

Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperative

Landscape Conservation Cooperatives Overview

The sustainability of natural and cultural resources and landscapes are important to quality of life and local economies.

Landscape Conservation Cooperatives (LCCs) address large scale natural resource challenges that transcend political and jurisdictional boundaries and require a networked approach to conservation—holistic, collaborative, and grounded in science—to ensure the sustainability of America's land, water, wildlife and cultural resources.

LCCs collectively form a national network of land, water, wildlife, and cultural resource managers, scientists, and interested public and private organizations—within the U.S. and across our international borders—that share a common need for scientific information in conservation.

Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperative

The Eastern Tallgrass Prairie and Big Rivers LCC is dedicated to addressing the conservation challenges of a heavily agricultural landscape that stretches across the nation's heartland from southwest Ohio westward across to parts of eastern Kansas, Oklahoma and Nebraska and northward into segments of Iowa, South Dakota and Minnesota.

European settlers moving west across a young America discovered rich, rolling, fertile lands and ample farming opportunities in the area that would become America's "cornbelt."



Left: Tallgrass prairie at Marais des Cygnes National Wildlife Refuge. Right: Freshwater mussels from upper Mississippi River. U.S. Fish and Wildlife Service photos.

Millions of acres of forest and prairie were cleared, plowed and put into agricultural production.

While the geography associated with the Eastern Tallgrass Prairie and Big Rivers LCC is predominantly agricultural and privately owned, the area also contains numerous state and federal-managed tracts of land including national wildlife refuges, state wildlife management areas, land trust parcels and nature preserves, which provide habitat for a wide variety of aquatic and terrestrial species of wildlife.

Many agricultural practices have begun to address conservation challenges, establish wildlife habitat and conserve forested lands within this agricultural landscape. State and federal programs have also worked to restore small and fragmented woodlands and protect critical riverine corridor habitat for fish and wildlife.

The landscape is home to some of America's premier rivers including the Mississippi, Missouri, Illinois, Wisconsin, Ohio and Wabash as well as a wide variety of lakes and reservoirs.

Contact

Glen Salmon, LCC Coordinator
620 S. Walker St.
Bloomington IN 47403
Phone: 812-334-4261 ext 1211

For more information:
<http://www.fws.gov/midwest/climate/LCC/ETPBR/>

Geographic Area



Geographic area defined by the Eastern Tallgrass Prairie and Big Rivers Landscape Conservation Cooperative outlined in red.

2012 Activities

Interim steering committee members include:

U.S. Fish and Wildlife Service (Midwest Region and Mountain Prairie Region); Illinois Department of Natural Resources; Indiana Division of Fish and Wildlife; Iowa Department of Natural Resources; Kansas Department of Parks and Wildlife; Missouri Department of Conservation; Nebraska Game and Parks Department; Ohio Division of Wildlife; Minnesota Department of Natural Resources; Oklahoma Department of Wildlife; South Dakota Game, Fish and Parks; Wisconsin Department of Natural Resources; The Nature Conservancy; Natural Resources Conservation Service; U.S. Army Corps of Engineers; Chicago Wilderness; Illinois Natural History Survey; Fish Habitat Partnerships; U.S. Geological Survey; Ducks Unlimited; Pheasants Forever; Land Trust Alliance; National Park Service; U.S. Forest Service; U.S. Environmental Protection Agency;

and Upper Mississippi River and Great Lakes Joint Venture. Interim committee members are currently working with the U.S. Geological Survey Northeast Climate Science Center to gather input from the Midwest scientific community to establish wildlife-related research priorities. Additional projects supported by the LCC are underway this year. Ongoing research projects include:

Remote sensing Mississippi River remote sensing

The Service, U.S. Army Corps of Engineers, U.S. Geological Survey, and many river partners along the Illinois and Mississippi rivers are partnering to collect infra-red digital imagery during periods of peak vegetative growth to develop a cover map for the Mississippi River flood plain from Minneapolis, Minn. to the Ohio River confluence. This information will be used to identify changes within the basin over the past 10 years, strategically guide biological programs in support of natural resource conservation,

and assist in making science-based decisions within the Mississippi River basin.

Aviation and remote sensing programs

The efficiency and effectiveness of aerial photography by the Service's Midwest Aviation Program will be improved with upgraded components for the Applanix DSS 439 Camera System. These upgrades will ultimately assist decision making by biological programs to support natural resource conservation.

Refining freshwater mussel conservation techniques

Early life stage survival in propagated mussels averages less than five percent. Through the installation and operation of a mobile rearing system using river water, this study will compare the relative survival of newly transformed juveniles using treated river water versus hatchery water.

Plains and Prairie Potholes Landscape Conservation Cooperative

Landscape Conservation Cooperatives Overview

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The Plains and Prairie Potholes Landscape Conservation Cooperative

The Plains and Prairie Potholes LCC is dedicated to the conservation of three main sub-units that transcend existing regional boundaries and the international border with Canada. Those geographic areas include the Prairie Pothole Region, Northern Great Plains, and the riparian corridors of several major river systems.

LCC partners are working to develop and apply the scientific tools necessary to determine how climate change, coupled with existing stressors such as the conversion of native prairie for agricultural purposes may affect the health and productivity of shared natural resources in this



Left: Prairie skyline in the upper Midwest. Right: Prairie potholes are also known as breeding grounds for America's waterfowl. U.S. Fish and Wildlife Service photos.

landscape. The actions of the LCC will support and supplement State Wildlife Action Plans and enhance protection for fish and wildlife resources in the region.

The Prairie Pothole Region includes millions of wetlands that constitute one of the richest wetland and grassland systems in the world. Ecologically, the Northern Great Plains is the most diverse subunit within the LCC but also the least protected with less than two percent of the area's 180 million acres managed for wildlife conservation. Rivers in the Plains and Prairie Pothole LCC are notorious for their extensive flooding, meandering channels, and for their ability to transport massive amounts of sediment. The upper Missouri River system and its major tributaries, such as the Yellowstone River, provide vital habitat for many threatened and endangered fish and wildlife species.

Partners of this LCC include federal agencies, fish and wildlife agencies of all included states, as well as Native American tribes and Canadian federal and provincial agencies and many nongovernmental and interjurisdictional organizations.

The LCC is co-chaired by the U.S. Fish and Wildlife Service (Service) and North Dakota Fish and Game Department.

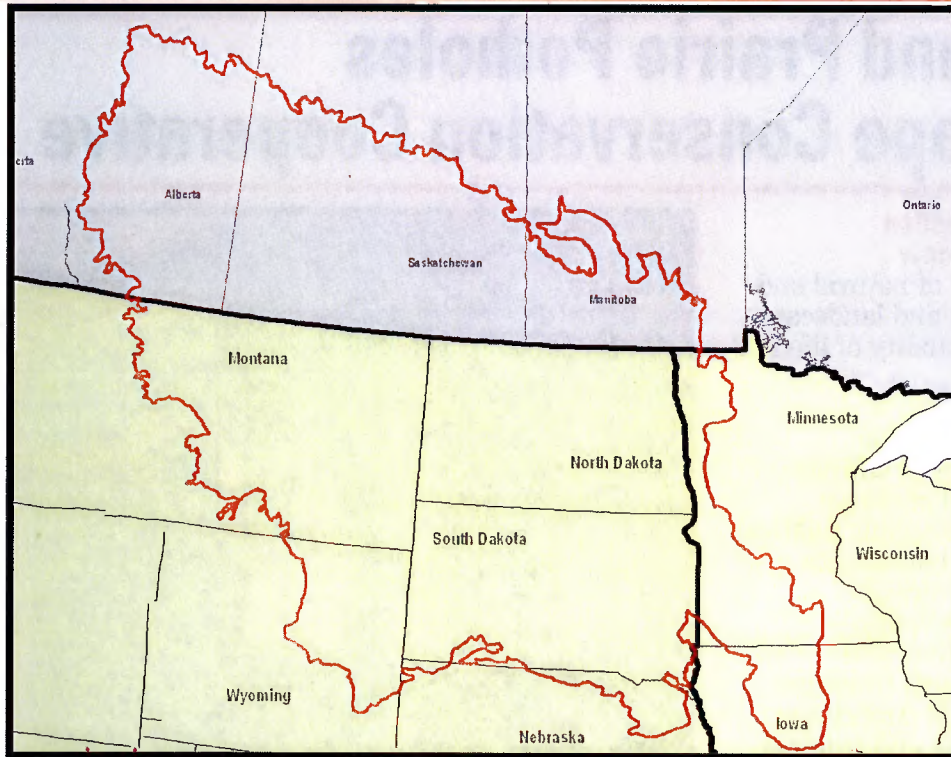
Established in 2010, the LCC was founded and organized by more than 20 federal, state and private conservation organizations.

Contact

Rick Nelson LCC Coordinator,
701-355-8509, Richard_D_Nelson@fws.gov

For more information:
plainsandprairiepotholeslcc.org

Geographic Area



Geographic area defined by the Plains and Prairie Potholes Landscape Conservation Cooperative outlined in red.

2012 Activities

The following research received funding from the Plains and Prairie Potholes LCC in 2012:

Livestock grazing and climate change impacts to sagebrush ecosystems and migratory birds
Livestock grazing practices are managed by private landowners, federal and state agencies across the western U.S. This project will evaluate the impact of specific livestock grazing practices and climate changes on migratory bird species associated with sagebrush habitat to better inform management practices.

Groundtruthing aquatic habitat models
This project will validate the accuracy of current aquatic habitat models developed by Midwest and Great Plains Fish Habitat Partnerships that set specific habitat restoration targets to achieve fish population objectives.

Effects of oil and gas development on grassland birds
Oil and gas development in North

Dakota is taking place at a rapid rate, and few managers and biologists are equipped to address and minimize damage from oil development and related activities on fish and wildlife habitat. This project aims to gather information on impacts to grassland birds from oil and gas development to better inform conservation managers.

Climate change impacts to water in wetlands

Wetland hydroperiod, the length of time water is available in wetlands, is particularly sensitive to changes in precipitation, temperature and timing due to climate variation. Truncated hydroperiod has major implications for wetland-dependent species and human water allocation. This study aims to link hydroperiod to current climatic variation and use this relationship to predict wetland hydroperiod across the sage steppe to grasslands landscape of the Plains and Prairie Pothole LCC.

Climate change and energy development impacts to large and small fish

This study will examine the swimming abilities of large river and small stream prairie fish to determine the potential impacts of changing water flow due to climate change in addition to the impacts of fish barriers associated with energy development. This information will assist fisheries biologists and managers in prioritizing fish passage and aquatic restoration work.

Upper Midwest and Great Lakes Landscape Conservation Cooperative

Landscape Conservation Cooperatives Overview

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The Upper Midwest and Great Lakes Landscape Conservation Cooperative

The geographic area of the Upper Midwest and Great Lakes LCC transcends existing state boundaries and the international border with Canada. The LCC includes portions of Minnesota, Iowa, Wisconsin, Illinois, Indiana, Michigan, Ohio, Pennsylvania, New York and Vermont, as well as areas of Manitoba, Ontario and Quebec.

The area includes unparalleled deepwater habitats, beaches, coastal wetlands, more than 35,000 islands, major river systems, boreal forests, and prairie-hardwood transition zones. These habitats provide for extensive resident and non-resident game



Left: The Great Lakes contain roughly 20 percent of the world's, and more than 80 percent of North America's, freshwater supply. Right: Upper Mississippi National Wildlife and Fish Refuge. U.S. Fish and Wildlife Service photos.

populations, fish and many other aquatic resources, waterfowl, colonial waterbirds, marshbirds, and neotropical migrant landbirds.

The unique deepwater habitats of the Great Lakes support extensive fish communities including many important sport and commercial species. The Great Lakes Fishery Commission has estimated the value of Great Lakes fisheries at \$7 billion annually. These are among the world's largest and most valuable freshwater fisheries.

The Great Lakes are large enough to define regional weather patterns, strengthening storms and causing "lake effect" conditions.

The upper Midwest and Great Lakes have experienced major ecological changes during the past 150 years due to many stressors. New environmental challenges continue to arise even as we address these historical damages. The impacts of climate change are already evident in warmer water, longer ice-free season,

earlier spring runoff, changing water levels and resulting habitat alterations and impacts to water quality and ecological processes.

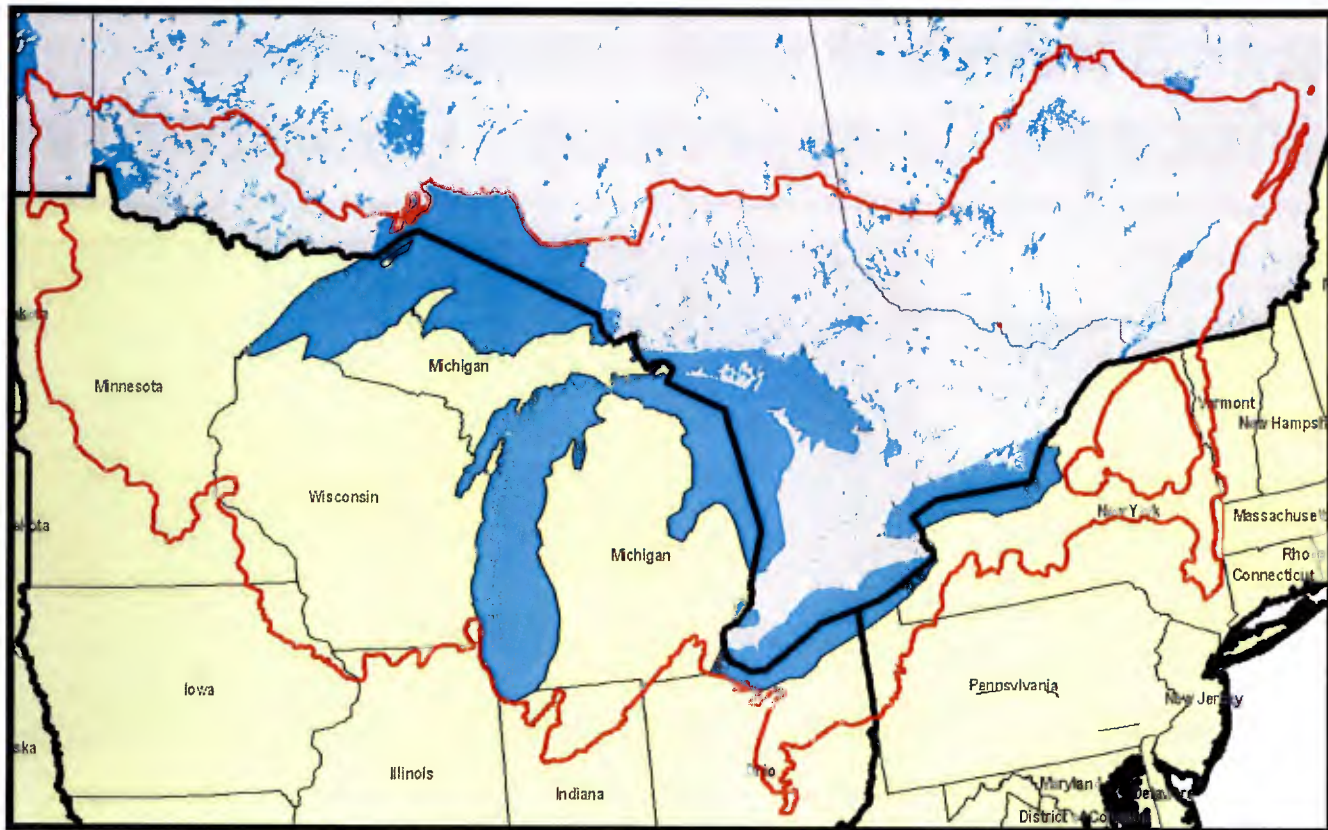
There is a long and successful history of partnership collaboration in the upper Midwest and Great Lakes. Partners of this LCC include federal agencies, fish and wildlife agencies of all included states, as well as Native American tribes and Canadian federal and provincial agencies and many nongovernmental and interjurisdictional organizations.

Contact

Craig Czarnecki, LCC Coordinator, (517) 341-8470 or craig_czarnecki@fws.gov.

For more information:
greatlakeslcc.org

Geographic Area



Geographic area defined by the Upper Midwest and Great Lakes Landscape Conservation Cooperative outlined in red.

2012 Activities

Five research projects were initiated with LCC funding in 2010. An additional nine projects were initiated in 2011. Multi-year research projects currently underway with 2010 and 2011 funding include:

The Nature Conservancy, U.S. Geological Survey and natural resources partners are working to develop a web-based information management and delivery system to facilitate education, and the sharing of data and decision tools for the Great Lakes.

Researchers at the University of Wisconsin are working with scientists and conservation managers to identify the most climate vulnerable terrestrial species and natural communities within the LCC geographic region.

The U.S. Fish and Wildlife Service is working alongside federal, state, academic and non-governmental

institutions across the Great Lakes basin to update and upgrade geospatial data as part of the National Wetland Inventory Program.

The Nature Conservancy is working to develop a scalable spatial model to rank the importance of coastal lands and waters as habitat for migrating birds.

Michigan State University is using data from the North American Breeding Bird Survey to estimate environmental factors impacting avian responses to climate change.

Academic researchers from Michigan and Canada are working in conjunction with the tribal and first nation communities of the upper Midwest and Great Lakes region to improve networking and collaboration on natural resource

issues related to climate change and landscape conservation.

U.S. Geological Survey and other conservation partners are working to identify vulnerabilities of river segments and fish species to climate change, and, to provide decision support tools for natural resources managers at multiple jurisdictional scales.

For a complete list of research funded by the Upper Midwest and Great Lakes LCC since 2010 and to view LCC technical and steering committee activities, visit greatlakeslcc.org