

Appendix E-62: Cave Entrances

6. Please rank the following threats to the Wildlife in Cave Entrances Habitat 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)	100% (1)	0% (0)	0% (0)	0% (0)	1
Bioaccumulation of contaminants	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Predators (native or domesticated)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Dependence on other species (mutualism, pollinators)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Diseases/parasites (of the species itself)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Regulated hunting/fishing pressure (too much)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1
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)	0% (0)	0% (0)	0% (0)	100% (1)	1
Unregulated collection pressure	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Dependence on irregular resources (cyclical annual variations) (e.g., food, water, habitat limited due to annual variations in availability)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Total Respondents							11

7. Please also rank these threats to the Wildlife in Cave Entrances Habitat 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)	100% (1)	0% (0)	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
Degradation of movement/migration routes	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1

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(overwintering habitats, nesting and staging sites)

Genetic pollution (hybridization)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Unknown	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	10

8. Other threats to the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

9. Please briefly describe the top two threats to the Wildlife in Cave Entrances Habitat in Indiana identified above.

Oxidus gracilis is a non-native carnivorous millipede invading caves in the east; it is now in several Indiana caves and is preying on the food base for cave salamanders. Further east, reports of greatly decreased insect diversity in caves invaded by this millipede have been reported. Potential impact is unknown, but could be significant.

Total Respondents 1

10. Please rank the following threats to the HABITAT of the Wildlife in Cave Entrances Habitat in Indiana.

	Critical threat	Serious threat	Somewhat of a threat	Slight threat	No threat	Unknown	Response Total
Commercial or residential development (sprawl)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Counterproductive financial incentives or regulations	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1
Invasive/non-native species	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Nonpoint source pollution (sedimentation and nutrients)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Habitat fragmentation	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1
Successional change	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1
Diseases (of plants that create habitat)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Habitat degradation	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Climate change	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Stream channelization	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Impoundment of water/flow regulation	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Agricultural/forestry practices	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Residual contamination	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1

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(persistent toxins)							
Point source pollution (continuing)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Mining/acidification	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Drainage practices (stormwater runoff)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Unknown	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							17

11. Other HABITAT threats to the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

12. Please briefly describe the top two HABITAT threats to the Wildlife in Cave Entrances Habitat in Indiana identified above.

Forestry practices that open the forest canopy around cave entrances can greatly impact the habitat for this species, drying out the entrance to the point it is not useable habitat by the salamanders.

Total Respondents 1

13. What current monitoring efforts by state agencies are you aware of for the Wildlife in Cave Entrances Habitat in Indiana?

	Yes, these efforts occur	Not aware of these efforts occurring	Response Total
Statewide year-round monitoring conducted by state agencies	0% (0)	100% (1)	1
Statewide once a year monitoring conducted by state agencies	0% (0)	100% (1)	1
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by state agencies	0% (0)	100% (1)	1
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by state agencies	0% (0)	100% (1)	1
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	0% (0)	100% (1)	1

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18. Regional or local monitoring by other organizations for the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

19. Please list organizations that are monitoring the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

20. What are the current monitoring techniques for the Wildlife in Cave Entrances Habitat in Indiana?

	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
Radio telemetry and tracking	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Modeling	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Coverboard routes	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Spot mapping	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Driving a survey route	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Reporting from harvest, depredation, or unintentional take (road kill, bycatch)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Mark and recapture	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Professional survey/census	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Volunteer survey/census	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Trapping (by any technique)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Representative sites	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Probabilistic sites	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1

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Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Total Respondents							13

21. Other monitoring techniques for the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

22. What one or two monitoring techniques would you recommend for effective conservation of the Wildlife in Cave Entrances Habitat in Indiana?

No responses were entered for this question.

Total Respondents 0

23. What current HABITAT inventory and assessment efforts or activities by state agencies are you aware of for the Wildlife in Cave Entrances Habitat 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	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)	100% (1)	1
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	100% (1)	0% (0)	1
Total Respondents			1

24. What current HABITAT inventory and assessment efforts or activities by other organizations are you aware of for the Wildlife in Cave Entrances Habitat in Indiana?

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	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	0% (0)	100% (1)	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	1

25. How crucial are these HABITAT efforts by state agencies for the conservation of the Wildlife in Cave Entrances Habitat 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 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	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1

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conducted by other organizations

Total Respondents 7

27. Regional or local state agency HABITAT inventory and assessment for the Wildlife in Cave Entrances Habitat in Indiana.

DFW - nongame

Total Respondents 1

28. Regional or local HABITAT inventory and assessment by other organizations for the Wildlife in Cave Entrances Habitat in Indiana.

Indiana Karst Conservancy and local grottos

Total Respondents 1

29. Please list organizations that are monitoring this HABITAT for the Wildlife in Cave Entrances Habitat in Indiana.

Indiana Karst Conservancy and local grottos

Total Respondents 1

30. What are the current HABITAT inventory and/or assessment techniques for the Wildlife in Cave Entrances Habitat in Indiana?

If a technique is not applicable to the Wildlife in Cave Entrances Habitat, do not select a response in that row.

	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)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
Aerial photography and analysis	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	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

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Modeling	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	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)	100% (1)	1						
Total Respondents							10						

31. Other HABITAT inventory and assessment techniques for the Wildlife in Cave Entrances Habitat in Indiana.

Visual estimation - has the entrance been changed in anyway from its historical configuration (forest canopy opened up, entrance enlarged or blocked, etc.)

Total Respondents 1

32. What one or two HABITAT inventory and assessment techniques would you recommend for effective conservation of the Wildlife in Cave Entrances Habitat in Indiana?

No responses were entered for this question.

Total Respondents 0

33. What is the current body of science for the Wildlife in Cave Entrances Habitat in Indiana?

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

34. Please provide a citation (title, author, date, publisher) that would give the best overview of the Wildlife in Cave Entrances Habitat 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%

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Publisher	0	0%
Total Respondents	0	

35. If possible, please provide a second citation (title, author, date, publisher) that would give another good overview of the Wildlife in Cave Entrances Habitat 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	

36. What is the current HABITAT body of science for the Wildlife in Cave Entrances Habitat in Indiana?

	Response Total	Response Percent
Complete, up to date and extensive	0	0%
Adequate	0	0%
Inadequate	1	100%
Nonexistent	0	0%
Other (please explain below)	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 Cave Entrances Habitat 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	

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38. If possible, please provide a second citation (title, author, date, publisher) that would give another good HABITAT overview of the Wildlife in Cave Entrances Habitat 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	

39. What are the research needs for the Wildlife in Cave Entrances Habitat 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)	0% (0)	100% (1)	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)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Relationship/dependence on specific habitats	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1
Population health (genetic and physical)	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)	100% (1)	1
Total Respondents							1

40. Other research needs for the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

41. What are the HABITAT research needs for the Wildlife in Cave Entrances Habitat in Indiana?

	Urgently needed	Greatly needed	Needed	Slightly needed	Not needed	Unknown	Response Total
Successional changes	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1
Distribution and abundance (fragmentation)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1

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Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1	
Total Respondents						1	

44. Other current conservation practices for the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

45. What one or two specific practices would you recommend for more effective conservation of the Wildlife in Cave Entrances Habitat in Indiana?

Protect cave entrances from inappropriate management activities.

Total Respondents 1

46. How well do the following conservation efforts address the HABITAT threats to the Wildlife in Cave Entrances Habitat in Indiana?

	Very well	Somewhat	Not at all	Not used	Unknown	Response Total	
Habitat protection through regulation	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1	
Habitat protection on public lands	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1	
Habitat protection incentives (financial)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Habitat restoration through regulation	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Habitat restoration on public lands	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Habitat restoration incentives (financial)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	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)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1	
Corridor development/protection	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Managing water regimes	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Pollution reduction	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Protection of adjacent buffer zone	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	1	
Restrict public access and disturbance	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1	
Land use planning	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Technical assistance	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1	
Cooperative land management agreements (conservation easements)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1	
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1	

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Total Respondents 18



47. Other current HABITAT conservation practices for the Wildlife in Cave Entrances Habitat in Indiana.

No responses were entered for this question.

Total Respondents 0

48. What one or two specific HABITAT practices would you recommend for more effective conservation of the Wildlife in Cave Entrances Habitat in Indiana?

Protect cave entrances from disturbance.

Total Respondents 1

49. Do you have any additional comments or information on the Wildlife in Cave Entrances Habitat that you feel would be useful in the development of the Indiana Comprehensive Wildlife Strategy?

No responses were entered for this question.

Total Respondents 0