





# CHAPTER 4

## Supply of Wetlands in Indiana

Chapter four examines the supply and types of wetlands in Indiana. Due to their rarity and threatened habitat status, wetlands are a priority of acquisition for outdoor recreation purposes, via the Land and Water Conservation Fund grant program. After decades of removal, neglect, drainage, development and destruction, wetland habitats have slowly undergone resurgence nationwide.

Each SCORP in the nation is required to have a chapter specifically addressing many aspects of wetlands: existing federal and State programs and initiatives, supply, types of wetlands commonly found in the state, and methods currently being undertaken to restore or conserve them.

### **Definition and Traits (from the Emergency Wetlands Resources Act)**

There are many definitions of wetlands. The U.S. Fish and Wildlife Service uses the most commonly accepted scientific definition. In 1979, Cowardin, Carter, Golet and LaRoe published “Classification of Wetlands and Deepwater Habitats of the United States.” This document was adopted by the U.S. Fish and Wildlife Service as its standard for wetlands classification. It defines wetlands as “... lands transitional between terrestrial and aquatic systems, where the water table is usually at or near

the surface or the land is covered by shallow water.” Wetlands in this standard must also have one or more of the following traits:

1. The vegetation of the site sometimes consists mainly of aquatic plants.
2. The underlying materials are mostly undrained, moist (wetland) soils.
3. The underlying materials are not actually soils, and are saturated with water or covered by water at some point during the growing season of each year (examples include peat, sand or muck).

This definition and set of traits are used in some form by most state agencies that have the authority to create wetland conservation initiatives. The State of Indiana uses them in an almost identical form.

### **INDIANA WETLANDS LEGISLATION, INITIATIVES, AND RESOURCES**

Section 303 of the Emergency Wetlands Resources Act (EWRA) of 1986, (16 U.S.C. Sections 3901-3932, Nov. 10, 1986, as amended 1988 and 1992) requires all SCORPs to: “... address wetlands within that State as an important outdoor recreation resource ...” as part of the National Park Service SCORP review and approval process.

## The Indiana Wetlands Conservation Plan

In 1996, the Indiana DNR Division of Fish & Wildlife created the “Indiana Wetlands Conservation Plan” (IWCP) as required by, and consistent with, the EWRA’s National Wetlands Priority Conservation Plan. The IWCP contains much information about wetlands in Indiana, and sets priorities for their identification and conservation. To view or download the IWCP, go to: [on.IN.gov/IWCP](http://on.IN.gov/IWCP).

Many of the wetlands conservation efforts in Indiana have begun shifting over to similar programs and staff within the Indiana Department of Environmental Management. Its contact information is:

IDEM - Watershed Planning Branch  
Wetlands, Lakes, and Streams Regulation  
100 North Senate Avenue  
MC65-42, WQS IGCN 1255  
Indianapolis, IN 46204  
(317) 233-8488

## Hoosier Wetlands Conservation Initiative (HWCI)

The IWCP created the Hoosier Wetlands Conservation Initiative (HWCI) as the action component of the plan. The HWCI uses six tactics for conserving wetlands in Indiana:

1. Implementing the IWCP through local wetland conservation partnerships.
2. Obtaining scientific information about Indiana’s wetland resources, with an emphasis on making conservation techniques effective and cost-efficient.
3. Providing positive incentives to motivate conservation and restoration of wetlands.
4. Providing educational opportunities for educational staff, landowners, schoolchildren, and other audiences to enhance community understanding of the functions and benefits of wetlands.
5. Acquisition (from willing owners) for the purpose of permanently protecting the highest priority wetlands.
6. Continuing the work of the IWCP’s Wetlands Advisory Group and Technical Advisory Team as cooperative partners, led by the DNR.

## IWCP Wetland Conservation Priorities

The IWCP separates the priorities for wetland conservation into two types:

1. Water quality, flood control and groundwater benefits.
2. Biological and ecological functions.

Priorities based on water quality, flood control and groundwater benefits are recommended to be made on the watershed or sub-watershed level. Criteria for identifying priorities based on these three aspects are given in Appendix E of the IWCP, while Appendix F of the IWCP has descriptions of the water management basins and watersheds of Indiana. According to the IWCP, priorities based on biological or ecological functions should be developed from these criteria:

- Rarity of wetland type.
- Presence of endangered, threatened or rare species.
- Presence of endangered, threatened or rare species habitat, but species not yet identified at the site.
- Diversity of native species.
- Proximity of other valued ecosystem types.
- Natural quality (amount/degree of disturbance or degradation).
- “Irreplaceability” (Can the wetland type be re-created?).
- “Recoverability” (Can the wetland type recover from disturbance it has experienced?).
- Size.
- Location.

The IWCP also states that these priorities should be identified based on the natural regions used by the Indiana DNR divisions of Nature Preserves and Fish & Wildlife, and other agencies and organizations. Appendix F of the IWCP identifies natural regions and wetland ecology found in each watershed. Appendix G of the IWCP describes wetland ecological communities. Recreation and historical benefits of wetlands are also mentioned in the IWCP as items to be considered when identifying priorities. Planners trying to create priorities for wetlands conservation in their area are highly encouraged to use the IWCP as a primary guidance document. The entire text of the IWCP is available

for free download at:  
on.IN.gov/IWCP.

IDEM's most recent wetland-related publication is the "Indiana Wetland Program Plan," published in March of 2015. This non-binding, non-regulatory plan is part of the U.S. Environmental Protection Agency's "Enhancing State and Tribal Wetland Programs (ESTP) Initiative." This voluntary plan was intended to act as a guide to wetland stakeholders statewide and offers public-input-informed goals to conserve and protect Indiana's remaining wetlands.

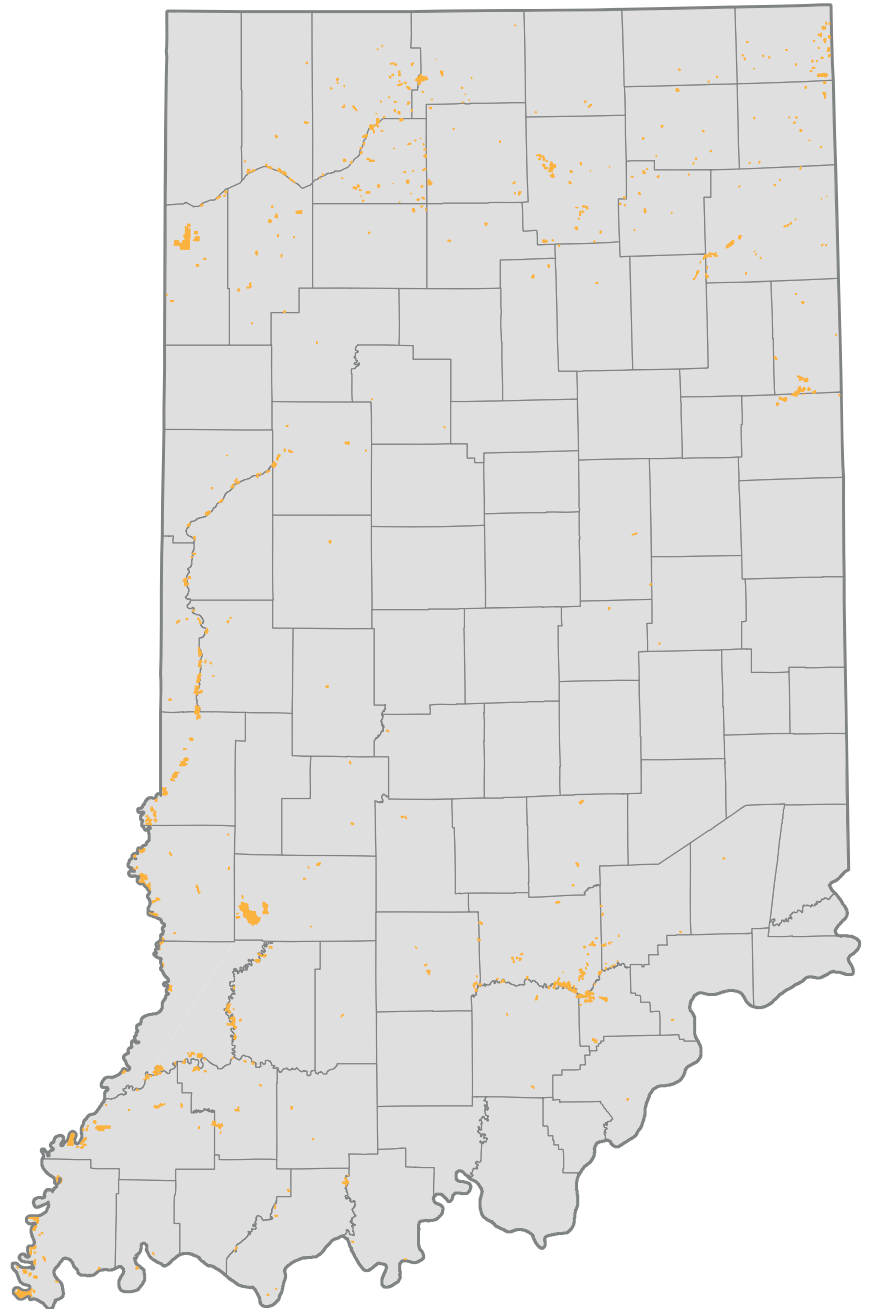
**U.S. Department of Agriculture – Natural Resources Conservation Service (NRCS), Agricultural Conservation Easement Program (ACEP) and the Wetland Reserve Easements Program (WRE)**

One of the largest wetlands conservation efforts in the state is the U.S.D.A. – Natural Resources Conservation Service Indiana Wetlands Reserve Easements Program (WRE). Indiana began participating in the program in 2014, after passage of the 2014 Farm Bill consolidated three former programs (Wetlands Reserve Program, Grasslands Reserve Program and Ranch Lands Reserve Program) into the new Agricultural Conservation Easement Program (ACEP). The ACEP is a voluntary landowner-participation program that encourages protection, restoration, and enhancement of wetlands on private property.

The Indiana NRCS ACEP 2014 website describes the benefits of the WRE program:

Figure 4.1

**NRCS WETLANDS RESERVE EASEMENT SITES**



“Wetlands Reserve Easements provide habitat for fish and wildlife, including threatened and endangered species, improve water quality by filtering sediments and chemicals, reduce flooding, recharge groundwater, protect biological diversity and provide opportunities for educational, scientific and limited recreational activities.”

## Healthy Rivers Initiative

In June 2010, Gov. Mitch Daniels announced the Healthy Rivers Initiative (HRI), the largest land conservation initiative to be undertaken in Indiana. The initiative includes a partnership of resource agencies and organizations who work with willing landowners to permanently protect 43,000 acres located in the floodplain of the Wabash River and Sugar Creek in west-central Indiana, as well as another 26,000 acres of the Muscatatuck River bottomlands in southeast Indiana. Together, HRI has a total land protection goal of 70,000 acres. As of June 2016, HRI had reached the halfway milestone: 35,275 acres permanently protected.

These projects involve protection, restoration and enhancement of riparian and aquatic habitats and the species that use them, particularly threatened or endangered migratory birds and waterfowl. This initiative also benefits the public and surrounding communities by providing flood protection to riparian landowners, increasing public access to recreational opportunities (such as hunting, fishing, trapping, hiking, boating, and bird watching), leaving a legacy for future generations and providing a major conservation destination for tourists.

Eight key objectives identified for HRI:

- Design an effective model for sustainability of natural resources.
- Connect fragmented parcels of public land on a broad scale to benefit wildlife diversity.
- Restore and enhance riparian habitat, including wetlands and bottomland hardwood forests.
- Protect essential habitat for threatened and endangered species.



- Open public access for recreational opportunities (fishing, hunting, trapping, hiking, canoeing, bird watching and boating).
- Preserve significant rest areas for migratory birds, especially waterfowl.
- Create a regionally significant conservation destination.
- Provide additional flood relief to current riparian landowners.

Recent HRI “Years in Review”:

- 2017 – 795 new acres purchased, three new river miles protected, 1,428 new acres opened for public recreation.
- 2018 – 1,193 new acres purchased, 745 acres of wetlands protected through permanent NRCS easements.

More details on the Healthy Rivers Initiative can be found at: [healthyrivers.IN.gov](http://healthyrivers.IN.gov).

## Benefits of Wetlands to Indiana’s Residents (from the IWCP)

For many reasons, it is vitally important for Indiana to conserve and restore wetlands whenever possible. Wetlands offer a significant set of financial, ecological, and recreational benefits to Hoosiers, including:

- Flood control – Wetlands can store large amounts of storm runoff, as seen with the constructed wetlands and settling ponds at Miller-Showers Park in Bloomington.
- Groundwater inlet and outlet – Aquifers can receive and expel water through wetlands as needed, such as the recharge taking place in Celery Bog Park in West Lafayette.
- Improved water quality – Wetlands can act as a biological filter for pollutants such as fertilizers, animal wastes, road runoff, sediments, pesticides and more; water filtered by wetlands costs less to treat and use as drinking water. This filtration process is used to treat acid coal mine drainage at the DNR’s Interlake State Recreation Area in Pike and Warrick counties.
- Sewage disposal – Constructed wetlands are being used as highly effective disposal methods for treated sewage from livestock farms and municipal wastewater. Constructed wetlands are being used for treated sewage disposal at The Farm at Prophetstown and Prophetstown State Park in Tippecanoe County.



- Fish and wildlife habitat – Wetlands are one of the most biologically diverse ecosystems in Indiana. Many fish and wildlife species depend on wetlands for some or all of their food, shelter and water needs. Many species of plants also require the conditions found in wetlands to survive. Goose Pond Fish & Wildlife Area near Linton is being restored as a diverse wetland by a consortium of partners, including the DNR, Natural Resources Conservation Service, and others. One reason for this project is to re-establish historically diverse plant and animal communities.
- Soil stabilization – Wetlands slow erosion by slowing the movement of water through a watershed and by holding soil down (especially on shorelines) with extensive aquatic root systems. IDEM has approved several projects on private property that use wetlands as part of a larger soil stabilization project.
- Food – Wetlands are an important source of food for both wildlife and humans, providing habitat for edible plants, fish, shellfish, waterfowl, deer and other animals.
- Timber production – If managed carefully, valuable timber and forest products can be harvested from wetlands in a sustainable manner without harming the resource.
- Fun – Wetland areas can be used for many popular forms of outdoor recreation such as canoeing, kayaking, fishing, hiking, nature photography, bird watching, swimming, boating and sightseeing. Pisgah Marsh in Kosciusko County is an example of a multiple-use DNR Fish & Wildlife Area that actively supports many types of outdoor recreation.

## INDIANA WETLANDS ACREAGE

As of the creation date of the 2021-2025 SCORP, there still is not a current inventory count of wetlands acres in Indiana. The current best available dataset for Indiana wetlands acres was created in 1991, by R.E. Rolley, as part of the DNR “Indiana’s Wetland Inventory” project. According to the 1996 IWCP, the most recent analysis of the acreage of wetlands in Indiana by habitat type was the 1991 Rolley dataset. At the time, Indiana had approximately 813,000 acres of wetlands, divided into seven basic types (see Table 4.1).

For comparison, it has been estimated that in

Table 4.1 **Indiana Wetland Acres (Rolley, R.E., 1991)**

Wetlands Habitats	Acres	% of Total
Scrub-Shrub	42,131	5.2
Forested	504,336	62.0
Wet Meadow	55,071	6.8
Shallow Marsh	67,564	8.3
Deep Marsh	20,730	2.5
Open Water	98,565	12.1
Other	24,633	3.0
<b>Total</b>	<b>813,032</b>	<b>100</b>

the 1780s, as the first settlers arrived, Indiana had approximately 5.6 million acres of wetlands. This indicates Indiana has lost approximately 85% of its wetlands to agriculture, roads, community development, pollution, vegetation clearing and other land uses. There have been some significant additions to the State’s wetlands portfolio since 1991. The 8,064-acre Goose Pond Fish & Wildlife Area and more than  $\frac{3}{4}$  of a mile of fen at Prophetstown State Park in Tippecanoe County are just two examples. If the newly acquired acreage from HRI is added to these examples, along with other new piecemeal wetland acreage statewide, gains in the total wetland inventory in Indiana are likely, but not yet provable with expert-verified data on a statewide basis.

As with many other states, Indiana, in the past, had placed a greater priority on development or conversion of wetlands to other uses. Historically, many farmers saw wet bottomlands on their properties as nuisances to be drained and used for agriculture, not as a natural resource to be conserved or protected. With greater overall understanding of the ecological importance and other benefits of wetlands, as well as recognition of their biodiversity and utility, attitudes toward wetlands have shifted toward conservation, remediation, and enhancement. The IWCP identifies some of the habitat lost or converted, as well as areas that need to be restored. State, federal, private and not-for-profit organizations are working together in many ways to identify, purchase and restore more of the former wetlands to their original glory.