







## Appendix E-5: Impoundments

**12.** Please briefly describe the top two HABITAT threats to the Wildlife in Aquatic Systems Impoundments Habitat in Indiana identified above.

1. (1) regulation of impounded water - extreme water fluctuations in mainly the Army Corps reservoirs can negatively effect crappie populations especially if the water fluctuations occur during spawning  
 (2) habitat degradation - the natural decomposition of flooded timber and woody debris is lessening the available cover for crappie. Also, siltation covers root wads left in the bottom of an impoundment which eliminates useable crappie cover.

2. habitat loss/degradation due to a variety of circumstances

**Total Respondents 2**

**13.** What current monitoring efforts by state agencies are you aware of for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	<b>Yes, these efforts occur</b>	<b>Not aware of these efforts occurring</b>	<b>Response Total</b>
Statewide year-round monitoring conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Statewide once a year monitoring conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Regional or local year-round monitoring conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Regional or local once a year monitoring conducted by state agencies	67% (2)	33% (1)	<b>3</b>
Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by state agencies	100% (3)	0% (0)	<b>3</b>
Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by state agencies	100% (3)	0% (0)	<b>3</b>
		<b>Total Respondents</b>	<b>24</b>

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### 14. What current monitoring efforts by other organizations are you aware of for the Wildlife in Aquatic Systems Impoundments 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% (3)	3
Statewide once a year monitoring conducted by other organizations	0% (0)	100% (3)	3
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (3)	3
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (3)	3
Regional or local year-round monitoring conducted by other organizations	0% (0)	100% (3)	3
Regional or local once a year monitoring conducted by other organizations	0% (0)	100% (3)	3
Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (3)	3
Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by other organizations	0% (0)	100% (3)	3
		<b>Total Respondents</b>	<b>24</b>

### 15. How crucial are these monitoring efforts by state agencies for the conservation of the Wildlife in Aquatic Systems Impoundments Habitat 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)	100% (3)	0% (0)	3
Statewide once a year monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Periodic statewide (less than once a year but still regularly scheduled) monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Occasional statewide (less than once a year and not regularly scheduled) monitoring conducted by state agencies	0% (0)	33% (1)	0% (0)	67% (2)	0% (0)	3
Regional or local year-round monitoring conducted by state agencies	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Regional or local once a year monitoring conducted by state agencies	33% (1)	33% (1)	33% (1)	0% (0)	0% (0)	3
Periodic regional or local (less than once a year but still regularly scheduled) monitoring conducted by state agencies	33% (1)	67% (2)	0% (0)	0% (0)	0% (0)	3
Occasional regional or local (less than once a year and not regularly scheduled) monitoring conducted by state agencies	33% (1)	33% (1)	33% (1)	0% (0)	0% (0)	3



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**18.** Regional or local monitoring by other organizations for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana.

1. none
2. none known
3. not aware of any

**Total Respondents 3**

**19.** Please list organizations that are monitoring the Wildlife in Aquatic Systems Impoundments Habitat in Indiana.

1. DNR/DFW
2. none known
3. NA

**Total Respondents 3**



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**22.** What one or two monitoring techniques would you recommend for effective conservation of the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

1. Electrofishing surveys  
 Trap netting surveys  
 Gill netting surveys  
 Angler creel surveys  
 Population estimates

2. (1) Reporting from harvest(angler creel surveys) - This survey will show angler exploitation.  
 (2) Professional survey (fish management surveys) - This survey will show size structure, relative abundance, and provide age and growth information.

**Total Respondents 2**

**23.** What current HABITAT inventory and assessment efforts or activities by state agencies are you aware of for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	<b>Yes, these efforts occur</b>	<b>No effort that I'm aware of</b>	<b>Response Total</b>
Statewide annual inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Statewide once a year inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Regional or local year-round inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Regional or local once a year inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	100% (3)	<b>3</b>
		<b>Total Respondents</b>	<b>24</b>

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

	<b>Yes, these efforts occur</b>	<b>No effort that I'm aware of</b>	<b>Response Total</b>
Statewide year-round inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Statewide once a year inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Regional or local year-round inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Regional or local once a year inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	100% (3)	<b>3</b>
		<b>Total Respondents</b>	<b>24</b>

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**25.** How crucial are these HABITAT efforts by state agencies for the conservation of the Wildlife in Aquatic Systems Impoundments 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)	67% (2)	33% (1)	<b>3</b>
Statewide once a year inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	<b>3</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)	67% (2)	33% (1)	<b>3</b>
Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	33% (1)	0% (0)	33% (1)	33% (1)	<b>3</b>
Regional or local year-round inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	<b>3</b>
Regional or local once a year inventory and assessment conducted by state agencies	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	<b>3</b>
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	33% (1)	0% (0)	33% (1)	33% (1)	<b>3</b>
Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by state agencies	0% (0)	33% (1)	0% (0)	33% (1)	33% (1)	<b>3</b>
				<b>Total Respondents</b>		<b>24</b>

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26. How crucial are these HABITAT efforts by other organizations for the conservation of the Wildlife in Aquatic Systems Impoundments 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 year-round inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Statewide once a year inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Periodic statewide (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Occasional statewide (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Regional or local year-round inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Regional or local once a year inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Periodic regional or local (less than once a year but still regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Occasional regional or local (less than once a year and not regularly scheduled) inventory and assessment conducted by other organizations	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
<b>Total Respondents</b>						<b>24</b>

27. Regional or local state agency HABITAT inventory and assessment for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana.	
1. None	
2. None known to occur.	
3. not familiar with habitat assessments that occur on impoundments	
<b>Total Respondents</b>	
<b>3</b>	



## Appendix E-5: Impoundments

**31.** Other HABITAT inventory and assessment techniques for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana.

none

**Total Respondents 1**

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

Systematic sampling would probably be best to determine the abundance of cover that is available, but could be very difficult as most of the habitat is hidden under the surface of the water.

**Total Respondents 1**

**33.** What is the current body of science for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	Response Total	Response Percent
Complete, up to date and extensive	0	0%
Adequate	3	100%
Inadequate	0	0%
Nonexistent	0	0%
Other (please explain below)	0	0%
<b>Total Respondents</b>	<b>3</b>	

**34.** Please provide a citation (title, author, date, publisher) that would give the best overview of the Wildlife in Aquatic Systems Impoundments Habitat in Indiana, if available. This resource may be used if further detail is needed.

Title Many in AFS journal of fish management and transactions of AFS  
 Impoundments Strategic Plan  
 Author IDNR - Fish and Wildlife  
 Date 1997  
 Publisher IDNR - Fish and Wildlife

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**35.** If possible, please provide a second citation (title, author, date, publisher) that would give another good overview of the Wildlife in Aquatic Systems Impoundments 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>	<b>0</b>

**36.** What is the current HABITAT body of science for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	Response Total	Response Percent
Complete, up to date and extensive	0	0%
Adequate	0	0%
Inadequate	2	67%
Nonexistent	1	33%
Other (please explain below)	0	0%
<b>Total Respondents</b>	<b>3</b>	<b>3</b>

**37.** Please provide a citation (title, author, date, publisher) that would give the best HABITAT overview of the Wildlife in Aquatic Systems Impoundments 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>	<b>0</b>

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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 Aquatic Systems Impoundments 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>	

**39.** What are the research needs for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	Urgently needed	Greatly needed	Needed	Slightly needed	Not needed	Unknown	Response Total
Life cycle	0% (0)	0% (0)	0% (0)	33% (1)	67% (2)	0% (0)	3
Distribution and abundance	0% (0)	0% (0)	67% (2)	33% (1)	0% (0)	0% (0)	3
Limiting factors (food, shelter, water, breeding sites)	0% (0)	33% (1)	67% (2)	0% (0)	0% (0)	0% (0)	3
Threats (predators/competition, contamination)	0% (0)	33% (1)	33% (1)	0% (0)	33% (1)	0% (0)	3
Relationship/dependence on specific habitats	0% (0)	0% (0)	100% (3)	0% (0)	0% (0)	0% (0)	3
Population health (genetic and physical)	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	0% (0)	3
Other (please specify below)	100% (1)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1
<b>Total Respondents</b>							<b>19</b>

**40.** Other research needs for the Wildlife in Aquatic Systems Impoundments Habitat in Indiana.

How to produce more, larger crappie

**Total Respondents 1**



## Appendix E-5: Impoundments

### 43. How well do the following conservation efforts address the threats to the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	Very well	Somewhat	Not at all	Not used	Unknown	Response Total
Habitat protection (use below for details)	33% (1)	33% (1)	0% (0)	33% (1)	0% (0)	3
Population management (hunting, trapping)	67% (2)	33% (1)	0% (0)	0% (0)	0% (0)	3
Population enhancement (captive breeding and release)	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Reintroduction (restoration)	33% (1)	67% (2)	0% (0)	0% (0)	0% (0)	3
Food plots	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Threats reduction	0% (0)	0% (0)	0% (0)	33% (1)	67% (2)	3
Native predator control	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Exotic/invasive species control	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	3
Regulation of collecting	33% (1)	0% (0)	33% (1)	33% (1)	0% (0)	3
Disease/parasite management	0% (0)	0% (0)	0% (0)	67% (2)	33% (1)	3
Translocation to new geographic range	0% (0)	33% (1)	0% (0)	67% (2)	0% (0)	3
Protection of migration routes	0% (0)	0% (0)	0% (0)	100% (3)	0% (0)	3
Limiting contact with pollutants/contaminants	67% (2)	33% (1)	0% (0)	0% (0)	0% (0)	3
Public education to reduce human disturbance	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	3
Culling/selective removal	0% (0)	67% (2)	0% (0)	33% (1)	0% (0)	3
Stocking	33% (1)	33% (1)	0% (0)	33% (1)	0% (0)	3
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
				<b>Total Respondents</b>		<b>49</b>

### 44. Other current conservation practices for the Wildlife in Aquatic Systems Impoundments 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 Aquatic Systems Impoundments Habitat in Indiana?

1. does not need conserving

2. Habitat protection - Actually, I mean habitat enhancement by adding more woody cover to the old impoundments where the former woody cover has decomposed.

**Total Respondents 2**

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**46.** How well do the following conservation efforts address the HABITAT threats to the Wildlife in Aquatic Systems Impoundments Habitat in Indiana?

	Very well	Somewhat	Not at all	Not used	Unknown	Response Total
Habitat protection through regulation	0% (0)	33% (1)	33% (1)	0% (0)	33% (1)	3
Habitat protection on public lands	33% (1)	33% (1)	33% (1)	0% (0)	0% (0)	3
Habitat protection incentives (financial)	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	3
Habitat restoration through regulation	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	3
Habitat restoration on public lands	0% (0)	67% (2)	33% (1)	0% (0)	0% (0)	3
Habitat restoration incentives (financial)	0% (0)	0% (0)	33% (1)	33% (1)	33% (1)	3
Artificial habitat creation (artificial reefs, nesting platforms)	0% (0)	33% (1)	33% (1)	33% (1)	0% (0)	3
Selective use of functionally equivalent exotic species in place of extirpated natives	0% (0)	0% (0)	33% (1)	67% (2)	0% (0)	3
Succession control (fire, mowing)	0% (0)	0% (0)	33% (1)	67% (2)	0% (0)	3
Corridor development/protection	0% (0)	33% (1)	0% (0)	67% (2)	0% (0)	3
Managing water regimes	100% (3)	0% (0)	0% (0)	0% (0)	0% (0)	3
Pollution reduction	67% (2)	33% (1)	0% (0)	0% (0)	0% (0)	3
Protection of adjacent buffer zone	33% (1)	67% (2)	0% (0)	0% (0)	0% (0)	3
Restrict public access and disturbance	0% (0)	0% (0)	67% (2)	33% (1)	0% (0)	3
Land use planning	0% (0)	100% (3)	0% (0)	0% (0)	0% (0)	3
Technical assistance	0% (0)	33% (1)	0% (0)	0% (0)	67% (2)	3
Cooperative land management agreements (conservation easements)	0% (0)	67% (2)	0% (0)	0% (0)	33% (1)	3
Other (please specify below)	0% (0)	0% (0)	0% (0)	0% (0)	100% (1)	1
				<b>Total Respondents</b>		<b>52</b>

**47.** Other current HABITAT conservation practices for the Wildlife in Aquatic Systems Impoundments 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 Aquatic Systems Impoundments Habitat in Indiana?

1. (1) Improve land use practices in watershed will reduce sedimentation in impoundments and reduce nutrient inputs. Reducing nutrient inputs will allow a deeper thermocline which is important for crappie growth. Crappie growth suffers when water temperatures become too high.

(2) Habitat restoration in the form of woody debris.

2. in Army Corps of Engineers impoundments alterations in water level control would likely benefit crappie

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**Total Respondents 2**

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

no

**Total Respondents 1**