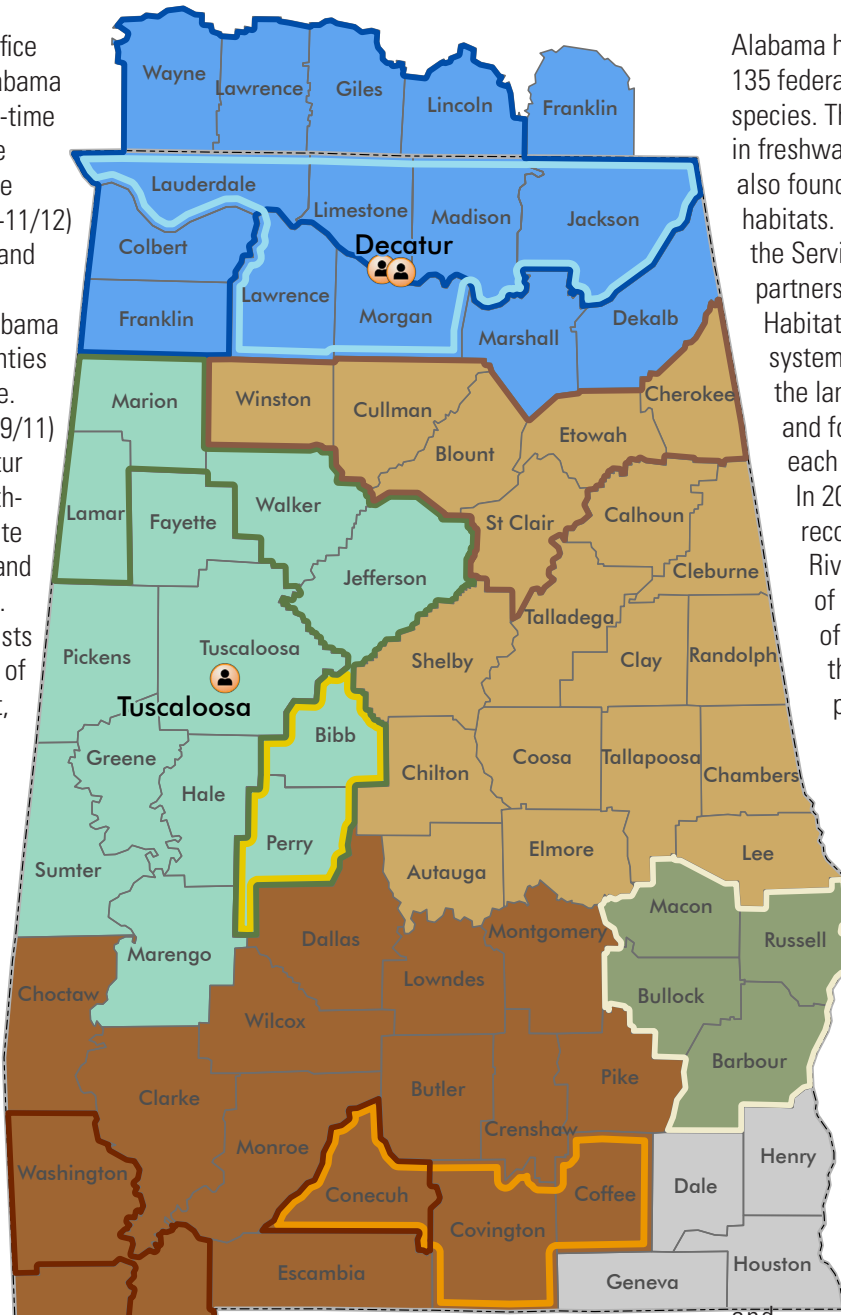




U.S. Fish & Wildlife Service

The Partners for Fish and Wildlife Program Alabama Ecological Services Field Office Daphne, Alabama

The Alabama Field Office (ALFO) in Daphne, Alabama (AL) supports four full-time Partners FTEs and one part-time position. The State Coordinator (GS-11/12) is located in Decatur and covers the Tennessee Valley in northern Alabama along with a few counties in southern Tennessee. Another biologist (GS-9/11) is co-located in Decatur and oversees the north-central part of the state (Upper Black Warrior and Middle Coosa Basins). Two additional biologists cover the central part of the state. To the west, one is located in Tuscaloosa (GS-9/11) focusing primarily on freshwater aquatics and longleaf pine restoration in the Tombigbee and Cahaba rivers, as well as a couple contiguous counties in Mississippi. To the east, one is located in Fort Benning, Georgia focusing on longleaf pine restoration in that part of the state. The fourth biologist (GS-9/11) is located in Daphne, Alabama and covers the lower third of the state. The remaining biologist (GS-9/11) is located in Daphne, Alabama and covers South Alabama. There are five work areas, consisting of five focus areas in the state: North Alabama, West



- North Alabama Freshwater Aquatics/Riparian
- North Alabama Caves/Karst
- Tombigbee and Cahaba Rivers
- West-Central Longleaf
- East-Central Alabama Freshwater Aquatics
- Southeast Alabama Longleaf
- South Alabama Longleaf
- South Alabama Freshwater Aquatics
- PFW Biologist Locations

Central Alabama, East-Central Alabama, South Alabama and Southeast Alabama.

Alabama has unparalleled biological diversity, with 135 federally listed species and another 80 at-risk species. The majority of these species are found in freshwater aquatic habitats; however, many are also found in terrestrial and karst (cave and springs) habitats. To address the numerous aquatic species, the Service, in collaboration with numerous partners and agencies have created Strategic Habitat Units (SHUs) throughout the state to systematically address conservation across the landscape; these SHUs are incorporated and form the operational boundaries for each biologist within the Partners Program. In 2020, the Alabama Wildlife Federation recognized the SHU Team (aka the Alabama River and Streams Network) as the recipient of the Governor's "Water Conservationist of the Year," which was in part, due to the collaboration and habitat restoration projects delivered by Alabama's Partners Program. Focal species presented on the next page are representative of a wide range of aquatic habitats within this work area, as there are numerous other listed and at-risk species known in these habitat types that are not identified in the table on the next page.

Aquatic habitat improvement projects within Alabama will continue to improve water quality, habitat stability, and connectivity. Habitat improvement practices will aim to reduce sedimentation non-point source pollution, upgrade in-stream habitat structures, and eliminate fish passage barriers. Terrestrial work will continue to restore fire-dependent communities in the longleaf pine ecosystem and protect caves and other karst features.

*Dale, Henry, Houston, and Geneva counties included in Florida Partners Program Strategic Plan.

North Alabama Work Area

The North Alabama Work Area consists of two focus areas encompassing a diversity of habitat types including freshwater aquatic/riparian, caves/ karst, bottomland and upland hardwood forests, glades, prairies, barrens and rock outcrops. The Partners Program in this focus area will engage landowners with caves, sinkholes, sinking streams and springs on their property to encourage the protection and enhancement of these habitats often contain rare, narrow endemic species.

Key partners in this work area include: Geological Survey of AL, University of AL, AL Department of Conservation and Natural Resources, AL Aquatic Biodiversity Center, AL Department of Environmental Management, AL Forestry Commission, AL Forestry Association, Tennessee Valley Authority, Tennessee Department of Environment and Conservation, Tennessee Wildlife Resources Agency, Tennessee Aquarium, U.S. Geological Survey, Natural Resources Conservation Service, County Commissioners, County Engineers, County Soil and Water Conservation District, Atlantic Coast Conservancy, The Westervelt Company, Wildlife Mississippi, Mississippi Wildlife, Fisheries and Parks, AL Mountains, Rivers and Valleys RC&D Council, Inc., The Nature Conservancy, and American Forest Foundation.

North Alabama Freshwater Aquatic/Riparian Focus Area

The North Alabama Freshwater Aquatic/Riparian Focus Area is located primarily in these three ecoregions: Interior Plateau, Southeast Plains and Southwestern Appalachians. These ecoregions provide for a great diversity of terrestrial and aquatic life. However, Partners projects proposed in this area will primarily concentrate on intermittent and perennial streams that host a multitude of federally listed or at-risk species. Aquatic habitat protection and restoration activities would continue where landowner opportunities allow throughout the mainstem, headwater and tributary reaches within Bear Creek, Cypress Creek, Elk River, Flint River, Limestone Creek, Paint Rock River, and Shoal Creek SHUs.



Partners staff getting assistance from partner agencies (Alabama Department of Environmental Management (ADEM), Geological Survey of Alabama (GSA), The Nature Conservancy - Alabama Chapter) to conduct pre-project monitoring (fish survey) for the Mulberry Fork/Hurricane Creek Project; credit, USFWS.

North Alabama Freshwater Aquatic/Riparian Focus Area

Habitat Type: Freshwater Aquatic – Tennessee River Basin

Total Listed & At-Risk Species in Focus Area: Endangered (30), Threatened (5), At-Risk (54)

Focal Species: ESA Status, Common Name (*Scientific Name*)

Taxa Group

Endangered:

Alabama Lampmussel (*Lampsilis virescens*)
 Anthony's Riversnail (*Athearnia anthonyi*)
 Slender Campeloma (*Campeloma decampi*)
 Palezone Shiner (*Notropis albizonatus*)
 Spring Pygmy Sunfish (*Elassoma alabamae*)
 Slackwater Darter (*Etheostoma boschungii*)

Mussel
 Snail
 Snail
 Fish
 Fish
 Fish

At-Risk:

Tennessee Bottlebrush Crayfish (*Barbicambarus simmonsii*)
 Lollipop Darter (*Etheostoma neopterum*)
 Tuscumbia Darter (*Etheostoma tuscumbia*)
 Eastern Hellbender (*Cryptobranchus alleganiensis*)

Crayfish
 Fish
 Fish
 Salamander

Focal Area Counties: Alabama: Colbert, Franklin, Jackson, Lauderdale, Limestone, and Madison; Tennessee: Giles, Lawrence, Lincoln, and Wayne

Types of Habitat Improvement: Fish passage enhancement/barrier removal, streambank stabilization, instream habitat restoration, riparian enhancement/establishment, livestock exclusion fencing, reforestation.

North Alabama Caves/Karst Focus Area

The North Alabama Caves/Karst Focus Area is well known for spectacular recreational spelunking and caving opportunities. Many of these caves exist in remote sites on privately owned lands and offer suitable habitats for a variety of cave-dependent species.

Although karst topography is a dominant geologic feature throughout northern Alabama and southern Tennessee, Partners projects will be focused in the northern tier counties in Alabama, where a multitude of mapped caves host federally listed and at-risk species and karst features (*i.e.*, rock outcrops, glades, barrens) support several federal priority species. Actions that protect the groundwater recharge area of caves and limit or restrict human access into caves will be pursued. Efforts will exercise best management practices that limit or prohibit cave entry during certain periods of the year, including the employment of safe, clean caving methods.

West-Central Alabama Work Area

The West-Central Alabama Work Area consists of two focus areas consisting of both aquatic and upland habitats. This unique geographic area contains upland ridges that serve as headwaters for many of Alabama’s most biodiverse streams, as well as transitional and depositional zones through the Fall Line and Coastal Plains, a physiographic assortment that produces incredibly high levels of biodiversity and habitat for a plethora of trust resources.

Key partners in this Focus Area include: AL Forestry Commission, Longleaf Alliance, AL Aquatic Biodiversity Center, AL Department of Conservation and Natural Resources, AL Forestry Association, AL Forever Wild, AL Department of Transportation, AL Department of Environmental Management, Geological Survey of AL, University of AL, Natural Resources Conservation Service, The Westervelt Company, The Nature Conservancy, American Forest Foundation and Freshwater Land Trust.

Bibb County Glades burn, credit: Jeffrey Drummond

North Alabama Caves/Karst Focus Area

Habitat Type: Caves/Karst

Total Listed & At-Risk Species in Focus Area: Endangered (11), Threatened (10), At-Risk (4)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Fleshy-Fruit Gladecress (<i>Leavenworthia crassa</i>) Leafy Prairie-Clover (<i>Dalea foliosa</i>) Indiana Bat (<i>Myotis sodalis</i>) Gray Bat (<i>Myotis grisescens</i>) Alabama Cave Shrimp (<i>Palaemonias alabamae</i>)	Plant Plant Bat Bat Crustacean
Threatened: Price’s Potato-Bean (<i>Apios priceana</i>) Northern Long-Eared Bat (<i>Myotis septentrionalis</i>)	Plant Bat
At-Risk: Alabama Cave Crayfish (<i>Cambarus jonesi</i>)	Crustacean

Focal Area Counties: Alabama: Jackson, Lauderdale, Lawrence, Limestone, Madison, and Morgan

Types of Habitat Improvement: Vegetative buffer enhancement and/or establishment at cave entrances /sinkholes /springs and spring-runs, promotion of agricultural and forestry BMPs in cave/ karst recharge areas, livestock exclusion fencing, prairie restoration, prescribed fire, cave gate installation, pollinator gardens



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Tombigbee and Cahaba Rivers Focus Area

The long history of industrial and residential development in the headwaters of these watersheds has produced a great need for projects to improve habitat conditions, while also providing abundant opportunities to engage diverse landowners in collaborative efforts to conserve Alabama's natural resources. Stream restoration and riparian buffer enhancement will be targeted in portions of the Ridge and Valley and Cumberland Plateau ecoregions, encompassing the upper and lower Cahaba, and the Sipsey, Mulberry, and Locust Forks of the Black Warrior River. Additional freshwater aquatic work will be completed through the Fall Line and Coastal Plains in the Tombigbee River Basin.

West-Central Longleaf Focus Area

Montane longleaf is a unique feature for this focus area, with longleaf habitat improvement targeted in the Ridge and Valley and Cumberland Plateau ecoregions of central Alabama and in the Coastal Plains of the Tombigbee River Basin. The reintroduction of and methods of management for montane longleaf will help maintain and enhance habitats that support unique floral communities including seepage bogs and high-elevation limestone outcrops. Furthermore, maintaining longleaf pine stands along elevation gradients, and the associated microclimate variation, will provide important opportunities to study and increase resiliency of longleaf pine forests in the southeastern US in the face of a changing climate.

East-Central Alabama Work Area

East-Central Alabama Work Area has one focus area concentrated on freshwater aquatics. Within this work area, aquatic habitat restoration projects will primarily focus on improvements to water quality, habitat stability, and connectivity. Specific project practices will include, but not be limited to: reducing sources of sedimentation and non-point source pollution, improving in-stream habitat structure for target species, and removing or improving fish passage/upstream migration barriers.

Tombigbee and Cahaba Rivers Focus Area

Habitat Type: Freshwater Aquatics - Tombigbee River and Cahaba River

Total Listed & At-Risk Species in Focus Area: Endangered (29), Threatened (14), At-Risk (35)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Southern Clubshell (<i>Pleurobema decisum</i>) Black Warrior Waterdog (<i>Necturus alabamensis</i>) Plicate Rocksnail (<i>Leptoxis plicata</i>) Watercress Darter (<i>Etheosoma nuchale</i>) Rush Darter (<i>Etheostoma phytophilum</i>)	Mussel Salamander Snail Fish Fish
Threatened: Round Rocksnail (<i>Leptoxis ampla</i>) Goldline Darter (<i>Percina aurolineata</i>) Flattened Musk Turtle (<i>Sternotherus depressus</i>) Alabama Streak-Sorus Fern (<i>Thelypteris pilosa</i> var. <i>alabamensis</i>)	Snail Fish Turtle Plant
At-Risk: Cockle Elimia (<i>Elimia cochliaris</i>) Oblong Elimia (<i>Leptoxis compacta</i>) Bluenose Shiner (<i>Pteronotropis welaka</i>) Black-Knobbed Map Turtle (<i>Graptemys nigrinoda</i>)	Snail Snail Fish Turtle

Focal Area Counties: Alabama: Jefferson, Lamar, Walker, Perry, Bibb and Marion

Types of Habitat Improvement: Streambank stabilization, instream restoration, fish passage enhancement (barrier removal), wetland reclamation/restoration, water quality improvements (exclusion fencing, nonpoint source), reforestation, upland timber stand improvement (TSI), bottomland TSI, riparian buffer enhancement

West-Central Longleaf Focus Area

Habitat Type: Fire-Dependent Wetlands, Bogs and Longleaf Pine

Total Listed & At-Risk Species in Focus Area: Endangered (3), Threatened (2), At-Risk (4)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Alabama canebrake pitcher-plant (<i>Sarracenia rubra alabamensis</i>) Red-Cockaded Woodpecker (<i>Picoides borealis</i>) - proposed downlisting	Plant Bird
At-Risk: Eastern Tiger Salamander (<i>Ambystoma tigrinum</i>)	Salamander

Focal Area Counties: Alabama: Perry and Bibb

Types of Habitat Improvement: Fire management, longleaf pine restoration/enhancement, prairie restoration, invasive species control, midstory reduction, native groundcover restoration, ephemeral wetland and bog restoration, and establishment / enhancement of native vegetation

Key partners in this Focus Area include: Geological Survey of AL, CAWACO RC&D, AL Department of Conservation and Natural Resources, AL Aquatic Biodiversity Center, AL Department of Environmental Management, The Nature Conservancy – AL Chapter, AL Power Company, Freshwater Land Trust, County Commissioners, County Engineers, Atlantic Coast Conservancy, Manitou Cave

of AL, U.S. Geological Survey, AL Forestry Commission, AL Forestry Association, Natural Resources Conservation Service, Tennessee Aquarium, U.S. Forest Service, AL Department of Transportation, American Forest Foundation and Auburn University.

East-Central Alabama Freshwater Aquatics Focus Area

The East-Central Alabama Focus Area is home to several Alabama endemic species and contains species that have a very limited range, many of which have only known occurrences in this focus area. Because many of these known species occur on private property and/or are only accessible through private property, it is a priority to identify those areas having the greatest protection potential from ongoing development associated with urban expansion.

Partners projects will continue to concentrate on restoration efforts in perennial and intermittent streams and their associated riparian habitats to improve the physical and chemical habitats of numerous targeted streams within the upper Black Warrior and Middle Coosa Basins.

Southeast Alabama Work Area

The Southeast Alabama Work Area constitutes the western section of the Fall Line Region (one key component of the broader Sentinel Landscape) which includes Ft. Benning Military Reservation (FBMR) and stretches eastward through central and eastern Georgia. Efforts will continue to center on restoration/enhancement of longleaf pine and fire-dependent community types to benefit several associated species, including the threatened red-cockaded woodpecker and candidate gopher tortoise.

Key partners in this Focus Area include: Geological Survey of AL, University of AL, Auburn University, University of West AL, AL Aquatic Biodiversity Center, AL Department of Environmental Management, AL Forestry Commission, AL Forestry Association, U.S. Geological Survey, Natural Resources Conservation Service, AL Department of Transportation, The Nature Conservancy, AL Department of Conservation and Natural Resources, American Forest Foundation and The Longleaf Alliance.

East-Central Alabama Focus Area

Habitat Type: Freshwater Aquatic – Upper Black Warrior and Middle Coosa Basins

Total Listed & At-Risk Species in Focus Area: Endangered (20), Threatened (15), At-Risk (39)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Southern Clubshell (<i>Pleurobema decisum</i>) Black Warrior Waterdog (<i>Necturus alabamensis</i>) Rush Darter (<i>Etheostoma phytophilum</i>)	Mussel Salamander Fish
Threatened: Flattened Musk Turtle (<i>Sternotherus depressus</i>) Finelined Pocketbook (<i>Hamiota altilis</i>) Blue Shiner (<i>Cyprinella caerulea</i>) Trispot Darter (<i>Etheostoma trisella</i>)	Turtle Mussel Fish Fish Plant
At-Risk: Alabama Spike (<i>Elliptio arca</i>) Canoe Creek Clubshell (<i>Pleurobema athearni</i>) Manitou Cave Snail (<i>Antrorbis breweri</i>)	Mussel Mussel Snail

Focal Area Counties: Alabama: Blount, Cherokee, Etowah, St. Clair, Cullman and Winston

Types of Habitat Improvement: Fish passage enhancement/barrier removal, streambank stabilization, instream habitat restoration, riparian enhancement/establishment, livestock exclusion fencing



Members of the Alabama Rivers and Streams Network (ARSN) performing fish Index of Biotic Integrity (IBI) sampling in the Hatchet Creek Strategic Habitat Unit in central Alabama. ARSN routinely performs biological sampling in support of PFW habitat restoration projects, credit: Eric Spadgenski.

Southeast Alabama Longleaf Focus Area

The Southeast Alabama Focus Area emphasizes a landscape scale approach to support an important conservation corridor connecting east Alabama quail plantations, FBMR, Army Compatible Use Buffer Lands, and other public and private conservation lands along the Fall Line Region. More specifically, this corridor is anchored by numerous conservation easements and state wildlife management areas of well-managed, open pine habitats, along with numerous small to large-scale longleaf pine projects on private land under long-term agreements through various state and Federal cost share programs. Projects include, but are not limited to, short term loblolly pine and slash pine plantation conversion to sustainable longleaf pine stands.



Prescribed fire in young longleaf pine regeneration at Splinter Hill Bog, a Nature Conservancy preserve in southwest Alabama. Longleaf pine require periodic fire to germinate and grow, and to reduce brush encroachment. The PFW program has partnered with The Nature Conservancy to support a seasonal prescribed fire team to burn ecologically significant tracts such as this for many years, credit: Eric Spadgenski.



Female red-cockaded woodpecker (RCW) on a private quail hunting plantation in southeast Alabama. The PFW program has spearheaded a highly successful recovery of RCWs on this property since 2007, credit: Eric Spadgenski.

South Alabama Work Area

The South Alabama Work Area has two focus areas that include both upland and aquatic habitat. Key partners in this focus area include: Geological Survey of AL, Wiregrass Resource Conservation and Development Council, AL Department of Conservation and Natural Resources, AL Aquatic Biodiversity Center, AL Department of Environmental Management, AL Forestry Commission, AL Forestry Association, Natural Resources Conservation Service, National Council For Air and Stream Improvement, AL Department of Transportation, The Nature Conservancy, American Forest Foundation, AL Soil and Water Conservation Committee, and various county commissions and engineering departments.

Southeast Alabama Longleaf Focus Area	
Habitat Type: Fire-Dependent Wetlands, Bogs and Longleaf Pine	
Total Listed & At-Risk Species in Focus Area: Endangered (4), Threatened (3), At-Risk (3)	
Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Reticulated Flatwoods Salamander (<i>Ambystoma bishop</i>) American Chaffseed (<i>Schwalbea americana</i>) Red-Cockaded Woodpecker (<i>Picoides borealis</i>) - proposed downlisting	Salamander Plant Bird
At-Risk: Gopher Tortoise (<i>Gopherus polyphemus</i>)	Turtle
Focal Area Counties: Alabama: Barbour, Macon, Bullock and Russell	
Types of Habitat Improvement: Upland longleaf pine and associated native groundcover restoration/enhancement	



Bibb County Glades burn, credit: Jeffrey Drummond

U.S. Fish & Wildlife Service

South Alabama Longleaf Focus Area

Efforts in the South Alabama Longleaf Focus Area will remain committed to the restoration and enhancement of the longleaf pine ecosystem and unique, fire-dependent, embedded community types such as ephemeral wetlands, open pine savannas, and pitcher plant bogs. Habitat improvement benefits focal species like the gopher tortoise and red-cockaded woodpecker and a variety of other more common species like the diamondback rattlesnake and quail. The Partners Program will continue coordinating with the numerous state and federal resource agencies working with many large, private landowners, as well as engaging several commercial timber interests to support conservation across the landscape.

South Alabama Freshwater Aquatics Focus Area

The freshwater aquatic work in this focus area will concentrate on multiple coastal drainages flowing into the Gulf of Mexico to reduce erosion and sedimentation and improve water quality. Aquatic issues include reducing sedimentation from farmlands and unpaved roads, improving water quality where possible, and working with private landowners and the ADCNR to identify potential reintroduction sites for imperiled species. The Alabama Field Office will work closely with the Panama City Partners Program to address many of these habitat improvement projects.



White-topped pitcher plant bog responding to spring prescribed fire at Splinter Hill Bog, a Nature Conservancy preserve in southwest Alabama. Pitcher plant bogs are reservoirs of biodiversity with hundreds of unique and endemic species that will only thrive with periodic growing season fires, credit: Eric Spadgenski

South Alabama Longleaf Focus Area

Habitat Type: Fire-Dependent Wetlands, Bogs and Longleaf Pine

Total Listed & At-Risk Species in Focus Area: Endangered (3), Threatened (3), At-Risk (8)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Red-Cockaded Woodpecker (<i>Picoides borealis</i>) - proposed downlisting	Bird
Threatened: Gopher Tortoise (<i>Gopherus polyphemus</i>) Tricolored Bat (<i>Perimyotis subflavus</i>)	Turtle Bat

Focal Area Counties: Alabama: Baldwin, Conecuh and Washington

Types of Habitat Improvement: Fire management, longleaf pine restoration/enhancement, invasive species control, midstory reduction, native groundcover restoration, ephemeral wetland and bog restoration, and establishment/enhancement of native vegetation



The PFW program partnered with the private landowner and multiple other partners including the Service's Fisheries and Aquatic Habitat Restoration Team to remove the Livingston Dam on the Sucarnoochee River in western Alabama. Removal of this dam improved habitat in a designated segment of Critical Habitat for four federally protected mussels and two at-risk species. Over 600 miles of river and tributaries were re-opened for fish passage and the river now flows free for its entire length, credit: Eric Spadgenski.

South Alabama Freshwater Aquatics Focus Area

Habitat Type: Fire-Dependent Wetlands, Bogs and Longleaf Pine

Total Listed and At-Risk Species: Endangered (5), Threatened (6), At-Risk (3)

Focal Species: ESA Status, Common Name (<i>Scientific Name</i>)	Taxa Group
Endangered: Alabama Pearlshell (<i>Margaritifera marrianae</i>)	Mussel
Threatened: Fuzzy Pigtoe (<i>Pleurobema strodeanum</i>)	Mussel
At-Risk: Rayed Creekshell (<i>Anodontoides radiatus</i>)	Mussel

Focal Area Counties: Alabama: Coffee, Conecuh and Covington

Types of Habitat Improvement: Fish passage barrier removal, culvert replacement, unpaved road and ditch improvements, gully repair, livestock exclusion fencing, riparian buffer establishment, streambank restoration, and native vegetation establishment/enhancement