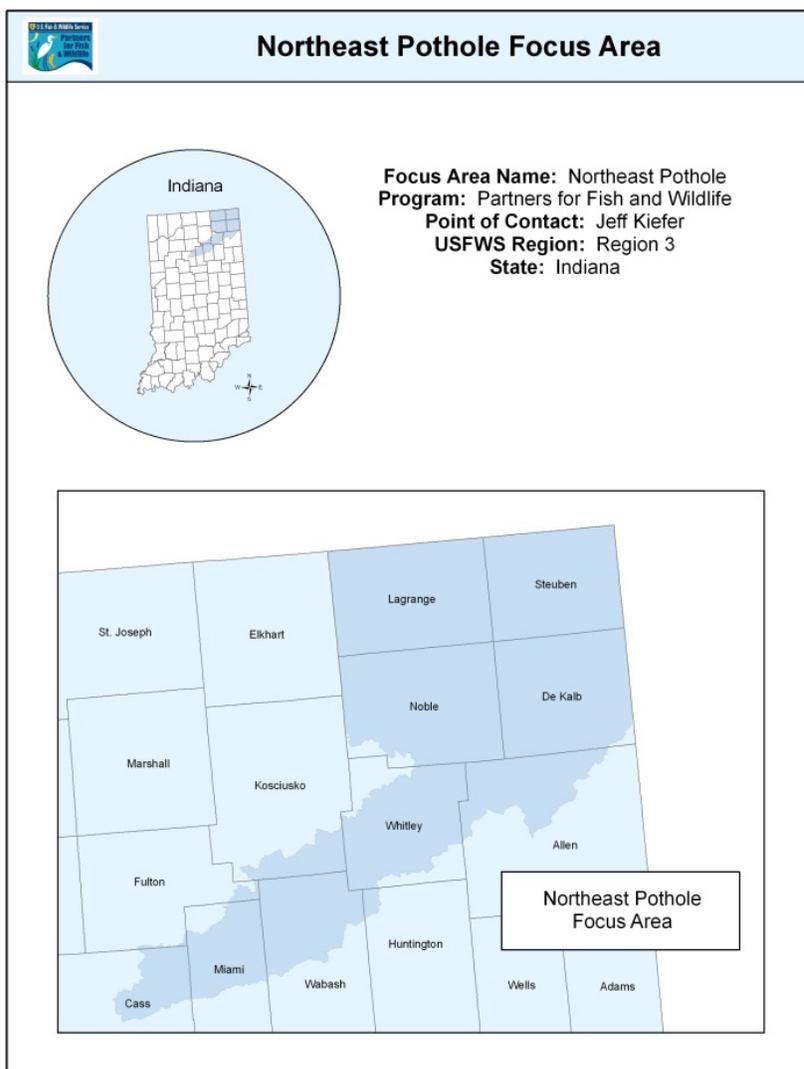
Muscatatuck Flats and Lowlands Focus Area Five-Year Targets

Wetland Restoration/enhancement: 75 acres

Upland Restoration/enhancement/protection: 250 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 0.5 miles

Northeast Pothole Focus Area



The Northeast Pothole Focus Area is a diverse region of lakes, pothole wetlands, existing and former grassland habitats, and small-medium sized streams which support a wide variety of federal trust resources. The focus area encompasses the Northern Lakes Natural Region and the northern portion of the Central Till Plain Natural Region in the northeastern corner of the state. The region was heavily influenced by past glacial activity, and the resulting landscape is characterized by rolling topography with abundant natural lakes and kettle-hole wetlands, many of the latter having been drained for agricultural production. At present, the majority of the land is in private ownership, with approximately 75% of the land base in farms with a mixture of grain and livestock operations, and a significant amount of dairy. However, there is a growing segment of hobby farmers and recreational landowners who derive a minority of their income from agriculture, and who are increasingly interested in restoring habitat for wildlife on their property.

The northeast pothole region was historically one of the most wetland-rich areas of the state, but now contains some of the highest density of tile drainage in the Midwest. However,

despite the significant historical loss of wetlands, this region remains one of the most important waterfowl and marsh bird breeding areas in Indiana, and also provides important habitat for grassland birds and several federally listed species. The focus area lies along the boundary of two Bird Conservation Regions of the North American Bird Conservation Initiative – the Eastern Tallgrass Prairie (BCR 22) and the Prairie Hardwood Transition (BCR 23) – both of which emphasize wetland, grassland, and shrubland priority species such as Mallard, Blue-winged Teal, Henslow’s Sparrow, and Willow Flycatcher.

One positive aspect of the extensive drainage network in this region is that it creates



Copperbelly Watersnake
Photo, John MucGregor

abundant opportunities for wetland restoration, making this one of the highest priority areas for wetland-associated species such as waterfowl, shorebirds, and wading birds. Also included in this wetland-dependent species group are the federally threatened Copperbelly Water Snake and the federal candidate eastern massasauga, both of which rely on emergent wetlands as well as adjacent upland habitats for survival. One of the

continued challenges in this region, particularly concerning wetlands, is the predominance of

invasive species, especially reed canary grass and Phragmites, and their impact on suppressing native plant communities and degrading habitat quality in both restored and natural wetlands.

Another unique resource in this region is the St. Joseph River watershed (Lake Erie basin), which extends into Ohio and Michigan and harbors a number of rare mussel species, including the Northern Riffleshell, and includes Fish Creek in Indiana, the only known location of the federally endangered White Cat’s Paw Pearlymussel. Wetlands and riparian forests have both been shown to enhance water quality by reducing sediment and nutrient loadings, and thus habitat restoration efforts targeting wetland and riparian reforestation projects will be a priority for the Partners Program in this watershed. The St. Joseph River watershed in Steuben and DeKalb Counties contains the last remaining populations of the federally threatened Copperbelly Water Snake, which requires a landscape mosaic of upland forest and small, scattered wetlands, with good connectivity to other habitat patches. The Partners Program will work with partners such as The Nature Conservancy (TNC) to target these core areas to expand on currently restored and protected habitat to improve the genetic resiliency of these populations and foster dispersal into new areas.

While historically this region was heavily forested, there were sizeable tracts of prairie and savanna which occurred throughout this portion of the state, and have since been converted to agricultural land. A similar trend in grassland habitats has been seen throughout the Midwest, and has contributed to the substantial declines in grassland bird numbers observed over the past several decades. Therefore, one of the Partners Program priorities in this region is to restore native prairie habitat, especially large blocks or those in association with other grassland habitats. This provides habitat not only for grassland-dependent species such as Henslow's Sparrow and Dickcissel, but also provides secure nest cover for upland nesting

ducks such as Mallard and Blue-Winged Teal when established in association with natural or restored wetlands.

Northeast Indiana has been a priority area for the Partners Program since the late 1980's, and as a result a number of partnerships have developed in this area to help foster common goals. The region currently contains the highest concentration of Conservation Reserve Program (CRP) land in the state, and is also a high priority for the Wetlands Reserve Program (WRP) and more recently the Healthy Forest Reserve Program (HFRP) through the Natural Resources Conservation Service. These programs can help develop important habitat complexes in key areas to foster the conservation of priority species such as the Copperbelly Water Snake, and the Partners Program will work in cooperation with these and other Farm Bill programs to maximize the impact of habitat development practices.

One of the more successful collaborative efforts in the region has been the Northeast Indiana Wetland/Grassland Restoration Program, a NAWCA-funded partnership between the U.S. Fish and Wildlife Service, Ducks Unlimited, Indiana DNR, and Pheasants Forever to work with private landowners to restore key wetland and grassland habitats for waterfowl, shorebirds, and grassland birds. In addition, tools such as the Great Lakes Habitat Evaluation Network (HEN) model through DU can help fine tune priorities on the ground by identifying those landscapes where wetland and grassland habitat developments will be most productive, especially for waterfowl. Where conservation of aquatic habitats such as streams are the main focus, an even broader landscape level approach is required, and partnership opportunities with organizations such as TNC and the St. Joseph River Watershed Initiative, which have both been active in the Fish Creek and St. Joseph River basins, will be essential to achieving conservation goals for priority aquatic species such as mussels. Additional partnerships are being developed with local land trusts, such as ACRES, Inc., to target habitat restoration on permanently protected lands owned and managed by these conservation organizations.

Northeast Pothole Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalis</i>) Federally Endangered
White Cat's Paw Pearlymussel	(<i>Epioblasma obliquata perobliqua</i>) Federally Endangered
Copperbelly Water Snake	(<i>Nerodia erythrogaster neglecta</i>) Federally Threatened
Mallard	(<i>Anas platyrhynchos</i>)
Blue-winged Teal	(<i>Anas discors</i>)
Virginia Rail	(<i>Rallus limicola</i>)
Greater Yellowlegs	(<i>Tringa melanoleuca</i>)
Henslow's Sparrow	(<i>Ammodramus henslowii</i>)

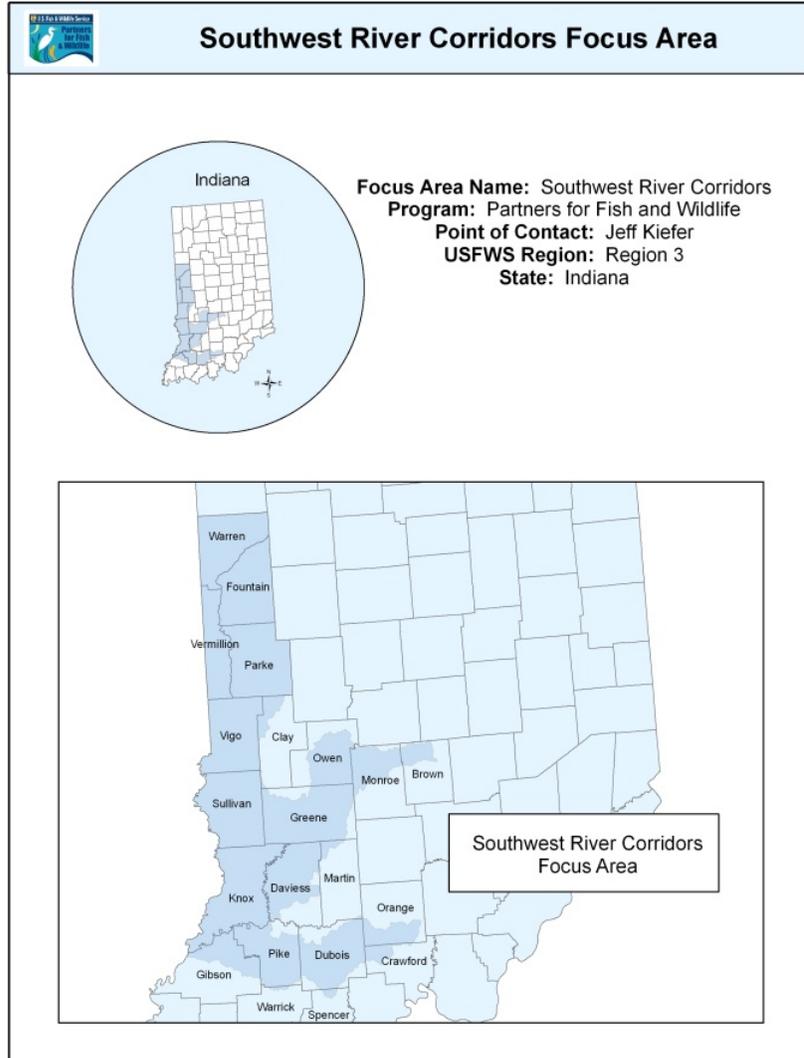
Northeast Pothole Focus Area Five-Year Targets

Wetland Restoration/enhancement: 300 acres

Upland Restoration/enhancement/protection: 550 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 0.5 miles

Southwest Rivers Corridors Focus Area



This region includes sections of the Southwestern Lowlands, Southern Bottomlands and Central Till Plain Natural Regions in southwest and west-central Indiana, and includes river corridor segments from some of Indiana's most important river corridors for migratory birds. From extensive bottomland hardwood forests and swamps along the Patoka, Lower White and Wabash Rivers to large contiguous blocks of upland forests, this region contains significant tracts of public land, including the Patoka River NWR and Cane Ridge Wildlife Management Area, and various state-owned properties, such as the recently restored Goose Pond State Fish and Wildlife Area, an 8,000-acre wetland/upland complex that is one of the largest WRP restoration sites in the Midwest. Overall, this region also contains the highest number of Audubon Society Important Bird Areas (IBA) of any focus area in the state. The focus area is located within the Central Hardwoods Bird Conservation Region (BCR 24) and the Appalachian Landscape Conservation Cooperative (LCC), where a major conservation emphasis is on floodplain forest species such as Cerulean Warbler and Prothonotary Warbler.

The river valleys in this region were shaped by past glaciation during the Illinoian period, and contain broad valleys dissecting generally level to gently rolling plains. Land use is mostly agricultural, but contains extensive floodplain forests and wetlands along the river corridors.

The floodplains and adjacent uplands of the major north-south rivers such as the Lower White and Wabash provide important migration corridors for waterfowl, shorebirds, and forest songbirds and, along with the Patoka River floodplain, represent Indiana's most significant wintering area for waterfowl. These floodplains also provide some of the best Wetlands Reserve Program (WRP) opportunities in the region, and the Natural Resources Conservation Service and The Nature Conservancy have partnered to target the Wetlands Reserve Enhancement Program (WREP) to the middle and lower sections of the Wabash River, focusing on floodplain wetlands and bottomland forests. Wetland restorations through the Partners Program in these floodplain habitats will also benefit numerous waterfowl and shorebird species, including the Wood Duck, Mallard, and Greater Yellowlegs.

In 2010, the Governor of Indiana announced the Healthy Rivers Initiative (HRI), focusing on the Wabash River/Sugar Creek Project Area, with the goal of permanently protecting 43,000 acres of land strategically targeted along a 94-mile reach of the Wabash River corridor and the associated tributary of Sugar Creek, by connecting lands currently owned by the Indiana DNR or protected by WRP easements on private land. In 2012, this HRI area was also identified by the Department of the Interior (DOI) as a highlighted project under the America's Great Outdoors (AGO) Initiative, which is a Presidential effort to foster landscape-scale partnerships to restore and protect unique natural resources and encourage people to connect more with the natural world. This provides an excellent opportunity for the Partners Program to target sites within the corridor to connect existing protected and restored lands to reduce habitat fragmentation. In addition, the Indiana DNR, Division of Forestry, recently completed a Statewide Forest Assessment and Strategy, identifying strategic forest patches for targeting conservation efforts. This focus area includes portions of six target forest patches, providing additional opportunities to improve connectivity and migratory corridors through reforestation for forest dependent migratory birds, such as the Cerulean Warbler, Acadian Flycatcher, and Prothonotary Warbler, as well as for the federally endangered Indiana Bat.

Another unique feature of this region is the large acreage of reclaimed coal mine lands currently in grassland habitat. These areas, although not a natural feature of the landscape, represent some of the largest contiguous blocks of grassland in the state, and are important breeding areas for grassland-dependent birds such as Henslow's Sparrow, Grasshopper Sparrow and Dickcissel. However, much of this acreage was planted to tall fescue, which limits the structural diversity of the plant community, thereby limiting the potential for grassland bird habitat. In addition, invasive species such as autumn olive have degraded hundreds of acres of grassland habitat, and the Partners Program will target invasive species control activities in these habitats, particularly in association with existing protected lands such as the Patoka River NWR.

This portion of the state also has some of the highest densities of Bobwhite Quail, which is a popular game bird with private landowners. This creates opportunities with individual landowners as well as with coal companies to enhance and expand grassland habitats through warm-season grass plantings and grassland management practices that would benefit both quail and grassland songbirds.

Primary partners in the focus area include Ducks Unlimited, The Nature Conservancy, Natural Resources Conservation Service, Indiana Department of Natural Resources, Quail Unlimited, local Soil and Water Conservation Districts, Sycamore Land Trust, and private landowners. This region is also the focus of the Wabash River Habitat Protection Project, a NAWCA-funded effort involving numerous agencies, organizations, and individuals to acquire and restore wetland and associated upland habitats to benefit waterfowl and other migratory birds, and will provide opportunities for collaborative efforts through the Partners Program to target priority areas.

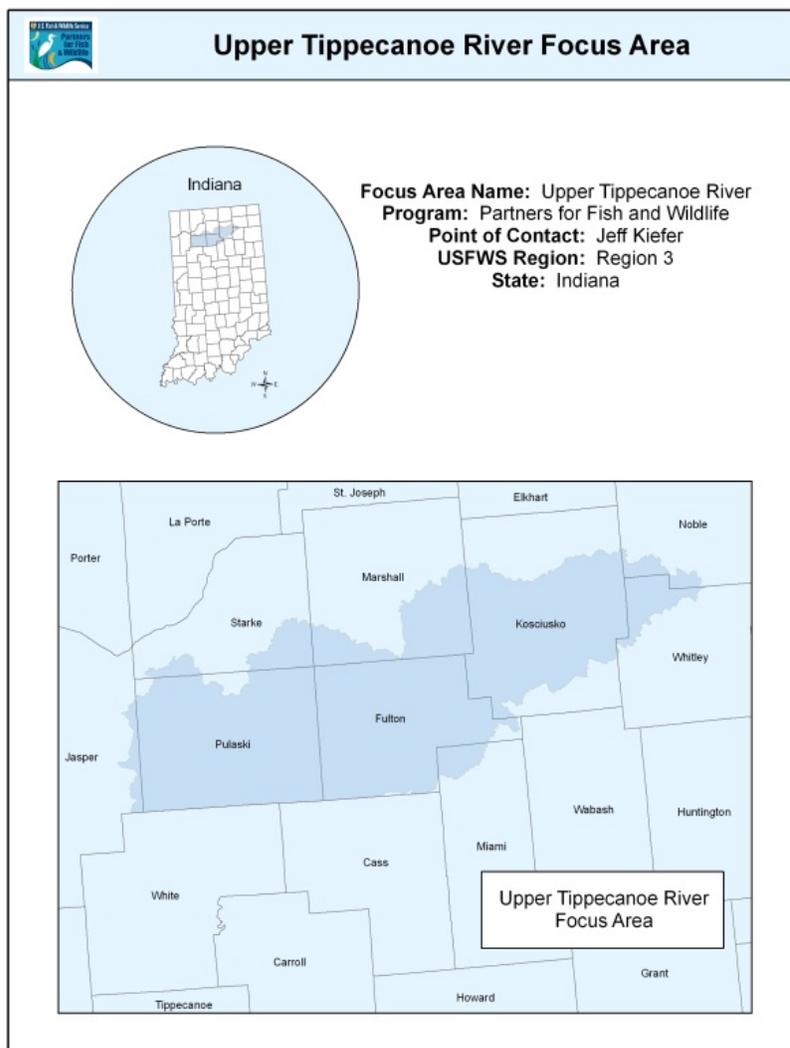
Southwest Rivers Corridors Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalist</i>) Federally Endangered
Copperbelly Water Snake	(<i>Nerodia erythrogaster neglecta</i>) Threatened
Mallard	(<i>Anas platyrhynchos</i>)
Prothonotary Warbler	(<i>Protonotaria citrea</i>)
King Rail	(<i>Rallus elegans</i>)
Henslow's Sparrow	(<i>Ammodramus henslowii</i>)
Northern Bobwhite	(<i>Colinus virginianus</i>)
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)

Southwest Rivers Corridors Focus Area Five-Year Targets

- Wetland Restoration/enhancement: 150 acres
- Upland Restoration/enhancement/protection: 350 acres
- River/Streams/Shoreline Riparian Corridor restoration/enhancement: 0.5 miles

Upper Tippecanoe River Focus Area



The aquatic biota that depend on freshwater habitats contain the highest percentage of imperiled species among all groups of animals and plants in the U.S. In particular, freshwater mussels have been especially impacted by degraded aquatic habitat, with more than two-thirds of mussel species designated as species of conservation concern. The Tippecanoe River is one of the most biologically diverse streams in the nation, supporting 49 of its original 57 species of freshwater mussels, including the federally endangered Clubshell, Fanshell, and Northern Riffleshell. The Clubshell population in the Tippecanoe River is reported to be the largest remaining population of this species in existence. The overall species diversity of the Tippecanoe rivals some of the highest quality streams in America, and The Nature Conservancy (TNC) has identified it as one of the top 10 rivers in the nation to preserve.

The upper portion of the Tippecanoe River, which is the primary emphasis of the focus area meanders in north central Indiana across portions of 8 counties and is confined mainly to the

Northern Lakes Natural Region and the Kankakee Sands Section of the Grand Prairie Natural Region. The landscape is predominantly agricultural, but also contains scattered woodlots, wetlands, and in some areas a significant riparian corridor along the Tippecanoe River. Due in part to the presence of more than 85 natural lakes and numerous wetlands that feed the river through its tributaries, water quality is still fairly good, although nonpoint source pollution through sedimentation and nutrient runoff is considered a threat to water quality.

The focus area lies within the Prairie Hardwood Transition Bird Conservation Region (BCR 23) and the Upper Mississippi/Great Lakes Landscape Conservation Cooperative (LCC), where the Joint Venture restoration emphasis is on shrubland, grassland, and savanna habitat for species such as the Willow Flycatcher, Dickcissel, and Red-headed Woodpecker. The Tippecanoe River floodplain is also considered to be an important migratory bird corridor for forest bird species migrating between the Wabash River corridor and the Great Lakes. The Service will work with partners to focus on habitat restoration activities within the watershed that benefit water quality, including wetland restoration, riparian reforestation, and native prairie establishment. These practices will help reduce sedimentation, which is a primary nonpoint source pollution threat to mussels in the river, and also will help to assimilate excess nutrients such as nitrogen and phosphorus, thereby improving surface water quality. Wetland restoration projects will also benefit Joint Venture focal species such as Mallard and Willow Flycatcher, and enhancing the floodplain corridor through reforestation will benefit species with riparian forest affinities in the watershed, such as Acadian Flycatcher and the federally endangered Indiana Bat. Grassland restoration, especially in larger blocks or in association with other grassland habitats, will benefit priority species such as Eastern Meadowlark and Dickcissel. Primary emphasis will be on projects that enhance habitat complexes and enlarge existing blocks of habitat, particularly along the Tippecanoe River corridor.

The Service has partnered with TNC through the Partners Program to jointly focus on habitat restoration within the Tippecanoe River watershed, and will continue to work in partnership with TNC to identify key private lands projects in the future. Opportunities also exist to complement USDA programs in the watershed, such as the Conservation Reserve Enhancement Program (CREP), which targeted the Tippecanoe River watershed as Indiana's first CREP project. The Partners Program will focus on opportunities where USDA programs cannot provide assistance to landowners, thereby expanding the tools available to put conservation projects on the ground in the watershed. Other partners in the focus area include Ducks Unlimited, Pheasants Forever, Natural Resources Conservation Service, Indiana Department of Natural Resources, NICHES Land Trust, local Soil and Water Conservation Districts, and private landowners.

Upper Tippecanoe River Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalis</i>) Federally Endangered
Clubshell	(<i>Pleurobema clava</i>) Federally Endangered
Blue-winged Teal	(<i>Anas discors</i>)
Mallard	(<i>Anas platyrhynchos</i>)
Willow Flycatcher	(<i>Empidonax traillii</i>)

Red-headed Woodpecker (*Melanerpes erythrocephalus*)
Dickcissel (*Spiza americana*)

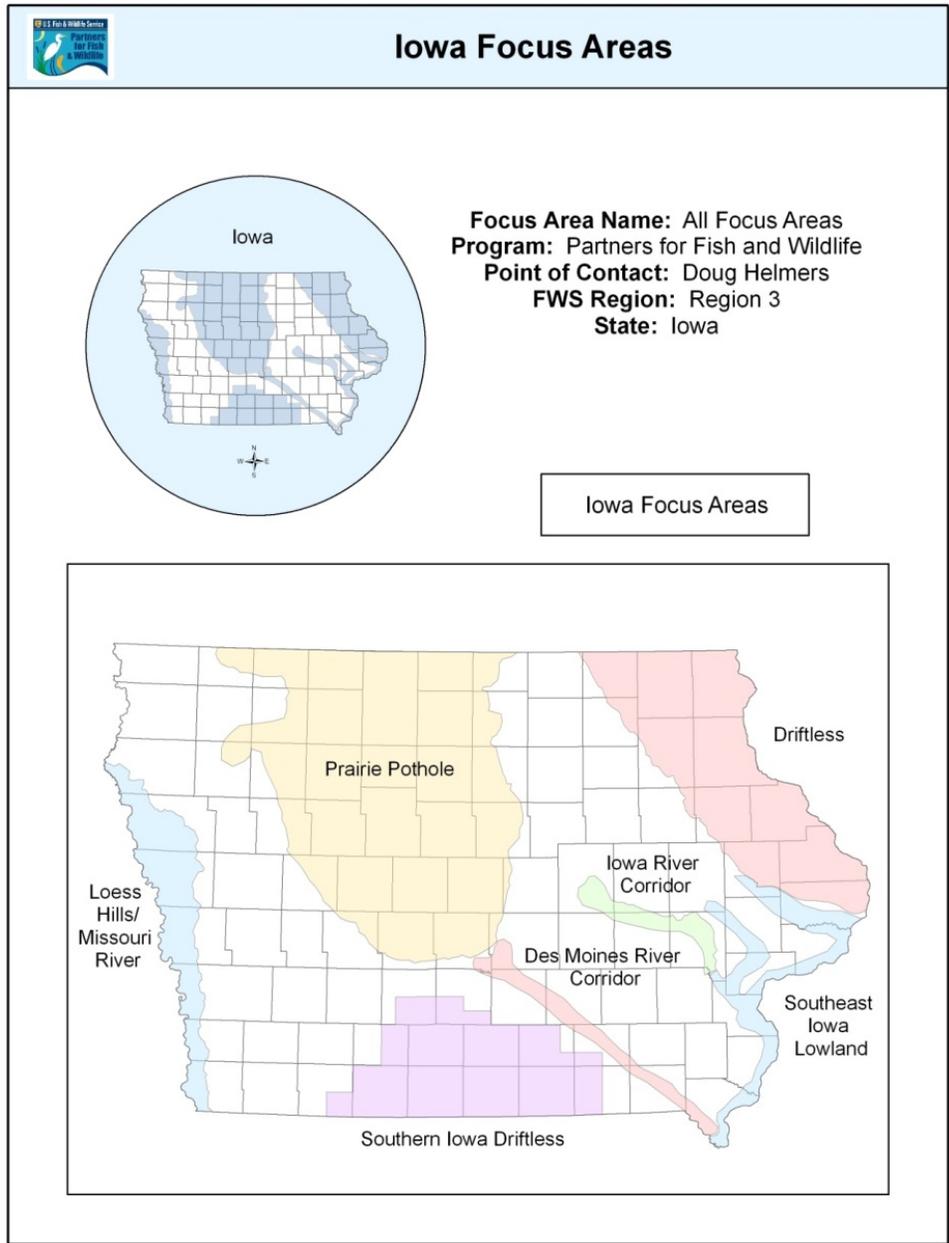
Upper Tippecanoe River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 150 acres

Upland Restoration/enhancement/protection: 125 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 1 mile

Iowa



Introduction and Overview

The Iowa Partners Program is dedicated to developing partnerships with Iowa private landowners to protect and restore natural habitats for the benefit of Federal Trust Species and the state’s natural resources. The Iowa Partners Program Strategic Plan for the next five years is built upon the foundation established by our 2007-2011 Strategic Plan. The plan developed for the Iowa Partners Program was a collaboration of U. S. Fish and Wildlife Service

biologists and project leaders, and partners to identify focus areas, evaluate critical resource needs and threats in conjunction with opportunities to prevent or reverse habitat fragmentation. It also identified existing or potential partners, and assessed support for National Wildlife Refuge system lands in relationship to private lands.

In addition to Service staff, our partners were critical to the development of this Strategic Plan and included Iowa Department of Natural Resources (IDNR), The Nature Conservancy (TNC), Iowa Natural Heritage Foundation (INHF), Pheasants Forever (PF), Ducks Unlimited (DU), Wild Turkey Federation (WTF), USDA Natural Resources Conservation Service (NRCS), Southern Iowa Oak Savanna Alliance (SIOSA), and Decatur County Conservation Board.

Iowa Landscape

Iowa is a diverse although highly modified state having lost over 99% of its native prairie and 95% of its wetlands. Over 70% of the State is in row crop production and less than 2% is in public ownership. Iowa is juxtaposed between the Mississippi and Missouri rivers on the east and west borders, respectively. Most of the landforms in Iowa have been created by glaciation. These geologic events have given Iowa some unique natural communities. However, many of the native plant and animal communities that existed before European settlement have been drastically altered by agriculture and development.

Thirty-five counties in north central Iowa are part of a larger northern Midwest geographic region known as the Prairie Pothole Region. The last Ice Age left a mosaic of shallow wetland basins surrounded by undulating hills covered by tallgrass prairies. Pothole wetlands are generally small depressions, containing thick deposits of black, rich soils. When drained, potholes become exceptionally valuable farmlands. Over 98% of the pothole wetlands in this region of Iowa have been drained for agriculture.

The interior of Iowa has over 19,000 miles of rivers and streams with 87 cold-water streams in the northeast driftless area many originating in limestone bluffs along the Mississippi River. Twenty-five of the largest interior streams extend over 3,500 miles and each is fed by numerous tributaries. These streams flow through what was once a vast tallgrass prairie that covered 85% of Iowa.

The Loess Hills were formed during glacial events from windblown silt deposited in ridges along what is now the Missouri River floodplain in western Iowa. These hills are Iowa's most unique and significant landform, because the depths of the loess deposits are unmatched in the world. The Loess Hills are steep, rugged and dry. These conditions result in plant and animal communities that are more associated with the dry climate of the short grass prairies in western States.

A large percent of Iowa's remaining unplowed prairie is found in the Loess Hills. The integrity and biodiversity of the natural communities are threatened by urban sprawl,

soil removal to be used as fill material at other development sites and most notably, the lack of fire management to control invasive woody species, particularly non-native eastern red cedar. The largest prairie remnants can be found in the Loess Hills in western Iowa.

Today, 92 percent of Iowa’s land is used for agriculture. Several plants, exotic to Iowa, have been accidentally or intentionally introduced and are threatening the natural communities in the State. The eastern red cedar has spread throughout the Loess Hills altering much of the area’s prairie character. Reed canarygrass, introduced to stop soil erosion along grassed waterways and field terraces, is now the dominant species in many wetlands.

Focus Areas

Priorities for implementing the Partners Program are directed to the seven focus areas designated in this plan. The focus areas were developed with our partners and insights from the Iowa Wildlife Action Plan (IWAP) and priorities established through the Partners for Fish and Wildlife Program. The identification of priority trust species for the focus areas included plans from a variety of Regional and National Conservation plans which included:



Prairie project after cedar removal and fire
Photo, USFWS

The Partners Program in Iowa focus areas were strategically developed to encompass the seven National Wildlife Refuges (NWR) and one Wetland Management District (WMD) to expand the zone of influence of the refuge boundaries by restoring and enhancing habitats on adjacent landowners. Priorities are also placed on developing corridors of habitat to connect other protected lands. Fish and Wildlife Service managed lands include: Union Slough NWR, Iowa WMD, McGregor District Upper Mississippi NFWR, Driftless Area NWR, Port Louisa NWR, Neal Smith NWR, Northern Tallgrass Prairie NWR, and DeSoto NWR.

The Partners Program in Iowa is also uniquely situated to have focus areas within three Landscape Conservation Cooperatives (LCC), which include the Prairie Pothole LCC, Eastern Tallgrass Prairie and Big Rivers LCC and Upper Midwest and Great Lakes LCC. The Partners Program works with the LCC’s to help reduce the threats to Federal Trust Species through habitat restoration on private lands adjacent to or corridors connecting protected lands.

America’s Great Outdoors

America’s Great Outdoors (AGO) is a Presidential initiative which takes as its premise that lasting conservation solutions should rise from the American people and that the protection

of our natural heritage be shared by all Americans. These locally supported outdoor projects aim to reconnect Americans to the natural world through parks, trails, and rivers and to conserve and restore working lands and wildlife habitat. The Partners Program in Iowa is prioritizing our involvement in two of those local initiatives.

The Loess Hills project will protect and restore prairies, oak savannas, forests and associated cultural resources in ecologically-important Loess Hills of Western Iowa. The long-term goals call for an additional 70,000 acres of land protected, restored or managed in the Loess Hills through public acquisition and private conservation efforts. The initiative provides technical and financial assistance to landowners and communities to conserve and manage the natural, cultural, and recreational resources of the Loess Hills. This project builds upon an extensive conservation network already protected by Iowa DNR, Iowa Natural Heritage Foundation, The Nature Conservancy, Loess Hills Alliance, seven County Conservation Boards and numerous partners.

The Southern Prairie Pothole National Wildlife Refuge initiative would protect and restore wetland and tallgrass prairie habitats by building upon the network of protected lands through public-private partnerships. This project seeks to protect these habitats through WRP and CRP (NRCS), Conservation Easements (USFWS), and fee title as Waterfowl Production Areas and Northern Tallgrass Prairie NWR (USFWS) by voluntary cooperation. The Partners Program will provide technical and financial assistance to landowners and communities to restore and enhance the natural resources of private lands to expand the zone of influence around this newly established refuge. This initiative will improve recreational opportunities and access for the public while conserving fish and wildlife resources.

Conservation Strategies

The Partners Program addresses wildlife habitat issues in Iowa through partnerships with other Federal and State agencies, private conservation organizations and private landowners with similar concerns and objectives. The synergy resulting from the cooperative partnership approach is demonstrated in the impressive accomplishments. In some cases we have provided leadership and direction to a project. More often, the Partners Program staff serves as team members, bringing specialized skills, knowledge and resources for wildlife habitat restoration and protection to landscape level resource issues. For example, the Partners Program provides important resources and technical skills to the prairie pothole wetland/prairie complex restoration effort. Partnering with USDA programs such as the Conservation Reserve Program and Wetlands Reserve Program are providing additional incentives to landowners. Iowa Department of Natural Resources is protecting and managing wetland and prairie complexes and the Partners for Fish and Wildlife Program has restored over 800 pothole wetlands in the area. Not only do the wetlands provide wildlife habitat, they also reduce nitrogen and phosphorus in drinking water.

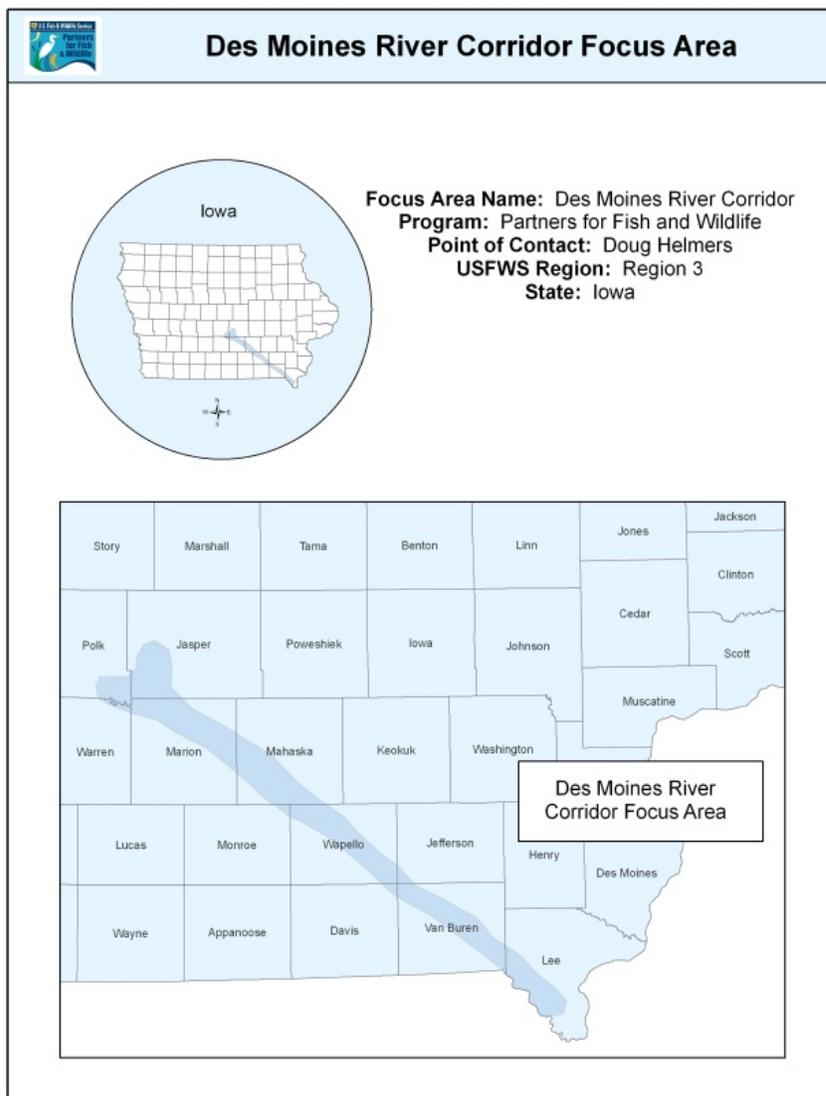
Iowa has 17 federally listed endangered, threatened or candidate species and the State of Iowa has listed 115 species of animals that are either endangered, threatened or species of concern. Recovery efforts to protect endangered and threatened species have included the restoration of oxbows for the Topeka shiner in partnership with private landowners and Iowa

Natural Heritage Foundation. The purchase of lands by the Fish and Wildlife Service in cooperation with Iowa DNR and county conservation boards to protect eastern and western prairie fringed orchids. In addition to the restoration of savannas in the southern Iowa drift plains for Indiana Bats with the Southern Iowa Oak Savanna Alliance.

Supporting plans for Iowa Focus Areas:

- NatureServe National and Sub-national Heritage Status Rankings
- The Iowa Breeding Bird Atlas
- USGS Breeding Bird Survey
- NABCI 2002 Bird Conservation Region
- USFWS Region 3 Birds of Conservation Concern
- United States Shorebird Conservation Plan
- Upper Mississippi-Great Lakes Shorebird Plan
- Northern Plains/Prairie Potholes Regional Shorebird Plan
- North American Waterbird Conservation Plan
- Iowa Important Bird Area Priority Birds List
- Upper Mississippi River Great Lakes Joint Venture Implementation Plan
- Prairie Pothole Joint Venture Implementation Plan 2005
- Fitzgerald, Jane A. and D. Pashley. 2000. Partners in Flight Bird Conservation Plan for the Dissected Till Plains.
- The Nature Conservancy, The Central Tallgrass Prairie Ecoregion Planning Team. 2000. Conservation in a Highly Fragmented Landscape: The Central Tallgrass Prairie Ecoregional Conservation Plan.
- Iowa Department of Natural Resources, Iowa Wildlife Action Plan: Securing a Future for Fish and Wildlife, A Conservation Legacy for Iowans.
- Partners in Flight. 2004. North American Landbird Conservation Plan.
- USFWS. Driftless Area National Wildlife Refuge Comprehensive Conservation Plan.

Des Moines River Corridor Focus Area



The Des Moines River bisects Iowa from the Northwest to Southeast. The river is approximately 525 miles long from its origins at Lake Shetek in Murray County, Minnesota. The river has two major reservoirs near central Iowa; Saylorville Lake north of Des Moines, and Lake Red Rock near Pella, Iowa. The river carries a significant amount of water from drainage systems of the Prairie Pothole region and is prone to major flood events. The Des Moines River joins the Mississippi River at the very southeast corner of Iowa in Lee County, where the river forms a short portion of the Iowa and Missouri Border.

This focus area is for the southern reaches of the Des Moines River from Lake Red Rock to the confluence of the Mississippi River. The river is a permanent, slow-moving river characterized by expansive floodplains with attendant backwaters, oxbows, and associated saturated uplands, floodplain forests, sandy areas, oak/hickory uplands, and remnant prairies.

The primary focus for the Partners Program in this focus area will be the restoration and enhancement of floodplain forest, riparian wetlands, upland oak savanna and woodlands, remnant prairie restoration and prairie establishment. The goal will be improving the river corridor as a migration route for migratory song birds and waterfowl that connects the Mississippi River habitats with the Prairie Pothole Region. In addition, the improved habitat conditions bordering the river corridor will enhance water quality of the river and improve conditions for many species of concern using the river, including the Higgin's eye pearly mussel.

The Des Moines River corridor focus area was established to help address connectivity of Iowa's major habitat units. As climate changes occur it will be necessary for wildlife species to have the ability to move and distribute populations on the landscape where habitat conditions are suited to their needs. Establishing corridors such as the Des Moines River will help provide opportunities for species movement.

DesMoines River Corridor Focus Area Priority Species

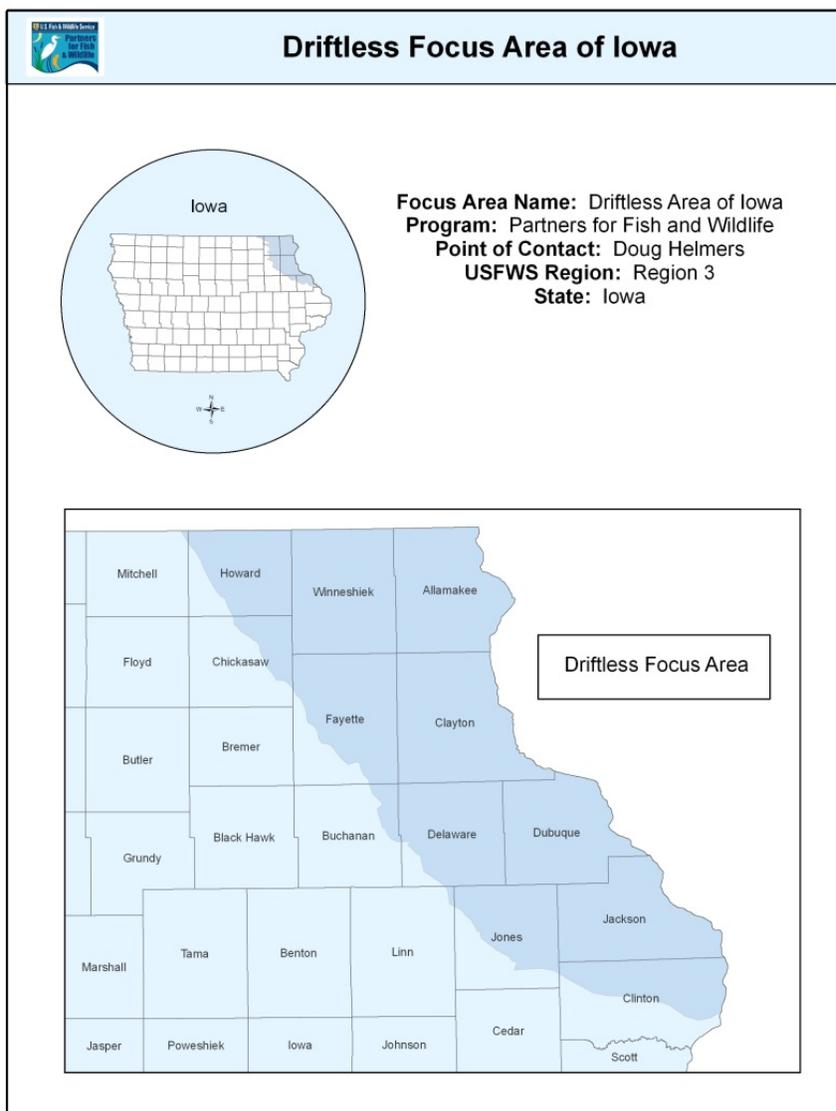
Indiana bat	(<i>Myotis sodalis</i>) Federally Endangered
Higgin's eye pearly mussel	(<i>Lampsilis higginsii</i>) Federally Endangered
Topeka shiner	(<i>Notropis topeka</i>) Federally Endangered
Mead's milkweed	(<i>Asclepias meadii</i>) Federally Threatened
Eastern massasauga	(<i>Sistrurus catenatus catenatus</i>) Candidate
Red-headed woodpecker	(<i>Melanerpes erythrocephalus</i>)
Acadian flycatcher	(<i>Empidonax vireescens</i>)
Solitary sandpiper	(<i>Tringa solitaria</i>)
Black tern	(<i>Chlidonias niger</i>)

DesMoines River Corridor Focus Area Five-Year Targets

Wetland Restoration: 100 acres

Upland Restoration/enhancement/establishment/maintenance: 750 acres

Driftless Area Focus Area



This focus area encompasses the primary land base of the Driftless Area NWR. This focus area is located in extreme northeast Iowa in the rugged bluffland areas developed by the tributaries of the Mississippi River. Geologically, this is a karst region that was untouched by the last glaciation, leaving the bedrock subject to erosion. The Mississippi River and its tributaries have carved very steep slopes and cliffs throughout much of the region causing unique habitat features referred to as algal talus slopes. These slopes remain cool throughout the year and provide a unique habitat for rare species of plants and animals including the endangered Iowa Pleistocene Land Snail and the threatened Northern Monkshood. The Iowa Pleistocene Land Snail was considered extinct until it was discovered in northeast Iowa in 1955 and was put on the endangered species list due to the fragile nature and small area of habitat in which it survives. There are 36 known colonies of the snail in northeast Iowa and one colony in northwest Illinois. Protection efforts include land acquisition through the Driftless Area NWR and funding for private landowners for

excluding cattle, cleaning sinkholes, planting buffer strips and managing woodland habitats. The Northern Monkshood belongs to the buttercup family. The plant has known populations on 114 algific talus slopes and similar cool moist habitats in Iowa, Wisconsin, Ohio and New York. The majority of these sites are located in northeast Iowa. Protection and recovery efforts are very similar to the Pleistocene Land Snail. Restoration efforts that help manage forest and prairie habitats on land surrounding the algific talus slopes also provide benefits to other trust resources.

Habitat improvements benefit bald eagles, the American woodcock, woodpeckers, and several grassland, savanna and woodland migratory birds. In addition to the algific talus slopes, the Driftless Area also buffers the Upper Mississippi National Fish and Wildlife Refuge. Land use in the area is very intensive agriculture with a strong beef and dairy cattle industry and row crop agriculture. With increasing commodity prices for corn and soybeans, many Conservation Reserve Program acres and old pastures may be converted to production, threatening the wetlands within the watershed with erosion. Restoring and buffering wetlands and working within riparian corridors in this focus area will help protect the resources of the Upper Mississippi Refuge. The Service works with State, county and private conservation organizations such as The Nature Conservancy to help manage and protect algific talus slopes. The most significant partners in the efforts to protect the slopes are the private landowners. Much of northeast Iowa including many of the slopes that are home to these species are in private ownership.

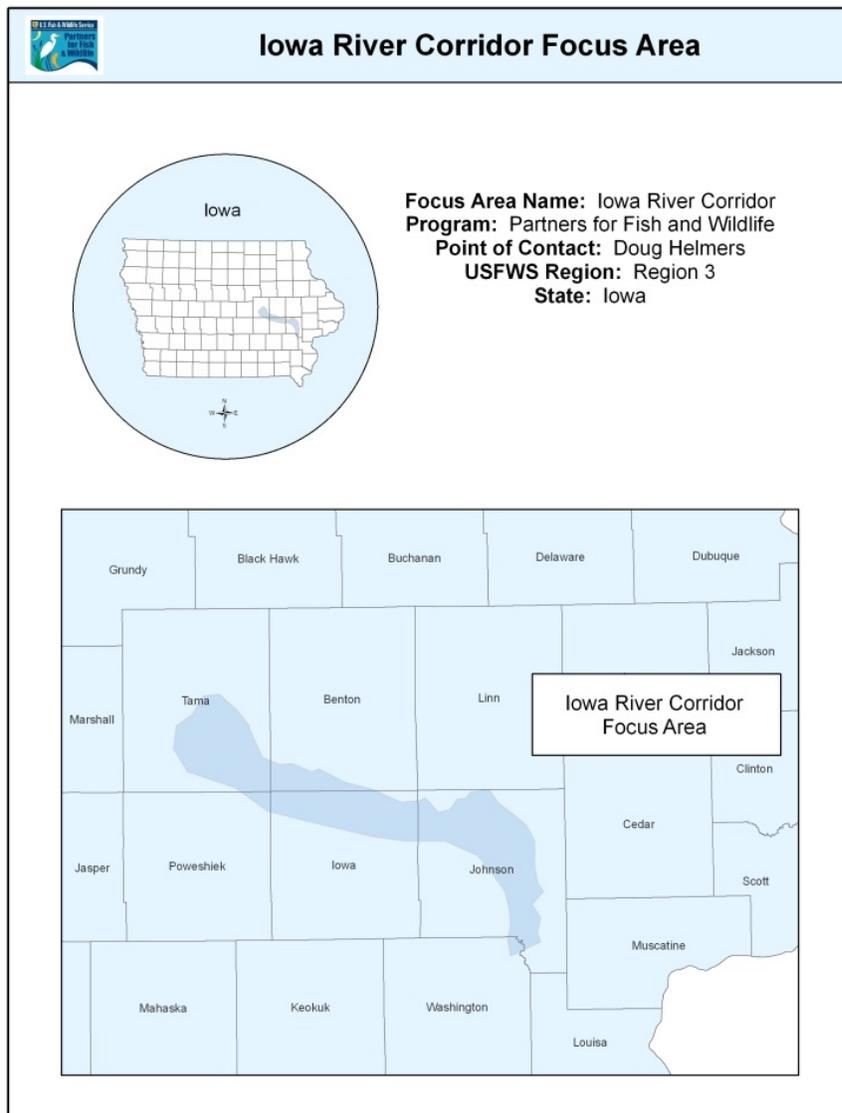
Driftless Area Focus Area Priority Species

Iowa Pleistocene snail	(<i>Discus macclintocki</i>) Federally Endangered
Indiana bat	(<i>Myotis sodalis</i>) Federally Endangered
Eastern prairie fringed orchid	(<i>Platanthera leucophaea</i>) Federally Threatened
Northern wild monkshood	(<i>Aconitum noveboracense</i>) Federally Threatened
Higgin’s eye pearlymussel	(<i>Lampsilis higginsii</i>) Candidate
Yellow rail	(<i>Coturnicops noveboracensis</i>)
Common tern	(<i>Sterna hirundo</i>)
Red-headed woodpecker	(<i>Melanerpes erythrocephalus</i>)
Blue-winged warbler	(<i>Vermivora pinus</i>)

Driftless Area Focus Area Five-Year Targets

- Wetland Restoration/enhancement: 100 acres
- Upland restoration/protection: 200 acres
- Riparian restoration/enhancement: 5 miles

Iowa River Corridor Focus Area



This focus area is along the Iowa River in the east central Iowa counties of Tama, Benton and Iowa. The area was heavily flooded in 1993 and much of the river floodplain was enrolled in the Wetland Reserve Program. Around 10,000 acres of the land within the 50,000 acre corridor area are owned and managed by the USFWS Port Louisa NWR. The corridor area runs along a 45 mile stretch of the Iowa River. Land within the corridor area is managed primarily for waterfowl and other migratory birds. The primary focus of the Partners Program in this area is to restore wetlands and establish prairie grasslands surrounding the managed conservation lands. Wetland restoration and grassland enhancements in the surrounding privately owned lands will enhance the wildlife benefits of the Refuge lands and protect the corridor from siltation and pollution from runoff of neighboring lands.

Threats to the habitat of the Refuge include invasive species such as reed canary grass and encroachment of woody species such as cottonwood, boxelder, elm and other aggressively growing trees. Other threats include increased intensity in row crop production due to high commodity prices for corn and soybeans. Intensive use of fertilizers and chemicals could increase run-off into the restored wetlands and conversion of grasslands to row crop production could enhance these concerns.

Many partners have worked to restore and enhance the habitat of the corridor area including the USDA - NRCS, Iowa Department of Natural Resources, County Conservation Boards, Pheasants Forever, Ducks Unlimited and Iowa State University.

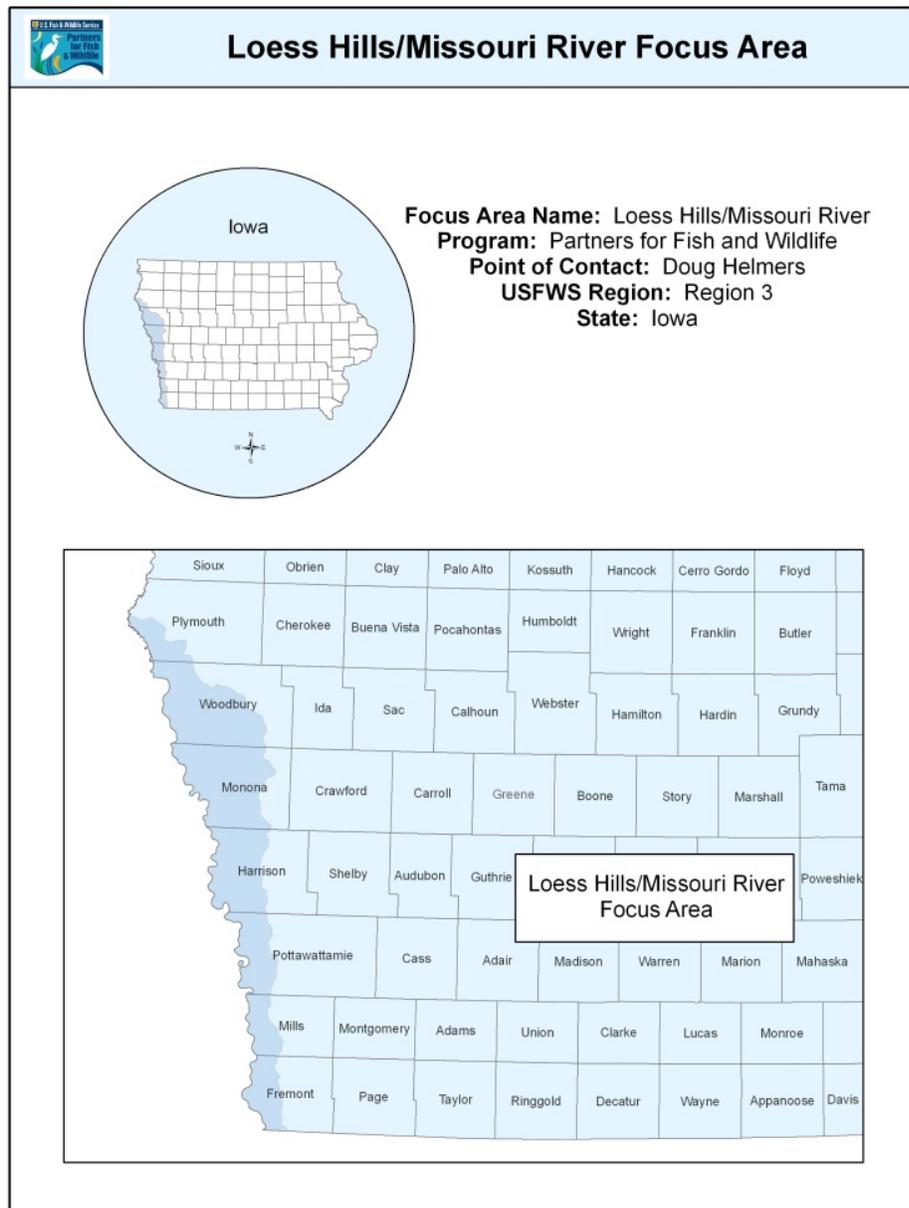
Iowa River Corridor Focus Area Priority Species

Indiana bat	(<i>Myotis sodalis</i>) Federally Endangered
Iowa Pleistocene snail	(<i>Discus macclintocki</i>) Federally Endangered
Topeka shiner	(<i>Notropis Topeka</i>) Federally Endangered
Northern wild monkshood	(<i>Aconitum noveboracense</i>) Federally Threatened
Western prairie fringed orchid	(<i>Platanthera praeclara</i>) Federally Threatened
Sheepnose mussel	(<i>Plethobasus cyphus</i>) Candidate
Eastern massasauga	(<i>Sistrurus catenatus catenatus</i>) Candidate
Acadian flycatcher	(<i>Empidonax virescens</i>)
Prothonotary warbler	(<i>Protonotaria citrea</i>)
Henslow's sparrow	(<i>Ammodramus henslowii</i>)

Iowa River Corridor Focus Area Five-Year Targets

- Wetland Restoration: 250 acres
- Upland Restoration: 500.0 acres

Loess Hills/Missouri River Focus Area



The Loess Hills are a unique natural landscape that was formed by wind deposits of loess soils along a very narrow band of the western edge of Iowa. Due to the unique structure of the soils, the steep topography and difficulty in row crop farming, much of the area maintains high quality remnant prairie. Much of the area is, however, being overtaken by invasive species such as eastern red cedar. Woody species encroachment is putting the remnant prairie landscape at risk. Fire, thinning of brush and patch burn grazing are methods being employed to restore and protect the hills. The Loess Hills focus area also includes the watershed of the Desoto National Wildlife Refuge. Wetland and grassland restoration help enhance the wildlife habitat of the Refuge and protect the waters from siltation.

Loess Hills/Missouri River Focus Area Priority Species

Least tern	(<i>Sterna antillarum</i>) Federally Endangered
Western prairie fringed	(<i>Orchid, Platanthera praeclara</i>) Federally Threatened
Piping plover	(<i>Charadrius melodus</i>) Federally Threatened
Eastern massasauga	(<i>Sistrurus catenatus catenatus</i>) Candidate
Dakota Skipper	(<i>Hesperia dacotae</i>) Candidate
Whimbrel	(<i>Numenius phaeopus</i>)
Red knot (roselaari)	(<i>Calidris canutus</i>)
Kentucky warbler	(<i>Oporornis formosus</i>)
Smith's longspur	(<i>Calcarius pictus</i>)
Short-eared owl	(<i>Asio flammeus</i>)

Loess Hills/Missouri River Focus Area Five-Year Targets

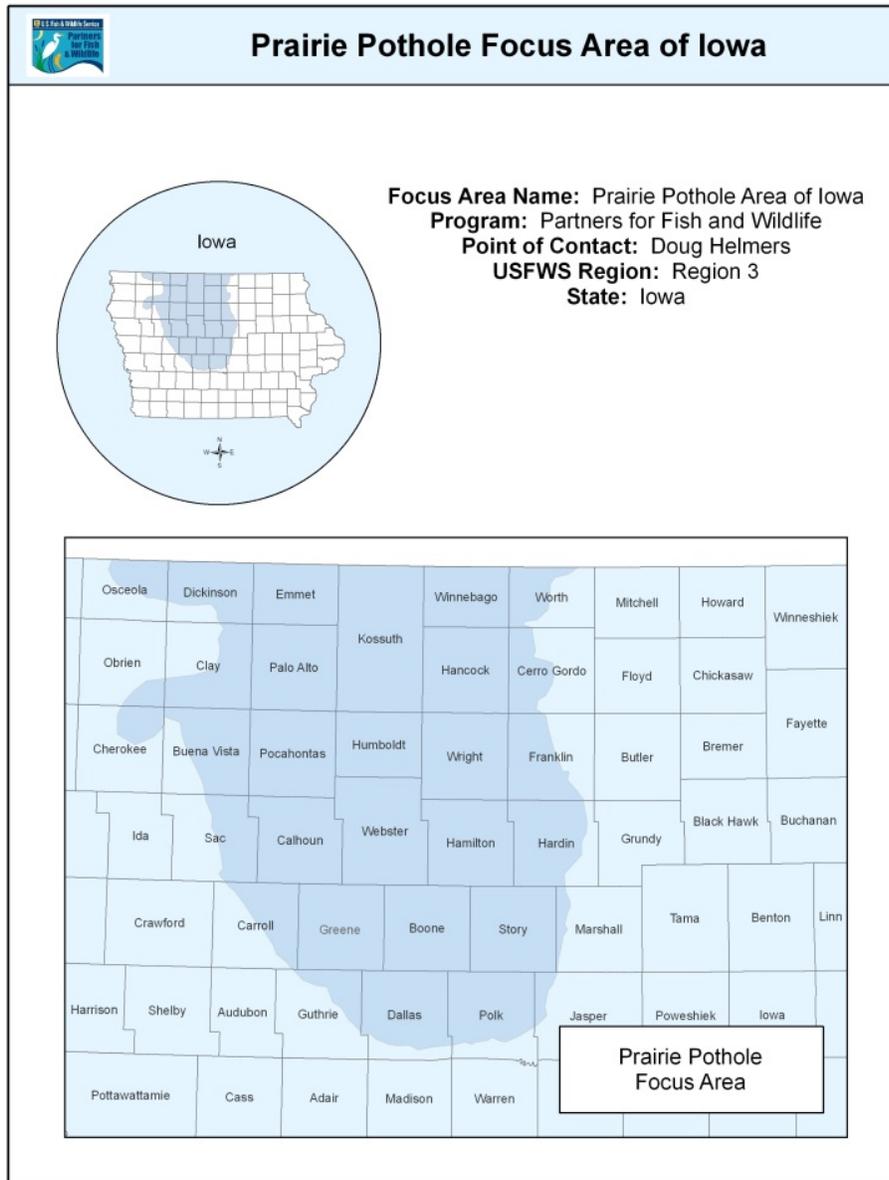
Wetland Restoration/enhancement: 100 acres

Upland restoration/enhancement: 1500 acres



Trumpeter Swans on restored Partners Program Wetland
Photo, USFWS

Prairie Pothole Focus Area



This focus area encompasses the watersheds of Union Slough NWR and much of the northern portion of the prairie pothole region of Iowa. Historically this landscape was dominated by open tallgrass prairie habitat interspersed by frequent shallow pothole wetlands. Well over 99% of the original tallgrass prairie and over 90% of the wetlands within this focus area has been converted to row crop agriculture, primarily corn and soybeans. The impact on both wetland and grassland bird populations has been dramatic. Restoration efforts within this focus area will strive to restore wetlands and surrounding upland habitats to form complexes of habitat for maximum benefit to grassland and wetland migratory birds. Partners in this effort include the USDA, Iowa DNR, County Conservation Boards, Pheasants Forever, Ducks Unlimited, and primarily private landowners. Positive results in bird use have been seen on many of the previously restored areas of the pothole region. Sandhill cranes are

beginning to use Iowa wetland complexes for nesting and in 2006 the first whooping cranes made a brief stop in north central Iowa wetlands prior to returning to nesting grounds in Wisconsin. The potential is there for significant benefits to several wetland and grassland bird populations. Threats to restoration efforts in this region include increasing commodity prices for corn and soybeans. Biofuel production could threaten wetland and upland habitat that is not under permanent protection. At the same time, the median age of farmers is increasing in Iowa and technology has made it much easier for fewer farm workers to manage the land. This may lead to opportunities to work with farmers to leave a conservation legacy on portions of the farms and those areas that the large equipment used today cannot efficiently operate.

The area consists of wetland, grassland, and oak savanna habitat enhancement and restoration. Each project area will have significant impacts on various wildlife species. For example, the Federally endangered Topeka Shiner will benefit directly from wetland restoration of riverine oxbows and secondarily from both tallgrass prairie and oak savanna restoration through improved water quality. It has been shown that run-off and siltation are significantly reduced in the prairie streams of the region when oak



Biologist searching for Topeka Shiners
Photo, USFWS

savanna is restored. In addition to benefiting federally listed species, these restoration projects will help improve habitat conditions for numerous species that are of special concern to the state and other conservation agencies listed in the Iowa Wildlife Action Plan. Included in this category is the Buff-breasted sandpiper, American Bittern, bobolink, dickcissel, Henslow's sparrow, Northern Harrier and many other species.

These actions will be incorporated into the Plains Pothole Landscape Conservation Cooperative to expand and enhance wildlife habitats for the purpose of mitigating the long term effects of climate change. This will be accomplished by increasing travel corridors on private lands between large blocks of habitat and expanding the zone of influence of large blocks of public/private habitats.

Prairie Pothole Focus Area Priority Species

Least tern	(<i>Sterna antillarum</i>) Federally Endangered
Topeka shiner	(<i>Notropis topeka</i>) Federally Endangered
Higgin's eye pearl mussel	(<i>Lampsilis higginsii</i>) Federally Endangered
Western prairie fringed orchid	(<i>Platanthera praeclara</i>) Federally Threatened
Prairie-bush clover	(<i>Lespedeza leptostachya</i>) Federally Threatened
Dakota skipper	(<i>Hesperia dacotae</i>) Candidate
Upland sandpiper	(<i>Bartramia longicauda</i>)

Grasshopper sparrow

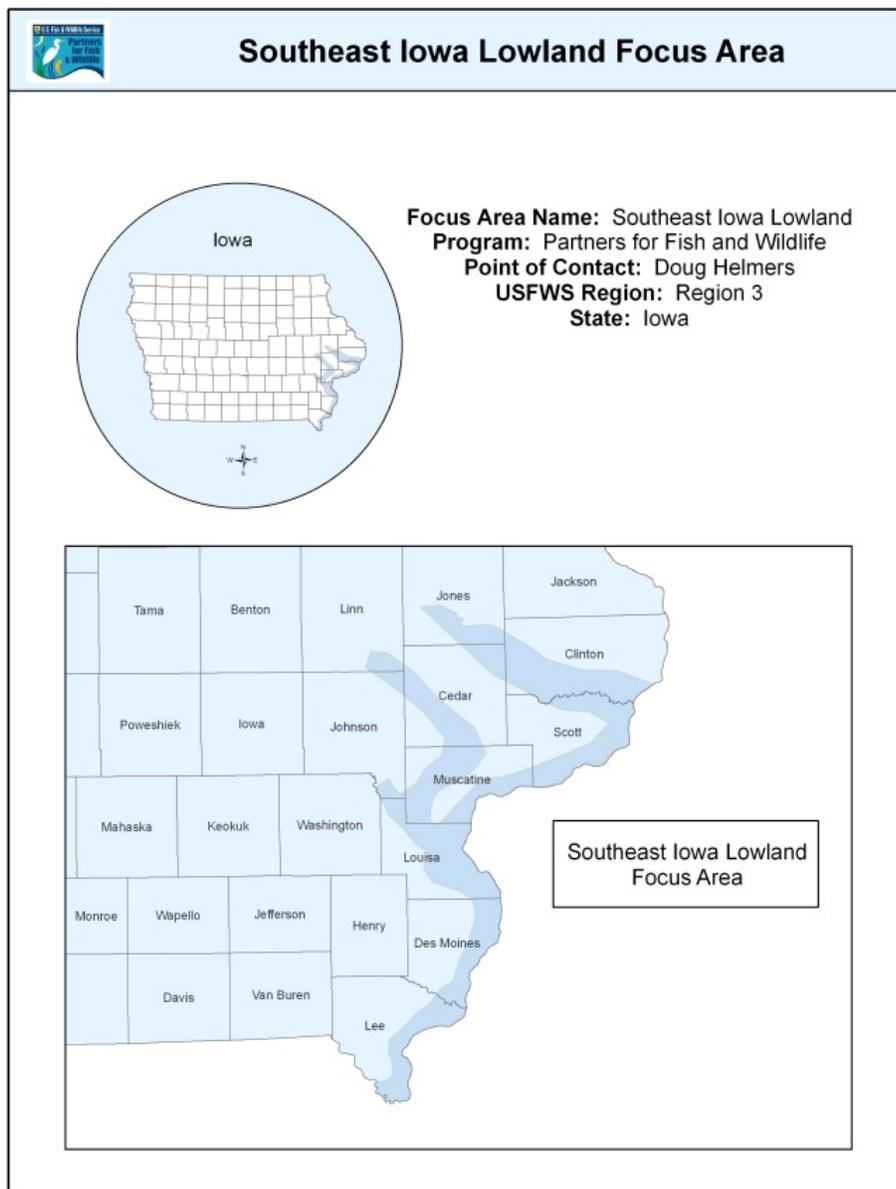
(*Ammodramus savannarum*)

Prairie Pothole Focus Area Five-Year Targets

Wetland Restoration/enhancement: 400 acres

Upland Restoration/enhancement: 750 acres

Southeast Iowa Lowlands Focus Area



The Southeast Iowa Lowlands focus area encompasses the lower Cedar River and Lower Iowa River watersheds. Focus work includes oak savanna restoration, wetland restoration, and riparian habitat improvements. This area also encompasses a large portion of the

watershed of the Port Louisa NWR. This is a priority focus area for the Iowa Partners Program because of the highly diverse ecosystem existing on the site and the presence of two globally rare plant communities, the swamp white oak woodland and rich peat fens. Sand terraces along the river provide tremendous varieties of habitats including oxbows, sand prairie, peat bogs, floodplain forests and oak savanna. The area is home to over 19 species of reptiles and amphibians, including the rare massasauga rattlesnake, stinkpot turtle and ornate box turtle. More than 300 plant species have been identified in this area including cardinal flower, forked asters, royal fern and kittentails. The lower Cedar River joins the Iowa River and flows into the Mississippi River. The confluence of the rivers with the Mississippi allows large freshwater fish, such as paddlefish and sturgeon, to swim up the Cedar River to essential habitat. Wetland restorations, native grassland seedings, oak savanna restoration and prescribed fire are the preferred restoration techniques used on the lower Cedar River focus area.

Threats to the region include fire suppression, which has allowed much of the oak savanna habitat to become overgrown with woody brush and trees. Increased flooding rates occur because of watershed practices such as tiling agricultural fields. The flooding in turn can bring invasive species to the site and cause extensive river bank erosion and siltation of surrounding wetlands.

The Nature Conservancy has established the Lower Cedar River as priority area for protection in Iowa. Over 20,000 acres of habitat in the Lower Cedar River is protected through easements on private lands, the NWRS, TNC and other conservation partners. The Partners Program will enhance these habitats through wetland, upland and riparian habitat improvement projects.

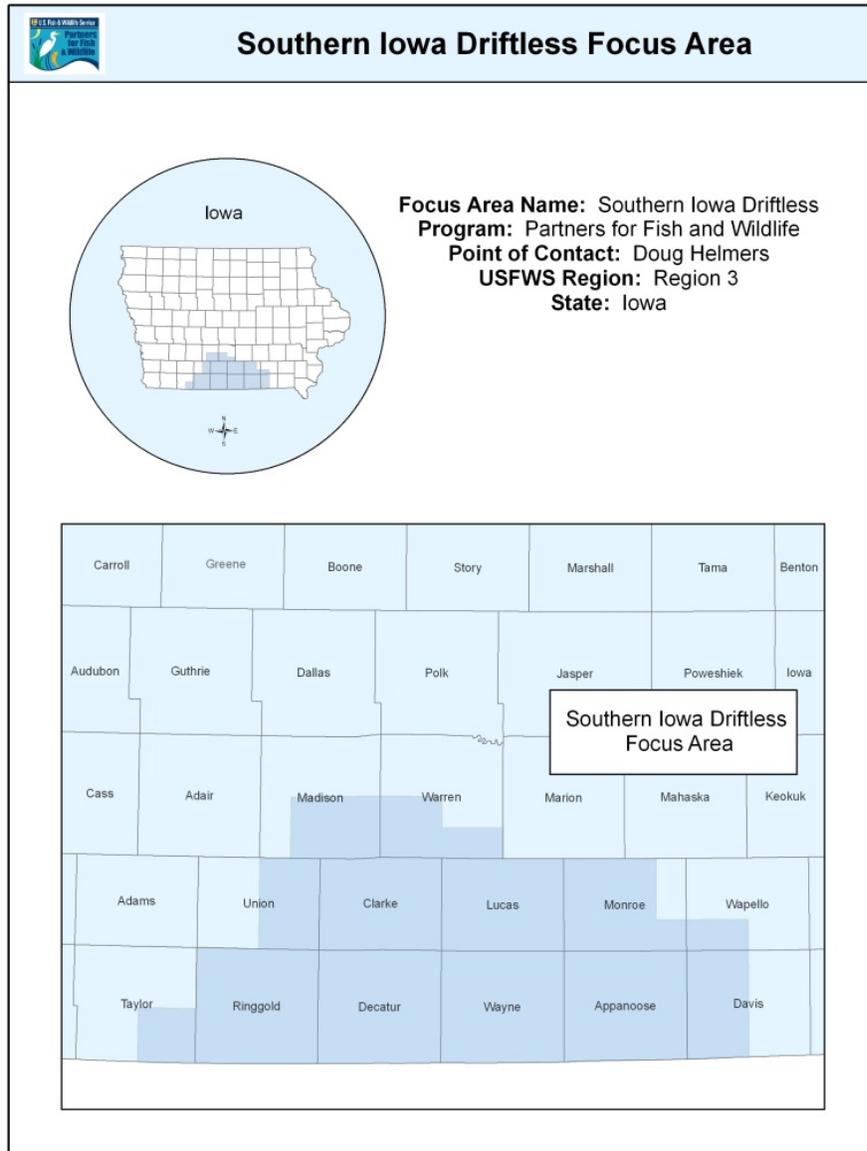
Southeast Iowa Lowlands Focus Area Priority Species

Higgin's eye pearlymussel	(<i>Lampsilis higginsii</i>) Federally Endangered
Topeka shiner	(<i>Notropis topeka</i>) Federally Endangered
Indiana bat	(<i>Myotis sodalis</i>) Federally Endangered
Iowa Pleistocene snail	(<i>Discus macclintocki</i>) Federally Endangered
Eastern prairie fringed orchid	(<i>Platanthera leucophaea</i>) Federally Threatened
Northern wild monkshood	(<i>Aconitum noveboracense</i>) Federally Threatened
Solitary sandpiper	(<i>Tringa solitaria</i>)
Bell's vireo	(<i>Vireo bellii</i>)
Bewicks wren	(<i>Thryomanes bewickii</i>)
Upland sandpiper	(<i>Bartramia longicauda</i>)

Southeast Iowa Lowlands Focus Area Five -Year Targets

- Wetland restoration: 100 acres
- Upland restoration: 100 acres
- Riparian restoration: 2 miles

Southern Iowa Driftless Focus Area



This focus area is in south central Iowa within the Southern Iowa Drift Plain. The landscape in this region of Iowa is rolling hills dominated by grasslands (approximately 65 percent) that contain moderate to high quality remnant prairie potential. The main priority for tallgrass prairie restoration efforts will be within the Kellerton Bird Conservation Area (BCA) of Ringgold County and the Sand Creek BCA in Decatur and Ringgold Counties. Restoring these prairies will improve conditions for the Greater Prairie Chicken re-introduction efforts of the Iowa DNR, Missouri Department of Conservation and The Nature Conservancy and will enhance habitats important to many of the Service trust resources including the Grasshopper Sparrow, Upland Sandpiper, Eastern Meadowlark, Bobolink, Dickcissel and several other migratory grassland birds. A significant restoration technique that will be used in the restoration and maintenance of the restored tallgrass prairies is patch burn grazing.

Patch burning uses fire and grazing to create a mosaic of habitats ranging from a very shortly clipped vegetation (upland sandpiper habitat), to a mixed stand of forbs and grass somewhat sparsely distributed (great brood rearing habitat) to a thicker grass stand with litter accumulation (nesting cover).

The South Central Prairies and Savanna focus area also contains very high quality oak savanna landscapes. Oak savanna is distributed throughout the focus area but has high concentrations and priority work located in Decatur, Clarke and Lucas counties. The northern most portion of this focus area runs into the suburban areas of Des Moines which display much higher degrees of habitat fragmentation. Work in this portion of the focus area will be in areas with concentrations of projects or permanently protected conservation lands. The primary focus areas will be the Sand Creek BCA in Decatur and Ringgold Counties, the Stephens Forest BCA in Clarke and Lucas Counties and the woodland areas of Decatur County. These areas were chosen because of the highly restorable oak savanna and tallgrass prairie resources on the landscape. Restoring these high quality systems will provide high quality feeding and brood rearing habitat for the endangered Indiana Bat, as well as many neo-tropical migrant savanna birds.

Land use within this focus area is dominated by cattle grazing. Only 25-30% of the priority area is in row crop cultivation, much of which is concentrated on flat uplands or broad river bottom flood plains. A recent change in land ownership is occurring rapidly across the region; with much of the land being purchased for recreational uses such as hunting. Many of these areas are no longer grazed and are quickly being overrun with eastern red cedar, honey locust and other invasive species. Helping landowners manage the landscape with prescribed fire will be a priority for our program to help slow or reverse the invasion of non-desirable woody species. Over 97% of the focus area is in private ownership with a large portion (~15-20%) of the land enrolled in the Conservation Reserve Program.

We are working closely with our partners in the oak savanna restoration efforts to encourage prescribed fire and timber stand improvement practices. Research efforts will continue with restoration methods and fire effects in oak woodlands to determine the best management practices for landowners in this priority area. We have developed strong partnerships in this priority area including work with the Iowa DNR, TNC, County Conservation Boards, NRCS, private landowners, Iowa State University, the Southern Iowa Oak Savanna Alliance, Southern Iowa Forage and Livestock Committee and many other partners.

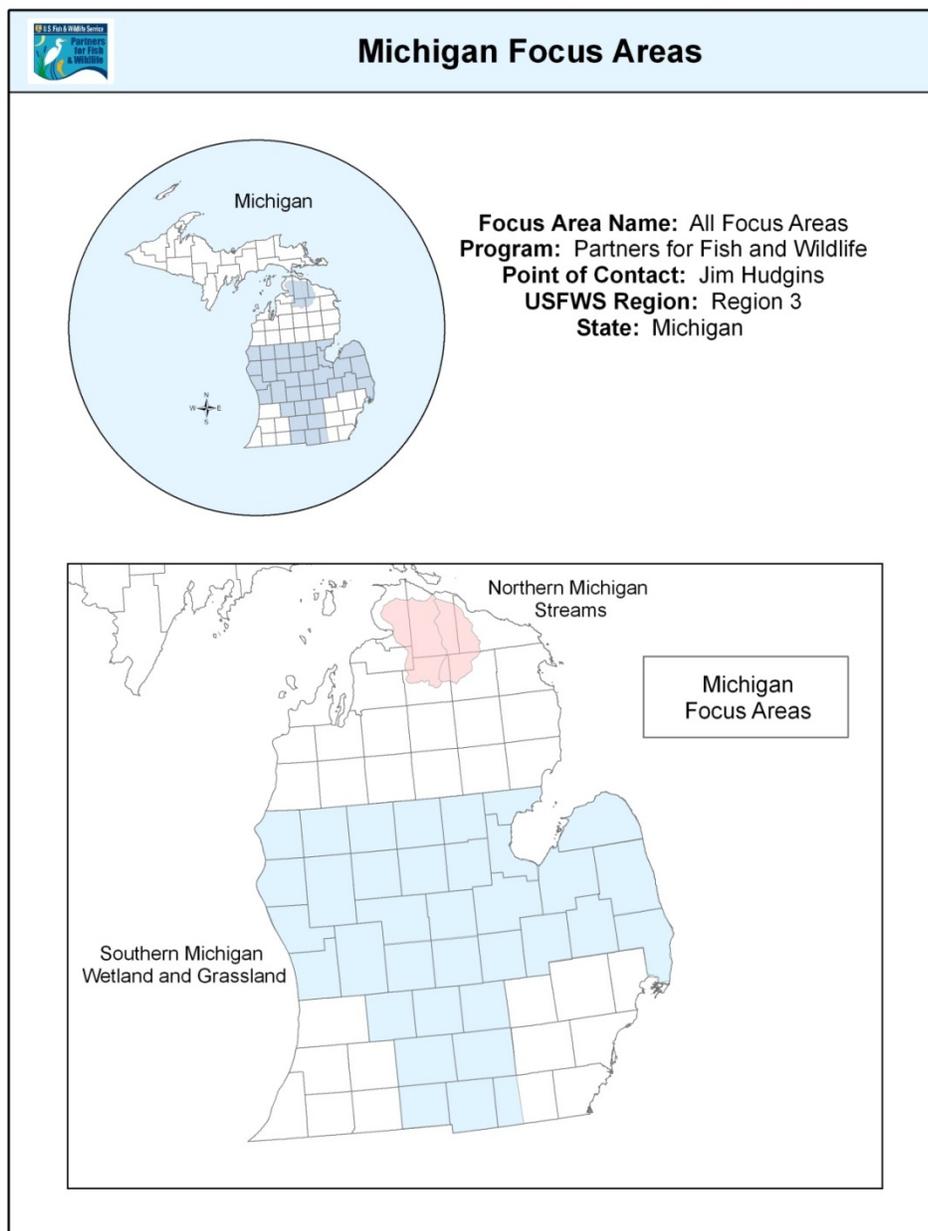
Southern Iowa Driftless Focus Area Priority Species

Indiana bat	(<i>Myotis sodalis</i>) Federally Endangered
Mead's milkweed	(<i>Asclepias meadii</i>) Federally Threatened
Upland sandpiper	(<i>Bartramia longicauda</i>)
Red-headed woodpecker	(<i>Melanerpes erythrocephalus</i>)
Acadian flycatcher	(<i>Empidonax virescens</i>)
Prothonotary warbler	(<i>Protonotaria citrea</i>)

Southern Iowa Driftless Focus Area Five-Year Targets

Upland Restoration/enhancement/establishment/maintenance: 8250.0 acres

Michigan



Introduction and Overview

Habitat improvement through the Partners Program is based on delivering the mission of the U.S. Fish and Wildlife Service (Service) and is guided by the Partners Program policy, the “Strategic Plan for the Partners for Fish and Wildlife Program (October 1, 2006 to September 30, 2010)”, and the Regional Step-down Plan for the Midwest Region (2007-2011). With significant input from Service staff and public and private partners in each state, the Regional Plan identified and described focus areas for the eight states of the Midwest Region,

including Michigan. This document is an update to the geographic focus areas described in 2007 and helps to set direction for Partners Program efforts in Michigan for the years 2013-2017.

This update comes at a time when the Service's approach to conservation, as well as that of many partners and stakeholders, is evolving to consider, or reconsider, the best ways to manage natural resources on an ever-changing landscape and in the face of a period of expected net declines in funding. An economic collapse within the timeframe of the first five years of this plan, and the slow recovery that is continuing today, combined with increasing demands for food and fuel and existing short-term and anticipated long-term climate changes, have made it more critical to use limited public and private resources wisely and strategically.

Part of our existing strategy includes: improving degraded habitats for Service trust species in decline or of significant public interest, such as waterfowl, in geographic areas identified in part through Service and partner plans (e.g. threatened or endangered species recovery plans, and Joint Venture plans); improving only private (non-federal/non-state owned) lands; providing technical and financial assistance to complete projects, without providing other



Partners Program biologist with landowner
Photo, Jim Hudgins, USFWS

financial incentives; securing funding to match Partners Program funds; and influencing how others' funds are spent for conservation, including benefits to Service trust species. As we take positive steps to become more strategic in the delivery of the Partners Program, we must remain cognizant that achieving success in a voluntary program is in many ways still driven by opportunity and that opportunities are also ever-changing. As such, success in the Partners Program will continue to come from being both strategic and opportunistic, or strategically opportunistic.

The backbone of the program remains partnerships with landowners, but the makeup of this group is evolving over time in part due to changes in the national and state economic outlook. Decisions to participate in voluntary conservation programs by farmers, individual sportsmen or groups, small businesses, non-governmental organizations, local governments and others are based as much on economic considerations as they are by a desire to implement conservation. A slow economy and high commodity prices have drawn some landowners into the program while others have backed away. In a similar way, while some partnerships with, and participation by, conservation organizations have remained steady, others have ebbed and flowed in response to economic conditions. In the coming five years the Partners Program will remain strategic in partnering, but look for opportunities to build new partnerships and expand existing ones.

Focus area selection in Michigan was based on a number of factors including: habitat needs of trust species in decline or of significant public interest; extent of habitat loss/degradation and public ownership throughout the state; consideration of presettlement vegetation as well

as current landscape conditions; interests and priorities of partners; and interest of landowners to voluntarily participate in Partners Program. The Southern Michigan Wetland and Grassland Focus Area was established based on the extent of landscape alterations, habitat loss, restoration opportunity and private ownership in the southern Lower Peninsula. Public ownership in this area exceeds 96% with grassland losses exceeding 95% overall and wetland losses of more than 90% in some counties. Within that broad area there are, and will be, priority areas that receive greater program attention, including the copperbelly water snake area and an interlobate headwaters area for wetland restoration. At the same time there are areas that will receive little attention under current program parameters despite potentially high resource values. This includes lakeplain and coastal areas from Saginaw Bay southward that have high agricultural investment and return, or significant development. A lack of financial incentives beyond restoration cost share has limited landowner interest in this area. This, coupled with higher restoration costs and potential to impact multiple landowners, has limited restoration actions through the Partners Program. The Partners Program has worked closely with Ducks Unlimited, the Michigan DNR and other partners to secure NAWCA grants for work from Saginaw Bay to Lake Erie, which has brought other conservation tools and opportunities to the table. The Northern Michigan Streams focus area targets habitat improvement for native brook trout. Given the extent of public land (49%) and proportionately smaller extent of habitat loss and degradation in the Upper Peninsula, no focus area was identified for this portion of the state.

While the habitat needs of federally-listed threatened or endangered species in Michigan are varied, a number can be addressed within the Southern Michigan Wetland and Grassland Focus Area. Wetland projects through the Partners Program and in conjunction with partners have benefitted copperbelly water snake, massasauga, and Mitchell's satyr. Grassland/barrens/savanna projects have benefitted Karner blue butterfly. Northern stream projects have benefitted the Hungerford's crawling water beetle. In addition, the Partners Program has worked with The Nature Conservancy, Michigan DNR and other partners to improve habitat outside of the focus areas for pitcher's thistle and other listed species.

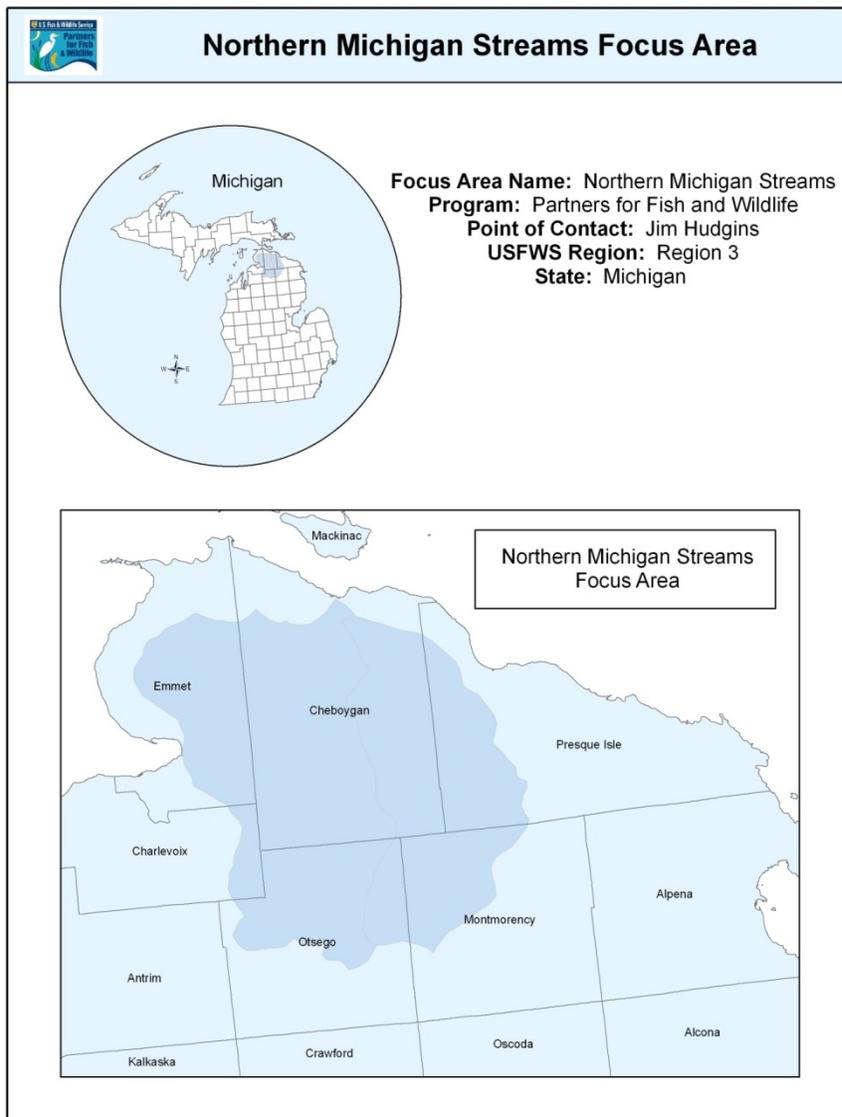
Partners Program in Michigan is delivered through staff of field stations representing three Service programs (Refuges, Fisheries, and Ecological Services) and works in cooperation with staff of both the Joint Venture Science Office and the Great Lakes LCC. This array of staff and programs helps to bring a broad variety of perspectives and partners into the planning and delivery of habitat improvement through the Partners Program in Michigan and will allow us to remain strategically opportunistic in the years 2012-2016.

Supporting Plans for Michigan Focus Areas:

- Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Experiment Station. 250 pp.
- Clark Eagle, A., et al. 2005. Michigan's Wildlife Conservation Strategy 27 June 2005. Michigan Department of Natural Resources. Lansing, Michigan. ~1500 pp.

- de Szalay, F., et al. 2000. U.S. Shorebird Conservation Plan, Upper Mississippi Valley/Great Lakes Regional Shorebird Conservation Plan, Version 1.0. 34 pp.
- Knutson, M.G., et al. 2001. Partners in Flight Bird Conservation Plan for the Upper Great Lakes Plan (Physiographic Area 16). USGS Upper Midwest Environmental Sciences Center in coop. w/ PIF. 59 pp.
- NAWMP. 1998. Upper Mississippi River and Great Lakes Region Joint Venture Implementation Plan 1998. 58 pp. + appendices.
- UMRGLR JV. 2007. Upper Mississippi River and Great Lakes Region Joint Venture Implementation Plan (compiled by G. Soulliere and B. A. Potter). U.S. Fish and Wildlife Service, Fort Snelling, MN, USA.
- Wires, L.R., et al. 2010 Upper Mississippi Valley / Great Lakes Waterbird Conservation Plan. A plan associated with the Waterbird Conservation for the Americas Initiative. Final Report submitted to the U.S. Fish and Wildlife Service, Fort Snelling, MN.
- Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Experiment Station. 250 pp.
- Conservation Resource Alliance. 2001. Lake Charlevoix Watershed Road/Stream Crossing Inventory. 100+pp.
- Huron Pines RC&D. 2007. Great Lakes Better Backroads Guidebook, 3rd Edition. National Fish Habitat Action Plan. April 2006.
- Tip of the Mitt Watershed Council. 2002. Cheboygan River Watershed Habitat Partnership Conservation Area Plan. 43 pp.

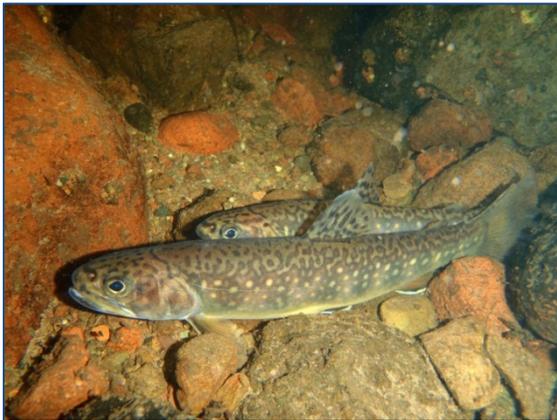
Northern Michigan Streams Focus Area



The Northern Michigan Stream Focus Area 2012 is identified as those areas of the northern Lower Peninsula of Michigan that provide the greatest opportunity to improve stream habitat to benefit brook trout (charr), lake sturgeon, and other aquatic species. Primary focus will be on the Cheboygan River watershed, which includes the Black, Maple, Pigeon, and Sturgeon rivers. This watershed supports both brook trout and lake sturgeon, which are listed as a Conservation Priority Species in Region 3 of the Fish and Wildlife Service. While all of the rivers in the watershed support trout populations (brook, rainbow, and brown), the Black River watershed is the only stream system in the northern Lower Peninsula of Michigan that is managed exclusively for native brook trout and no other trout species. An inland population of lake sturgeon is found in the lower reaches of the watershed. The Hungerford's crawling water beetle, a federally-listed endangered species, is found only in four streams in the world; two of these are in the Cheboygan River watershed (Black and

Maple rivers). A portion of the Maple River is the only occupied stream with consistently large numbers of beetles. In addition to the Cheboygan River watershed, secondary focus may be placed on the Boardman-Charlevoix and Au Gres/Rifle river watersheds. These watersheds include the watershed of the Jordan River National Fish Hatchery and a high quality coldwater stream with no dams, respectively.

Habitat work is being completed throughout the Cheboygan River watershed, with work in the Black River leading the way through a strong, grassroots coalition of partners that



Brook Trout
Photo, USFWS

supports stewardship activities within this sub-watershed. Within the Black River watershed more than 15 partners including government agencies at all levels, watershed councils, non-governmental conservation organizations, private clubs, and landowners have worked together since 1998 to identify problem sites, implement 14 road/stream crossing improvements, remove one dam, place large woody debris, and repair streambank erosion sites. Service funds of \$475,000 from several programs have been matched with \$912,000 in state and private funding. This partnership remains active and focused on improving the Black River watershed. A similar, but less

active group supports action within the Maple River watershed. Trout Unlimited has adopted the Cheboygan River watershed as a “home river” and has completed habitat mapping for the Pigeon River. This first-in-the-nation effort will be expanded to the Sturgeon River and eventually the full watershed. Partners’ interest is high for securing funding and completing habitat improvements throughout the Cheboygan River watershed in 2012-2013 and beyond.

As we learn more about the Hungerford’s crawling water beetle we may have opportunities over the next five years to improve habitat for this species. Little is currently known about the beetle, but we believe sediment reduction and placement of large woody debris in the streams will benefit this species. Monitoring associated with Partners for Fish and Wildlife program projects and activities will help evaluate the response of the beetle to stream projects.

Sediment loading remains the number one contaminant in Michigan streams and is a major concern in the Cheboygan River watershed. The Cheboygan River Watershed Habitat Partnership Conservation Area Plan (2002) selected six conservation strategies for immediate development and implementation, including stabilizing and upgrading road/stream crossings. Channelization, riparian modifications, and dams have also been identified as priority threats to aquatic systems in the Michigan Wildlife Action Plan (Michigan Department of Natural Resources, 2006). These threats have led to degradation of northern Michigan streams for fish spawning and other life functions and disrupt fish passage. Coordinated work within this focus area with other Service programs and partners provides the greatest opportunity to improve stream habitat on private lands for brook trout, lake sturgeon and other Service trust

resources.

The ecosystems within this focus area are varied, influenced by glaciers, logging in the late 19th century, and current recreational use. The impacts from agriculture and development are present to a degree, but not nearly to the extent found in southern Michigan. The regional landscape ecosystems of northern Michigan were described by Albert (1995) as a glacial-influenced landscape dominated forestland both in pre-settlement and present times. Glacial and post-glacial landforms cover the land surface and include lake plain, outwash plain, and moraines. Prior to European settlement, almost all of the area was forested with northern hardwoods, jack pine barrens, white pine-red pine forests, hardwood-conifer swamps and conifer swamps. Much of the land remains forested, but the forest composition has changed as a result of logging. Most of the soils are sands, loamy sands, and sandy loams (Albert 1995).

Within the focus area stream habitat will be targeted for restoration with emphasis on improving road-stream crossings, stabilizing banks, increasing in-stream structure, and removing dams and other barriers to fish passage. The sandy soils of much of the focus area result in significant sediment loading into streams from road-stream crossings and eroding banks. EPA 319 watershed plans have been completed for both the Black and Maple rivers, and problem sites within the watersheds have been identified and evaluated. Sites having the greatest impact to water quality, habitat value and fish passage are prioritized for action. Restorative action taken to stop sediment loading at road-stream crossings and other sources will allow stream flow to wash sand and silt downstream, exposing a natural stream bottom and improving habitat for brook trout and other species.

Land ownership and land use patterns within the focus area reflect a mixture of public forestland, private forestland, agricultural land (pasture/hay, orchard/vineyard and row crops), small rural communities and growing development based on outdoor recreation and tourism. Land ownership of the non-public lands is divided into blocks ranging from tens or hundreds of acres to several thousand acres.

One large challenge for habitat restoration in the focus area is securing adequate matching funds to complete larger projects, particularly improved road-stream crossings and dam removal. A base for matching funds often comes from local communities or county road commissions, which are challenged by limited or declining budgets. This challenge is addressed in part by seeking additional funds from conservation organizations, grants and other sources. A second challenge is coordinating and completing projects that often involve multiple landowners, require several permits and use the resources from a coalition of partners to come to fruition. Strong, locally-lead support helps to address this challenge.

Past habitat improvement projects have been completed in part through strong partnerships with watershed councils (e.g. Black River Watershed Council, Tip of the Mitt), conservation organizations (e.g. Huron Pines RC&D, Conservation Resource Alliance, Trout Unlimited), government agencies (e.g. Conservation Districts, USDA offices, Michigan Department of Natural Resources), and private landowners. Locally-prepared watershed plans provide a strong foundation of inventory, review and prioritization of problem sites within a watershed

on which to build a unified restoration effort. Locally-developed guidance, such as the Huron Pines RC&D's Great Lakes Better Backroads Guidebook (3rd Edition Sept. 2007), provides a template for action for projects undertaken with and without the assistance of the Partners for Fish and Wildlife Program. As recreational land use and ownership continues to expand in this area we expect interest in stream habitat restoration will also grow.

We expect to reach restoration targets by remaining strategically opportunistic and flexible in the face of program changes, landscape changes, and social changes. Availability of partner funding for larger road-stream crossing projects will have a large influence on selection of projects, and our ability to complete those projects. Use of existing and/or newly developed watershed plans will help guide efforts to reach the established goals. Shifting of focus among primary and secondary watersheds allows us to partner where the best opportunities exist.

As a result of past and current land uses, this focus area provides an excellent opportunity in Michigan to restore altered habitats for the benefit of a range of Federal trust species, with emphasis on the brook trout, lake sturgeon and other aquatic species associated with coldwater streams of northern Michigan.

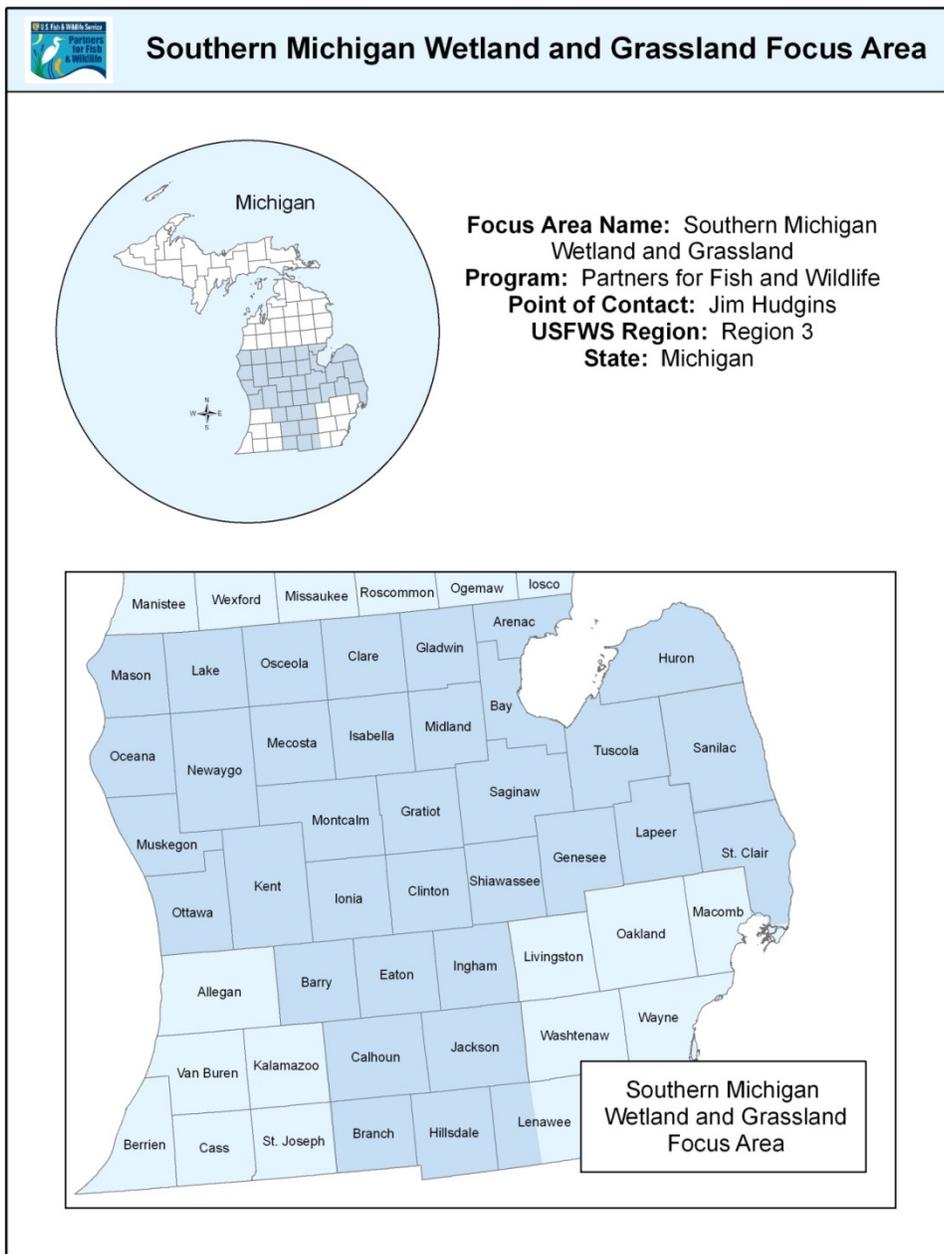
Northern Michigan Streams Focus Area Priority Species

Hungerford's crawling water beetle	(<i>Brychius hungerfordi</i>) Federally Endangered
Lake sturgeon	(<i>Acipenser fulvescens</i>)
Charr (brook trout)	(<i>Salvelinus fontinalis</i>)

Northern Michigan Streams Focus Area Five-Year Targets

Stream Channel restoration: 20 miles

Southern Michigan Wetland and Grassland Focus Area



The Southern Michigan Wetland and Grassland Focus Area was identified as that area of Michigan that provides the greatest opportunity to restore, enhance and/or establish wetlands and grasslands to provide habitat for migratory birds and federally-listed threatened and endangered species. Wetland losses statewide are estimated at more than 2.4 million acres. Greatest losses occurred in southern Michigan, where an estimated 43 percent of wetland acres have been lost. In some counties that rate of loss is close to 90 percent. Only scattered remnants of Michigan’s native prairies/grasslands remain. The losses of wetlands and grasslands nationwide and in southern Michigan are associated with decline of migratory bird

populations dependent upon these cover types. Remnant wetland types, prairie barrens, and savannas support federally-listed species including the Mitchell's satyr, northern copperbelly water snake, and the karner blue butterfly. While this focus area includes some of the greatest restoration challenges in the face of an ever-expanding landscape of agriculture and development, it also provides the greatest opportunity to improve key habitats on private lands for Service trust resources.

This focus area is large by design to strategically capture opportunities in an ever-changing physical and social landscape and a continually-evolving conservation framework. Priorities evolved over the past five years as we implemented our strategic plan and will continue to evolve through the next five years. The Michigan Department of Natural Resources Wildlife Division is reworking its approach to private lands work. Initiatives, like those for woodcock and pheasant in Michigan, have started within the past five years and more are likely to start in the next five years. The science of conservation planning and the approach used by conservation agencies and organizations have changed and will continue to change. Tools developed through our Landscape Conservation Cooperative and Joint Venture Science Office will be used to help to target future habitat improvement efforts. Long-term challenges, like the impacts of climate change, are on the horizon but can affect today's actions. Immediate challenges, like the current general downturn in the economy have eliminated some opportunities for conservation and partnerships and, through necessity, strengthened others. Changes in agricultural activities, including more land put into production as a reflection of higher crop prices, has and will continue to impact fish and wildlife habitats and restoration opportunities. It is within this evolving landscape that Partners Program biologists are evaluating and implementing habitat improvement projects.



American Woodcock
Photo, Jim Hudgins, USFWS

Within the broad focus area are smaller geographic hotspots of activity. Some hotspots have provided for many years, and will continue to provide, traditional opportunities to improve habitat for nesting, brood-rearing and migration by waterfowl. Activities in other hotspots, like the copperbelly water snake area in Hillsdale County, are evolving in location and type of restoration, as we adapt our efforts based on better scientific information. Partners have proposed, and we have supported new initiatives – for example, separate woodcock and pheasant initiatives – that focus habitat improvement efforts in specific counties or townships within our broad focus area. Through the Michigan steering committee for NAWCA, we have been successful in identifying projects within multi-county and/or watershed target areas and securing grant and partner funding to implement those projects including work on

private lands. New initiatives are building, including weed cooperatives that will target new activity to restore coastal wetlands, in part through the control and management of phragmites. Future work may include activity in floodplain corridors in southwest Michigan to improve habitat for forest-dependent songbirds.

It is our strategy to remain focused yet flexible on improving habitat for Service trust species and to participate in and take advantage of these evolving conservation opportunities. Rather than outline multiple small focus areas within our single broad focus area, we will continue to deliver conservation based on available conservation science, active partnerships, and landowner interest and willingness to participate. In evaluating restoration opportunities we will continue to consider both what was on the landscape at presettlement and what can be supported in light of the current condition and anticipated changes to that landscape. In determining both what we do and where we do it we will continue to use sound science for guidance and incorporate the interests and abilities of our partners.

The ecosystems within this focus area are varied, but are linked by the common factor that they have been significantly altered by human activity. The regional landscape ecosystems of southern Michigan were described by Albert (1995) as an area with rolling hills and flat lake plains that have been greatly modified by agriculture and urban development. Glacial and post-glacial landforms cover the land surface and include lake plains, an interlobate outwash plain, and moraines. Prior to European settlement, almost all of the area was forested with oak savanna, oak-hickory forest and beech-sugar maple forest. The southern portion also included large areas of tallgrass prairie. Wetlands included lakeplain prairies, extensive marshes, fens and swamp forests (Albert, Dennis A. 1995. Regional landscape ecosystems of Michigan, Minnesota and Wisconsin: a working map and classification. Gen. Tech. Rep. NC-178. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Experiment Station. 250 pp.).

Within the focus area wetlands and grasslands will be targeted for restoration, enhancement and establishment, but we will also take advantage of evolving opportunities, like management of young forest through the woodcock initiative. Wetland restoration will be focused in areas where previous agricultural drainage provides abundant opportunities to restore hydrology to drained or partially drained wetland basins. Smaller basins, less than 10 acres in size, with emergent vegetation are most easily restored and represent a type and size of wetland that was readily removed from the landscape through agricultural drainage. Partners Program biologists consider trust species needs, wetland size, vegetative diversity, adjacent buffering cover and landscape features, opportunities to create wetland complexes, restorability, and other factors when determining which projects will be implemented. Grassland are most often established to provide a buffer and nesting cover adjacent to wetlands, to build upon a block of existing grassland, or to provide a stand-alone block of nesting cover for grassland birds. Remnant habitats essential to federally-listed species are often degraded by invasive plant species and are improved by actions to control or remove the invasive plants.

Land ownership and land use patterns within the focus area reflect a mixture of urban centers, rural communities and agricultural fields dominated by row crops. Urban expansion

into the rural countryside continues both through development and landowners' interest in buying blocks of undeveloped land for hunting and other recreational uses. Land ownership within much of the non-urban landscape is divided into blocks ranging from tens of acres to hundreds of acres. In southern Michigan only four percent of land is in public ownership, compared to 26 percent in the northern Lower Peninsula and 49 percent in the Upper Peninsula.

One large challenge for habitat restoration in focus area is that land ownership in southern Michigan is fragmented such that a restorable landscape feature may be owned by multiple landowners or proximity to adjacent properties may influence to opportunity to complete a project. This challenge can be addressed by working farther from urban centers and having multiple landowners participate in a project. A second challenge is that the economic return from some current land uses, for example farming in the lakeplain region of Saginaw Bay, makes it unlikely that a landowner will enroll in a voluntary habitat restoration program that does not offer significant financial incentives for enrollment. This program continues to target landowners primarily interested in stewardship of their property. A third challenge is to balance the opportunity for and cost effectiveness of restoration of significantly altered habitats in highly urbanized settings in light of existing program resources. We have elected to generally work away from highly urbanized areas.

Past habitat improvement projects have been completed in part through strong partnerships with conservation organizations (e.g. Ducks Unlimited, Pheasants Forever, and The Nature Conservancy), government agencies (e.g. Conservation Districts, RC&Ds, USDA offices, Michigan Department of Natural Resources), and private landowners. Contractors and other members in a community play an increasing role identifying potential projects. Grants have been used successfully to provide additional funding and will be pursued in the future. We will continue to expand the partnership base of organizations, businesses, individuals, foundations, and others.

We expect to deliver on-the-ground high quality, cost effective habitat improvement projects by remaining strategically opportunistic and flexible in the face of program changes, landscape changes, and social changes. We will continue to partner with others when such efforts allow us to collectively do more than we can as individual programs or organizations.

As a result of past and current land uses, this focus area provides the greatest opportunity in Michigan to restore altered habitats for the benefit of a wide range of Federal trust species, particularly declining species of migratory birds and several federally-listed species.

Southern Michigan Wetland and Grassland Focus Area Priority Species

Copperbelly water snake	<i>(Nerodia erythrogaster neglecta)</i> Federally Threatened
Eastern Massasauga	<i>(Sistrurus catenatus catenatus)</i> Candidate
Karner blue butterfly	<i>(Lycaeides melissa samuelis)</i> Federally Endangered
Pitcher's thistle	<i>(Cirsium pitcher)</i> Federally Threatened
Mallard	<i>(Anas platyrhynchos)</i>
Wood Duck	<i>(Aix sponsa)</i>
Bobolink	<i>(Dolichonyx oryzivoru)</i>

Henslow's Sparrow

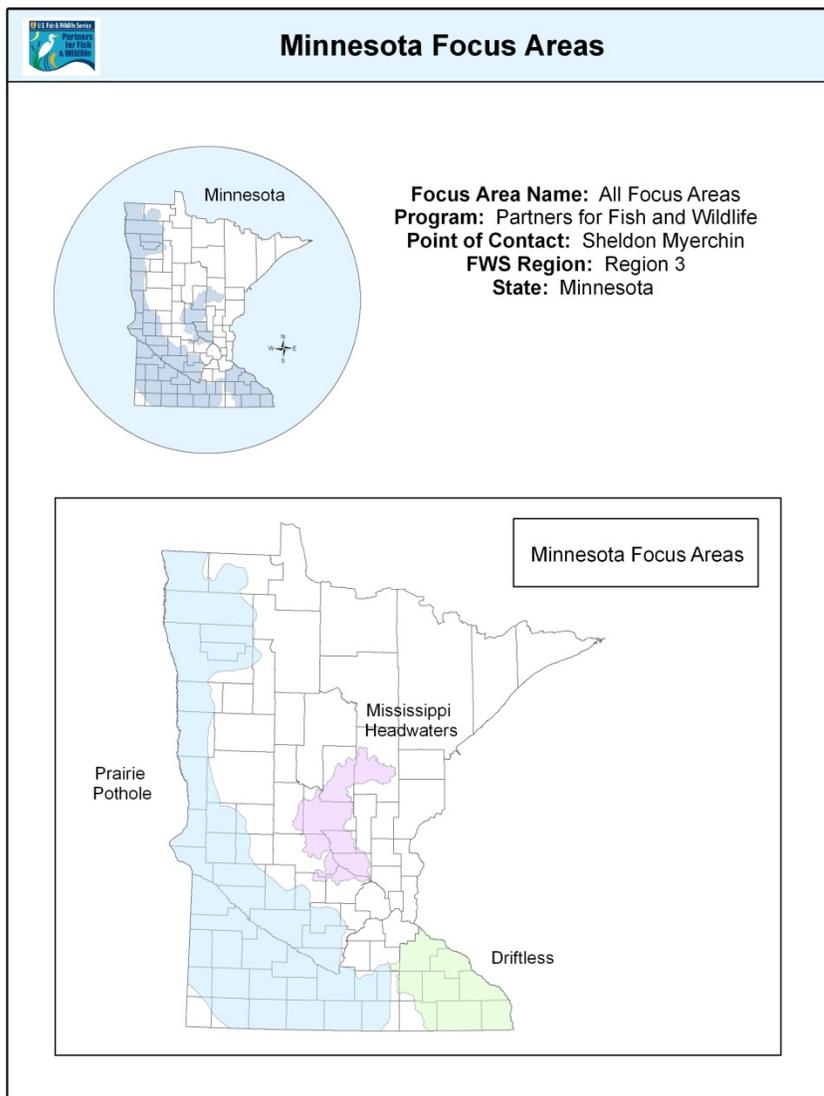
(*Ammodramus henslowii*)

Southern Michigan Wetland and Grassland Focus Area

Wetland restoration/enhancement: 1,500 Acres

Upland restoration/enhancement/establishment: 2,500 acres

Minnesota



Introduction and Overview

The Minnesota (MN) Partners Program Strategic Plan for the next five years is built upon the foundation established by our 2007-2011 Strategic Plan. That plan developed MN Partners Program focus areas, evaluated critical resource needs and threats in conjunction with opportunities to prevent or reverse habitat fragmentation. It also identified existing or potential partners, and assessed support for National Wildlife Refuge system lands in relationship to private lands. Information relating to species and habitat occurrences, priority areas for conservation, and presence of potential local partnerships were obtained from the Service's Region 3 Habitat Population and Evaluation Team (HAPET) Office, Minnesota Department of Natural Resources (MN DNR), The Nature Conservancy (TNC), Pheasants Forever (PF), Ducks Unlimited (DU), The Bureau of Water and Soil Resources (BWSR), and several other conservation agencies and organizations. The MN DNR's Comprehensive

State Wildlife Action Plan, *Tomorrow's Habitat for the Wild and Rare*, was a significant



Restored Prairie, MN
Photo, USFWS

resource to help guide the planning process. Additionally, Service Field Station staff members including Partners Program field biologists regularly participate in a wide range of local working and planning groups. Information from these more localized sources was integrated into the national, regional, and statewide data. Minnesota is home to 17 plant and animal species listed as threatened or endangered under the Endangered Species Act (ESA). The MN DNR identifies 292 species as those in greatest conservation need. Minnesota lies within both the Prairie Pothole Joint Venture (PPJV) and the Upper Mississippi River Great Lakes Joint Venture (UMRGLJV). The state provides important nesting and stopover habitat for many migratory wetland, grassland, and forest bird species. Approximately 77% of all land in Minnesota is in private or local government ownership. It is the intersection between private land ownership and habitat needs for declining species, which provides the primary filter and foundation

for Partners Program restoration efforts.

Identifying Focus Areas:

The Partners Program in Minnesota works with a variety of conservation partners throughout the state to improve wildlife habitat. Many of these federal, state, and non-governmental organizations have strategic plans (i.e. Partners in Flight, North America Waterfowl Management Plan, Minnesota's Comprehensive Wildlife Conservation Strategy, etc.) in place to focus their efforts on established public properties, specific watersheds, or designated focal areas. For example, the Minnesota DNR Duck Plan has set a 50 year objective for additional wetland and grassland restoration in the state at 2,000,000 acres of habitat. Eighty-five percent of this acreage is to be located in the PPJV portion of the state. The Partners Program in Minnesota has estimated wetland and grassland restoration at 16,500 acres over the next five years in this focus area. Extrapolating Partners Program restoration goals out to 50 years, the Partners Program would restore approximately 10% of the total acres needed in Minnesota to improve conditions for a sustainable population of breeding waterfowl. Working with other conservation partners and programs such as the US Department of Agriculture (USDA) through its Farm Bill programs, Minnesota Department of Natural Resources Duck Stamp program, Ducks Unlimited, and other conservation organizations utilizing the new Legacy Amendment state grant funds, the remaining 90% of acreage goals could be attainable as additional capacity to deliver habitat on the ground is built.

In addition to assisting in implementing the above mentioned plans, the Partners Program recognizes the need for adaptive management strategies to meet regional land use challenges and global impacts such as climate change. Through adaptive management strategies and proven science-based habitat restoration techniques, the Partners Program continues to

deliver habitat improvement projects for fish and wildlife species directly impacted by these challenges. An adaptive management project researching sediment removal from prairie pothole wetlands as part of the restoration strategy is currently in place. The Partners Program in Minnesota has identified priority national, regional and local landscape initiatives within the state. By setting priorities, goals and habitat objectives within these priority landscapes, the Partners Program will work towards measurable metrics that are quantifiable and feed-back into the SHC process.

Partners Program biologists, with input from local stakeholders, identify conservation opportunities and targets for their respective geographic regions. Due to the voluntary nature of the Partners Program, not only biological drivers play an important part in determining a program's success on the landscape, but demographic, social, and economic attributes also influence where the Partners Program may or may not be successful.

The Minnesota Partners Program is committed to working with others to improve wildlife habitat within the state. This Strategic Planning document is fluid and dynamic. It is our goal to have stakeholders evaluate, critique, and comment whenever possible on our goals and objectives. As new opportunities arise, funding levels change, species improve or decline, or land-use evolves, the Partners Program will adapt and redirect to be an effective results-oriented habitat restoration program in Minnesota.

Focus Areas:

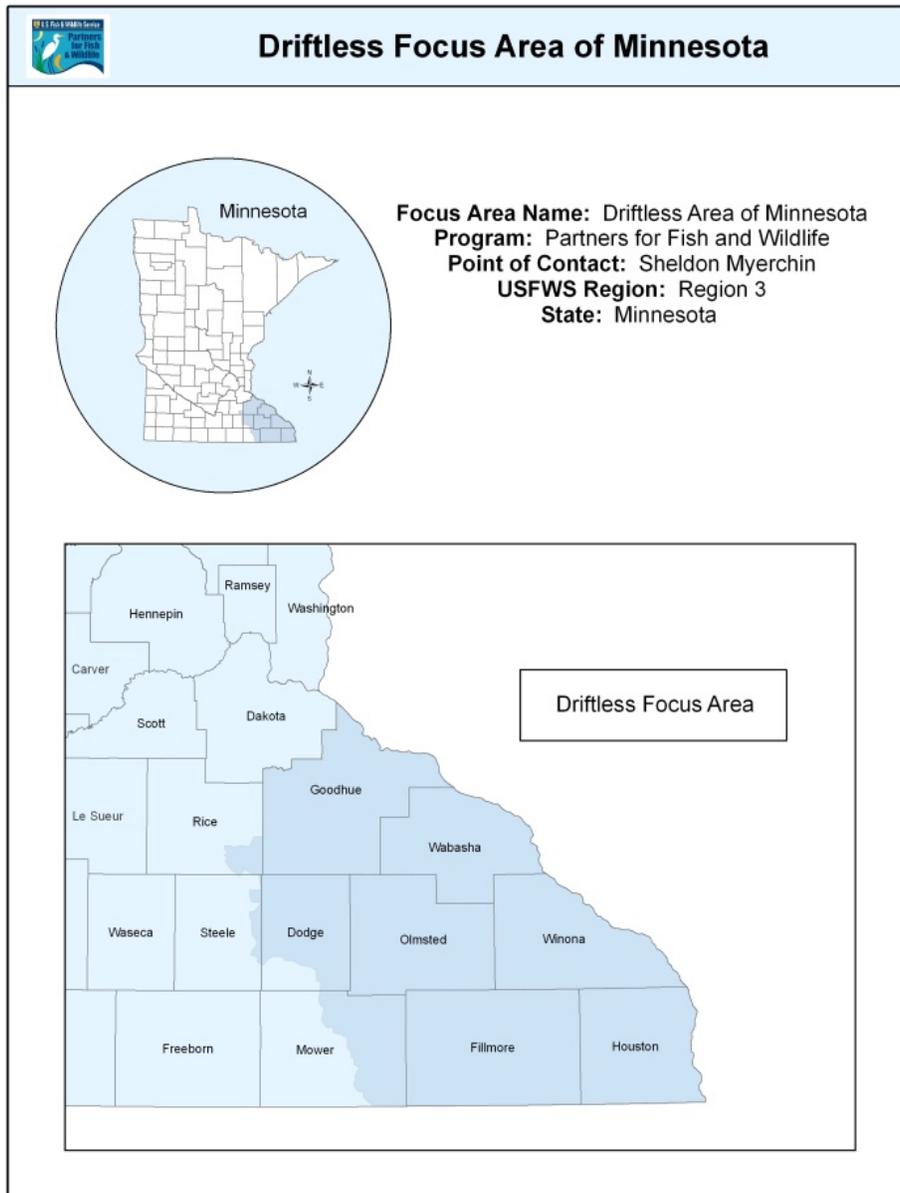
The Minnesota Partners Program has identified three focus areas, which are embedded within the regional, national and local conservation initiatives across the state and where we will concentrate our efforts to maximize habitat restoration benefits for Federal Trust Resources. The Focus Area Descriptions identify Partners Program priority areas and describe how habitat objectives will work towards meeting goals of the regional and national conservation initiatives. Strategic delivery of the Partners Program in Minnesota is paramount within these identified focus areas. However, the Partners Program is voluntary and must remain dynamic and opportunistic at times. Quality projects occurring outside of these identified focus areas will still be considered for assistance as long as the result is a direct benefit to a Federal Trust Resources.

Supporting Plans for Minnesota Focus Areas:

- Upper Mississippi River & Great Lakes Joint Venture Waterfowl Habitat Conservation Strategy, 2006, Draft
- Tomorrow's Habitat for the Wild and Rare, Minnesota's CWCS
- Partner's in Flight Bird Conservation Plan for the Great Lakes Basin Region. 2001
- Upper Mississippi National Fish and Wildlife Refuge Comprehensive Conservation Plan, 2006
- National Fish Habitat Action Plan
- Prairie Pothole Joint Venture Implementation Plan 2005
- Tomorrow's Habitat for the Wild and Rare, Minnesota's CWCS
- United States Shorebird Conservation Plan

- Minnesota Wetland Management Districts Comprehensive Conservation Plans (2003)
- Partners in Flight North American Landbird Conservation Plan
- Minnesota Wetland Management Districts Comprehensive Conservation Plan (2003)
- Minnesota Prairie Landscape Conservation Plan, TNC (2010)
- USFWS Topeka Shiner Critical Habitat Plan (Draft)
National Fish Habitat Plan
- Upper Mississippi River and Great Lakes Region Joint Venture Waterfowl Habitat Conservation Strategy, 2006, Draft
- Upper Mississippi River and Great Lakes Region Joint Venture Land-bird Habitat Conservation Strategy, 2006, Draft
- Tomorrow's Habitat for the Wild and Rare, Minnesota's CWCS
- Sherburne National Wildlife Refuge Comprehensive Conservation Plan, 2005
- Rice Lake National Wildlife Refuge Comprehensive Conservation Plan, 2007
- Crane Meadows National Wildlife Refuge Comprehensive Conservation Plan, 2010
- Upper Mississippi Valley/Great Lakes Water-bird Conservation Plan
- Partners in Flight Boreal Hardwood Transition Bird Conservation Plan

Driftless Focus Area



The Driftless Area provides an ecologically complex and environmentally vulnerable landscape buffer that protects and enhances the longest and most heavily visited national wildlife refuge in the contiguous 48 states. The Upper Mississippi River National Wildlife and Fish Refuge (UMRNWFR) encompasses approximately 240,000 acres of floodplain habitats managed in partnership with the U.S. Army Corps of Engineers and the states of MN, WI, IA and IL. Up to 40 percent of the continent’s waterfowl use this river flyway during migration, including up to 50 percent of the world’s canvasback ducks and 20 percent of the eastern population of tundra swans. The Refuge supports approximately 160 nesting pairs of bald eagles, 15 nesting colonies of great blue herons with approximately 5,000 nests, and a full array of other species of concern, including other colonial nesters, waders, raptors and songbirds. Annual songbird point counts on the Refuge have documented 199 species,

many of them neo-tropical migrants, including the rare cerulean warbler. In addition to hosting about 300 species of birds throughout the year, the Refuge is also home to rare reptiles, including Blanding's turtle and the massasauga rattlesnake; amphibians, including nine frogs and one toad; 51 species of mammals, including furbearers such as beaver, muskrat and river otter; 119 species of fish; 50 species of fresh water mussels, many of them vulnerable and declining; and a bewildering array of invertebrates and aquatic plants. The entire assemblage of Refuge biota is threatened by water quality impairments resulting from climate and land use changes occurring throughout the surrounding basin.

The Driftless Area or sub-watersheds within it have been recognized by several entities for priority conservation efforts. Trout Unlimited's Driftless Area Restoration Effort (TUDARE) and the U.S. Dept. of Agriculture's Mississippi River Basin Initiative (MRBI) are just two of several initiatives that have provided additional funding and technical support to implement additional conservation practices to improve water quality and provide wildlife habitat. The Partners Program plays an important role to coordinate our habitat restoration priorities with these initiatives.



Steambank Restoration with Trout Unlimited
Photo, USFWS

The Driftless Area's ecological complexity in Minnesota is due in large part to its topographic diversity and unique hydrologic features, as well as obvious land use gradients from the very steep and wooded bluffs and deeply incised stream coulees closely bordering the Mississippi River, to the more gently sloping and intensively farmed crop and pasture lands that dominate the upstream portions of watersheds. A diverse forest matrix covers the rugged karst features framing lower valleys of rivers and streams. The matrix is fragmented in many areas by development, outcrops and goat prairies or oak savannas on bluff slopes and terraces regularly impacted by fires. This interspersed of upland, floodplain and cold-water stream habitats makes the entire Driftless Area a biodiversity hot zone and target area for cooperative conservation.

Riparian areas providing connecting corridors of native trees, shrubs and grasses will be targeted for restoration, along with floodplain wetlands and in-stream aquatic habitats for both cold and warm water species. Upland habitats that will be targeted for restoration and adaptive management improvements include large tracts of native woodlands for area-sensitive species, as well as savannas, prairies, swales and shrub fens on erosive slopes. Bird friendly forest management and trout stream improvements are priority.

Conversion of existing USDA Conservation Reserve Program lands into highly erosive corn and soybean production for subsidized bio-fuel production represents a grave threat to

presently diversified farmlands as well as downstream habitats. Consolidation and intensification in agriculture have historically lead to severe environmental impacts, and conservation alternatives, as well as a recent shift toward recreational wild land ownership can help offset some of the negatives for fish and wildlife. The challenge is to help restore and enhance a healthy habitat matrix across this naturally diverse landscape.

Comprehensive partnerships include; Green Lands, Blue Waters (Midwest Universities), BALMM (Basin Alliance for Lower Mississippi in MN), Driftless Area Initiative (RC&Ds), Driftless Area Restoration Effort (Trout Unlimited, USFWS-NFHP), Important Bird Areas Partnership (Audubon), Root, Whitewater, Zumbro rivers, Lake Pepin and other watershed partnerships. Coordination, training and technical assistance needs mount as more complex conservation partnerships become established. The USFWS Partners Program can play an important role in assisting to clarify and integrate various levels of conservation activity into a more coherent and efficient delivery system for habitat protection and restoration.

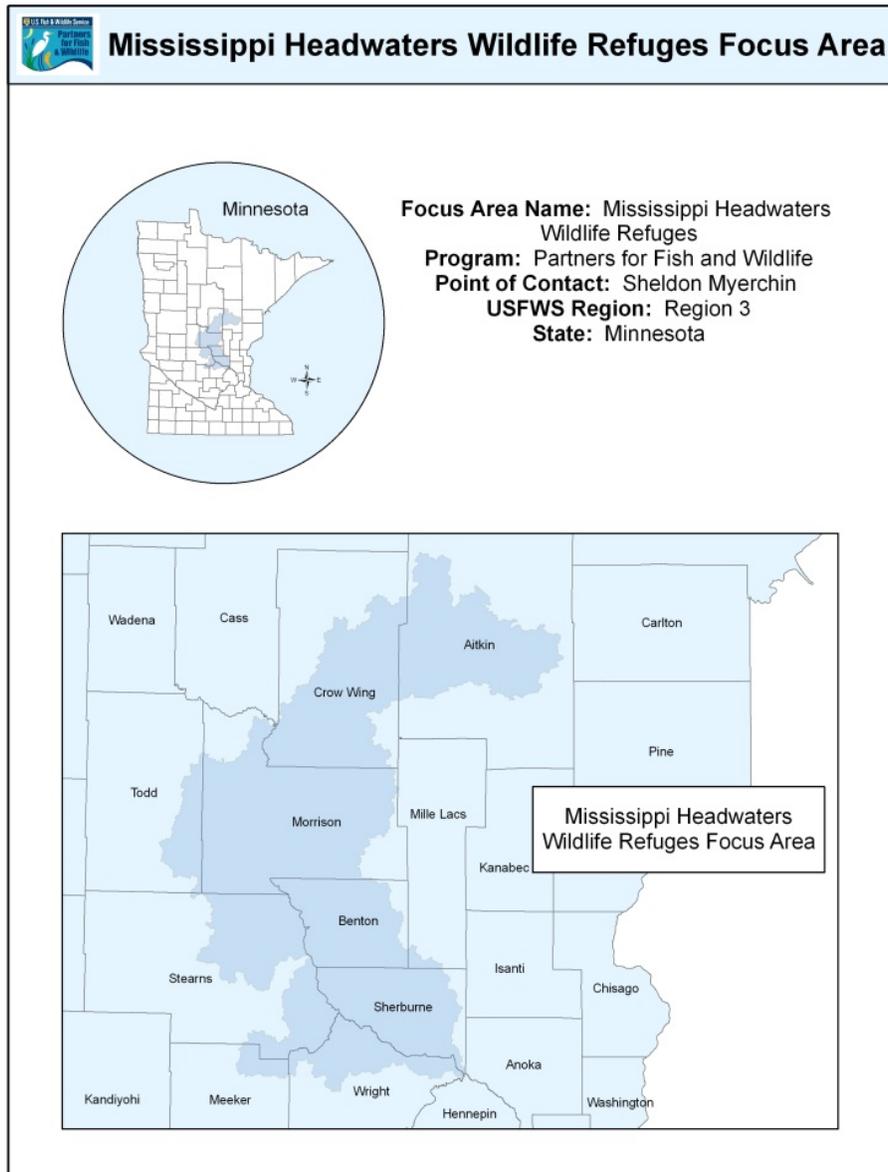
Driftless Focus Area Priority Species

Minnesota dwarf trout lily	<i>(Erythronium propullans)</i> Federally Endangered
Spotted Sandpiper	<i>(Actitis macularia)</i>
Blue-winged Teal	<i>(Anas discors)</i>
Mallard	<i>(Anas platyrhynchos)</i>
Swamp Sparrow	<i>(Melospiza Georgiana)</i>
Henslow's Sparrow	<i>(Ammodramus henslowii)</i>
Timber Rattlesnake	<i>(Crotalus horridus)</i>
Blanding's turtle	<i>(Emydoidea blandingii)</i>
Charr	<i>(Salvelinus fontinalis)</i>

Driftless Focus Area Five-Year Targets

- Wetland Restoration/enhancement: 100 acres
- Upland Restoration/enhancement/protection: 370 acres
- River/Streams/Shoreline Riparian Corridor restoration/enhancement: 5 miles
- Stream Channel restoration/enhancement: 5 miles

Mississippi Headwaters Wildlife Refuges Focus Area



The Mississippi Headwaters Refuges focus area is located in the Mississippi Headwaters/Tallgrass Prairie ecosystem. It is comprised of diverse landscape features formed by the advance and subsequent retreat of glaciers. The three major ecological communities within this ecosystem are the tallgrass prairie, the northern boreal forest, and the eastern deciduous forest. Vegetation common to the tallgrass prairie includes big bluestem, little bluestem, Indian grass, sideoats grama, and switch grass. Native prairie also supports numerous ecologically important forbs such as prairie coneflower, purple prairie clover, and blazing star. The northern boreal forest is primarily comprised of a variety of coniferous species such as jack pine, balsam fir, and spruce. Common tree species in the eastern deciduous forest include maple, basswood, red oak, white oak, and ash. Current land uses range from tourism and timber industries in the northern forests to intensive agriculture

in the historic tallgrass prairie. Oak savanna and tallgrass prairie are by far the most threatened landscapes in the Midwest, with more than 99 percent having been converted for agricultural or residential purposes.

Due to its ecological and vegetative diversity, this ecosystem supports at least 121 species of neo-tropical migrants and other migratory birds. It provides breeding and migration habitat for significant populations of waterfowl plus a variety of other water birds. The ecosystem supports several species of candidate and federally-listed threatened and endangered species including the Bald Eagle, Piping Plover, Higgins eye pearly mussel, Karner blue butterfly, prairie bush clover, Leedy's roseroot, dwarf trout lily, and the western prairie fringed orchid. The increasingly rare paddlefish and lake sturgeon are also found in portions of this ecosystem. This diversity is characterized by rolling to flat lake plains, beach ridges, and ground moraines which form large lakes, black spruce bogs, tamarack swamps, shallow wetlands, aspen-birch and white pine-oak forests, to oak savannas and upland tallgrass prairies.

The primary watersheds identified are the main hydrologic sources of water for the Rice Lake, Crane Meadows, and Sherburne National Wildlife Refuges. These Refuges provide critical habitat for diverse species of migratory birds, over forty mammal species, and almost another forty species of fish, amphibians, and reptiles. Federally listed threatened and endangered species such as Canada Lynx, Gray Wolves, and Bald Eagles are present in this area and many of the recently established eastern population of Whooping Cranes have utilized the habitat here. Several of the state listed species are also present.

A priority for the Partners Program is to work on projects that have the potential to affect and improve Refuge resources. Assisting landowners within and immediately adjacent to the Refuge acquisition boundaries has been a primary focus of wetland and grassland restoration. The Refuges are able to implement many of the same conservation practices on private lands as they would on Service-owned and managed land. Because water quality is a high priority for the Refuges, priority is also given to projects located in the watershed above the Refuges. Priorities also include lands adjacent to public natural areas or parks, those that are adjacent to larger contiguous natural areas and conservation corridor areas that facilitate wildlife movement.

Urban development and conversion to agricultural production has historically resulted in the loss of prairie, savanna, woodlands, and the drainage of wetlands. With escalating land prices, larger tracts are being sub-divided with new owners interested in conservation practices to improve the aesthetic value of the land and to provide recreational opportunities.

Opportunities exist to work with private landowners and partnering agencies and organizations to restore wetland and upland complexes, enhance woodlands, and control invasive species to benefit fish and wildlife species. These restored and enhanced areas will complement the Refuge habitat and provide for improved water quality through these protected systems.

Partners include Refuge Friends Groups, MN DNR, Lake Associations, Minnesota Waterfowl Association, Audubon Society, the Habitat Corridors Partnership, Anoka Sand-Plain Partnership and several landowners.

Mississippi Headwaters Wildlife Refuges Focus Area Priority Species

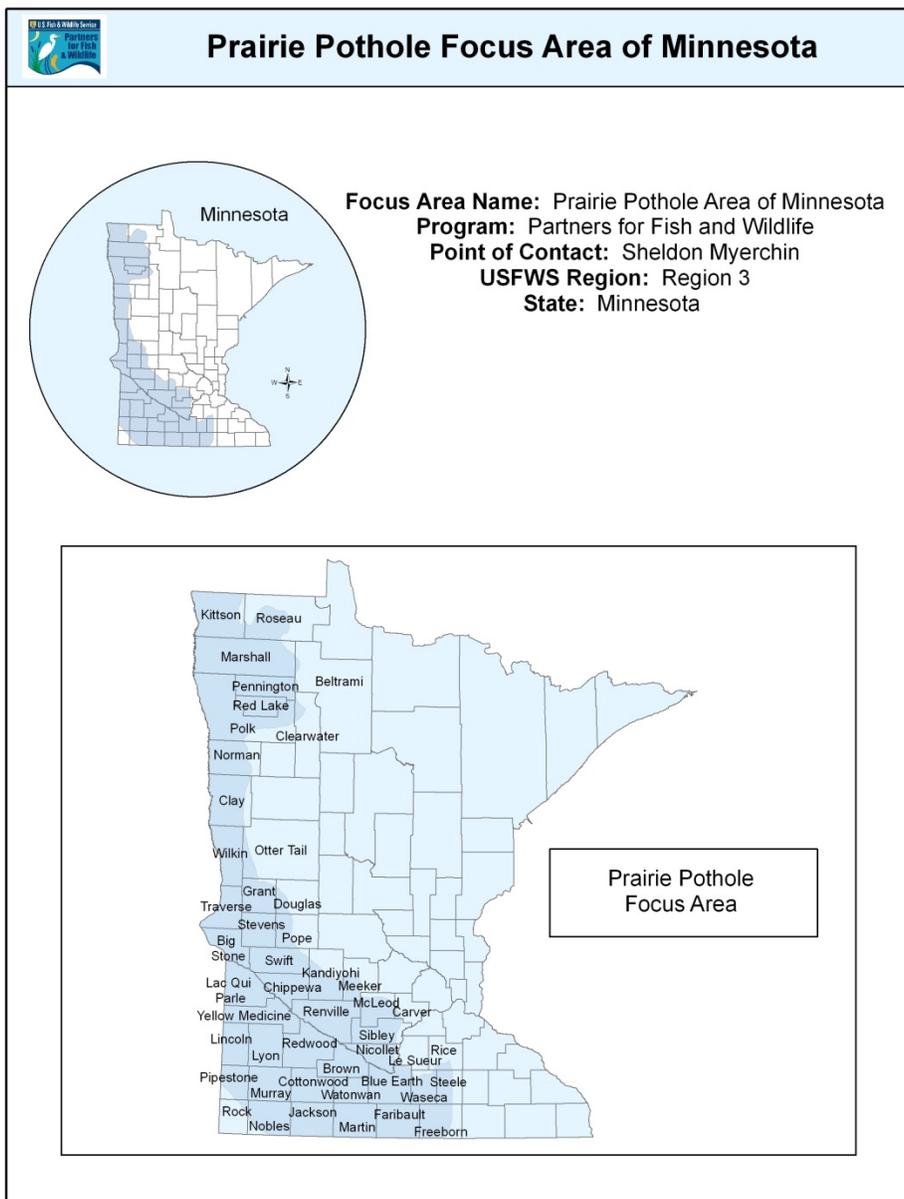
Wood Duck	<i>(Aix sponsa)</i>
Blue-winged Teal	<i>(Anas discors)</i>
Mallard	<i>(Anas platyrhynchos)</i>
Black Tern	<i>(Chlidonias niger)</i>
Sandhill Crane	<i>(Grus canadensis)</i>
American Woodcock	<i>(Scolopax minor)</i>
Golden-winged Warbler	<i>(Vermivora chrysoptera)</i>

Mississippi Headwaters Wildlife Refuges Focus Area Five-Year Targets

Wetland Restoration/enhancement: 500 acres

Upland Restoration/enhancement/protection: 1,250 acres

Prairie Pothole Focus Area



The Prairie Pothole Region (PPR) of Minnesota traverses from the northwestern Aspen Parkland and Red River Valley southward through the Minnesota River Prairie to the Coteau Moraines at the southern border. Once a vast area of prairie grassland interspersed with thousands of "prairie pothole" wetlands, formed as a result of glaciation, the landscape has been significantly altered through intense conversion to agriculture production. These prairie pothole wetlands and the surrounding prairie grasslands provided vital breeding habitat for a variety of waterfowl and grassland dependent birds and also supported significant numbers of spring and all migratory species. The Prairie Pothole Region is an internationally recognized wildlife habitat priority area.

Less than one percent of the historical 18 million acres of prairie in Minnesota remain with those remnants usually consisting of small tracts unable to be cropped and/or used for livestock grazing where feasible. In many counties, over 90 percent of the wetlands have been drained or filled to facilitate tillage for commodity crops or livestock production. Over 80 percent of the landscape area is utilized for row crop production and 9 percent is used as pasture with less than 10 percent remaining in a natural state of wetlands, prairie, or riparian woodlands. These remaining habitats provide the core for restoring wetlands and prairie grassland through cooperation of a diverse group of federal, state, and local agencies, non-profit conservation organizations, and private landowners. The Partners Program has been, and continues to be the essential tool to restore degraded wetland and grassland habitat, as well as key in establishing the Service's presence and priorities across this large geographic area.



Wetland Restoration
Photo, USFWS

Approximately 98 percent of the land is privately owned with public ownership primarily consisting of scattered state Wildlife Management Areas and state forests, federal Waterfowl Production Areas (WPAs) and the Agassiz, Big Stone, Glacial Ridge, Rydell, Minnesota Valley and Tamarac National Wildlife Refuges. The U.S. Fish and Wildlife Service (Service) and several other agencies and organizations are also actively acquiring perpetual easements to protect existing habitat or restoring habitat through partnership efforts. The Service has six Wetland Management

District Offices along with the associated Wetland Management Districts at Big Stone and Minnesota Valley NWRs located within the PPR of Minnesota. These offices manage the WPAs and habitat easements as part of the National Wildlife Refuge System. Acquisition of these public lands and private land easements is prioritized through the use of habitat priority models provided by the Habitat and Population Evaluation Team (HAPET) located in Fergus Falls, MN. The Partners Program also utilizes these same tools to prioritize habitat restoration projects to complement these Service lands and build wildlife habitat complexes and or corridors of wetlands and associated upland habitats. Because of the number of Service Field Stations working in the PPR of Minnesota and the large number of scattered tracts of public lands and priority areas, the recognition of the whole PPR of Minnesota as a focus area is best suited for this plan.

Due to an aging agricultural community and technically specialized agriculture production, opportunities exist to work with landowners to restore environmentally sensitive land and marginal cropland. With several national initiatives already in progress, the Partners Program in Minnesota is actively working towards those goals along with in-state initiatives such as the Habitat Corridors Partnership utilizing state Environment and Natural Resource Trust funds and the state led Working Lands Initiative which targets specific locations within this

focus area. The new Lessard-Sams Outdoor Heritage Council (L-SOHC), which recommends funding priorities of the state Legacy Amendment funds, also recognizes the PPR of Minnesota as a priority area. The Plains-Prairie Pothole Region of the U.S. and Canada was the first recognized Landscape Cooperative Conservation (LCC) area formed for the purpose of targeting collaborative efforts amongst agencies and organizations to result in focused effort of landscape conservation. Another initiative currently in development by the HAPET Office, the Prairie Pothole Region Integrated Landscape Conservation Strategy (PPRILCS), looks to form collaborative efforts amongst the various conservation stakeholders in Minnesota of which the Partners Program can play a vital role.

The primary Service partners in habitat conservation efforts in Minnesota include the USDA Farm Service Agency and Natural Resources Conservation Service; Minnesota Department of Natural Resources and Bureau of Water and Soil Resources; local Soil and Water Conservation Districts and Watershed Districts; The Nature Conservancy; Pheasants Forever; Ducks Unlimited; Minnesota Waterfowl Association; and a diverse group of landowners.

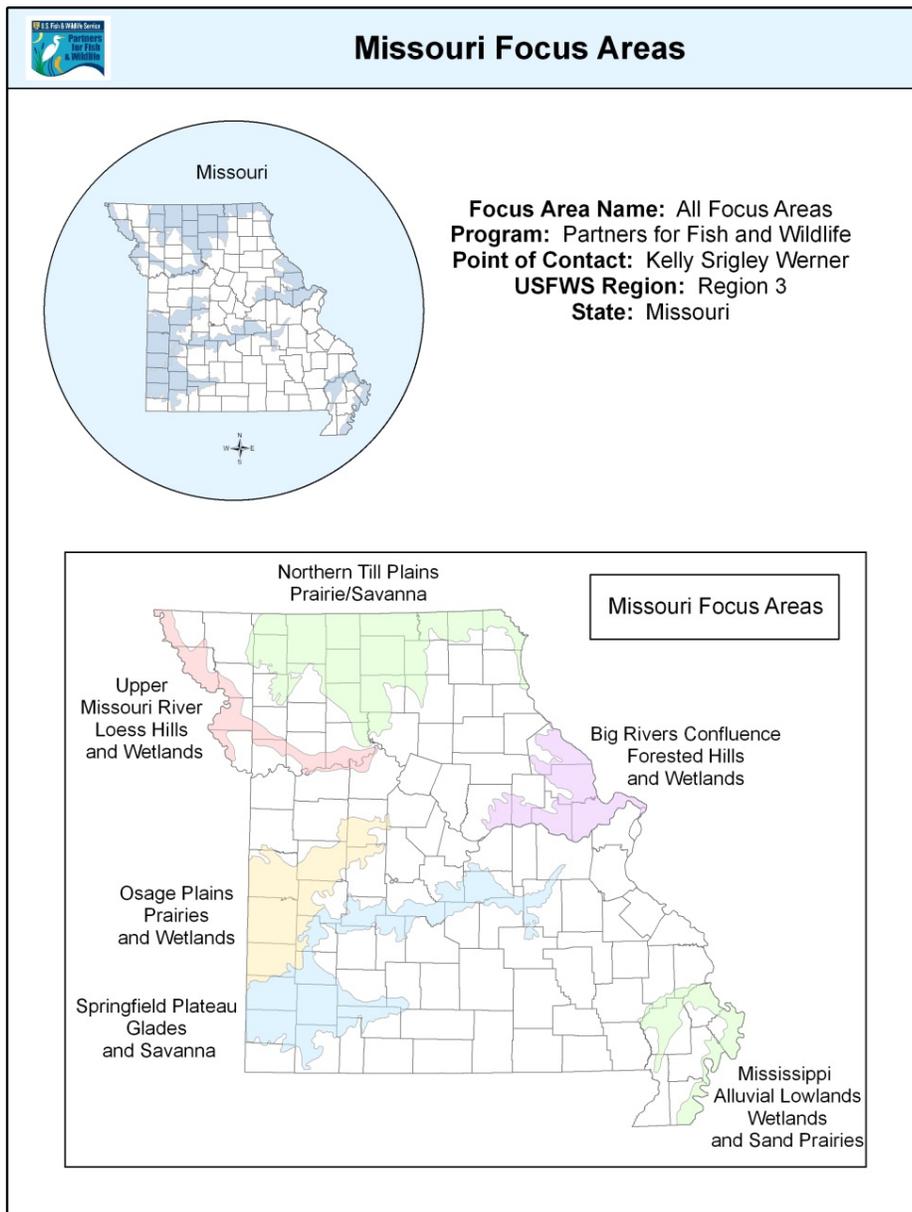
Prairie Pothole Focus Area Priority Species

Western Prairie Fringed Orchid	(<i>Platanthera praeclara</i>) Federally Threatened
Dakota Skipper	(<i>Hesperia dacotae</i>) Candidate
Sprague's Pipit	(<i>Anthus spragueii</i>) Candidate
Topeka shiner	(<i>Notropis topeka</i>) Federally Endangered
Northern Pintail	(<i>Anas acuta</i>)
Blue-winged Teal	(<i>Anas discors</i>)
Black Tern	(<i>Chlidonias niger</i>)
Marbled Godwit	(<i>Limosa fedoa</i>)
American Woodcock	(<i>Scolopax minor</i>)
Greater Prairie-chicken	(<i>Tympanuchus cupido</i>)

Prairie Pothole Focus Area Five-Year Targets

Wetland Restoration/enhancement: 5,250 acres
 Upland Restoration/enhancement/protection: 11,250 acres
 River/Streams/Shoreline Riparian Corridor restoration/enhancement: 21 miles
 Stream Channel restoration/enhancement: 21 miles

Missouri



Introduction and Overview

Missouri’s conservation tradition is steeped in the collaborative spirit of conservation partnerships. Our Strategic Plan for the next five years is built upon the foundation established by our 2007-2011 Strategic Plan. That plan developed Missouri’s Partners Program focus areas, evaluated critical resource needs and threats in conjunction with opportunities to prevent or reverse habitat fragmentation. It also identified existing or potential partners, and assessed support for National Wildlife Refuge system lands in relationship to private lands.

Our strategy in developing our 2012-2017 focus areas was to re-evaluate existing areas identified in our 2007-2011 strategic plan in relation to current collaborative partnership success and conservation need among various other criteria including biological diversity, fragmentation reduction in relation to wildlife adaptability, native habitat conversion to other uses, socio-economic considerations for landowners, maintaining the integrity of our national wildlife refuge lands, adjacent partner efforts including other federal, state, and non-government organizations, opportunities for success, priority zones for state rare and declining habitats, national and regional conservation planning objectives, Missouri's Comprehensive Wildlife Strategy and input from other Service divisions and numerous conservation partners.

General areas of conservation work align similarly with our original focus areas, but have become less broad and more strategic based on improved geospatial analyses. Partners Program staff meet regularly with conservation partners to develop strategies to implement habitat restoration projects on private lands in areas widely known as Conservation Opportunity Areas (COAs). While our focus areas don't align perfectly with COAs, we use them as a driving force in our being responsive to helping Missouri maintain its biological integrity through a landscape level vision for fish and wildlife conservation especially where there is commonality on resource issues between partners. There are other areas of focus that also play into defining our focus areas including but not limited to Missouri's Important Bird Areas (IBAs) defined in partnership with Missouri Audubon; The Nature Conservancy's globally significant aquatic and terrestrial focus areas for species, natural communities and ecological systems; Ducks Unlimited, Inc.'s priority counties for wetland restoration; and Missouri's Grassland Coalition Focus Areas of which the Service was a partner in developing as part of the Missouri Grassland Coalition.

Because nearly 94% of Missouri's 44.09 million acre land base is privately owned by citizens, many of whom earn an income from the land, it is important that private lands staff balance the principles of conservation with the concepts of working lands, whether for row crops or livestock production. The average farm size in Missouri in 2007 was 269 acres and 45% of all farms range in size from 1 to 99 acres with only 13% of all farms ranging in size from 500 to 2,000 acres or more. The 2010 census determined that nearly 6.0 million people live in Missouri half of which reside in urban areas such as Springfield, St. Louis and Kansas City. Intrinsicly, Missouri's Partners Program restoration projects are quality based projects which concentrate on increased natural community diversity and structure and reduced fragmentation, but projects may not be large in acreage. Our efforts require working with more landowners for larger landscape level projects in high priority conservation focus areas.

Missouri has 37 species which are federally-listed endangered, threatened, proposed or candidate species (3 mammals, 2 birds, 1 reptile, 1 amphibian, 7 fish, 11 freshwater mussels, 1 cave snail, 1 insect, 1 cave crayfish, and 9 plants). In addition, because of the inherent geologically diverse nature of Missouri there are 1,059 Missouri species of conservation concern (25 lichens, 31 liverworts and hornworts, 115 mosses, 24 ferns and allies, 466 plants (10 state-listed endangered), 4 flatworms, 58 mollusks (11 state-listed endangered), 6 arachnids, 41 crustaceans, 4 millipedes, 108 insects (2 state-listed endangered), 66 fish (13

state-listed endangered and 1 threatened), 16 amphibians (2 state-listed endangered), 18 reptiles (5 state-listed endangered), 49 birds (9 state-listed endangered), and 28 mammals (5 state-listed endangered).

Missouri also occurs within the Mississippi Flyway and subsequently converges with a Central Flyway conduit via the Missouri River. Habitats along these corridors provide important mid-latitude transitory stopover resources for numerous species of migrating and wintering birds and also harbor the richest agricultural soils in the state for agriculture. In addition, Missouri habitats in the Ozarks also serve source populations for several migratory land bird species.

Aquatic habitats associated with the Missouri and Mississippi Rivers, the two longest rivers at 2,540 and 2,340 miles long respectively, are important to inter-jurisdictional fish. Missouri is also highly dissected with 110,000 miles of navigable streams and rivers supporting some of the nation's most diverse assemblages of freshwater mussels and rare, endemic shiners and darters along with other diverse aquatic species like salamanders and crayfish— many thousands more miles of small streams and drainages accompany these navigable waters and many drainages in the Ozarks, referred to as losing streams, supply ground water recharge in karst habitats underground which in turn provide habitats for karst dependent species many of which are endemic.



Missouri/Mississippi River Partnership, St. Charles County, MO
Photo: Ashley Spratt, USFWS

Partners Program efforts in Missouri also focus on rare and declining habitats which support a diverse array of fish, wildlife and plants including glades, pine savanna, fens, loess hills, springs and caves especially in conjunction with federally-listed species. Partners Program staff evaluates projects based on criteria that will benefit the National Refuge System's trust lands that are either associated with refuge boundaries or refuge Farm Services Agency easements;

trust resources including threatened, endangered, candidate, or proposed species and state species in decline. Partners Program staff coordinates with other Fish and Wildlife Service Offices as it relates to projects that have a direct influence on their office missions.

Partners Program also work regularly and often with partners who have a vested interest in the area we are working in to leverage funds, to help design projects for private landowners collaboratively, and to build upon long standing partnerships in areas of the state that have high resource value. The effort to work in this collaborative fashion improves our conservation community integrity with landowners and helps build trust. We regularly collaborate on projects with the Missouri Department of Conservation, Natural Resources Conservation Service, Farm Service Agency, The Nature Conservancy, Ducks Unlimited, Inc., Missouri Prairie Foundation, National Wild Turkey Federation, and local Soil and Water Conservation Districts when and where applicable. This practice has enabled our

program dollars to be matched regularly by at least 2:1 and usually higher. Numerous partnerships exist in Missouri to achieve conservation success and are briefly discussed below:

Oak Savanna/Prairie Partnership in Northeast Missouri and Southern Iowa:

Efforts for improving tallgrass prairie and oak savanna habitat with a consortium of interests in Iowa and Missouri have led to focused efforts for habitat enhancement and restoration in partnership with National Wild Turkey Federation, Quail and Upland Wildlife Federation, Quail and Pheasants Forever, The Nature Conservancy, the Grassland Coalition, Missouri Prairie Foundation, Missouri Department of Conservation, the Natural Resources Conservation Service and private landowners. This region is important to declining grassland birds, the federally endangered Indiana bat, and eastern prairie fringed orchid, among other state declining species. However due to the anticipated loss of extensive northern Missouri CRP enrolled acres, there is a new conversation beginning to synergize biofuel discussions for a socio-economic boost to local economies and discussions to find ways to improve/maintain grassland habitats for wildlife while reserving some level of the biomass for “green” energy use. This in turn is leading to a larger regional biofuel discussion and current work is currently underway to form a Midwest Conservation Biofuel Alliance.

Missouri/Mississippi Confluence Conservation Partnership in the Big Rivers Confluence of Eastern Missouri:

This partnership has been recognized by the Department of Interior and is an America’s Great Outdoors Rivers Project which serves as a model for collaborative partnerships to achieve conservation success especially for America’s rivers. This Confluence floodplain focus is 300,000 acres and concentrating on all-bird conservation while supporting conservation of federally-listed species where applicable. The partnership mission has been to address threats of urban expansion, climate change, and floodplain management; to promote wise use of the floodplain; to build conservation corridors on private land which connect to public land by restoring various types of wetland habitat including moist soil, emergent, wet prairie and forested wetlands; to permanently protect lands through donated and purchased conservation easements; to promote environmental education to get people connected to the river and its associated habitats; address policy issues; and acquire new public lands. All aspects of participation in conservation efforts are voluntary. The partnership consists of a loosely knit consortium of nearly 40 federal, state, local and non-governmental partners and landowners whose vision is to strategically implement alternatives which enable landowners and local governments to *voluntarily* maintain, protect, restore and enhance the open space of the Confluence Focus Area through existing federal, state, and local conservation programs and to initiate innovative cooperative approaches to conserve the natural, cultural and historical significance of the Confluence area while maintaining a viable agricultural and rural condition. The core partnership consists of Great Rivers Habitat Alliance, Ducks Unlimited, Missouri Department of Conservation, Audubon Missouri, U.S. Fish and Wildlife Service, Quail and Pheasants Forever, the Nature Conservancy and the Natural Resources Conservation Service.

Stony Point Grassland Initiative Partnership in the Osage Plains of Southwest Missouri:

This partnership has formed out of a need to address the decline of the Greater Prairie Chicken, Northern Bobwhite, and numerous other declining grassland bird species in southwest Missouri and is a partnership with the Department of Conservation and the



Grasshopper Sparrow
Photo: Frank Oberle

Missouri Prairie Foundation. In Missouri, 98% of the original tallgrass prairie has been lost to other land uses. Goals of the partnership include reconnecting remnant blocks of prairie to permanently protected areas either owned by the Conservation Department or the Missouri Prairie Foundation; to convert tall fescue to a mixture of native tallgrass grasses and forbs in order to help diversify cattle production lands and improve the economic return for producers; to increase the native grass landscape matrix within the focus area to benefit grassland birds needing large blocks of grassland; to reduce invasive species and non-native exotics; and to manage native prairie remnants with fire. Because native wet prairie is even rarer today than tallgrass prairie, Partners Program biologists are making it a priority to seek out ways to restore these more rare grassland habitats as they visit with landowners in the focus area. This partnership has just begun and with increased interest we will be

pulling in other partners to assist including the Natural Resources Conservation Service, Quail and Upland Wildlife Federation, The Nature Conservancy, and Quail and Pheasants Forever.

Missouri Bird Conservation Initiative:

For the past nine years, the Missouri Private Lands Office has been involved in the Missouri Bird Conservation Initiative (MoBCI) whose mission is to promote conservation efforts for all Missouri birds. MoBCI is a consortium of 62 organizations with an interest in bird conservation and was formed under the principles of the North American Bird Conservation Initiative. They advocate for all birds on a variety of conservation issues but mostly related to restoring bird habitats. Each year, the Missouri Department of Conservation avails nearly \$100,000 to fund a competitive granting program that addresses the needs of birds based on local, state, regional, and national bird conservation plans. Grantees much match every dollar provided by MoBCI 1:1. Projects can occur on any lands including those in federal ownership. Partners Program has helped meet the needs of the competitive grants program by partnering with organizations working on restoration projects in our focus areas and meeting the needs of our trust resources. Nearly \$3.1 million dollars of conservation work has been delivered for Missouri birds over the last 10 years and the program regularly is matched 2:1 by the organizations that participate in the grants program.

Conservation Federation of Missouri OAKs (Outdoor Action Committee):

Missouri celebrates 75 years of conservation with the original passage of a constitutional amendment to form the Missouri Department of Conservation, a non-political professional agency to address the needs of Missouri's forests, fish and wildlife. That historic passage was the result of leading conservationists in 1935 gathering to discuss the fate of Missouri's natural resources and from that they formed the Restoration and Conservation Federation of Missouri (known today as the Conservation Federation of Missouri (CFM)). One of those conservation leaders was Aldo Leopold. The Outdoor Action Committee (OAKs) was formed in honor of 75 years of conservation shortly after an Outdoor Summit of Missouri natural resource interests gathered to discuss the most important challenges/issues to Missouri's natural resources. OAKs is the next generation of conservation leaders discussing ways to address those challenges. Partners Program serves on the Conservation Subcommittee to ensure the conservation of sustainable Missouri landscapes and for enhanced outdoor participation and access. The focus for the sub-committee is private land focused for restoring and maintaining working and non-working lands, engaging non-traditional partners, and discussing ways to better engage landowners. This effort is just one major issue that was determined to be one of the most important challenges facing the next 75 years of conservation.

Missouri Agricultural Wetland Initiative:

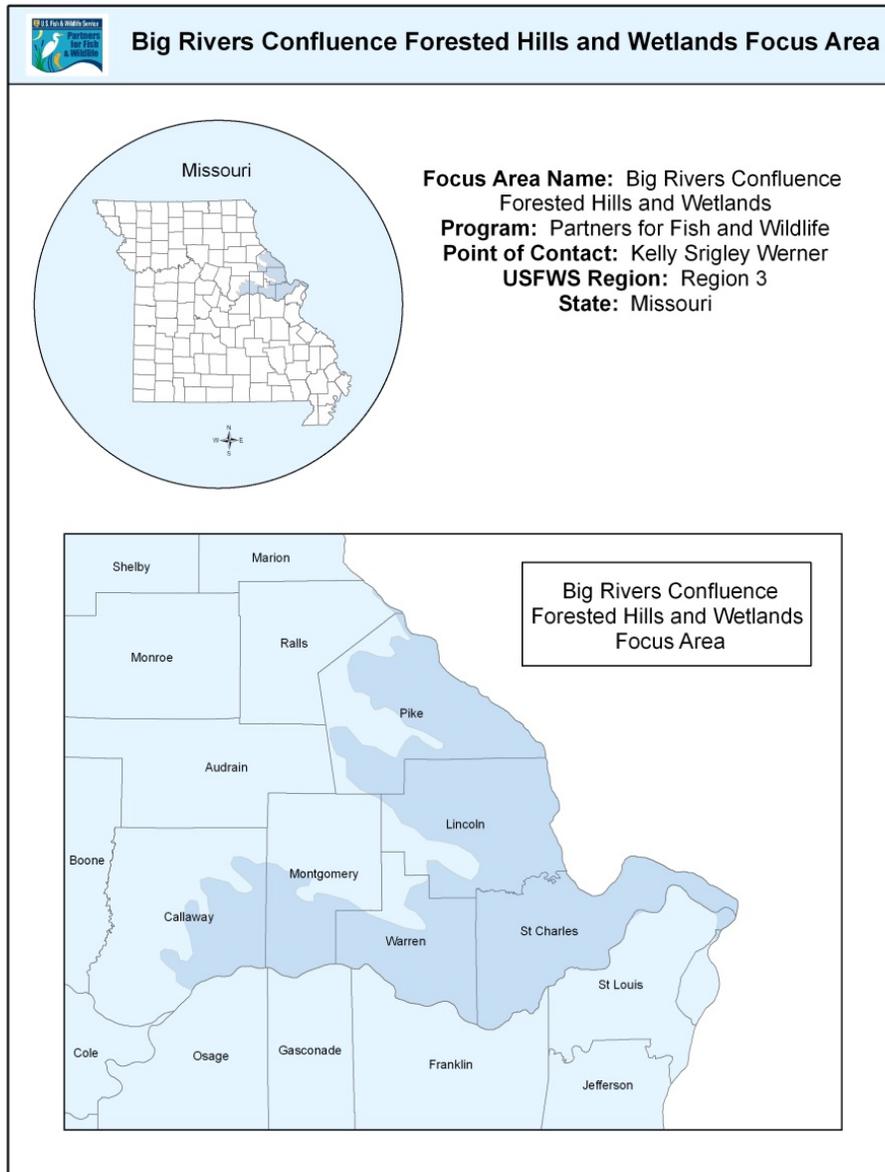
Landowners need a "one-stop-shop" for wetland program information. In 2006 Partners Program partnered with Ducks Unlimited, Missouri Audubon, the Farm Service Agency, the Natural Resources Conservation Service and Missouri Department of Conservation to develop a marketing strategy in pilot locations in Missouri to promote wetland restoration on working lands which would help address hypoxia issues, nutrient loading in streams and improve wildlife habitat. The success of the program was impressive. In the next 5 years, we plan to expand that wetland conservation effort to areas of the state where there is a collaborative need based on conservation priorities between Partners Program, DU, Audubon and MDC.

Supporting Plans for Missouri Focus Areas:

- Audubon Important Bird Areas
<http://mo.audubon.org/sites/default/files/documents/mo-iba-map.pdf>
- Central Hardwoods Joint Venture Strategic Plan --
http://www.chjv.org/CHJV_Strategic_Plan.html
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- Jacobs, B. and J.D. Wilson. 1997. Missouri Breeding Bird Atlas 1986-1992. Missouri Department of Conservation Natural History Series, No. 6. Missouri Department of Conservation, Jefferson City, Missouri. 430p.

- Least Tern Recovery Plan --
http://www.fws.gov/ecos/ajax/docs/recovery_plan/900919a.pdf
- Master, Lawrence L., Stephanie R. Flack and Bruce A. Stein, eds. 1998. Rivers of Life: Critical Watersheds for Protecting Freshwater Biodiversity. The Nature Conservancy, Arlington, VA.
- Nelson, Paul W. 2005. The Terrestrial Natural Communities of Missouri. The Missouri Department of Natural Resources. 550pp.
- Nigh, Tim. 2005. Missouri Department of Conservation Terrestrial Biodiversity Assessment, Attachment 4.
- Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Inigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Pashley, K.V. Rosenberg, C. M. Rustay, J.S. Wendt, T.C. Will. 2004. Partners in Flight North American Landbird Conservation Plan. Cornell Lab of Ornithology. Ithaca, NY.
- Shorebird Habitat Conservation Strategy --
http://uppermissgreatlakesjv.org/docs/UMRGLR_JV_ShorebirdHCS.pdf
- A Ten Year Strategic Plan for the Recovery of the Topeka Shiner in Missouri
http://mdc.mo.gov/sites/default/files/resources/2010/10/topeka_shiner_recovery_plan_10-20-10.pdf
- The Nature Conservancy. The Central Tallgrass Prairie Ecoregion Planning Team. Conservation in a Highly Fragmented Landscape: The Central Tallgrass Prairie Ecoregional Conservation Plan. 2000. 127 pp.
- Upper Mississippi Great Lakes Joint Venture Implementation Plan --
<http://uppermissgreatlakesjv.org/docs/JV2007All-BirdPlanFinal2-11-08.pdf>
- U.S. Shorebird Conservation Plan ---
<http://www.fws.gov/shorebirdplan/USShorebird/PlanDocuments.htm>
- Waterbird Habitat Conservation Strategy --
http://uppermissgreatlakesjv.org/docs/UMRGLR_JV_WaterbirdHCS.pdf
- Waterfowl Habitat Conservation Strategy --
http://uppermissgreatlakesjv.org/docs/UMRGLR_JV_WaterfowlHCS.pdf

Big Rivers Confluence Forested Hills and Wetlands Focus Area



Interior Valleys and Hills ecosystems encompass the Big Rivers Confluence Forested Hills and Wetlands Focus Area and are associated with many wide, flat-bottomed terraced valleys, forested valleys and dissected glacial till plains. Much of the land in this region is in row crops, however, there is a significant portion that remains in forest due to the steep cliffs and slopes along the river. Far more bottomland forests occurred in this region also, however, large expanses of bottomland prairie were interspersed throughout the Missouri River portion of this region.

In this focus area, there are two habitat focal points where habitat restoration through the Partners Program will be concentrated; the River Hills area and the Missouri/Mississippi River Confluence Wetlands area.

Efforts to restore habitats in the River Hills area, which contain habitats in the largest contiguous tract of oak hickory forest in Missouri, include glade and forest stand improvement for a variety of land bird species including the Cerulean Warbler as well as for the federally-listed endangered Indiana bat. These habitat enhancements also aid forest health and contribute to regeneration of oak/hickory species which are currently shaded by understory invasive species such as eastern red cedar, sugar maple and autumn olive. The original focal species for this area continues to be ruffed grouse, however, through monitoring, the forest improvement techniques being implemented are proving beneficial for declining interior forest nesting birds as well.

Currently there is a multi-agency and organizational response to habitat restoration efforts to conserve this oak-hickory forest. The Service has been assisting with small forest openings to diversify the forest structure which in turn enhances the area for declining interior forest birds. The Ruffed Grouse Society has helped generate interest and has provided restoration and enhancement opportunities with landowners and has partnered with the Service and others to help deliver the practices needed for restoration. The area known as the Confluence of the Missouri and Mississippi Rivers has a rich history both culturally and biologically and is the second major focal point within this focus area. The Corps of Discovery began at the Mouth of the Missouri River and traveled westward to describe the interior of the continent of North America. They noted the landscape of the Confluence area as a combination of prairies, woodlands, and very fertile ground interspersed along the floodplain and upon the bluffs.



Green Wing Teal, Linn County Wetland
Photo, Kelly Srigley Werner, USFWS

In 1994, the Service, Ducks Unlimited, Pheasants/Quail Forever, the Missouri Department of Conservation, The Nature Conservancy and the Great Rivers Habitat Alliance formed a partnership to focus on the importance of the floodplain in St. Louis, St. Charles, Pike, and Lincoln counties with a primary focus on St. Charles County due to challenges related to urban expansion and the need to conserve thousands of acres of floodplain. It is important to note the rich history of this area for migratory birds by honoring the fact that the Mississippi Flyway Council was organized in St. Louis, Missouri in 1952 specifically to address the management needs of waterfowl along the 14 states that border the Mississippi River and to monitor and collect data on populations. Recreational opportunities and activities associated with hunting and bird watching brings 2.4 million dollars to the state each year and the Confluence plays a large part in that.

The Mississippi River corridor is the longest and most traversed migratory route for ALL birds in the northern hemisphere. During peak migration birds use habitats along the Confluence and the river corridor to rest, refuel, and some use habitats for nesting. As a

barometer of the importance of the Confluence to birds, between 1.5 and 3.0 million dabbling ducks alone utilize the habitats along the Mississippi and Central flyways. The Confluence is the central point for birds to traverse to and from their breeding and wintering grounds. Like much of the floodplain of the Missouri and Mississippi Rivers the present day land use is dominated by row crop agriculture operated by 3rd and 4th generation families. Recreational use is also extremely important here as the area also supports the largest number of *contiguous* duck clubs, encompassing close to 37,000 acres; more than anywhere else in the United States.

Linking Partners Program habitat restoration work to managed protected land, including Two Rivers NWR (in Illinois) and Great River NWR, as well as state managed areas is an important focus to provide adequate habitat for all bird conservation during migration. The Mississippi River could be most visibly changed in response to climate change with rising ordinary high water marks and increased flooding due to extreme weather events. Restoration work seeks to maintain biological diversity through educating local residents of the importance of green space in an area that recently has experienced devastating flooding in 1993, 1995, 2008 and 2009. This high frequency of flooding would cost billions of dollars were the confluence to be settled by expanding urban interests. The partnership focuses on restoring between 30 and 60 thousand acres of wet prairie, emergent wetlands and forest and scrub shrub wetland habitats and protecting lands from development through a comprehensive restoration strategy which includes donated conservation easements. We work actively with stakeholders in the Confluence to restore natural communities with voluntary participants where it makes sense; to help landowners and communities reduce runoff and sedimentation problems; to maintain adequate green space to absorb floodwaters and provide recreational opportunities; to educate communities about using conservation as an economic stimulus by promoting the area's natural and cultural heritage; to control invasive non-native plants and animals; and improve the quality of life for the citizenry of the Confluence through workshops, field days and festivals.

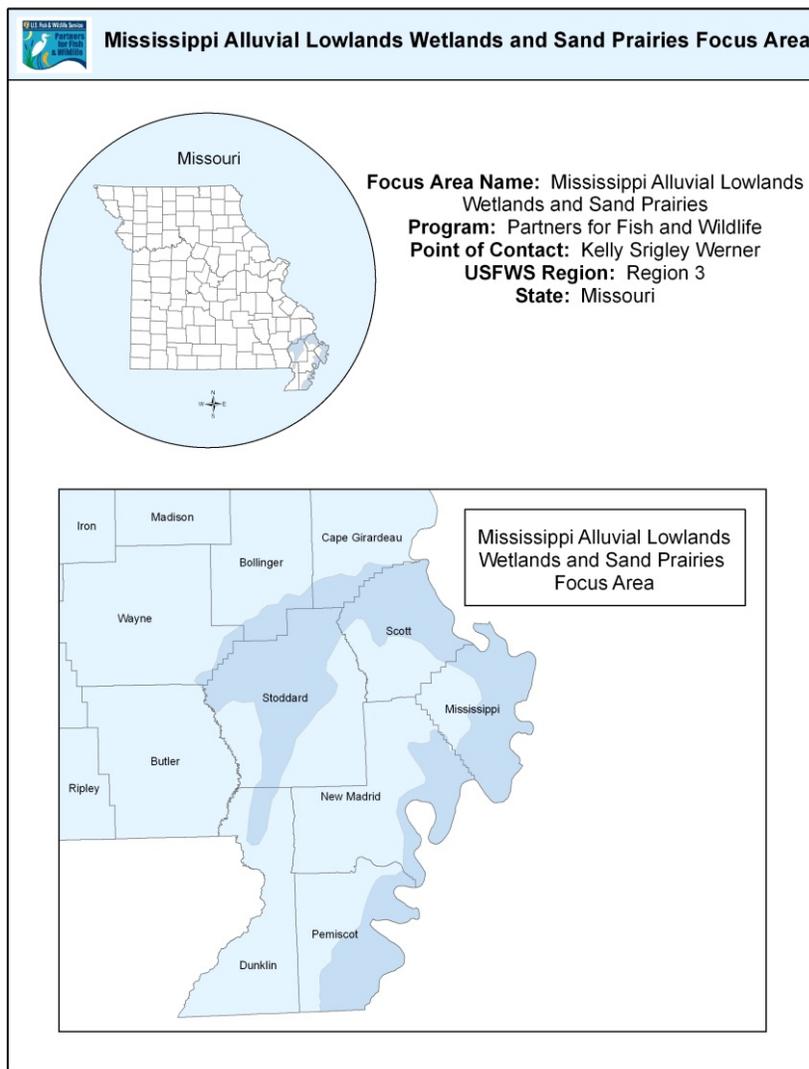
Big Rivers Confluence Forested Hills and Wetlands Focus Area Priority Species

Cerulean Warbler	(<i>Dendroica cerulean</i>) Species of Concern
Decurrent false aster	(<i>Boltonia decurrens</i>) Federally-listed Threatened
American bittern	(<i>Botaurus lentiginosus</i>) species of Concern
Black rail	(<i>Laterallus jamaicensis</i>) species of concern
Indiana bat	(<i>Myotis sodalis</i>) Federally-listed Endangered
Blue-winged warbler	(<i>Vermivora pinus</i>) Species of Concern

Big Rivers Confluence Forested Hills and Wetlands Focus Area Five-Year Targets

Wetland Restoration/enhancement: 500 acres
Upland Restoration/enhancement/protection: 75 acres

Mississippi Alluvial Lowlands Wetlands and Sand Prairies Focus Area



The Mississippi Alluvial Plain ecoregion, located in the southeast corner of the state and encompassing the Mississippi Alluvial Lowlands Wetlands and Sand Prairies Focus Area, is largely dependent on the Mississippi River and is the lowest elevation in the state. It is a broad, flat alluvial plain which once had numerous swales and river terraces, and was dominated by cypress-tupelo swamps so soils are very poorly drained. This is also the most highly altered region of the state with a network of straight line ditches and levees developed in the early 1900's to drain wetlands and convert the region to row crop agriculture. Of the 2.5 million acres of bottomland hardwood and swamp wetlands that once occurred here, only a fraction remains in remnants that are in state or federal ownership including Mingo National Wildlife Refuge. There still remains opportunity to restore habitats that are hard to drain in a region between Mingo and Otter slough and on the river side of the Mississippi River where Least terns and Mississippi Kites nest.

Within the focus area, the Partners Program main work emphasis will be to reduce habitat fragmentation and restore bottomland forested wetlands and cypress-tupelo swamps as well

as buffer streams and create migration corridors for wildlife between current state and federally owned lands. The Mingo Basin and Mississippi River Plain are new focus areas for Missouri and with recent partnership efforts and a renewed commitment for habitat restoration in the Mingo Basin, the Partners Program can be an effective catalyst to work on marginal lands and improve wetland hydrology and functionality where practicable.

Challenges include restoring hydrology in a highly modified system of levees and stream channelization as well as land leveling and improved capacity for intensive farming techniques. Invasive species like kudzu, *Sericea lespedeza*, Japanese hops, Johnson grass and spotted knapweed are problematic. Connecting habitats for migrating species will also pose a challenge based on current economics related to agricultural commodities. Due to its elevation, climate change could impact this region's water quality, making waters hyper-saline as waters from the Gulf of Mexico back up to this region during extensive flooding events.

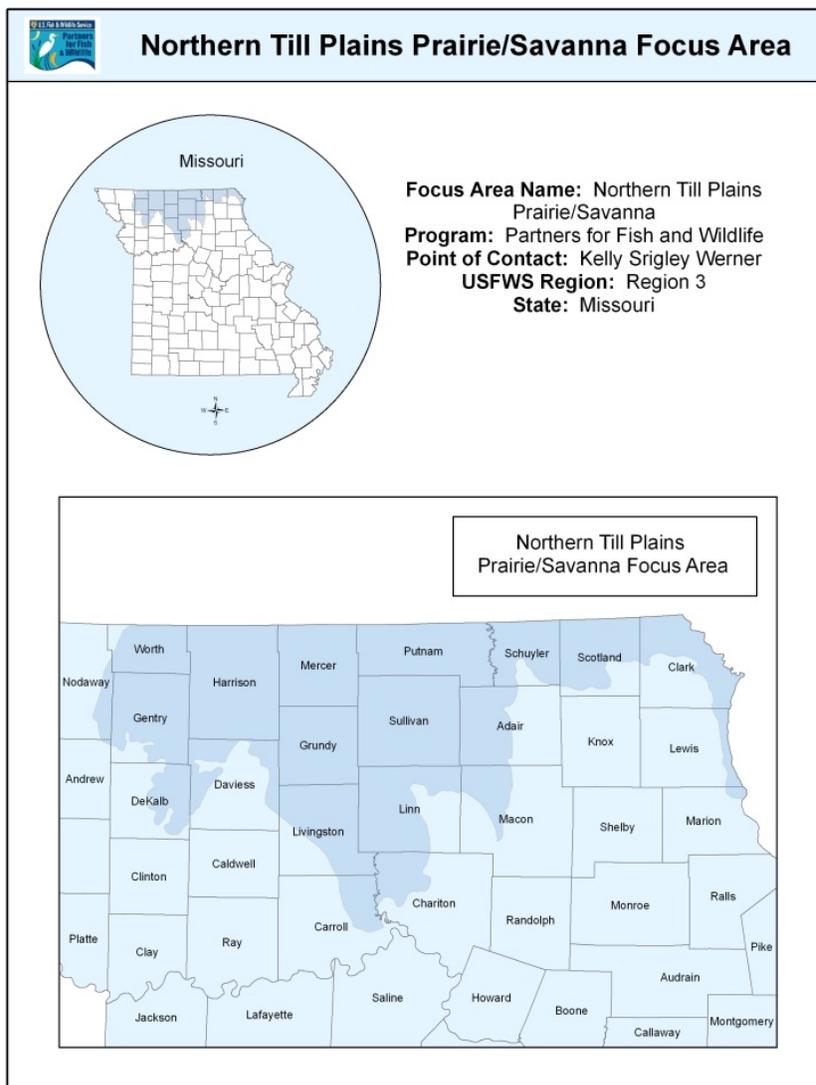
Mississippi Alluvial Lowlands Wetlands and Sand Prairies Focus Area Priority Species

Illinois chorus frog	<i>(Pseudacris illinoensis)</i> State Species of Conservation Concern
Least bittern	<i>(Ixobrychus exilis)</i> Species of Concern
Swainson's warbler	<i>(Limnothlypis swainsonii)</i> Species of Concern
Prothonotary warbler	<i>(Protonotaria citrea)</i> Species of Concern
Least tern	<i>(Sternula antillarum)</i> Federally-listed endangered

Mississippi Alluvial Lowlands Wetlands and Sand Prairies Focus Area Five-Year Targets

Wetland Restoration/enhancement: 125 acres
 Upland Restoration/enhancement/protection: 95 acres
 River/Streams/Shoreline Riparian Corridor restoration/enhancement: 3 miles
 Stream Channel Restoration/enhancement: 2 miles

Northern Till Plains Prairie/Savanna Focus Area



This region of the state was historically tallgrass prairie in a mosaic of woodlands along streams and drainages with several areas of transitional oak savanna. Today the majority of the land north of the Missouri River is in private ownership and most floodplains along rivers and in upland plains are dedicated to row crops. This northern portion of Missouri is characterized by glaciated plains which slope towards the Missouri River. The focus areas, shaped by the great glaciers, are comprised of high prairie plains with abundant dissected steep timbered hills all associated with the tremendous network of streams and rivers.

Opportunity for habitat restoration and enhancement exists in this hill landscape focus area and include wetland, upland and riparian/stream habitats important to many Service trust resources. Land use is dominated by row crop agriculture, hay and livestock production and has been the primary way of life since the late 1800's. The wide floodplain areas along major streams and rivers are predominantly row cropped, while the upland hills are used for livestock grazing and hay production. A significant portion of the focus area is currently

enrolled in the Conservation Reserve Program but thousands of acres are scheduled to expire between 2011 and 2013 accelerating our efforts to work with our conservation partners to maintain restore and enhance habitats is critical for grassland birds on private lands. Topeka shiner is an endangered species which occurs in high plains prairie streams within this focus area. We continue to work with our partners and landowners with stream and riparian restoration and a new focus for our efforts relates to the recently designated priority streams for Topeka shiner reintroduction.

New challenges associated with climate change and alternative sources of energy have emerged since our original strategic plan including bioenergy, wind power and fragmentation. Current predictions indicate that Missouri will become wetter and slightly warmer in this region which could impact habitat conditions for nesting grassland dependent species. Our strategies include reducing fragmentation by working with landowners in areas where we can merge larger protected landscapes including those across the border in Iowa, working with other divisions within the Service to address concerns with other agencies and corporations and educating landowners about quality fish and wildlife habitat with our conservation partners.

We are exploring biofuel technology in the region using native plant materials with partners interested in maintaining large sustainable landscapes that also contribute to the well-being of local residents, and finding a way to balance the use of native plants for biofuel while maintaining quality native wildlife habitats for declining grassland species. There are also numerous invasive species impacting the region including teasel, sericea lespedeza and bush honey suckle. Our strategy is to work closely with our partners to educate landowners about the impacts invasive species have on native communities, wildlife and farming operations.

Wet prairie and emergent wetlands were interspersed along larger river floodplains in the region and have been a focus for the Partners Program since the infancy of the program. Swan Lake National Wildlife Refuge occurs within this focus area and the majority of fish and wildlife easements that resulted from farm foreclosures in the 1980's. The highest concentration of wetland restoration effort occurs in areas surrounding Swan Lake and while the majority of lands in private ownership that had been severely impacted by flooding from 1993, 1995, and 1998 have been enrolled in the Wetland Reserve Program, there are numerous smaller wetland tracts that can still be restored and enhanced to further reduce fragmentation, address the migratory needs of water dependent species in spring and fall, and improve the wetland landscape in this important region. The Grand River is a major drainage flowing from southern Iowa to Join the Missouri River. Due to the extensive land use changes that have occurred since the early 1900's efforts are underway to work in partnership with numerous agencies and non-government organizations on non-regulatory means of improving water quality and through the Missouri Agricultural Wetland Initiative, the Partners Program will be one of the conservation restoration tools used on private lands.

Northern Till Plains Prairie/Savanna Focus Area Priority Species

Indiana bat	(<i>Myotis sodalis</i>) Endangered
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>) Species of Concern
Grasshopper Sparrow	(<i>Ammodramus savannarum</i>) Species of Concern
Greater Prairie Chicken	(<i>Tympanuchus cupido</i>) State Endangered
Northern Bobwhite	(<i>Colinus virginianus</i>) Species of Concern
Virginia Rail	(<i>Rallus limicola</i>) Species of Concern
Eastern Massasauga	(<i>Sistrurus tergeminus tergeminus</i>) State Endangered
Topeka shiner	(<i>Notropis Topeka</i>) Endangered

Northern Till Plains Prairie/Savanna Focus Area Five-Year Targets

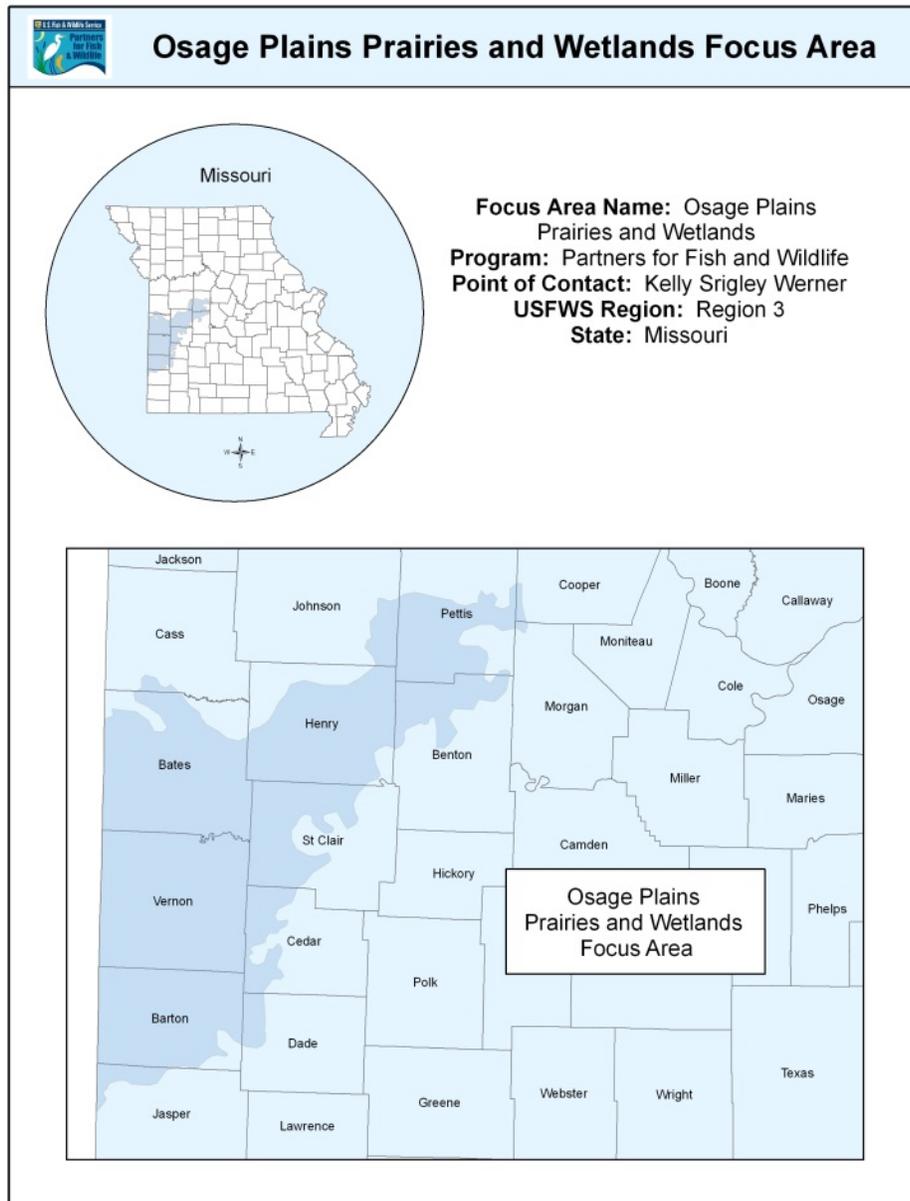
Wetland Restoration/enhancement: 375 acres

Upland Restoration/enhancement/protection: 2,300 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 12 miles

Stream Channel restoration/enhancement: 5 miles

Osage Plains Prairies and Wetlands Focus Area



The Osage Plains south of the Missouri River in western Missouri have rockier substrates, are less dissected, and support diverse geologic glade habitats (rocky outcroppings) with species adapted to dry conditions including the federally-listed threatened geocarpon and Missouri Bladderpod. The majority of lands here are also in private ownership and the primary land use is livestock and poultry production with some highly concentrated areas of row crops along floodplains of major drainages. Some streams were altered in this region by the construction of large reservoirs for flood control in the middle of the 20th century which has inundated significant historic wetland and wet prairie areas.

Historically this region was about 80% tallgrass prairie. However, oak savanna and woodlands also once occurred in steeper valleys. This region has a multitude of bottomland

areas where wet prairie and emergent wetlands once occurred and forested wetlands along major rivers like the Lower Marais Des Cygnes, Little Osage, Marmaton and South Grand Rivers. Today, the majority of the area is dominated by fescue/brome pasture with larger fields of cropland on flatter portions of the plains. Much of the wetland habitat has been converted to other land uses but the success of the Wetland Reserve Program in Missouri has contributed to increased wetland acres.

Habitat restoration potential consists of prairie, wet prairie, glade and oak savanna, emergent and floodplain wetlands and wet prairie. There is a combined conservation effort to secure remnant prairie and restore larger acreages (>2 km²) to benefit declining grassland birds and the declining Greater Prairie Chicken and the prairie ecosystem overall. Recently efforts to restore habitat for the endangered American burying beetle have been identified and we will work with other Service divisions to improve habitats for reintroduction of this species. We will continue work to open vistas, reduce fragmentation, convert fescue/brome, and enhance prairie through management and rotational grazing in these areas and work to restore wet prairie which is the rarest of prairie habitat in Missouri.

Challenges still exist in association with the U.S. Army Corps of Engineers flood protection/energy production reservoirs, but we continue to find opportunities to restore wetland habitat in smaller watersheds outside of flowage easement areas linked to lake management. There are even more serious invasive species problems in this region including *Sericea lespedeza*, bush honey suckle, spotted knapweed, teasel and Johnson grass, which we continue to work with partners to control and alleviate. Rivers have been channelized and highly modified in this region but smaller streams that support larger river systems can be improved to benefit downstream species of conservation concern.

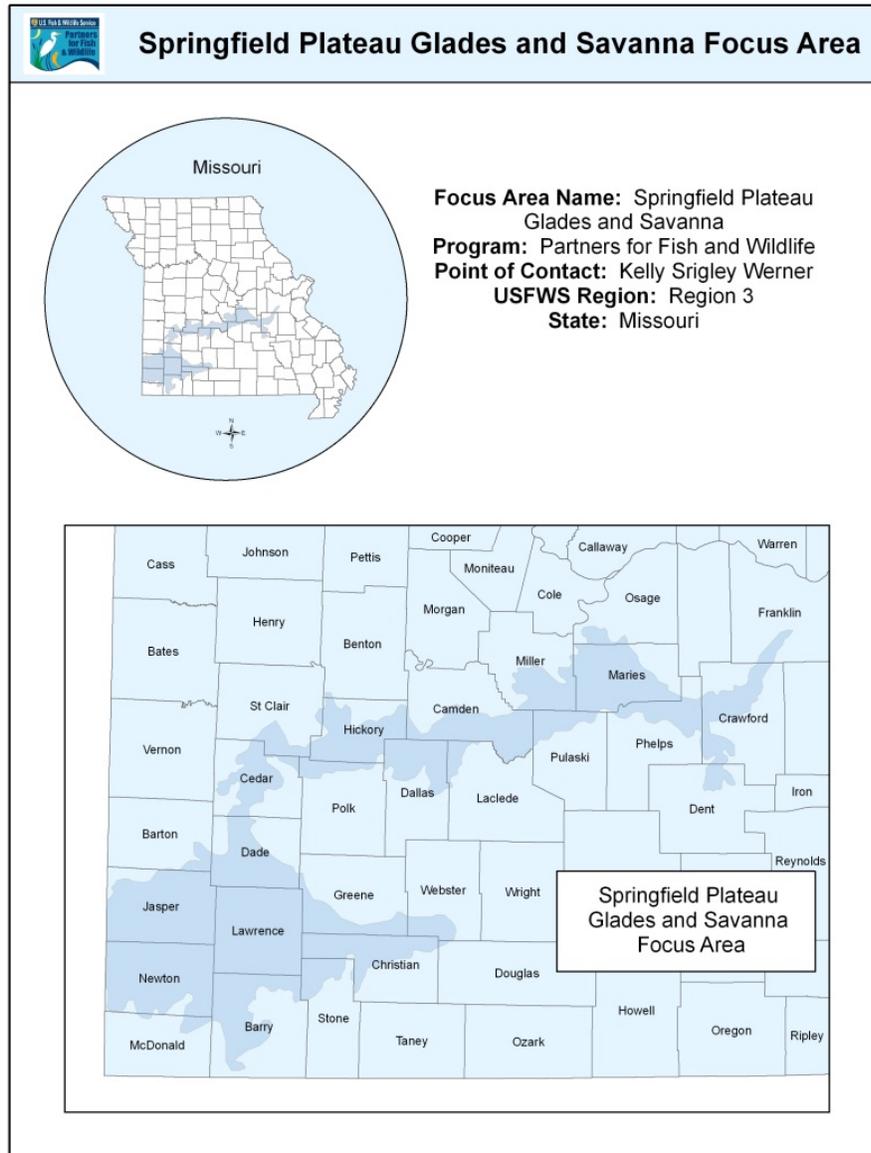
Osage Plains Prairie and Wetlands Focus Area Priority Species

Ghost Shiner	(<i>Notropis nocturnes</i>) State-listed imperiled
Black Sandshell	(<i>Ligumia recta</i>) State-listed imperiled
Bell's vireo	(<i>Vireo bellii</i>) Species in Decline
Greater Prairie Chicken	(<i>Typanuchus cupido</i>) State Endangered
Mead's Milkweed	(<i>Asclepias meadii</i>) Federally-listed threatened
Northern Bobwhite	(<i>Colinus virginianus</i>) Species in Decline
Red-headed Woodpecker	(<i>Melanerpes erythrocephalus</i>) Species of Concern
Least Bittern	(<i>Ixobrychus exilis</i>) Species in Decline
Sora	(<i>Porzana Carolina</i>) Species in Decline

Osage Plains Prairie and Wetlands Focus Area Five-Year Targets

Wetland Restoration/enhancement: 300 acres
 Upland Restoration/enhancement/protection: 2,250 acres
 River/Streams/Shoreline Riparian Corridor restoration/enhancement: 10 miles
 Stream Channel restoration/enhancement: 4 miles

Springfield Plateau Glades and Savanna Focus Area



The Ozark Highlands ecoregion in the southern part of the state, which encompasses the Springfield Plateau Glades and Savanna Focus Area, supports the most diverse assemblage of fish, wildlife and plants in the Service’s Midwest Region and is the most biologically diverse region in Missouri with irregular topography and expansive forests, glades, savanna, open woodland, high plains, high gradient cool water streams, and karst features supporting the most expansive cave system in the United States. The majority of the forests are mixed stands of oak but pine is also common in the most southern portions of the ecoregion and within the focus area. The extensive forested habitats are of great value to interior forest-dependent land birds and require managing young forests, maintaining and restoring pine and oak savannas, and improving interspersed grassland habitats for all species.

Due to its endemism and numerous spatial and temporal scales, climate changes could have a deleterious effect on this ecoregion resulting in extinction and/or significant reduction in species populations as temperatures and precipitation increase and more erratic weather patterns emerge. Corridor expansion will be difficult due to the surrounding landscape, beyond the ecoregion, largely being dominated by agriculture. While this area is largely intact with less than 25% being cleared for agricultural purposes, the area is affected by lead and other heavy metal contamination, fragmentation, loss of ecological processes, invasive species, and human encroachment. Challenges include reducing and eradicating invasive species including *Sericea lespedeza*, teasel, spotted knapweed, Himalayan blackberry, Johnson Grass and feral hogs, and reducing habitat fragmentation while working with a large demographic on land parcels between 30 and 100 acres in size. *A Special Note:* A large percentage of Missouri's federally-listed threatened and endangered species occur in the Ozark Highlands (>75%) as well as many of the state's species and natural communities of concern. Overall, 200 species are largely restricted to the Ozark Highlands, 160 of which occur nowhere else in the world. However, because species are so specialized and niche specific, identifying a focus area would be difficult. The Partners Program will remain committed to our trust resources beyond the boundaries of a focus area statewide, but in particular in the Ozark Highlands. Fens, caves, limestone glades, pine savanna, sand prairie, and springs are areas on private lands that biologists are committed to protecting, enhancing and restoring where practicable.

Four focal point areas have been identified in this ecoregion and within the focus area, two of which are a continuation of existing partnerships and two which are new areas of focus as a result of our ability to increase workforce capacity in this region of the state. Within the Springfield Plateau Glades and Savanna Focus Area, from west to east, the focal point areas are: Lower Sac River Oak Woodland Hills, Upper Niangua Oak Savanna and Buffalo Plain, Tavern Creek Oak Savanna and West Meramec River Oak Woodlands.

We have been working with landowners in the lower Sac and West Meramec Creek focal points within the Focus Area to improve stream habitat specifically for the Niangua darter and scaleshell mussel as well as other declining aquatic species and plan to include the Upper Niangua and Tavern Creek as we expand our efforts to improve habitats for federally-listed aquatic species. In addition, due to the extensive historic glade and savanna areas in these focal point areas, we also work in partnership with local landowners, watershed committees, and state and federal partners to restore these habitats for migratory songbirds and to restore bottomland woodlands for riparian dependent birds.

Conservation efforts on private lands in this area demand habitat restoration on a large scale. The human impact of settlement, including roads and livestock production, is more prevalent in this part of the Ozarks than further to the south where large expanses of land are in public ownership. For stream habitats, land use decisions in the upper parts of each watershed which support Niangua darter and freshwater mussels affect these species so we continue to educate and inform landowners to reach common ground towards common goals to improve water quality, reduce sedimentation and erosion, and enhance habitats for aquatic species dependent on Ozark streams. Because the Niangua darter occurs predominantly on private lands, the Service, in order to achieve recovery of this species, will need to continually

maintain an open dialogue with local landowners and communities to insure the continued survival of this charismatic darter and associated aquatic species occurring in these watersheds.

The far eastern focal point area is associated with the Meramec River, which is one of the most diverse aquatic systems for freshwater mussels. This region is dominated by forest interspersed with cattle and row crop agriculture in the upper watershed while becoming more urban with highly dissected landownership and contaminant issues associated with lead mining in the lower reaches. Efforts to focus on water quality improvement in the upper and middle reaches of the watershed in partnership with landowner committees, small towns, and local and state conservation partners has resulted in high quality stream restoration projects and because of the extensive network of small watersheds and high gradient streams, much work remains.

Challenges include the demographic makeup of the focal point areas requiring us to work with many more landowners who own between 10-25 acres of land in addition to agricultural producers. There are problems with invasive species and a distrust of government in the region but our efforts to balance the needs of working farms with improved habitats for aquatic species have shown a win-win relationship which has enabled more projects to move forward than ever before.

The Springfield Plateau consists of the Cherokee Plains which was historically 80% tallgrass prairie, however oak savanna and woodland occurred on the steeper areas and in the valleys, some wet prairie also occurred nearer to rivers and streams. A significant land use shift from warm season to cool season tall fescue has nearly eliminated high quality prairie habitats on private lands. Recent shifts in precipitation, making this region much drier than in recent years, has increased interest among landowners to diversify their working landscapes to include a warm season grass component to their ranching operations. To address this we have partnered with state agencies and organizations to promote the importance of native grasses to the region and are finding ways to communicate increased economic return from the investment. Recreational landowners are interested in glade restoration which is valuable habitat for deer and turkey but also the federally-listed threatened Missouri bladderpod and geocarpon and the declining Painted Bunting and Prairie Warbler. There are streams and cave systems that also support bats, the federally-listed threatened Ozark cavefish and numerous state species in decline. Where we have opportunities to continue partnerships to improve karst systems, we will work with our partners to accomplish this.

Springfield Plateau Glades and Savanna Focus Area Priority Species

Niangua darter	(<i>Etheostoma nianguae</i>) Federally-listed threatened
Spectaclecase mussel	(<i>Cumberlandia monodonta</i>) Federally-listed endangered
Neosho madtom	(<i>Noturus placidus</i>) Federally-listed threatened
Whip-poor-Will	(<i>Caprimulgus vociferous</i>) Species of Concern
Prairie warbler	(<i>Dendroica discolor</i>) Species of Concern
Painted Bunting	(<i>Passerina ciris</i>) Species of Concern
Grasshopper Sparrow	(<i>Ammodramus savannarum</i>) Species of Concern

Greater Prairie Chicken (*Tympanuchus cupido*) State Endangered

Springfield Plateau Glades and Savanna Focus Area Five-Year Targets

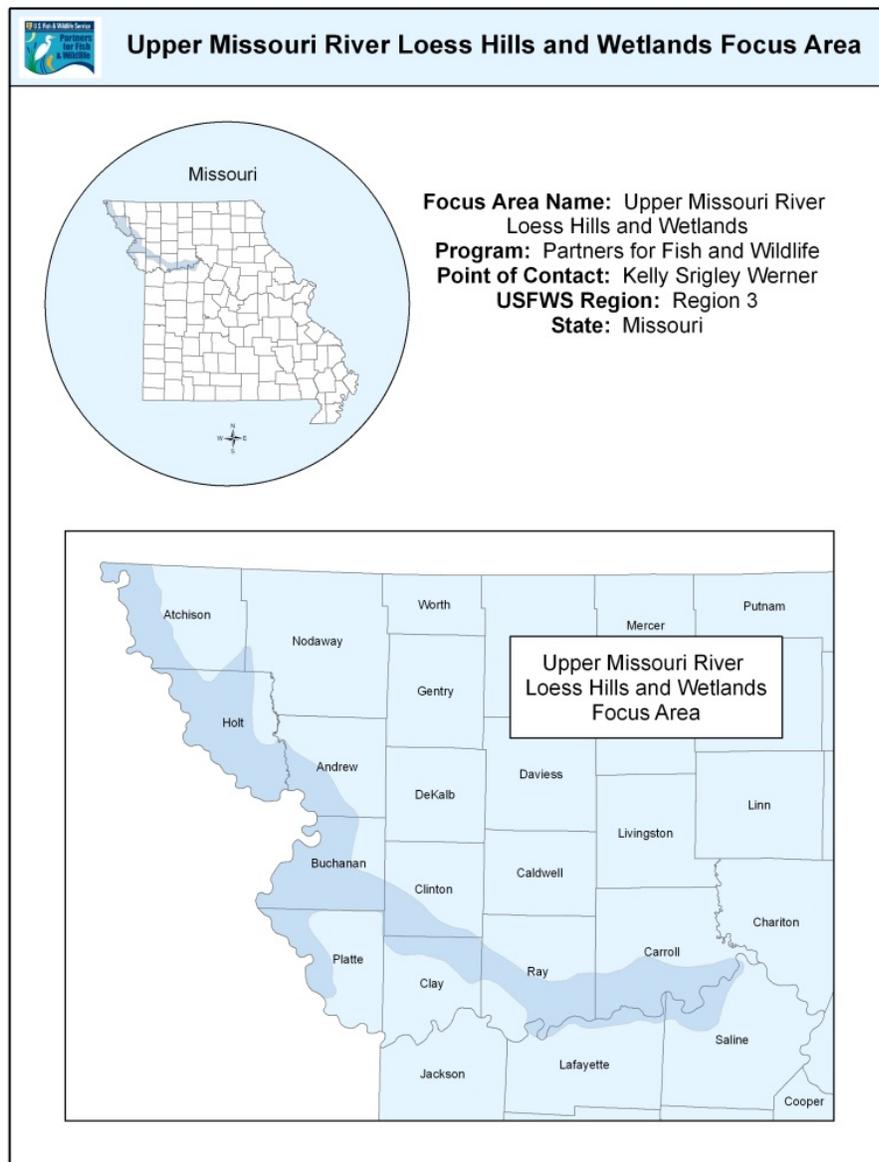
Wetland Restoration/enhancement: 50 acres

Upland Restoration/enhancement/protection: 260 acres

River/Streams/Shoreline Riparian Corridor Restoration/enhancement: 30 mile

Stream Channel Restoration/enhancement: 15 miles

Upper Missouri River Loess Hills and Wetlands Focus Area



This focus area was historically 75% tallgrass prairie and wet prairie but the majority of the landscape is currently in row crops especially in the floodplain of the large river systems associated with this focus area. The loess hills extend from Squaw Creek National Wildlife Refuge north through Iowa. Due to the extensive large floodplain habitats associated with the Missouri River, wetlands are the primary habitat priority for this focus area and include bottomland hardwoods, wet prairie and emergent marsh habitat specifically for migratory dependent species. Missouri is a mid-latitude geography important to the seasonal migratory patterns for waterfowl and other wetland dependent species for foraging, cover, and rest. Portions of this focus area are also becoming important for nesting Trumpeter Swans and also serve wood ducks during the breeding season. The primary concentration of effort will be on areas along the Missouri River and its associated tributaries and trust lands including Squaw Creek and the Big Muddy National Fish and Wildlife Refuge. Partners Program biologists continue to work with other conservation cooperators to promote wetland restoration in intensive agricultural settings for the purposes of improving water quality and wetland hydrology for migrating species. The Missouri Agricultural Wetland Initiative will provide an informational resource to landowners regarding all wetland restoration programs offered in Missouri as a method of “one-stop-shopping”. The MAWI effort stresses the importance of providing buffers to streams to reduce nutrient loading, and ways wetlands can serve as an alternate source of income through recreational hunting leases. We will continue to promote wet prairie habitat restoration near and around Squaw Creek and Big Muddy refuges to benefit secretive marsh birds and other wet prairie and emergent marsh species of concern, and to reduce habitat fragmentation where feasible in agriculturally dominated landscapes.

The loess hills area continue to be an important focal point in this focus area due to cross-state collaboration with Iowa to improve and restore this rare prairie habitat that harbors many of the state’s rarest plant species akin to western mid and short grass prairie systems. In association with the loess hills are bur oak dry savannas. Challenges with loess hill restoration include restoration on highly erodible steep slopes (up to 250 foot relief), reducing invasive species such as elm, hackberry and gray dogwood, and reintroduction of fire.

With the Upper Missouri River Loess Hills and Wetlands Focus Area, through the Partners Program, we are proposing to work in two new habitat focal points that are ecological “hot spots” for species diversity. These new habitat focal points also support numerous migratory songbirds, shorebirds, waterfowl, colonial water birds and secretive marsh birds during migration, and provide wintering habitat. These habitat focal points aid in augmenting habitats associated with parcels of Big Muddy NFWR and are Important Bird Areas (IBA) in Missouri. The IBA Program is a worldwide bird conservation program designed to identify, monitor, and protect those areas most important to birds and there are numerous partners wanting to work with landowners to improve native habitats.

One of the habitat focal points is located just north of Kansas City, along the Iatan/Weston Missouri River corridor, and is important to neotropical migrants and water dependent species where there are opportunities to restore and enhance wet prairies, marshes and riparian forests in the lowlands which are interspersed in agricultural lands. The other habitat

focal point is located to the east of Kansas City, in the Wakenda Bottoms area, and is a portion of the Missouri River floodplain that is exceptionally wide and tucked in among rugged hills bordering the Missouri River valley. This area specifically encompasses tracts of the Big Muddy NFWR. Opportunities to restore additional wet prairie, emergent wetlands and moist soil habitats exist in this area, however, landowner knowledge of the natural communities in the area is poor. We intend to use the model developed with recent partnerships to improve habitats through landowner workshops, incorporating and utilizing all partners interested in the focus areas through a consolidated message, and develop habitat restoration goals that target priority species.

Upper Missouri River Loess Hills and Wetlands Focus Area Priority Species

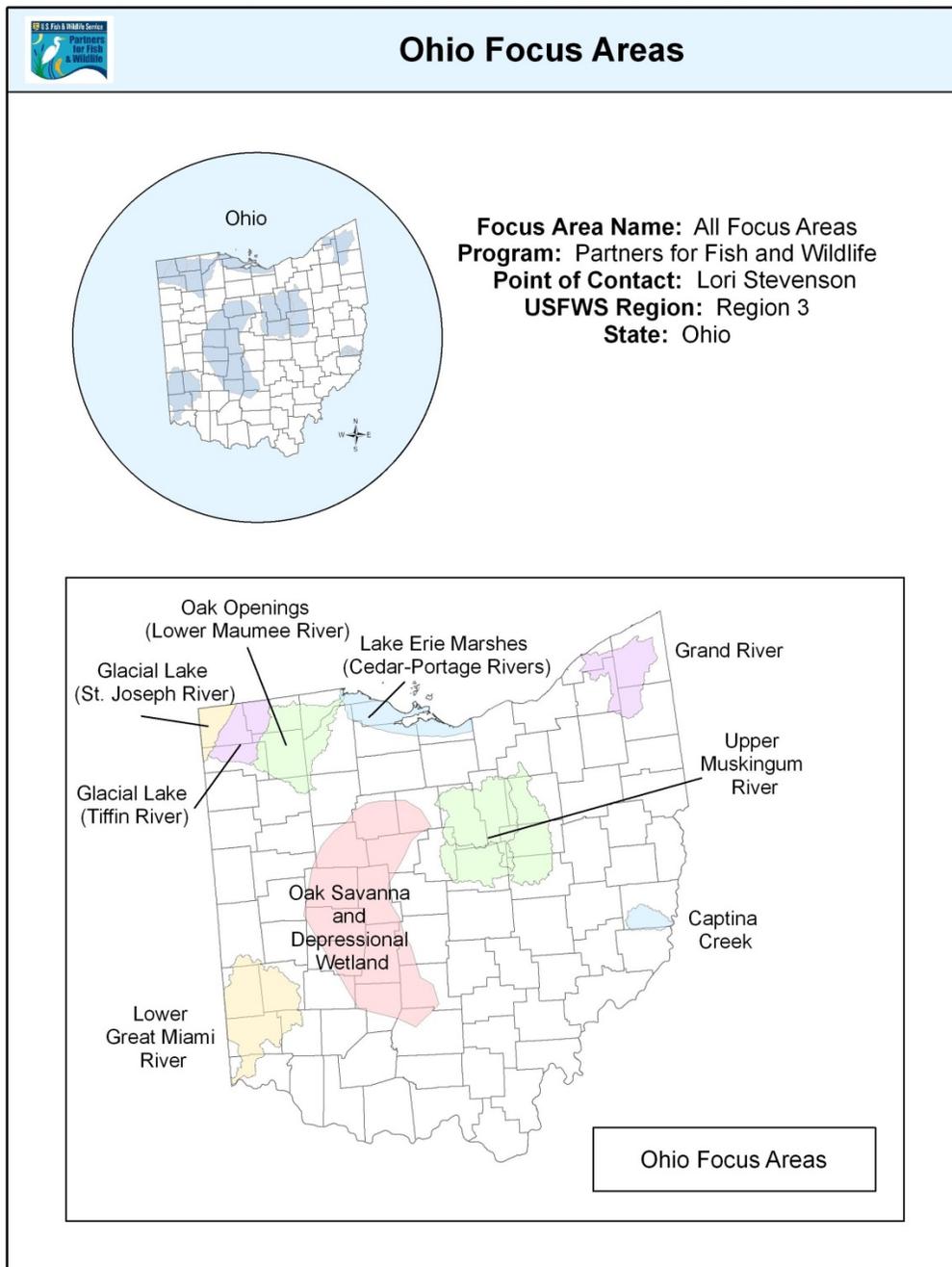
Cerulean Warbler	<i>(Dendroica cerulean)</i> Species of Concern
Indiana bat	<i>(Myotis sodalis)</i> Federally-listed endangered
Western Prairie Fringed Orchid	<i>(Platanthera praeclara)</i> Federally-listed threatened
Loggerhead shrike	<i>(Lanius ludovicianus)</i> Species of Concern
Henslow's Sparrow	<i>(Ammodramus henslowii)</i> Species of Concern
Black-crowned Night Heron	<i>(Nycticorax nycticorax)</i> Species of Concern
Virginia Rail	<i>(Rallus linicola)</i> Species of Concern

Upper Missouri River Loess Hills and Wetlands Focus Area Five-Year Targets

Wetland Restoration/enhancement: 350 acres

Upland Restoration/enhancement/protection: 150 acres

Ohio



Introduction and Overview

For the Ohio (OH) Partners Program Strategic Plan, information relating species and habitat occurrences, priority areas for conservation, and presence of potential local partnerships were obtained from the OH Department of Natural Resources (ODNR), Pheasants Forever (PF), Quail Forever (QF), The Nature Conservancy (TNC), Ducks Unlimited (DU), National Wild Turkey Federation (NWTF), statewide and local land trusts, and numerous other

conservation organizations. ODNR's Comprehensive State Wildlife Action Plan, in particular, was used to help guide the planning process. Additionally, OH Partners Program field biologists regularly participate in a wide range of local working and planning groups. Information from these more localized sources was integrated into the national, regional, and statewide data. Ohio is home to 25 plant and animal species listed as threatened, endangered or candidate species under the Endangered Species Act (ESA). The ODNR lists 174 species as State Endangered or Threatened, and 103 species as Species of Concern. A majority of Ohio lies within the Upper Mississippi River Great Lakes Joint Venture (UMRGLJV) region. A portion of southeastern Ohio lies within the Appalachian Mountains Joint Venture region, where it borders the UMRGLJV region. The state provides important nesting and stopover habitat for many migratory wetland, shorebird, grassland, and forest bird species. Although a portion of Ohio is in state or Federal ownership (4.2%; 396,749 acres), nearly 95.8% or 26,053,171 acres are in private or local government ownership. It is the intersection between private land ownership and habitat needs for declining species, which provides the primary filter and foundation for Partners Program restoration efforts.

Identifying Focus Areas:

The Ohio Partners Program works with a variety of conservation partners throughout the state to improve wildlife habitat. Many of these federal, state, and non-governmental organizations have strategic plans (i.e. Partners in flight, North America Waterfowl Management Plan, Ohio's Comprehensive Wildlife Conservation Strategy, etc.) in place to focus their efforts on established public properties, specific watersheds, or designated focal areas. For example, the UMRGLJV has set a goal for wetland restoration in Ohio over the next 15 years at 3,706 ha of seasonal and semi-permanent marsh for Bird Conservation Regions (BCR) 13, 22, and 28. The Partners Program in Ohio has estimated wetland restoration at 1,075 acres (430 ha) over the next five years. Extrapolating Partners Program wetland restoration goals out to 15 years (3,225 acres), the Partners Program would restore 35% of the total wetlands needed in Ohio to improve conditions for a sustainable population of breeding waterfowl.

Partners Program biologists, with input from local stakeholders, identify conservation opportunities and targets for their respective geographic regions. Due to the voluntary nature of the Partners Program, not only biological drivers play an important part in determining a program's success on the landscape, but demographic, social, and economic attributes also influence where the Partners Program may or may not be successful. In addition to the primary focus areas which are geographically connected at the watershed or other geologic scale, the OH Partners Program will prioritize educational projects (i.e. in partnership with schools or other educational institutions) and fish passage/barrier removal as they become available. Reconnecting youth to the outdoors through hands-on instructional based learning is priority for the Service and the OH Partners Program.

The OH Partners Program is committed to working with others to improve wildlife habitat in Ohio. This Strategic Planning document is fluid and dynamic. It is our goal to have stakeholders evaluate, critique, and comment whenever possible on our goals and objectives. As new opportunities arise, funding levels change, species improve or decline, or land-use

changes, the OH Partners Program will adapt and redirect to be an effective results-oriented habitat restoration program in Ohio.

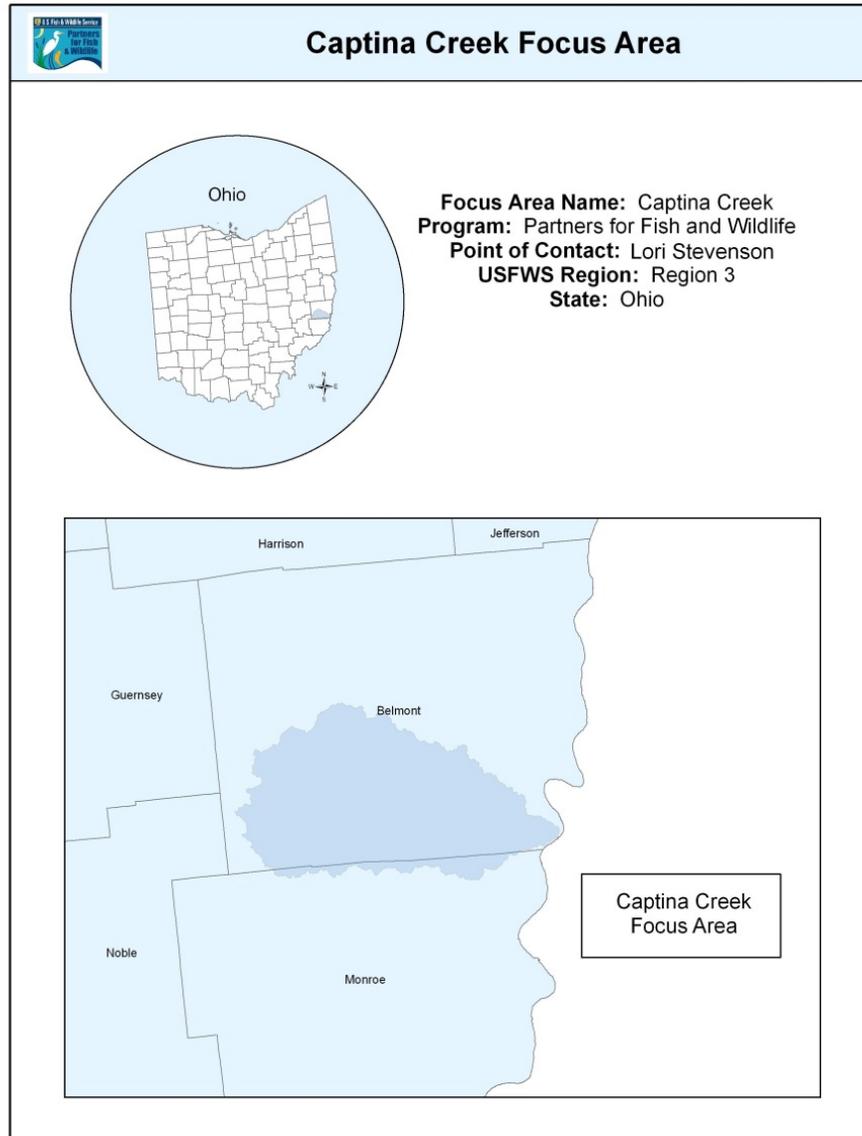
Focus Areas:

Following are the Focus Areas identified by the Ohio Partners Program. The Focus Area Descriptions identify OH Partners Program priority areas or “Hot Spots” and describe how habitat objectives will work towards meeting goals of the regional and national conservation initiatives. Strategic delivery of the Partners Program in Ohio is paramount within these identified focus areas. However, the Partners Program is voluntary and must remain dynamic and opportunistic at times. Quality projects occurring outside of these identified focus areas will still be considered for assistance, individually and at the field level, as long as the result of the project is a direct benefit to a Federal Trust Resource.

Supporting Plans for Ohio Focus Areas

- Upper Mississippi River Great Lakes Joint Venture (UMRGLJV) Implementation Plan.
- Ohio Wildlife Action Plan.
- North American Bird Conservation Initiative (NABCI).
- North American Waterfowl Management Plan (NAWMP).
- Region 3 Conservation Priority Species List, 2002.
- Ohio River Fish Habitat Partnership Conservation Strategy.
- North American Quail Initiative.
- Partners in Flight Bird Conservation Plan for the Prairie Peninsula.
- Ducks Unlimited Focus Area.
- Ohio Important Bird Areas. Audubon Ohio.
- Karner Blue Butterfly Recovery Plan.
- USFWS, Thirteen Goals in Protecting Ohio Birds.
- Bi-National Conservation Blueprint for the Great Lakes, 2005. TNC.
- The Sedge Flora of Ohio Fens, ODNR.
- Captina Creek Watershed Action Plan

Captina Creek Focus Area



The Captina Creek watershed covers 227 square miles of surface area in Belmont and Monroe Counties in southeastern Ohio and is a direct tributary to the Ohio River. Captina Creek was recently graded exceptional for both the mainstem and several tributaries by the Ohio Environmental Protection Agency (OEPA). The OEPA has also classified Captina Creek as an Outstanding State Water from RM 25.42 to RM 0.7 and the US EPA has designated the creek an Aquatic Resource of National Importance based on its biodiversity and water quality values.

Nearly the entire length of Captina Creek is classified by the OEPA to be exceptional warm water habitat. Several of the headwater tributaries feeding into the creek have attained cold water habitat status based on diversities of sampled salamanders and macro-invertebrates. The main stem of Captina Creek scored the highest Index of Biotic Integrity (IBI) average in

the state (55.1 out of a possible 60 points) with a diversity of 56 fish species sampled, many of which are pollution intolerant. Moreover, Invertebrate Community Index (ICI) score averages place Captina Creek in the top ten among watersheds in the state (OEPA, 2010). Adding to its unique diversity, Captina Creek is home to the largest population of the federally listed candidate species of Eastern hellbender salamander in the state of Ohio, and the only reproductive population. Sightings of the state endangered bobcat have also increased in the forested habitat of the watershed over the last 10 years.

Within the watershed there are two current land conservation areas, Dysart Woods and Raven Rocks. Dysart Woods is an old growth forest preserve of approximately 55 acres owned and operated by Ohio University. Raven Rocks Inc. is a private organization that owns and preserves land for conservation practices. The group has acquired approximately 1200 acres of land within the watershed.

Although Captina Creek scores high on OEPA and US EPA water quality and habitat assessments, significant threats to the biological integrity of the watershed exist with land use being one of the primary concerns. Concerns exist with livestock having unregulated access to portions of the creek, trampling stream banks and increasing nutrient loading.

The Partners Program will focus on riparian corridor protection and restoration, restoration of forest cover and establishment of rotational grazing paddocks for livestock producers. The Partners Program will work in tandem with our partners in the ODNR Division of Wildlife, Belmont County Soil and Water Conservation District, the NRCS, the Captina Creek Conservancy and other partners to achieve our restoration and protection goals.

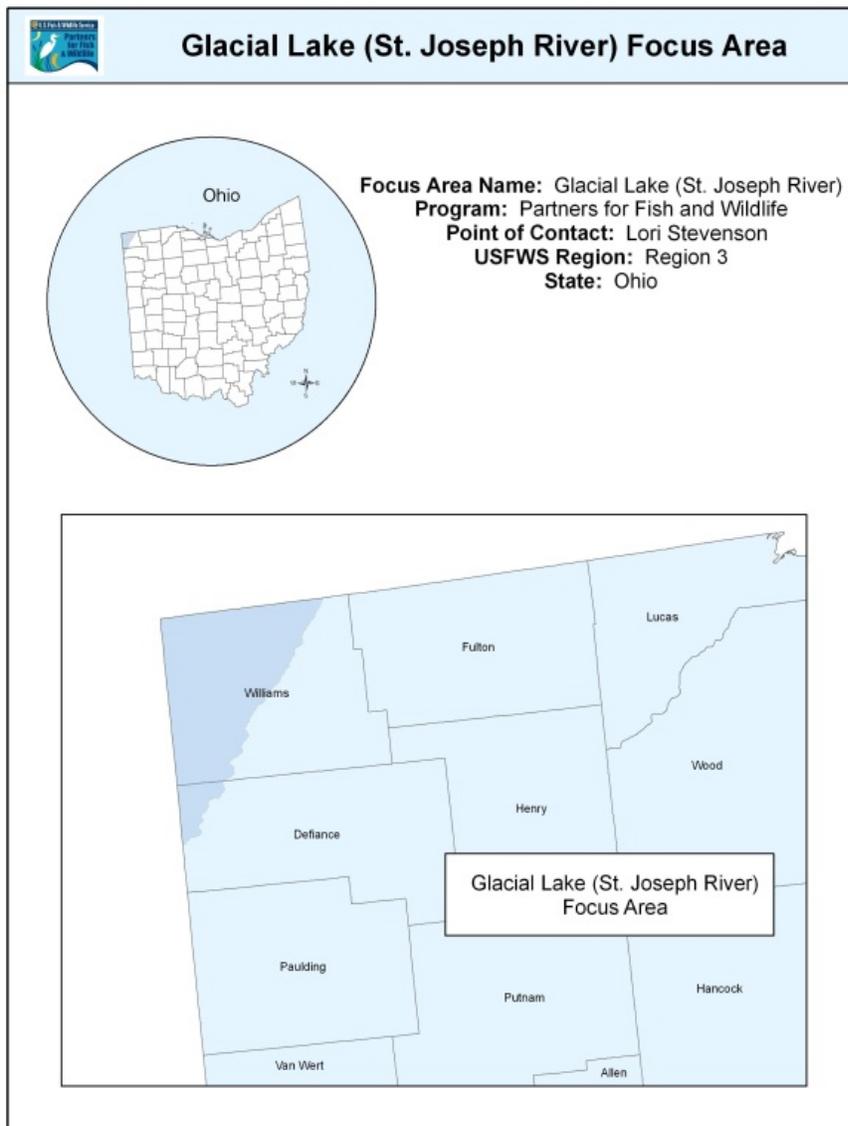
Captina Creek Focus Area Priority Species

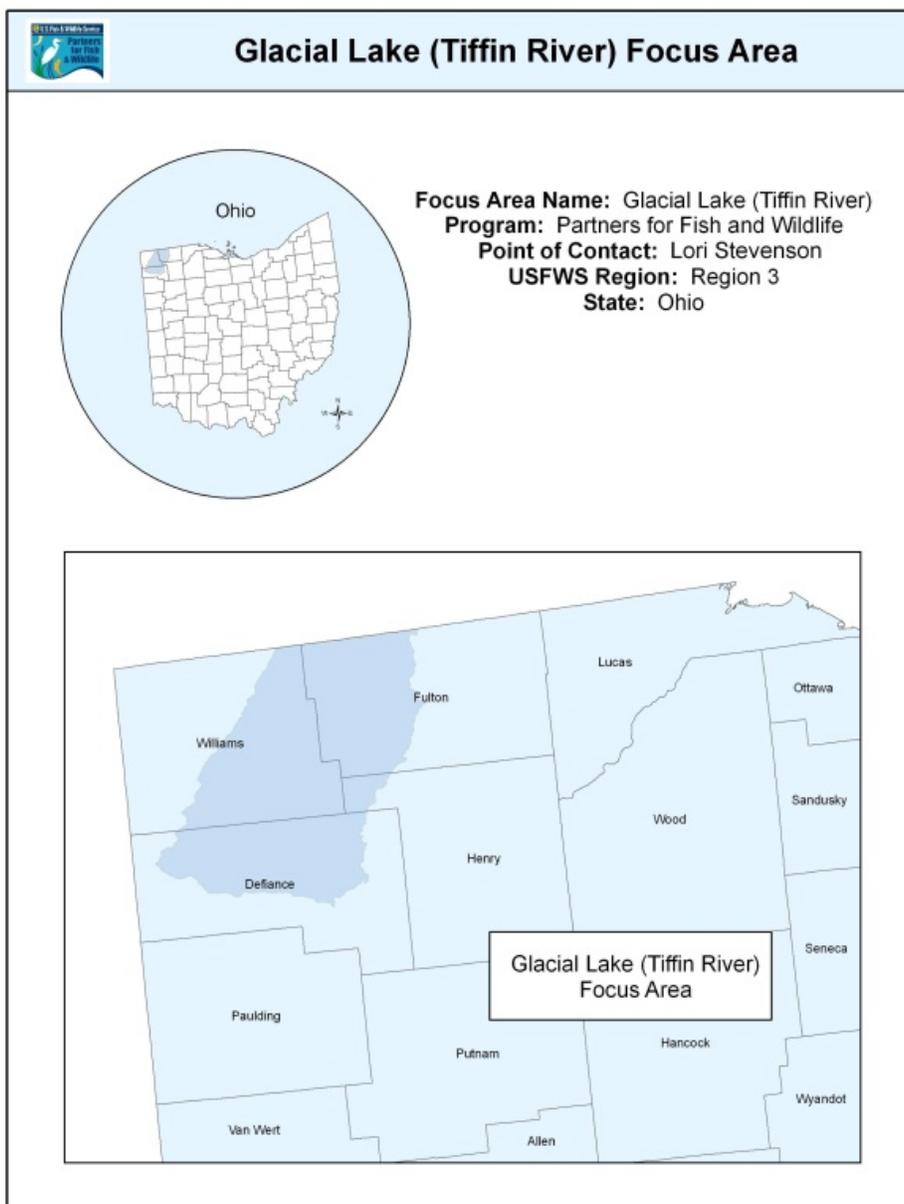
Indiana Bat	(<i>Myotis sodalist</i>) Endangered
Eastern Hellbender	(<i>Cryptobranchus alleganiensis</i>) Candidate
Bobcat	(<i>Felis rufus</i>) State Endangered

Captina Creek Focus Area Five-Year Targets

Wetland Restoration/enhancement: 25 acres
 Upland Restoration/enhancement/protection: 100 acres
 River/Streams/Shoreline Riparian Corridor restoration/enhancement: 20 miles

Glacial Lake (St. Joseph River) and Glacial Lake (Tiffin River) Focus Areas





The watersheds of the Tiffin and St. Joseph Rivers encompass all of Williams County and portions of Defiance and Fulton Counties in northeastern Ohio. This area has a large concentration of acreage that is enrolled in U.S. Department of Agriculture (USDA) Farm Bill Programs, which further benefits projects completed by the Partners Program. Williams County has the largest enrollment in the Conservation Reserve Program (approximately 20,000 acres) in the state of Ohio. Williams County has a high percentage of hydric soils which were historically wetland and marshland habitats and are areas that can more easily be restored to wetland habitat. In addition to the large number of acres enrolled in conservation programs, the Federally threatened Copperbelly water snake has been documented in the watersheds of the Tiffin and St. Joseph Rivers and is not known to occur anywhere else

within the state of Ohio. The endangered White cat's paw pearlymussel is also found within these watersheds. The watersheds are included within the UMRGLJV. The topography, soils, high USDA Farm Bill enrollment, occurrence of listed species, and willingness by private landowners to complete restoration projects make this a very logical focus area.

This geographic area has been targeted by other federal and local conservation agencies such as The Nature Conservancy (TNC), USDA's Natural Resources Conservation Service (NRCS) and Farm Services Agency (FSA), and Ducks Unlimited (DU). A core focus area for Copperbelly water snake has been developed by the Service's Partners Program biologist, TNC, and NRCS. This core area is believed to have existing populations of the Copperbelly water snake. Projects will be targeted around that core focus area to link fragmented suitable habitat and to create additional suitable habitat for expansion of the current range and increases to the population. Restoring quality wetlands and educating landowners will be the main tool for achieving this goal.

Wetland restorations will also be targeted within this focus area to improve water quality and benefit the endangered White cat's paw pearlymussel. The watersheds contain a high percentage of hydric soils which make wetland restoration possible. Wetland restorations will be completed in locations that provide the most filtering capabilities. In addition to strategically completing wetland restorations, Partners Program biologists will assist NRCS, FSA and other conservation partners to implement conservation programs and practices that are already in place within the watersheds.

Glacial Lake (St. Joseph River) Focus Area and Glacial Lake (Tiffin River) Focus Area Priority Species

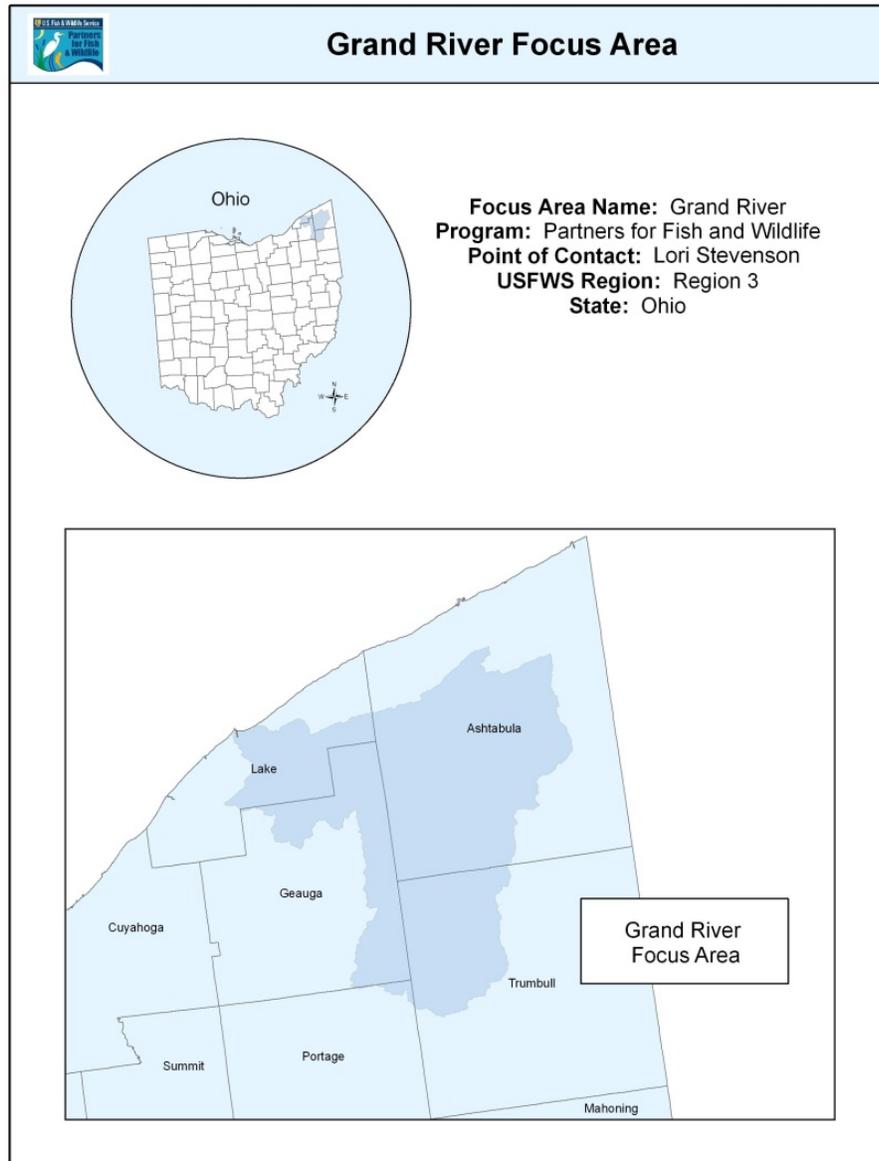
White cat's paw pearlymussel	(<i>Epiblasma obliquata perobliqua</i>) Federally Endangered
Indiana Bat	(<i>Myotis sodalist</i>) Federally Endangered
Wood Duck	(<i>Aix sponsa</i>)
Henslow's Sparrow	(<i>Ammodramus henslowii</i>)
Mallard	(<i>Anas platyrhynchos</i>)
Hooded Merganser	(<i>Lophodytes cucullatus</i>)
American Black Duck	(<i>Anas rubripes</i>)

Glacial Lake (St. Joseph) Focus Area and Glacial Lake (Tiffin River) Focus Area Five-Year Targets

Wetland Restoration/enhancement: 200 acres

Upland Restoration/enhancement/protection: 200 acres

Grand River Focus Area



This focus area lies within the Lake Erie snow-belt region and is characterized by large expanses of level land with silty hydric soils. Large hardwood swamps still remain, but many acres have been drained. Relatively small restoration projects can restore substantial wetland habitats. Farming dominates less of the landscape than it did 50 years ago and many acres are reforesting naturally.

The Grand River focus area has long been recognized as an important natural landscape. The Ohio DOW manages large acreages of wetlands at the Grand River Wildlife Area and Pymatuning Creek Wildlife Areas. Important and strong relationships exist between the ODOW, Service and the Western Reserve Lands Conservancy (WRLC). These partnerships provide the foundation for exceptional restorations and success. WRLC alone holds conservation easements or fee title on 12,000 acres. The Partners Program staff in Ohio is

working with our partners in the Grand River Focus Area to implement SHC and strategically target areas that will benefit the Eastern Massasauga Rattlesnake.

Grand River Focus Area Priority Species

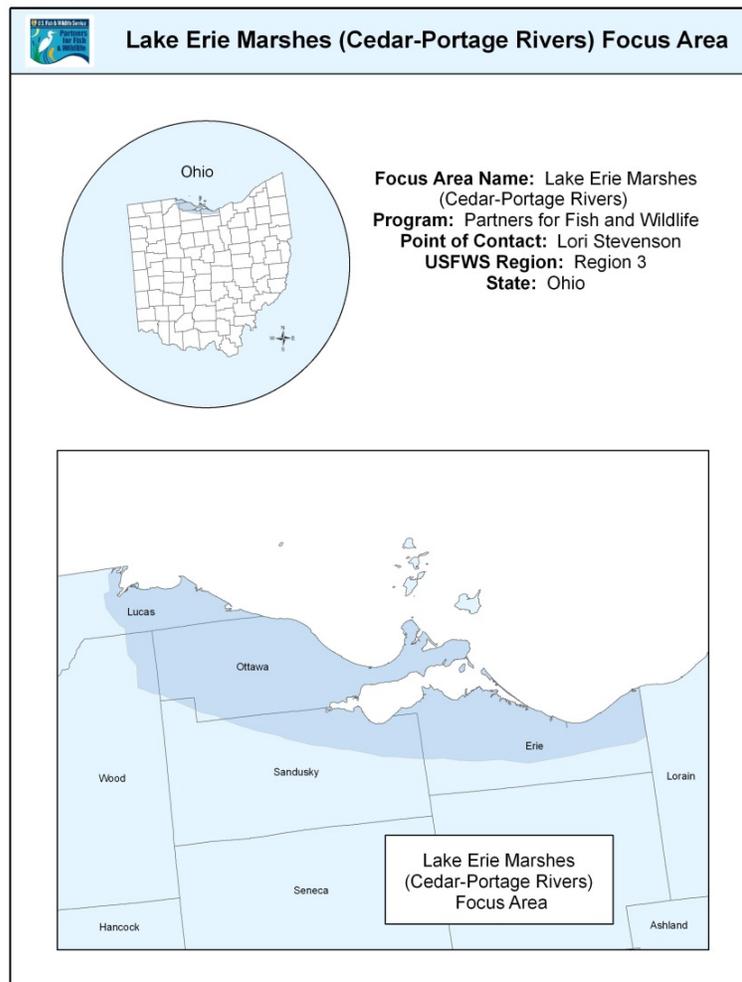
Indiana Bat	(<i>Myotis sodalist</i>)	Endangered
Eastern Massasauga Rattlesnake	(<i>Sistrurus catenatus</i>)	Candidate
Mallard	(<i>Anas platyrhynchos</i>)	
Cerulean Warbler	(<i>Dendroica cerulean</i>)	
Wood Duck	(<i>Aix sponsa</i>)	
American Black Duck	(<i>Anas rubripes</i>)	

Grand River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 200 acres

Upland Restoration/enhancement/protection: 200 acres

Lake Erie Marshes (Cedar-Portage Rivers) Focus Area



The Ottawa National Wildlife Refuge (Refuge) is located within this focus area in Ottawa and Lucas counties. The Refuge, along with Magee Marsh/Crane Creek Wildlife Areas, managed by the Ohio Department of Natural Resources (ODNR), has been identified by several sources as areas which are important to migratory birds. The watershed for this focus area is located along a major bird migration route and is a major resting/refueling stop for many bird species before they pass around or over Lake Erie in the spring. Lake Erie is the largest barrier, after the Gulf of Mexico, for many migrant songbirds. The Refuge is positioned at the mouth of Crane Creek leading into Lake Erie. More than 45,000 waterfowl pass through the Refuge during spring and fall migrations. More than 275 species of birds are recorded on the Refuge annually. Nearly half of those species breed in the area. The Refuge is listed as both a North American Important Bird Area and an Ohio Important Bird Area. The Ottawa Refuge Complex is located within the two joint venture areas identified in the North American Waterfowl Management Plan (NAWMP). The two joint venture areas are the Upper Mississippi River and Great Lakes Joint Venture as well as the Lake Erie Marshes Focus Area of this Joint Venture. The NAWMP provides a conduit for enhanced State, Federal and private wetland conservation efforts from partners like the ODNR Division of Wildlife, DU, local Soil and Water Conservation Districts, FSA, and the NRCS.

The area was also included as a critical element in the U.S. Shorebird Conservation Plan. Nearly 20,000 shorebirds use the area on an annual basis. Numerous federal/state threatened and endangered species are dependent upon or use the area during migration. Some of those species are the Bald Eagle, Kirtland’s warbler, Indiana Bat, American and Least Bittern, king rail, northern harrier, hermit thrush, and common tern. The area surrounding the Refuge is predominately intensive row crop agriculture. Because of the



Mechanical treatment of invasive Phragmites
Photo, USFWS

proximity to Lake Erie, development pressures have also had a detrimental impact on habitat resources. The Service has made concerted effort to acquire additional acreage within close proximity to the Refuge, but progress is slow. Efforts will be made by the Service’s Partners Program to focus on wetland restoration, invasive species removal, and native grassland restoration projects within the Cedar-Portage Watershed, specifically, adjacent to lands owned by the Service.

Lake Erie Marshes (Cedar-Portage Rivers) Focus Area Priority Species

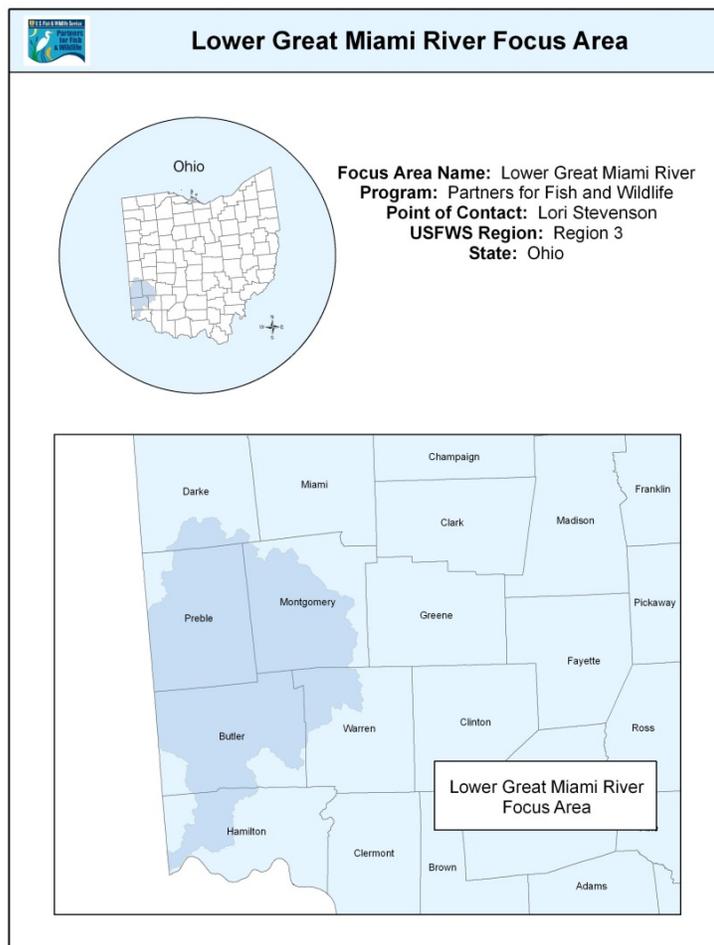
Indiana Bat	(<i>Myotis sodalist</i>) Endangered
Wood Duck	(<i>Aix sponsa</i>)
Henslow’s Sparrow	(<i>Ammodramus henslowii</i>)
Mallard	(<i>Anas platyrhynchos</i>)
Hooded Merganser	(<i>Lophodytes cucullatus</i>)
American Black Duck	(<i>Anas rubripes</i>)

Lake Erie Marshes (Cedar-Portage Rivers) Focus Area Five-Year Targets

Wetland Restoration/enhancement: 200 acres

Upland Restoration/enhancement/protection: 100 acres

Lower Great Miami River Focus Area



The Great Miami River Watershed has received much attention in recent decades due to its ecological significance to Ohio, development pressure, and restoration and/or conservation needs. According to the ODNR it is one of the highest priority focus watersheds in the state based on its ecological and restoration importance. The portion of the watershed chosen as a focus area includes an Audubon Important Bird Area as well as the area covered by an active land trust, which facilitates partnership opportunities and restoration projects.

The Three Valley Land Trust is an extremely active organization, having put easements on thousands of acres in their area. Many of these easements contain high quality woods or are adjoined by high quality streams. A recent effort has been made to protect in its entirety a four mile section of Four Mile Creek, which runs between Oxford and Lake Atkins. This stretch is designated as Exceptional Warm Water Habitat. Easements that the Three Valley Land Trust holds allow agriculture, so it is possible that the Partners Program could have several projects if landowners discontinue agriculture on their land. As the block of habitat increases in size more rare song birds that only tolerate large blocks will begin to benefit from Partners Program projects.

The southern part of this focus area is an Important Bird Area (IBA) as designated by the Audubon Society. It also contains a high concentration of Running Buffalo Clover, a Federally endangered plant. Further north, two Important Bird Areas are the Heuston Woods IBA and the Germantown IBA. The ODNR also named the Great Miami River Watershed as one of the highest priority watersheds in the state based on its ecological and restoration importance.

Lower Great Miami River Focus Area Priority Species

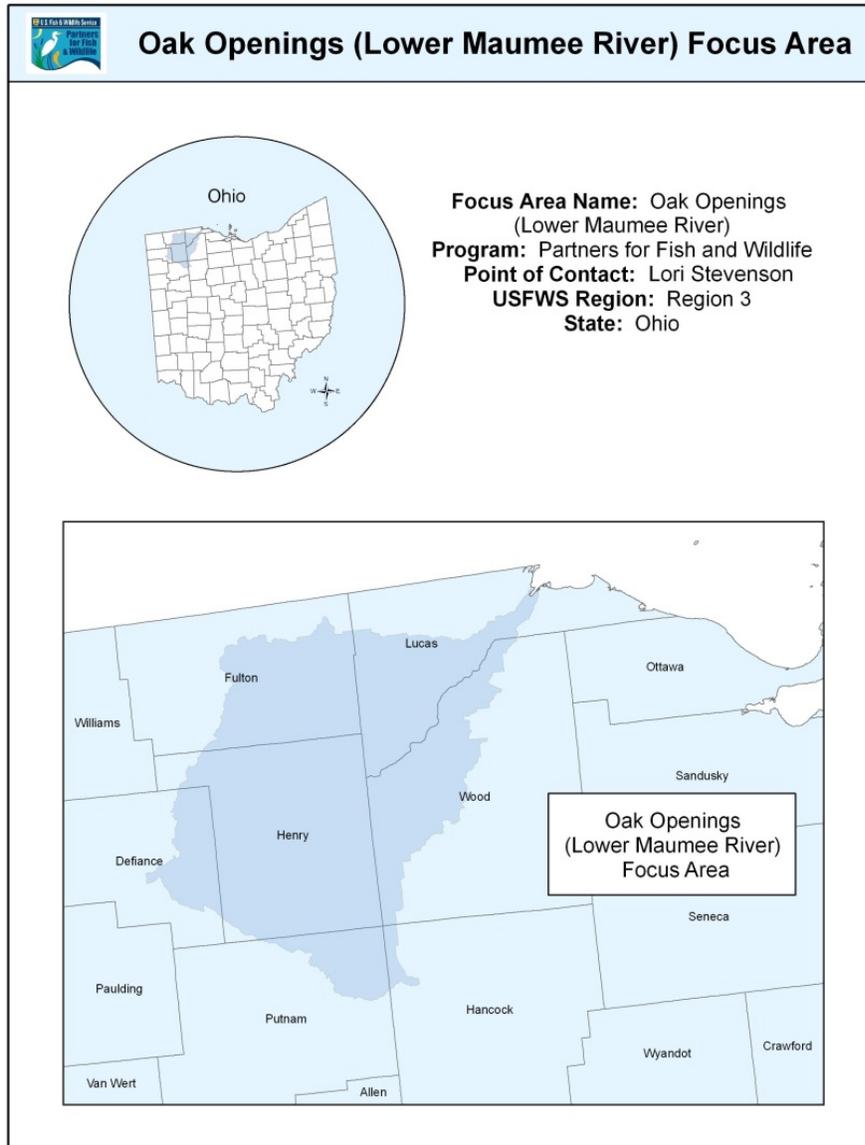
Indiana Bat	(<i>Myotis sodalists</i>) Endangered
Eastern Massasauga Rattlesnake	(<i>Sistrurus catenatus</i>) Candidate
Clubshell	(<i>Pleurobema clava</i>) Endangered
Mallard	(<i>Anas platyrhynchos</i>)
American Black Duck	(<i>Anas rubripes</i>)
Yellow Rail	(<i>Coturnicops noveboracensis</i>)
Henslow's Sparrow	(<i>Ammodramus henslowii</i>)
Running Buffalo Clover	(<i>Trifolium stoloniferum</i>) Endangered

Lower Great Miami River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 200 acres

Upland Restoration/enhancement/protection: 500 acres

Oak Openings (Lower Maumee River) Focus Area



The Oak Openings Region of Northwest Ohio is a globally rare ecosystem, declared by The Nature Conservancy as “One of America’s Last Great Places”. It is also one of the few intact oak savanna habitats left in Ohio. The Oak Openings Region is in the Western portion of Lucas County, stretching to portions of Fulton and Henry counties to the South. At its northern reaches, it extends almost to the Ohio-Michigan line. This geographic area is comprised of a band of sandy soil that is approximately 22 miles long and varies from 3 to 5 miles wide. The Oak Openings Region was formed during the last ice age, when the glacier that covered this part of the state began to melt. This melting created a lake that has since been named Lake Warren. Over time the lake waters receded, and the old beaches and sand dunes were all that remained. The sandy soil left by the lake helped to create this globally unique ecosystem. Sand depths vary from a few inches to 20 feet in spots. Beneath the sand

is an impermeable layer of blue clay. In some areas there is standing water much of the year and in other areas it is almost desert-like. Water quickly filters through the sand dunes down to the clay layer. In some locations the sand is thin. This allows water to stand and create swampy areas for much of the year until warm summer and fall days evaporate the water. Common transitions from high, dry sandy areas to swampy areas can often be encountered within feet of each other.

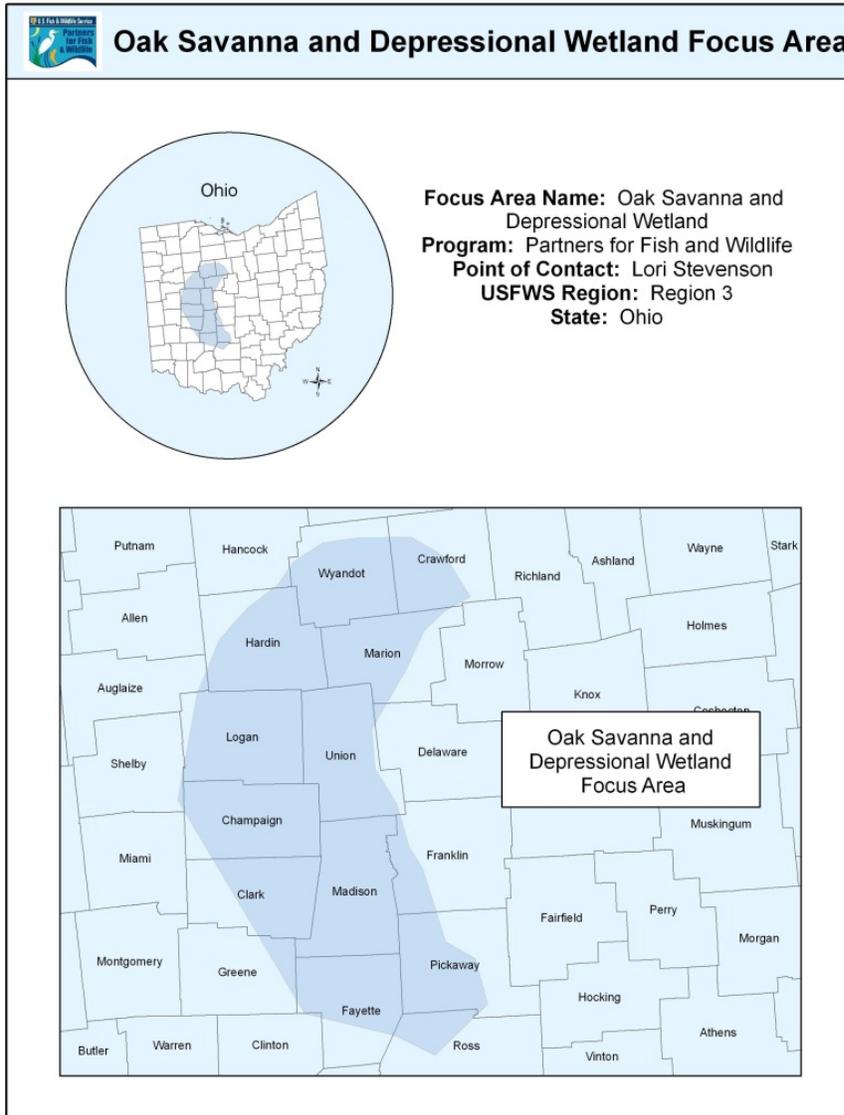
Oak Openings (Lower Maumee River) Focus Area Priority Species

Karner blue butterfly	(<i>Lycaeides Melissa</i>) Federally Endangered
Indiana Bat	(<i>Myotis sodalist</i>) Federally Endangered

Oak Openings (Lower Maumee River) Focus Area Five-Year Targets

Upland Restoration/enhancement/protection: 100 acres

Oak Savanna and Depressional Wetland Focus Area



The Oak Savanna Depressional Wetland focus area encompasses parts or all of the following Ohio counties: Wyandot, Crawford, Hardin, Marion, Logan, Union, Champaign, Clark, Madison, Fayette, Greene and Pickaway counties. Within this relatively large focus area the Partners Program will strategically target oak/hickory savanna habitats and depressional wetland habitats. This focus area is the eastern extent of the Midwest Oak Savanna ecosystem. Three plains areas occur within this area; the Sandusky Plains, the Darby Plains, and the Pickaway Plains. The plains savannas are unique in that they are dominated by Bur Oak (*Quercus macrocarpa*) with a wet prairie/sedge meadow herbaceous layer. A good example of this habitat can be found at the ODNR's Daughmer Savanna in the Sandusky Plains area as well as remnant savannas managed by Darby Metro Parks in the Darby Plains area. Dry ridge savannas occur in the adjacent areas and are dominated by White Oak (*Quercus alba*) and Black Oak (*Quercus velutina*). Dry ridge savannas like this are currently being restored through the Partners Program in Logan County and have gained public

interest. These sites have oak savanna indicator plant species responding to management and Federal Trust Resources such as Northern Flicker and Red Headed woodpecker are beginning to use these sites. Oak Hickory woodlands also occur in this area and management of this habitat could benefit migratory birds in Ohio. Many restorable sites can be found in this region but threats still exist due to intensive grazing, increasing demands for agricultural production and urban sprawl.

Areas of the southwest extant of the focus area (Champaign, Clark and Greene counties) have remnants of many closed depressional wetlands, fens, bogs and wet sedge meadows. This portion of the focus area is primarily an agricultural setting within the Great Miami, Mad River, and Little Miami River drainages. There are known populations of the threatened Eastern Prairie Fringed Orchid and the candidate species, Eastern Massasauga rattlesnake. Many of these sites still remain because they are too low to drain, though attempts have been made and in some cases successful drainage with tile and open ditches has occurred. The main threat to the wetlands is drainage, sedimentation and loss of diversity due to undesirable plant species such as Reed canary grass and Narrow leaved cattail. Many of these closed depressional wetlands are direct links to the aquifer therefore restoration to the depression and surrounding uplands would have a direct benefit to the public water supply as well as increasing usable habitat for migratory birds, reptiles and amphibians. Discussions with USDA Plant Materials Lab, NRCS, local Soil and Water Conservation Districts, and ODNR, to partner on the restoration of these sites have begun. Partnering could include landowner education, releasing Ohio eco-type seed to nurseries to grow for future projects, and monitoring restoration success and promoting USDA programs in areas with cropping history. The high amounts of hydric soils in this area make it an ideal place to promote the USDA's Wetland Reserve Program as well.

Building partnerships, educating the public about these ecosystems and promoting the use of prescribed fire are the most important factors for restoring, managing and protecting these unique landscape ecosystems. Partnerships have already been built with Pheasants Forever and landowners currently restoring Oak Savanna have displayed an interest in starting an Ohio Oak Savanna Alliance. Additional partnerships with Soil and Water Conservation Districts, ODNR, USDA, local land trusts and other NGO's could further build community support and education for Oak Savanna restoration in West Central Ohio.

Oak Savanna and Depressional Wetland Focus Area Priority Species

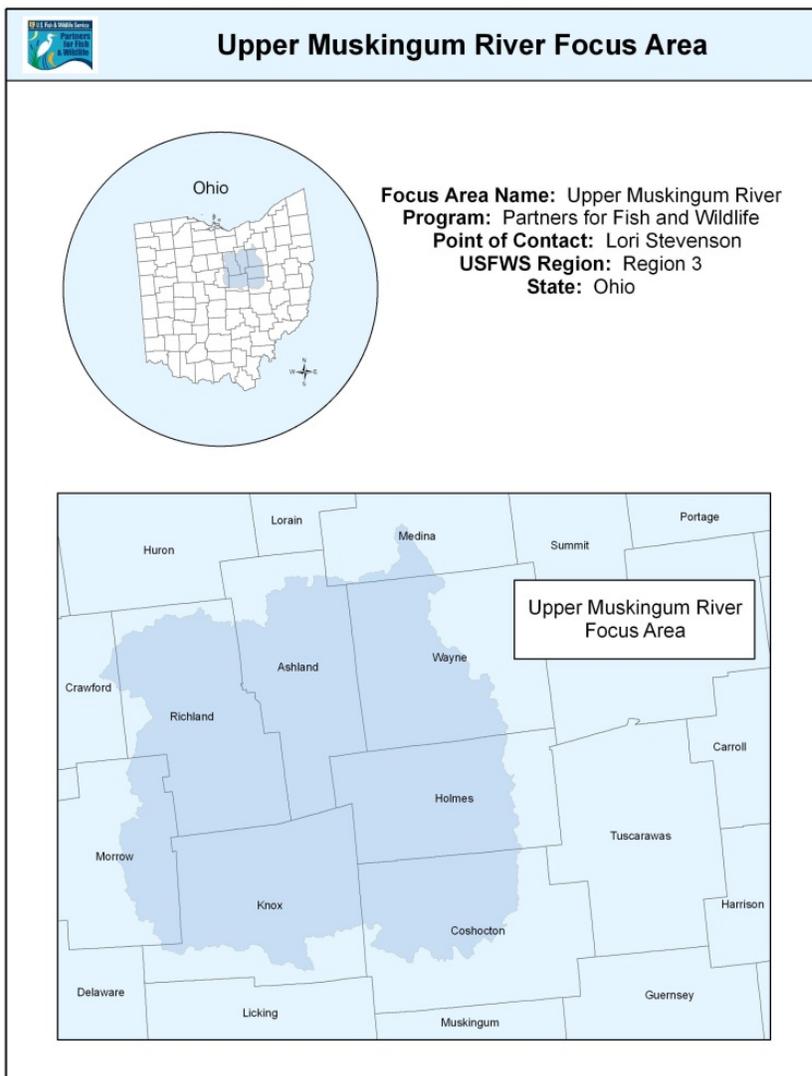
Eastern Massasauga Rattlesnake	(<i>Sistrurus catenatus</i>) Candidate
Eastern Prairie Fringed Orchid	(<i>Platanthera leucophaea</i>) Threatened
Indiana Bat	(<i>Myotis sodalists</i>) Endangered
Wood Duck	(<i>Aix sponsa</i>)
Mallard	(<i>Anas platyrhynchos</i>)
Black Rail	(<i>Laterallus jamaicensis</i>)
Red Headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)
Willow Flycatcher	(<i>Empidonax traillii</i>)
Eastern Tiger Salamander	(<i>Ambystoma tigrinum</i>)

Oak Savanna and Depressional Wetland Focus Area Five-Year Targets

Wetland Restoration/enhancement: 200 acres

Upland Restoration/enhancement/protection: 500 acres

Upper Muskingum River Focus Area



The Muskingum River is the largest stream in the state and drains 8,038 square miles, or about one-fifth of Ohio. Within the basin, the physiographic, geologic, and soil conditions vary greatly. The Muskingum River forms at the junction of the Walhonding and Tuscarawas Rivers near Coshocton, and flows 109 miles to the south and east to enter the Ohio River at Marietta. The northern and western edges of the focus area are glaciated. Multiple state and federally threatened or endangered freshwater mussels are known to exist in the watershed.

The focus area is entirely within the Allegheny Plateaus province. The line of glaciation marking the farthest southward advance of the ice sheets extends west from northern Tuscarawas County to the vicinity of Loudonville, thence almost directly south, leaving the basin in Perry County. The glaciated area is generally gently rolling with some flat topography, and the unglaciated plateau is generally rough and well dissected.

The mix of glaciated and unglaciated geography of the Walhonding River makes it a unique watershed with unique habitat characteristics for migratory birds. Agricultural improvements exist throughout the focus area, but natural areas are also prominent. The high diversity of mussel species in the Walhonding and greater Muskingum River and significant use of the area as a migratory corridor make this a prime area for the Partners Program to develop and implement partnerships on private property to enhance, restore and conserve habitat for Federal Trust Resources. Partnering with landowners and the ODNR on cattle exclusions from streams, wetland restorations, native grassland establishment and forest restorations will greatly enhance the area for migratory trust resources.

Upper Muskingum River Focus Area Priority Species

Indiana Bat	(<i>Myotis sodalists</i>) Endangered
Sheepnose mussel	(<i>Plethobus cyphus</i>) Candidate
Eastern Prairie Fringed Orchid	(<i>Platanthera leucophaea</i>) Threatened
Wood Duck	(<i>Aix sponsa</i>)
Mallard	(<i>Anas platyrhynchos</i>)
Black Rail	(<i>Laterallus jamaicensis</i>)
Red Headed Woodpecker	(<i>Melanerpes erythrocephalus</i>)
Black Billed Cuckoo	(<i>Coccyzus erythrophthalmus</i>)

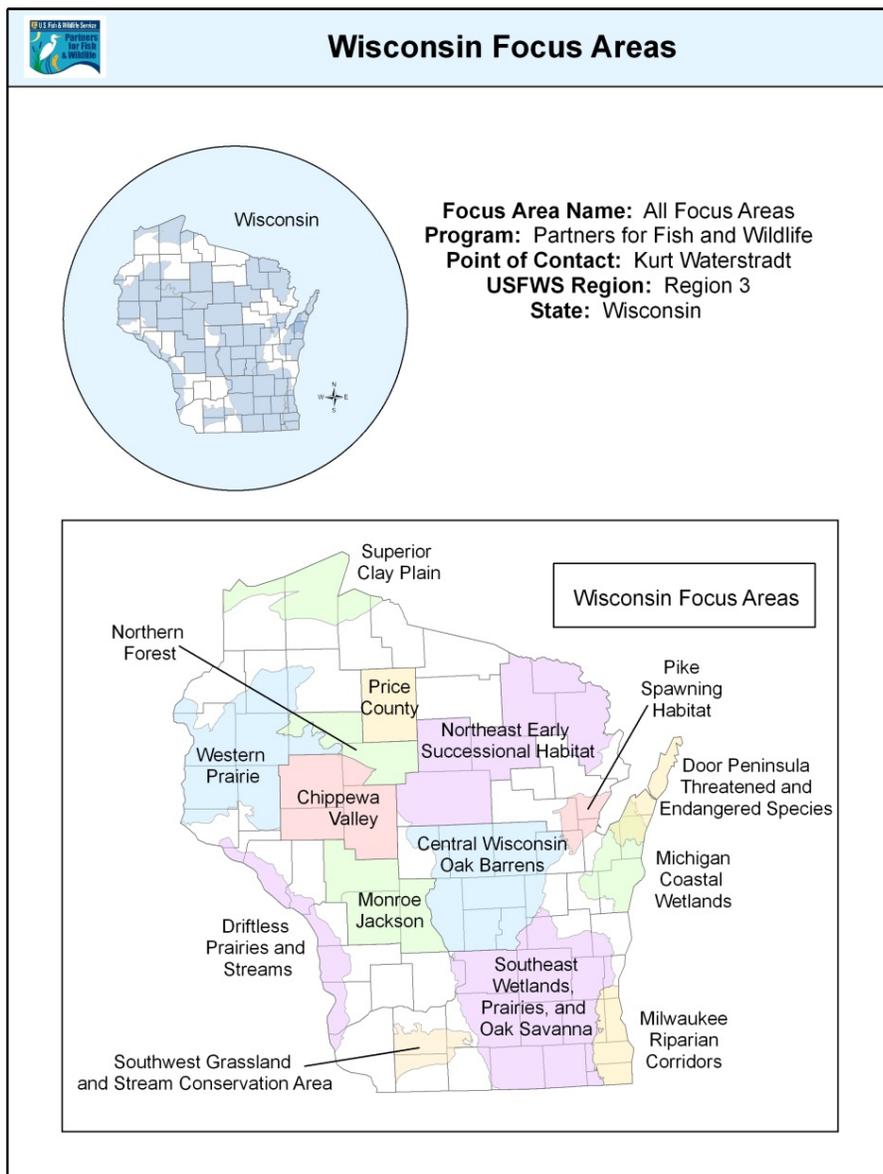
Upper Muskingum River Focus Area Five-Year Targets

Wetland Restoration/enhancement: 50 acres

Upland Restoration/enhancement/protection: 200 acres

River/Streams/Shoreline Riparian Corridor restoration/enhancement: 20 miles

Wisconsin



Introduction and Overview

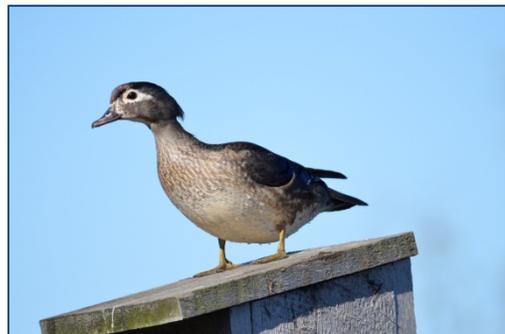
For the Wisconsin (WI) Partners Program Strategic Plan information relating species and habitat occurrences, priority areas for conservation, and presence of potential local partnerships were obtained from the Wisconsin Department of Natural Resources (WDNR), The Nature Conservancy (TNC), Ducks Unlimited (DU), The Aldo Leopold Foundation, and numerous other conservation organizations. WDNR’s Comprehensive State Wildlife Action Plan, in particular, was used to help guide the planning process. Additionally, WI Partners Program field biologists regularly participate in a wide range of local working and planning groups. Information from these more localized sources was integrated into the national,



Red-headed woodpecker
Photo, Jack Bartholmai

regional, and statewide data. Wisconsin is home to 21 plant and animal species listed as threatened or endangered under the Endangered Species Act (ESA). The WDNR lists 165 species as State Endangered or Threatened. Wisconsin lies within the Upper Mississippi River Great Lakes Joint Venture (UMRGLJV). The state provides important nesting and stopover habitat for many migratory wetland, grassland, and forest bird species. Although a portion of Wisconsin is in state or Federal ownership, nearly 87% or 29,904,815 acres are in private or local government ownership. It is the intersection between private land ownership and habitat needs for declining species, which provides the primary filter and foundation for Partners Program restoration efforts.

The Wisconsin Partners Program works with a variety of conservation partners throughout the state to improve wildlife habitat. Many of these federal, state, and non-governmental organizations have strategic plans (i.e. Partners in flight, North America Waterfowl Management Plan, Wisconsin's Comprehensive Wildlife Conservation Strategy, etc.) in place to focus their efforts on established public properties, specific watersheds, or designated focal areas. For example, the Upper Mississippi River - Great Lakes Joint Venture (UMRGLJV) has set a goal for wetland restoration in Wisconsin over the next fifteen years at 21,745 ha of seasonal and semi-permanent marsh for Bird Conservation Regions (BCR) 23, the southern two thirds of Wisconsin. The Partners Program in Wisconsin has estimated wetland restoration at 2,300 acres (931 ha) over the next five years. Extrapolating Partners Program wetland restoration goals out to 15 years, the Partners Program would 13% of the total needed in Wisconsin to improve conditions for a sustainable population of breeding waterfowl. Working with other conservation partners and programs such as the US Department of Agriculture (USDA) through the 2008 Farm Bill, Wisconsin Department of Natural Resources (WDNR) Duck Stamp program, Ducks Unlimited, will add an additional 45,000 acres of semi-permanent wetlands to this total or about 75% of the UMRGLJV goals. Collectively and collaboratively, wetland restoration programs in Wisconsin will meet or exceed UMRGLJV goals in BCR 23 adding to the economic, recreational, and biological opportunities for stakeholders throughout the Midwest.



Female Wood duck
Photo, Mark Martin

In addition to assisting in implementing the above mentioned plans, the Partners Program recognizes the need for adaptive management strategies to meet regional land use challenges and global impacts such as climate change. Through adaptive management strategies and

proven science-based habitat restoration techniques, the Partners Program continues to deliver habitat improvement projects for fish and wildlife species directly impacted by these



Partners biologists planting in oak barrens
Photo, USFWS

challenges. The Wisconsin Partners Program has adopted Wisconsin DNR's Ecological Landscapes classification across the state and has identified national, regional and local initiatives within these landscapes. By setting priorities, goals and habitat objectives within these priority landscapes, the Partners Program will work towards measurable metrics that are quantifiable and feed-back into the SHC process.

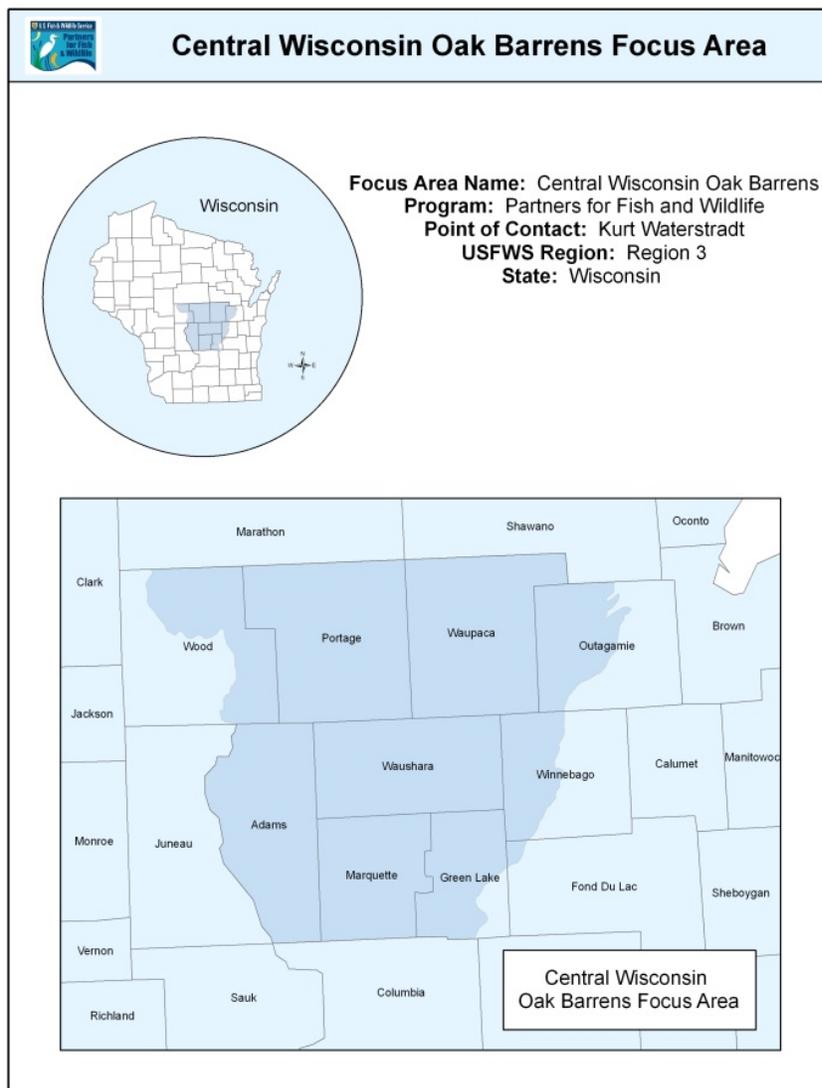
The Wisconsin Partners Program is committed to working with others to improve wildlife habitat in Wisconsin. This Strategic Planning document is

fluid and dynamic. It is our goal to have stakeholders evaluate, critique, and comment whenever possible on our goals and objectives. As new opportunities arise, funding levels change, species improve or decline, or land-use changes, the Partners Program will adapt and redirect to be an effective results-oriented habitat restoration program in Wisconsin.

Supporting Plans for Wisconsin Focus Areas:

- Upper Mississippi River Great Lakes Joint Venture (UMRGLJV) Implementation Plan
- Wisconsin Wildlife Action Plan
<http://dnr.wi.gov/topic/WildlifeHabitat/ActionPlan.html>
- North American Bird Conservation Initiative (NABCI)
- North American Waterfowl Management Plan (NAWMP)
- Ecological Landscapes of Wisconsin Handbook
<http://dnr.wi.gov/topic/landscapes/Handbook.html>
- Region 3 Conservation Priority Species List, 2002
- Management Habitat for Grassland Birds – A guide for Wisconsin, Sample & Mossman 1997.
- Waterfowl Habitat Conservation Strategy
- Shorebird Habitat Conservation Strategy
- Waterbird Habitat Conservation Strategy
- Landbird Habitat Conservation Strategy
- Endangered Species Recovery Plans
- USDA State Wildlife Team
- Surrogate Species List

Central Wisconsin Oak Barrens Focus Area



The Partners Program strives to collaborate with conservation partners to strengthen and improve the wildlife conservation efforts in Wisconsin. The Sand County Foundation and Partners Program have collaborated for over a decade to better reach private land owners and leverage federal dollars with significant funding. This partnership has helped Wisconsin private landowners restore habitat for the federally endangered Karner blue butterfly (KBB) and many associated rare and declining species. Restoration will continue to build positive relationships between private landowners and the Endangered Species Act, while achieving conservation priorities outlined in the Karner Blue Butterfly Recovery Plan and Wisconsin Karner Blue Butterfly Habitat Conservation Plan.

Several large conservation land parcels are within, adjacent to, or are near the Focus area. These include Necedah National Wildlife Refuge (NWR), Meadow Valley State Wildlife Area (SWA), Buena Vista SWA, and county forests. WDNR's NHI lists approximately twenty-five habitat types within the Focus Area. Those having perhaps the greatest potential

for restoration include dry prairies, oak or pine barrens (savannas), and wetlands of different classifications. Ditching was extensively used to remove water for lands thought suitable for agriculture. Cranberry growing operations continue to expand in this area—sometimes to the detriment of wetlands. The NHI lists about seventy-five species (animal and plant) that have some level of conservation concern that might be benefitted by habitat restoration or enhancement within the area. Focal species for the area include Karner Blue butterflies, Kirtland's warblers, greater prairie chickens, whooping cranes, woodcock, and facultative or obligate grassland passerines. Karner blue butterflies are federally listed as endangered, but have viable sub-populations within this Focal Area. Known butterfly populations exist on Necedah NWR, and in several locations within Adams County. Much of the Focal Area has at least a fifty percent probability that butterflies are within five miles of any one location.



Kirtland's Warbler
Photo, Joel Trick, USFWS

Kirtland's warblers are another federally endangered species was found within the Focal Area within the past five years. The species requires young stands of jack pine, but may also select young red pines. The Service, working with partners, has reduced brown-headed cowbird nest parasitism of warbler nests the past two years to increase warbler nesting success. Plans are being developed that will examine different combinations of grassland restoration techniques and silvicultural practices to find a combination that may increase populations of Kirtland's warblers.

While greater prairie chickens (state threatened) were historically found across much of southern Wisconsin, remaining populations, such as those at Buena Vista SWA, are nearby or within this Focus Area. Some landowners have reported seeing prairie chickens, or leks, within the landowner's lifetime. The Service has a perpetual Conservation Easements nearby that may be beneficial to prairie chickens.

Necedah NWR is a major participant in the Whooping Crane Eastern Partnership (WCEP) efforts directed at increasing whooping crane populations. Others WCEP members include (but are not limited to) WDNR, USGS, and the International Crane Foundation. Young cranes are reared and/or released Necedah NWR and migrate to Florida. After whoopers return to the Necedah area in spring, young birds typically fly away from the Refuge area for a while before returning. Telemetry data indicate that whoopers can be found on wetlands within this focus area during their spring wandering period. Areas having wetland restoration potential, particularly shallow marsh and sedge meadow wetlands with open visibility are of primary interest.

Woodcock population indices in the Central Management Region continue to decline, perhaps because early successional forest growth has matured to a point where it does not

provide desired habitat for nesting, foraging, and singing grounds. Soil based modeling by the Upper Mississippi River and Great Lakes Region Joint Venture suggests that areas in northeast Adams County and central Wood County has potential for woodcock breeding. We anticipate working with the Ruffed Grouse Society and others to increase early successional alder swamps and other forest areas that may benefit woodcock.

Grassland dependent passerines will benefit from restoration efforts that also help prairie chickens. Expanding grassland size, reducing edge effects associated with features such as tree lines will benefit grassland species—especially those that are area sensitive.

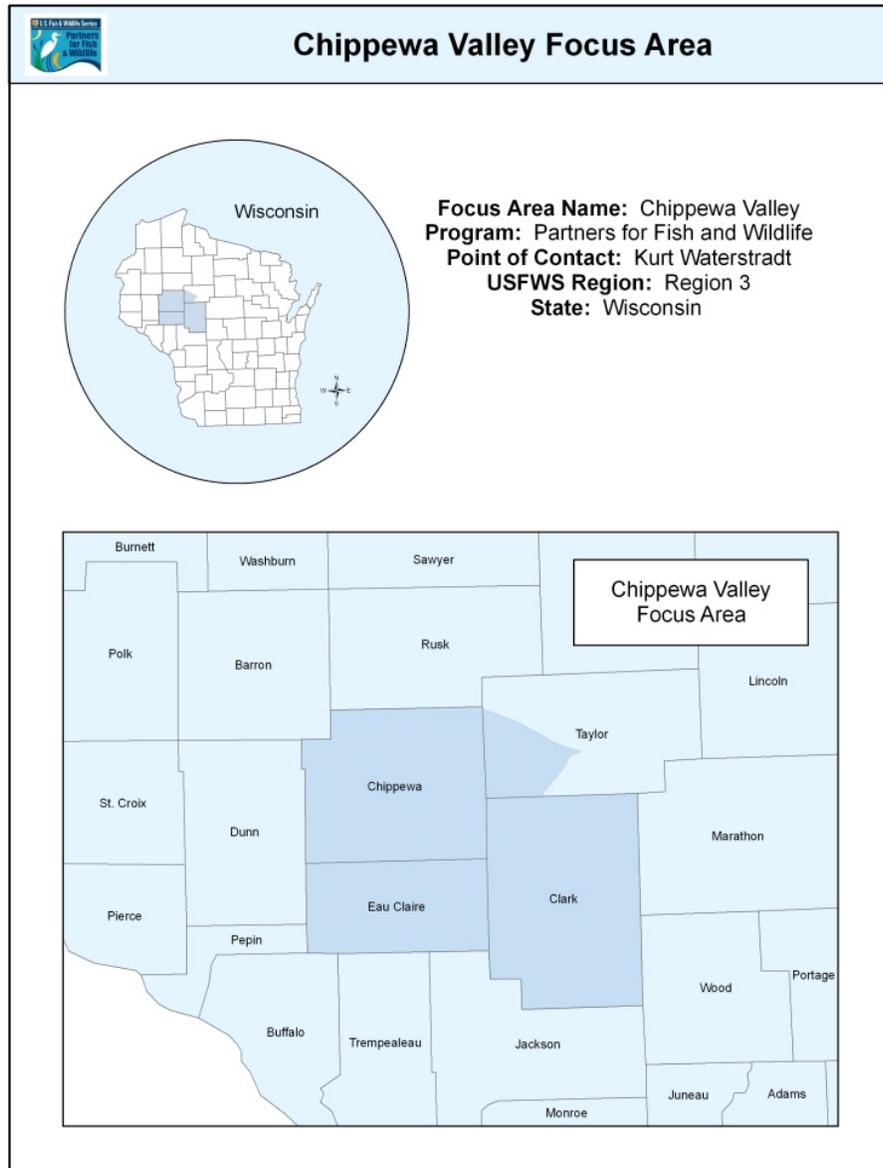
Central Wisconsin Oak Barrens Focus Areas Priority Species

Karner blue butterfly	(<i>Lycaeides melissa samuelis</i>) Federally Endangered
Whooping crane	(<i>Grus Americana</i>)
American woodcock	(<i>Scolopax minor</i>)
Kirtland's warbler	(<i>Dendroica kirtlandii</i>) Federally Endangered

Central Wisconsin Oak Barrens Focus Areas Five-Year Targets

Wetland Restoration/enhancement: 200 acres
 Upland Restoration/enhancement/protection: 1000 acres
 Fish Barrier Removal: 1 barrier

Chippewa Valley Focus Area



This focus area lies within the Western Coulee and Ridges Ecological Landscape and includes western Eau Claire, Chippewa and Clark Counties in Wisconsin. The Forest Transition Ecological Landscape lies along the northern border of Wisconsin's Tension Zone, through the central and western part of the state, and supports both northern forests and agricultural areas. The central portion of the Forest Transition lies primarily on a glacial till plain. Soils are diverse, ranging from sandy loam to loam or shallow silt loam, and from poorly drained to well-drained. Several large rivers including the Wisconsin, Mississippi, Chippewa, Kickapoo and Black flow through or border this area. Wisconsin NHI documents many species of conservation need in this area, which will benefit from habitat restoration on private lands.

Historical vegetation consisted of southern hardwood forests, oak savanna, scattered prairies, and a variety of wetland communities. Among these wetland communities are emergent deep-water wetlands, ephemeral ponds, depressional wetlands and sedge meadows which provide habitat to many species of migratory birds such as mallards, blue-winged teal, wood duck, Canada geese, sedge wren and American bittern.

The Partners Program has partnered with the WDNR, Natural Resources Conservation Service (NRCS), non-governmental organizations (NGOs) and many landowners to provide technical advice and cost-share funding for restoration of degraded wetlands and surrounding uplands. Common treatments used to restore wetlands include the removal of drain tiles, construction of ditch fills, low level embankments, wildlife scrapes and removal of sediment accumulation. Invasive plant species are controlled by a combination of excavation, mowing, burning and herbicide treatment.

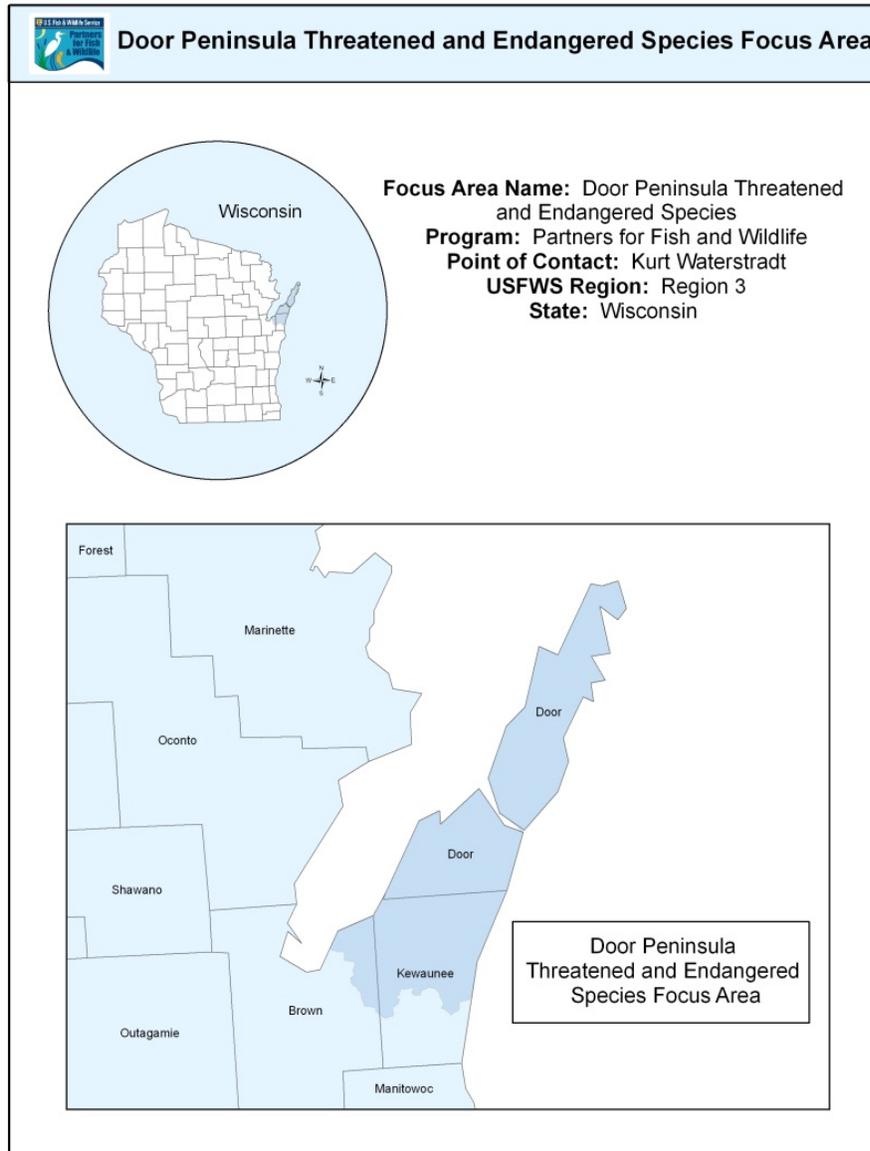
Chippewa Valley Focus Area Priority Species

Mallard	<i>(Anas platyrhynchos)</i>
Wood Duck	<i>(Aix sponsa)</i>
Blue winged teal	<i>(Anas discolor)</i>
American bittern	<i>(Botaurus lentiginosus)</i>

Chippewa Valley Focus Area Five-Year Targets

Wetland Restoration/enhancement: 30 acres
Upland Restoration/enhancement/protection: 300 acres

Door Peninsula Threatened and Endangered Species Focus Area



Located in northeastern Wisconsin, the Door Peninsula Threatened and Endangered Species Focus Area is a large finger of land which lies between Lake Michigan and the bay of Green Bay. Its rocky cliffs, sandy beaches, marshy bays, fertile wetlands, and conifer forests provide habitat for many rare plants, animals, and endemic natural communities. Three Federally listed species, the Hine's emerald dragonfly, dwarf lake iris, and dune thistle are found within the focus area. The Peninsula's vast shoreline provides and an important migrational corridor for many species of waterbirds and shorebirds. Several islands lie off the Door Peninsula and provide important habitat for colonially nesting birds. The limestone that forms the backbone of the peninsula is part of a geologic feature called the Niagara Escarpment. The cliffs, sinkholes, and dolomite ledges associated with the Niagara Escarpment, provide habitat for a number of unique plant and animal species.

Current land cover consists of more than 60% non-forested land, most of which is agricultural, along with smaller amounts of grassland, wetland, shrubland, and urbanized areas. Due to the invasion of exotic plants, there are opportunities for restoration and management of lakeshore marshes, sedge meadows, fens, coastlines, and forest habitat. The Service is working with the WDNR, the Door County Soil and Water Conservation Department, The Nature Conservancy, and the Door County Land Trust to protect, restore and enhance critical habitats required for the survival of the many rare and endemic species found within the Door Peninsula Focus Area.

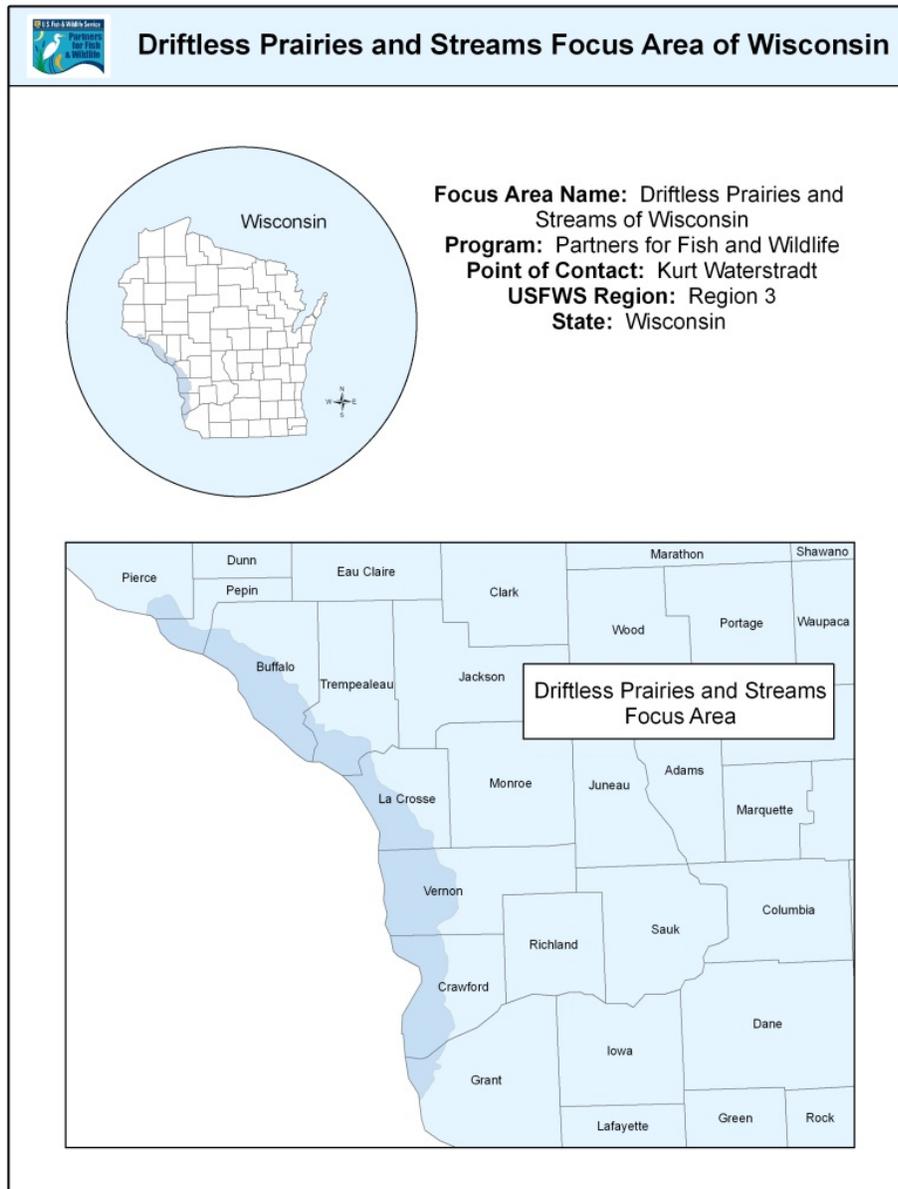
Door Peninsula Threatened and Endangered Species Focus Area Priority Species

Pitcher's Thistle	(<i>Cirsium pitcher</i>) Federally Threatened
Hind's emerald dragonfly	(<i>Somatochlora hineana</i>) Federally Endangered
Dwarf lake iris	(<i>Iris lacustris</i>) Federally Threatened

Door Peninsula Threatened and Endangered Species Focus Area Five-Year Targets

Wetland Restoration/enhancement: 100 acres
 Upland Restoration/enhancement/protection: 250 acres
 Fish Barrier Removal: 1 barrier

Driftless Prairies and Streams Focus Area



The Driftless Area is a unique landscape located in the Midwest with approximately 70% occurring in Wisconsin. In southwest and west central Wisconsin, the Driftless Area is also referred to as the Western Coulee and Ridges landscape which is located in counties along the Mississippi River. These counties typically are highly eroded, driftless topography (unglaciated), extensive grasslands and forest areas, and numerous cold-water streams. Historically, this area was covered in southern hardwood forests, oak openings, prairies, and floodplain forests and marshes along the rivers. Unique features found in this landscape include dry cliffs, pine relicts, and algal talus slopes. With the arrival of European settlers, any area flat enough for agriculture was cleared and plowed (ridge tops and valley bottoms). The steep slopes became oak-hickory woodlands after wildfires were suppressed. Due to the

agricultural practices and conversion of oak openings to oak woodlands fragmentation of the landscape has occurred. This in turn has led to a decline in diversity of the plants and animals that are dependent on this unique landscape. Fragmentation has also led to an increase in invasive species including reed canary grass, honeysuckle, eastern red cedar, and crown vetch. Partner agencies and organizations include Mississippi Valley Conservancy, The Prairie Enthusiast, Pheasants Forever, WDNR, NRCS, county land conservation departments, and local conservancies.

Prairies and oak openings are two natural communities which are considered to be some of the rarest in the country which can be found in the Western Coulee and Ridges landscapes, though in degraded conditions. Prairies typically found in the landscape are characterized as dry prairies. These dry prairies are found near ridge tops on west and south slopes. Encroachment from woody and invasive species severely alters these communities and at times completely eliminates the open prairies.

Management practices can be used to restore dry prairies; including removal of woody species, chemical treatment of herbaceous invasive species, and reintroduction of prescribed fire. Oak openings are typically found in a more degraded state than prairies. Wildfire suppression, heavy grazing from cattle, and extensive logging has removed mature oaks and encouraged the spread of non-desirable trees. Mature oaks still can be found in these openings but are accompanied with more mesic species (basswood, ironwood and hackberry) and dense brush understory (buckthorn and honeysuckle). If an oak structure is present then restoration through removal of trees and brush and reintroducing prescribed fire is possible for management options.



Conservation partners looking at bluff prairies
Photo, Dave Linderud

The Western Coulee and Ridges landscape contains several large rivers (Trempealeau, La Crosse, Black, Kickapoo, and the Wisconsin), numerous creeks/streams and springs. Majority of the creeks are cold water which support the native brook trout. Many of these creeks are not in good condition due to erosion and lack of riparian buffers due to agricultural practices. Restoration of these streams is possible, however tends to be costly. Partnerships with other agencies and local conservation groups make these restoration projects possible.

Driftless Prairies and Streams Focus Area Priority Species

Eastern Massasauga Rattlesnake	<i>(Sistrurus catenatus)</i>
Brook trout	<i>(Salvelinus fontinalis)</i>
Timber rattlesnake	<i>(Crotalus horridus horridus)</i>
Bell's vireo	<i>(Vireo bellii)</i>
Red-headed woodpecker	<i>(Melanerpes erythrocephalus)</i>

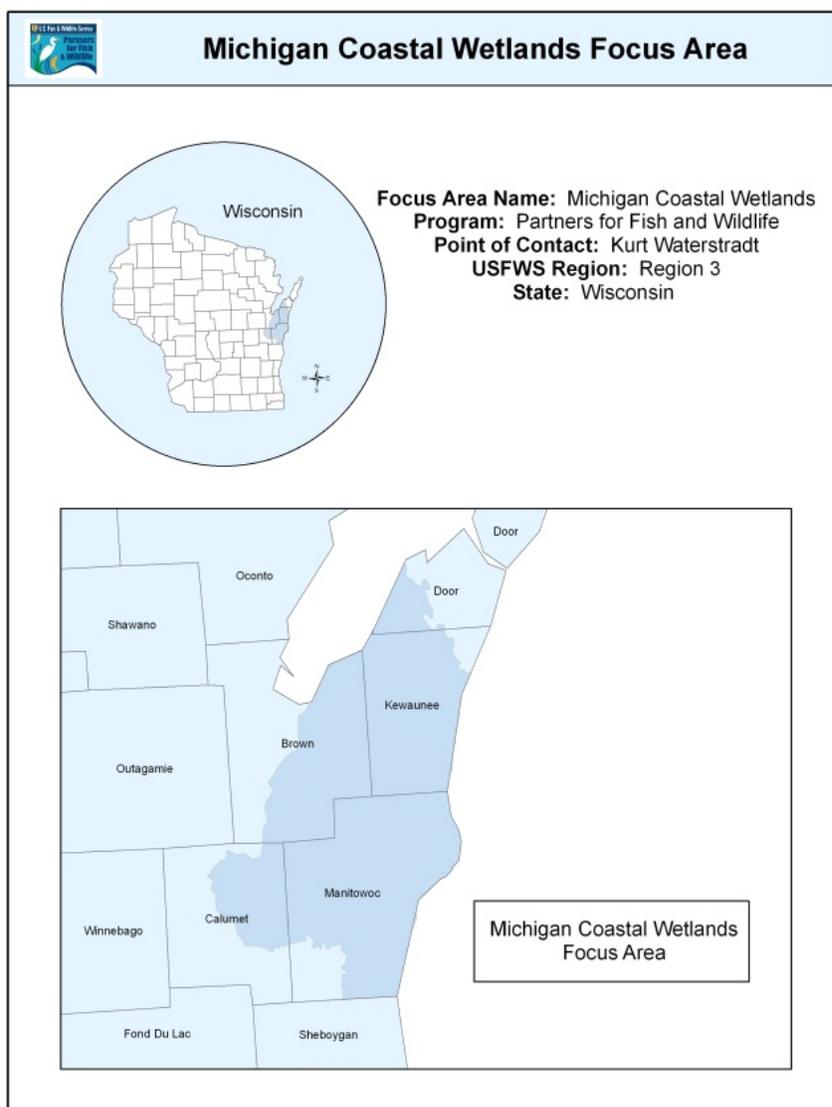
Driftless Prairies and Streams Focus Area Five-Year Targets

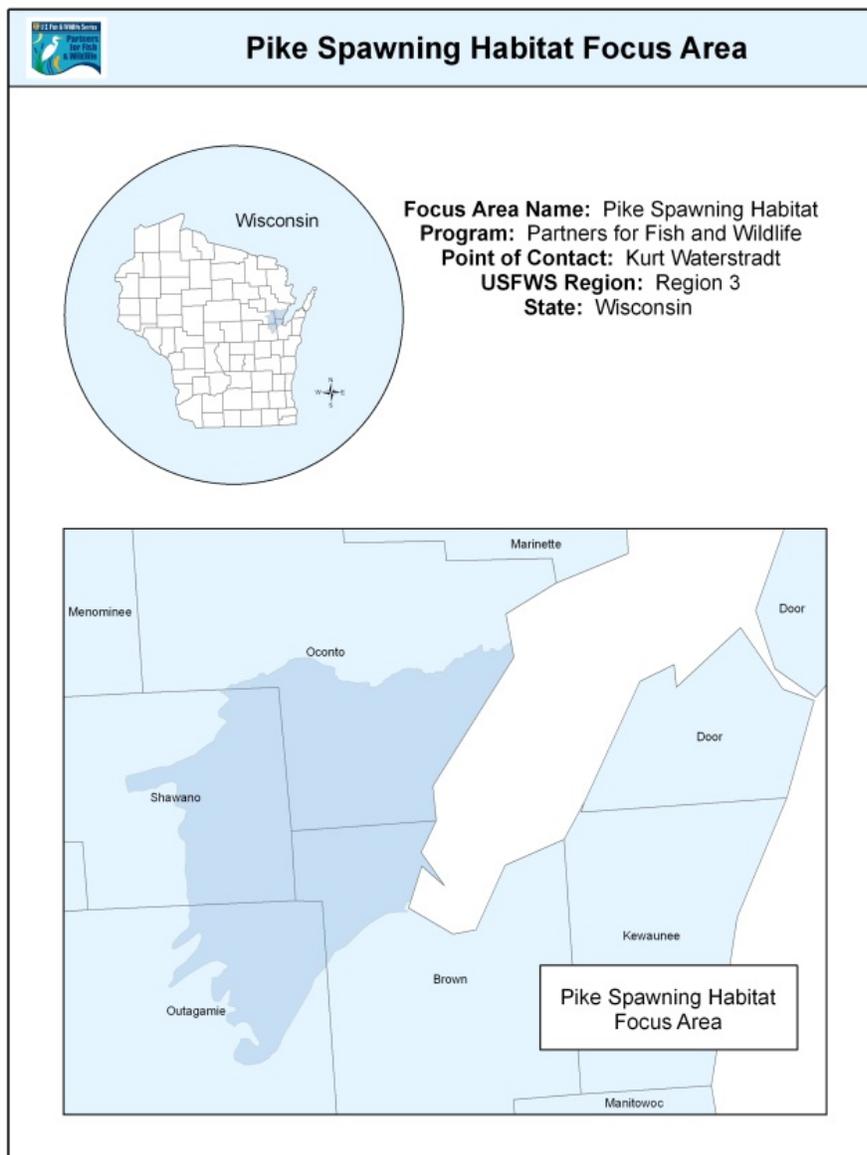
Wetland Restoration/enhancement: 15 acres

Upland Restoration/enhancement/protection: 300 acres

Fish Barrier Removal: 1 barrier

Michigan Coastal Wetlands and Pike Spawning Habitat Focus Areas





The Northern Lake Michigan Coastal region is located in northeastern Wisconsin and includes the bay of Green Bay. The area is comprised of a complex of coastal wetlands and tributary streams. These coastal systems support a remarkable amount of biological diversity including migratory birds, native fish, invertebrates and rare plant communities. Alteration of land use practices and urbanization of Green Bay's western coastal zone has led to the degradation of many natural streams and the loss of approximately 70% of the associated wetland habitat. Poorly placed culverts and small impassable dams along waterways, and loss of near shore open water habitat have further degraded these systems. Despite these modifications to the natural drainage systems, the Green Bay west shore coastal wetlands and tributaries remain a critical habitat for spawning northern pike. Northern pike leave the open bay in early spring, traveling miles up both large and small tributaries to spawn in the headwater wetlands. Unfortunately, due to the reduction of available spawning habitat, a

significant decline in northern pike populations has been observed across the bay of Green Bay.

In an effort to protect and restore northern pike spawning habitat, the Service is working with the WDNR, local County Land Conservation Departments, Ducks Unlimited, the Oneida Tribe of Indians, and local conservation groups and organizations. Habitat restoration efforts include the use of techniques such as stream channel modification, wetland sediment removal, establishment of riparian buffers and culvert replacement. Long-term outcomes of this habitat restoration partnership effort will not only benefit northern pike, but also many other fish and wildlife species.

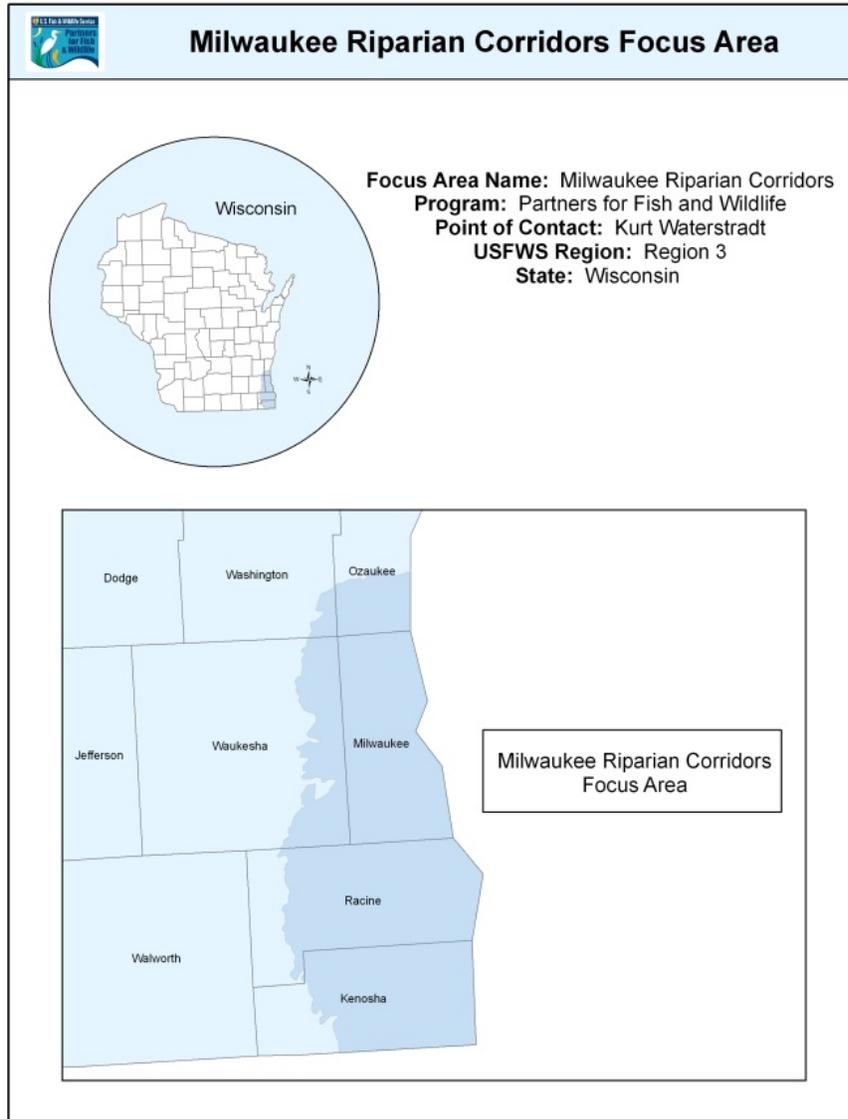
Michigan Coastal Wetlands and Pike Spawning Habitat Focus Areas Priority Species

Mallard	<i>(Anas platyrhynchos)</i>
Wood Duck	<i>(Aix sponsa)</i>
Blue winged teal	<i>(Anas discolor)</i>
American bittern	<i>(Botaurus lentiginosus)</i>
Northern pike	<i>(Esox Lucius)</i>

Michigan Coastal Wetlands and Pike Spawning Habitat Focus Areas Five- Year Targets

Wetland Restoration/enhancement: 200 acres
Upland Restoration/enhancement/protection: 100 acres
Fish Barrier Removal: 1 barrier

Milwaukee Riparian Corridors Focus Area



The Milwaukee Area Riparian Focus Area (MARFA) was historically dominated by mesic hardwood forest composed primarily of sugar maple, basswood, and beech with some oak. Also common within this region were wet, wet-mesic, and lake plain prairies. These landscapes offered habitats for a variety of birds, flora, and fauna that are increasingly imperiled in today's landscape. Over the last 150 years there has been a dramatic land use shift within this area: forest and prairie loss have been widespread in the areas suitable for agricultural and increased human population and its associated development pressure. The ecology of these habitats are also being affected by the colonization of invasive plants such as non-native buckthorns, honeysuckles, Japanese barberry, Oriental bittersweet, reed canary grass, phragmites, and narrowleaf cattail. While some adaptable bird species such as mallard, Canada geese, and blue-winged teal are well-represented in this altered landscape, other species with more specific habitat requirements are at significant risk of survival.

These include species such as Henslow's sparrow, bobolink, eastern meadowlark, wood thrush, and blue-winged warbler. This region is highly urbanized including Wisconsin's largest city, Milwaukee. Unfortunately, the amount of farmland is decreasing rapidly. The region has the highest percentage of farmland sold and diverted to other uses, primarily residential construction. This accelerated subdivision of rural land into smaller parcels promotes landscape fragmentation and loss of quality wildlife habitat for those species that are area-sensitive.

The Partners Program has identified a significant portion of the MARFA as a focus area for our program's wildlife habitat restoration initiative. Working in combination with a variety of Partner agencies and organizations such as The Nature Conservancy, Milwaukee Metropolitan Sewage District, Ducks Unlimited, WDNR, local land conservancies and others, the Partners Program is helping private landowners, local units of government and other land stewards to restore critical habitat for a suite of imperiled species in each of the habitat categories listed below. In addition, the Partners Program seeks to keep common species common, especially in the case of species such as wood duck and blue-winged teal that have regionally significant populations in the focus area. A summary of each habitat type, focal species, and typical restoration practices to be used by the Partners Program follows:

Reforestation in the WI Milwaukee Area Riparian Focus Area:

The southern mesic forest is a forest type characterized by a dense canopy, high internal humidity, and adequate moisture throughout the growing season. The dominant species were American beech, sugar maple, and basswood with red, white or black oak as major associates. These mesic forests provided large tracts of habitat and their ecological makeup, along with natural occurrences, provided the means to keep these communities diverse. By the early 1920s, most of the forests in the basin were logged for lumber and converted to agricultural land. Because of the influences of agriculture and development, southern mesic forests of today are characterized by their fragmentation and tend to favor adaptive animal species such as white-tailed deer, coyote, raccoon, skunk, blue jay, and cowbird. As population increases and rural lands are converted for homes and business, pollution sources to surface and groundwater increase while wildlife habitat and water quality degrades. Reforestation is, in the simplest terms, causing a forest to occur again. This can be done by letting deforested land go fallow for several years or by replanting native species in open areas or adjacent to remaining forest. The goal of this type of restoration is to reconnect small fragmented blocks of existing forest and ultimately maintain larger blocks of unfragmented forests with dense shrub patches. In existing blocks of forest clearing invasive trees and shrubs, removing invasive or exotic plants to eliminate their spread, and/or inter-seeding disturbed areas.

There are a few species associated with mesic forest habitat experiencing significant declines. A number of these bird species have begun to decline in recent years (e.g., wood thrush and blue-winged warbler) in which the fragmentation and suburban sprawl has resulted in increased nest predation and cowbird parasitism, thereby significantly reducing

their reproductive success. Also playing a major role is the replacement of native shrubs important for nesting by invasive plants.

Native Grassland Restoration in the WI Milwaukee Area Riparian Focus Area:

The Partners Program is actively assisting landowners and local units of government to restore native mesic and wet-mesic prairies on fallow cropland throughout the MARFA region. Many of these sites complement adjacent wetland restorations by providing much-needed nesting cover for waterfowl and other grassland birds. Additionally, many of these restored grasslands offer green space for local communities in the area that are battling urban sprawl. As in the Wisconsin Southeast Glacial Plain focus area, restored prairies are being managed to prevent woody encroachment by utilizing prescribed fire, herbicides and periodic mowing. Obligate grassland birds using these restored prairies include bobolink, eastern meadowlark, dickcissel, and upland sandpiper. Waterfowl, such as blue-wing teal, mallard and pintails, also use these grasslands for nesting. A naturalized non-native species, the ringneck pheasant, is also found in restored prairies of the region, providing an important recreational focus for landowners and hunters in the fall of the year.

Wetland Restoration in the WI Milwaukee Area Riparian Focus Area:

Most of the original wetlands in the MARFA have been lost through conversion to agriculture or urban development. There exists, however, an ample opportunity to restore many of these wetlands that idle or not currently being farmed. Additionally, most of the small-order streams in the region have been severely degraded through channelization, stormwater conveyance, and bridge and culvert infrastructure.

The adjacent riparian wetlands occurring along these streams and canals, that typically consisted of sedge meadows or wooded wetlands, have likewise been seriously degraded or completely lost by conversion to other uses. The Partners Program has worked closely with the Milwaukee Metropolitan Sewerage District (MMSD) and The Conservation Fund in a regional partnership that seeks to restore and reconnect riparian wetlands, providing both needed flood storage and local green space for an expanding population.

Many wildlife species also benefit from this effort, including waterfowl species such as wood duck, Canada geese, marsh wren, blue-wing teal, and the great blue heron. This region also has many depressional pothole wetlands that have been tile-drained for agriculture and offer opportunity for restoration to shallow and deep water emergent marsh. To be expected in a high-population landscape, most of the existing wetlands in the region have been degraded by sediment accumulation, nutrient runoff and partial filling/drainage efforts. Low quality invasive wetland species dominate many of these sites and offer further opportunity for restoration. The primary species targeted for vegetation management control in low-quality wetlands are phragmites, reed canary grass and hybrid/narrowleaf cattail.

Federally Threatened Species in the WI Milwaukee Area Riparian Focus Area:

Eastern prairie fringed orchid, *Platanthers leucophaea*: (federally threatened, state endangered) This orchid is a perennial herb that grows from an underground tuber occurring in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering, and a grassy habitat with little or no woody encroachment. The fragrant flowers of this white orchid are pollinated by night-flying hawk moths, who inadvertently collect pollen on their proboscises as they ingest nectar from the flower's long nectar spurs. Current decline is mainly due to the loss of habitat from drainage and development of wetlands, as well as the succession to woody vegetation and competition from non-native species.

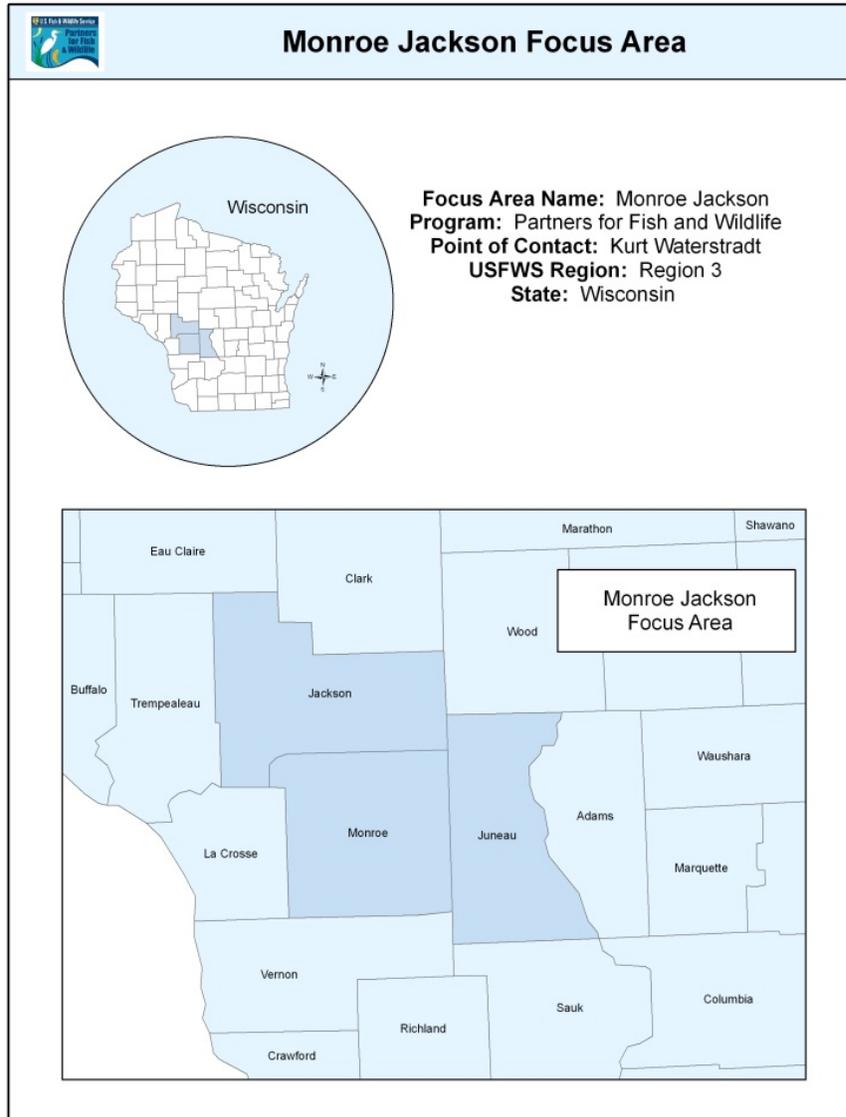
Milwaukee Riparian Corridors Focus Area Priority Species

Eastern prairie fringed orchid	<i>(Platanthers leucophaea)</i> Federally Threatened
Wood thrush	<i>(Hylocichla mustelina)</i>
Blue-winged warbler	<i>(Vernivora pinus)</i>

Milwaukee Riparian Corridors Focus Area Five-Year Targets

Wetland Restoration/enhancement: 50 acres
 Upland Restoration/enhancement/protection: 50 acres
 Fish Barrier Removal: 1 barrier

Monroe Jackson Focus Area



Monroe and Jackson Counties are part of the Driftless Area serviced from Necedah National Wildlife Refuge (NWR) and includes the southwest corner of Juneau County, the southern half of Monroe County, and the western half of Jackson County. The landscape, which was not covered with ice during the Wisconsin glaciation, is dominated by highly dissected topography with many small cold-water streams. The larger streams within the area are the Baraboo, Little LaCrosse, and Kickapoo Rivers. Lower order tributaries are common. Topography frequently restricts row-crop agriculture to valley lowlands and most crop fields are relatively small, although fields may be expanding in size, and may again be expanded onto slopes as farmers increase production due to recent increases in grain prices. Many farms are Amish owned. There is both dairy and beef cattle grazing. WDNR has several properties within the area, of which Wildcat Mountain State Park is the largest. The Nature Conservancy and The Prairie Enthusiasts have land holdings or projects sites to the south that are nearby, but are not within the Focus Area. WDNR has designated the Driftless Area as a

priority area under its 2009-2011 Landowner Incentive Program, whereby WDNR provides technical assistance to landowners. In addition, Trout Unlimited, and their local chapters, has initiated their Driftless Area Restoration Effort (DARE) program to restore cold-water streams.

Historically, vegetation communities included prairies, oak savannas, southern hardwood forests, and occasionally relict pine and hemlock forests primarily on north facing slopes. Specific site conditions created a continuum from prairie to savanna to forest, with white, red, black, and burr oaks as part of the matrix. Today's landscape is a mix of forest, agriculture, grasslands, and wetlands. Forests on slopes are dominated by oaks and hickories, while maples, ashes, basswoods, elms, and cottonwoods are more apt to be found in lower areas. Sedge meadow and wet prairie wetlands are frequently found in low-lying valley areas in close association with streams.

Hardwood forests now dominate the Driftless Area landscape due, in large part to fire suppression. The primary restoration goal is to reduce the areal extent of woodlots and forests, while increasing the number of savanna and prairie acres. At a minimum this will require finding landowners willing to remove timber and allow prescribed fire to be used on their properties. One option to explore is working with grazers to increase grassland acres in such a way that increases wildlife value and meets their economic needs.

Karner Blue butterflies have been documented at numerous locations in Jackson and Monroe counties. Much of these counties lie within the high probability range of the species and several past projects have resulted in increased habitat for Karner Blue butterflies. Future projects should increase not only the number of acres of suitable habitat, but also increase connectivity between sites. Restoring savannas and barrens having ample populations of lupine and nectariferous forbs are key to increasing populations of these butterflies. The quality of the brook trout fishery is also tied to upslope conditions.

Early in the 20th Century, sediments flowed downhill into valley streams due to overgrazing and row-crop agriculture on upland slopes. Improvements in agricultural conservation practices slowed the movement of soil, but stream characteristics changed from narrow and deep to wide and shallow. This change was also abetted as prairies and savannas grew into forests. Potentially, the area has many opportunities for cold-water stream restoration, although it is a costly process. In general, restoration requires tree removal, reshaping bank slopes to reconnect the stream to its floodplain, installing in-stream features that support trout life cycle requirements, and re-establishing prairie/savanna flora. Due to the area's topography shallow-water marshes are not that common. Restoring hydrology with ditch plugs in stream valleys will benefit sedge meadow and wet prairie communities. Telemetry data documents that wetlands in this area have been used by young whooping cranes during their spring wandering period. Since Necedah NWR is a major participant in the Whooping Crane Eastern Partnership (WCEP), efforts directed at increasing whooping crane populations with shallow marsh, sedge meadow, or wet prairie restorations accomplished in this area may benefit whooping cranes as well as other wetland-dependent species. Other WCEP members include (but are not limited to) WDNR, USGS, and the International Crane Foundation. Young cranes are reared and/or released at Necedah NWR and migrate to



Blanding's Turtle
Photo, USFWS

Florida. After whoopers return to the Necedah area in spring, young birds typically fly away from the Refuge area for a while before returning.

Areas having wetland restoration potential, particularly shallow marsh and sedge meadow wetlands with open visibility are of primary interest. Wisconsin's Natural Heritage Inventory (NHI) lists Juneau, Monroe, and Jackson as having bat hibernaculums, presumably because of the topography. Although wildlife projects which benefit cave-dwelling bats are probably few and far between, opportunities to reduce the likelihood of

white-nose syndrome on private lands should be considered.

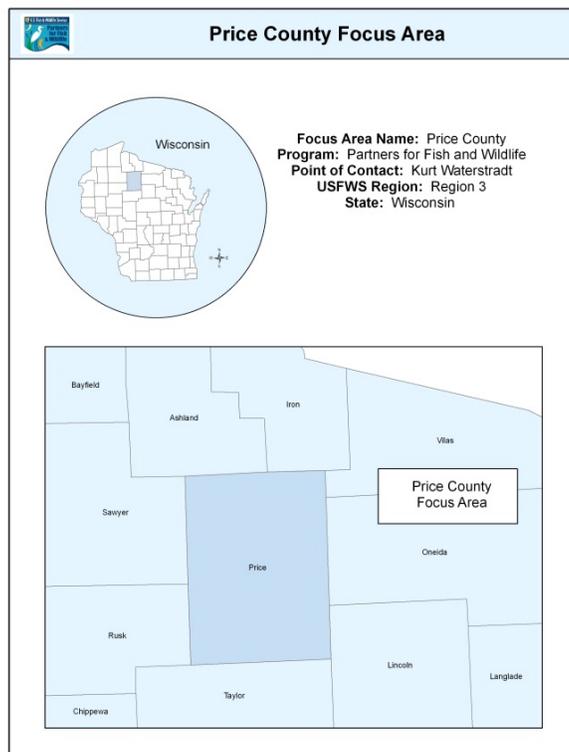
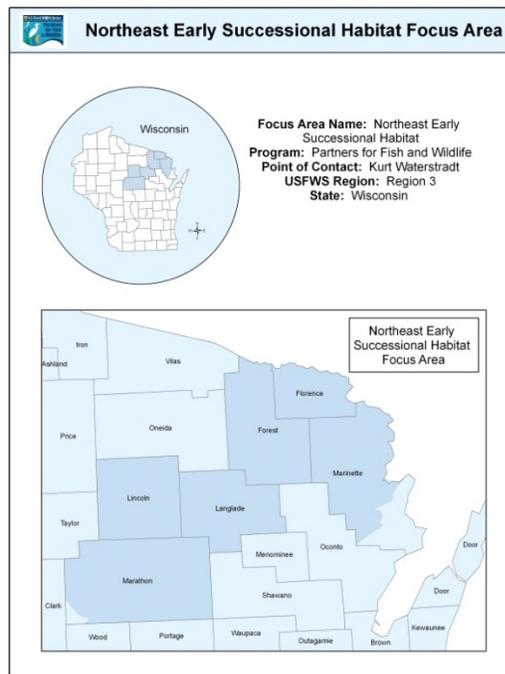
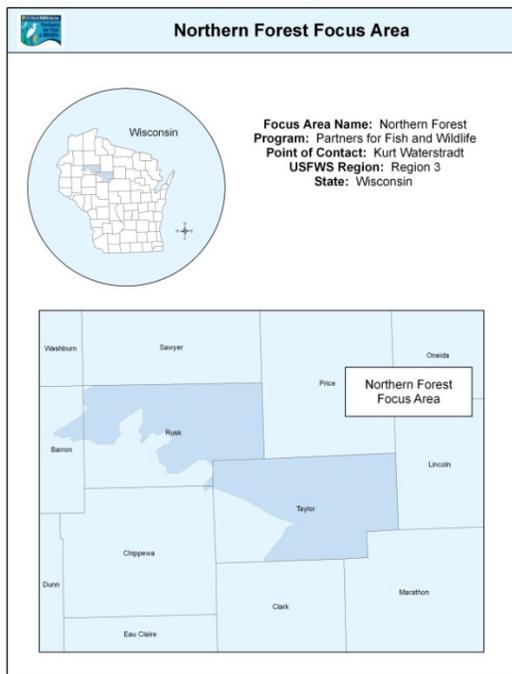
Monroe Jackson Focus Area Priority Species

Karner blue butterfly	(<i>Lycaeides melissa samuelis</i>) Federally Endangered
Blanding's Turtle	(<i>Emydoidea blandingii</i>)
Yellow Rail	(<i>Coturnicops noveboracensis</i>)
Eastern Massasauga	(<i>Sistrurus catenatus catenatus</i>)
Whooping crane	(<i>Grus Americana</i>) Federally Endangered

Monroe Jackson Focus Area Five-Year Targets

Wetland Restoration/enhancement: 50 acres
 Upland Restoration/enhancement/protection: 300 acres
 Fish Barrier Removal: 1 barrier

Northern Forest, Northeast Early Successional Habitat, and Price County Focus Areas



This region is characterized by sandy soils and landforms of the more expansive northern forest region of the state. It has a higher percentage of forested land and less agricultural development. Historic vegetation consisted primarily of a variety of northern forest species. Presently, this area has been fragmented by agricultural use and is now approximately 1/4 non-forested. Most of the agricultural use is pasture and hay. Wetland drainage occurred during the period of forest clearing.

In Wisconsin, the goal of the Service's Partners Program is to create and improve habitat for woodcock on non-federal lands located in northern and central regions of the State. To accomplish this goal, the Service will work with partners to regenerate early successional forest habitat, using principles and practices outlined in the Service approved American Woodcock Conservation Plan. These practices will include methods such as woody plant removal, prescribed burning, tree shearing, timber harvest, hand clearing, and other approved management practices. These actions will provide valuable habitat for woodcock and other species of greatest conservation need. The American woodcock is a popular migratory game bird throughout eastern North America. During the past three plus decades the woodcock population across its range in the Northeast and Midwest United States and Canada has shown a steady decline. Biologists believe this is primarily related to changes in habitat. The management objective of the Service is to increase populations of woodcock to levels consistent with the demands of hunters and non-consumptive users.

Other opportunities occur for restoration of wetlands altered by agricultural development, restoration of stream corridors affected by tree clearing, agriculture and sediment deposition. These restorations would benefit migratory water and shore birds, brook trout, and waterfowl.

Partners include the Ruffed Grouse Society, Great Lakes Indian Fish and Wildlife Commission, Wisconsin Department of Natural Resources, U.S. Forest Service, and the Price County Land Conservation Department.

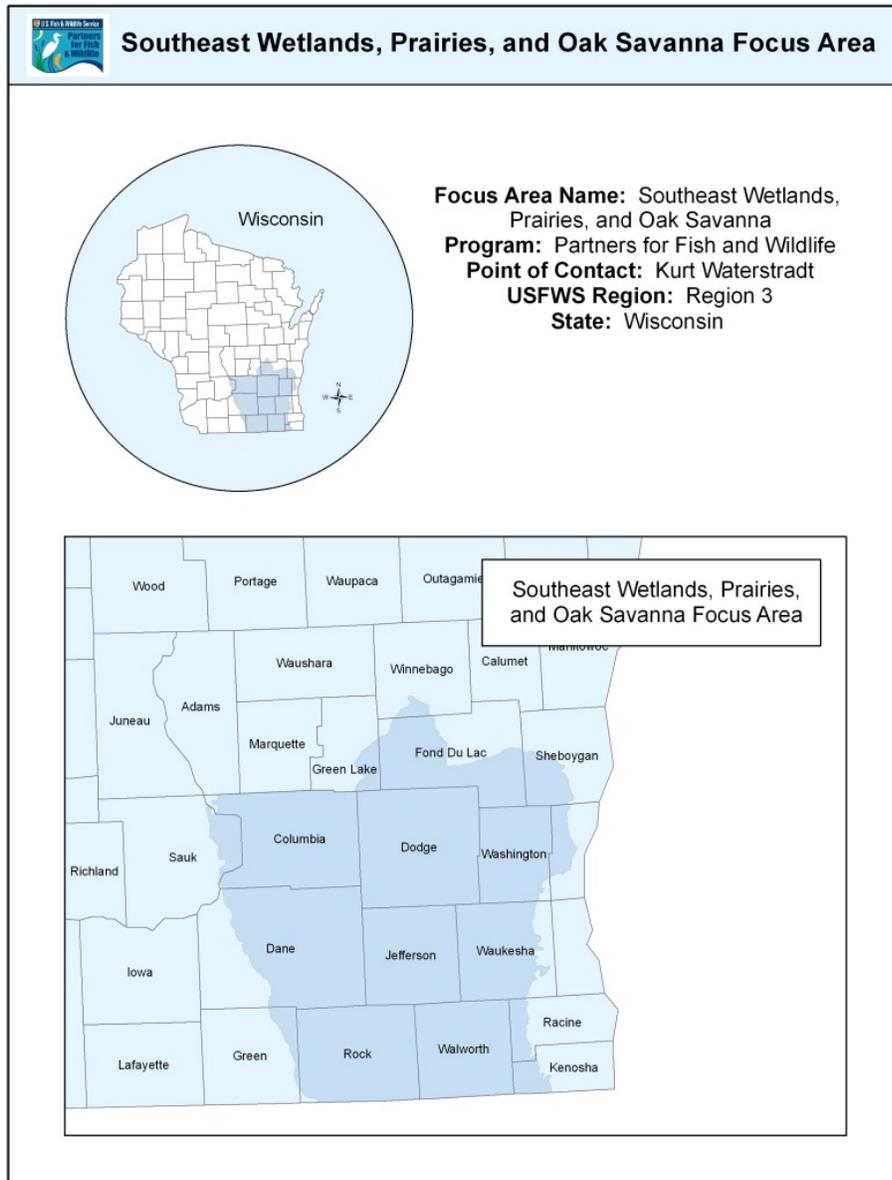
Northern Forest, Northeast Early Successional Habitat, and Price County Focus Areas Priority Species

American woodcock	<i>(Scolopax minor)</i>
Black-billed cuckoo	<i>(Coccyzus erythrophthalmus)</i>
Golden-winged warbler	<i>(Vernivora chrysoptera)</i>
Whip-poor-will	<i>(Caprimulgus vociferous)</i>

Northern Forest, Northeast Early Successional Habitat, and Price County Focus Areas Five-Year Targets

Wetland Restoration/enhancement: 225 acres
 Upland Restoration/enhancement/protection: 700 acres
 Fish Barrier Removal: 5 barriers

Southeast Wetlands, Prairies, and Oak Savanna Focus Area



The Wisconsin Southeast Glacial Plain (WSEGP) originally had a significant proportion of its landscape in a mix of mesic and wet-mesic prairie, oak savanna and wetlands. These landscapes offered habitats for a variety of birds, flora, and fauna that are increasingly imperiled in today's landscape. Current land use has altered this mosaic of natural landforms to a more homogenous mix dominated by row-crop agriculture intermixed with small woodlots, degraded oak savanna, and open grasslands dominated by European grasses. Scattered within this landscape are many small degraded wet meadows and emergent wetlands dominated by invasive reed canary grass, phragmites, and narrowleaf cattail. While some adaptable bird species such as mallard, Canada geese, and blue-winged teal are well-represented in this altered landscape, other species with more specific habitat requirements

are at significant risk of survival. These include many grassland-obligate bird species such as Henslow's sparrow, bobolink, upland sandpiper, and northern harrier; and wetland-obligate species such as whooping crane, sedge wren, and American bittern. In addition, the WSEGP has the densest human population in the state, anchored by the state capital, Madison, in the west and Wisconsin's largest city, Milwaukee in the east. In between these two metro areas, the rural landscape is increasingly being converted to rural housing developments and small farms. This accelerated subdivision of rural land into smaller parcels promotes landscape fragmentation and loss of quality wildlife habitat for those species that are area-sensitive.

The Partners Program has identified a significant portion of the WSEGP as a focus area for our program's wildlife habitat restoration initiative. Working in combination with a variety



Oak Savanna in the Midwest
Photo, USFWS

of Partner agencies and organizations such as The Nature Conservancy, Ducks Unlimited, WDNR, local land conservancies and others, the Partners Program is helping private landowners, local units of government and other land stewards to restore critical habitat for a suite of imperiled species in each of the habitat categories listed below. In addition, the Partners Program seeks to keep common species common, especially in the case of species such as wood duck and blue-winged teal that have regionally significant populations in the focus area. A summary of

each habitat type, focal species, and typical restoration practices to be used by the Partners Program follows:

Oak Savanna Habitat in the WI Southeast Glacial Plain:

Oak savannas were the communities in the middle of this prairie to forest continuum, dominated by large open grown oak trees and maintained by frequent fires. By the early to mid-19th century, oak savannas were virtually destroyed or badly fragmented within Wisconsin as a result of clearing and plowing, overgrazing, and/or the invasion of dense shrub and tree growth due to the lack of fire. Currently there are many of acres of overgrown but retrievable oak savanna on private land. Much of this land could be restored by clearing invasive trees and shrubs that shade out herbaceous plants, mowing invasive or exotic plants to eliminate their spread, prescribed burning to reduce woody encroachment, and/or inter-seeding disturbed areas. Fortunately, most of the savanna species have readily adapted to the changed landscape, or they have managed to hang on and survive to this point in suboptimal habitat (e.g., the fringes of other less devastated communities such as oak forests). However, there are a few species associated with savanna habitat experiencing significant declines. A

number of savanna bird species have begun to decline in recent years (e.g., northern flicker, redheaded woodpecker, vesper sparrow, and field sparrow) in which the abandonment and loss of savanna/woodlot pastures is playing a major role. There are a few reptiles also suffering from the loss of critical savanna habitat. These include the western slender glass lizard and the ornate box turtle; both are now on the state list of endangered species. As agriculture continues to dominate open spaces traditionally used for turtle nesting, savanna sites are becoming important nesting areas for turtle species such as the state-threatened blanding's turtle.

Prairie Habitat in the WI Southeast Glacial Plain:

Native grass/forb prairies were an important component of the pre-settlement landscape in this region of Wisconsin. They ranged from historically wet and wet-mesic meadows dominated by sedges and water-loving grasses to dry and dry-mesic ridge tops and glacial drumlins. By far the greatest percentage of prairie was the tall-grass mesic prairie, dominated by big bluestem, Indian grass and switchgrass along with tall robust forbs such as compass plant, prairie dock and rattlesnake master. It is estimated that 99% or more of the original prairies in the southeast region have been converted to row-crop agriculture or cool-season non-native pasture and hayland, resulting in a severe decline of native obligate grassland birds such as the lesser prairie chicken, bobolink and upland sandpiper. A small fraction of native remnant prairie can still be found, though typically invaded by invasive woody trees and shrubs that take over prairies when burning ceases. Restoration practices used to re-establish or restore prairies include ceasing crop production and seeding with a species-rich mix of grasses and forbs into the crop residue, chemical treatment of invasive trees and brush, and conversion of cool-season non-native grassland to prairie. In addition to the obligate grassland birds that will benefit from increasing prairie habitat, mesic and wet-mesic prairies are used for nesting by mallard and blue-winged teal throughout the WSEGP.

Wetland Habitat in the WI Southeast Glacial Plain:

There is a rich array of wetland types occurring in this landscape, ranging from wet prairies (see above) to prairie potholes that support a variety of dabbling ducks and rails, to deep-water emergent marshes that provide habitat to diving ducks and Canada geese. Along rivers and streams, wooded floodplain wetlands provide habitat for wood ducks as well as rookeries for colonial wading birds. As in the case of prairies, over 75% of all wetlands in this focus area have been drained and converted to agricultural production. Many of these converted wetlands are marginal cropland in the current farm economy and as such, present a good opportunity for restoration.

The Wisconsin Plan for the Great lakes Joint Venture identifies the WSEGP as Priority 1 breeding and migrational habitat for ducks and Canada geese. In recent years there has been a 15% reduction in the cumulative breeding population of ducks in the GL Joint Venture from the peak populations of the mid-1990's. To address this decline the joint venture has established a wetland restoration goal for Bird Conservation Region 23 (WSEGP is included in this BCR) of 10,347 acres annually for the period 2007-2022. Considering that the

WSEGP makes up approximately 35% of BCR 23, there is a need to restore and protect about 41,000 acres of wetland in the WSEGP over the next 12 years. The Partners Program, working with the USDA-NRCS, our state WDNR partner, and the many private landowners and non-profit organizations in the region, are working cooperatively to reach this goal. Focal species that will benefit from this initiative include mallard, blue-winged teal, wood duck and Canada geese.



Restored Wetland, Jefferson County, WI
Photo, USFWS

Practices commonly used for wetland restoration in the WSEGP include tile breaks, ditch fills, low-head embankments and shallow scrapes. Additionally, invasive species such as phragmites, reed canary grass and cattail are often controlled through a mix of mowing, burning and herbicide application.

Federally Threatened & Endangered Species in the WI Southeast Glacial Plain

Eastern prairie fringed orchid: This orchid is a perennial herb that grows from an underground tuber occurring in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering, and a grassy habitat with little or no woody encroachment. The fragrant flowers of this white orchid are pollinated by night-flying hawk moths who inadvertently collect pollen on their proboscises as they ingest nectar from the flower's long nectar spurs. Current decline is mainly due to the loss of habitat from drainage and development of wetlands, as well as the succession to woody vegetation and competition from non-native species.

Prairie Bush Clover: It is a member of the bean family found only in the tallgrass prairie region of the upper Mississippi River Valley. It has a clover-like leaf comprised of three leaflets about an inch long and a quarter inch wide with pale pink or cream colored flowers that bloom in mid-July. Current decline is mainly due to the loss of its tallgrass prairie habitat as a result of the conversion to agriculture, invasion of woody species, and lack of fire.

Southeast Wetlands, Prairies, and Oak Savanna Focus Areas Priority Species

Mallard	(<i>Anas platyrhynchos</i>)
Wood Duck	(<i>Aix sponsa</i>)
Blue winged teal	(<i>Anas discolor</i>)
Red-headed woodpecker	(<i>Melanerpes erythrocephalus</i>)
Henslow's sparrow	(<i>Ammodramus henslowii</i>)
Eastern prairie fringed orchid	(<i>Platanthera leucophaea</i>) Federally Threatened

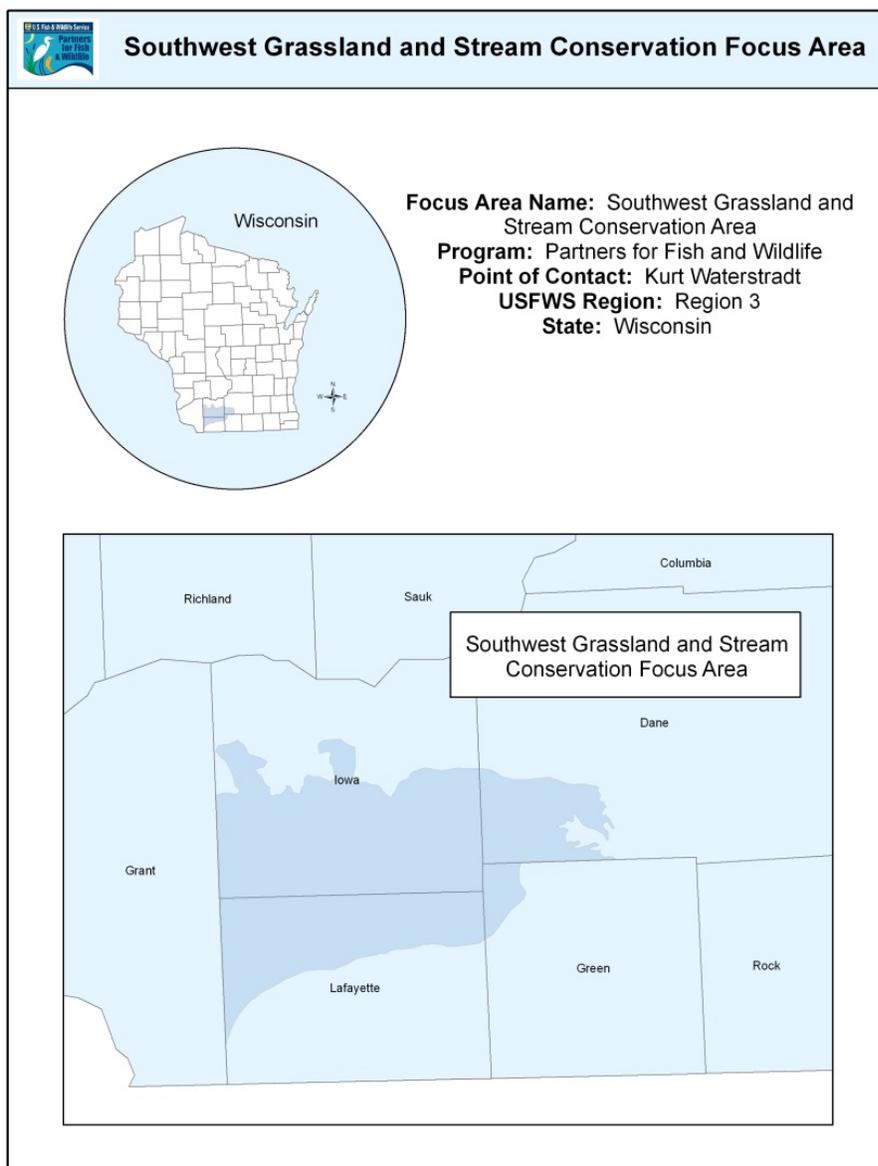
Southeast Wetlands, Prairies, and Oak Savanna Focus Areas Five-Year Targets

Wetland Restoration/enhancement: 300 acres

Upland Restoration/enhancement/protection: 500 acres

Fish Barrier Removal: 1 barrier

Southwest Grassland and Stream Conservation Focus Area



The Southwest Wisconsin Grassland Focus Area including parts of Dane, Green, Iowa and Lafayette Counties is Strategic Habitat Conservation in action. The Wisconsin Wildlife Action Plan identifies this area as the state’s best opportunity to protect remaining native

prairies and oak savannas, and high quality cool- and warm-water streams, within a larger managed grassland landscape.

The Partners Program will work with partners to establish three Bird Conservation Areas (BCA) for declining grassland birds. The BCA model encompasses a block of at least 10,000 acres of public and/or private lands in an open landscape. Around this core is a matrix of primarily private agricultural lands, preferably managed for good bird habitat. The BCA concept has been recommended as an important conservation strategy for grassland birds by both Partners in Flight (Rich, et al. 2004) and the Service Upper Mississippi River and Great Lakes Region Joint Venture (Potter, et al. 2007).



Henslow's sparrow
Photo, Jack Bartholmai

The Service Upper Mississippi River and Great Lakes Joint Venture (Potter, et al. 2007) has developed population estimates and goals for several grassland birds in Wisconsin. They recommend doubling the Red-headed Woodpecker, Henslow's Sparrow and Eastern Meadowlark populations in Wisconsin, and increasing the Upland Sandpiper population by about one-third above current levels. The Partners Program hires private contractors or partners with private landowners to improve grassland habitat on private lands as follows:

- Remove invasive trees from riparian corridors and field edges sending the wood product to generate electricity as biofuel. The tree line removal improves water quality and reduces predator pressure on declining grassland birds.
- Mow or use prescribed fire to increase forage production on grazing land for beef cattle and dairy cows. This increases the quality of habitat for grassland obligate birds.
- Hire small local businesses to manage invasive species in grass and savanna habitat.

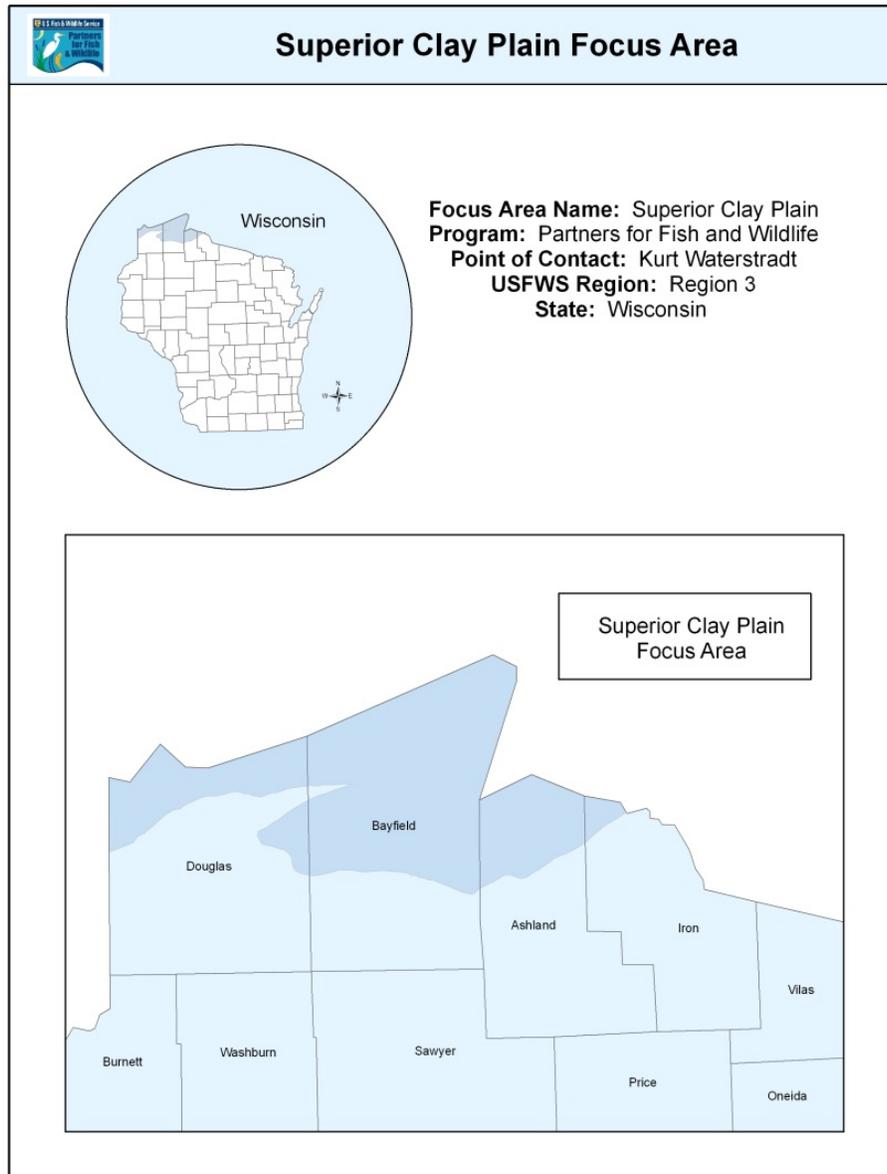
Southwest Grassland and Stream Conservation Focus Area Priority Species

Red-headed woodpecker	<i>(Melanerpes erythrocephalus)</i>
Eastern meadowlark	<i>(Sturnella magna)</i>
Upland sandpiper	<i>(Bartramia longicauda)</i>
Henslow's sparrow	<i>(Ammodramus henslowii)</i>

Southwest Grassland and Stream Conservation Focus Area Five-Year Targets

Wetland Restoration/enhancement: 30 acres
Upland Restoration/enhancement/protection: 2100 acres

Superior Clay Plain Focus Area



This area is strongly influenced by Lake Superior, resulting in cooler summers, warmer winters, and greater precipitation compared with more inland locations. The major landform is a nearly level plain of lacustrine clays that slopes gently toward Lake Superior. A group of sandstone-cored islands, the Apostles, occurs in Lake Superior just north of the Bayfield Peninsula. Sand spits are a feature of the Lake Superior shoreline, typically separating the waters of the lake from inland lagoons and wetlands. The spits support rare and highly threatened natural communities including beaches, dunes, wetlands, and pine barrens. The mouths of many of the streams entering Lake Superior are submerged, creating freshwater estuaries. Whittlesey Creek National Wildlife Refuge is located in Bayfield County and was established to protect and restore habitat for the coaster brook trout.



Mallard Drake
Photo, Ted Koehler, USFWS

Historic vegetation consisted primarily of a variety of northern forest species. Presently, this area has been fragmented by agricultural use and is now approximately 1/3 non-forested. Most of the agricultural use is pasture and hay. Wetland drainage occurred during the period of forest clearing.

Opportunities occur for restoration of wetlands altered by agricultural development, restoration of stream corridors affected by tree clearing, agriculture and sediment deposition, and wild rice bed restoration. These restorations would benefit migratory water and shore birds, coaster brook trout, and waterfowl.

Partners include Ducks Unlimited, Trout Unlimited, Great Lakes Indian Fish and Wildlife Commission, several Indian tribes, The Nature Conservancy, Wisconsin Department of Natural Resources, U.S. Forest

Service, and the Douglas, Bayfield, Ashland, Iron Land and Water Conservation Departments.

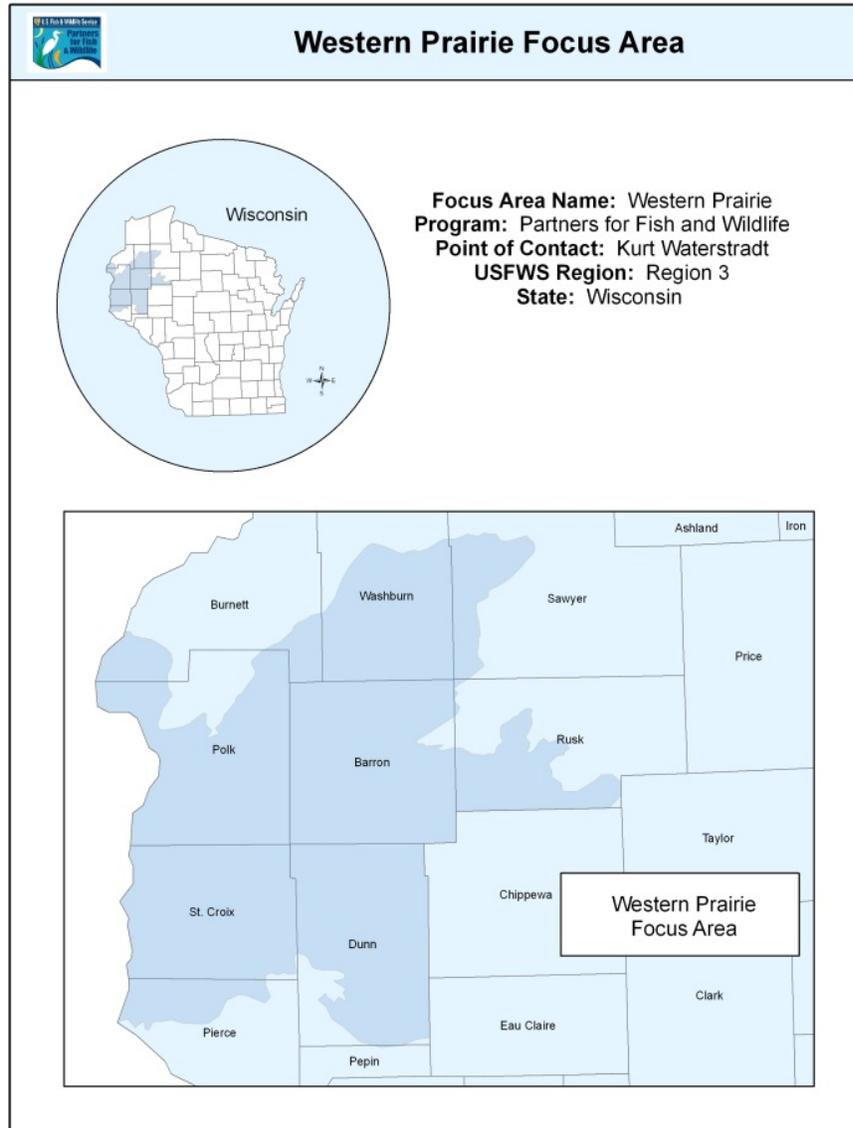
Superior Clay Plain Focus Area Priority Species

Mallard	<i>(Anas platyrhynchos)</i>
Wood Duck	<i>(Aix sponsa)</i>
Blue winged teal	<i>(Anas discolor)</i>
Coaster brook trout	<i>(Salvelinus fontinalis)</i>

Superior Clay Plain Focus Area Five-Year Targets

Wetland Restoration/enhancement: 150 acres
 Upland Restoration/enhancement/protection: 100 acres
 Fish Barrier Removal: 2 barriers

Western Prairie Focus Area



The Wisconsin Western Prairie originally had a significant proportion of its landscape in a mix of mesic and wet-mesic prairie, oak savanna and wetlands. Historically, this landscape was dominated by pothole type wetlands supporting relatively high densities of breeding waterfowl, particularly mallards, wood ducks and blue winged teal. Current land use has altered this mosaic of natural landforms to a more homogenous mix dominated by row-crop agriculture intermixed with small woodlots, degraded oak savanna, and open grasslands dominated by European grasses. Scattered within this landscape are many small degraded wet meadows and emergent wetlands dominated by invasive reed canary grass, phragmites, and narrowleaf cattail. While some adaptable bird species such as mallard, canada geese, and blue-winged teal are well-represented in this altered landscape, other species with more specific habitat requirements are at significant risk of survival. These include many grassland-obligate bird species such as Henslow's sparrow, bobolink, upland sandpiper, and northern harrier; and wetland-obligate species such as whooping crane, sedge wren, and

American bittern. In addition, the Western Prairie is threatened from urban sprawl with Minneapolis/St. Paul, MN expansion. This accelerated subdivision of rural land into smaller parcels promotes landscape fragmentation and loss of quality wildlife habitat for those species that are area-sensitive.

The Western Prairie Habitat Restoration Area was established by the State of Wisconsin to protect and restore 20,000 acres of grassland and wetland habitat in western St. Croix and southwestern Polk counties. The goal is to restore a large enough block of habitat to benefit many of the grassland dependent birds that were once common in this historically prairie dominated area of Wisconsin. Within these two landscape level focus areas within the St. Croix Wetland Management District (District), there are several smaller focus areas that the District is working on. These include the following:

Star Prairie Grasslands Bird Conservation Area (BCA):

The goal of this project is to restore 40% grassland on the BCA landscape that is



Native Prairie, St. Croix County, WI
Photo, USFWS

approximately 29,000 acres in size. This is a partnership project with the WDNR to target our restoration and management efforts to benefit a myriad of grassland dependent birds in a focused area.

Management and restoration efforts are targeted on existing public lands as well as neighboring landowners within the project area. The BCA is early in the stages of monitoring and restoration. Complete habitat mapping of the BCA has been completed and grassland represents 25% of the 29,000 acres landscape. Partners Program activities will include removal of

fencerow trees with WPA neighbors, wetland restoration, grassland restoration, oak savanna restoration.

Willow River BCA:

The goal of this project is to restore 40% grassland on the BCA landscape that is approximately 12,000 acres in size. This is a partnership project with the WDNR to target grassland restoration within a corridor along the Willow River. Most of the work will be on public lands and adjacent private lands. Partners Program activities will include removal of fencerow trees with public land neighbors, grassland restoration, oak savanna restoration

Waterfowl Production Focus Areas: Burnett, Washburn, Polk, Barron and Dunn Counties:

The goal of the project is to restore small wetlands across the landscape. Little work has been done to promote or restore wetlands on a concentrated basis within these counties. The

project will start the promotion of the program and identify areas within the counties that are suitable for a focused effort. The District mapped all wetlands within the eight county area and completed an analysis which weighted the acreage of wetland with the number of wetland basins. Through this process the District identified several areas that have a high density of wetland basins. Restoration activities will be targeted in these areas to try to further increase the density of wetland basins on the landscape as well as grassland acreage.

Kinnickinnic Watershed:

The goal of this project is to restore and enhance habitat within the Kinnickinnic watershed in partnership with the Kinni River Land Trust, an organization dedicated to the restoration and protection of the Kinnickinnic River as a community resource.

The Kinnickinnic River watershed is a 100,000 acre watershed in Pierce and St. Croix counties. The Kinni watershed is characterized by scenic bluff lands, rare oak savanna, original prairie, farm land, white pine forest, wooded coulees, sedge meadows, rare and endangered plant species (including the Fameflower), beautiful stands of white pines and plenty of open space and scenic vistas. Its feeder creeks are cold and clean, containing wild native brook trout, important spawning areas, wetlands, and many springs arising from under picturesque limestone outcroppings. Its acreage is home to deer, wild turkey, pheasants, rabbits, ducks and other wildlife. Within the Kinni watershed can be found 40 Endangered, Threatened, or Special Concern species, 500 plant species (40% of all plant species found in Wisconsin), 100 non-vascular plants (mosses, lichens, etc.), and 140 bird species (50% of the species found in Wisconsin). Partners Program activities will include wetland restoration in upper reaches of the watershed, bluff oak savanna restoration along the river, grassland restoration in the watershed, technical assistance

Western Prairie Focus Area Priority Species

Red-headed woodpecker	<i>(Melanerpes erythrocephalus)</i>
Eastern meadowlark	<i>(Sturnella magna)</i>
Henslow’s sparrow	<i>(Ammodramus henslowii)</i>
Mallard	<i>(Anas platyrhynchos)</i>
Blue winged teal	<i>(Anas discolor)</i>

Western Prairie Focus Areas Five-Year Targets

Wetland Restoration/enhancement: 300 acres
 Upland Restoration/enhancement/protection: 500 acres