

Section 1. Arkansas Wildlife Action Plan

Eight Required Elements

Congress identified eight required elements to be addressed in these wildlife conservation plans. Further, the plan must identify and focus on the “species in greatest need of conservation,” yet address the “full array of wildlife” and wildlife- related issues. They must provide and make use of:

- (1) Information on the distribution and abundance of species of wildlife, including low and declining populations as the State fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the State’s wildlife; and,
- (2) Descriptions of locations and relative condition of key habitats and community types essential to conservation of species identified in (1); and,
- (3) Descriptions of problems which may adversely affect species identified in (1) or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats; and,
- (4) Descriptions of conservation actions proposed to conserve the identified species and habitats and priorities for implementing such actions; and,
- (5) Proposed plans for monitoring species identified in (1) and their habitats, for monitoring the effectiveness of the conservation actions proposed in (4), and for adapting these conservation actions to respond appropriately to new information or changing conditions; and,
- (6) Descriptions of procedures to review the plan at intervals not to exceed ten years; and,
- (7) Plans for coordinating the development, implementation, review, and revision of the plan with Federal, State, and local agencies and Indian tribes that manage significant land and water areas within the State or administer programs that significantly affect the conservation of identified species and habitats.
- (8) Congress also affirmed through this legislation, that broad public participation is an essential element of developing and implementing these plans, the projects that are carried out while these plans are developed, and the Species in Greatest Need of Conservation that Congress has indicated such programs and projects are intended to emphasize.

The following section is a guide to how Arkansas addressed the eight required elements.

Element 1. Information on the distribution and abundance of species of wildlife, including low and declining populations as the State fish and wildlife agency deems appropriate, that are indicative of the diversity and health of the State's wildlife;

Locations: The methodology of selecting, scoring and ranking **species that are indicative of the diversity and health of the State's wildlife** is provided in Section 2. Species of Greatest Conservation Need on pages 14-19.

Each SGCN has an individual Species Report located on pages 36-1131. Refer to this for Species Priority Score. Species Priority Scores reflect the abundance and population trend of the SGCN.

Refer to Species Reports on pages 36-1131 for ecoregions, ecobasins, terrestrial and aquatic habitats associated with SGCN. The ecoregions and habitats associated with SGCN represent **distribution**.

The entire list of SGCN is listed by Species Priority Score in Appendix 2.1 (pages 1582-1591).

Lists of SGCN presented by taxa group is presented in Appendix 2.2. (pages 1592 – 1606).

Element 2: Descriptions of locations and relative condition of key habitats and community types essential to conservation of species identified in (1);

Locations: Refer to Section 3. The Ecoregions of Arkansas on pages 1132-1207. Within each ecoregion description is an **ecoregion map, description, associated SGCN and associated habitats**. Ecoregions are ranked by conservation priority based on overall importance to SGCN.

Section 4. Terrestrial Habitat, pages 1208-1517, has **descriptions, locations, key factors and indicators**, and, where available, **relative condition** of terrestrial habitats. Each terrestrial habitat is ranked according to its overall importance to SGCN associated with it.

Section 5. Aquatic Habitats, pages 1518-1558, has **descriptions, maps and indicators of aquatic condition**. Each aquatic habitat is ranked according to its overall importance to SGCN associated with it.

Element 3: Descriptions of problems which may adversely affect species identified in (1) or their habitats, and priority research and survey efforts needed to identify factors which may assist in restoration and improved conservation of these species and habitats;

Locations: Refer to Section 2. Species of Greatest Conservation Need in the Species Reports, pages 36-1131, for data gaps or research needs associated with each SGCN. This is **research needed to identify factors which may assist in restoration and improved conservation of these species and habitats.**

Refer to the Species Reports, pages 36-1131. Each Species Report lists **problems (threats and sources) which may adversely affect each SGCN.**

Refer to Section 3. The Ecoregions of Arkansas, pages 1132-1207, for tables that summarize and rank the **problems faced.** Problems faced by SGCN are presented in each ecoregion section.

Element 4: Descriptions of conservation actions proposed to conserve the identified species and habitats and priorities for implementing such actions;

Locations: Refer to the Species Reports, pages 36-1131. Each Species Report has a section which lists **conservation actions associated with each SGCN.**

Refer to Section 3. The Ecoregions of Arkansas, pages 1132-1207, **Conservation Actions** ranked to provide guidance for prioritizing the implementation of such actions. Each ecoregion has a list of Conservation Action categories associated with it.

Element 5: Proposed plans for monitoring species identified in (1) and their habitats, for monitoring the effectiveness of the conservation actions proposed in (4), and for adapting these conservation actions to respond appropriately to new information or changing conditions;

Locations: Refer to Section 1. Wildlife Action Plan on pages 9- 10.

Refer to Section 2. Species Reports, pages 36-1131, for a list of **species-specific monitoring actions.**

Refer to Section 4. Terrestrial Habitats, page 1211, for **monitoring associated with conservation actions.**

Refer to Section 5. Aquatic Habitat, page 1551, for **monitoring associated with conservation actions.**

Element 6: Descriptions of procedures to review the plan at intervals not to exceed ten years;

Location: Refer to Section 1. **Review Process and Schedule**, pages 10-13.

Element 7: Plans for coordinating the development, implementation, review, and revision of the plan with Federal, State, and local agencies and Indian tribes that manage significant land and water areas within the State or administer programs that significantly affect the conservation of identified species and habitats.

Location: Refer to Section 6. Informing and engaging the public on pages 1559-1565.

Refer to Section 6. Reaching out to the scientific community, pages 1559-1564.

Refer to Section 6. Native American contact, page 1565.

Element 8: Congress also affirmed through this legislation, that broad public participation is an essential element of developing and implementing these plans, the projects that are carried out while these plans are developed, and the Species in Greatest Need of Conservation that Congress has indicated such programs and projects are intended to emphasize.

Location: Section 6. Informing and engaging the public (pages 1564-1565) documents outreach and public participation.

Guiding Principles

From the outset, Arkansas' AWAP teams chose to focus on developing a living planning tool, rather than a static funding document, that could be useful to professional partners, citizen conservationists and land managers. At the core of Arkansas' plan are teams of scientists who have populated a database which stores and links information and makes possible the calculation of priorities. The result is a database that can be readily updated as data gaps are filled and conservation actions are accomplished. With every update, the status of species of greatest conservation need and the relationships between species, habitats and conservation actions can be reexamined in an efficient manner that will demonstrate progress over time.

Science-based decision making relies on making accurate information accessible and usable. In Arkansas, scientific teams, the general public, nonprofit groups, government agencies and land managers will rely on database-managed priorities communicated online at www.WildlifeArkansas.com.

Implementing Arkansas' Wildlife Action Plan

State Wildlife Grants support activities promoting the betterment of Arkansas' designated species of greatest conservation need (SGCN). Because there is much more to do to conserve SGCN than can be funded in a given year, Arkansas developed a science-based prioritization process to make the most efficient use of available funds. The process relies on a database framework for organizing, analyzing, storing and retrieving data. Each step in the process receives expert input from the plan's partners and stakeholders. Projects funded by State Wildlife Grants (SWG) will be chosen from a list of implementation needs that are generated from the database, coarse-filtered by Science Teams, then fine-filtered by the Steering Committee and the Implementation Team.

Given the current limits to available resources, doing our best for species of greatest conservation need means that funds must be targeted with an eye to optimizing results. The process will rely on a database framework for organizing, analyzing, storing and retrieving data, and it will rely on input from biologists, landowners, scientific teams, the general public, researchers, nonprofits, and the many partners whose involvement has contributed so much.

Monitoring and adaptive management are key elements of the conservation effort. Agencies and partners cannot afford to undertake large scale habitat protection, restoration or enhancement endeavors, only to discover after years of management that actions were ineffective or even counterproductive. Monitoring helps evaluate:

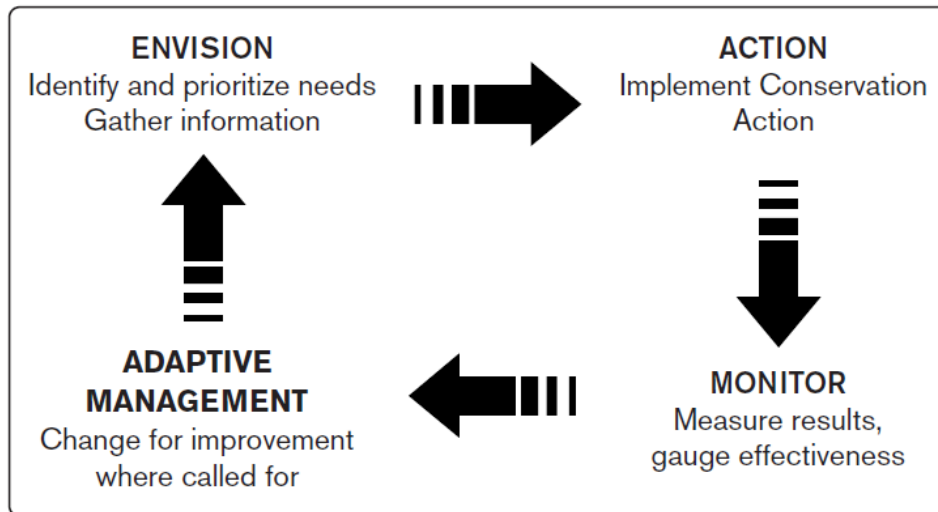
- assumptions made in species-habitat models and decision support tools;
- habitat responses to conservation actions;

- population responses to conservation actions; and
- progress toward habitat and population objectives.

New information generated from research and monitoring only becomes useful if it influences future conservation decisions and actions. These benefits are most pronounced when the elements are iterative and ongoing, rather, than static or episodic. Thus, habitat conservation strategies are most appropriately viewed as living strategies that are continually developing in response to targeted research and monitoring results.

A continuous feedback loop is part of effective implementation. Successful application will depend upon sharing information and incorporating it into the overall body of knowledge held by the AWAP.

EFFECTIVE IMPLEMENTATION



A strategic approach for addressing and prioritizing multiple implementation needs

Assemble information

Implementation Step 1. As described in Sections 2, 3, 4 and 5, the Science Teams (Taxa Association Teams and Habitat Teams) populated the AWAP database with information on species of greatest conservation need ranked by species priority score. The teams linked species to ecoregion, ecobasin and habitats and weighted the relative importance of those relationships. The spatial relationships between ecobasins, habitats and ecoregions were mapped. For each species, Science Teams described problems faced, threats and sources, and data gaps, then

recommended conservation actions and monitoring strategies.

Generate implementation priorities

Implementation Step 2. The purpose of Step 2 is to use the information gathered and prioritized in Step 1 to promote efficient and scientific evaluation and to prioritize the allocation of resources, Arkansas uses a systematic approach to ranking implementation needs.

Implementation needs are categorized into three groups:

- **Data Gaps:** Survey or basic research needs identified during the planning process as requiring attention before further action can be taken. Examples are additional biological information needed for understanding of life history, population ecology, or distribution of SGCN prior to developing a conservation action.
- **Conservation Actions:** the protection, management and restoration activities that directly affect SGCN, often at the habitat management level.
- **Monitoring Needs:** Measuring how SGCN and habitats change over time. Of particular interest are those changes affected by the implementation of conservation actions. Monitoring drives the adaptive management process, guiding improvements in procedure, along with the identification and prioritization of additional data gaps and conservation actions.

On a 10-year cycle, a list of implementation needs is generated from the AWAP database using these data sets:

- a ranked list of all data gaps,
- a ranked list of all conservation actions, and
- a ranked list of all monitoring needs.

Prior to generating the list of implementation needs, the database will be updated with information gathered since the last revision, including information about previously implemented and ongoing research, conservation actions, and monitoring activities. Priority rankings associated with database-generated lists will be derived from an automated computation of the weights and rankings associated with SGCN, habitats, key factors, and indicator records. The information on this list is sorted and provided to teams representing these groupings: bird, mammal, fish, insect, crayfish, mussel, herpetofauna, other invertebrates, karst species, aquatic habitats, and terrestrial habitats.

Develop ten-year draft implementation schedule

Implementation Step 3. Each team will develop a ten-year implementation instrument to be used as a coarse-scale tool to help teams sort priorities and facilitate the creation of subsequent, finer-scale priority

action lists.

This step will be repeated biennially. Science Teams will convene to review and synthesize implementation needs. The result is a draft of implementation for the next ten years based on urgency, feasibility and scale, cost, capacity and funding availability, partnership/leverage opportunities, and other factors as circumstances warrant.

Science Teams prioritize implementation needs

Implementation Step 4. Every two years, the continuously updated AWAP database will provide Science Teams with updated ranked lists for data gaps, conservation actions, and monitoring needs.

After comparing the ranked lists with the existing ten-year implementation plan, and taking into account new information that warrants consideration, each team will identify top priorities in each category.

Each team's task is to then narrow the list to a "Hot List" of the highest priority needs that should be funded in the next two years if a proposal is submitted. The Hot Lists from each team include a mix of data gaps, conservation actions and monitoring needs that reflect their best judgment for that point in time. A Hot List from each team is provided to the Steering Committee for further consideration.

Steering Committee recommends annual action items

Implementation Step 5. Each year, the Steering Committee reviews the Hot Lists provided from each Science Team. At this time, the Steering Committee considers any new information or opportunities to develop a set of Annual Action Items.

Priorities the Steering Committee uses to evaluate implementation needs are determined through a combination of factors: relevance to species of greatest conservation concern and/or habitat priorities identified in the AWAP, project design, feasibility and cost, and the amount of currently available funding. Members of the Steering Committee will rank project proposals using the above set of defined criteria.

The final list of data gaps, conservation actions and monitoring needs captured will vary from year to year as biological, ecological, and programmatic circumstances warrant. So too will the mix of species and habitats vary from year to year.

Pre-proposals requested to meet annual action items

Implementation Step 6. With this list of needs selected, the State Wildlife Action Plan Coordinator will issue a Request for Pre-proposals, i.e. project descriptions including preliminary budgets, non-federal funding match opportunities and monitoring elements. Pre-proposals should

address the implementation priorities selected by the Steering Committee.

Implementation Team selects projects for funding

Implementation Step 7. The Implementation Team is composed of decision makers who have considerable vision and influence in deciding how SWG funds, agency budgets and partner budgets can be used most effectively. Each year, they will select from an array of pre-proposals that were solicited in Implementation Step 6. After the projects are selected, the budget will be presented to the Commission Budget Committee for review and approval. Those projects that are selected will be submitted to the U. S. Fish and Wildlife Service for approval.

Monitoring and Performance Measures

Methodologies

Implementation Step 8. Monitoring is essential to making effective management decisions and evaluating the outcomes of those decisions.

Short-term performance measures

Performance measures to ensure the effectiveness of projects will be a requirement of each project selected for SWG funding. Performance measures are quantifiable results that relate to implementation actions and make it possible to revise conservation actions by responding to new information or changing conditions for species-specific actions. Each state wildlife grant funded project will include performance measures that will be incorporated into the Tracking and Reporting Actions for the Conservation of Species (TRACS) database. Wildlife TRACS is the tracking and reporting system for conservation and related actions funded by the US Fish and Wildlife Services (USFWS) and Wildlife and Sport Fish Restoration (WSFR) Program. Project results and performance measures will be reported to the Science Teams, Steering Committee, AWAP partners, and stakeholders annually, and compiled and presented at the biennial Wildlife Action Plan Symposium.

Examples of short-term performance measures:

- 65 acres of Arkansas Valley Prairie and Woodland were burned in spring for 3 years. This is an obligate habitat for Greater Prairie Chicken (*Tympanuchus cupido*) and the Prairie Mole Cricket (*Gryllotalpa major*).
- 122 acres of stream habitat sheltering the Arkansas darter was protected with a conservation easement.
- 2000 yards of instream and streambank habitat in the Eleven Point River was stabilized and restored. This is important habitat for the Ozark hellbender.

Long term Performance Measures

While short term performance measures quantify effort expended, to be adaptive, we need to tie efforts back to the effects on the status of SGCN. A long term view is required because effects on target species may be difficult to measure or may not be noticeable for years after the conservation action was taken.

Long term effects will be reflected in the:

- Priority Scores of each SGCN, which are reviewed and updated by the Science Teams.
- Lists of priority data gaps, conservation actions, and monitoring needs recommended by the Teams. (See Implementation Step 4).

For example, burning projects in the Ozark-Ouachita Prairie and Woodland have had a generally beneficial effect on SGCN, therefore, we would expect to see a lowering of priority score for species associated with this habitat type as restoration improves and expands available habitats over time.

Revision Process and Schedule

Implementation Step 9. The steps of the implementation process incorporate consistency in managing changing priorities. AWAP teams and staff will continually update the AWAP database and communicate priorities with partners and stakeholders. A formal, comprehensive review of the Plan is required every ten years by the USFWS.

Revision Process

The first formal review and revision of the AWAP began in June 2012 when a letter of intent to review was submitted to the Service. At that time, a meeting with the implementation committee was held to discuss the needs for the review and update. The 2005 plan served as the starting point. Upon agreement that the underlying assumptions, processes, and prioritization mechanisms of the 2005 plan were still relevant and were working well, the objectives for the Plan review and revision were to address the eight required elements and specifically to: 1) update the SGCN list, 2) update SGCN status and information, 3) update habitat information, and 4) incorporate emerging threats.

Science Teams

The taxa expert teams and the habitat teams were instrumental in the updating of the Plan. These inter-agency teams began reviewing species and habitat information in September 2012 and continued to work on the revising of SGCN lists and updating of SGCN information (threats, research and monitoring needs, conservation actions, etc.) until summer of 2015. A list of taxa and habitat team members is provided in Section 6.

1. Changes to SGCN

To determine the list of species of greatest conservation need, the current list was chosen as a starting point. Each taxa team met to review species ranks. One of the largest undertakings involved many taxa teams reviewing the NatureServe state rankings. The NatureServe ranks are an important component of the species account, as the specie's priority score (degree of imperilment) is calculated using the global (G) rank and state (S) rank. State ranks were re-evaluated, and updated ranks were submitted to NatureServe for birds, fish, crayfish, amphibians, reptiles, and butterflies. Species with state ranks S1 and S2 were automatically added to the SGCN list. Species with a state rank S3 were reviewed to determine their need to add to the SGCN list. In general, species with an S4 or S5 rank were not included as SGCN. However, in some instances, an S4 species was included if it had a low global rank or severe impending threats.

Special attention was paid to pollinators and the insect taxa team added 22 new species of butterflies and dragonflies, based on review of species' status. Among the species added is the Monarch butterfly. This species was added due to the drastic decline of the migratory subspecies and based on the recommendation of the Association of Fish and Wildlife Agencies.

The re-evaluation of ranks resulted in the addition of several new species to the list of species of greatest conservation need, as well as the deletion of species. Newly discovered species and updated genetic analyses also resulted in the addition of new species. These additions and deletions are summarized in Appendix 2.3.

2. Updating SGCN Status and Information

Once the SGCN lists were finalized, the taxa team revised all species accounts with the latest information on species status, distribution, threats, research needs, monitoring needs, and conservation actions. Distribution maps were updated with the most current spatial data. These data were derived from occurrence data stored by the Arkansas Natural Heritage Commission, from AGFC staff databases, and from researcher databases. In addition, bird occurrences from eBird were used for bird SGCN. Habitat associations were also reviewed for each species and maps of potential habitat were updated.

3. Updating Habitat Lists and Information

The terrestrial and aquatic habitat teams met and reviewed the lists of habitats. After reviewing the list of terrestrial habitats, the habitat team decided to combine similar habitats to streamline the plan. In addition, a new habitat type, herbaceous wetland, was added. A summary of habitat changes is provided in Appendix 3.2. Indicators for all habitats were reviewed and updated where needed. Habitat team members met with representatives of each taxa team to review and update species-habitat relationships.

4. Addition of Emerging Threats

New threats have emerged or worsened since the completion of the original Plan. Added to the Plan are specific research needs, monitoring strategies, and/or conservation actions to address new threats: white-nose syndrome, feral hogs, wind energy impacts, and natural gas extraction. White-nose syndrome was confirmed in the state in 2013. Six bat SGCN are threatened by white-nose syndrome. The feral hog population has worsened in the state over the past 10 years. As a result, several ground nesting birds and amphibian species are at risk. Although not seen on a large scale, some wind energy development is present within the state. Bird and bat species may be impacted by colliding with towers or turbines. To address this, the threat “collision with man-made structures” was added to the Plan. Natural gas extraction in the Fayetteville Shale region began in 2006. The impacts of extraction and fracking on stream ecosystems were of particular concern and were added as an emerging threat to the Plan as a result. This activity would encompass several threats listed in the plan (toxins/contaminants, habitat destruction, sedimentation, etc.) with a source “resource extraction”. New threats and sources along with research and monitoring needs and conservation actions were incorporated into associated species’ accounts in Section 2.

Climate Change

Climate change impacts were not addressed in the original version of the Plan. A section was added to summarize potential changes in climate in Arkansas, to detail potential impacts to species and habitats, and to outline strategies to adapt to and lessen climate change impacts on species of greatest conservation need.

Cooperation with Other Agencies

All major partners were invited to participate in the review and revision of the Plan. Many partners participated by serving on specific taxa and habitat review teams. The draft plan was made available on the website. An email notification was sent to all partners with a link to the document and request for input/comments. A thirty-one day review period was given. All feedback was reviewed and suggested changes were incorporated into the Plan. Tables listing partner participants are provided in Section 6.

Public Participation

Public participation is an important component of any conservation plan. Public input was requested for the Plan following a similar procedure for the conservation partners. The draft revised plan was made available on the Arkansas Wildlife webpage and a 31 day public comment period was held between August 12th and September 11th. The notice for review was distributed with a statewide newspaper ad, in the Arkansas Game and Fish Commission’s weekly newsletter, and via the Arkansas Game and Fish Commission’s Facebook page. In addition, the

wildlife diversity program coordinator conducted a radio interview to discuss the plan revision and public comment period. The interview was broadcast once in northwest Arkansas and once in central Arkansas.

Comments received from the general public were few. Only one comment regarding actual plan content was received. This comment was in regards to the species account for the Rufous-crowned Sparrow. The comment was forwarded to the bird taxa team, who made changes accordingly to the account. Other comments were general in nature (better document accessibility, longer period of time for review desired, etc.). Responses were sent to all who provided input.

Plan Submission and Distribution

The revised plan was submitted to the Service on October 1, 2015. Upon plan approval, the AGFC will provide all conservation partners and the public at large with access to the updated Plan via the Arkansas wildlife action plan website. To ensure access to conservation partners, electronic copies of the Plan and the database will be distributed at the Arkansas Wildlife Action Plan Symposium, Fall 2016.

Commitment to Revision 2025

AGFC commits to completing a second comprehensive review and revision of the AWAP process and plan by October 1, 2025. At that time, not only will the functional process be evaluated, but the database, protocols and fundamental logic behind assumptions will be reassessed. We anticipate following a similar process in updating the SGCN list, SGCN status and information, habitat lists and indicator review, and the incorporation of emerging threats.