

Appendix O: Public Comments

**Partner Comments**

**Comment 1**

Location Table #9

Comment Funding is available for the Wetlands Reserve Program on an annual allocation basis. Therefore Funding Available should say "yes".

**Reply 1:** The Table was modified based on the comment

**Comment 2**

Location Table 10

Comment For USDA Natural Resources Conservation Service, there should also be an "X" under subterranean.

**Reply 2:** The Table was modified based on the comment

**Comment 3**

Location figure 4

Page # 34

line # 1

Comment typo - barren lands comprise 0.19 percent, not 19 percent.

**Reply 3:** The Figure was modified based on the comment

**Comment 4**

Location Table 10

Page # 62-66

line # 10

Comment Some of the rows do not add up to 100% (Four Rivers RC&DA, Hoosier Conservation Alliance, Indiana Association of Cities and Towns, Indiana Beaglers Alliance, Indiana Environmental Institute, IPL, Little River Wetlands, Newport Chemical Depot, NE Trout Assoc., NIPSCO, NW Indiana Regional Planning Commision, Sycamore Land Trust, Tippecanoe Audubon Society, others?). The "average time spent" at the bottom of the table sums to 151%, which is a meaningless figure (should add to 100). Doesn't make much sense.

**Reply 4:** The Table was modified based on the comment

**Comment 5**

Location XII

Page # 67

line # line 10, 12

Comment couple of grammatical errors:

line 10 - "receive" should be "received"

line 12 - "has" should be "have"

**Reply 5:** The Text was modified based on the comment

**Comment 6**

Location Matrix of Conservation Partners

Page # 62

line # Table 10

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**Comment** It appears that an individual other than the Indiana Regional Biologist provided comments. In an attempt to reduce confusion, please only include Ducks Unlimited, Inc. in Table 10. Thanks.

**Reply 6:** The Table was modified based on the comment

### **Comment 7**

**Location** Section VIII. Key Habitats and Communities for Species of Greatest Conservation Need

**Page #** 29-31, 36

**line #** figure 6 forest lands

**Comment** Comparing with USDA Forest Service Forest Inventory & Analysis (FIA) data, it appears that habitat features were identified based on satellite imagery data, which only allows for analysis of land cover. FIA uses a definition based on land use. The report states that 23 percent of IN is forested (more than 5.5 million acres), while FIA data shows 4.5 million acres. As an example, was the developed lands layer taken out? Looking at the Indianapolis area in the Forest Lands Map (figure 6), it appears that there is forestland located here. FIA would preclude these acres due to the land-use definition; however, using satellite imagery as the basis for forestland, there could be canopy coverage in urban areas such as this. Another probable source of differences would be such things as pastured woodlots. FIA's land-use definition would again throw out these acres from forestland, while analysis of satellite imagery would say this ground is forest (cover). The definition of forestland used is somewhat vague--what are the size limitations?, what pixel size was used in the analysis?, etc.? I believe a million acres difference in forestland acreage for the state is quite a large number.

**Reply 7:** This issue is addressed in section VIII, page 34

### **Comment 8**

**Location** General Comment on Entire Document

**Page #**

**line #**

**Comment** My expertise is in aquatic systems / freshwater mussels but my comment may apply to other areas. While the document lists certain conservation measures for mussels and other species, artificial propagation / supplementation of existing populations is notably missing from all sections. I spent the last 2 years on an extensive survey of Indiana's premier mussel streams (East fork White R., Wabash R., and Tippecanoe R.). Almost all showed signs of low or limited reproduction. Without a captive propagation program (where mussels are captively raised in aquaculture and released to supplement existing populations or in historic habitats) it is almost certain Indiana's mussels will continue to decline, particularly the rare and endangered species. In fact, 10 years from now when the next mussel monitoring event is scheduled will likely be too late and only document the drastic decline. Ohio, Kentucky, and other states have a cooperative effort between facilities in KY, OH, WV and others. It is my understanding that Indiana was unwilling to participate (Dr. Tom Watters, OSU museum of biological diversity, pers. comm.). The strategy should include a goal for captive propagation of native mussels, gastropods, and perhaps native fishes. Because other states such as Ohio and KY already have advanced programs it would be relatively little

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effort to have these facilities raise mussels for Indiana until IN develops its own program.

**Reply 8:** This issue is addressed in Table 8, page 64, conservation actions 4 and 5 for all habitats combined.

### **Comment 9**

Location Section VII. Species of Greatest Conservation Need

Page # 24

line # Table 1

Comment I just happened to glance at the Species of Greatest Conservation Need document during lunch today. As nearly as I can tell, you have some species in there that are simply at the edge of their range (green salamander, e.g.). I don't see anything in this document to separate out the "edge of range" species from those in real trouble. I know the herp TAC group has discussed this issue from time to time. There's no "great conservation need" for these species, and how to list them is problematical. I don't know what you did with these species once you had the list together, but am hoping that some distinction or additional detail was added to separate the species that have true, major conservation needs from those that are just at the edge of their range.

**Reply 9:** This issue is addressed in section VII page 25.

### **Comment 10**

Location Problems affecting species and habitat

Page #

line #

Comment I did not see mercury referenced even though most of our waterways are impaired and Indiana is ranked 4th in the US for mercury pollution. Is it in the Bioaccumulation of Contaminants section?

**Reply 10:** This issue is addressed in Section VIII, page 50.

### **Comment 11**

Location general question

Page #

line #

Comment Who looks at cross state habitat consistent strategy such as Illinois plans for Kankakee vs. Indiana's plans for Kankakee?

**Reply 11:** This issue is addressed in Section VI, page 24.

### **Comment 12**

Location Monitoring Progress into the future

Page # 4

line # 38-39

Comment We fully agree with the need to monitor for amphibians. We modeled habitat needs for spotted salamander in our recent Forest Plan revision efforts. The same for Mussels. We need to know where they are located to provide the greatest protection for the species and its habitat.

**Reply 12:** This issue is addressed in Section XII, page 79, Table 79

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### **Comment 13**

Location Species of Greatest Conservation Needs

Page # 25 - 28

line # Table 1

Comment I am surprised to see that the Ruffed Grouse and American Woodcock did not make the list of Species of Greatest Conservation need. During recent Forest plan revision modeling through the use of LANDIS showed that the habitat requirements for these species were not adequate to maintain a viable populations in to the future.

**Reply 13:** See Section IV, page 15 for a description of the model and Section VII for selection of SGCN.

### **Comment 14**

Location Key habitat and communities for species of greatest conservation need

page # 30

line # 12-13

Comment The definition of forestland only covers late-successional forest habitat. This eliminates those species that might be dependent on early successional type habitat that is comprised of trees and shrubs 0 to 9 years of age. This is the preferred habitat for species such as Ruffed grouse and American Woodcock. It also reduces the amount of habitat for late-successional species that may prefer early successional habitat for some part of their life cycle, such as foraging.

**Reply 14:** See Appendix A for a complete list of habitats definitions

### **Comment 15**

Location Threats to Habitats

Page # 45

line # 12-14

Comment This paragraph could be worded more strongly. The threat for habitat loss from invasive species is a serious consideration. The need for chemical treatments for use on all lands needs to be addressed. When cities decide to be less aggressive in their treatment methods than the state and federal entities it undermines the ability to use all available tools to control these species. State and Federal land managers need to take the lead and become the authority in this area.

**Reply 15:** this issue is included in Section IX Pages 56 & 57, Tables 4 & 5.

### **Comment 16**

Location Threats to habitat

Page # 45

line # 22-34

Comment The mapping needs to include age class and habitat type in their classifications. Otherwise the loss or early successional habitat cannot be adequately addressed.

**Reply 16:** See Appendix A for a complete list of Sub-habitats and their definitions. See Appendices E33 through E46 for results of technical expert results on all forest sub-habitats.

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### **Comment 17**

Location VIII key Habitats and Communities

Page # 29-30

line #

Comment We are concerned that savannas are not listed as a habitat or discussed in this document. Oak savannas of various types (e.g. black oak savannas on dry sand dunes, red and white oak savannas on somewhat better soils, bur oak savannas on silt loam soils) are important habitats in Northwest Indiana. They should at least be mentioned and it should be indicated if they are being counted among Forests or Grasslands if it is too difficult to distinguish them in the spectral identification and mapping.

**Reply 17:** See Appendix E59 for the results of technical expert results on this sub-habitat.

### **Comment 18**

Location Figure 4. Barren Lands

Page # 34

line #

Comment Obviously 19 percent is incorrect. According to Table 2 it should be 0.19 percent.

**Reply 18:** Text was corrected.

### **Comment 19**

Location Table 10. Matrix of conservation partners

page # 62-66

Comment Our organization, LaPorte County Conservation Trust, Inc., is not listed as a partner and was not contacted about this Comprehensive Wildlife Strategy. We are a land trust in LaPorte County and own several parcels, including the 23 acre Wintergreen Woods State Nature Preserve and 60 acre Ridgway Wetlands. We are listed in the Division of Nature Preserves list of Indiana land trusts, so don't know how we were missed. You can contact us through my email or at 405 Maple Avenue, LaPorte, IN 46350 because our Web Site is not yet on line.

**Reply 19:** This organization was added to table 11 (formerly table 10)

### **Comment 20**

Location XI, A-2: Habitats Conservation Actions

Page # 53

line # 22

Comment We need to keep all of our tools in place for working with private landowners, including the Classified Wildlife Habitat program.

**Reply 20:** This issue is addressed in Section XI, Page 63.

### **Comment 21**

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We applaud the effort required to generate this document and hope to see it lead to the implementation of actual conservation specifics - so long as they are done on a science-based rather than political basis.

**Reply 21:** Conservation funding is often politically influenced.

### **Comment 22**

First of all, a question (or series of related questions) – how will this document be used? Will the state be required to develop conservation initiatives to protect the threatened species and habitats? Who will actually use it and how? How will they know it exists? How will its use in formulating public policy and regulation be tracked? Will the final version have any legal standing?

**Reply 22:** This document will be implemented by conservation partners and the Indiana DNR. Please see table 11, Page 72 for a complete list of organizations.

### **Comment 23**

Page 54, table 7 (“Conservation action needed...”) lists “Regulation of Collecting” in a tie for first place with “Habitat Protection” under Subterranean Systems – we disagree that these items are of the same magnitude. Our organization sees only an occasional request for a permit to collect in any of the subterranean aspects of the properties we manage and, to the best of our ability, we monitor activities within the underground portions of our preserves through a combination of gates, supervision, and electronic logging devices and thus have confidence that there is only minimal undocumented use. We are acquainted with many of the researchers who would be making such requests and while they agree that it could become a problem if for some reason the field became “hot”, no one is aware of it currently being a big problem. This is not to say that there shouldn’t be increased regulatory controls to preclude such collecting for scientific or other purposes from becoming a threat, only that the threat due to habitat degradation is much larger and more immediate. Looking at Appendix E60, the responding experts ranked unregulated collecting pressure as: 14% “Somewhat of a threat”, 29% “Slight”, 43% “No”, and 14% “Unknown”.

**Reply 23:** The results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 24**

The focus of the subterranean portion seems to be the Indiana Bat (*myotis Sodalis*). This is likely due to the visibility of the species resulting from its designation as a federally endangered species and to the amount of research (and researchers) available. Focusing on this one species, which has very specific needs, such as a hibernaculum chamber temperature between 3 and 7°C, as representing the biological health of a cave would lead to some rather demanding management prescriptions (refrigeration?). Of the approximately 2,900 caves in Indiana (typical temperatures of 11 to 13°C), less than thirty appear to be viable hibernacula for the species. Monitoring the success of a hibernating colony of Indiana Bats would allow conclusions to be drawn about the chamber temperature, summer breeding success and lack of disturbance but would say little about the remaining 2,870 caves where the health of the resident salamanders, crayfish, cavefish, copepods etc. depends upon a largely different set of factors such as

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energy input through detritus, moisture, warmer temperatures and an ecosystem that likely includes complicated inter-relationships of insects, microbes, fungus and so on. Caves, subterranean water conduits, and springs have a direct bearing on the local water quality. Monitoring the Indiana Bat is likely to offer few clues regarding water quality whereas monitoring, say, the population of crayfish might. We note that there are no references to the work done by Dr. Julian J. Lewis of Lewis Bioconsulting regarding his biological surveys in the caves of Indiana for The Nature Conservancy and the Hoosier National Forest. This would seem to be a major omission as his are probably the most recent and comprehensive studies done. Dr. Lewis was recently featured in the Autumn 2005 edition of Nature Conservancy where his work in various caves in Tennessee was spotlighted.

**Reply 24:** Please see section IV, page 15 for a description of the model and Section V for representative species selection.

### **Comment 25**

We are concerned that initiatives coming out of this program might make information regarding the locations of various caves and other karst features on private, state and federal properties available to the general public. After the publication, in 1961, of the *Caves of Indiana* – which included 398 detailed topographical locations (mostly on private land) – by the Indiana Geological Survey, untold damage due to vandalism, overuse and ignorance resulted in most of the caves listed. Several bat hibernacula were greatly impacted. Other private publications followed suit and aggravated the problem. Only those caves with vigilant owners escaped. Fortunately, these publications are now out of publication, though copies still exist in public libraries. In our work with the Hoosier National Forest, we have made cave locations available but only after signing a memorandum of understanding which gives us sole ownership of the location database, subjects them to our conditions and denies them the right to publish entrance locations without our concurrence. Similar arrangements do not exist with the State of Indiana and so the locations that exist in various forms in State Agencies are vulnerable to release. Incorporation of an “Entrance Layer” into a GIS database would make a powerful tool in the hands of any vandal or ignorant “spelunker” should it (inevitably) escape to the world of the Internet. The implications are even greater because so many of these locations would be on private property, encouraging trespassing and further degrading landowner relations.

**Reply 25:** This issue is addressed in Section IV, page 15.

### **Comment 26**

In Table 8 on page 55, “Habitat Protection Incentives (financial)” is listed as seventh rank (tie) for subterranean systems, we would rank it much higher. Other habitats generally rank it higher; some place it first. From our perspective, finding funding for acquisition of critical habitat is essential, it is really a now or never situation. Urban sprawl is enveloping wildlife habitat at a dramatic and accelerating rate. As farms and forests are broken up into residential developments, wildlife habitat is generally irretrievably lost. Having financial incentives, be they tax relief, restoration grants or acquisition grants (such as from the Indiana Heritage Trust) is critical to preserving at least some of the wildlife value of the property. We rely on donations from our members, other

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organizations, corporations and the State to purchase our preserves. Where possible, we acquire as much of the surface surrounding the entrance and overlying the cave passages as possible. This reduces the likelihood of contamination of the subterranean system by spills of contaminants, malfunctioning septic systems or sedimentation due to inappropriate surface management. With property prices rising rapidly this means that significant funding is required. Opportunities for acquisition greatly exceed funds available.

**Reply 26:** The results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 27**

On the organization of the electronic form of the document – it would improve access if the table of contents could be made “live” that is, if the chapter titles were linked to the document so that clicking on them would jump the user directly to the page in question. This should be possible with Adobe Acrobat™.

**Reply 27:** Thank you for the recommendation.

### **Comment 28**

Page 5, line 67--That the...“DNR will conduct species and habitat assessment efforts *as resources allow*”...is a problematic statement on what should be considered essential to the well-being of Indiana citizens since a habitat unhealthy for wildlife is ultimately unhealthy for humans. We would prefer guaranteed minimum resources as the quality of the food we eat and air we breath and water we drink is predicated on healthy habitats. Resources will always be found for what government considers essential and almost never so for what is considered an afterthought (such as wetlands in a delta).

**Reply 28:** Thank you for the comment, we agree and hope that the development of this document will allow more reliable funding.

### **Comment 29**

Page 14, Line 9—We accept DFW selection of a habitat-based approach rather than using a species-by-species approach. However, a habitat-based approach does not completely guarantee that individual species (particularly SGCN) do not suffer as a habitat could be altered over the long term to favor, for example, shrub/early successional species such as game birds to the detriment of closed-canopy species such as neotropical warblers.

**Reply 28:** Please see section IV, page 15 for a description of the model and Section V for representative species selection.

### **Comment 30**

Page 15, Line 6—“The process also identifies gaps in\_\_\_”. The sentence is incomplete; Line 7 is blank.

**Reply 30:** This section was corrected based on the comment.

### **Comment 31**

Page 17, Line 26—Step1: Assemble a guild of species for each habitat type.

Page 17, Line 45—Step 2: Select a species to represent each guild.

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It is not clear that a completely unbiased approach has been established in selecting representative species. What prevents outside pressure or simply personal preference in favoring game species to the exclusion of non-game species to represent a guild? Also, if the guild of species for each habitat type is too small, you may, for example, have Baltimore Orioles (which nest and forage in large hardwoods on the edges) representing Forest Lands, which might lead to a forest management plan favoring the oriole by creating numerous small clear-cut patches. However, assessing habitat only for the Baltimore Oriole would lead to erroneous conclusions on managing Forest Lands, to the detriment of the Northern Parula Warbler (which nests in the interior of large, structurally complex hardwood forests) which has been harmed by forest fragmentation in some parts of its range.

**Reply 30:** Please see section IV, page 15 for a description of the model and Section V for representative species selection.

### **Comment 32**

Page 33, Figure 3: Aquatic System—It should be clarified that the 2.36% does not reflect the free-flowing streams and groundwater that are present in Subterranean habitats and, therefore, does not represent the total Aquatic resources in Indiana.

**Reply 32:** The results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 33**

Page 34, Figure 4: Barren Lands—“Indiana’s barren lands comprise 19 percent of Indiana.” Decimal point appears to be missing; should this not be 0.19 percent?

**Reply 33:** This section was corrected based on the comment.

### **Comment 34**

Page 35, Figure 5: Developed Lands—“Indiana’s developed lands constitute 3.69% of Indiana...” This percentage seems low. Does this include all industry not associated with agriculture (*active* mine lands, gravel pits, quarries, oil and gas infrastructure, etc.)? Is suburban sprawl adequately represented in this?

**Reply 34:** See Appendix A for a complete list of habitats definitions

### **Comment 35**

Page 54, Line 1--Table 7. Conservation action needed for species in each of the habitats. Ranking of conservation action needed for Subterranean Systems has “habitat protection” and “regulation of collecting” tied for first place. Theoretically, collecting may be an issue but, practically speaking, “threats reduction” and “limiting contact with pollutants/contaminants” are more pressing issues. Subterranean species, specifically bats, have been and are being targeted by humans using fire, smoke, firearms and other means to kill them. Dumping chemicals or trash into sinkholes is a common occurrence that can contaminate well water and springs used by both people and livestock. Water moves very rapidly once it enters the underlying limestone passages and is filtered very little; thus, any pollutant that enters a sinkhole may move a great distance in a relatively short time to resurface at a spring. In Indiana’s karst regions non-point source pollution can easily seep through the soil and into the groundwater below.

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**Reply 35:** The results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 36**

Thank you for the opportunity to comment on Indiana's Comprehensive Wildlife Conservation Plan. We found the document easy to follow. It clearly synthesizes a significant volume of information about Indiana's wildlife and we believe it will be a very useful starting point for future conservation efforts. We have organized our comments into three categories: Assessment (i.e. species, habitat and threat assessments), Strategy (i.e. prioritized conservation actions) and Implementation (i.e. next steps for moving the plan forward and monitoring through an adaptive management process).

**Reply 36:** Thank you for the comment, the results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 37**

#### **A. I. Assessment**

We were very happy to see the draft document centered on habitat conservation, "conservation of wildlife must start with a focus on habitat" pg. 4. Many other states have taken a habitat approach, but Indiana's plan has the clearest articulation we have seen of why a habitat approach makes sense both biologically and practically on page 14. We were also pleased to see the statements about a landscape approach to conservation mentioned on page 16 which suggests decisions will be made more strategically and in a landscape context. We are very encouraged by these steps forward in Indiana's approach to conservation.

To complement this habitat approach we recommend the Indiana plan ultimately contain habitat goals. Although not required by Congress, Defenders believes that having clear, measurable goals helps focus the plan, instigate implementation, and assists with concrete monitoring efforts. South Dakota has proposed maintaining at least 10% of the historic acreage for each habitat type as a goal for their plan. Nebraska also calculated a goal for the number of protected patches for each habitat type. These kinds of specific numerical goals can be difficult to determine initially, but act as a guide and a measure for monitoring purposes. Many other states, specifically North Carolina and Hawaii, have included more wide ranging, general goals that could serve as good models.

We were pleased to see that Indiana included numerous maps showing the distribution of habitat types across the state. Defenders of Wildlife believe that the identification of priority conservation areas is critical for a successful plan. Identifying priority areas ensures that conservation efforts are more coordinated and efficient, thereby maximizing the use of limited conservation dollars. Massachusetts, Illinois, and Florida, as well as many other states, have all included excellent spatial analysis of priority conservation areas in their plans. We recommend including such a map as an explicit work product under the spatial analysis planned for statewide monitoring on pg. 74.

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Indiana's statewide threats discussion highlights the most prevalent issues for species and habitats which correctly center on habitat loss, connectivity and quality. The accompanying Tables 3 and 4 are a nice summary of statewide issues. We were pleased data gaps were not listed as a threat to wildlife as other states have done, but rather dealt with in Section X on additional research and survey efforts. We agree that there is need to study habitat at specific sites for better restoration and management, but there is also a need for statewide assessment of habitat condition so that priority habitat conservation areas can be chosen as mentioned above. We suggest this analysis is equally important to the more site specific habitat studies and the two should inform each other.

**Comment 37:** This issue is addressed in Section IV, page 15.

### **Comment 38**

#### **B. II. Strategy**

Generally, the conservation actions are well organized. Early statements make it clear this is not an operational plan. However, we would like to see more detail regarding some of the actions outlined in the plan. For example, private land conservation is discussed along with the challenge resulting from dividing parcels into smaller acreages with more owners (pg. 53). Land use planning however is only mentioned briefly.

Given the importance of development pressure affecting wildlife habitat described in Section IX, a discussion of actions to address this threat could be expanded to indicate the kind of tools available and the need for outreach and working with local land use planners. Defenders developed a section of our Biodiversity Partners website to discuss the issue of habitat and sprawl ([www.biodiversitypartners.org/habconser/sprawl.shtml](http://www.biodiversitypartners.org/habconser/sprawl.shtml)). It describes the issue and lists a number of tools employed by planners to protect habitat. In the same vein, actions to inform the design, maintenance and retrofit of the transportation network to minimize their impact on wildlife habitat could also be included. Some suggested language could be, "Work with land use and transportation planners to incorporate areas of important biodiversity into residential and commercial development, roads and other infrastructure to minimize the impacts of city planning on sensitive habitat areas."

Including such planning and policy connections to address land use and transportation planning issues has also been critical for many other States. States like Maine have developed programs that include working with planners as a priority conservation action and we recommend that you highlight and work to strengthen your involvement with these planning agencies. Involving wildlife issues in land use and transportation planning early on will avoid unnecessary conflicts and delays over development and should be an excellent example of a proactive way to use information from the wildlife strategy.

It was encouraging to see reference to using incentive programs and working with private landowners in Section B on Partnering Agencies and Organizations (pg. 56). Table 9 is a very good list of the programs available in the state and a good starting point. The discussion of the barriers to using these programs effectively to conserve wildlife habitat

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is informative. We recommend that the appendix M list be accompanied by short descriptions of the how the programs work.

We would also like to see some ideas on how the state intends to better make use of these programs using information from the CWS. For example, the wildlife plan might recommend that the criteria for determining where some of these program dollars are spent could be informed by the habitat priorities or specific places on the landscape the state feels are the best opportunities for conservation. Some programs have been better aligned with conservation plans in this way by other states (e.g. Florida, Utah, etc.).

Defenders of Wildlife developed a report that describes many of the different incentive programs that can be used to encourage private landowners to manage their lands compatibly with wildlife. You may find the descriptions and discussion useful for the Indiana plan. Here is the link to the full report:

(<http://www.biodiversitypartners.org/bioplanning/tools/index.shtml>).

**Comment 38:** This issue is addressed in Section IV, page 15 and Table 10 page 68.

### **Comment 39**

#### **III. Implementation**

There are a few elements that we believe are crucial in order to smoothly transition from planning to implementation. These include clearly defined leadership roles, some discussion of funding, and a complete monitoring plan.

Leadership can be presented in the strategic plans in a number of ways. Many States have created tables of threats and actions and listed the agency or organization best suited to implement those actions. In addition, partners can be included in particular actions such as watershed assessments or mapping projects. Other indications of clear leadership are hiring staff dedicated to implementation and coordinating an implementation work group. North Carolina is a good example of a State that has clearly presented leadership roles. The Indiana plan lists many conservation partners and discusses the idea of bringing them together in early 2006 to discuss implementation activities. This is a positive step. We recommend you consider creating an implementation committee or working group as other states are doing to maintain momentum into implementation and provide direction.

Lack of funding is identified as a major barrier to conservation in Indiana. A clear presentation of available funds or potentially available funds will help clarify what actions will be feasible to implement. It is also important to identify creative additional funding sources such as the Farm bill, transportation mitigation dollars, ballot initiatives, and Federal invasive species control grants

(<http://invasivespecies.gov/toolkit/grants.shtml>). Indiana lists various existing programs in Appendix M and indicates whether funds are available, but does not include dollar figures and other programs that can be used for habitat conservation (e.g. transportation, Pittman-Robertson, etc.). Iowa included an excellent description of existing and needed future funds in their plan. We recommend using it as a model.

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The description of monitoring is very good with a description of habitat monitoring and plans to establish a spatial base line and regular monitoring of habitat condition and other variables (pg. 74). This is very much in line with recommendations we made in a report Defenders produced related to habitat monitoring. Here again, having clear goals will make monitoring actions much easier and more meaningful. One of the other ideas developed is that of a conservation registry to track conservation actions spatially (including land protection through acquisitions, easements and other agricultural incentive programs). Here are some of the highlighted recommendations from that report:

- Track and map actions of multiple groups in a registry of conservation actions
- Track long term land use changes relative to habitat priorities at a statewide and/or ecoregional scale
- Form a statewide, interagency and private sector monitoring group to facilitate coordinated monitoring
- Involve citizens in some elements of monitoring programs for practical and educational purposes

Here's a link to the full report:

<http://www.biodiversitypartners.org/infomanage/monitoring/01.shtml>

**Comment 39:** This issue is addressed in Section IV, page 15

### **Comment 40**

#### **IV. Concluding Remarks**

Page 77 describes the creation of an action plan in early 2006 to accompany the strategy. Certainly more detailed planning will be necessary for site specific actions, but we believe this document could go farther in providing statewide and landscape direction for action if it went a little deeper by identifying the best opportunities for habitat conservation and fleshed out more of the planning and policy connections.

Overall, we believe that Indiana has put together a solid wildlife conservation assessment that will be useful for the coming years. We especially look forward to seeing progress on mapping habitats and priority areas. We hope that these suggestions are useful to you. Please contact us if you have any questions regarding our comments. Thank you again for making the document available for public review.

**Comment 40:** Thank you for your comment.

### **Comment 41**

Pg. 14. Habitat loss or degradation is considered the biggest threat, and rightfully so. However, can you document this for Indiana?, ie, how many acres are lost annually in Indiana to development? I think its about 101,000 acres.

How much natural land lost?

How much farm land lost?

How much natural land is regained?

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### Methods

Step 1. Assemble a guild of species for each habitat type – This is what ISU is doing.

Step 2. Select a species to represent each guild.

**Reply 41:** This issue is addressed in Section VII, page 34.

### **Comment 42**

Pg. 19 Comment: The questionnaires were very difficult to use and very time consuming. They could have been greatly modified to do a much better job – i. e., a simple questionnaire would have gotten much more response. This is especially true for wildlife professionals.

**Reply 42:** Through adaptive management the CWS will be modified as appropriate.

### **Comment 43**

Pg. 25 List of Species – I suggest a major rearrangement of this list to make it more usable. Professionals usually use scientific names rather than common names, but I realize why common names would be emphasized here. However, I would reorganize the list on pp. 25-28 to make it much more usable and user friendly. It is currently awful to use. (What list did you use for common names? Simon et. al., 2002?)

First, I would divide the table up into:

Mammals

Birds

Reptiles

Amphibians

Fish

Then, I would divide by status

FE, FT, SE (There is no longer any State Threatened

or perhaps –

Endangered (Federal or State)

Threatened

SC

Exotic

This would allow the list to be used much more easily – and you could tell how many Endangered forms there were – by group, or totally.

**Reply 43:** Thank you for the recommendation.

### **Comment 44**

VIII. Pg. 29 Habitats – more than 60 specific habitats

acreage

distribution

(patch size?)

native vs non-native

plant diversity

relative abundance

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(ownership)  
relative condition  
1800  
1900  
2000

Too many comments of yours are included such as– This is the first attempt...etc.

**Reply 44:** This issue is addressed in Section VII, page 34.

### **Comment 45**

Pg. 42. Fig. 10 – Some of the shadings are difficult to separate,

(Quercus – Carya versus Wetlands

Fagus Acer versus Fagus- Quercus – Acer – Carya)

**Reply 45:** Through adaptive management the CWS will be modified as appropriate.

### **Comment 46**

Pg. 43 Last par. – See my question #1 again. I see no attempt to determine the land loss, nor even to let people know what a huge factor this is. Last par. – Suggests that different evolutionary pressures are involved in shaping the species in these habitats – and that these populations are small and isolated – I am not sure that there are these small isolated populations in those habitats (barren, developed lands) i. e., most species occur on contiguous habitats. What species are we talking about that have these small and isolated populations in barren or developed lands? Remove this or provide evidence that such populations exist. I suspect that the whole paragraph should be deleted, beyond the first phrase...Habitat loss...in most habitats (period).

**Reply 46:** Through adaptive management the CWS will be modified as appropriate.

### **Comment 47**

Threats. Pg. 46.

Habitat loss – data?? I would suggest a list of habitats – and how they have fared.

1800, 1900, 2000 - and perhaps, by ten year periods from 1900 to present.

Why is this listed twice?

This whole table seems based on peoples opinions – rather than on data.

And what does this all mean? For example – there is a #1 under Agriculture, pg. 46.

Does this mean there is a threat to the wildlife there?

Or, that the Agricultural land is disappearing?

If there is a threat to wildlife on agricultural lands – What species are threatened?

On down the list – 3<sup>rd</sup> threat – Migration routes – What species are threatened?

Also, what species are threatened by:

#4 – irregular resources,

#5 – pollution

#6 – Predators – especially

#7 – Contaminants

#8 – Viable reproductive population size

#9 – Invasive species

#10 – Disease/Parasites

etc.

## Appendix O: Public Comments

What species are threatened by all of these and in what habitats? I have the same sorts of questions regarding the threats to habitats in Table 4. We need details, not so much the generalities.

**Reply 47:** Thank you for the comment, the results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate

### **Comment 48**

Pg. 48. Research needs – the greatest was to identify the threats – including predators, competition etc.

Limiting factors need to be studied.

Most of these need study on a case by case basis by Species, as you indicate with your Indiana bat example.

Also – interactions are stressed. The report, as you recognized – does not give many specific research needs. Probably a species rather than a habitat approach would give more of this – especially when applied to the endangered, threatened and SC species. Perhaps the suggestion for research to come out of this is to recommend that each of the target species be studied to attempt to determine specific threats. Then indicate what habitats those threats occur in. Conservation needs then should become clearer.

What Endangered/Threatened/Special Concern species are present in all of the habitats?  
But especially – 1) Agriculture 2) Developed 3) Barren lands

If none, or very few – we can pretty much forget those habitats and concentrate on the more natural habitats.

**Reply 48:** Thank you for the comment, the results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate

### **Comment 49**

Pg. 50 - If we consider threats to habitats – the greatest has to be development – certainly to Agriculture and Grasslands.

Some examples of conservation actions are listed on pp 51 – They could be pulled out and emphasized more.

**Reply 49:** Thank you for the comment

### **Comment 50**

Pg. 52. line 20 – Protection of migration routes – Do we really mean migration – movement one way – then back later – Or, do we mean dispersal route?

I believe I would sort out the research and also the conservation plans – specifically and for, individual species that need it – there are a number of thoughts on this in your report– pp. 48----- and they could be emphasized.

This would be my thoughts on what a strategy should do – point out specifics – rather than generalize so much.

**Comment 50:** This issue is addressed in Section IV, page 15.

## Appendix O: Public Comments

### **Comment 51**

Pg. 54 – Table 7. Again, habitat protection is the #1 priority for Agricultural lands – and again, I ask – what does this mean?

a) That we need to protect agricultural lands because they are disappearing (will we have to eat our subdivisions later – I always ask).

b) Do we need to protect species by protecting agricultural land – again, I ask – What species?

Again – I think that the case needs to be made – giving acreages – as to what is happening to our land – by habitats.

a) Agricultural

b) Aquatic

c) Barren „,perhaps give them by ten year periods...

d) Developed

e) .etc., but especially for the more natural habitats.

How long can these trends continue?

I note Tables 7,8 – Pollutants are not even mentioned under agriculture –

However – a major research question is:What are the pesticides and fertilizers doing to us and to our wildlife? That would be a major question that could lead to conservation needs if the answer to the research is not acceptable or to our liking.

**Reply 51:** Thank you for the comment, the results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate

### **Comment 52**

Pg. 57 – Travel constraints, matching fund constraints etc., are pointed out as impediments in your reports. This is good.

These can be big constraints on a project at worst, and can be an unnecessary paperwork hassle at best. Various funding agencies should simplify rather than complicate the process, and you could make a strong plea for that in this document.

**Reply 52:** Thank you for the comment

### **Comment 53**

Another thing you could do here in outlining your strategy could be to greatly elaborate on Table 9 – Conservation (and research?) Programs and Resources. You could provide a section in the “strategy” that would provide more information on how and where to get these funds, what they can be used for, and also restraints, and at the same time, make recommendations that the restraints be reduced.

Perhaps there is more information on this and on other items in the appendices, which I do not have.

**Reply 52:** Through adaptive management the CWS will be modified as appropriate.

### **Comment 54**

Other specific recommendations that could be incorporated in your strategy are that:

a) Biological surveys be supported and carried out on all State and Federal Natural Lands. This has been a push by the Indiana Academy of Science, Biological Survey Committee for some time.

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b) Specific consistent survey techniques be developed (research) and carried out (management) for various species or groups of species such as bats, certain fish, crayfish, certain birds, and many others.

c) Survey work has declined in recent years because there has been lack of emphasis on taxonomic and survey work by Colleges and Universities and by funding organizations. This has led to critical shortages of taxonomists and ecologists who can carry out such work. Increases in basic support for those efforts and also for museums, which also support those efforts, That should help greatly in conserving our natural resources.

-Some of this you stated or implied but the more specific the better.-

**Reply 54:** Thank you for the comment, the results presented are the results of technical experts input. Through adaptive management the CWS will be modified as appropriate.

### **Comment 55**

Pg. 74 Habitat monitoring – I discussed this above.

I think you could take out much of the discussion in places – or at least deemphasize them – and put greater emphasis on specific recommendations. The more specific recommendations you can come up with, the more that the state, universities, conservation organizations, etc., can make use of them.

**Comment 55:** This issue is addressed in Section IV, page 15.

### **Comment 56**

Location XI, A-1

Page # 50

line # 43

Comment Members of pro-hunting groups might be utilized as manpower for species population management.

**Reply 55:** Please see Table 10, page 73 for a complete list of conservation partners.