



Appendix E-19: Rivers and Streams Ohio River Drainage Interior River Lowland Headwater

**7.** Please also rank these threats to the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.

	<b>Critical threat</b>	<b>Serious threat</b>	<b>Somewhat of a threat</b>	<b>Slight threat</b>	<b>No threat</b>	<b>Unknown</b>	<b>Response Total</b>
Habitat loss (breeding range)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Habitat loss (feeding/foraging areas)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Small native range (high endemism)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Near limits of natural geographic range	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Large home range requirements	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Viable reproductive population size or availability	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Specialized reproductive behavior or low reproductive rates	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Degradation of movement/migration routes (overwintering habitats, nesting and staging sites)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Genetic pollution (hybridization)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	<b>1</b>
Unknown	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
<b>Total Respondents</b>							<b>7</b>

**8.** Other threats to the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat 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 Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana identified above.

Degradation of nesting and staging sites- pools or riffles with slow current beneath flat rocks  
 Low reproductive rates-Males reach sexual maturity at 2 while females can reproduce at 1 and they only have a life span of about 3 years.

**Total Respondents**      **1**

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**10.** Please rank the following threats to the HABITAT of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.

	<b>Critical threat</b>	<b>Serious threat</b>	<b>Somewhat of a threat</b>	<b>Slight threat</b>	<b>No threat</b>	<b>Unknown</b>	<b>Response Total</b>														
Commercial or residential development (sprawl)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Counterproductive financial incentives or regulations	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1														
Invasive/non-native species	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1														
Nonpoint source pollution (sedimentation and nutrients)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Habitat fragmentation	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Successional change	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1														
Diseases (of plants that create habitat)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	1														
Habitat degradation	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Climate change	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1														
Stream channelization	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Impoundment of water/flow regulation	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	1														
Agricultural/forestry practices	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	1														
Residual contamination (persistent toxins)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	1														
Point source pollution (continuing)	0% (0)	0% (0)	0% (0)	100% (1)	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)	100% (1)	0% (0)	0% (0)	0% (0)	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														
<b>Total Respondents</b>							<b>16</b>														

**11.** Other HABITAT threats to the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.

No responses were entered for this question.

**Total Respondents**      **0**  
(skipped this question)      1

**12.** Please briefly describe the top two HABITAT threats to the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana identified above.

Habitat degradation in terms of removal of substrate for spawning and sedimentation for covering the substrate needed to spawn.

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Total Respondents 1

13. What current monitoring efforts by state agencies are you aware of for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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	100% (1)	0% (0)	1
Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by state agencies	100% (1)	0% (0)	1
		<b>Total Respondents</b>	<b>8</b>

14. What current monitoring efforts by other organizations are you aware of for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat 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	0% (0)	100% (1)	1
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (1)	1
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (1)	1
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	0% (0)	100% (1)	1
Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (1)	1

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Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (1)	<b>1</b>
<b>Total Respondents</b>			<b>8</b>

**15.** How crucial are these monitoring efforts by state agencies for the conservation of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

	<b>Very crucial</b>	<b>Somewhat crucial</b>	<b>Slightly crucial</b>	<b>Not crucial</b>	<b>Unknown</b>	<b>Response Total</b>
Statewide year-round monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Statewide once a year monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Regional or local year-round monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Regional or local once a year monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by state agencies	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by state agencies	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
<b>Total Respondents</b>						<b>8</b>



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<b>Total Respondents</b>	<b>0</b>
(skipped this question)	1

<b>20.</b> What are the current monitoring techniques for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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)	0% (0)	<b>0</b>
Modeling	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Coverboard routes	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Spot mapping	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Driving a survey route	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Reporting from harvest, depredation, or unintentional take (road kill, bycatch)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Mark and recapture	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Professional survey/census	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Volunteer survey/census	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Trapping (by any technique)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
Representative sites	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Probabilistic sites	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
<b>Total Respondents</b>							<b>2</b>

<b>21.</b> Other monitoring techniques for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.	No responses were entered for this question.	
<b>Total Respondents</b>		<b>0</b>
(skipped this question)		1



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conducted by other organizations			
Regional or local once a year inventory and assessment conducted by other organizations	0% (0)	100% (1)	<b>1</b>
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (1)	<b>1</b>
Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (1)	<b>1</b>
		<b>Total Respondents</b>	<b>8</b>

**25.** How crucial are these HABITAT efforts by state agencies for the conservation of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

	<b>These efforts are very crucial for this HABITAT</b>	<b>These efforts are somewhat crucial for this HABITAT</b>	<b>These efforts are slightly crucial for this HABITAT</b>	<b>These efforts are not crucial for this HABITAT</b>	<b>Unknown</b>	<b>Response Total</b>
Statewide annual inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Statewide once a year inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
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)	<b>1</b>
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)	<b>1</b>
Regional or local year-round inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Regional or local once a year inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	<b>1</b>
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	100% (1)	0% (0)	0% (0)	0% (0)	<b>1</b>
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)	<b>1</b>
					<b>Total Respondents</b>	<b>8</b>





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No responses were entered for this question.

**Total Respondents**      **0**

(skipped this question)      1

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**32.** What one or two HABITAT inventory and assessment techniques would you recommend for effective conservation of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

No responses were entered for this question.

**Total Respondents 0**

(skipped this question) 1

**33.** What is the current body of science for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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%
<b>Total Respondents</b>	<b>1</b>	

**34.** Please provide a citation (title, author, date, publisher) that would give the best overview of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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%
<b>Total Respondents</b>	<b>0</b>	
(skipped this question)		1

**35.** If possible, please provide a second citation (title, author, date, publisher) that would give another good overview of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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%

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Publisher	0	0%
<b>Total Respondents</b>	<b>0</b>	
(skipped this question)		1

**36.** What is the current HABITAT body of science for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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%
<b>Total Respondents</b>	<b>1</b>	

**37.** Please provide a citation (title, author, date, publisher) that would give the best HABITAT overview of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage 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%
<b>Total Respondents</b>	<b>0</b>	
(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 Headwaters in the Interior River Lowland of the Ohio River Drainage 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%
<b>Total Respondents</b>	<b>0</b>	
(skipped this question)		1

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**39.** What are the research needs for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

	<b>Urgently needed</b>	<b>Greatly needed</b>	<b>Needed</b>	<b>Slightly needed</b>	<b>Not needed</b>	<b>Unknown</b>	<b>Response Total</b>
Life cycle	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	<b>1</b>
Distribution and abundance	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	<b>1</b>
Limiting factors (food, shelter, water, breeding sites)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Threats (predators/competition, contamination)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Relationship/dependence on specific habitats	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>1</b>
Population health (genetic and physical)	0% (0)	0% (0)	0% (0)	100% (1)	0% (0)	0% (0)	<b>1</b>
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	<b>0</b>
	<b>Total Respondents</b>						<b>6</b>

**40.** Other research needs for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.

No responses were entered for this question.

**Total Respondents**      **0**

(skipped this question)      1

**41.** What are the HABITAT research needs for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

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



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(skipped this question) 1

**45.** What one or two specific practices would you recommend for more effective conservation of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

Habitat protection and threats reduction

**Total Respondents 1**

**46.** How well do the following conservation efforts address the HABITAT threats to the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat 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)	0% (0)	0
Habitat protection on public lands	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Habitat protection incentives (financial)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Habitat restoration through regulation	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Habitat restoration on public lands	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Habitat restoration incentives (financial)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Artificial habitat creation (artificial reefs, nesting platforms)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Selective use of functionally equivalent exotic species in place of extirpated natives	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Succession control (fire, mowing)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Corridor development/protection	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Managing water regimes	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Pollution reduction	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Protection of adjacent buffer zone	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Restrict public access and disturbance	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
Land use planning	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0
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 0**

(skipped this question) 1

**47.** Other current HABITAT conservation practices for the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana.

No responses were entered for this question.

**Total Respondents 0**

(skipped this question) 1

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**48.** What one or two specific HABITAT practices would you recommend for more effective conservation of the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat in Indiana?

Habitat restoration and protection

**Total Respondents 1**

**49.** Do you have any additional comments or information on the Wildlife in Headwaters in the Interior River Lowland of the Ohio River Drainage Habitat that you feel would be useful in the development of the Indiana Comprehensive Wildlife Strategy?

IDEM has collected spottail darters in Posey Co. on a trib of Black River and Hawthorne Creek.

**Total Respondents 1**