

# 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 habitat type for acquisition for outdoor recreation purposes via the Land and Water Conservation Fund grant program. Nationwide, wetland habitats have slowly undergone resurgence after decades of removal, neglect, drainage, development and destruction. Each SCORP in the nation is required to have a chapter specifically addressing many aspects of wetlands. Topics include existing federal and state programs and initiatives, supply, types of wetlands commonly found in the state, and methods being used to restore or conserve them.

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

There are many definitions of wetlands. The most commonly accepted scientific definition is that used by the U.S. Fish and Wildlife Service (USFWS). In 1979, Cowardin, Carter, Golet and LaRoe published "Classification of Wetlands and Deepwater Habitats of the United States." The USFWS adopted this document as its standard for wetlands classification. The publication 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. Some of the time, the vegetation of the site consists mainly of aquatic plants.

And May Include One of the Following:

2. The underlying materials are mostly undrained, moist (wetland) soils.

OR:

3. The underlying materials are not actually soils, and are saturated with water or covered by water at some time during the growing season of each year. Examples include peat, sand or muck.

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

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 a lot of information about wetlands in Indiana and sets priorities for their identification and conservation. To view or download the IWCP, go to: [wildlife.IN.gov/3350.htm](http://wildlife.IN.gov/3350.htm).

Many of the wetlands conservation efforts in Indiana have begun shifting over to similar programs and staff within the Indiana Department of Environmental Management (IDEM). 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. Planning and implementing the IWCP through local wetland conservation partnerships.
2. Obtaining more scientific information about Indiana's wetland resources, with an emphasis on making conservation techniques that are effective and cost-efficient.
3. Providing positive incentives to motivate people to conserve and restore wetlands.
4. Providing educational opportunities for educational staff, landowners, schoolchildren, and other audiences to enhance community understanding of the functions and benefit 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. Appendix F of the IWCP provides 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 the following 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 DNR Division of Nature Preserves, the DNR Division of 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 [wildlife.IN.gov/3350.htm](http://wildlife.IN.gov/3350.htm).

U.S. Dept. 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. Department of

Agriculture – Natural Resources Conservation Service Indiana Wetlands Reserve Easements Program (WRE). Indiana began participating in the program in 2014, after the 2014 Farm Bill consolidated three former programs (the Wetlands Reserve Program, the Grasslands Reserve Program, and the Ranch Lands Reserve Program) into the new Agricultural Conservation Easement Program (see figure 4.1). The program is a voluntary landowner-

**FIGURE 4.1**  
**NRCS WRE MAP**



## SWIMMING



participation program that encourages protection, restoration and enhancement of wetlands on private property. The benefits of the WRE program (from the Indiana NRCS WRE 2014 Fact Sheet): <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/in/programs/easements/acep/?cid=stelprdb1248149>):

“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. HRI includes a partnership of resource agencies and organizations that works with willing landowners to permanently protect 43,000 acres in the floodplain of the Wabash River and Sugar Creek in west-central Indiana and 26,000 acres of Muscatatuck River bottomlands in southeast Indiana.

These projects involve the protection, restoration and enhancement of riparian and aquatic habitats and the species that use them, particularly threatened, endangered, migratory birds and waterfowl. HRI will also benefit 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, and leaving a legacy for future generations by providing a major conservation destination for tourists.

Eight key objectives identified for the 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”

- June 2013-June 2014: 1,525 new acres permanently protected, three new river miles protected, 1,894 acres opened to the public in two Conservation Areas.
- June 2014-June 2015: 1,626 new acres purchased, two new river miles protected, and a new Wabash River public access site built.

More details on the HRI are at [dnr.IN.gov/6498.htm](http://dnr.IN.gov/6498.htm).

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

It is 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, such as the constructed wetlands and settling ponds at Miller-Showers Park in Bloomington.
- Groundwater inlet and outlet – Aquifers can receive and expel water as needed through wetlands, 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. Such filtering is used to treat acid coal mine drainage at the DNR 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. Many species of plants also require the conditions found in wetlands to survive. Goose Pond Fish & Wildlife Area, near Linton, is being restored as diverse wetlands 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 down soil (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, including 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 offer 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

Several different efforts are underway to provide a current inventory of wetlands acres in Indiana. These efforts attempt to update what, according to the 1996 IWCP, is the current best-available dataset for Indiana wetlands acres. That data set was created in 1991 by R.E. Rolley as part of the DNR’s Indiana’s Wetland Inventory project. At the time, Indiana had approximately 813,000 acres of wetlands divided into seven basic types. (see table 4.1), the Rolley Data Table.

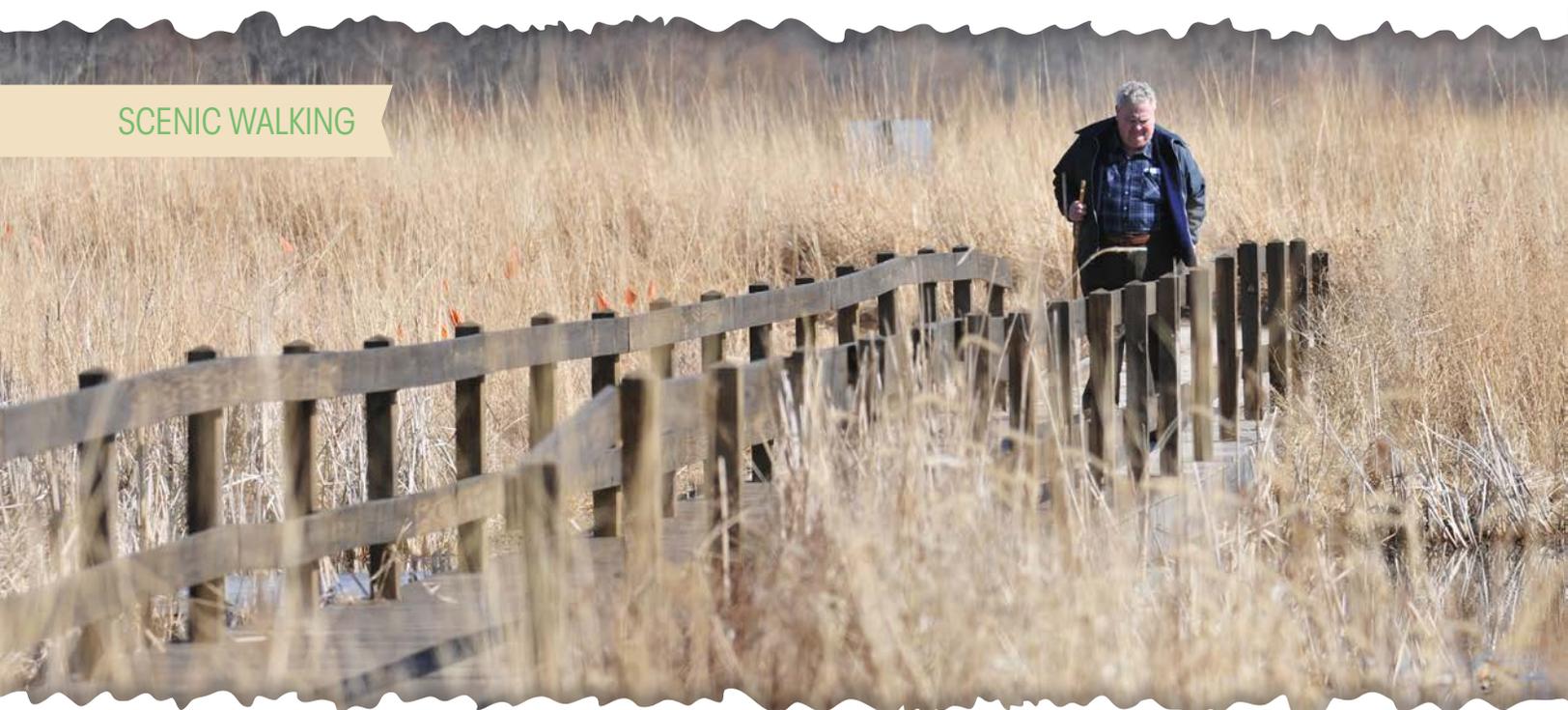
For comparison, it has been estimated that in the 1780s, as the first settlers arrived, Indiana had approximately 5.6 million acres of wetlands. This indicates that Indiana had lost approximately 85% of its wetlands to agriculture, roads, community development, pollution, vegetation clearing and other land uses.

Since 1991, there have been significant additions to the State’s wetlands. The 8,064-acre Goose Pond Fish & Wildlife Area and more than

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

Wetland Habitats	Acres	Percent 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>

## SCENIC WALKING





## REENACTMENT

three-quarters of a mile of fen at Prophetstown State Park in Tippecanoe County are two examples. If the newly acquired acreage from the HRI is added to these examples, along with other new piecemeal wetland acreage added statewide, gains in the total wetland inventory in Indiana are likely, but such gains are not yet provable with expert-verified data on a statewide basis. The results from expert-verified wetlands inventories taking place now should reflect change and improvement in wetland conservation and enhancement in Indiana. Even greater improvements may be possible.

As many other states, Indiana once placed a greater priority on the development or conversion of wetlands to other uses. For example,

historically, many farmers saw wet bottomlands as a nuisance to be drained and turned to field agricultural purposes. They did not view them as a useful natural resource to be conserved or protected. With today's greater 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 to identify, purchase and restore more of the former wetlands to their original glory.

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