

Appendix E-42: Pre-Forest Stage

6. Please rank the following threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

| | Critical threat | Serious threat | Somewhat of a threat | Slight threat | No threat | Unknown | Response Total |
|--|------------------------|-----------------------|-----------------------------|----------------------|------------------|----------------|-----------------------|
| Invasive/non-native species | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| High sensitivity to pollution | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Bioaccumulation of contaminants | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Predators (native or domesticated) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Dependence on other species (mutualism, pollinators) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Diseases/parasites (of the species itself) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Regulated hunting/fishing pressure (too much) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Species over population | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Unintentional take/ direct mortality (e.g., vehicle collisions, power line collisions, by-catch, harvesting equipment, land preparation machinery) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Unregulated collection pressure | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Dependence on irregular resources (cyclical annual variations) (e.g., food, water, habitat limited due to annual variations in availability) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| | | | | | | | 10 |
| Total Respondents | | | | | | | 10 |

7. Please also rank these threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

| | Critical threat | Serious threat | Somewhat of a threat | Slight threat | No threat | Unknown | Response Total |
|---|------------------------|-----------------------|-----------------------------|----------------------|------------------|----------------|-----------------------|
| Habitat loss (breeding range) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Habitat loss (feeding/foraging areas) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Small native range (high endemism) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Near limits of natural geographic range | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Large home range requirements | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Viable reproductive population size or availability | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Specialized reproductive behavior or low reproductive rates | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |

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|--|--------|--------|--------|--------|----------|----------|----------|
| Degradation of movement/migration routes (overwintering habitats, nesting and staging sites) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Genetic pollution (hybridization) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Unknown | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Total Respondents | | | | | | | 9 |

8. Other threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

No responses were entered for this question.

Total Respondents **0**

(skipped this question) **1**

9. Please briefly describe the top two threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana identified above.

1. Eastern Towhee is considered a habitat generalist that uses early successional habitats within deciduous forests. With prevailing land management that does not generate early succession habitat (such as maturation of forest on former farm lands), habitat is reduced. A second top threat is probably loss of nest and nesting females to cats, chipmunks, snakes and other ground predators.

Total Respondents **1**

10. Please rank the following threats to the HABITAT of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

| | Critical threat | Serious threat | Somewhat of a threat | Slight threat | No threat | Unknown | Response Total |
|---|------------------------|-----------------------|-----------------------------|----------------------|------------------|----------------|-----------------------|
| Commercial or residential development (sprawl) | 0% (0) | 100% (2) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 2 |
| Counterproductive financial incentives or regulations | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (2) | 2 |
| Invasive/non-native species | 0% (0) | 0% (0) | 100% (2) | 0% (0) | 0% (0) | 0% (0) | 2 |
| Nonpoint source pollution (sedimentation and nutrients) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (2) | 0% (0) | 2 |
| Habitat fragmentation | 0% (0) | 0% (0) | 100% (2) | 0% (0) | 0% (0) | 0% (0) | 2 |
| Successional change | 0% (0) | 100% (2) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 2 |
| Diseases (of plants that create habitat) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (2) | 2 |
| Habitat degradation | 0% (0) | 0% (0) | 100% (2) | 0% (0) | 0% (0) | 0% (0) | 2 |
| Climate change | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (2) | 2 |
| Stream channelization | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (2) | 0% (0) | 2 |

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| | | | |
|---|--------|--------------------------|----------|
| Regional or local year-round monitoring conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Regional or local once a year monitoring conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by state agencies | 0% (0) | 100% (1) | 1 |
| | | Total Respondents | 8 |

| 14. What current monitoring efforts by other organizations are you aware of for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana? | | | |
|---|---------------------------------|---|-----------------------|
| | Yes, these efforts occur | Not aware of these efforts occurring | Response Total |
| Statewide year-round monitoring conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Statewide once a year monitoring conducted by other organizations | 100% (1) | 0% (0) | 1 |
| Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by other organizations | 100% (1) | 0% (0) | 1 |
| Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by other organizations | 0% (0) | 0% (0) | 0 |
| Regional or local year-round monitoring conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Regional or local once a year monitoring conducted by other organizations | 100% (1) | 0% (0) | 1 |
| Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by other organizations | 100% (1) | 0% (0) | 1 |
| Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by other organizations | 0% (0) | 100% (1) | 1 |
| | | Total Respondents | 7 |

| 15. How crucial are these monitoring efforts by state agencies for the conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana? | | | | | | |
|--|---------------------|-------------------------|-------------------------|--------------------|----------------|-----------------------|
| | Very crucial | Somewhat crucial | Slightly crucial | Not crucial | Unknown | Response Total |
| Statewide year-round monitoring conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Statewide once a year monitoring conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |

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|------------------------------|----------|--------|----------|--------|--------|--------|----------|--|
| bycatch) | | | | | | | | |
| Mark and recapture | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 | |
| Professional survey/census | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 | |
| Volunteer survey/census | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 | |
| Trapping (by any technique) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 | |
| Representative sites | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 | |
| Probabilistic sites | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 | |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 | |
| Total Respondents | | | | | | | 5 | |

21. Other monitoring techniques for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

No responses were entered for this question.

Total Respondents **0**

(skipped this question) **1**

22. What one or two monitoring techniques would you recommend for effective conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

1. Primary technique used is point counts of singing birds in breeding season, either by roadside counts (BBS) or set survey points (e.g., Hoosier NF monitoring). Roadside surveys are probably most effective because towhees are edge/early successional species, using habitats found near roads. Long term banding programs (e.g., MAPS) provide demographic information not gained with other monitoring, but are more intensive.

Total Respondents **1**

23. What current HABITAT inventory and assessment efforts or activities by state agencies are you aware of for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | Yes, these efforts occur | No effort that I'm aware of | Response Total |
|---|---------------------------------|------------------------------------|-----------------------|
| Statewide annual inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Statewide once a year inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies | 100% (1) | 0% (0) | 1 |
| Occasional statewide (less than once a year and not regularly | | | |

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|---|--------|--------------------------|----------|
| scheduled) inventory and assessment conducted by state agencies | | | |
| Regional or local year-round inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Regional or local once a year inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 100% (1) | 1 |
| | | Total Respondents | 8 |

24. What current HABITAT inventory and assessment efforts or activities by other organizations are you aware of for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | Yes, these efforts occur | No effort that I'm aware of | Response Total |
|--|--------------------------|-----------------------------|----------------|
| Statewide year-round inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Statewide once a year inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations | 100% (1) | 0% (0) | 1 |
| Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Regional or local year-round inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Regional or local once a year inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations | 0% (0) | 100% (1) | 1 |
| | | Total Respondents | 8 |

25. How crucial are these HABITAT efforts by state agencies for the conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | These efforts are very crucial | These efforts are somewhat crucial for | These efforts are slightly | These efforts are not crucial | Unknown | Response Total |
|--|--------------------------------|--|----------------------------|-------------------------------|---------|----------------|
| | | | | | | |

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| | for this HABITAT | this HABITAT | crucial for this HABITAT | for this HABITAT | | |
|---|---------------------|-----------------|--------------------------------|---------------------|--------------------------|----------|
| Statewide annual inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Statewide once a year inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Regional or local year-round inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Regional or local once a year inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| | | | | | Total Respondents | 8 |

| 26. How crucial are these HABITAT efforts by other organizations for the conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana? | | | | | | |
|---|---|---|---|--|----------|----------------|
| | These efforts are very crucial for this HABITAT | These efforts are somewhat crucial for this HABITAT | These efforts are slightly crucial for this HABITAT | These efforts are not crucial for this HABITAT | Unknown | Response Total |
| Statewide year-round inventory and assessment conducted by other organizations | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Statewide once a year inventory and assessment conducted by other organizations | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Periodic statewide (less than once a year but still regularly scheduled) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |

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| | Frequently used | Occasionally used | Not used but possible with existing technology and data | Not used and not possible with existing technology and data | Not economically feasible | Unknown | Response Total |
|-----------------------------------|-----------------|-------------------|---|---|---------------------------|----------|----------------|
| GIS mapping | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Aerial photography and analysis | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Systematic sampling | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Property tax estimates | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| State revenue data | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Regulatory information | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Participation in landuse programs | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Modeling | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Voluntary landowner reporting | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Total Respondents | | | | | | | 9 |

| | |
|--|--|
| 31. | Other HABITAT inventory and assessment techniques for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana. |
| No responses were entered for this question. | |
| Total Respondents 0 | |
| (skipped this question) 1 | |

| | |
|-----------------------------------|---|
| 32. | What one or two HABITAT inventory and assessment techniques would you recommend for effective conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana? |
| 1. | As stated before, I am unaware of efforts to monitor young age classes of forest. GIS mapping can certainly generate amounts and trends of habitat if forest type and age are mapped. Aerial photography can be used when young age classes appear distinct from other habitat classes. |
| Total Respondents 1 | |

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33. What is the current body of science for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | | Response Total | Response Percent |
|------------------------------------|---|-------------------|---------------------|
| Complete, up to date and extensive | | 0 | 0% |
| Adequate |  | 1 | 100% |
| Inadequate | | 0 | 0% |
| Nonexistent | | 0 | 0% |
| Other (please explain below) | | 0 | 0% |
| Total Respondents | | 1 | 1 |

34. Please provide a citation (title, author, date, publisher) that would give the best overview of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana, if available. This resource may be used if further detail is needed.

| | | Response Total | Response Percent |
|--------------------------|--|-------------------|---------------------|
| Title | Eastern Towhee, Birds of North American account #262 | 1 | 100% |
| Author | Greenlaw, J.S. | 1 | 100% |
| Date | 1996 | 1 | 100% |
| Publisher | The Birds of North America, Inc. | 1 | 100% |
| Total Respondents | | 1 | 1 |

35. If possible, please provide a second citation (title, author, date, publisher) that would give another good overview of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana. This resource may also be used if further detail is needed.

| | | Response Total | Response Percent |
|--------------------------|---|-------------------|---------------------|
| Title | Decline of the Rufous-sided Towhee in the eastern United States | 1 | 100% |
| Author | Hagan, J.M. | 1 | 100% |
| Date | 1993 | 1 | 100% |
| Publisher | Auk 110:863-874. | 1 | 100% |
| Total Respondents | | 1 | 1 |

36. What is the current HABITAT body of science for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | | Response Total | Response Percent |
|------------------------------------|--|-------------------|---------------------|
| Complete, up to date and extensive | | 0 | 0% |
| Adequate | | 0 | 0% |

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| | | | |
|------------------------------|---|--------------------------|----------|
| Inadequate | 1 | 1 | 100% |
| Nonexistent | 0 | 0 | 0% |
| Other (please explain below) | 0 | 0 | 0% |
| | | Total Respondents | 1 |

37. Please provide a citation (title, author, date, publisher) that would give the best HABITAT overview of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana, if available. This resource may be used if further detail is needed.

| | Response Total | Response Percent |
|-------------------------|----------------|--------------------------|
| Title | 0 | 0% |
| Author | 0 | 0% |
| Date | 0 | 0% |
| Publisher | 0 | 0% |
| | | Total Respondents |
| | | 0 |
| (skipped this question) | | 1 |

38. If possible, please provide a second citation (title, author, date, publisher) that would give another good HABITAT overview of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana. This resource may also be used if further detail is needed.

| | Response Total | Response Percent |
|-------------------------|----------------|--------------------------|
| Title | 0 | 0% |
| Author | 0 | 0% |
| Date | 0 | 0% |
| Publisher | 0 | 0% |
| | | Total Respondents |
| | | 0 |
| (skipped this question) | | 1 |

39. What are the research needs for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | Urgently needed | Greatly needed | Needed | Slightly needed | Not needed | Unknown | Response Total |
|---|-----------------|----------------|----------|-----------------|------------|---------|----------------|
| Life cycle | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Distribution and abundance | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Limiting factors (food, shelter, water, breeding sites) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Threats (predators/competition, contamination) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |

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|--|--------|----------|--------|--------|----------|--------|--------|----------------------------|
| Relationship/dependence on specific habitats | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Population health (genetic and physical) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | | 1 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | | 0 |
| | | | | | | | | Total Respondents 6 |

40. Other research needs for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

- The eastern towhee is a well-known, fairly common species. The general life-history literature is extensive. Population trends, habitat needs and threats are not well defined for Indiana. The documented population declines in databases such as the Breeding Bird Surveys are poorly explained.

Total Respondents 1

41. What are the HABITAT research needs for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | Urgently needed | Greatly needed | Needed | Slightly needed | Not needed | Unknown | Response Total |
|---|------------------------|-----------------------|---------------|------------------------|-------------------|----------------|----------------------------|
| Successional changes | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Distribution and abundance (fragmentation) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Threats (land use change/competition, contamination/global warming) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Relationship/dependence on specific site conditions | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Growth and development of individual components of the habitat | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| | | | | | | | Total Respondents 5 |

42. Other HABITAT research needs for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

- Forest succession is well understood in Indiana. But the relationship between towhee occupancy and habitat age is not explicitly well studied here.

Total Respondents 1

43. How well do the following conservation efforts address the threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

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| | Very well | Somewhat | Not at all | Not used | Unknown | Response Total |
|---|------------------|-----------------|-------------------|--------------------------|----------------|-----------------------|
| Habitat protection (use below for details) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Population management (hunting, trapping) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Population enhancement (captive breeding and release) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Reintroduction (restoration) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Food plots | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Threats reduction | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Native predator control | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 1 |
| Exotic/invasive species control | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Regulation of collecting | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Disease/parasite management | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Translocation to new geographic range | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Protection of migration routes | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Limiting contact with pollutants/contaminants | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Public education to reduce human disturbance | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Culling/selective removal | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Stocking | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| | | | | Total Respondents | | 15 |

44. Other current conservation practices for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

1. Education of public to reduce losses due to exotic predators such as cats is probably important to some local populations.

Total Respondents 1

45. What one or two specific practices would you recommend for more effective conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

1. The major need is regional land management plans that retain young forest age classes and mixes of habitats within regional landscapes. Second practice may be exotic plant control. Garlic mustard and Amur honeysuckle have the ability to change vegetative structure of ground and understory layers. As ground nester and ground forager, towhees could be affected, but this is unstudied.

Total Respondents 1

Appendix E-42: Pre-Forest Stage

46. How well do the following conservation efforts address the HABITAT threats to the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

| | Very well | Somewhat | Not at all | Not used | Unknown | Response Total |
|--|-----------|----------|------------|--------------------------|----------|----------------|
| Habitat protection through regulation | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Habitat protection on public lands | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Habitat protection incentives (financial) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Habitat restoration through regulation | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Habitat restoration on public lands | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Habitat restoration incentives (financial) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Artificial habitat creation (artificial reefs, nesting platforms) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Selective use of functionally equivalent exotic species in place of extirpated natives | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Succession control (fire, mowing) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Corridor development/protection | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Managing water regimes | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Pollution reduction | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 1 |
| Protection of adjacent buffer zone | 0% (0) | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Restrict public access and disturbance | 0% (0) | 0% (0) | 0% (0) | 100% (1) | 0% (0) | 1 |
| Land use planning | 100% (1) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 1 |
| Technical assistance | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Cooperative land management agreements (conservation easements) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| Other (please specify below) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0% (0) | 0 |
| | | | | Total Respondents | | 15 |

47. Other current HABITAT conservation practices for the Wildlife in Pre-Forest Stage Forest Habitats in Indiana.

No responses were entered for this question.

Total Respondents 0

(skipped this question) 1

48. What one or two specific HABITAT practices would you recommend for more effective conservation of the Wildlife in Pre-Forest Stage Forest Habitats in Indiana?

1. Encouragement of forest management plans that retains / creates mix of young and older forest should retain towhees in regional avifaunas. Forest habitat restoration provides habitat in early stages.

Total Respondents 1

Appendix E-42: Pre-Forest Stage

49. Do you have any additional comments or information on the Wildlife in Pre-Forest Stage Forest Habitats that you feel would be useful in the development of the Indiana Comprehensive Wildlife Strategy?

1. Eastern towhee is a non-endangered but declining species across much of the United States. It is not the focus of specific monitoring efforts (because it is not on threatened lists), but it has shown sharp declines. Indiana populations on the Breeding Bird Survey show a negative (-1%/year) but nonsignificant decline. The species is best used as an indicator on young forest age-classes within a management district or region.

Total Respondents 1