

## FOREST WETLAND HABITATS NARRATIVE

### Habitat description

An area characterized by woody vegetation over 20 feet tall, where soil is at least periodically saturated with or covered by water.

### Problems affecting species and habitats

#### Species threats

The respondent listed the following as "somewhat of a threat" to wildlife in forested wetland habitats in Indiana (not ranked):

- Invasive/non-native species
- Predators (native or domesticated)
- Habitat loss (breeding range, feeding/foraging areas)
- Degradation of movement/migration routes (overwintering habitats, nesting and staging sites)

The respondent listed the following as "slight threat" (not ranked):

- Species overpopulation
- Unintentional take/ direct mortality (e.g., vehicle collisions, power line collisions, by-catch, harvesting equipment, land preparation machinery)
- Near limits of natural geographic range
- Viable reproductive population size or availability

The respondent listed no threats as "critical" or "serious."

The respondent offered no additional threats to wildlife in forested wetland habitats in Indiana.

The respondent listed top threats to wildlife in forested wetland habitats in Indiana:

- Adequate habitat (primarily American sycamores along riparian areas) in breeding areas

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to wildlife in forested wetlands habitats. Their responses included:

- Loss of habitat threatens wood duck nesting.  
Important area for migrating waterfowl.
- No. Forested wetlands comprise more than 60% of all wetland acreage in Indiana, and support dozens of species of birds, mammals, reptiles, and amphibians. To include only two species in the guild for this habitat type makes the evaluation incomplete at best. A more appropriate guild would include species representatives of the variety of forested wetland types found in the state, including flatwoods, forested swamp, forested fen, wet floodplain forest, and wet-mesic floodplain forest. Since forested wetlands show the greatest percentage loss of all wetland types, the lack of "critical" or "serious" threats to the species inhabiting them hardly seems accurate. Birds of forested wetlands typically make up a sizable percentage of the top species of management concern for organizations such as Partners in Flight, making the conservation of forested wetlands critical. To consider the top threat to wildlife in forested wetlands an inadequate number of sycamores along riparian areas is to virtually ignore the importance of forested wetlands to a host of wildlife species

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and the serious continued threats to those species due to loss and degradation of habitat through piecemeal clearing, drainage, and subsequent fragmentation.

### Habitat threats

The respondent listed the following as “somewhat of a threat” to forested wetland habitats in Indiana (not ranked):

- Commercial or residential development (sprawl)
- Counterproductive financial incentives or regulations
- Habitat fragmentation
- Successional change
- Stream channelization
- Impoundment of water/flow regulation
- Agricultural/forestry practices
- Mining/acidification

The respondent listed the following as “slight threat” (not ranked):

- Invasive/non-native species
- Nonpoint source pollution (sedimentation or nutrients)
- Diseases (of plants that create habitat)
- Habitat degradation
- Point source pollution
- Drainage practices (stormwater runoff)

The respondent listed no threats as “critical” or “serious.”

The respondent noted no additional threats to forested wetland habitats in Indiana.

The respondent listed top threats to forested wetland habitats in Indiana:

- Loss of floodplain sycamores and upland pine forests

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to forested wetlands habitats. Their responses included:

- Again, to consider the dominant wetland type in Indiana with the highest level of loss to be without critical or serious threats completely misses the mark. Many of the threats listed above should be considered critical or serious threats, including habitat fragmentation (through clearing, drainage, development), stream maintenance/channelization, and acid mine drainage or other contaminants.

## **Additional research and survey efforts**

### **Current body of research**

#### Species research

The respondent stated that the current body of science is adequate for wildlife in forested wetland habitats in Indiana.

Respondents did not identify citations (title, author, date, publisher) that would give the best overview of wildlife in forested wetland habitats in Indiana.

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Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the current body of science for wildlife in forested wetlands habitats. Their responses included:

- No. Very little species-specific research on wildlife of forested wetlands in Indiana.

Appropriate papers include:

Knutson, M.G., J.P. Hoover, and E.E. Klaas. 1996. The importance of floodplain forests in the conservation and management of neotropical migratory birds in the Midwest. Pages 168-188 in Thompson, F.R., editor. Management of Midwestern Landscapes for the Conservation of Neotropical Migratory Birds. USDA NC Forest Exp. Stat. Gen. Tech. Rep NC-187.

### Habitat research

The respondent stated that the current body of science is adequate for forested wetland habitats in Indiana.

Respondents did not identify citations (title, author, date, publisher) that would give the best overview of forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the current body of science for forested wetlands habitats. Their responses included:

- No. Appropriate titles include:

Roberts, S.D. and R.A. Rathfon, editors. 1994. Management of forested wetland ecosystems in the Central Hardwood Region. Purdue University FNR 151.

Stauffer, D.F. and L.B. Best. 1980. Habitat selection by birds of riparian communities: Evaluating the effects of habitat alterations. J. Wildl. Manage. 44(1): 1-15.

Twedt, D.J. et.al. 2002. Avian response to bottomland hardwood reforestation: The first 10 years. Restoration Ecol. 10(4): 645-655.

U.S. Fish and Wildlife Service. 1990. Regional Wetlands Concept Plan. Region 3.

Indiana DNR. 1996. Indiana Wetlands Conservation Plan.

Gosselink, J.G., et. al. 1990. Ecological Processes and Cumulative Impacts: Illustrated by Bottomland Hardwood Wetland Ecosystems. Lewis Publ. 708 pp.

## **Research needs**

### Species research

The respondent listed the following research as "needed" for wildlife in forested wetland habitats in Indiana (not ranked):

- Life cycle
- Limiting factors (food, shelter, water, breeding sites)

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- Relationship/dependence on specific habitats

The respondent listed the following as “slightly needed” research (not ranked):

- Distribution and abundance
- Threats (predators/competition, contamination)
- Population health (genetic and physical)

The respondent listed no research as “urgently needed” or “greatly needed.”

The respondent noted no other research needs for wildlife in forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the research needs for wildlife in forested wetlands habitats. Their responses included:

- How species respond to habitat fragmentation will be one of the major research needs in the future.

### Habitat research

The respondent listed the following research as “needed” for forested wetland habitats in Indiana (not ranked):

- Distribution and abundance (fragmentation)
- Relationship/dependence on specific site conditions

The respondent listed the following research as “slightly needed” (not ranked):

- Successional changes
- Threats (land use change/competition, contamination/global warming)
- Growth and development of individual components of the habitat

The respondent listed no research as “urgently needed” or “greatly needed.”

The respondent noted no additional research needs for forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the research needs for forested wetlands habitats. Their responses included:

- See above

## **Conservation actions necessary**

### Species actions

The respondent ranked the following conservation efforts that address threats to wildlife in forested wetland habitats in Indiana:

<b>Rank</b>	<b>Conservation efforts for wildlife in forested wetland habitats</b>
1	Habitat protection

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- 2 (tie) Threats reduction
- 2 (tie) Regulation of collecting
- 2 (tie) Protection of migration routes

The respondent noted no other conservation practices for wildlife in forested wetland habitats in Indiana.

The respondent recommended these no additional practices for more effective conservation of wildlife in forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the conservation practices for wildlife in forested wetlands habitats. Their responses included:

- Habitat Protection on Public and Private Lands.

### Habitat actions

The respondent stated that the following conservation efforts address threats to forested wetland habitats in Indiana “somewhat” well (not ranked):

- Habitat protection through regulation
- Habitat protection on public lands
- Habitat protection incentives (financial)
- Habitat restoration through regulation
- Habitat restoration on public lands
- Habitat restoration incentives (financial)
- Succession control (fire, mowing)
- Corridor development/protection
- Pollution reduction
- Protection of adjacent buffer zone
- Restrict public access and disturbance
- Technical assistance
- Cooperative land management agreements (conservation easements)

The respondent listed no additional current conservation practices for forested wetland habitats in Indiana.

The respondent recommended the following conservation practices for more effective conservation of forested wetland habitats in Indiana:

- Conservation of habitats

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the conservation practices for forested wetlands habitats. Their responses included:

- Habitat restoration on private lands through programs such as the WRP, CRP, and Partners for Fish and Wildlife is one of the best ways to generate a net gain in forested wetland habitat.

## Proposed plans for monitoring

### Current monitoring

#### Species monitoring

The respondent was aware of the following monitoring efforts by state agencies for wildlife in forested wetland habitats in Indiana:

- Occasional statewide (less than once a year and not regularly scheduled) monitoring

The respondent was aware of the following monitoring efforts by other organizations for wildlife in forested wetland habitats in Indiana:

- Statewide once-a-year monitoring

The respondent listed the following monitoring efforts by state agencies as “somewhat crucial” for conservation of wildlife in forested wetland habitats in Indiana:

- Occasional statewide (less than once a year and not regularly scheduled) monitoring

The respondent listed the following monitoring efforts by other organizations as “somewhat crucial” for conservation of wildlife in forested wetland habitats in Indiana:

- Statewide once-a-year monitoring

The respondent listed regional or local monitoring by state agencies for wildlife in forested wetland habitats in Indiana:

- Periodic statewide Breeding Bird Atlas

The respondent listed regional or local monitoring by other organizations for wildlife in forested wetland habitats in Indiana (not ranked):

- Federal Breeding Bird Survey statewide
- Statewide May Day bird counts
- Summer bird counts

The respondent listed organizations that monitor wildlife in forested wetland habitats in Indiana (not ranked):

- Birdwatchers
- USGS
- Volunteers

The respondent considered monitoring techniques for wildlife in forested wetland habitats in Indiana:

Monitoring techniques for wildlife in forested wetland habitats	Used	Not used but possible with existing	Not used and not possible with existing technology

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		technology and data	and data
Radio telemetry and tracking	--	X	--
Spot mapping	X	--	--
Driving a survey route	X	--	--
Reporting from harvests, depredation, or unintentional take	--	--	X
Mark and recapture	X	--	--
Professional survey/census	X	--	--
Trapping (by any technique)	X	--	--
Representative sites	X	--	--

The respondent noted no other monitoring techniques for wildlife in forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the monitoring techniques for wildlife in forested wetlands habitats. There were no responses.

### Habitat inventory and assessment

The respondent was aware of no inventory and assessment efforts by state agencies for forested wetland habitats in Indiana.

The respondent was aware of the following inventory and assessment effort by other organizations for forested wetland habitats in Indiana:

- Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment

The respondent listed the following inventory and assessment efforts by state agencies as "somewhat crucial" for conservation of forested wetland habitats in Indiana:

- Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment

The respondent listed no inventory and assessment efforts by other organizations that are crucial for conservation of forested wetland habitats in Indiana.

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The respondent listed no regional or local inventory and assessment by state agencies for forested wetland habitats in Indiana.

The respondent listed the following regional or local inventory and assessment by other organizations agencies for forested wetland habitats in Indiana:

- Statewide aerial imagery of habitat in Indiana

The respondent listed no organizations that monitor forested wetland habitats in Indiana.

The respondent considered inventory and assessment techniques for forested wetland habitats in Indiana:

<b>Inventory and assessment techniques for forested wetland habitats</b>	<b>Used</b>	<b>Not used but possible with existing technology and data</b>	<b>Not economically feasible</b>
GIS mapping	X	--	--
Aerial photography and analysis	X	--	--
Systematic sampling	--	X	--

The respondent listed no additional inventory and assessment techniques for forested wetland habitats in Indiana.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the inventory and assessment techniques for forested wetlands habitats. There were no responses.

### **Recommended monitoring**

#### Species monitoring

The respondent recommended the following monitoring techniques for effective conservation of wildlife in forested wetland habitats in Indiana (not ranked):

- Roadside surveys
- Canoe surveys
- Local more intensive studies

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the monitoring techniques for effective conservation of wildlife in forested wetlands habitats. There were no responses.

#### Habitat inventory and assessment

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The respondent recommended the following inventory and assessment techniques for effective conservation of forested wetland habitats in Indiana:

- Aerial imagery of riparian and pine habitats coupled with habitat modeling

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the inventory and assessment techniques for effective conservation of forested wetlands habitats. There were no responses.

Technical experts and conservation organizations offered the following additional comments:

- From the comments it sounds like only one person has made any recommendations for this habitat. I think it would be beneficial to get feedback from more than one person.
- Difficulty in separating Forested Wetlands, Floodplain Wetlands, and Riparian Forests.....many individual sites are all three, and little overlap in species composition, threats, or conservation measures.