

Appendix R. Focus Group One

Table R-1. Threats to SGCN and their habitats in Indiana.

Major categories of direct threats (adapted from Salafsky et al. 2008, based on the focus group results)	Subcategories of direct threats to SGCN and their habitats in Indiana (based on the focus group results)
<p>Urban/exurban development (residential/commercial/industrial)*</p> <ul style="list-style-type: none"> • Interacting with invasives/problematic species as it is an avenue for their transmission • Interacting with pollution 	<ul style="list-style-type: none"> • Road construction associated with urban/exurban development, leading to increased road mortality, impeded wildlife movement, fragmented habitat, loss of habitat, increased runoff, flashier hydrology, down-cutting streams, and increased sediments • Removal of riparian habitats associated with development • Point source pollution from commercial/industrial sources • Non-point source pollution from pesticide use on residential/commercial lawns • Cats and other domestic pets killing small birds/mammals
<p>Agriculture and aquaculture</p>	<ul style="list-style-type: none"> • Water quality problems resulting from pesticide use in farming and on-farm nutrient/waste management • Exotic species from aquaculture • Land conversion for biofuels, contributing to habitat fragmentation • High cost of land • Changes in drainage due to installation of tile drainage • Changes in water quantity affecting the availability of shallow, standing water for species • Introduced genetic material from fish stock • Channelization and dredging of streams contributing to habitat loss
<p>Energy production and mining</p> <ul style="list-style-type: none"> • Interacting with transportation/service corridors 	<ul style="list-style-type: none"> • Water quality problems from chemicals used in/spilled from mining and energy production facilities/operations (e.g., fracking, coal mining, etc.) • Disturbing/diminishing habitats due to siting of the facilities/operations and related road construction • Large amount of water used for energy production • Wind farms affecting bird/bat species • Filled in caves
<p>Transportation and service corridors</p>	<ul style="list-style-type: none"> • Highway/road/service corridor construction leading to increased road mortality and increased runoff • Habitat loss due to roads and service corridors • Passage way for introducing/spreading invasive species

<p>Biological resource use</p>	<ul style="list-style-type: none"> • Over use and harvesting of certain wildlife species (e.g., aquatic turtles, reptiles, mussels, roe-bearing fish) • Inappropriate forestry practices (e.g., select harvesting) affecting wildlife habitat • Genetic patenting for commercial use (introduction of genes into natural populations) • Privatization of wildlife/captive wildlife causing disease introduction • Fewer hunters and fishers to support the wildlife conservation programs
<p>Human intrusions and disturbance</p> <ul style="list-style-type: none"> • Interacting with invasives/problematic species • Interacting with climate change 	<ul style="list-style-type: none"> • Recreation activities affecting wildlife/aquatic habitat (e.g., ATV/off-highway vehicles, trail use, horseback riding, high-speed boating, canoeing) • Human-induced invasive species • Overuse and misuse of public lands (e.g., trashing, arson, pesticide dumping) • Stream crossings by ATV/horse riding disrupting habitat
<p>Natural systems modification*</p>	<ul style="list-style-type: none"> • Wetland loss due to agriculture • Riparian zone removal for stream channelization • Channelization and dredging of streams, changing water flow patterns, water temperature, and sediments • Manmade structures in aquatic systems (e.g., seawalls, levies, dams) stabilizing water levels and disrupting habitat • Lack of good forest management (i.e., fire suppression, snag removal), leading to diminishing quality habitat, particularly for early successional species • Change in patterns, for example fire suppression or over-mowing of areas
<p>Invasives and problematic species*</p>	<ul style="list-style-type: none"> • Aquatic invasive species overwhelming native species and changing aquatic habitats • Overabundance of deer in the natural system • Forest insects threatening forest wildlife habitats • Biofuel planting, converting natural habitats to agricultural fields and creating monoculture • GMO spread into nature, changing wildlife habitats • Wildlife diseases (e.g., white-nose syndrome, chronic wasting disease) • Invasive shrubs, for example honeysuckle and multiflora rose
<p>Pollution</p>	<ul style="list-style-type: none"> • Water quality problems • Thermal pollution • Noise/light pollution • Air pollution, particularly smoke, mercury emissions, and ammonia from fertilizer use • Bioaccumulation of pollutants in wildlife

<p>Climate change*</p> <p>Note: This is a long-term challenge and will become a huge burden on conservation.</p>	<ul style="list-style-type: none"> • Changing the frequency, duration, and intensity of drought • Reducing base flow in streams and increasing water temperature, affecting aquatic species, particularly cold-water fish and vernal pool species • Changing the frequency and duration of floods • Changing wildfire frequency and intensity • Shifting the range of suitable habitats • Changing temperature and shifting seasons, particularly warmer winters leading to increased adapted invasive species • Potential inability of native species to adapt to shifting species • Increased ground water withdrawal for irrigation to mitigate shifting weather patterns because of climate change
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* Indicates threats that were identified as particularly important in Indiana.

Table R-2. Conservation actions necessary in the next 10 years to address threats to SGCN and their habitats in Indiana.

Major categories of conservation actions (adapted from Salafsky et al. 2008, based on the focus group results)	Subcategories of conservation actions necessary to conserve SGCN and their habitats in Indiana (based on the focus group results)
Land/water protection	<ul style="list-style-type: none"> • Acquire unprotected wetlands and enhance wetland protection • Acquire more conservation easements to protect important wildlife habitats • Create more communication and coordination among agricultural producers, developers, planners, and state wildlife personnel • Increase the amount of public lands in the state as wildlife habitats • Enhance the protection of riparian corridors • Take an ecosystem planning approach to prioritize actions to protect land and water • Develop metrics for monitoring effectiveness of conservation actions

<p>Land/water/species management</p>	<ul style="list-style-type: none"> • Develop and promote farming technologies and practices that have conservation benefits, particularly technologies and practices that improve on-farm nutrient management • Consolidate adjacent lands to create unfragmented, large patch of wildlife habitats • Enforce better/targeted mitigation measures for vulnerable habitat • Buffer existing protected areas • Improve statewide coordination on invasive species management • Relate water management (for example, dealing with drought) to climate change • Promote holistic, landscape-level planning and management and reduce conflicts among competing interests • Promote city planning and zoning regulations to reduce urban sprawl • Restore natural streams • Use an umbrella/indicator species approach to provide directions for conservation actions • Invest in research that helps better understand the impacts of climate change on wildlife habitats • Invest in proactive rather than reactive management policies, programs, and practices • Promote management policies, programs, and practices that balance game and non-game species • Promote effective invasive species control • Promote effective management of nuisance wildlife populations (e.g., deer, raccoons, Canada geese) • Restore/relocate certain species that are “on the edge” (e.g., mussels)
<p>Education and awareness</p>	<ul style="list-style-type: none"> • Create/promote programs that bring kindergarten and elementary students outside • Create/promote education programs that focus on improving the conservation awareness/literacy of urban population • Enhance current education programs that focus on landowners • Put up conservation signage in smaller natural areas/around smaller rivers (instead of only putting signage in state parks/forests)
<p>Law and policy</p>	<ul style="list-style-type: none"> • Increase regulations on invasive species • Influence legislators to ensure consistent funding for wildlife conservation, to increase funding for protection of state endangered species, and to provide sufficient resources for the Division of Fish and Wildlife operations • Legalize venison processing in Indiana • Amend/update existing policies/laws • Change policies that aren't working • Protect existing working policies, i.e. methods to support Indiana's hardwood industry through certified forest programs

Livelihood and economic incentives	<ul style="list-style-type: none"> • Create a market for nitrogen trading • Promote payment for ecosystem services programs • Promote nature tourism • Promote conservation easements as a means to providing financial incentives to landowner • Support a balanced hardwood industry • Expand alternative agricultural markets and support local organic farms • Improve current mitigation funds to be more systematic
External capacity building	<ul style="list-style-type: none"> • Enhance public-private partnerships and coordination and organization for partners to work together on conservation issues • Increase the state's capacity for research and monitoring of conservation actions • Promote the use of science in conservation decision making • Foster productive relationships between scientists, environmentalists, and agricultural producers and landowners

Focus Group One Protocol

Greetings/Introduction/Ground rules – 10 minutes

- Welcome and thank you for taking the time to participate in this focus group meeting
- Project team introductions:
 - PI: Pat Zollner
 - Co-PI: Rob Chapman, Vanessa Quinn, Zhao Ma
 - Research Assistants: Rita Blythe, Colleen Hartel
- Project introductions (with potential verbiage to use)

Our Purdue team contracted with the DFW to update and prepare the 2015 SWAP for Indiana. Through the next few months, we will be working closely with the Core Team and the Advisory Team to engage conservation professionals throughout the state and to collect and update wildlife species and habitat information.

One of our objectives for the next few months is to identify threats to the SGCN in Indiana and to prioritize conservation actions for the state in the next 10 years. Therefore, we want to use today's focus group meeting as a scoping process to discuss what potential threats you see as present in Indiana and what conservation actions need to be taken in the next 10 years. At the end of today, we hope to be able to compile a list of potential threats and conservation actions, and we will then use this list to inform the development of a survey questionnaire, which will be administered sometime in May and June.

Participant introductions (with potential verbiage to use)

Before we get started, let's go around and have everyone in the room briefly introduce him/herself, just your name and organization will be fine. Thank you. We would also like to ask for your permission to audio record our meeting, so we won't miss any important ideas you offer. The recording will be used only for the purpose of updating Indiana's State Wildlife Action Plan. Only the

project team has access to the recording, and no comments will be attributed to specific individuals in any future reports. Please let us know at this time if you do not feel comfortable with us recording our discussion (Note: The facilitator needs to look around the room for consent and if everyone seems to be ok, make sure to conclude that everyone seems ok and we will get started. The facilitator turns on the recorder).

Ground rules (with potential verbiage to use). Time duration – We hope to complete our discussion today in 90 minutes.

We have a total of three topics to go through. Under each topic, we have 3 to 5 specific questions that we would like to ask. I will be the facilitator for our discussion to ensure that we cover all the topics and questions and that everybody has an opportunity to share his/her opinions. Time is somewhat limited, so please help keep the discussion going at a good pace.

- Turn-taking – Please be courteous and take turns in speaking. Speak one at a time and allow others to finish their thoughts before commenting.
- Breaks – If you need to use the restroom at any time during the discussion please feel free to do so. The restrooms are located...
- Refreshments – We have (some cookies and drinks) for everybody. Please feel free to help yourself at any time to the refreshments during the course of our discussion.
- Concluding comments – Remember that there are no right or wrong answers, and we expect to hear a wide variety of opinions today. Please feel free to share your ideas. We are eager to hear from everyone in the room. We want to assure you that all the information we collect today will be used for the purpose of updating Indiana's State Wildlife Action Plan only and no personal identity will be revealed in any way.

Topic 1 – General: Wildlife management and conservation experience – 10 minutes

Let's start with a general question about your experience with the 2005 State Wildlife Action Plan in Indiana.

1. Who here has been involved in or has used information contained in the 2005 State Wildlife Action Plan?
2. What kind of information do you find useful in the 2005 State Wildlife Action Plan, and what kind of information do you find not useful in the 2005 State Wildlife Action Plan?

Topic 2 – Threats to Species of Greatest Conservation Need in Indiana – 30 minutes

Now, I want to switch gears and talk about threats to SGCN in Indiana. Let's start with two general questions and we will then talk about the classification of threats presented in the 2008 Salafsky et al. paper that the Division sent to you a few days ago.

1. Generally speaking, what do you see as immediate threats to Species of Greatest Conservation Need in Indiana? By immediate, we mean in the next 10 years. (Note: Use flip chart to write down threats identified by participants)
2. Generally speaking, what do you see as long-term threats to Species of Greatest Conservation Need in Indiana? By long-term, we mean in the next 10 to 50 years? (Note: Use flip chart to write down threats identified by participants)

Alright, we've talked about some general threats in Indiana. Now I want to bring our discussion to the 2008 Salafsky et al. paper. The Division recommended this paper to us a while back and it

seems to be really helpful for conceptualizing different types of direct threats to biodiversity. You may have already read through Table 1. It groups all potential threats to biodiversity into 11 categories. These 11 categories are presented on the flip chart (Note: The facilitator shows participants the pre-drawn flip chart. See Appendix A for how the flip chart could look like). I would like to go through these categories with you and discuss their applicability to SGCN in Indiana.

1. In your opinion, do we have all these 11 categories of threats in Indiana? If not, which ones are not present or will not be present in Indiana in the next 10 years?
2. In your opinion, are there any additional types of threats not included in these 11 categories but are present or will be present in Indiana in the next 10 years? If yes, what are they?
3. We pretty much agree that we have all these threats in Indiana (Note: The facilitator will point to the ones that have been identified). Could you give us a few examples of the threats that you and/or your organization are particularly concerned about under each of these categories?
4. (Note: If a category has not been discussed much, the facilitator should draw everybody's attention to that category and ask the following question). It seems we have quite some examples for these categories (Note: The facilitator will point to the categories with many examples), but I noticed that we have not talked much about these categories (Note: The facilitator will point to the categories with few examples). Do you still think these types of threats problematic in Indiana? If so, what examples can you give?

Topic 3 – Conservation actions needed in Indiana – 30 minutes

Alright, after identifying threats to Species of Greatest Conservation Need in Indiana, I want to ask all of you to think about what conservation actions are needed to address these threats. Just like last round, I will ask you one general question and we will then talk about the classification of conservation actions presented in the 2008 Salafsky et al. paper.

1. Generally speaking, what types of conservation actions need to be taken in the next 10 years to protect Species of Greatest Conservation Need and their habitat in Indiana? (Note: Use flip chart to write down actions identified by participants)

Alright, we've talked about some general conservation actions that are needed in Indiana. Now I want to bring our attention once again to the 2008 Salafsky et al. paper. Table 2 groups all potential conservation actions into 7 categories. These 7 categories are presented on the flip chart (Note: The facilitator shows participants the pre-drawn flip chart. See Appendix A for how the flip chart could look like). I would like to go through these categories with you and discuss their applicability in Indiana.

2. In your opinion, do we need all these 7 categories of conservation actions in Indiana? If not, which ones do we not need to worry about in the next 10 years?
3. In your opinion, are there any additional types of conservation actions not included in these 7 categories but will be needed in Indiana in the next 10 years? If yes, what are they?
4. We pretty much agree that we need to take these types of actions in Indiana (Note: The facilitator will point to the ones that have been identified). Could you give us a few examples of the types of actions that you and/or your organization think are particularly important for protecting Species of Greatest Conservation Need in Indiana?
5. (Note: If a category has not been discussed much, the facilitator should draw everybody's attention to that category and ask the following question). It seems we have quite some examples for these categories (Note: The facilitator will point to the categories with many

examples), but I noticed that we have not talked much about these categories (Note: The facilitator will point to the categories with few examples). Do you still think these types of conservation actions are needed in Indiana? If so, what examples can you give?