

DUNES AND SHORELINES HABITAT

Habitat description

Dunes and shoreline systems are located along the coastline of Lake Michigan and associated interior areas formed by either eroded glacial drift along the coast by wave activity or eroded from inland deposits and carried by rivers and streams.

Problems affecting species and habitats

Species threats

The respondent listed no “critical” or “serious threats” for wildlife in dunes and shorelines habitat in Indiana. The respondent indicated the following as “somewhat of a threat” (not ranked):

- High sensitivity to pollution
- Bioaccumulation of contaminants
- Predators (native or domesticated)
- Habitat loss (breeding range)
- Habitat loss (feeding/foraging areas)
- Degradation of movement/migration routes (overwintering habitats, nesting and staging sites)

The respondent listed no other threats to wildlife in dunes and shorelines habitat in Indiana.

The respondent listed the top threats to wildlife in dunes and shorelines habitat in Indiana as “human disturbance” and “modification/degradation of habitats.”

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to wildlife in dunes and shorelines habitat. There were no responses.

Habitat threats

The respondent listed no “critical threats” to dunes and shorelines habitat in Indiana. Respondents indicated the following as serious “threats” (not ranked):

- Stream channelization
- Impoundment of water/flow regulation

The respondent listed the following as “somewhat of a threat” to dunes and shorelines habitat in Indiana (not ranked):

- Commercial or residential development (sprawl)
- Counterproductive financial incentives or regulations
- Nonpoint source pollution (sedimentation and nutrients)
- Successional change
- Habitat degradation
- Agricultural/forestry practices
- Residual contamination (persistent toxins)
- Point source pollution
- Mining/acidification

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- Drainage practices (stormwater runoff)

The respondent listed no other threats to dunes and shorelines habitat in Indiana.

The respondents noted that top threats to dunes and shorelines habitat in Indiana are (not ranked):

- Factors that affect food availability
- Modification of stream shoreline habitats

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the threats to dunes and shorelines habitat. There were no responses.

Additional research and survey efforts

Current body of research

Species research

The respondent indicated that the current body of science for dunes and shorelines wildlife species is adequate.

The respondent identified the following citations (title, author, date, publisher) that would give the best overview of wildlife in dunes and shorelines habitats in Indiana.

Title: Atlas of Breeding Birds in Indiana
Author: Castrale, J.S., E. Hopkins, C.E. Keller
Date: 1998
Publisher: IDNR

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 dunes and shorelines habitat. There were no responses.

Habitat research

The respondent indicated that the current body of science for dunes and shorelines habitat is inadequate.

The respondent indicated to see previous citation (title, author, date, publisher) that would give the best overview of dunes and shorelines 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 dunes and shorelines habitat. There were no responses.

Research needs

Species research

The respondent indicated that no research need is either “urgently needed” or “greatly needed” for wildlife in dunes and shorelines habitat in Indiana. The respondent stated that research is “needed” in the following areas (not ranked):

- Life cycle

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- Distribution and abundance
- Limiting factors (food, shelter, water, breeding sites)
- Threats (predators/competition, contamination)
- Relationship/dependence on specific habitats
- Population health (physical and genetic)

The respondent listed no other research needs for wildlife in dunes and shorelines habitat 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 dunes and shorelines habitat. There were no responses.

Habitat research

The respondent indicated that no research need is either “urgently needed” or “greatly needed” for dunes and shorelines habitat in Indiana. The respondent stated that research is needed in the following areas (not ranked):

- Successional changes
- Distribution and abundance (fragmentation)
- Threats (land use change/competition, contamination/global warming)
- Relationship/dependence on specific site locations
- Growth and development of individual components of habitat

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the research needs for dunes and shorelines habitat. There were no responses.

Conservation actions necessary

Species actions

The respondent indicated how well conservation efforts address the threats to wildlife in early dunes and shorelines habitat in Indiana. The following efforts address threats “very well” (not ranked):

- Habitat protection
- Protection of migration routes

The respondent stated that these conservation efforts address threats to wildlife in dunes and shorelines habitat in Indiana “somewhat” (not ranked):

- Threats reduction
- Regulation of collecting
- Limiting contact with pollutants/contaminants
- Public education to reduce disturbance

The respondent listed no other current conservation practices for wildlife in dunes and shorelines habitat in Indiana.

The respondent recommended these practices for more effective conservation of wildlife in dunes and shorelines habitat in Indiana (not ranked):

- Prevention of stream channelization
- Prevention of other (pollution) habitat factors

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- Limit disturbance in nesting/migration habitat

Technical experts and conservation organizations reviewed the above results and were asked if these were a reasonable representation of the effective conservation of wildlife in dunes and shorelines habitat. There were no responses.

Habitat actions

The respondent indicated that the following conservation efforts address threats to dunes and shorelines habitat in Indiana “very well” (not ranked):

- Habitat restoration on public lands
- Habitat restoration incentives (financial)
- Managing water regimes
- Restrict public access and disturbance

The respondent indicated that the following conservation efforts address threats to dunes and shorelines habitat in Indiana “somewhat” (not ranked):

- Habitat protection through regulation
- Succession control (fire, moving)
- Habitat protection on public lands
- Habitat protection incentives (financial)
- Habitat restoration through regulation
- Artificial habitat creation (artificial reefs, nesting platforms)
- Corridor development/protection
- Cooperative land management agreements (conservation easements)
- Protection of adjacent buffer zone
- Technical assistance
- Land use planning
- Pollution reduction

The respondent listed no other conservation practices for dunes and shorelines habitat in Indiana.

The respondent recommended “water regime management for migration habitat” and “protection of nesting habitat along streams” for more effective conservation of dunes and shorelines habitat 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 dunes and shorelines habitat. There were no responses.

Proposed plans for monitoring

Current monitoring

Species monitoring

The respondent indicated that this monitoring effort is conducted by state agencies for wildlife in dunes and shorelines habitat in Indiana:

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

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The respondent indicated that this monitoring effort is conducted by other organizations for wildlife in dunes and shorelines habitat in Indiana (not ranked):

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

The respondent considered no monitoring efforts considered “very crucial” or “somewhat crucial” by state agencies for wildlife in dunes and shorelines habitat in Indiana. “Slightly crucial” monitoring efforts include:

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

The respondent considered no monitoring efforts considered “very crucial” or “somewhat crucial” by other organizations for wildlife in dunes and shorelines habitat in Indiana. “Slightly crucial” monitoring efforts include:

- Statewide once-a-year monitoring

The respondent listed the following regional or local monitoring efforts by state agencies for wildlife in dunes and shorelines habitat in Indiana:

- Breeding Bird Atlas statewide every 20 years

The respondent listed the following regional or local monitoring efforts by organizations for wildlife in dunes and shorelines habitat in Indiana (not ranked):

- Federal Breeding Bird Survey
- State May Day counts
- Summer bird counts

The respondent listed the following organizations that monitor wildlife in dunes and shorelines habitat in Indiana (not ranked):

- USGS (Breeding Bird Survey)
- Volunteers with Indiana Audubon Society

According to the respondent, the most “frequently used” monitoring techniques for wildlife in dunes and shorelines habitat in Indiana are (not ranked):

- Driving a survey route
- Volunteer survey/census

The respondent indicated that the following techniques are “not used but possible with existing technology and data” for wildlife in dunes and shorelines habitat in Indiana (not ranked):

- Radio telemetry and tracking
- Modeling
- Spot mapping
- Mark and recapture
- Trapping (by any technique)
- Representative sites
- Probabilistic sites

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The respondent listed no other monitoring techniques for wildlife in dunes and shorelines habitat 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 dunes and shorelines habitat. There were no responses.

Habitat inventory and assessment

The respondent indicated awareness of no inventory and assessment efforts by state agencies and other organizations for dunes and shorelines habitat in Indiana.

The respondent indicated that no inventory and assessment efforts conducted by state agencies and other organizations are “very crucial” or “somewhat crucial” for dunes and shorelines habitat in Indiana. Listed as “slightly crucial” are (not ranked):

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

The respondent was not aware of regional or local inventory and assessment efforts by state agencies or organizations for dunes and shorelines habitat in Indiana. The respondent was not aware of organizations involved in habitat monitoring.

The respondent listed no inventory and assessment techniques as “frequently used” and cited the following as “occasionally used” for dunes and shorelines habitat in Indiana (not ranked):

- GIS mapping
- Aerial photography and analysis
- Systematic sampling
- Voluntary landowner reporting
- Modeling

The respondent listed no other inventory and assessment techniques for dunes and shorelines habitat 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 dunes and shorelines habitat. There were no responses.

Recommended monitoring

Species monitoring

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The respondent recommended the following monitoring techniques for wildlife in dunes and shorelines habitat in Indiana (not ranked):

- Directed surveys (canoe surveys, migration counts) most intensive
- General breeding bird surveys less intensive

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 dunes and shorelines habitat. There were no responses.

Habitat inventory and assessment

The respondent recommended the following inventory and assessment technique for dunes and shorelines habitat in Indiana:

- Aerial imagery to identify and quantify habitat

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 dunes and shorelines habitat. There were no responses.