

## HERBACEOUS MARSH WETLAND HABITATS NARRATIVE

### Habitat description

Wetlands are areas where the soil or substrate is periodically saturated with or covered with water as defined by Cowardin et al.

*Emergent herbaceous wetlands* are areas where perennial herbaceous vegetation accounts for 75 to 100 percent of the cover and the soil or substrate is periodically saturated with or covered with water.

### Problems affecting species and habitats

#### Species threats

The respondent listed no "critical threats," but listed as "serious threats" to wildlife in herbaceous marsh wetland habitats in Indiana: (not ranked):

- Invasive/non-native species
- Dependence on other species (mutualism, pollinators)
- Unintentional take/direct mortality (e.g., vehicle collisions, power line collisions, by-catch, harvesting equipment, land preparation machinery)
- Habitat loss (breeding range)
- Habitat loss (feeding/foraging areas)

The respondent cited "unregulated collection pressure" as "somewhat of a threat."

The respondent listed as "slight threats" to wildlife in herbaceous marsh wetland habitats in Indiana (not ranked):

- Predators (native or domesticated)
- Large home range requirements

The respondent listed additional threats to wildlife in herbaceous marsh wetland habitat in Indiana:

- Artificial manipulation of water levels in wetlands seems likely to increase mortality of over-wintering snakes. Snakes hibernate underground at the groundwater interface. Raising water levels in the winter could drown snakes, and lowering the water table could expose them to extreme cold temperatures. Both activities are likely to kill over-wintering snakes

The respondent listed top threats to wildlife in herbaceous marsh wetland habitats in Indiana (not ranked):

- Artificial manipulation of water levels in wetlands increases mortality of over-wintering snakes (see Q8)
- Inappropriate management of sandy fire breaks in managed areas that are disked at inappropriate times or are managed in inappropriate cover types. I have seen dead Massasauga rattlesnakes that have been disked on DNR lands

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to wildlife in herbaceous marsh wetland habitats. There were no responses.

#### Habitat threats

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The respondent listed the following threat to herbaceous marsh wetland habitats in Indiana as “critical”:

- Impoundment of water/flow regulation

The respondent listed the following threats to herbaceous marsh wetland habitats as “serious” (not ranked):

- Habitat fragmentation
- Successional change
- Habitat degradation

The respondent listed “agricultural/forestry practices” as “somewhat of a threat” to herbaceous marsh wetland habitats in Indiana.

The respondent listed no other threats to herbaceous marsh wetland habitats in Indiana.

The respondent listed top threats to herbaceous marsh wetland habitats in Indiana (not ranked):

- Fire suppression in graminoid wetland habitat creates late successional wetlands that are not appropriate habitat. Conversely, late spring fire in these habitats is likely to cause direct adult mortality
- Artificial manipulation of water levels in wetlands increases mortality of over-wintering snakes (see Q8)

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to herbaceous marsh wetland habitats. There were no responses.

## **Additional research and survey efforts**

### **Current body of research**

#### Species research

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

Respondents identified the following citations (title, author, date, publisher) that would give the best overview of wildlife in herbaceous marsh wetland habitats in Indiana.

Title = various theses;

Author = Bruce Kingsbury et al

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 herbaceous marsh wetland habitats. There were no responses.

#### Habitat research

The respondent stated that the current body of science for herbaceous marsh wetland habitats is adequate.

Respondents did not identify citations (title, author, date, publisher) that would give the best overview of herbaceous marsh 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 herbaceous marsh wetland habitats. There were no responses.

### **Research needs**

#### Species research

The respondent listed the following research needs for wildlife in herbaceous marsh wetland habitats in Indiana as “greatly needed” (not ranked):

- Life cycle
- Limiting factors (food, shelter, water, breeding sites)
- Threats (predators/competition, contamination)
- Population health (genetic and physical)

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

- Distribution and abundance
- Relationship/dependence on specific habitats

The respondent listed no other research needs for wildlife in herbaceous marsh 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 herbaceous marsh wetland habitats. There were no responses.

#### Habitat research

The respondent listed no research as “urgently needed,” but listed the following for herbaceous marsh wetland habitats in Indiana as “greatly needed” (not ranked):

- Successional changes
- Relationship/dependence on specific site conditions

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

- Distribution and abundance (fragmentation)
- Threats (land use change/competition, contamination/global warming)

The respondent listed additional research needs for herbaceous marsh wetland habitats in Indiana (not ranked):

- Spatial relationships between occupied wetlands relative to population dynamics
- Physical characteristics of over-wintering sites

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the research needs for herbaceous marsh wetland habitats. There were no responses.

### **Conservation actions necessary**

#### Species actions

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The respondent stated that these conservation efforts address threats to wildlife in herbaceous marsh wetland habitats in Indiana “very well.”

- Exotic/invasive species control

The respondent indicated that the following conservation efforts address threats to wildlife in herbaceous marsh wetland habitats “somewhat” (not ranked):

- Regulation of collecting
- Habitat protection

The respondent listed another current conservation practice for wildlife in herbaceous marsh wetland habitats in Indiana:

- Invasive species control (buckthorn, autumn olive, phragmites) to keep open herbaceous habitat suitable for Massasauga rattlesnakes

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

- Design and management of conservation areas that specifically incorporate life history requirements of the Blanding's turtle across relatively large habitats (>1,000 acres). This species is too often subjected to management decisions that favor other species, and these often have a negative impact on available wetland and nesting habitat. In some cases (water level manipulations, late spring prescribed fire), these management decisions seem likely to result in the direct mortality of adults.

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the practices for more effective conservation of wildlife in herbaceous marsh wetland habitats. There were no responses.

### Habitat actions

The respondent stated that none of the listed conservation efforts address threats to herbaceous marsh wetland habitats in Indiana “very well.”

The respondent indicated that the following conservation efforts address threats to herbaceous marsh wetland habitats in Indiana “somewhat” (not ranked):

- Habitat protection through regulation
- Habitat protection on public lands
- Succession control (fire, mowing)
- Protection of adjacent buffer zone

The respondent offered no other current or recommended practices for herbaceous marsh 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 efforts for herbaceous marsh wetland habitats. There were no responses.

## **Proposed plans for monitoring**

### **Current monitoring**

#### Species monitoring

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The respondent listed the following monitoring effort by state agencies and other organizations for wildlife in herbaceous marsh wetland habitats in Indiana:

- Occasional regional or local (less than once a year and not regularly scheduled) monitoring

The respondent listed the following monitoring efforts by state agencies as “very crucial” for wildlife conservation in herbaceous marsh wetland habitats in Indiana:

- Periodic statewide (less than once a year but still regularly scheduled) monitoring

The respondent listed the following monitoring efforts by state agencies as “somewhat crucial” (not ranked):

- Statewide year-round monitoring
- Statewide once-a-year monitoring
- Occasional regional or local (less than once a year and not regularly scheduled) monitoring

The respondent listed as “slightly crucial” the following monitoring efforts by state agencies for conservation of wildlife in herbaceous marsh wetland habitats in Indiana (not ranked):

- Occasional statewide (less than once a year and not regularly scheduled) monitoring
- Regional or local year-round monitoring
- Regional or local once-a-year monitoring
- Periodic regional or local (less than once a year but still regularly scheduled) monitoring

The respondent listed no monitoring efforts by other organizations as “very crucial” for wildlife conservation in herbaceous marsh wetland habitats in Indiana. The respondent listed the following as “somewhat crucial:”

- Occasional regional or local (less than once a year and not regularly scheduled) monitoring

The respondent listed no regional or local monitoring by state agencies or other organizations for wildlife in herbaceous marsh wetland habitats in Indiana.

The respondent listed the following organization that monitors wildlife in herbaceous marsh wetland habitats in Indiana:

- The Nature Conservancy (funded research at Cline Lake Fen)

The respondent listed the following monitoring technique as “frequently used” for wildlife in herbaceous marsh wetland habitats in Indiana:

- Radio telemetry and tracking

The respondent listed the following as “occasionally used” (not ranked):

- Spot mapping
- Mark and recapture
- Professional survey/census

The respondent cited no techniques that fall into the categories of “not used but possible with existing technology or data” or “not economically feasible” for wildlife in herbaceous marsh wetland habitats in Indiana.

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The respondent listed no other monitoring techniques for wildlife in herbaceous marsh 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 efforts for wildlife in herbaceous marsh wetland habitats. There were no responses.

### Habitat inventory and assessment

The respondent listed the following monitoring effort by state agencies and other organizations for herbaceous marsh wetland habitats in Indiana:

- Occasional regional or local (less than once a year and not regularly scheduled) monitoring

The respondent listed that the following efforts by state agencies are “very crucial” for conservation of herbaceous marsh wetland habitats in Indiana:

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

The respondent listed no efforts by other organizations as “crucial” for conservation of herbaceous marsh wetland habitats in Indiana.

The respondent listed no regional or local inventory and assessment by state agencies or other organizations for herbaceous marsh wetland habitats in Indiana. The respondent listed no organizations that monitor this habitat.

The respondent listed no current monitoring techniques for herbaceous marsh wetland habitats that are “frequently used” or indicate feasibility of other monitoring techniques. The respondent listed the following techniques that are “occasionally used” (not ranked):

- GIS mapping
- Aerial photography and analysis

The respondent cited no techniques that fall into the categories of “not used but possible with existing technology or data” or “not economically feasible.”

The respondent listed no inventory and assessment techniques for herbaceous marsh 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 herbaceous marsh wetland habitats. There were no responses.

## **Recommended monitoring**

### Species monitoring

The respondent recommended no monitoring techniques for effective wildlife conservation in herbaceous marsh wetland habitats in Indiana.

## Appendix F-69: Herbaceous Marsh

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 herbaceous marsh wetland habitats. There were no responses.

### Habitat inventory and assessment

The respondent recommended no inventory and assessment techniques for effective conservation of herbaceous marsh 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 effective conservation of herbaceous marsh wetland habitats. There were no responses.

Technical experts and conservation organizations offered the following additional comments:

- Need more than one respondent. This habitat is probably not used to much by waterfowl unless it is in close proximity to other types of wetlands. It would however be used by many song bird species such as Yellowthroats, Sparrows, Wrens, Red-wing Blackbirds. There will also be use by amphibians.