CHAPTER 3. APPROACH

The task of revising the Wildlife Action Plan (WAP) has been coordinated among Louisiana Department of Wildlife and Fisheries (LDWF) staff from the Office of Wildlife and Office of Fisheries. Additional input was solicited from representatives of other state and federal agencies, universities, non-governmental and environmental organizations, corporations and industry, and the citizens of Louisiana. The revision of the WAP would not have been possible without their feedback. This chapter presents the approach used during the 2015 revision process. For details on the approach used in the development of the WAP in 2005, refer to Appendix B.

A. Organizational Structure

1. Technical Committees

As in 2005, a core committee of LDWF staff (Appendix C) was formed to oversee the revision of the WAP. This committee included representatives from both the Office of Wildlife and Office of Fisheries and met monthly during the revision process to track progress and provide guidance. The core committee was responsible for reviewing each chapter of the 2005 WAP to identify any aspects of the WAP that required update. Additional chapters were developed during the revision process and the core committee was tasked with reviewing and editing each completed section of the revised WAP prior to agency-wide review. The core committee was also responsible for the development of Species of Greatest Conservation Need (SGCN) ranking criteria discussed below.

In-house technical committees were formed and focused on specific taxonomic groups, habitats, invasive species, climate change, Conservation Opportunity Areas (COAs), and research and monitoring (Appendix C). These committees met as needed from 2012 until mid-2015.

2. Coordination with Other Agencies

LDWF identified 26 federal and state government agencies as stakeholders in the development and implementation of the 2015 WAP (Appendix D). In 2015, those agencies were notified of the ongoing revision and were offered the opportunity to review and comment on the WAP prior to finalization. On June 15, 2015, the revised WAP was made available to all such agencies, and a 45-day window to submit input and feedback was provided. Once the 45-day window had closed, all comments were compiled and addressed, and the draft WAP was revised as needed to reflect the input of the other agencies, with additional consultation as required during this final revision process.

3. Public Involvement and Partnerships

During the 2015 revision process, it was once again recognized that the Louisiana WAP would benefit from the input of both conservation partners and interested members

of the general public. Therefore, the opportunity to provide input and comments was provided to 91 non-government organizations (NGOs; Appendix D) following the same procedure as outlined above for federal and state agencies, including the same 45 day comment period.

Additionally, to afford the general public an opportunity to contribute to and comment on the revised WAP, the draft WAP was made available on the LDWF website (www.wlf.louisiana.gov/wildlife/wildlife-action-plan). To inform the public about this opportunity, a press release was issued, and subsequently cross-posted onto LDWF's public media resources. After the comment period ended, all comments from the public were carefully reviewed and addressed as appropriate.

4. Cooperation with Other States

During the revision process, neighboring states (Mississippi, Arkansas, and Texas) were afforded the opportunity to review and comment on the draft 2015 WAP. This was an important aspect of the revision process, as many of the conservation needs in Louisiana are shared with our neighboring states and will best be addressed via a regional approach. Staff from LDWF attended two national WAP summits during the revision process to facilitate coordination and consistency between all states for the 2015 WAPs.

5. Procedures for the 2025 WAP Revision

The Louisiana Department of Wildlife and Fisheries commits to a comprehensive review and revision of the 2015 WAP by October 1, 2025. In the interim, LDWF will utilize the monitoring framework described in Chapter 9, along with adaptive management practices to ensure that the 2015 WAP remains an effective tool for conservation planning.

Similar procedures as described for technical expert, government agency, NGO, and public participation during the 2015 revision will be implemented in the 2025 revision process. It is anticipated that lessons learned during the 2015 revision will be of great value during the next revision. Prior to the submission of the 2025 WAP, LDWF will utilize the Emerging Issue process to address new conservation issues that may arise.

B. Species of Greatest Conservation Need

1. Identifying SGCN

The SGCN list from the 2005 WAP was the starting point for the 2015 SGCN list. This list was reviewed internally by the taxonomic committees (Appendix C), and SGCN were suggested for removal or addition, as deemed appropriate. An effort was also made to reconcile differences between the SGCN list and the LNHP tracked species list, as many Louisiana Natural Heritage Program (LNHP) tracked (i.e., rare) species had not been included on the 2005 SGCN list. Once the in-house taxonomic committees had completed an initial revision of the SGCN lists, as well as research needs and

conservation actions for those SGCN, the information was provided to subject-matter experts outside of LDWF for their review and input. In total, the revised SGCN lists were sent to more than 100 taxonomic experts, and 59 responses were received (see Appendix E for a list of all respondents). Once all of the outside reviewer input had been compiled, the in-house committees met to discuss the recommendations of those experts and revise the SGCN lists accordingly. This proved to be a valuable process, as the external feedback resulted in SGCN being added to the list, and changes to the conservation status of multiple SGCN. Finally, during the internal LDWF review process, the SGCN list was further refined prior to the public and partner comment period.

A concerted effort was made during the 2015 WAP revision to consider invertebrate species for inclusion on the SGCN list. This included terrestrial and aquatic insects, arachnids, freshwater and marine crustaceans, and freshwater and marine mollusks. Additionally, although plants are not eligible for funding under the SWG program, LNHP staff used alternative funding to develop and include a list of plant SGCN, for two primary reasons. First, these species are in as much, if not more, need of conservation as many of the animal SGCN, and it is hoped that including these species in the WAP will raise their conservation profile. Secondly, by including these species in the 2015 WAP, the needed information will already be at hand in the event that these species become eligible for SWG in the future, or an alternative funding mechanism is identified.

2. SGCN Prioritization Process

During the 2015 WAP revision process, a mechanism to prioritize SGCN was developed. The WAP is intended to provide guidance for the conservation of hundreds of different SGCN, as well as the natural communities that support those SGCN. However, since the completion of the 2005 WAPs, there has been recognition of the need for greater prioritization of SGCN (AFWA 2011), to allow state fish and wildlife agencies to more effectively plan conservation actions and allocate limited funding. Different methods have been used by states to prioritize SGCN, with many states, including Louisiana, not prioritizing SGCN during the 2005 planning process. For this revision, LDWF has developed a set of ranking criteria (Table 3.1) that were applied to all SGCN. The ranking criteria generated a total score for each species that ranged from a minimum of two points to a maximum of 26 points. Once each SGCN had a total score, the interquartiles of the range of scores were determined and were used to separate the SGCN into three Tiers within each taxonomic group. For each taxonomic group there are Tier I, Tier II, and Tier III SGCN. Tier I SGCN should generally be prioritized for conservation action over Tier II SGCN, and Tier II SGCN should likewise be prioritized over Tier III SGCN.

Table 3.1. Ranking Criteria for Louisiana SGCN

Criterion	Choices	Point Value
Global Rarity Rank		
	G1-G2	2
	G3-G4	1
	G5	0
State Rarity Rank		
	S1-S2 (and SH/SX)	6
	S3	4
	S4 (and SU)	2
	S5 (and SZ)	1
Eligibility for Other Funding		
	Not Eligible	3
	Endangered Species Funding	2
	Wildlife/Sport Fish Restoration	0
% of Population/Range in LA		
	80%-Endemic	6
	50-79%	4
	25-49%	2
	1-24%	1
Population Trend		
	Declining	3
	Unknown	2
	Stable	1
	Increasing	0
Knowledge Level in LA		
	Low	2
	Moderate	1
	High	0
Dependent on Rare/Vulnerable Habitat		
	Yes	2
	No	0
Climate Change Vulnerability		
	Extremely/Highly Vulnerable	2
	Moderately Vulnerable	1
	Not Vulnerable	0

C. Habitats

1. Identifying Important Habitats for SGCN Conservation

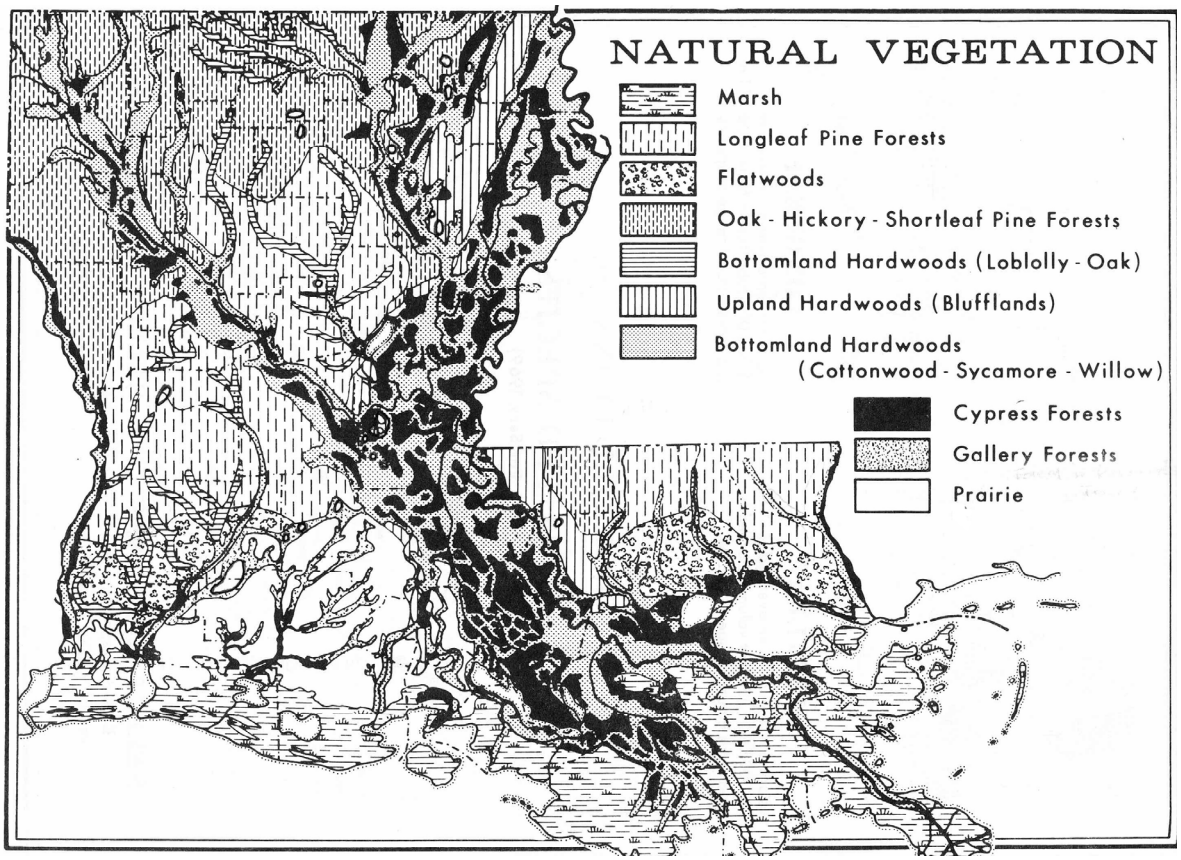

Figure 3.1. Primary natural vegetation types and presettlement distribution in Louisiana (Newton 1972).

As with the SGCN list, the list of habitats from the 2005 WAP was the starting point for the revised list. The initial revision of the list was undertaken by the LDWF internal habitat committee (Appendix C).

No habitats from the 2005 list were removed. Additional habitats that were overlooked in 2005 were added, and some habitats were either split out of existing habitat types, or lumped together with other habitats. A total of 59 habitats, 12 river basins, and five marine substrate types are treated in the 2015 WAP (Appendix F).

Each habitat (or basin or substrate type) treatment was extensively reviewed and revised, and new treatments were written for those habitats that were added to the WAP. Threats (see below), research and survey needs, conservation actions, and associated SGCN were also revised for each habitat or basin by internal committees, and then made available to partners and public for input during the comment period.

2. Prioritizing Habitats Important for SGCN Conservation

A set of habitat prioritization criteria (Table 3.2) was developed to enable the most effectual expenditure of resources for habitat conservation. Criteria in this tool include rarity ranks, threats, historical and current estimated extents, ecological understanding,

and number of associated SGCN. For rarity ranks, both global and state ranks are taken into consideration. Since the WAP is Louisiana-specific, state ranks are weighted more heavily than global ranks. Threat status is expressed in four levels (low, medium, high, very high) based on the threats assessment using the NatureServe Conservation Status Assessments: Rank Calculator, Version 3.186. The point values received by habitats experiencing high and very high levels of threat are two and three, respectively. These values are modest because the threats assessment protocol considers remaining habitat, not historical habitat loss, such as occurred during large-scale conversion to agriculture. Estimated historical extent and current remaining extent levels and values are based largely on Smith (1993). For estimated historical extent, the scale is curved to weight broad-scale (matrix) habitats and historically rare habitats more heavily than habitats of intermediate historical areal coverage. This was done to increase conservation emphasis on matrix habitats while also accounting for small-scale habitats, many of which are unique and very diverse (e.g. Hillside Seepage Bogs). Level of knowledge regarding identity and ecological processes varies among Louisiana's habitats. A criterion accounting for this is included to provide a slight increase in emphasis on habitats that are poorly understood. The final criterion for habitat prioritization is number of SGCN associated with each habitat, which is expressed in five classes. The results of the habitat prioritization can be found in Appendix G.

Table 3.2 Habitat Prioritization Criteria

Criterion	**Levels**	**Point Values**
Global Rarity Rank	G1-G2	2
	G3	1
	G4-G5	0
	Not Ranked	1
State Rarity Rank	S1-S2 (SH/SX)	6
	S3	4
	S4	2
	S5	1
Threat Status	Very High	3
	High	2
	Medium	1
	Low	0
Historical Extent (acres)	>4 M	5
	1-4 M	4
	100K – 1 M	3
	10K – 100K	4
	<10K	5
Percent of Habitat Remaining	≤5%	6
	6-25%	3

	26-50%	2
	51-75%	1
	>75%	0
Ecological Knowledge Level	Poorly known	2
	Moderately known	1
	Well understood	0
Number of SGCN	>75	8
	51-75	6
	26-50	4
	10-25	2
	<10	1

D. Threats to SGCN and Related Habitats

For the 2015 WAP Revision, it was decided that, as recommended in the AFWA Best Practices document (AFWA 2011), the standard threats lexicon described in Salafsky et al. (2008) would be adopted. The lexicon described by Salafsky et al. (2008) is a hierarchical system, in which there are multiple threat levels. The most general, or 1st level threats, are comprehensive, as are the 2nd level threats, which have a higher degree of specificity than do the 1st level threats. For a complete list of 1st and 2nd level threats presented in the standard lexicon, see Appendix H. For each habitat and basin treated in the 2015 WAP, 1st and 2nd level threats were assessed utilizing the NatureServe Conservation Status Assessment Rank Calculator (Version 3.186), as there is a threats calculator within that tool that incorporates the standard lexicon.

Once all relevant 1st level threats had been assessed for a given habitat (or basin), a formula was developed that took the calculated threat impact for each of those threats (determined by scope and severity) and assigned a point value for each threat that was calculated to be low impact (1 point), medium impact (2 points), high impact (3 points), and very high impact (4 points). Once this process had been completed for all habitats, the range of scores was analyzed to assign an overall threat impact to each habitat, based on the following breakdown of those scores:

- Very High – this category included those habitats with a threat score in the top 10% of all scores.
- High – this category included the next highest 15% of all scores.
- Medium – this category included the middle 50% of all scores.
- Low – this category included the bottom 25% of all scores.

The threat impact for each of the 1st level threats, as well as the overall threat impact for each habitat and basin can be found in those treatments, as well as additional discussion of those threats.

For SGCN, it was not considered efficacious to utilize the aforementioned rank calculator to assess threats at the level of the individual species. Instead, for each broad taxonomic group (i.e. mollusks, birds, and mammals) the 1st level threats that are relevant are identified, and those threats are discussed briefly, along with relevant stresses, in some cases. A stress, as defined by Salafsky et al. (2008) is a "symptom" of a threat, such as habitat fragmentation (stress), which results from residential development (1st level threat). Two of the 11 1st level threats, invasive species and climate change, are discussed in detail in chapters devoted to those threats, due to recognition that those threats were not fully addressed in the 2005 WAP.

E. Identifying Priority Subbasins for Conservation Opportunity Areas

A prioritization method is described here for assigning scores to four-digit subbasins (developed by Louisiana Department of Environmental Quality) in Louisiana (see LDEQ 2004). These subbasins are hierarchically nested watersheds that drain larger river basins (e.g., Lake Pontchartrain or Calcasieu River Basins). To prioritize stream and tidal subbasins, only species ranked S1-S3 were used to assign scores to subbasins

First, a count was made for each of the four-digit subbasins from LDEQ (2004) of all S1-S3 species of each taxonomic group. Using Natureserve.org and other distribution lists from various texts (e.g., *Crawfishes of Louisiana*), museum collections (e.g., Tulane Museum of Ichthyology), and fisheries-independent data collected by LDWF (e.g., trawl, seine, gill net, electrofishing samples), a count was made for every species that occurred in that subbasin based on the aforementioned sources as well as expert opinion. Second, counts were categorized by S- rank. This means that counts were made separately for S1, S2, and S3 species. Third, scores were calculated for each subbasin based on the number of S1, S2, and S3 species. For each subbasin, the total number of species of each S-rank was multiplied by a prioritization factor. For S1 species, the total number was multiplied by three. For S2 species, the total number was multiplied by two, and for S1 species the total number was multiplied by one. This gave greater weights to those subbasins that supported rarer species. The scores for each subbasin were then summed across each S-rank to get a total score for that subbasin.

Lastly, the distribution of total scores was divided into five levels based on percentiles to create categories of relative priority. The five levels were as follows:

- Level 1 – Top 5% of scores
- Level 2 – Next 10% of scores
- Level 3 – Next 10% of scores
- Level 4 – Next 25% of scores
- Level 5 – Bottom 50% of scores

The first three levels were used in the creation of Conservation Opportunity Areas (COAs). For more information on the identification of COAs, see Chapter 8.