

Appendix M: Suggested Wildlife Monitoring

<b>Suggested Wildlife Monitoring Needs</b>					
<b>Species Group</b>	<b>Species</b>	<b>Schedule</b>	<b>Area</b>	<b>Justification/Need details</b>	<b>Associated database needs</b>
Amphibians	Salamanders	Annual	Statewide	A regionally or nationally standardized methodology for the collection of location and abundance data for salamanders is needed. A volunteer based, survey methodology would facilitate statewide implementation. New survey techniques, especially safe and effective marking techniques, are needed. A standardized database structure for reporting and analysis of survey results should also be developed. Survey data could be compiled into an Indiana specific salamander or amphibian atlas.	Yes
Birds	Migratory stopover sites	Annual	Selected migratory stopover sites	Could contribute to the national monitoring effort and provide insight into characteristics and importance of migratory stopover habitat.	Yes
	Nesting habitat searches	Annually	Selected habitats	Selected forest, grassland, wetland etc. habitats could be censused for nesting birds to help determine if the habitat patch is a source or a sink.	Yes – part of Statewide Bird DB
	Owls and Nightjars	Annually	Statewide in suitable habitat	Techniques for efficient nocturnal surveys are needed.	Yes – part of Statewide Bird DB
	Rails, bitterns, and shorebirds	Annually	Statewide in appropriate wetlands habitat on a regular cycle	Rail, bittern and shorebird surveys could benefit from a national or regional protocol that would facilitate regional or national population analysis.	Yes – part of Statewide Bird DB

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Cave Invertebrates	Cave invertebrates	Continuous	Selected cave systems on a regular cycle	Cave invertebrates have limited dispersal power and can be sensitive to acute and chronic environmental disturbances. Regular inventory would help define the status of cave dependent species, their habitat and the level of threat.	Yes
Fish and Mussels	Freshwater mussels	Annually	A subset of Indiana's small streams on a 5-10 year rotation	This survey would complement the commercial mussel survey (every ten years in selected big river reaches) to give a complete picture of the status of Indiana's mussel fauna.	Yes
Insects	General insect survey	Continuous	Selected rare habitats on a regular cycle	Much of Indiana has been modified. Rare insect species are suspected to occur in rare habitat. Yet, even the rare habitats have been inadequately inventoried. This effort is a necessary first step.	Yes
Mammals	Bats (summer)	Annual	Portions of the state on a regular cycle	Analysis of separate and limited studies indicates a general decline in bats. Summer bats are a heterogeneous group and a multifaceted approach is needed to accurately determine the status of this group.	Yes
	Bats (winter)	Annual	Known or suspected bat caves on a schedule. (except <i>Myotis sodalists</i> caves)	Surveys for cave dwelling bats species, besides Indiana bats is need to adequately protect wintering bat populations. Caves, abandon mines and quarries are individually unique features, a standardized protocol that provides for statistically valid repetition of the same sites is desirable	Yes
	Small mammals (shrews, mice and voles)	Annual -	Statewide - representative habitats, by county on a regular cycle	Would provide important baseline information for these important prey species and an indicator of habitat structure changes and quality.	Yes

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	Trapper survey (otter , bobcat, and badger)	Annual	Statewide	Although these three species are protected nongame they are encountered during normal trapping season. The location, frequency of non-target captures and age and sex ratio's of specimens encountered can be useful indicators of regional population status	Yes
Reptiles	Lizards	Annual	Statewide or by county on a regular cycle	A regionally or nationally standardized methodology for the collection of location and abundance data for lizards is needed. A volunteer-based methodology would facilitate statewide implementation. New techniques, especially safe and effective marking techniques, are needed. A standardized database structure for reporting and analysis of survey results should also be developed. Survey data could be compiled into an Indiana specific lizard or reptile atlas.	Yes – part of statewide reptile DB
	Snakes	Annual	Statewide or by county on a regular cycle	A regionally or nationally standardized methodology for the collection of location and abundance data for snakes is needed. A volunteer-based methodology would facilitate statewide implementation. New survey techniques, especially safe and effective marking techniques, are needed. A standardized database structure for reporting and analysis of survey results should also be developed. Survey data could be compiled into an Indiana specific snake or reptile atlas.	Yes – part of statewide reptile DB

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	Turtles	Annual	Statewide or by county on a regular cycle	A regionally or nationally standardized methodology for the collection of location and abundance data for turtles is needed. A volunteer-based methodology would facilitate statewide implementation. New survey techniques, especially safe and effective marking techniques, are needed. A standardized database structure for reporting and analysis of survey results should also be developed. Survey data could be compiled into an Indiana specific turtle or reptile atlas	Yes – part of statewide reptile DB
General surveys	Surveys of species most in need of conservation, especially in certain habitats.	Annually	Statewide in appropriate habitats on a regular cycle	Land treatment programs such as, but not necessarily limited to the Wetland Reserve Program (WRP), Conservation Reserve Program (CRP), mine land reclamation and silviculture practices can provide specific habitat features and the response of wildlife to these features needs to be recorded and evaluated.	Yes – part of the Heritage Database (HD)
	General prey inventories, -insect, small mammals, amphibians, etc.	As needed	Specific study sites	An index of prey abundance would be an important component of population models for specific species in specific habitats.	No – include in study report
State Land Surveys	General Nongame survey - All nongame wildlife and insects	Annually	DNR properties	Department of Natural Resources Properties are considered to be repositories of Indiana’s biological Diversity. Survey and monitoring efforts to determine the distribution and abundance of wildlife on these properties is appropriate.	Yes – could be part of each area’s database and the HD
Additional Database needs	Bird sighting database	Continuous	Statewide	Bird sightings are reported on internet sites, but this massive amount of information is not organized, summarized in a standard way or readily accessible. Population trends and location data could be extracted from these records.	Yes – could be part of a statewide bird database

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	(Pit tag database)			Many researchers use Passive Integrated Transponder tags to mark research subjects for individual identification. Tagged individual may be recovered by other researchers, law enforcement agents and the public. Valuable information is lost if the origin of these tags can not be quickly ascertained.	Yes
	Bat Band Database			The movements and habits of bats are poorly understood. The USFWS provides the data management service for bird bands that ensures the origin and history of recovered bands is available. A similar service does not exist for bat bands and valuable data is being lost. The establishment of a comparable bat banding laboratory is needed.	Yes
	Road kill database (all vertebrate species)	Annually	Statewide (selected roadways on an established cycle)	Information on road killed animals can serve as an index of abundance, delineate occupied range and help locate features that attract wildlife to roads and the design and optimal placement of collision avoidance measures.	Yes
	Wildlife disease	Continuous	Statewide	Wildlife species are necropsied each year, but results are not centralized or summarized. Trends and locations of wildlife diseases could be monitored in a more timely basis if such a database existed.	Yes
	Wildlife rehabilitation	Annual	Statewide	Summary of wild species handled by licensed rehabilitators with sources of injury could be helpful in identification of threats.	Yes
	Window, cell tower and windmill bird and bat kill database	Annual	Statewide	Information on the date, species, environmental conditions and location of birds killed by flying into structures could provide an index to migratory timing and routes and characteristics of obstacles. The data could be used to aid in avoidance and minimization recommendations.	Yes – could be part of a statewide bird database