CHAPTER 7
CONSERVATION PRIORITY AREAS AND COORIDORS

Conservation Priority Areas (CPA)

Alabama's remarkable variety of terrestrial and aquatic life faces many threats as outlined in Chapter 3. To effectively conserve the state's natural heritage, it is essential to identify and protect the most ecologically significant areas, those that support rare, endemic, and priority species, maintain ecological connectivity, and promote long-term resilience.

This chapter outlines the process of identifying and refining Conservation Priority Areas (CPAs) as part of Alabama's SWAP 2025 revision. These areas represent the most critical landscapes and waterscapes for sustaining populations of SGCN and preserving essential ecological functions. The delineation of CPAs was guided by a data-driven, multi-step process that combined expert consultation, geospatial analysis, and species prioritization. By engaging expert taxa groups from across the state including specialists in vascular plants, fish, amphibians, reptiles, birds, snails, mussels, crayfish, and mammals, the SWAP team incorporated the latest scientific knowledge on species distribution, habitat requirements, and conservation threats. Their expertise provided the biological foundation for determining where conservation efforts would have the greatest impact.

To complement expert knowledge, Geographic Information Systems (GIS) were employed to map and model spatial data, including species occurrences, habitat conditions, habitat suitability modeling, and connectivity corridors. This geospatial analysis allowed for the identification of biologically rich and vulnerable areas, enabling the ability to visualize and prioritize habitats most in need of protection, restoration, and management.

The Conservation Priority Areas presented in this chapter help to serve as a framework to Alabama's wildlife conservation strategy. They are intended as a guide to support conservation actions, inform land-use planning, and direct funding efforts toward the most ecologically valuable and threatened regions. By focusing resources on these strategically identified areas, Alabama can maximize the effectiveness of its conservation initiatives and ensure the protection of its unique species richness for future generations.

2025 Alabama SWAP Revision

The 2005 and 2015 editions of the Alabama SWAP contained a Conservation Priority Areas map that was developed by TNC between the years of 1999 and 2001. The process followed principles and methods outlined in TNC's Designing a Geography of Hope (Groves et al 2000), which provides a framework for ecoregion-based conservation planning.

For the 2025 SWAP revision, the above outlined CPAs were used as a jumping off point for both expansion and refinement based on updated occurrence data, new and updated SGCN species designations, new modeling tools and methodologies, and updated information on focus areas as determined through feedback from various species experts from across the state. The goal in redefining priority areas was not to discard previous work, but to build upon and enhance it.

The general process of identifying Alabama's CPAs was informed by several key steps:

•Species and Habitat Data Collection: Comprehensive data on SGCN distribution, population trends, and habitat requirements were compiled.

•Expert Consultation: Taxa-specific working groups composed of biologists, ecologists, and conservation practitioners were convened to identify areas of biological significance based on their field expertise and scientific knowledge. Over the course of 3 years, multiple meetings, working sessions, presentations, and online discussions were conducted with species experts for feedback and information collection.

•Strategy Species: For each taxa group included in the 2025 SWAP revision, a list of strategy species was developed for habitat suitability modeling. Strategy species served as representative or surrogate species whose habitat needs and distribution patterns help guide the protection of broader ecological communities. The process of selecting strategy species included expert consultation, data analysis, and careful consideration of ecological criteria. Specifically, strategy species were chosen based on co-occurrence with other SGCN species, representation of various habitat types, and combined distribution covering the full extent of Alabama.

•SGCN Cluster Areas: Geographic Information Systems (GIS) was used to identify high-density clusters of species occurrences. By mapping and analyzing the distribution of SGCN and other priority taxa, areas across the state were pinpointed as potential areas of high density of known occurring priority species and flagged for potential areas that warrant protection, restoration, or targeted management efforts.

•Habitat Suitability Modeling: Strategy species were modeled using the Maximum Entropy (MaxEnt) algorithm. This allowed for predicting where suitable habitat occurs for each species outside of just known locations, helping fill in gaps and determine important areas outside of what is already known. Occurrence data was combined with a variety of environmental predictors like Bioclimate data, NLCD Land Cover data, POLARIS soils data, and more.

•Ecological connectivity was established at the state level by identifying and prioritizing landscape linkages essential for species movement, genetic exchange, and ecosystem resilience. This process combined geospatial analysis, species distribution data, and land-cover data to map and evaluate connected habitats.

One major change from the 2015 SWAP is the development of CPAs for each individual taxa group. Creating taxa-specific CPAs offers a more targeted and detailed approach to species preservation than relying solely on the overall CPAs. Many biologists dedicate their research and conservation efforts to a particular taxonomic group such as amphibians, birds, or plants based on their expertise and ecological interests. However, funding and public attention are often unevenly distributed across these groups, with some receiving significantly more support than others. By prioritizing areas for each taxa group, this can hopefully help focus conservation and research efforts with the limited amount of money available. Then, by identifying areas where multiple rare or understudied taxa overlap, conservation planners can better allocate resources and foster collaborative efforts that benefit a broader group of species. This strategy not only enhances ecological outcomes but also ensures that less-visible species are not overlooked in broader conservation agendas.

Habitat Suitability Modeling

The primary input driving the Conservation Priority Areas redesign is habitat suitability modeling. By modeling habitat, knowledge gaps were able to be filled around the state. For example, survey efforts for many taxa groups have been focused on Alabama's public lands due to their easy access, known habitats, and conservation status. These areas are clearly important, but there are large gaps in survey effort in regions of the state like the Black Belt and southwest Alabama, where research has been more difficult and less is known about what species may occur there. These gaps in survey effort also vary between the different taxa. Habitat modeling can help mitigate (though not completely eliminate) bias that may stem from incomplete data. Also, by taking a habitat-centric approach, allowed for conservation of whole ecosystems that may contain a variety of SGCN species and perform ecosystem services.

The Maximum Entropy modeling approach was chosen due to its success with modeling presence- only data. This is often essential for rare species modeling as frequently, the only data available may be patchy and incomplete occurrence records and no or very few true absence points from survey effort (Elith et al 2011, Phillips et al 2006).

Occurrence data was acquired primarily from the Alabama Natural Heritage Program Biotics database and ADCNR's Natural Heritage Section database. Data was also acquired directly from experts as well as iNaturalist and GBIF, where appropriate. Occurrences were thoroughly cleaned to account for land use changes and inaccuracies, particularly in older records.

Species were modeled in one of two methods- either terrestrially or aquatically. This was due to data availability and species needs. To be modeled aquatically, a species needed to occupy habitats attached to permanent, connected bodies of water. Species occurring in isolated wetlands were modeled terrestrially, even if they are technically aquatic. Terrestrial modeling data was compiled from a variety of sources at a 30m x 30m resolution. Aquatic modeling used data from the National Hydrology Data set v2 and was modeled to a catchment-level resolution. Predictor layers were selected based on biological needs as described in the scientific literature and expert input.

Most habitat suitability models were presented to experts at least once to ensure accuracy and verify predictors were biologically relevant. A small number of aquatic species models were ensembled, using both the MaxEnt model and a generalized linear model, based on how accurate the MaxEnt appeared to experts. The freshwater mussels and snails could not be modeled effectively, so a different approach was taken.

Zonation: Spatial Conservation Prioritization

Throughout the conservation prioritization process, a variety of software was employed to collect, process, analyze, and visualize spatial data, with Zonation serving as the final tool that synthesized the information into a comprehensive series of conservation prioritization maps. Zonation is a spatial conservation prioritization tool designed to identify and rank areas of high ecological value by optimizing the representation of species richness features across a landscape. Widely used in conservation planning, Zonation helps identify regions where conservation actions will be most effective, considering factors such as species richness, habitat quality, and connectivity (SECAS 2024; Shams-Esfandabad and Kaboli 2020; Veloz et al 2015). This allows conservation planners to perform large-scale prioritization analyses, guiding land protection, restoration, and management efforts.

Inputs and Settings

Zonation operates by taking spatial data about biological features and using an iterative, hierarchical ranking process to rank each pixel across a landscape (Moilanen et al 2024). Habitat suitability models were used as the biological data to represent areas of important habitats, occurrence data to emphasize areas where known SGCN species occur, and NLCD land cover data to represent habitat condition. Specifically, the “Developed High Intensity” and “Developed Moderate Intensity” classifications were used as a negative mask to remove urban areas from conservation prioritization. In some cases, “Cultivated Crops” were used in a similar manner, where biologically appropriate. For fish, where dams can cause significant barriers and habitat changes, the National Inventory of Dams dataset (for dams on Stream Orders 4-9) was used to act as barriers for conservation prioritization in a similar manner. Other inputs included expert-identified areas that were formed during various meetings based on occurrence cluster analysis, gaps in knowledge, and gaps in protection.

While settings varied slightly between each taxa group, there were key principles that remained the same. Land was prioritized through a rule that ensures coverage of high-quality areas for each input feature. Connectivity transformations and boundary length penalties were employed to emphasize local connectivity. The amount of connectivity varied for each taxa group based on home range size and general dispersal abilities within each taxa group.

Maps were produced for each individual taxa group, except for mussels and snails, which were unable to have their habitats modeled effectively. Instead, occurrence data was used to create a "heat map" of HUC 12s based on the count of unique species found in each HUC 12.

Along with the individual taxa maps, Terrestrial and Aquatic Conservation Priority Areas maps were created as well. These were created using the Zonation outputs for each of the relevant taxa groups, with some adjustments (like only including the aquatic crayfish in the Aquatic map and terrestrial crayfish in the Terrestrial map). The mussel and snail heat map was used in place of a Zonation output for the overall Aquatic map.

Post-Processing

Zonation produces a map that ranks each 30m by 30m pixel in the state from 0-1. To further refine this output, post-processing features in Zonation were used, as well as ArcGIS, to select only the highest value areas of large habitats. Specifically, this generally was the top 15%, though for the purely aquatic species like the fish and the overall aquatic map the top 10% was chosen. This is due to the fact that there is just less aquatic habitat by acreage in Alabama than terrestrial habitat. This top percentage was then further refined by only preserving blocks of contiguous habitat of 400 + acres. This product was still too finely detailed to be easily readable in the SWAP and useful at a landscape scale, so ArcGIS and Adobe Illustrator were further used to group pixels based on their density. To produce the final CPA maps, polygons were produced that represented "high" and "moderate" density of high conservation value habitat.

Zonation is a powerful spatial conservation prioritization tool used in ArcGIS to identify and rank areas of high ecological value. By iteratively removing low-value cells while retaining areas of high species richness, Zonation generates hierarchical conservation maps that guide land protection, restoration, and corridor planning. Its ability to optimize multiple species layers, preserve connectivity, and integrate with ArcGIS makes it an essential tool for state-level conservation planning in Alabama and beyond.

CPA Densities

The CPA maps for each taxa group are shown in two levels of "densities" as defined in Table 8.1.

Table 8.1 CPA Map Densities

LEVEL	DEFINITION
High Density	Areas characterized by the greatest concentrations of SGCNs, coinciding with relatively high levels of suitable habitat availability for these species.
Moderate-Density	Areas with comparatively lower concentrations of SGCNs and reduced levels of suitable habitat availability, often encompassing dispersed or fragmented habitat patches occurring in proximity to one another.

To develop the density layers, outputs from the Zonation analyses were integrated with species point-occurrence data to manually identify areas of elevated importance for each taxonomic group. Regions delineated in red represent locations with higher concentrations of SGCNs and elevated probabilities of habitat suitability, as determined by the distribution of selected strategy species. The designation of density levels is intended to highlight priority areas for potential research and conservation focus, while acknowledging that other regions may also hold ecological significance.

Statistics

To understand how much SGCN species occurrence data fall within the CPAs, several metrics were calculated. First, total acreage was calculated of the CPAs and divided that by the total acreage of the state of Alabama (about 33 million acres) to get the percentage of Alabama's lands covered by the CPAs. For the taxa-specific CPAs, high density CPA ranged from 4%-8% of Alabama's land area. Moderate density CPAs ranged from 10%-31% of Alabama's land area. The number of SGCN species that fall within the high and moderate density CPAs was calculated, then the number of individual occurrences of SGCN species that fall within the CPAs, and finally the number of individual occurrences for each of the priority groups - P1, P2, and P3. Overall, 59%-100% of SGCN species were covered by high density CPAs and 74%-100% of SGCN species were covered by moderate density CPAs.

Amphibian and Reptile Conservation Priority Areas

The primary Zonation inputs were the strategy species, point data for SGCN species, and the polygons identified by experts at the 2024 ALAPARC meeting. The final map is composed of the highest-ranking areas for both the “terrestrial” herp Zonation output and the “aquatic” herp Zonation output (Figure 8.1). These were run separately due to the scale difference between the outputs, then added together during the postprocessing phase.

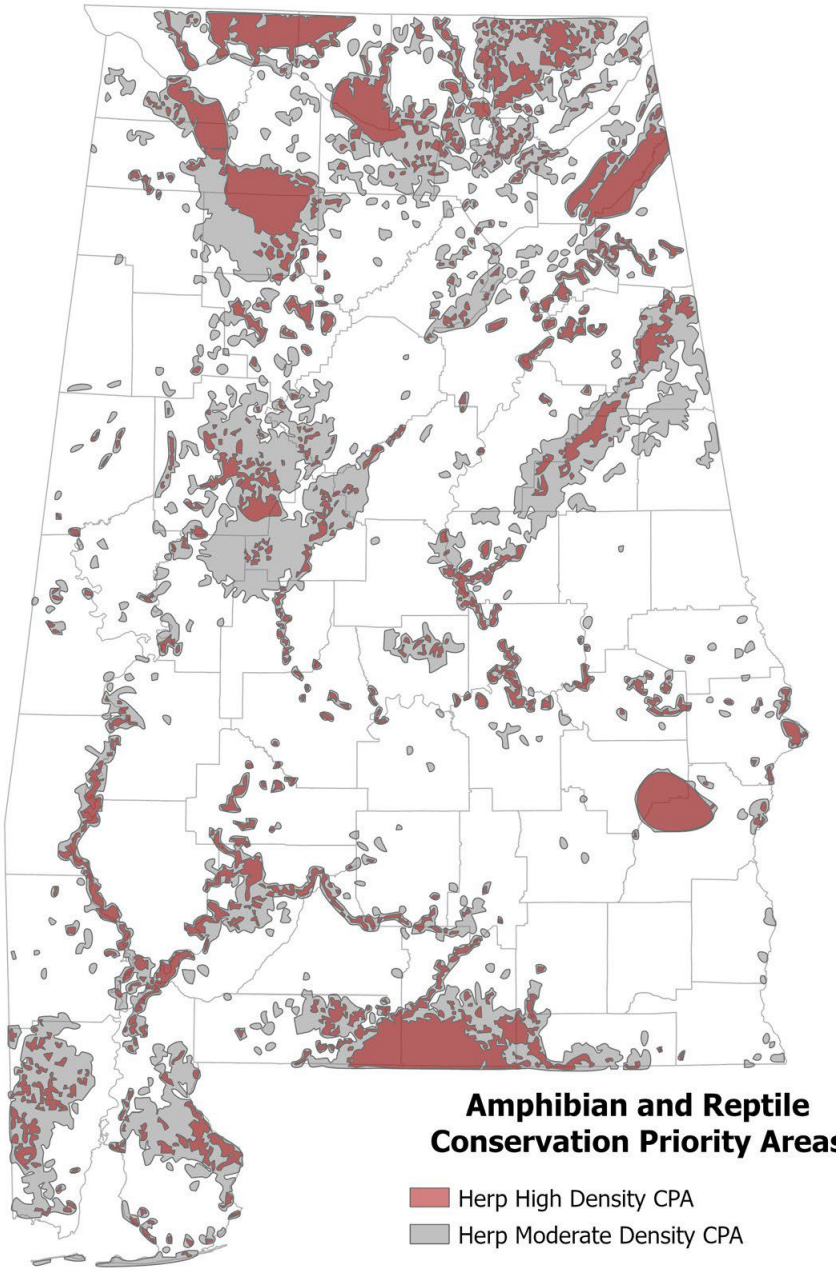

Figure 8.1 Amphibian and Reptile Conservation Priority Areas

Table 8.2 Amphibian and Reptile Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	2,422	51%
Total Acreage	2,801,334	8%
Total Number of Species Covered	50	88%
Number of P1 Points	1,240	50%
Number of P2 Points	933	47%
Number of P3 Points	249	29%
Moderate Density CPAs		
SGCN Occurrences within CPAs	4,056	80%
Total Acreage	8,428,327	26%
Total Number of Species Covered	54	95%
Number of P1 Points	1,930	78%
Number of P2 Points	1,512	77%
Number of P3 Points	614	71%

Table 8.3 Strategy Species for Amphibian and Reptile Conservation Priority Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Ambystoma texanum	Small-mouthed Salamander	P2
Ambystoma tigrinum tigrinum	Eastern Tiger Salamander	P2
Aneides aeneus	Green Salamander	P2
Desmognathus aeneus	Seepage Salamander	P2
Dryophytes andersonii	Pine Barrens Treefrog	P1
Lithobates capito	Gopher Frog	P1
Phaeognathus hubrichti	Red Hills Salamander	P2
Gopherus polyphemus	Gopher Tortoise	P2
Lampropeltis triangulum	Eastern Milksnake	P3
Ophisaurus attenuatus longicaudus	Eastern Slender Glass Lizard	P2
Pituophis melanoleucus ssp (P. m. melanoleucus, P. m. lodingi, P. m. mugitus)	Pinesnakes (Black, Northern, Florida)	P1/P2
Plestiodon anthracinus ssp (P. a. anthracinus, P. a. pluvialis)	Coal Skinks (Northern and Southern)	P2
Cryptobranchus alleganiensis alleganiensis	Eastern Hellbender	P1
Sternotherus depressus/Necturus alabamensis	Flattened Musk Turtle/Black Warrior Waterdog	P1
Graptemys ernsti	Escambia Map Turtle	P2
Graptemys pulchra	Alabama Map Turtle	P3
Macrochelys temminkii	Western Alligator Snapping Turtle	P3

Bird Conservation Priority Areas

This map of Conservation Priority Areas is composed of the habitat suitability models for the strategy species listed below as well as the expert-identified polygons that were created as a result of the Bird Taxa Team Meeting in April 2024 (Figure 8.2). Point data was not used as a Zonation input due to the extreme volume of occurrences from the eBird dataset. However, point data from 2018-2025 was used during the post-processing phase to help delineate CPA boundaries and vet smaller CPA validity.

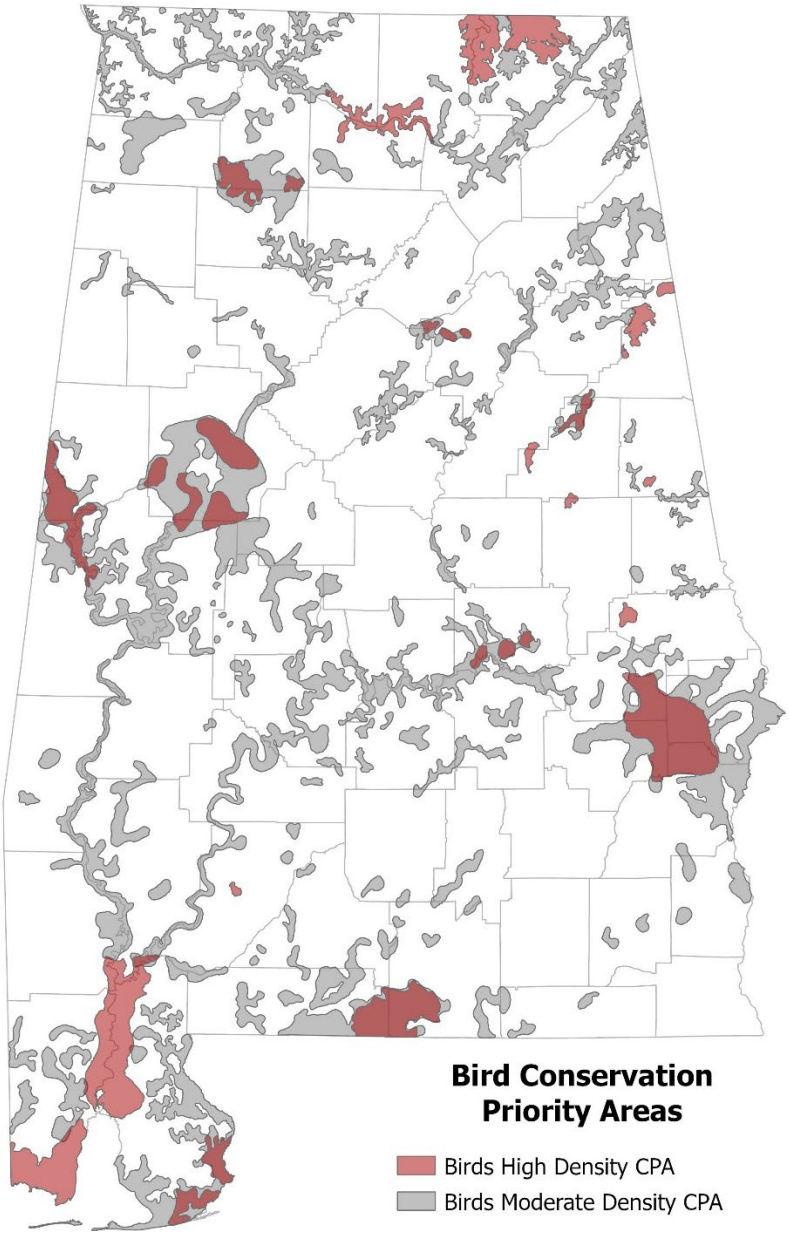

Figure 8.2 Bird Conservation Priority Areas.

Table 8.4 Bird Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	22,419	14%
Total Acreage	1,671,212	5%
Total Number of Species Covered	54	100%
Number of P1 Points	367	3%
Number of P2 Points	4,108	13%
Number of P3 Points	17,282	14%
Moderate Density CPAs		
SGCN Occurrences within CPAs	70,434	43%
Total Acreage	5,738,561	17%
Total Number of Species Covered	54	100%
Number of P1 Points	5,431	49%
Number of P2 Points	16,252	53%
Number of P3 Points	48,751	40%

Table 8.5 Strategy Species for Bird Conservation Priority Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Ammodramus savannarum	Grasshopper Sparrow	P2
Geothlypis formosa	Kentucky Warbler	NonSGCN
Botaurus exilis	Least Bittern	P2
Peucaea aestivalis	Bachman's Sparrow	P2
Protonotaria citrea	Prothonotary Warbler	P3
Rynchops niger	Black Skimmer	P1

Mammal Conservation Priority Areas

The Zonation inputs for the mammal maps included the habitat suitability models for each of the Strategy Species below, point data, and polygons identified with clustering methodology mentioned earlier in the chapter (Figure 8.3). *Perimyotis subflavus* had different enough habitat requirements in the summer and winter seasons that two HSMs were developed. These models were balanced in the final Zonation to weigh equally with the other Strategy Species.

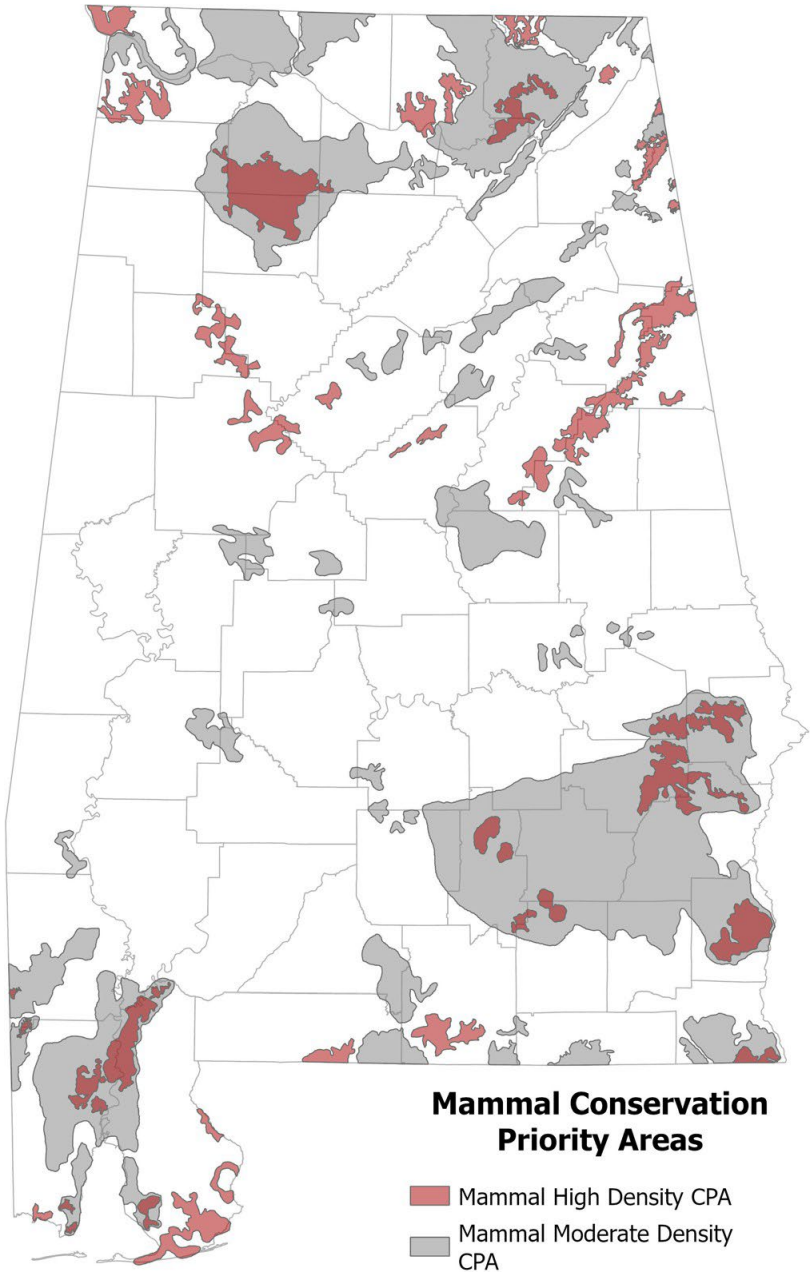

Figure 8.3 Mammal Conservation Priority Areas

Table 8.6 Mammal Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	3,186	51%
Total Acreage	1,661,509	5%
Total Number of Species Covered	22	92%
Number of P1 Points	922	32%
Number of P2 Points	1,529	74%
Number of P3 Points	704	57%
Moderate Density CPAs		
SGCN Occurrences within CPAs	3,807	84%
Total Acreage	6,694,845	31%
Total Number of Species Covered	21	96%
Number of P1 Points	1,754	84%
Number of P2 Points	1,417	84%
Number of P3 Points	606	83%

Table 8.7 Strategy Species for Mammal Conservation Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Geomys pinetis	Southeastern Pocket Gopher	P2
Myotis austroriparius	Southeastern Myotis	P2
Perimyotis subflavus	Tricolored Bat	P1
Spilogale putorius	Spotted Skunk	P2
Neogale vision	American Mink	P3

Crayfish Conservation Priority Areas

The crayfish Conservation Priority Area map is composed of the habitat suitability models for the strategy species listed below, SGCN point data from the ADCNR, Biotics, and Museum databases, and two polygon layers (Figure 8.4). There are several "guild" models that were created for the crayfish, which include multiple species with similar habitat needs. Two polygon layers were developed using point data to identify sites with high value for crayfish.

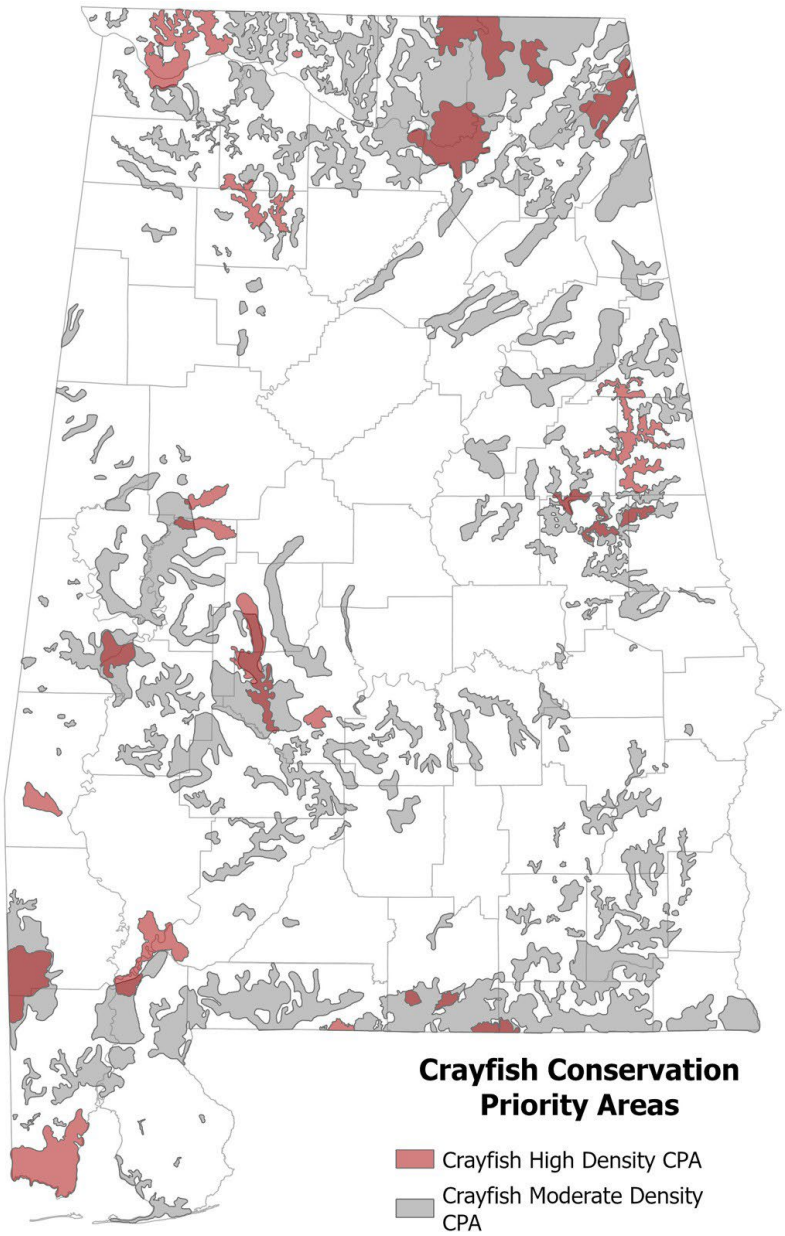

Figure 8.4 Crayfish Conservation Priority Areas

Table 8.8 Crayfish Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	1,014	33%
Total Acreage	1,371,738	4%
Total Number of Species Covered	460	69%
Number of P1 Points	127	29%
Number of P2 Points	299	40%
Number of P3 Points	588	31%
MODERATE DENSITY CPAs		
SGCN Occurrences within CPAs	2,231	73%
Total Acreage	6,801,918	21%
Total Number of Species Covered	58	87%
Number of P1 Points	310	71%
Number of P2 Points	386	52%
Number of P3 Points	1,149	61%

Table 8.9 Strategy Species for Crayfish Conservation Priority Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Cambarus distans	Boxclaw Crayfish	P1
Cambarus halli	Slackwater Crayfish	NonSGCN
Cambarus manningi	Greensaddle Crayfish	P2
Faxonius holti	Bimaculate Crayfish	NonSGCN
Faxonius validus	Powerful Crayfish	NonSGCN
Faxonius yanahlindus	Spinywrist Crayfish	NonSGCN
Hobbseus prominens	Prominence Riverlet Crayfish	P2
Procambarus hubbelli	Jackknife Crayfish	P3
Procambarus suttkusi	Choctawhatchee Crayfish	NonSGCN
Cambarus hamulatus[1]	Prickly Cave Crayfish	P3
Cambarus jonesi[1]	Alabama Cave Crayfish	P1
Cambarus laconensis[1]	Lacon Exit Cave Crayfish	P1
Cambarus pecki[1]	Phantom Cave Crayfish	P1
Cambarus speleocoopi[1]	Sweet Home Alabama Crayfish	P2
Cambarus veitchorum[1]	White Spring Cave Crayfish	P1
Orconectes australis[1]	Southern Cave Crayfish	P3
Orconectes shelta[1]	Shelta Cave Crayfish	P1
Creaserinus burrisi[2]	Burrowing Bog Crayfish	P3
Creaserinus byersi[2]	Lavender Burrowing Crayfish	P3

[1] Cave Obligate Guild: Multiple Species included in one habitat suitability model based on similar habitat needs.

[2] Creaserinus Guild: Multiple Species included in one habitat suitability model based on similar habitat needs.

Table 8.9 Strategy Species for Crayfish Conservation Priority Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Creaserinus danielae[2]	Speckled Burrowing Crayfish	P1
Lacunicambarus acanthura[3]	Thornytail Crayfish	NonSGCN
Lacunicambarus dalyae[3]	Jewel Mudbug	NonSGCN
Lacunicambarus erythrodactylus[3]	Warpaint Mudbug	NonSGCN
Lacunicambarus freudensteini[3]	Banded Mudbug	P1
Lacunicambarus ludovicianus[3]	Painted Devil Crayfish	NonSGCN
Lacunicambarus miltus[3]	Rusty Grave Digger	P3
Lacunicambarus mobilensis[3]	Lonesome Grave Digger	P1

[2] Creaserinus Guild: Multiple Species included in one habitat suitability model based on similar habitat needs.

[3] Lacunicambarus Guild: Multiple Species included in one habitat suitability model based on similar habitat needs.

Fish Conservation Priority Areas

The fish Conservation Priority Areas map are zonation inputs that included the habitat suitability models for the Strategy Species listed below, point data, and a polygon layer(Figure 8.5). In lieu of expert-identified polygons, point data was combined with HUC 12s to identify HUCs with 9+ species found within them. Barrier layers were created for dams on stream orders 4+.

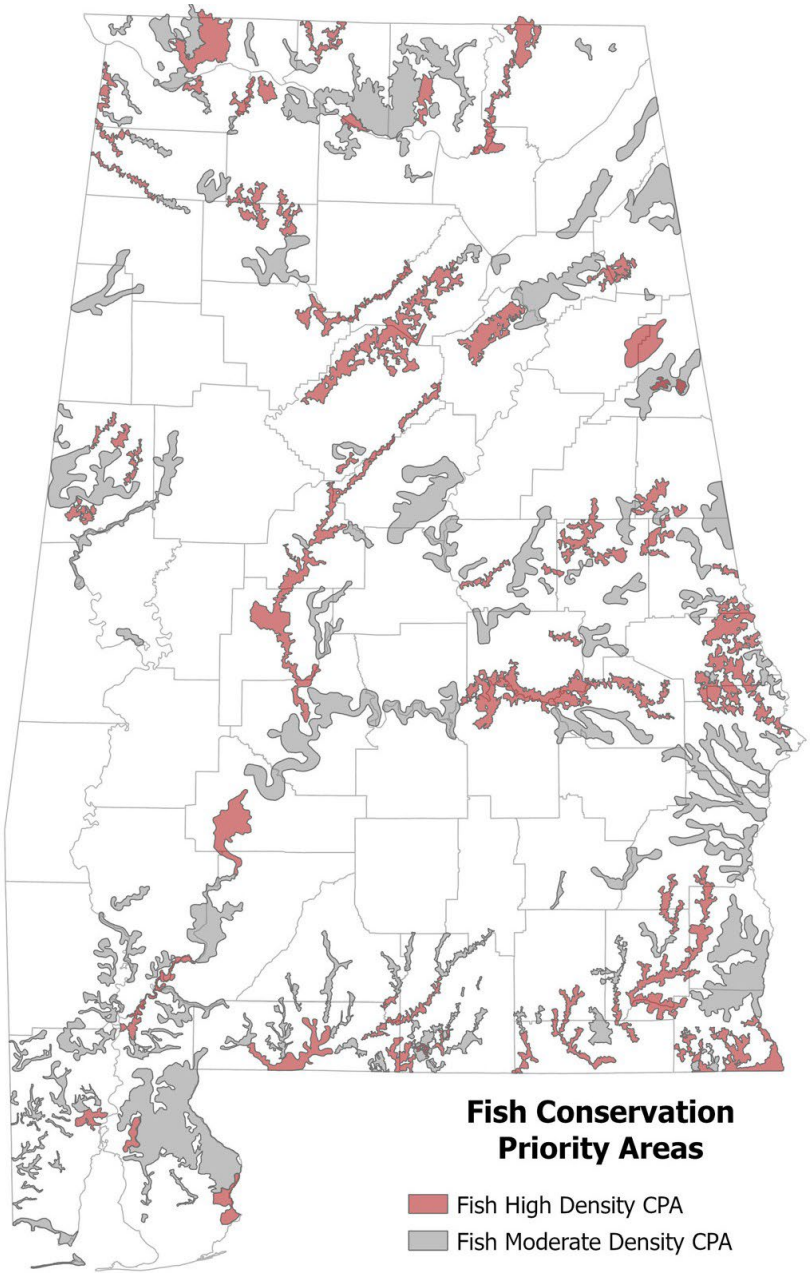

Figure 8.5 Fish Conservation Priority Areas

Table 8.10 Fish Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	1,658	52%
Total Acreage	1,752,532	5%
Total Number of Species Covered	80	91%
Number of P1 Points	647	57%
Number of P2 Points	220	33%
Number of P3 Points	768	56%
Moderate Density CPAs		
SGCN Occurrences within CPAs	944	29%
Total Acreage	3,369,587	10%
Total Number of Species Covered	65	74%
Number of P1 Points	369	39%
Number of P2 Points	246	37%
Number of P3 Points	316	23%

Table 8.11 Strategy Species for Fish Conservation Priority Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Alburnops petersoni	Coastal Shiner	P3
Campostoma pauciradii	Bluefin Stoneroller	P3
Crystallaria asprella	Crystal Darter	P3
Cyprinella whipplei	Steelcolor Shiner	P3
Etheostoma trisella	Trispot Darter	P1
Etheostoma tuscumbia	Tuscumbia Darter	P2
Fundulus bifax	Stippled Studfish	P3
Miniellus uranoscopus	Skygazer Shiner	P3
Moxostoma carinatum	River Redhorse	P3
Nothonotus douglasi	Tuscaloosa Darter	P3
Percina brevicauda	Coal Darter	P2
Pteronotropis euryzonus	Broadstripe Shiner	P1
Pteronotropis merlini	Orangetail Shiner	P3
Pteronotropis signipinnis	Flagfin Shiner	P3
Pteronotropis welaka	Bluenose Shiner	P1

Mussels and Snails

Habitat suitability modeling for mussels and aquatic snails was difficult due to data deficiencies, taxonomic uncertainties, and modeling constraints (Figure 8.6). Instead of the typical CPA map, a “heat map” was produced using counts of unique species in each HUC 12.

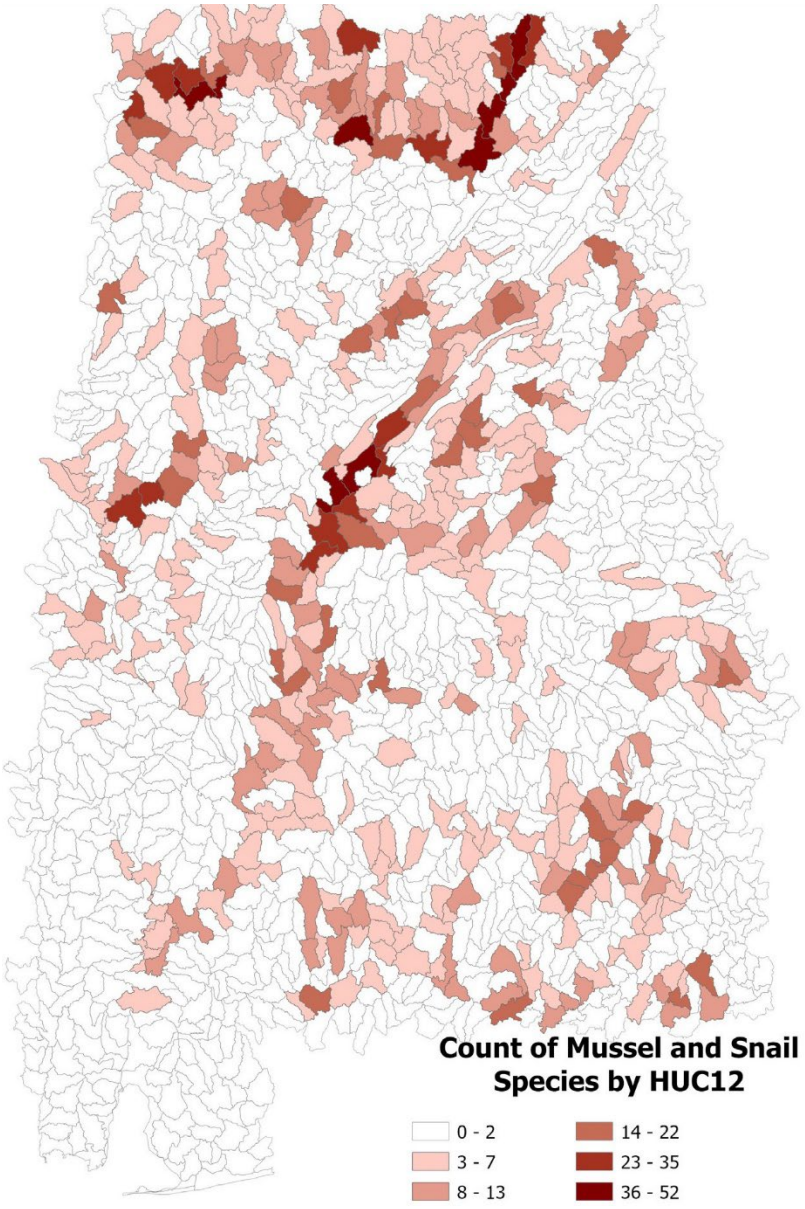

Figure 8.6 Mussel and Snail Conservation Priority Areas

Vascular Plant Conservation Priority Areas

For the first time, vascular plants have been incorporated into Alabama's SWAP on equal footing with other taxonomic groups. The Zonation inputs for these CPAs include habitat suitability models for each of the strategy species below, point data, and expert identified polygons of high importance for vascular plants (Figure 8.7).

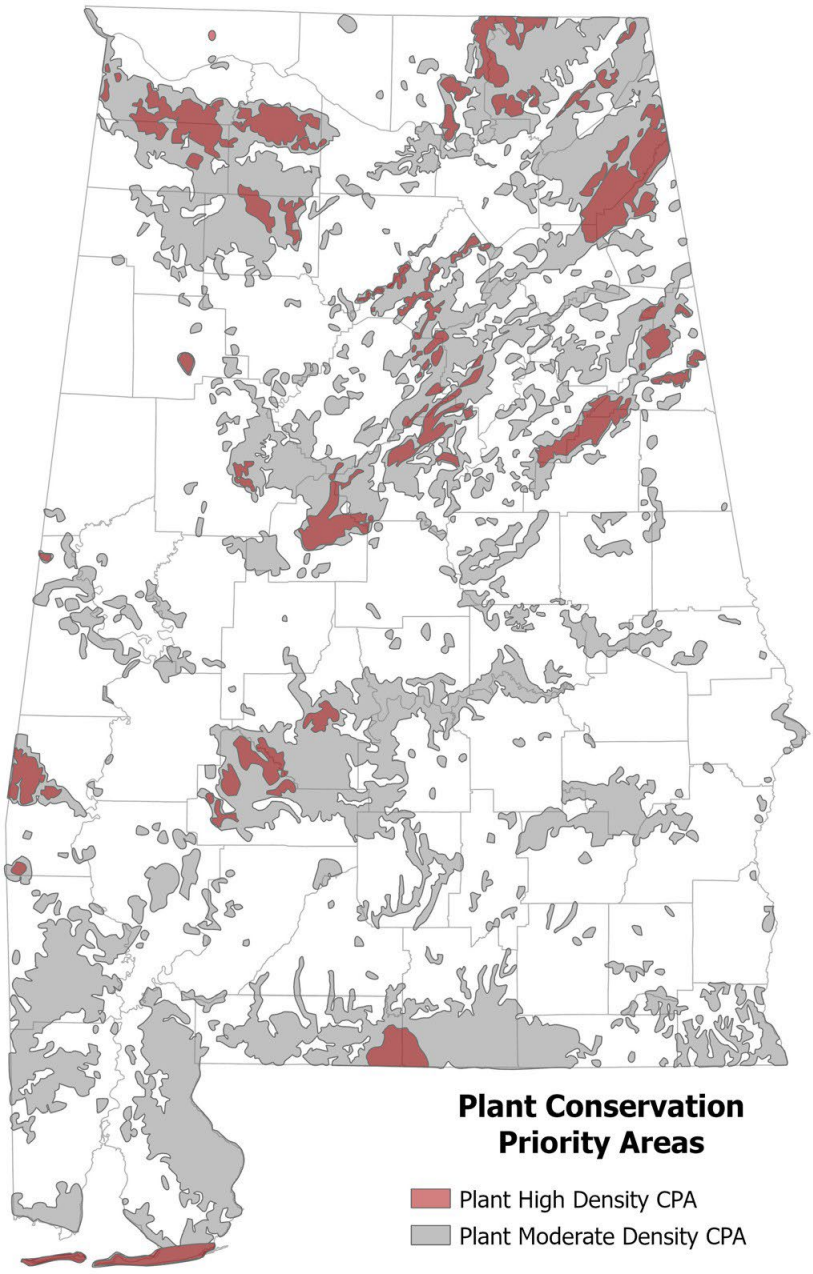

Figure 8.7 Vascular Plant Conservation Priority Areas

Table 8.12 Vascular Plant Conservation Priority Areas

STATISTIC	VALUE	PERCENTAGE
High Density CPAs		
SGCN Occurrences within CPAs	3,458	41%
Total Acreage	1,379,260	4%
Total Number of Species Covered	252	59%
Number of P1 Points	1,216	46%
Number of P2 Points	1,526	40%
Number of P3 Points	716	36%
Moderate Density CPAs		
SGCN Occurrences within CPAs	7,110	84%
Total Acreage	10,213,545	31%
Total Number of Species Covered	252	96%
Number of P1 Points	1,216	84%
Number of P2 Points	1,526	84%
Number of P3 Points	7,160	83%

Table 8.13 Strategy Species for Vascular Plant Conservation Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Apios priceana	Price's Potato-bean	P2
Arabis georgiana	Georgia Rockcress	P1
Baptisia megacarpa	Apalachicola Wild Indigo	P2
Brickellia cordifolia	Flyr's Brickell Bush	P2
Carex impressinervia	Impressed Nerve Sedge	P2
Coreopsis pulchra	Woodland Tickseed	P2
Cuscuta harperi	Harper's Dodder	P2
Delphinium alabamicum	Alabama Larkspur	P3
Desmodium ochroleucum	Cream Tick Trefoil	P3
Eriogonum harperi	Harper's Umbrella Plant	P1
Hamamelis ovalis	Bigleaf Witch Hazel	Not Ranked
Hymenocallis coronaria	Shoals Spider Lily	P3
Isotria verticillata	Large Whorled Pogonia	P3
Jamesianthus alabamensis	Jamesianthus	P3
Lilium iridollae	Panhandle Lily	P1
Lindera subcoriacea	Bog Spicebush	P1
Mirabilis albida	Pale Umbrella Wort	P3
Monarda clinopodia	Basil Beebalm	P3
Neviusia alabamensis	Alabama Snow Wreath	P2
Pinus serotina	Pond Pine	P1
Platanthera integrilabia	White Fringeless Orchid	P2
Quercus boyntonii	Boynton's Sand Post Oak	P2

Table 8.13 Strategy Species for Vascular Plant Conservation Areas

SCIENTIFIC NAME	COMMON NAME	2025 RANK
Rhynchospora crinipes	Mosquito Beakrush	P3
Sabatia capitata	Rose Gentian	P3
Sagittaria secundifolia	Kral's Water Plantain	P1
Salix floridana	Florida Willow	P1
Sarracenia leucophylla	Whitetop Pitcher Plant	P2
Scutellaria alabamensis	Alabama Skullcap	P2
Spigelia alabamensis	Alabama Pinkroot	P1
Stewartia malacodendron	Silky Camellia	P3
Stewartia ovata	Mountain Camellia	P2
Trillium rugelii	Southern Nodding Trillium	P3
Xyris tennesseensis	Tennessee Yellow Eyed Grass	P2

Aquatic Conservation Priority Areas

Inputs for the Aquatic CPAs include the Strategic Habitat Units and Strategic River Reach Units, the aquatic crayfish models, aquatic amphibian and reptile models, fish models, the mussel and snail heat map, and P1 species occurrence data (Figure 8.8). It is important to note that this map is not meant to replace the SHUs and SRRUs, but to instead act as an additional tool with a slightly different scope in order to direct conservation actions.

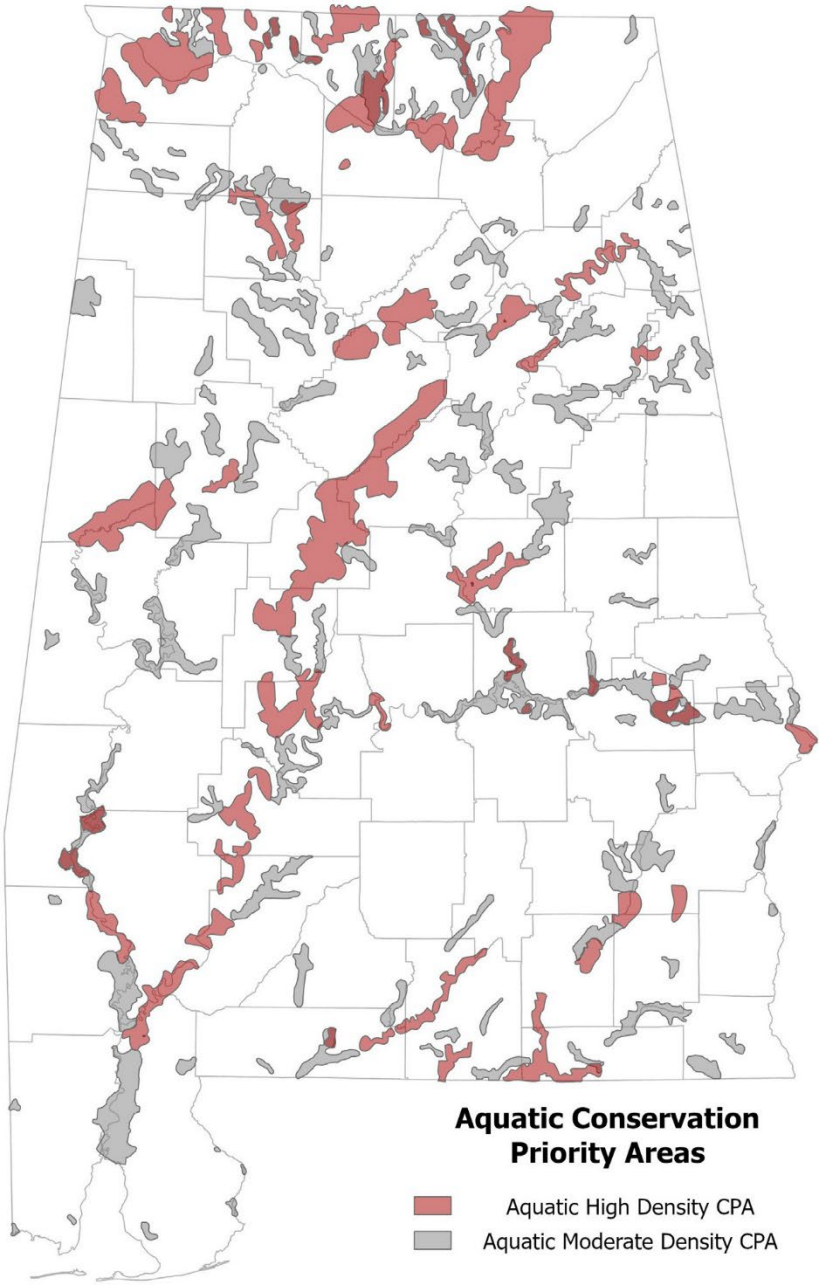

Figure 8.8 Aquatic Conservation Priority Areas

Terrestrial Conservation Priority Areas

Inputs for the Terrestrial CPAs include all the terrestrial species models (including terrestrial crayfish), with each taxa balanced to have equal weight despite the differences in numbers of strategy species, as well as P1 SGCN occurrence data (Figure 8.9). Small, fragmented polygons were aggregated in ArcGIS Pro to form larger CPAs.

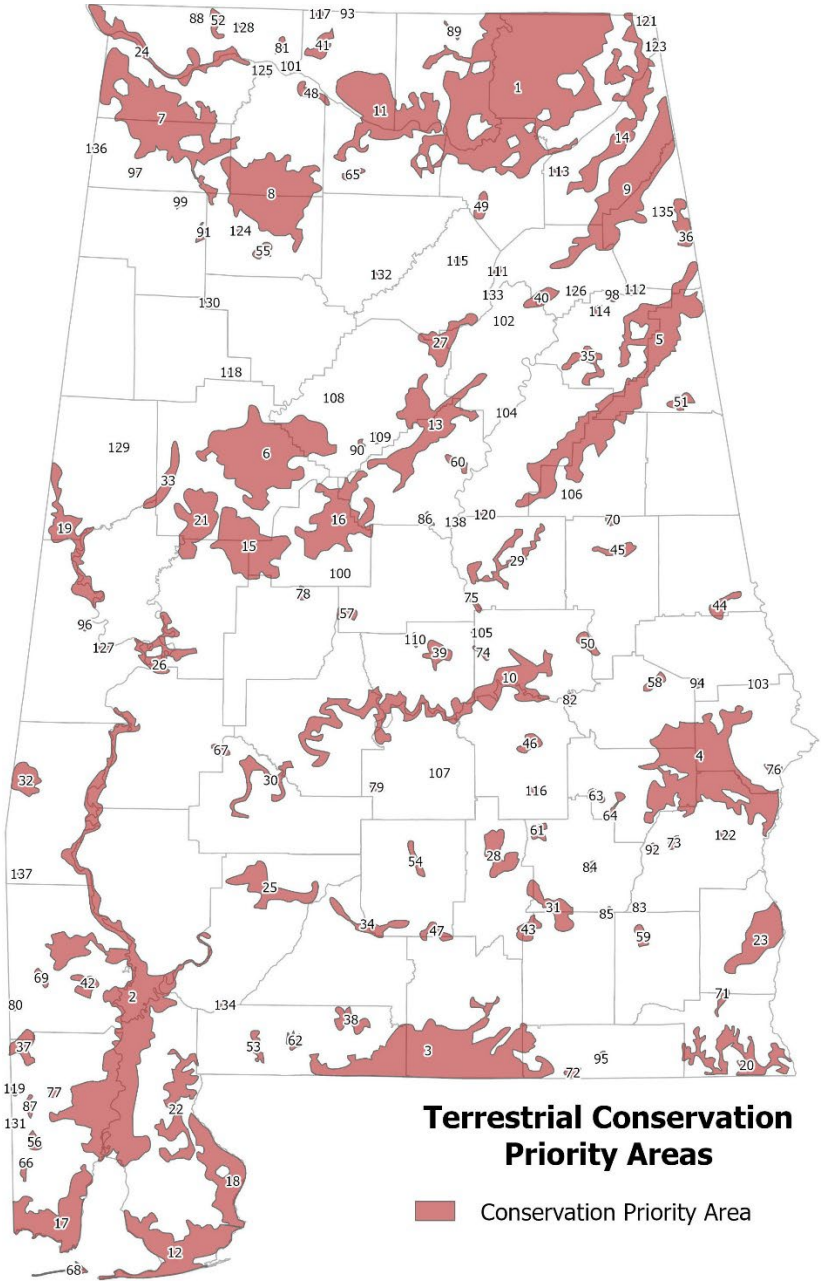

Figure 8.9 Terrestrial Conservation Priority Areas

Table 8.14 Terrestrial Conservation Priority Areas

STATISTIC	VALUE	PERCENT-AGE
SGCN Occurrences within CPAs	87,010	45%
Total Acreage	6,132,112	19%
Total Number of Species Covered	678	86%
Bird Species	54	100%
Crayfish Species	52	78%
Fish Species	71	81%
Herp Species	54	95%
Mammal Species	23	96%
Mussel and Snail Species	233	89%
Plant Species	359	85%

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
1	Skyline	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Flood-plain Forest
2	Tensaw Delta	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Wet Pine Savanna and Flatwoods
3	Conecuh NF Megasite	Dry Longleaf Pine Forest	Riparian and Flood-plain Forest	Glades, Prairies, and Grasslands
4	East Alabama Fall Line Hills	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest	Swamp
5	Talladega Mountains	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
6	Black Warrior River Slopes	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
7	Freedom Hills and Adjacent Lands	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
8	Bank-head/Warrior Mountains	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
9	Little River Canyon	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
10	Alabama River	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
11	Wheeler NWR / Redstone Arsenal	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
12	Gulf Islands	Wet Pine Savanna and Flatwoods	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest
13	Oak and Double Oak Mountains	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
14	Chitwood Barrens - Coon Gulf	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
15	Oakmulgee District, Talladega N.F.	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands
16	Bibb County Glades	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
17	Grand Bay Savanna	Wet Pine Savanna and Flatwoods	Intertidal Marshes, Flats, and Submerged Vegetation	Riparian and Floodplain Forest
18	Perdido River	Glades, Prairies, and Grasslands	Wet Pine Savanna and Flatwoods	Riparian and Floodplain Forest
19	Lower Tombigbee River	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
20	Chipola River/Big Creek Woods	Riparian and Floodplain Forest	Swamp	Glades, Prairies, and Grasslands
21	Lower Black Warrior Swamps-South Tuscaloosa	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
22	Splinter Hill Bog	Dry Longleaf Pine Forest	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands
23	Peterman-Abbie Creek	Glades, Prairies, and Grasslands	Mesic Hardwood Forest	Dry Hardwood and Mixed Pine Forest
24	Tennessee River Bluffs	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest	Mesic Hardwood Forest
25	Tallahatta Bluffs	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest	Mesic Hardwood Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
26	Lower Black Warrior Swamps	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
27	Inland Lake/Black-burn Fork Woods	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
28	Fullers Cross-roads	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest	Dry Hardwood and Mixed Pine Forest
29	Lower Hatchet Creek/Coosa WMA	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
30	Prairie Bluff - Millers Ferry Prairie	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
31	Big Creek	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
32	Rock Springs	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest
33	Sipsee River	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
34	Sepulga River Slopes	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
35	Pelham Range Prairie	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
36	Bogan Moun-tain-Coosa Val-ley Prairies	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Swamp
37	Frey Tract	Dry Longleaf Pine Forest	Riparian and Flood-plain Forest	Swamp
38	Cedar Creek	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest
39	Autauga Sandhills	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
40	Canoe Creek Valley	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Swamp
41	Elk River Bluffs	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Mesic Hardwood Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
42	MS-AL State-line Bogs East	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Longleaf Pine Forest
43	Bryans Pond	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Swamp
44	Tuckersburg-Cusseta	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
45	Horseshoe Bend	Mesic Hardwood Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
46	Pike Road	Riparian and Floodplain Forest	Swamp	Mesic Hardwood Forest
47	Persimmon Creek	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest	Mesic Hardwood Forest
48	Mallard-Fox Creek	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
49	Dividing Ridge	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Mesic Hardwood Forest
50	Yates Lake West	Mesic Hardwood Forest	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest
51	Turkey Heaven Mountain	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
52	Transition Hills East	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Flood-plain Forest
53	Stanley Cross-roads	Riparian and Floodplain Forest	Swamp	Glades, Prairies, and Grasslands
54	Hawkins Creek	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
55	Curtis Cross-roads	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
56	Big Creek Lake	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest
57	Oakmulgee District, Tal-ladega N.F. South	Dry Hardwood and Mixed Pine Forest	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands
58	Tuskegee Na-tional Forest	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
59	Barnes-Dill	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
60	Yellowleaf Creek Bog	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest	Swamp
61	Olustee	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Swamp
62	Wild Fork Creek	Riparian and Floodplain Forest	Swamp	Dry Longleaf Pine Forest
63	Mount Hillard	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest
64	Jenkins Crossroads	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest
65	Cedar Plains Glades	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
66	Seven Hills	Dry Longleaf Pine Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
67	Catherine-Carleys	Riparian and Floodplain Forest	Swamp	Glades, Prairies, and Grasslands
68	Dauphin Island	Beach and Dune	Intertidal Marshes, Flats, and Submerged Vegetation	Wet Pine Savanna and Flatwoods
69	MS-AL Stateline Bogs	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest
70	Goldville North	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
71	Kinsey	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Mesic Hardwood Forest
72	Lower Chocta-whatchee River Bluffs South	Riparian and Floodplain Forest	Swamp	Glades, Prairies, and Grasslands
73	Bells Crossroads	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
74	Mortar Creek	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
75	Lower Hatchet Creek/Coosa WMA-Schley	Mesic Hardwood Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
76	Fort Benning	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
77	Chunchula	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
78	Oakmulgee District, Talladega N.F. West	Dry Hardwood and Mixed Pine Forest	Dry Longleaf Pine Forest	Riparian and Floodplain Forest
79	Fostoria	Riparian and Floodplain Forest	Swamp	Glades, Prairies, and Grasslands
80	MS-AL Stateline Bogs West	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Swamp
81	Blowing Springs	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
82	Tysonville-Cubahatchee	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
83	Doster-Bethel	Glades, Prairies, and Grasslands	Swamp	Dry Hardwood and Mixed Pine Forest
84	Pike County Pocosin	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest
85	Clearwater Creek Roeton	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
86	Waxahatchee Creek	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
87	Big Creek Georgetown	Dry Longleaf Pine Forest	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands
88	Transition Hills West	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
89	Sulphur Springs	Dry Hardwood and Mixed Pine Forest	Riparian and Floodplain Forest	Mesic Hardwood Forest
90	Shades Valley	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest
91	Hoggle Ridge	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
92	Hurricane Creek	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
93	North Elk River	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
94	Long Branch	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Dry Longleaf Pine Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
95	Lower Chocta-whatchee River Bluffs North	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
96	Ft. Tombecbe - Jones Bluff	Mesic Hardwood Forest	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest
97	Bear Creek Ra-vines	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
98	Coffee Creek	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Swamp
99	Bear Creek Ra-vines South	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
100	Oakmulgee District, Tal-ladega N.F. North	Dry Hardwood and Mixed Pine Forest	Dry Longleaf Pine Forest	Mesic Hardwood Forest
101	Elk River View	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Glades, Prairies, and Grasslands
102	Pinedale	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Swamp
103	Crawford	Swamp	Riparian and Flood-plain Forest	Glades, Prairies, and Grasslands
104	Norman Moun-tain	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
105	Shoal Creek Jordan Lake	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
106	Backbone Mountain	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
107	Big Swamp Creek	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Swamp
108	Short Creek Hills	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Flood-plain Forest
109	Moss Rock	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Flood-plain Forest

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
110	Autauga Sandhills	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
111	Altoona Mountain	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
112	Colvin Mountain	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest
113	South Sauty Creek	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
114	Mount Polk	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
115	Royal Riverside	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
116	Gibson	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Swamp
117	Smith Hollow	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
118	Boley Springs	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
119	Escatawpa Boothetown	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Longleaf Pine Forest
120	Lower Hatchet Creek/Coosa WMA-Deans	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Floodplain Forest
121	Hogjaw Valley	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
122	White Oak Barbour Creek	Glades, Prairies, and Grasslands	Riparian and Floodplain Forest	Mesic Hardwood Forest
123	Raccoon Creek	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
124	Right Fork	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands

Table 8.15 Conservation Priority Areas

CPA #	CPA NAME	MOST HABITAT	2ND MOST HABITAT	3RD MOST HABITAT
125	Fishermans Resort-Big Nance	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest
126	Whorton Bend	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Swamp
127	Old Bluffport	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest	Dry Hardwood and Mixed Pine Forest
128	Richardson Creek	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Riparian and Flood-plain Forest
129	Lathrop	Riparian and Floodplain Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
130	South Eldridge	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
131	Flat Creek-Wil-mer	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest
132	Stout Moun-tain-Thacker Creek	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Glades, Prairies, and Grasslands
133	Blount Moun-tain	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest
134	Little River State Forest	Dry Longleaf Pine Forest	Glades, Prairies, and Grasslands	Riparian and Flood-plain Forest
135	Cornwall Fur-nace	Dry Hardwood and Mixed Pine Forest	Riparian and Flood-plain Forest	Swamp
136	Bear Creek Ra-vines North	Riparian and Floodplain Forest	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands
137	Silas Hill	Glades, Prairies, and Grasslands	Dry Hardwood and Mixed Pine Forest	Dry Longleaf Pine Forest
138	Blue Springs West	Dry Hardwood and Mixed Pine Forest	Mesic Hardwood Forest	Swamp
133	Blount Moun-tain	Dry Hardwood and Mixed Pine Forest	Glades, Prairies, and Grasslands	Mesic Hardwood Forest

CORRIDORS

This section presents Alabama's inaugural statewide ecological connectivity strategy, developed through the design of landscape-scale wildlife corridors. Landscape-scale corridors increasingly play a critical role in the conservation and long-term viability of Species of Greatest Conservation Need (SGCN) by addressing habitat fragmentation, promoting genetic exchange, and enhancing species resilience. As human development continues to fragment natural landscapes and waters, the creation and preservation of connected habitat networks becomes essential for supporting Alabama's wildlife resources.

The following five goals guided the team's approach to defining wildlife corridors at the state scale.

1. **Ensure Habitat Continuity**: Connect intact habitat patches to reduce isolation of wildlife populations and maintain viable home ranges. For this work, both the newly defined CPAs were used along with existing state and federal lands.
2. **Facilitate Daily and Seasonal Movement**: Provide pathways for species to access food, shelter, breeding grounds, and seasonal resources across the landscape.
3. **Maintain Genetic Variability**: Promote gene flow between populations by reducing barriers to dispersal, which helps sustain long-term species health and adaptability.
4. **Reduce Human–Wildlife Conflicts**: Design corridors that avoid high density development areas, road systems where possible, and highly disturbed habitats.
5. **Build Resilient Pathways**: Prioritize corridors that follow land cover types conducive to species habitation including forest, wetlands, grasslands, and others.

This initial proposal for the Alabama corridor plan represents a foundational step toward enhancing ecological connectivity across the state. Developed using the best available data and stakeholder input, the plan begins to identify key areas where wildlife movement is essential for species survival and long-term ecosystem resilience. As a first iteration, it outlines priority corridors based on CPA locations presented in the previous chapter, land use analysis, and known conservation targets, while recognizing that gaps and uncertainties remain. Designed to be a living document, the Alabama corridor plan will be refined over time through continued collaboration with researchers, landowners, agencies, and communities. Future iterations will incorporate new data, field validation, and input from ongoing monitoring efforts. Ultimately, the goal is to build a robust, adaptive framework that supports species richness, reduces habitat fragmentation, and helps inform conservation decisions at both state and local scales for years to come.

Corridor Modeling and Methods

The methodology for generating wildlife corridors utilized the most recent occurrence data collected from species experts throughout 2024 and 2025, alongside the newly defined Conservation Priority Areas described in the previous chapter. This approach focused on identifying and connecting critical habitats across the Alabama landscape to support species

movement and ecological resilience. First, CPA areas were identified for their high conservation value due to the presence of key habitats and SGCN species and were mapped using existing ecological datasets and expert feedback. Using a recently released suite of Least Cost Corridor tools in ArcGIS, habitat suitability models for strategy species were overlaid with land cover types and human development data to assess where movement is possible or impeded. Least-cost path analysis were then applied to simulate how species might move between CPAs, state, and/ or federally protected lands, identifying the most effective routes that minimize resistance and maximize connectivity. The resulting corridor outputs were refined by incorporating barriers such as roads or urban areas, and prioritized based on land cover types and feasibility.

The Least-Cost Path Corridor tool in ArcGIS was used to model the corridors between two or more locations based on landscape resistance. The tool identifies not just a single least-cost path, but a broader swath of potential movement routes that represent varying levels of cumulative travel cost across the landscape. This makes it particularly valuable for ecological connectivity planning.

Step by Step Process

Starting/End points: Source and Destination Areas were defined with starting and ending points of movement, usually already existing habitat cores and/or newly defined Conservation Priority Areas (CPAs) or known species locations inputed as raster and/or feature layers.

Cost Surface Rasters were generated to depict each cell as representing a cost of movement through a particular location. Low-cost values indicate preferred or easier terrain (e.g., forests, wetlands, grasslands), and high-cost values represent barriers or less suitable areas (e.g., urban development, highways).

Cost Distance tools were used to calculate the least accumulative cost of travel from the source areas across the landscape with resulting cost distance rasters and a Backlink rasters, which guided movement direction.

Optimal Corridor Path tools were also explored to identify the most efficient path of movement between two input regions, based on landscape cost and resistance, as a single corridor line.

Least Cost Corridor Range identified a gradient corridor of low cumulative cost between two cost distance rasters each from different source areas highlighting areas of lower and higher cost. The resulting output highlighted a range of potential pathways, with lower values indicating higher suitability for wildlife movement.

Continuing the development of the Alabama corridor plan is essential to ensure its long-term effectiveness and adaptability. As landscapes and ecological conditions evolve, incor-

porating new projects and the latest data keeps the plan current and relevant. Ground truthing, field verification of corridor locations and conditions, at multiple scales helps validate model predictions, identify barriers or opportunities missed in initial analyses, and refine corridor boundaries. This hands-on approach strengthens the scientific foundation of the plan and informs practical management actions. Equally important is building broad support across the state among landowners, local communities, agencies, and stakeholders. Wide collaboration fosters shared stewardship, increases resources and political backing, and encourages voluntary conservation efforts.

Together, these ongoing efforts transform the corridor plan from a static document into a dynamic, living strategy that can effectively guide landscape connectivity conservation, respond to emerging challenges like weather pattern shifts, and promote resilient ecosystems for the benefit of wildlife and people alike.

Statistics

After the corridor modeling process was completed, each corridor was analyzed for overall acreage and number of species occurring across corridors. For this analysis, the entire corridor range as defined by the extent of the least-cost corridor output, was treated as a single, continuous area. This approach allowed for the comparison of corridors not only in terms of connectivity but also in their relative conservation value, helping to prioritize those that support the highest richness of priority species.

Corridors

The map below shows 25 wildlife corridors across Alabama (Figure 8.10). Each corridor links large to medium habitat patches, including Conservation Priority Areas (CPAs), state lands, and federally managed lands. Corridor connections can help maintain ecological integrity by allowing species to move, disperse, and adapt across the landscape.

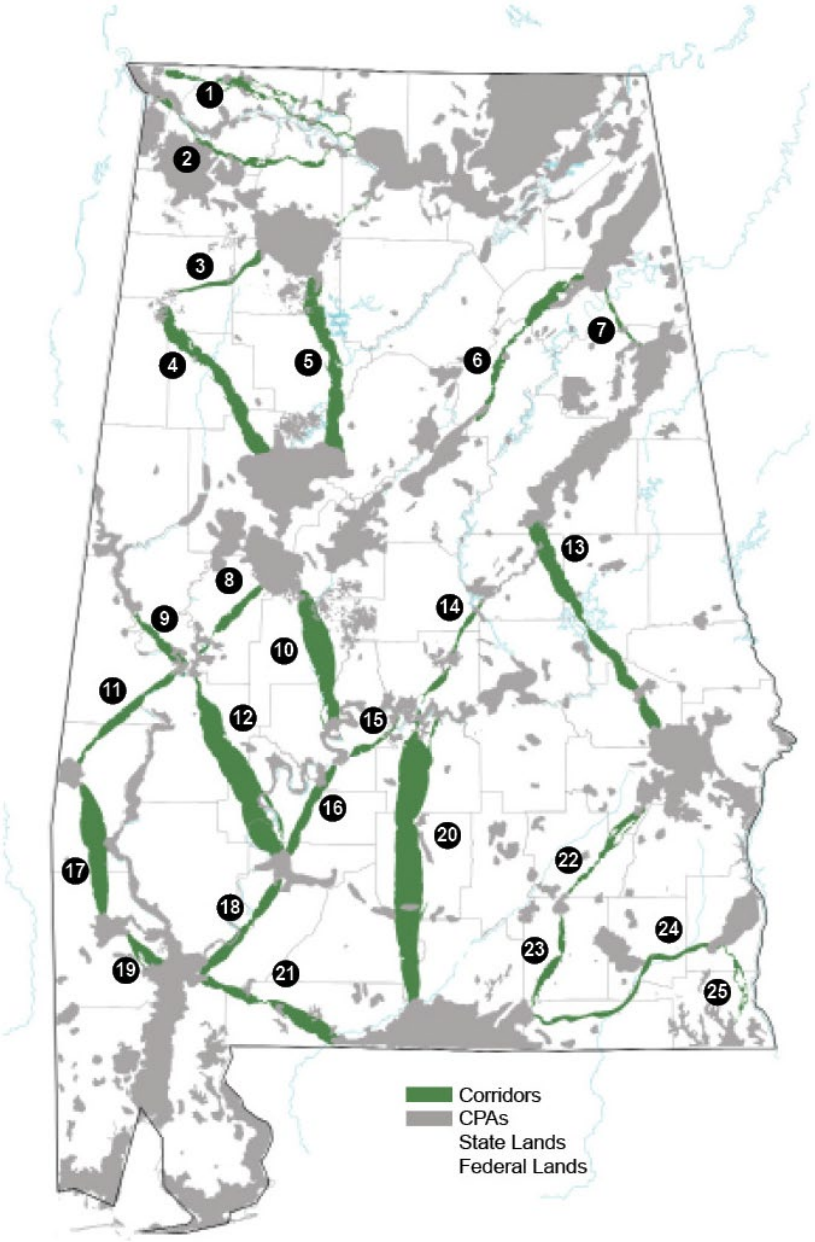

Figure 8.10 Alabama Corridors

Table 8.16 Wildlife Corridor Map Coverage

STATISTIC	NUMBERS	PERCENT COVERAGE
Total Acreage	2,089,825	6%
Total Number of Species Covered	272	35%
Bird Species	36	67%
Herp Species	29	52%
Mammal Species	10	40%
Plant Species	95	22%