

# SOUTHERN ENVIRONMENTAL LAW CENTER

Telephone 919-967-1450

601 WEST ROSEMARY STREET, SUITE 220  
CHAPEL HILL, NC 27516-2356

Facsimile 919-929-9421

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Bridget Fahey  
Chief, Division of Conservation and Classification  
U.S. Fish and Wildlife Service  
5275 Leesburg Pike, MS: ES  
Falls Church, VA 22041-3808  
[bridget\\_fahey@fws.gov](mailto:bridget_fahey@fws.gov)

Craig Aubrey  
Chief, Division of Environmental Review  
Ecological Services Program  
U.S. Fish and Wildlife Service  
5275 Leesburg Pike, MS: ES  
Falls Church, VA 22041  
[craig\\_aubrey@fws.gov](mailto:craig_aubrey@fws.gov)

Samuel D. Rauch, III  
National Marine Fisheries Service  
Office of Protected Resources  
1315 East-West Highway  
Silver Spring, MD 20910  
[Samuel.rauch@noaa.gov](mailto:Samuel.rauch@noaa.gov)

## **Re: Proposed Revisions of Endangered Species Act Regulations**

Dear Mr. Aubrey, Ms. Fahey, and Mr. Rauch:

The Southern Environmental Law Center (“SELC”) submits the following comments in opposition to the U.S. Fish and Wildlife Service’s and National Marine Fisheries Service’s proposed revisions to the Endangered Species Act’s implementing regulations.<sup>1</sup> We submit these comments on behalf of 57 organizations working to protect the natural resources of the

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<sup>1</sup> Revision of the Regulations for Prohibitions to Threatened Wildlife and Plants, 83 Fed. Reg. 35,174 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 17); Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. 35,178 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 402); Revision of the Regulations for Listing Species and Designating Critical Habitat, 83 Fed. Reg. 35,193 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 424).

Southeast, including the states of Virginia, North Carolina, South Carolina, Tennessee, Georgia, and Alabama.

The Endangered Species Act (“ESA” or “Act”) has been remarkably successful in achieving its goals: 99 percent of species have been saved from extinction. Yet these proposals would fundamentally overhaul how the Act operates and severely diminish protections for endangered and threatened species across the nation. Such a drastic rewriting of species protections is of particular concern to the Southeastern region of the United States, with its rich biodiversity. The U.S. Fish and Wildlife Service (“USFWS”) and the National Marine Fisheries Service (“NMFS”, and together with USFWS, “the Services”) should strive to make the Act work better for species, not for private and commercial interests. Because the proposed revisions contravene the purpose and policy of the Act and threaten the Southeast’s unique species and ecosystems, our organizations call on the USFWS and NMFS (collectively, the “Services”) to rescind them.

The comments that follow, with their supporting appendix and attachments, respond to all three proposed revisions together, to address the interrelated and cumulative harms they pose for imperiled species. In summary, the proposed revision to the take prohibitions for threatened species will leave hundreds of species without any protections against take, while adding to the delay in listing imperiled species and increasing agency backlog. The proposed changes to species listing and critical habitat designation regulations would interject politics into listing decisions by allowing economics to be referenced in that process, while reducing the role of science and limiting critical habitat designations. The proposed revisions to interagency cooperation would effectively gut some of the most important, protective provisions of the ESA by allowing agencies to take actions detrimental to species recovery. These proposals are contrary to the purpose and intent of the Act and must be rejected.

## **I. Background of the Endangered Species Act**

The ESA was passed in 1973 in recognition of the “esthetic, ecological, educational, historical, recreational, and scientific value” of species that development and inadequate conservation measures were threatening or destroying.<sup>2</sup> As the Supreme Court has explained, “The plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, *whatever the cost.*”<sup>3</sup> The Act’s ultimate goal is to achieve recovery of listed species through conservation actions, where “conservation” is defined as “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this chapter are no longer necessary.”<sup>4</sup> “The ESA’s conservation purpose ‘is reflected in literally every section of the statute.’”<sup>5</sup>

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<sup>2</sup> 16 U.S.C. § 1531(a)(3).

<sup>3</sup> *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 184, 98 S. Ct. 2279, 2297 (1978) (emphasis added).

<sup>4</sup> 16 U.S.C. § 1532.

<sup>5</sup> *Ctr. for Biological Diversity v. Jewell*, 2018 WL 1586651, \*3 (quoting *Babbitt v. Sweet Home Chapter of Cmities. for a Great Or.*, 515 U.S. 687, 699 (1995)).

## A. The Act’s Focus on Ecosystem and Habitat

In writing the ESA, Congress recognized that conserving habitat was key to protecting imperiled species. Indeed, the first purpose of the Act is to “provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved.”<sup>6</sup> As one court summarized, “In enacting the Endangered Species Act, Congress recognized that individual species should not be viewed in isolation, but must be viewed in terms of their relationship to the ecosystem of which they form a constituent element.”<sup>7</sup> Legislative history shows that Congress regarded the threat of habitat loss as a prime driver of species extinction.<sup>8</sup> In particular, the Senate Conference Report recognized that “[o]ften, protection of habitat is the only means of protecting endangered animals which occur on non-public lands.”<sup>9</sup> The ESA’s conservation policy and goals depend upon protecting habitat and ecosystems, not isolated species.

## B. The Act’s Emphasis on Science-based Decision-making

Sound science is key to the ESA’s conservation policies and goals. Indeed, Congress directed agencies to use the best available science in determining which species are protected and the terms of the protections afforded by the Act, as well as during consultation pursuant to Section 7.<sup>10</sup>

The ESA requires the Services to determine whether a species is threatened or endangered “solely on the basis of the best scientific and commercial data” after conducting a thorough review of the species status.<sup>11</sup> The best available scientific data must also be used in designating critical habitat for such species, although other information may also be consulted.<sup>12</sup> When listing a threatened species, the Services must “issue such regulations as [the Secretary] deems necessary and advisable to provide for the conservation of the species.”<sup>13</sup> The statute requires scientific reviews, such as the five-year status review and recovery plans, to guide the Services’ conservation of protected species.<sup>14</sup>

Science—and the precautionary principle—underpin the ESA’s requirements for federal agencies to evaluate the impacts of actions they take, fund, or authorize.<sup>15</sup> Specifically, federal agencies are prohibited from taking or authorizing actions likely to jeopardize the continued

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<sup>6</sup> 16 U.S.C. § 1531(b).

<sup>7</sup> *CBD v. Jewell*, 2018 WL 1586651, at \*4 (quoting H.R. REP. NO. 97-835, at 30 (1982) (Conf. Rep.)).

<sup>8</sup> *See Tenn. Valley Auth. v. Hill*, 437 U.S. at 179-80 (quoting and summarizing legislative history regarding habitat loss and destruction).

<sup>9</sup> S. REP. NO. 93-307, at 4 (1973); *see also* H.R. REP. NO. 93-412, at 9 (1973) (“The protection of habitat of endangered species is clearly a critical function of any legislation in this area.”).

<sup>10</sup> 16 U.S.C. §§ 1533(b)(1)(A), (b)(2), (b)(3); *id.* at § 1536(a)(2).

<sup>11</sup> *Id.* at § 1533(b).

<sup>12</sup> *Id.* at § 1533(b)(2).

<sup>13</sup> *Id.* at § 1533(d).

<sup>14</sup> *Id.* at §§ 1533(c)(2), (f).

<sup>15</sup> *Tenn. Valley Auth.*, 437 U.S. at 184 (explaining that the Act represents “the institutionalization of caution”).

existence of listed species or cause the destruction or adverse modification of critical habitat.<sup>16</sup> Again, the ESA mandates the use of “the best scientific and commercial data available” in determining whether an action is likely to jeopardize a species or adversely modify its critical habitat.<sup>17</sup>

## II. The ESA’s Importance to the Southeast

The climate and geography of the Southeastern United States have enabled this region to harbor high levels of biodiversity for millions of years.<sup>18</sup> In 2016, the Southeast was recognized as the 36<sup>th</sup> Global Biodiversity Hotspot.<sup>19</sup> To qualify for such a title, an area must have over 1,500 endemic plant species, and must have lost at least 70 percent of its natural habitat.<sup>20</sup> The Southeast exceeds these requirements, hosting over 1,800 endemic plant species, and having 85.5 percent of its natural habitat “highly altered or converted to anthropogenic land cover.”<sup>21</sup> As a result, many species found in the region have suffered devastating population declines.

### A. An Overview of Imperiled Species in the Southeast<sup>22</sup>

The Southeast<sup>23</sup> is home to a multitude of species and habitats protected by the ESA, many of which will be affected significantly by the proposed regulations. Across the Southeast, there are currently 253 species that receive ESA protections by their classification as either endangered (176), threatened (74), or experimental populations (32).<sup>24</sup> These species range from the iconic and critically endangered North Atlantic right whale to lesser-known mussels that play an important role in preserving the water quality of our region. Invertebrates like mussels and crayfish make up the largest taxonomic group of all Southeastern listed species, with 100 listed species. There are 69 listed plants,<sup>25</sup> 39 listed fishes, 14 listed mammals, 10 listed birds, 10

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<sup>16</sup> 16 U.S.C. § 1536(a)(2).

<sup>17</sup> *Id.*

<sup>18</sup> See, e.g., Reed F. Noss et al., *How Global Biodiversity Hotspots May Go Unrecognized: Lessons from the North American Coastal Plain*, 21 *DIVERSITY AND DISTRIBUTIONS* 236 (2015) (attached as Exhibit 1).

<sup>19</sup> Reed F. Noss, *Announcing the World’s 36th Biodiversity Hotspot: The North American Coastal Plain*, CRITICAL ECOSYSTEM PARTNERSHIP FUND (Feb. 18, 2016), <https://www.cepf.net/stories/announcing-worlds-36th-biodiversity-hotspot-north-american-coastal-plain>.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> To compile data discussed in this section, SELC reviewed the Environmental Conservation Online System (ECOS), which is an online public database containing records of listings and critical habitat designations, and the National Marine Fisheries Service (“NMFS”) Species Directory. As needed, SELC also reviewed Federal Register notices and the Code of Federal Regulations.

<sup>23</sup> For the purposes of this section, “the Southeast” is defined to include Virginia, North Carolina, South Carolina, Georgia, Alabama, and Tennessee.

<sup>24</sup> For a full list of listed species in the Southeast, see Appendix A. Numbers may not necessarily add up because some species are listed differently based on their geographic range.

<sup>25</sup> Plants are provided a lower level of protection than generally applies to listed species of animals. In particular, while Section 7 consultation requirements still apply to plants, take prohibitions are limited to protection against removal of, or malicious damage to, such plants on federal lands. See 16 U.S.C. § 1536; *id.* § 1538(a)(2). Endangered plants are also protected from commercial trade. See 16 U.S.C. § 1538(a)(2)(C).

listed reptiles, six listed amphibians, and five listed insects in our region alone. The majority of these species (237) are managed by USFWS, while seven are managed by NMFS, and nine are jointly managed by the two Services. Alabama leads the Southeast region in number of listed species with 144, followed by Tennessee with 101, Georgia with 85, Virginia with 84, North Carolina with 76, and South Carolina with 49.

Currently, close to 77 million acres and 19,000 miles of critical habitat<sup>26</sup> have been designated in the Southeast to protect 74 different species of all taxonomic groups. These designated habitats range from small caves—like the tiny Key Cave in Alabama, which protects the Alabama cavefish—to large swaths of ocean basin—like the Loggerhead sea turtle’s *Sargassum* habitat, which spans from the offshore waters of Delaware to Texas.

In addition to the 253 Southeastern species already listed under the ESA, 190 additional species in the Southeast are being considered for listing by either USFWS or NMFS. Species under consideration include 53 invertebrates, 42 plants, 36 insects, 28 fishes, 12 amphibians, 11 reptiles, five birds, and three mammals.<sup>27</sup> Among the Southeastern states, Alabama has the greatest number of species under review for listing, at 89, followed by Georgia with 76, Tennessee with 69, Virginia with 67, North Carolina with 63, and South Carolina with 50. Of these 190 species, 185 are under review by USFWS, while the remaining five are being considered by NMFS.

Of the 185 terrestrial species being considered for listing in the Southeast, USFWS has found that there is “substantial information” to warrant listing of 173, yet has not initiated the next step in the listing process, a 12-month status review. For most of these species, as many as seven years have passed since their 90-day finding was published. In 2016, USFWS released a seven-year work plan for addressing this backlog,<sup>28</sup> in which the Service set internal deadlines to complete steps toward the listing of hundreds of species by 2023. The work plan covers 85 Southeastern species,<sup>29</sup> including the Carolina madtom (*Noturus furiosus*), the hellbender (*Cryptobranchus alleganiensis*), the southern hognose snake (*Heterodon simus*), the Cumberland moccasinshell (*Medionidus conradicus*), the alligator snapping turtle (*Macrochelys temminckii*), the golden-winged warbler (*Vermivora chrysoptera*), and the gopher tortoise (*Gopherus polyphemus*). However, the plan is non-binding and non-enforceable, and thus gives the Service little to no incentive to adhere to it in a timely fashion.

Indeed, in the two years since the release of the work plan, USFWS’s progress has been alarmingly slow. In 2017, it moved forward with only nine of 12 Southeastern species that were being considered for listing. This fiscal year, which ends at the beginning of October, the Service has made progress with only one of 16 Southeastern species considered for listing. Since the status for listing most of these species remains at early stages of the multi-step process outlined by the Act, many of them could still be awaiting listing well after 2023. For example,

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<sup>26</sup> Rivers, shoreline, and other linear habitat features are measured in miles, while non-linear habitat features such as lakes and ocean area are measured in acres.

<sup>27</sup> For a full list of species under review in the Southeast, see Appendix B.

<sup>28</sup> USFWS, NATIONAL LISTING WORKPLAN: 7-YEAR WORKPLAN (SEPTEMBER 2016 VERSION), <https://www.fws.gov/endangered/esa-library/pdf/Listing%207-Year%20Workplan%20Sept%202016.pdf> (attached as Exhibit 21).

<sup>29</sup> See Appendix C for the schedule of Southeast species’ listing determinations.

the Chesapeake logperch (*Percina bimaculata*), an estuarine fish endemic to the Chesapeake Bay, was petitioned for listing in 2010 by a coalition of conservation groups. If the Service sticks to its anticipated timeline of a 12-month finding for the species by 2023—which could well be delayed—nearly 15 years will have passed between petition and final listing. Under the Act, species protection should be based on the best available science, not on agency backlogs and delay.

In addition, 120 of the 253 listed species in the Southeast are awaiting or undergoing the five-year status review required by the statute.<sup>30</sup> While the Services have emphasized that their proposed regulations are prospective only, the Act’s requirement for a five-year status review could mean that these changes would likely sweep in and apply to the *entire* list of threatened and endangered species by 2023.

## **B. Unique Habitats of the Southeast**

Understanding the relationship between species and the ecosystems they inhabit is critical for achieving the ESA’s conservation goals. Scientific literature suggests that species and habitats rely upon one another for success. Generally speaking, greater biodiversity improves the stability of an ecosystem, making it more likely to withstand disturbance.<sup>31</sup> Moreover, a healthy species diversity provides a number of ecosystem services, such as nutrient recycling and maintaining water quality.<sup>32</sup> Indeed, biodiversity is often used as an indicator for ecosystem health.<sup>33</sup>

The biodiverse ecosystems of the Southeast face multiple threats from human activity. Habitat destruction and degradation are the leading causes of species imperilment and extinction, both in the United States and around the world.<sup>34</sup> The impacts of human presence on habitats in the Southeast are becoming increasingly problematic. Eleven of the 20 fastest-growing metropolitan areas in the nation are found in the Southeast.<sup>35</sup> As these cities expand, urban sprawl is contributing significantly to the fragmentation and destruction of natural habitats.<sup>36</sup>

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<sup>30</sup> 16 U.S.C. § 1533(c)(2).

<sup>31</sup> See, e.g., Anthony R. Ives & Stephen R. Carpenter, *Stability and Diversity of Ecosystems*, 317 SCIENCE 58 (2007) (attached as Exhibit 2); Kevin Shear McCann, *The Diversity-Stability Debate*, 405 NATURE 228 (2000) (attached as Exhibit 3).

<sup>32</sup> See, e.g., Georgina M. Mace et al., *Biodiversity and Ecosystem Services: A Multilayered Relationship*, 27 TRENDS IN ECOLOGY AND EVOLUTION 19 (2012) (attached as Exhibit 4); Sandra Diaz et al., *Biodiversity Loss Threatens Human Well-Being*, 4 PLOS BIOLOGY 1300 (2006) (attached as Exhibit 5).

<sup>33</sup> See, e.g., Tonio Di Battista et al., *Environmental Monitoring Through Functional Biodiversity Tools*, 60 ECOLOGICAL INDICATORS 237 (2015) (attached as Exhibit 6).

<sup>34</sup> See, e.g., S.L. Pimm et al., *The Biodiversity of Species and Their Rates of Extinction, Distribution, and Protection*, 344 SCIENCE 1246752 (2014) (attached as Exhibit 7); Wilcove, D.S. et al., *Quantifying Threats to Imperiled Species in the United States: Assessing the Relative Importance of Habitat Destruction, Alien Species, Pollution, Overexploitation, and Disease*, 48 BIOSCIENCE 607 (1998) (attached as Exhibit 8).

<sup>35</sup> U.S. CENSUS BUREAU, U.S. DEP’T OF COMMERCE, RELEASE NO. CB15-56, NEW CENSUS BUREAU POPULATION ESTIMATES REVEAL METRO AREAS AND COUNTIES THAT PROPELLED GROWTH IN FLORIDA AND THE NATION (2015), <https://www.census.gov/newsroom/press-releases/2015/cb15-56.html>.

<sup>36</sup> Adam J. Terando et al., *The Southern Megalopolis: Using the Past to Predict the Future of Urban Sprawl in the Southeast U.S.*, 9 PLOS ONE e102261 (2014) (attached as Exhibit 9).

These changes can introduce a host of negative impacts to species, such as by interrupting predator-prey relationships and by diminishing the quality of foraging habitat.

Because of climate change, a number of habitats in the Southeast are predicted to transform significantly in the foreseeable future, introducing additional threats to the already imperiled species and habitats in the region.<sup>37</sup> There has been a substantial increase in the severity of Atlantic hurricane activity since the 1980s, and further increases are projected.<sup>38</sup> In addition, researchers predict that areas in southwestern portion of the Southeast region may experience drier conditions, while the northeastern areas may experience wetter conditions.<sup>39</sup> Warmer temperatures could also increase the frequency and intensity of wildfires, as well as outbreaks of damaging forest pests, including the hemlock woolly adelgid.<sup>40</sup> Coastal populations and ecosystems in the Southeast are also threatened by sea level rise—currently as much as two inches per decade and accelerating in some places along our coast—which will erode shorelines, inundate wetlands, and allow saltwater intrusion.<sup>41</sup> Changing ocean currents are predicted to alter the distribution of many offshore prey species.<sup>42</sup> Studies have indicated that endangered mammals and birds are particularly affected by the changing climate.<sup>43</sup>

In the sections below, we describe some of the unique habitats and species endemic to the Southeast. These ecosystems have benefitted from the protections of the ESA, particularly in the face of growing threats to species habitat across the region, and are likely to be significantly affected by the proposed regulations. Reducing protections for threatened and endangered species will reduce protection for these ecosystems, which are essential to Southeast environments, economies, and way of life.

## 1. Rivers, Streams, and Freshwater Ecosystems of the Southeast

The water-rich Southeast supports a broad network of iconic and treasured waterways spanning from the Southern Appalachians to the Atlantic Ocean and Gulf of Mexico.<sup>44</sup> Virtually all of the region's communities are within a mile of a river or stream, and millions depend on these watersheds for clean drinking water. The rivers and streams of the Southeast support an astounding level of biodiversity relative to the rest of the U.S.—hosting 38 percent of freshwater

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<sup>37</sup> Jennifer Costanza et al., *Assessing Climate-Sensitive Ecosystems in the Southeastern United States*, U.S. GEOLOGICAL SURVEY (USGS) (2016), <https://pubs.er.usgs.gov/publication/ofr20161073>.

<sup>38</sup> See, e.g., Kevin J.E. Walsh et al., *Tropical Cyclones and Climate Change*, 7 WIREs CLIMATE CHANGE 65 (2015) (attached as Exhibit 10).

<sup>39</sup> Jerry M. Melillo et al., *Climate Change Impacts in the United States: The Third National Climate Assessment*, U.S. GLOBAL CHANGE RESEARCH PROGRAM (2014), <https://nca2014.globalchange.gov/report/regions/southeast>.

<sup>40</sup> *Id.*

<sup>41</sup> NAT'L OCEANIC AND ATMOSPHERIC ADMIN. (NOAA), *Sea Level Trends* (2018), <https://tidesandcurrents.noaa.gov/sltrends/>.

<sup>42</sup> James W. Morley et al., *Projecting Shifts in Thermal Habitat for 686 Species on the North American Continental Shelf*, 13 PLOS ONE e0196127 (2018) (attached as Exhibit 11).

<sup>43</sup> Michela Pacifici et al., *Species' Traits Influenced Their Response to Recent Climate Change*, 7 NATURE CLIMATE CHANGE 205 (2017) (attached as Exhibit 12).

<sup>44</sup> See SOUTHEASTERN FRESHWATER BIODIVERSITY CONSERVATION STRATEGY, <http://southeastfreshwater.org/> (last visited Sept. 20, 2018).

fishes, 43 percent of snails, 60 percent of mussels, and 52 percent of turtles.<sup>45</sup> Unfortunately, these habitats are just as imperiled as they are diverse. Development, logging, pollution, agriculture, and poor land management in the region have put freshwater systems—and the species they support—at risk. Out of all the listed species in the Southeast, over *half* inhabit freshwater ecosystems, including 95 species of mussels, snails, and crayfish, as well as 32 species of fishes.

Specific examples of freshwater biodiversity showcase how important these habitats and their resident species are to the region. The state of Alabama ranks first in the nation in diversity of freshwater species, including more than 750 species of freshwater fishes, mussels, aquatic snails, and crayfishes.<sup>46</sup> In fact, no state east of Colorado has more listed species than Alabama.

Across the Southeast, brilliant darter species can be found in many rivers and streams, with colors that rival those of coral reef fishes, such as the endangered bluemask darter (*Etheostoma akatulo*), the endangered vermilion darter (*Etheostoma chermocki*), and the threatened slackwater darter (*Etheostoma boschungii*). Several rivers across the Southeast are designated as critical habitat for the endangered Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), a prehistoric fish that can reach a stunning 14 feet in length and live up to 60 years.<sup>47</sup> The iconic hellbender, a large salamander which is under review for listing under the ESA, also inhabits Southeastern streams. Smaller streams support a variety of listed mussel species, such as the endangered dwarf wedgemussel (*Alasmidonta heterodon*), the endangered Carolina heelsplitter (*Lasmigona decorata*), and the threatened yellow lance mussel (*Elliptio lanceolata*). Particularly sensitive to changes in water quality, mussels often serve as indicators of a stream or wetland ecosystem's health, while also contributing to that health through their water filtration services.<sup>48</sup>

Additionally, pitcher plants are a family of carnivorous plants indigenous to freshwater wetlands of the Southeast. Three species are listed endangered under the ESA—the green pitcher-plant (*Sarracenia oreophila*), the Alabama canebrake pitcher-plant (*Sarracenia rubra alabamensis*), and the mountain sweet pitcher-plant (*Sarracenia rubra jonesii*).

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<sup>45</sup> Charles Lydeard & Richard L. Mayden, *A Diverse and Endangered Aquatic Ecosystem of the Southeast United States*, 9 CONSERVATION BIOLOGY 800 (1995) (attached as Exhibit 13).

<sup>46</sup> ALA. DIV. OF WILDLIFE AND FRESHWATER FISHERIES, ALA. DEP'T OF CONSERVATION AND NAT. RES., ALABAMA'S WILDLIFE ACTION PLAN (2015), [https://www.outdooralabama.com/sites/default/files/Research/SWCS/AL\\_SWAP\\_FINAL%20June2017.pdf](https://www.outdooralabama.com/sites/default/files/Research/SWCS/AL_SWAP_FINAL%20June2017.pdf).

<sup>47</sup> Proposed Listings for Two Distinct Population Segments of Atlantic Sturgeon in the Southeast as Endangered under the ESA, 75 Fed. Reg. 61,904, 61,905 (Oct. 6, 2010).

<sup>48</sup> ALA. DEP'T OF CONSERVATION AND NAT. RES., FRESHWATER MUSSELS IN ALABAMA (2018), <https://outdooralabama.com/invertebrates/freshwater-mussels-alabama>.



## 2. Forest Ecosystems of the Southeast

Forests are essential for life on Earth. The Southeast boasts five million acres of protected national forest—the largest concentration of public land east of the Rockies. According to the U.S. Forest Service, this area contains 50 imperiled forest communities that face myriad threats, like the wood pellet industry, agriculture, and urbanization.<sup>49</sup> These habitats are home to 43 threatened and endangered species.

### a. *Forested Wetlands*

Forested wetlands—such as swamps, floodplain forests, riparian areas, bottomland forests, bogs, and pocosins—are highly productive and dynamic environments that protect water quality for their associated water bodies by removing nutrients and pollutants from runoff. They also contain a number of diverse habitats and support high numbers of endangered and threatened plants and animal species. They provide vital breeding, feeding, and resting grounds for numerous waterfowl and songbirds, such as the endangered whooping crane (*Grus americana*), the endangered Mississippi sandhill crane (*Grus canadensis pulla*), the endangered Bachman’s warbler (*Vermivora bachmanii*), and the threatened wood stork (*Mycteria americana*). Several listed insects and plants—for example, the endangered St. Francis’ satyr butterfly (*Neonympha mitchellii francisci*), the endangered bunched arrowhead (*Sagittaria fasciculata*), and the threatened swamp pink (*Helonias bullata*)—also inhabit forested wetlands year-round.

The endangered red wolf (*Canis rufus*) was also once common throughout Southeastern forest wetlands. Habitat loss and predator control drove the species to be declared extinct in the wild, although the remaining red wolves were captured and bred in captivity. Now, red wolves can only be found in Eastern North Carolina where they were successfully reintroduced in the late 1980s.

### b. *Longleaf Pine Forests*

The longleaf pine ecosystem of the southern Coastal Plain is critical for the biodiversity of the region, and is among the most endangered ecosystems in North America. Native longleaf pine forests are “renowned for their high levels of diversity, endemism, and species rarity” and are “one of the most species-rich ecosystems found outside the tropics.”<sup>50</sup> Their native range once stretched from southern Virginia to east Texas, covering almost 90 million acres.<sup>51</sup> Today, only three million acres across the Southeast and a few other southern states contain longleaf pine forests, supporting several listed species, including the threatened black pine snake (*Pituophis melanoleucus lodingi*), the endangered dusky gopher frog (*Rana sevosa*), the

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<sup>49</sup> USFWS, U.S. DEP’T OF AGRIC., SOUTHERN FOREST RESOURCE ASSESSMENT (David N. Wear & John G. Greis eds., 2002), [https://www.srs.fs.usda.gov/pubs/gtr/gtr\\_srs053.pdf](https://www.srs.fs.usda.gov/pubs/gtr/gtr_srs053.pdf).

<sup>50</sup> *Id.*, at 55; Directorate-General for Environment, *Environmental Implications of Increased Reliance of the EU on Biomass from the South East US*, 36, European Comm’n Doc. ENV.B.1/ETU/201/0043 (Dec. 2015), <http://www.aebiom.org/wp-content/uploads/2016/08/DG-ENVI-study-imports-from-US-Final-report-July-2016.pdf>.

<sup>51</sup> Albert Way, *Longleaf Pine Ecosystem*, NEW GEORGIA ENCYCLOPEDIA (Sept. 8, 2006), <https://www.georgiaencyclopedia.org/articles/geography-environment/longleaf-pine-ecosystem>.

endangered American chaffseed (*Schwalbea americana*), and the endangered reticulated flatwoods salamander (*Ambystoma bishop*).

The endangered red-cockaded woodpecker (*Picoides borealis*) also inhabits these ecosystems. This species, first federally listed as endangered in 1970, was once widespread across the Southeast, but by the time it was listed in 1970, fewer than 10,000 individuals remained.<sup>52</sup> Only 7,800 active clusters of red-cockaded woodpeckers exist today across the species range. Habitat loss was the primary driver of this decline, and continues to be a serious threat to the species today. Notably, the red-cockaded woodpecker is currently undergoing five-year status review. It is a sobering example of a species which—if it is downlisted under the revised regulations—could lose the benefit of decades of critical legal protections that have protected not only the species itself, but an entire ecosystem.

c. *High-elevation Forests*

High-elevation forests in the Southeast are characterized by a mixture of coniferous trees and deciduous trees, which transform the region into a canvas of reds, oranges, and yellows each fall. They are also home to a number of species listed under the ESA, such as the endangered rusty patched bumble bee (*Bombus affinis*), the endangered spruce-fir moss spider (*Microhexura montivaga*), the endangered white irisette (*Sisyrrinchium dichotomum*), and the endangered spreading avens (*Geum radiatum*).

Additionally, the endangered Carolina northern flying squirrel (*Glaucomys sabrinus coloratus*) is only found in the high-elevation areas of North Carolina, Tennessee, and southwest Virginia. This remarkable mammal survives from the last ice age, which forced its ancestors to the high peaks of the Southern Appalachians. Logging and subsequent fires during the early part of the 20<sup>th</sup> century changed large areas of high-elevation forests in the Appalachian Mountains. The Carolina northern flying squirrel is still recovering from that disturbance, and has been listed since 1985. Its close relative, the Virginia northern flying squirrel (*Glaucomys sabrinus fuscus*), once listed as endangered, has since made a full recovery and has been delisted.

Mountain forests in the Southeast are also important habitats for many species of salamander, two of which currently receive ESA protections: the endangered Shenandoah salamander (*Plethodon shenandoah*) in Virginia, and the threatened Red Hills salamander (*Phaeognathus hubrichti*) in Alabama. These two species are extremely rare and uniquely characterized by their complete lack of lungs. Because they breathe through their skin, these species require moist, shaded habitats that the Southeast's high-elevation forests provide. Recent research has shown that these animals are also particularly vulnerable to climate change.<sup>53</sup> Eight additional salamander species are anticipated to receive listing determinations by 2023.<sup>54</sup>

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<sup>52</sup> USFWS, RECOVERY PLAN FOR THE RED-COCKADED WOODPECKER (*PICOIDES BOREALIS*) SECOND REVISION RECOVERY PLAN (2003).

<sup>53</sup> Mary Lou Hoffacker et al., *Interspecific Interactions are Conditional on Temperature in an Appalachian Stream Salamander Community*, 188 OECOLOGIA 623 (2018) (attached as Exhibit 14).

<sup>54</sup> USFWS NATIONAL LISTING WORKPLAN, *supra* note 28.

### 3. Coastal and Marine Habitats of the Southeast

The Southeast's coast encompasses over 12,500 miles of sandy beaches, barrier islands, marshes, tidal creeks, maritime forests, and estuaries,<sup>55</sup> accounting for almost a quarter of the total coastline of the contiguous United States. Nowhere else in the world is such a vast array of habitats found. The coast is home to 24 species of imperiled flora and fauna in the Southeast.

#### a. *Estuaries*

Estuarine habitats sustain a diverse biological community of plants and animals, and are found in every state along the Southeast coast. The shallow, warm, brackish waters that are characteristic of estuarine habitats make perfect sanctuaries for juvenile fishes, invertebrates, and waterfowl. In the Gulf of Mexico, estuarine habitats support unique imperiled species such as the threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and the endangered smalltooth sawfish (*Pristis pectinata*).

Farther north, the Chesapeake Bay is the largest estuary in the Southeast and, indeed, in the United States, stretching from Maryland to Virginia. The 200-mile-long river mouth and its surrounding ecosystems host a wide variety of plant and animal species, many of which are protected by the ESA, such as the endangered Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*), the endangered shortnose sturgeon (*Acipenser brevirostrum*), the endangered Virginia big-eared bat (*Corynorhinus townsendii virginianus*), and the threatened northeastern beach tiger beetle (*Cicindela dorsalis dorsalis*).

#### b. *Sandy Beaches and Barrier Islands*

Barrier islands and sandy beaches are iconic features of the Southeast coast. These habitats are important to many listed species, such as the threatened red knot (*Calidris canutus rufa*), the endangered Alabama beach mouse (*Peromyscus polionotus ammobates*) and Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*), and the threatened seabeach amaranth (*Amaranthus pumilus*).

In addition, five of the seven global species of sea turtles nest on Southeast beaches—loggerheads, leatherbacks, greens, Kemp's ridleys, and hawksbills—all of which are either threatened or endangered. Sea turtle viewing plays an important role in many states' tourism economies. Tens of thousands of people travel to Southeast beaches each year to observe endangered sea turtles either in the wild or in rehabilitation facilities.<sup>56</sup> At one North Carolina beach alone, sea turtle viewing activities directly contribute as much as \$30 million per year to local economies in tourism spending.<sup>57</sup>

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<sup>55</sup> U.S. CENSUS BUREAU, *Statistical Abstract of the U.S.: 2011*, Table 360: Coastline and Shoreline of the United States by State,

<https://www2.census.gov/library/publications/2010/compendia/statab/130ed/tables/geo.pdf>.

<sup>56</sup> OCEANA, *Economic Benefit of Sea Turtles to Coastal Communities*, [https://usa.oceana.org/sites/default/files/4046/sea\\_turtle\\_map.pdf](https://usa.oceana.org/sites/default/files/4046/sea_turtle_map.pdf).

<sup>57</sup> Kate Elizabeth Queram, *Report - Sea Turtles Have Economic Impact*, STAR NEWS (Dec. 4, 2013), <http://www.starnewsonline.com/news/20131204/report---sea-turtles-have-economic-impact>.

Also, the piping plover (*Charadrius melodus*) is a Southeastern shorebird that spends a large part of the year foraging along the beaches and barrier islands of the Southern Atlantic coast. North Carolina is the only state where the piping plover's breeding and wintering ranges overlap and where the birds are present year-round.<sup>58</sup> Southeast piping plover populations became federally listed as threatened in 1986, due to destruction of fragile dune habitat from beach development, shoreline stabilization, and the use of off-road vehicles.<sup>59</sup> Since being listed more than 20 years ago, piping plover numbers have increased through intensive nest- and predator-management programs, as well as the designation of critical habitat for breeding Great Lakes and Northeastern populations.

c. *Offshore Waters*

The open ocean ecosystem supports some of the largest species on Earth, in addition to a wide variety of highly migratory species. The pelagic environment off the Southeast coast is incredibly rich in species because of the meeting of two ocean currents—the Labrador Current and the Gulf Stream—which creates oceanographic conditions that support a high level of biodiversity. The waters off Cape Hatteras are internationally renowned for having the highest diversity of marine mammals in any area along the East Coast.<sup>60</sup> Ocean waters off the Southeast are also biologically important for the migration and breeding of many whale species. Five species of endangered whale occur in the waters off the Southeast: the sei whale (*Balaenoptera borealis*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), North Atlantic right whale (*Eubalaena glacialis*), and sperm whale (*Physeter macrocephalus*). In addition, five species of listed sea turtle roam the far-reaching waters off the Southeast coast—loggerheads, leatherbacks, greens, Kemp's ridleys, and hawksbills.

The North Atlantic right whale is a particularly iconic species in the Southeast. It is also one of the most critically endangered of all large whales, and continues to be killed or injured by entanglement in fishing gear and by collisions with ships. Federally protected critical habitat for the species' Southeastern calving grounds was expanded in 2016 to include waters off North Carolina and South Carolina.<sup>61</sup> Only about 450 individual right whales remain. The death of 17 right whales in 2017—approximately four percent of their population—was unprecedented.<sup>62</sup> Possibly more concerning is that no new calves were born this season, for the first time in nearly

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<sup>58</sup> Fact Sheet, *Showcase Species: Southeast – Piping Plover in the Southeast*, NAT'L WILDLIFE FED'N, <https://www.nwf.org/~media/PDFs/Wildlife/SE-PipingPlover.ashx>.

<sup>59</sup> Determination of Endangered and Threatened Status for the Piping Plover, 50 Fed. Reg. 50,726 (Dec. 11, 1985) (to be codified at 50 C.F.R. pt. 17).

<sup>60</sup> Barbie L. Byrd et al., *Strandings as Indicators of Marine Mammal Biodiversity and Human Interactions off the Coast of North Carolina*, 112 FISHERY BULLETIN 1 (2014) (attached as Exhibit 15).

<sup>61</sup> Endangered and Threatened Species; Critical Habitat for Endangered North Atlantic Right Whale, 81 Fed. Reg. 4838 (Jan. 27, 2016) (to be codified at 50 C.F.R. pt. 226).

<sup>62</sup> Press Release, *Second North Atlantic Right Whale Mortality of 2018 Confirmed*, NOAA (Aug. 29, 2018), [https://www.greateratlantic.fisheries.noaa.gov/mediacenter/2018/08/29\\_second\\_north\\_atlantic\\_right\\_wa\\_le\\_mortality\\_of\\_2018\\_confirmed.html](https://www.greateratlantic.fisheries.noaa.gov/mediacenter/2018/08/29_second_north_atlantic_right_wa_le_mortality_of_2018_confirmed.html).

30 years. The ongoing death crisis—which continues with two deaths in 2018—has been declared an “Unusual Mortality Event” for the species.<sup>63</sup>

### **III. The Proposed Revisions Would Dismantle Longstanding and Successful Species Protections**

The regulatory changes proposed by the Services would collectively overhaul and diminish established protections for listed species that have been critical to the conservation of the Southeast’s rich biodiversity and ecosystems. While the Services frame their proposed revisions as promoting efficiency, in reality, these proposals would hamstring agencies’ efforts to list, protect, and ultimately recover threatened and endangered species. In addition, while the Services most often characterize these regulatory revisions as minor reconciliations with Service practice, the changes would, in fact, be far-reaching and create an enormous administrative burden. Fundamentally, they would undermine the purpose of the ESA and its history of conservation success.

#### **A. Threatened Species**

While Section 9 of the ESA broadly prohibits the “take” of *endangered* species, the Act does not itself directly extend these protections to *threatened* species.<sup>64</sup> Instead, threatened species are protected against take as provided in special rules issued pursuant to Section 4(d) of the Act, which requires that “the Secretary *shall* issue such regulations as he deems necessary and advisable to provide for the conservation of such species.”<sup>65</sup> Since 1978, however, USFWS has extended the Act’s broad protections against take to threatened species as well, through the so-called “blanket 4(d)” rule, unless USFWS chooses to promulgate a separate, specific rule for that species.<sup>66</sup>

For four decades, the blanket 4(d) rule has protected threatened species and significantly reduced the administrative burden for USFWS, which would otherwise be required to promulgate individual rules for each threatened species under its jurisdiction.<sup>67</sup> In the Southeast, currently 61 threatened species benefit from the blanket 4(d) rule. One example is the iconic piping plover. Notably, while the Southeast population of piping plover is listed as threatened, the Great Lakes population is highly endangered. As discussed above, these populations overlap on North Carolina’s beaches, making consistency in their protections all the more critical.

The implications of the removal of the blanket 4(d) rule for threatened species in the Southeast will be far-reaching due to the species backlog already facing the Service. As many as 185 Southeast species are stalled in the agency’s backlog, and another 171 could be downlisted from endangered status following a status review. If the proposed rule revisions go into effect before the five-year review for these species is completed, their listing status under the ESA

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<sup>63</sup> *Id.*

<sup>64</sup> 16 U.S.C. §1538(a).

<sup>65</sup> *Id.* § 1533(d) (emphasis added).

<sup>66</sup> See 50 C.F.R. § 17.31; Protection for Threatened Species of Wildlife, 43 Fed. Reg. 18,180 (Apr. 28, 1978) (to be codified at 50 C.F.R. pt. 17).

<sup>67</sup> Revision of the Regulations for Prohibitions to Threatened Wildlife and Plants, 83 Fed. Reg. 35,174, 35,175 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 17).

could change and their protections may be lost, to their detriment. Species-specific rulemaking requires significant administrative resources and can take years to complete, particularly with the current agency backlog. The regulatory burden of potentially issuing special 4(d) rules for *hundreds* of species could cripple the agency, preventing it from moving through listings and issuing special rules in a timely fashion. As it is, USFWS is unable to meet the Act’s listing deadlines. A recent report found that, on average, the agency takes 12 years to list each species because of its backlog and limited resources.<sup>68</sup> In the meantime, population decline becomes more likely, making recovery more difficult, expensive, and burdensome. At least 42 species have gone extinct during a delay in the listing process—more than have been lost after being listed.<sup>69</sup> Removing the blanket prohibition on take for threatened species will extend this “waiting period” even longer, putting threatened species on a fast-track to endangered or extinct status. Furthermore, as the agency’s current listing backlog demonstrates, this type of strain on agency resources is likely to leave countless threatened species with no protection against take while the agency goes through the time-consuming process for proposing and finalizing a species-specific 4(d) rule.<sup>70</sup>

As USFWS notes in its proposed rule, the blanket 4(d) rule is specific to USFWS, whereas NMFS has not had a parallel provision.<sup>71</sup> This distinction is entirely consistent with the number of species under each agency’s jurisdiction and the administrative burden each must manage. USFWS has far more species—and threatened species in particular—under its jurisdiction than does NMFS. Specifically, on a national level, USFWS currently manages 255 threatened species<sup>72</sup> and has an enormous backlog of hundreds of species awaiting listing determinations, while NMFS oversees only 80 threatened species and has no backlog. Notably, even NMFS has developed species-specific 4(d) rules for only 41 of the 80 threatened species under its jurisdiction, leaving 39 without any protection against unpermitted take.

Finally, USFWS already has the regulatory authority to issue special rules for threatened species when those rules are appropriate. Indeed, the practice of USFWS issuing special rules has increased in recent years. Our organizations appreciate the ability to participate in those rulemakings and determine the measures most appropriate for species protections, yet we do not support giving threatened species *no* protection because of agency backlog and delay. The current regulatory structure should be maintained, continuing to apply the blanket 4(d) rule to threatened species under USFWS jurisdiction unless and until a species specific 4(d) rule is developed and finalized.

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<sup>68</sup> Emily E. Puckett et al., *Taxa, Petitioning Agency, and Lawsuits Affect Time Spent Awaiting Listing under the US Endangered Species Act*, 201 BIOLOGICAL CONSERVATION 220 (2016) (attached as Exhibit 16).

<sup>69</sup> Kieran Suckling et al., *Extinction and the Endangered Species Act*, CTR. FOR BIOLOGICAL DIVERSITY (2004) (attached as Exhibit 17).

<sup>70</sup> Revision of the Regulations for Prohibitions to Threatened Wildlife and Plants, 83 Fed. Reg. at 35,175 (stating intention—but not requiring—that species-specific rules be finalized with final listing rule).

<sup>71</sup> *Id.*

<sup>72</sup> This is excluding 62 nonessential experimental populations that are treated as threatened species.

## B. Listing Species and Designating Critical Habitat

As discussed above, the legislative history and plain language of the Act confirm that Congress intended it to conserve species using the best available science. The Services' proposed revisions to the regulations for listing species and designating critical habitat, however, would undercut the central role of science and would no longer give species the benefit of the doubt in those decisions. These proposals would likely result in fewer listed species and less designated critical habitat, undermining the purposes of the ESA to conserve species and the ecosystems on which they depend.

Current long-standing regulations explicitly prohibit the consideration of economics in listing decisions, keeping the focus of the determination on the best available science.<sup>73</sup> The Services propose to remove the requirement that listing decisions be made “without reference to possible economic or other impacts of such determination.”<sup>74</sup> While the Service asserts that the statutory restriction on listing species solely on the basis of the best scientific evidence available will prevent the improper consideration of economic impacts, the agency's argument begs the question of why the change is needed if that is the case.

There is no reason to allow economic analysis unless the agency believes it will make a difference, and it is easy to identify the types of difference it would make. Releasing economic information will likely increase political pressure on the Services *not* to list certain species.<sup>75</sup> Even if they truly do not consider the economic information in their listing determinations, the development and release of economic information invites legislators and the public to oppose listings because of their own economic self-interest, inserting politics into the listing process contrary to the clear goals of the ESA. In addition, since courts often defer to agency expertise on matters such as listing decisions, it will likely be difficult to prove that economics were considered in the agency's decision-making processes. Last but not least, this provision would put an unnecessary burden on already strained agency resources, encouraging the Services to spend time and money on analyses that cannot be lawfully considered.

In another part of the listing proposal, the Services would limit what science can be considered with a new definition of “foreseeable future”; future extinction of the species, considering both the threat and a species' reaction to the threat, must be “probable” in order to give the Act's protection to threatened species.<sup>76</sup> This change is a significant departure from current practice, and one that would particularly harm species threatened by climate change. It would also harm all species for which researchers have limited information—a significant percentage of species that warrant protection in order to meet the purposes of the ESA.

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<sup>73</sup> See 50 C.F.R. § 424.11(b).

<sup>74</sup> *Id.* See Endangered and Threatened Wildlife and Plants; Revision of the Regulations for Listing Species and Designating Critical Habitat, 83 Fed. Reg. at 35,194.

<sup>75</sup> Traditional economic analyses are likely to be lopsided toward quantifying costs associated with listing, without fully considering the economic benefits that accrue to society as a result of ESA protections. A full and fair economic analysis would include proper economic valuation of ecosystem services and ecotourism benefits in demonstrating the benefits of species and habitat protection.

<sup>76</sup> 83 Fed. Reg. at 35,195, 35,201.

Similarly, the proposed revisions would expand the universe of reasons for determining that critical habitat designations are “not prudent,” and would result in fewer critical habitat protections for listed species.<sup>77</sup> The Act requires the Services to designate critical habitat “to the *maximum extent* prudent and determinable” at the time of listing.<sup>78</sup> Currently, 50 C.F.R. § 424.12 requires the designation of critical habitat unless doing so would not be prudent, as determined by an exhaustive list of circumstances.<sup>79</sup> In contrast, the Services’ proposed revisions would open the door to countless “not prudent” determinations by creating a *non-exhaustive* list of circumstances. This non-exhaustive list includes when critical habitat is not threatened or is threatened only by “causes that cannot be addressed through management actions resulting from consultations,”<sup>80</sup> such as “melting glaciers, sea level rise, or reduced snowpack.”<sup>81</sup>

Critical habitat designations are intended to protect the value of the habitat for the species’ recovery to the point where the protections of the Act are no longer necessary. The inquiry is *not* whether the habitat itself is currently threatened, but whether the habitat is essential to the conservation of the species. There are certainly situations where habitat that is critical to a species’ recovery may not initially be threatened, or may not be the cause for a species being listed – i.e., for species threatened with diseases or overuse, but later becomes so because of continued development pressures—especially in a rapidly growing region like the Southeast. Critical habitat must be maintained as an important conservation planning tool through which the Services can provide for a species’ recovery in the face of all the threats it faces, regardless of whether the critical habitat itself is currently threatened or whether the species is currently threatened by habitat loss.

The proposed revisions would also restrict designation of unoccupied habitat by restoring the “step-wise” approach, which requires that currently occupied areas be considered for designation before unoccupied areas.<sup>82</sup> According to the ESA, critical habitat specifically includes “areas ... essential for the conservation of the species” that may be “*outside the geographical area occupied by the species at the time it is listed.*”<sup>83</sup>

The proposed revisions would hamper the ability of the Services to designate unoccupied critical habitat by narrowing the meaning of “essential.” Unoccupied areas of habitat may be more important to conservation than currently occupied areas, such as the case for a species threatened by sea level rise that may need to migrate gradually inland. Again, this is a proposal that is especially likely to harm listed species in the Southeast because of the vulnerability of this region to sea level rise. Over 30 currently listed threatened or endangered species populations in the Southeast are already at risk from habitat reduction caused by sea level rise.<sup>84</sup> In the context of barrier island and marsh migration, for example, preserving the unoccupied critical habitat

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<sup>77</sup> *Id.* at 35,196-97.

<sup>78</sup> 16 U.S.C. § 1533(a)(3)(A) (emphasis added).

<sup>79</sup> 50 C.F.R. § 424.12(a)(1).

<sup>80</sup> Revision of the Regulations for Prohibitions to Threatened Wildlife and Plants, 83 Fed. Reg. at 35,201.

<sup>81</sup> *Id.* at 35,197.

<sup>82</sup> *Id.* at 35,197-98.

<sup>83</sup> 16 U.S.C. § 1532(5)(A)(ii) (emphasis added).

<sup>84</sup> CTR. FOR BIOLOGICAL DIVERSITY, DEADLY WATERS: HOW RISING SEAS THREATEN 233 ENDANGERED SPECIES (2013) (attached as Exhibit 18).



may well be more important than preserving currently occupied habitat that is expected to be lost in the foreseeable future. Similarly, unoccupied areas may simply be easier to designate in certain situations.

The Services' proposed rollbacks to species listing and critical habitat designations would have far-reaching implications for the 190 Southeastern species being considered for listing by either USFWS or NMFS, as well as those that may be undergoing a change of status after a five-year review. The Services should rescind the proposed changes and maintain the proven protections in existing regulations.

### **C. Section 7 Consultation**

Section 7 of the Act imposes both procedural and substantive obligations on federal agencies. Fundamentally, it requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.<sup>85</sup> Federal agencies meet these mandates through a requirement to consult with the Services and receive a biological opinion on the effects of their actions.

These obligations are ongoing. If new information shows that a federal action is likely to impact listed species or habitat in a manner or to an extent not previously considered, consultation with the Services must be reinitiated. In addition, biological opinions must include:

- measures to mitigate the impact of federal actions on listed species and habitat,
- “incidental take statements” that provide a trigger for reevaluating the effects of the action, and
- monitoring requirements.<sup>86</sup>

Section 7 is essential to the functioning of the ESA because it forces federal agencies to examine and tailor their actions so they do not impair the survival or recovery of listed species. The Services' proposed revisions would confuse and narrow the Section 7 consultation process. They would limit the likelihood that a federal action would be found likely to jeopardize listed species or adversely modify critical habitat, and therefore limit the likelihood that a federal agency would be required to modify its actions for the benefit of listed species.

#### **1. Indefinite Mitigation Plans**

The ESA permits agencies to incorporate conservation measures into a project in order to offset possible impacts, thereby avoiding a “jeopardy” finding under Section 7. However, such measures must be

reasonably specific, certain to occur, and capable of implementation; they must be subject to deadlines or otherwise-enforceable obligations; and most important,

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<sup>85</sup> 16 U.S.C. § 1536(a)(2).

<sup>86</sup> *Id.* at § 1536(b).

they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards.<sup>87</sup>

“[E]ven a sincere general commitment” to conservation measures is insufficient under the ESA, “absent specific and binding plans.”<sup>88</sup>

Contradicting long-standing, established case law interpreting Section 7, the Services propose that mitigation measures used to “avoid, minimize, or offset the effects of the action” should “not require any additional demonstration of specific binding plans or a clear, definite commitment of resources.”<sup>89</sup> In other words, the action agency need not offer any assurance that this mitigation measure would actually occur. To relieve an agency of the obligation to take real, not illusory mitigation measures makes a mockery of the biological opinion’s purpose—to “ensure” that federal actions are not likely to jeopardize the continued existence of listed species. Indeed, with no assurance that the promised mitigation will actually occur, the entire definition of the action is called into question.

The Services have asserted that any deviations from a biological opinion will trigger re-initiation of consultation. Again, this imposes an unreasonable administrative burden on the Services, both increasing the risk that they will prepare biological opinions on entirely fictitious agency proposals with unfunded, illusory mitigation measures, and increasing the likelihood that they will need to request re-initiation from action agencies that failed to follow through. It also increases the burden on citizen watchdogs to monitor agency actions and their impacts, since that burden will be lessened on the agencies themselves. Mitigation promises without “specific binding plans” are at best lofty goals and at worst empty promises that could cause the extirpation of a species. They certainly cannot satisfy the requirements of Section 7 of the ESA to ensure against jeopardy.

## 2. Redefining Destruction or Adverse Modification of Critical Habitat

The Services propose to add “as a whole” into the definition of “adverse modification” of critical habitat. This change would limit a finding that a critical habitat has been adversely modified to those instances when a “direct or indirect alteration ... appreciably diminishes the value of critical habitat *as a whole*.”<sup>90</sup> Instead, the determination should look not at the whole critical habitat for a species, but to the area implicated by the particular action.

In this way, an action that might destroy the entirety of critical habitat in a particular region, or for a particular life function for a species, but that represented only a small percentage of all critical habitat for a species, could avoid a finding of adverse modification. This would be likely to result in “death by a thousand cuts”: a series of projects could be permitted that destroy significant parts or elements of critical habitat long before the Services would make an adverse

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<sup>87</sup> *Ctr. for Biological Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002) (citing *Sierra Club v. Marsh*, 816 F.2d 1376 (9th Cir. 1987)).

<sup>88</sup> *Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 935–36 (9th Cir. 2008).

<sup>89</sup> Endangered and Threatened Wildlife and Plants; Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. 35,178, 35,192 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 402).

<sup>90</sup> *Id.* at 35,182, 35,191.

modification determination as to the whole critical habitat. At that point the damage to the habitat's value for species recovery would be done.

For example, critical habitat for loggerhead sea turtles spans approximately 207 million acres of ocean area, and over 700 miles of beach. Loggerheads are long-lived, slow-growing animals that use multiple habitats across entire ocean basins throughout their life history. This complex life history encompasses terrestrial, inshore/estuarine, nearshore, and open ocean habitats. Accordingly, the loggerhead's critical habitat is broken into five different types: Nearshore Reproductive, Migratory, *Sargassum*, Breeding, and Overwintering.<sup>91</sup> The diverse nature of this designation showcases its importance in conserving the habitats upon which this species relies.

Some of the loggerhead's most significant nesting aggregations occur in the Southeast, from the beaches of Georgia to North Carolina.<sup>92</sup> The Southeast sees thousands of loggerhead nests laid per year. Additionally, the unique nature of sea turtle reproduction underscores the importance of conserving individual nesting habitats for the benefit of the entire species.

All sea turtles demonstrate temperature-sex determination, meaning warmer incubation temperatures produce more female hatchlings, while cooler incubation temperatures produce more male hatchlings.<sup>93</sup> Some researchers have suggested that over time and space, the population collectively chooses nesting sites so that the optimal sex ratio is reached.<sup>94</sup> In other words, the ratio of male to female hatchlings produced in any given season from a North Carolina beach will ultimately balance out with that of a Florida beach, to produce an optimal ratio of adult breeding males and females. From a policy standpoint, this means that destruction or modification of one nesting beach may have implications for the sex ratio of an entire population.

Furthermore, loggerhead sea turtles show a high degree of fidelity to nesting sites; an adult female will return to the region of her birth when selecting her own nesting beach, and will tend to re-nest in relatively close proximity during successive nesting attempts within the same and subsequent breeding seasons.<sup>95</sup> These phenomena illustrate that thorough conservation of local nesting sites and adjacent areas is very important in preserving the status of the entire species.

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<sup>91</sup> Critical Habitat for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (DPS) and Determination Regarding Critical Habitat for the North Pacific Ocean Loggerhead DPS: Final Rule, 79 Fed. Reg. 39,856 (Jul. 10, 2014) (to be codified at 50 C.F.R. pt. 226).

<sup>92</sup> Designation of Critical Habitat for the Northwest Atlantic Ocean Loggerhead Sea Turtle Distinct Population Segment (DPS) and Determination Regarding Critical Habitat for the North Pacific Ocean Loggerhead DPS, 78 Fed. Reg. 43,005, 43,006 (proposed Jul. 18, 2013) (to be codified at 50 C.F.R. pt. 226).

<sup>93</sup> See, e.g., Thane Wibbels, *Critical Approaches to Sex Determination in Sea Turtles*, in *THE BIOLOGY OF SEA TURTLES*, VOL. II (Peter Lutz et al. eds., 2003) (attached as Exhibit 19).

<sup>94</sup> *Id.*

<sup>95</sup> Jeffrey D. Miller et al., *Nest Site Selection, Oviposition, Eggs, Development, Hatching, and Emergence of Loggerhead Turtles*, in *LOGGERHEAD SEA TURTLES* (Alan B. Bolten & Blair E. Witherington eds., 2003) (attached as Exhibit 20).

Under the Services' proposal, it appears that loggerheads' critical nesting habitat in North and South Carolina could be destroyed without a finding of adverse modification, because critical habitat in Florida still exists. Yet, as just described, this could well result in decreased reproductive potential for the population as a whole because the northern beaches that produce more males would be lost. In addition, the proposal seems to allow the destruction of all other nesting habitat as long as the *Sargassum* habitat still exists. At worst, this proposal would render critical habitat meaningless. At best, it will result in dramatically increased litigation over what it means to "appreciably diminish[] the value of critical habitat *as a whole*." The Services should rescind this proposal.

### 3. Redefining the Jeopardy Analysis

The Services' proposed change to how they would determine jeopardy also flies in the face of the Act's conservation mandate. The Services propose that for a formal consultation, they should "add the effects of the action and cumulative effects to the environmental baseline and in light of the status of the species and critical habitat, formulate the Service's opinion as to whether *the action* is likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat."<sup>96</sup>

This is seemingly different from what the USFWS Handbook currently instructs: USFWS is to find whether

the *aggregate effects* of the factors analyzed under "environmental baseline," "effects of the action," and "cumulative effects" in the action area ... are likely to jeopardize the continued existence of the species or result in destruction or adverse modification of critical habitat.<sup>97</sup>

The proposed regulation is unclear about whether USFWS will determine jeopardy from the "aggregate effects" of both the environmental baseline and the action, or whether it will determine jeopardy by studying only the added effects of the action.

If the Services only review the action's additional effects on the environmental baseline, a degraded environmental baseline would prevent a jeopardy finding unless the action causes an even more degraded baseline. In this scenario, an incremental change that lessens but does not eliminate the harmful impact to listed species or critical habitat could never jeopardize a species.

For instance, when seven hydropower dams controlling 275 miles of the Coosa River in Alabama were built in the 1920s and 1950s, they caused "one of the largest extinction rates in North America during the 20<sup>th</sup> century, with the extinction or extirpation of nearly 40 freshwater species."<sup>98</sup> In 2013, based on USFWS's Biological Opinion, the Federal Energy Regulatory

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<sup>96</sup> Endangered and Threatened Wildlife and Plants; Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. 35,178, 35,192 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 402) (emphasis added).

<sup>97</sup> USFWS & NMFS, ENDANGERED SPECIES CONSULTATION HANDBOOK 4-33 (1998). (emphasis added).

<sup>98</sup> USFWS, *Biological Opinion for the Relicensing of Alabama Power Company's Coosa River Hydroelectric Project*, June 7, 2012.

Commission (“FERC”) reissued a 30-year license for these seven dams.<sup>99</sup> This license failed to include measures for raising dissolved oxygen levels to meet state standards, had no measures for fish passage, and set no mandatory minimum flows for most of the dams.<sup>100</sup>

USFWS admitted that operating these dams would take 100 percent of several of the species and acknowledged the dire status of the river system. However, it did not find that the proposed conditions in the license would cause “jeopardy,”<sup>101</sup> because the conditions of the new license were more “beneficial” than the previous conditions.<sup>102</sup>

This method, like USFWS’s proposed method of determining jeopardy, does not “insure” that the action will not jeopardize the continued existence of the species.<sup>103</sup> In fact, when FERC’s license was challenged, a federal appeals court ruled that both USFWS and FERC wrongly concluded that licensing would have no substantial impact on either the River’s ecological condition or endangered species.<sup>104</sup> “[T]he Commission declined to factor in the decades of environmental damage already wrought by exploitation of the waterway for power generation and that damage’s continuing ecological effects.”<sup>105</sup> The ESA does not contemplate whether or not the action is better for the species, but it specifically requires agencies to “insure” that the species *will not be jeopardized*.

In this proposed rule, the Services attempt to rewrite several judicial decisions from both the D.C. Circuit and the Ninth Circuit Court of Appeals.<sup>106</sup> The Services have arbitrarily proposed that the baseline for any species cannot be already “in peril.”<sup>107</sup> They explain that the “ESA and our regulations do not use terms ‘in jeopardy,’ ‘in peril,’ or ‘jeopardized’ to describe the environmental baseline or the pre-action condition of a species.”<sup>108</sup>

However, the ESA does not define the environmental baseline at all, and certainly does not preclude a species’ baseline from being in jeopardy of extinction. Current regulations require the Services to determine the “environmental baseline” by describing the past and present impacts of all actions affecting the species in question.<sup>109</sup> Prohibiting USFWS and NMFS from

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<sup>99</sup> *Order Issuing New License for Alabama Power Company*, 143 Fed. Energy Regulatory Comm’n ¶ 61,249 (2013).

<sup>100</sup> *Am. Rivers v. Fed. Energy Regulatory Comm’n*, 895 F.3d 32, 47, 52 (D.C. Cir. 2018).

<sup>101</sup> USFWS, *Biological Opinion for the Relicensing of Alabama Power Company’s Coosa River Hydroelectric Project*, June 7, 2012 at 90-91 (100 percent of the southern clubshell, finelined pocketbook, southern pigtoe, and Georgia pigtoe would be taken in the Weiss Bypass. One hundred percent of the tulotoma snail, painted rocksnail, and southern clubshell would all be taken downstream of Logan Martin Dam. Further 100 percent of the 21 species reintroduced into the action area would also be taken.).

<sup>102</sup> *Id.* at 89.

<sup>103</sup> 16 U.S.C. § 1536(a)(2).

<sup>104</sup> *Am. Rivers v. Fed. Energy Regulatory Comm’n*, 895 F.3d 32, 37 (D.C. Cir. 2018).

<sup>105</sup> *Id.*

<sup>106</sup> Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. 35,178, 35,282 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 402) (citing *Nat’l Wildlife Fed’n v. Nat’l Marine Fisheries Serv.*, 524 F.3d 917, 930 (9th Cir. 2008); *Turtle Island Restoration Network v. U.S. Dep’t of Commerce*, 878 F.3d 725, 735 (9th Cir. 2017); *Oceana, Inc. v. Pritzker*, 75 F. Supp. 3d 469, 483 (D.D.C. 2014)).

<sup>107</sup> *Id.*

<sup>108</sup> *Id.*

<sup>109</sup> 50 C.F.R. § 402.02 (definition of effects of the action).

describing the current state of a species is asking staff to ignore science. If a species is truly “in peril” or “in jeopardy,” then the environmental baseline should reflect this.

Further, the Services’ new method of finding jeopardy, compounded with their new definition of “environmental baseline,” will avoid studying the impacts of actions that have never been the subject of a biological opinion. The Services propose defining “environmental baseline” as “the state of the world absent the action under review and includes the past, present, and ongoing impacts of all past and ongoing Federal, State, or private actions.... Ongoing means impacts or actions that would continue in the absence of the action under review.”<sup>110</sup> If the Services do not study the aggregate effects of the action *and* the baseline, but rather only the “added effects” of the action, and the “ongoing effects” are not included in the effects of the action, then continuing an ongoing destructive project could not, by definition, cause “jeopardy.” This is especially concerning if these ongoing impacts have never been the subject of a biological opinion.

The dams at issue in the Coosa case were built before the ESA was adopted, and therefore most of these dams had never been a subject of a biological opinion before the operator asked FERC to renew the license and USFWS issued a biological opinion in 2012.<sup>111</sup> Five of the dams were originally licensed in 1957 and were being relicensed for the first time.<sup>112</sup> This is not a unique situation; most of the hydroelectric dams in the country were built between 1930 and 1970, before the ESA was enacted.<sup>113</sup> If, as the Services propose, the effects of a new federal action are determined by measuring only its effects added onto historical actions, then when hydropower licenses are re-issued, many dams would continue in the same harmful way as when they were built. This method of reviewing 30- to 50-year licenses does not ensure that species are protected and not jeopardized and disregards the D.C. Circuit’s finding.<sup>114</sup>

#### 4. The Effects of Indirect, Interrelated, or Interdependent Actions

This change in the way jeopardy will be determined, along with the change in the definition of “effects of the action,” is also indefensible. The Services propose to redefine “effects of the action” and delete any mention of the requirement that they study the indirect, interrelated, or interdependent actions.<sup>115</sup> As a result, only those effects caused *directly* by the action will be studied under the proposed rulemaking.

The Services claim that “[t]he concepts of interrelated and interdependent actions in the existing regulations are now captured by the concept of effects of activities that are caused by the proposed action, but are not part of the proposed action.”<sup>116</sup> If these effects truly should be included in “all effects,” then it is nonsensical to delete them from the regulation. Further,

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<sup>110</sup> Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. at 35,184.

<sup>111</sup> *Ala. Power Co.*, 18 FPC 257 (1957); *Ala. Power Co.*, 54 FPC 2452 (1975); *see also Am. Rivers v. Fed. Energy Regulatory Comm’n*, 895 F.3d 32 (D.C. Cir. 2018).

<sup>112</sup> *Id.*

<sup>113</sup> U.S. ENERGY INFO. ADMIN., Hydroelectric generators are Among the United States’ Oldest Power Plants, March 13, 2017, available at <https://www.eia.gov/todayinenergy/detail.php?id=30312>.

<sup>114</sup> *Am. Rivers*, 895 F.3d at 37.

<sup>115</sup> Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. at 35,191.

<sup>116</sup> *Id.* at 35,183.

encompassing “interrelated and interdependent actions” in the terms “effects of activities that are caused by” the action but “are not part” of it does not seem to be the intent of USFWS, since it states in the next line that “an effect or activity is caused by the proposed activity if it would not occur but for the proposed action . . . .”<sup>117</sup> Only direct effects, not interrelated and interdependent effects, will be studied. In the example of relicensing dams on the Coosa River, under the current definition, the existence of dams could be an interrelated and interdependent action studied as the “effects of the action,” but with the new definition, only the relicensing of the dams—the new conditions—will be studied, which is contrary to the D.C. Circuit’s holding.<sup>118</sup>

#### 5. Re-initiation of Consultation on Land- or Water-Management Plans

As discussed above, national forests are important components of the Southeast landscape. The Services’ proposal would diminish protections for species that inhabit these critical public lands by exempting them from re-initiating consultation if new species are listed or new critical habitat is designated.<sup>119</sup> This change would fail to ensure that these programmatic plans for managing often the largest habitat areas on which these species rely are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat.

Land-management plans are, by their nature, multiple-use planning documents. Forest plans, in particular, set goals and objectives for wildlife, timber harvest, water use, and other environmental objectives.<sup>120</sup> There is no question that these plans and the activities they govern affect listed species. Indeed, courts have consistently found exactly this, and that project level consultation is inadequate to meet the ESA’s mandates.<sup>121</sup>

### IV. **Undefined Proposed Changes**

In addition to the specific proposed regulatory changes discussed above, the Services make general statements about reconsidering the entirety of “part 424,” and “part 402” of Title 50 of the Code of Federal Regulations—in other words, essentially all of the implementing regulations of the ESA.<sup>122</sup> The Services specifically state that their rulemakings should be “considered applying to all of” parts 402 and 424 and that “the Services will consider whether additional modifications to [these] regulations . . . would improve, clarify, or streamline the administration of the Act.”<sup>123</sup> We object to such an attempt by the Services to promulgate final rules that were not properly proposed and noticed to the public. If the Services wish to revise other sections of regulations implementing the ESA, they must separately and formally propose

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<sup>117</sup> *Id.* at 35,191.

<sup>118</sup> *See Am. Rivers v. Fed. Energy Regulatory Comm'n*, 895 F.3d 32 (D.C. Cir. 2018)

<sup>119</sup> Revision of Regulations for Interagency Cooperation, 83 Fed. Reg. at 35,189.

<sup>120</sup> *See, e.g.*, 16 U.S.C. § 1604.

<sup>121</sup> *See, e.g., Citizens for Better Forestry v. U.S. Dep't of Agric.*, 341 F.3d 961 (9th Cir.2003), *Citizens for Better Forestry v. U.S. Dep't of Agric.*, 632 F. Supp. 2d 968 (N.D. Cal. 2009), *Citizens for Better Forestry v. U.S. Dep't of Agric.*, 481 F.Supp.2d 1059 (N.D.Cal.2007).

<sup>122</sup> *See id.* at 35,179; Revision of the Regulations for Listing Species and Designating Critical Habitat, 83 Fed. Reg. 35,193, 35,194 (proposed July 25, 2018) (to be codified at 50 C.F.R. pt. 424).

<sup>123</sup> *Id.* at 35,179; Revision of the Regulations for Listing Species and Designating Critical Habitat, 83 Fed. Reg. at 35,194.

those revisions. They cannot simply shoehorn such changes into final versions of their currently proposed regulatory changes and avoid the requirements of the Administrative Procedure Act.

## V. Conclusion

The proposed regulatory changes would wreak havoc on Southeastern ecosystems, upending current and anticipated protections for rare species and habitats across the region. The Services must return to the conservation-driven, science-based approach mandated by the ESA and should accordingly abandon their proposed revisions to the ESA regulations.

Thank you for your consideration of these comments.

Sincerely,



Ramona H. McGee  
Staff Attorney  
Southern Environmental Law Center



Melissa L. Whaling  
Research Associate  
Southern Environmental Law Center

On behalf of:

### **Chesapeake Bay Foundation**

Lisa Feldt  
Vice President, Environmental Protection and Restoration

### **Lynnhaven River NOW**

Karen W. Forget  
Executive Director

### **Potomac Riverkeeper Network**

Phillip Musegaas  
Vice President, Programs & Litigation

### **Virginia League of Conservation Voters**

Mike Town  
Executive Director

### **Virginia Wilderness Committee**

Mark Miller  
Executive Director

### **Waterkeepers Chesapeake**

Katlyn Schmitt  
Staff Attorney



**Audubon North Carolina**

Greg Andeck  
Director, Government Relations

**Environment North Carolina**

Drew Ball  
State Director

**Green Riverkeeper**

Gray Jernigan  
Riverkeeper

**MountainTrue**

Bob Wagner  
Co-Director

**North Carolina Conservation Network**

Grady McCallie  
Policy Director

**North Carolina League of Conservation Voters**

Carrie Clark  
Executive Director

**Sound Rivers**

Forrest English  
Pamlico-Tar Riverkeeper

**Carolina Wetlands Association**

Rick Savage  
President

**Coastal Conservation League**

Laura Cantral  
Executive Director

**Congaree Riverkeeper**

Bill Stangler  
Riverkeeper

**Save Our Saluda**

Melanie Ruhlman  
President

**South Carolina Wildlife Federation**

Ben Gregg  
Executive Director

**Upstate Forever**

Andrea Cooper  
Executive Director

**Altamaha Riverkeeper**

Jen Hilburn  
Executive Director

**Atlanta Audubon Society**

Nikki Belmonte  
Executive Director

**Center for a Sustainable Coast**

David Kyler  
Executive Director

**Chattahoochee Riverkeeper, Inc.**

Kevin Jeselnik  
General Counsel

**Georgia ForestWatch**

Donald E. Davis  
Executive Director

**Initiative to Protect Jekyll Island**

David Egan  
Co-Director

**Oconee Rivers Audubon Society**

Catie Welch  
President

**Ogeechee Audubon Society**

Leslie Weichsel  
President

**One Hundred Miles**

Megan Desrosiers  
President & CEO

**Satilla Riverkeeper**

Laura Early  
Executive Director

**St. Marys EarthKeepers**

Alex Kearns  
Chair

**Alabama Rivers Alliance**

Cindy Lowry  
Executive Director

**Black Warrior Riverkeeper**

Charles Scribner  
Executive Director

**Cahaba River Society**

Beth K. Stewart  
Executive Director

**Coosa Riverkeeper, Inc.**

Frank Chitwood  
Riverkeeper

**Friends of the Locust Fork**

Stephen Guesman  
President

**Little River Waterkeeper**

W.Y. Shugart, IV  
Executive Director & Waterkeeper

**Shoals Environmental Alliance**

Charles L. Rose  
President

**Tennessee Riverkeeper**

David Whiteside  
Executive Director

**Chattooga Conservancy**

Nicole Hayler  
Director

**Cherokee Forest Voices**

Catherine Murray  
Director

**Sierra Club, Tennessee Chapter**

Axel C. Ringe  
Conservation Chair

**Tennessee Clean Water Network**

Kathy Hawes  
Executive Director

**Tennessee Environmental Council**

John McFadden  
CEO

**Sierra Club, Mississippi Chapter**

Louie Miller  
Director

**Dogwood Alliance, Inc.**

Vicki Weeks  
Georgia State Coordinator

**The Clinch Coalition**

Diana Withen  
President

**American Rivers**

Jim Bradley  
Vice President, Policy & Government Relations

**Center for Biological Diversity**

Perrin de Jong  
Staff Attorney

**Coalition to Protect America's National Parks**

Amy Gilbert  
Executive Director

**Defenders of Wildlife**

Ben Prater  
Southeast Program Director

**Inland Ocean Coalition**

Vicki Nichols Goldstein  
Founder & Executive Director

**Waterkeeper Alliance**

Kelly Hunter Foster  
Senior Attorney

**Wildlands Network**

Dr. Ron Sutherland  
Conservation Scientist

**Marine Conservation International**

Lance Morgan  
President

**Ocean Conservation Research**

Michael Stocker

Director

**The Dolphin Project**

M. Peach Hubbard

President

**Whale and Dolphin Conservation**

Regina Asmutis-Silvia

Executive Director

## Appendices

To compile data presented in these Appendices, SELC reviewed the Environmental Conservation Online System (“ECOS”), which is an online public database containing records of listings and critical habitat designations, and the National Marine Fisheries Service (“NMFS”) Species Directory. As needed, SELC also reviewed Federal Register notices and the Code of Federal Regulations. For the purposes of this document, the Southeast is defined to include the following states: Virginia, North and South Carolina, Georgia, Alabama, and Tennessee.

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## Appendix A: Full list of species found in the Southeast (VA, NC, SC, GA, AL, TN) listed under the ESA

Table A.1. *Endangered Species*

This table contains a full list of species found in the Southeast that are listed as endangered under the ESA. For each species, the following information is also provided: its jurisdictional agency (FWS, NMFS, or both), its common and scientific names, its taxonomic group, its geographical range within the Southeast, and its broad habitat type. Additionally, we provide the latest federal action taken by the Services regarding listing status, as well as the species-specific 4(d) rule, if applicable. Some species are listed differently based on geographic location, in which case both statuses are given. Listing statuses that differ across state lines are denoted by red text.

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>	Amphibian	Endangered	GA	Forest	5Y Status Review completed 8/5/15	
FWS	Black warrior (=Sipsey Fork) waterdog	<i>Necturus alabamensis</i>	Amphibian	Endangered	AL	River/Stream/Freshwater	Listed Endangered 1/3/18	
FWS	Shenandoah salamander	<i>Plethodon shenandoah</i>	Amphibian	Endangered	VA	Forest	5Y Status Review initiated 5/7/12	
FWS	Dusky gopher frog	<i>Rana sevosia</i>	Amphibian	Endangered	AL	Forest	5Y Status Review completed 9/9/15	
FWS	Mississippi sandhill crane	<i>Grus canadensis pulla</i>	Bird	Endangered	AL	Forest	5Y Status Review initiated 6/8/10	
FWS	Red-cockaded woodpecker	<i>Picoides borealis</i>	Bird	Endangered	VA, NC, SC, GA, AL	Forest	5Y Status Review begins 10/5/18	
FWS	Kirtland's warbler	<i>Setophaga (= Dendroica) kirtlandii</i>	Bird	Endangered	SC	Forest	5Y Status Review initiated 6/16/17	
FWS	Least tern	<i>Sterna antillarum</i>	Bird	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 10/24/17	
FWS	Roseate tern	<i>Sterna dougallii dougallii</i>	Bird	Endangered	VA, NC	Coastal/Marine	5Y Status Review begins 9/7/18	
FWS	Bachman's warbler (=wood)	<i>Vermivora bachmanii</i>	Bird	Endangered	SC	Forest	5Y Status Review completed 5/6/15	
FWS/ NMFS	Shortnose sturgeon	<i>Acipenser brevirostrum</i>	Fish	Endangered	GA, NC, SC, VA	Coastal/Marine	5Y Status Review completed 11/1/10	
FWS/ NMFS	Atlantic sturgeon	<i>Acipenser oxyrinchus oxyrinchus</i>	Fish	Endangered	GA, NC, SC, VA	Coastal/Marine	5Y Status Review initiated 5/15/18	
FWS	Laurel dace	<i>Chrosomus saylora</i>	Fish	Endangered	TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Bluemask darter	<i>Etheostoma akatulo</i>	Fish	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 12/27/13	
FWS	Vermilion darter	<i>Etheostoma chermocki</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Etowah darter	<i>Etheostoma etowahae</i>	Fish	Endangered	GA	River/Stream/Freshwater	5Y Status Review completed 10/21/14	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Watercress darter	<i>Etheostoma nuchale</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Rush darter	<i>Etheostoma phytophilum</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Cumberland darter	<i>Etheostoma susanae</i>	Fish	Endangered	TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Palezone shiner	<i>Notropis albizonatus</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 5/30/14	
FWS	Cahaba shiner	<i>Notropis cahabae</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 6/29/16	
FWS	Cape Fear shiner	<i>Notropis mekistocholas</i>	Fish	Endangered	NC	River/Stream/Freshwater	5Y Status Review completed 8/21/17	
FWS	Chucky madtom	<i>Noturus crypticus</i>	Fish	Endangered	TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Amber darter	<i>Percina antesella</i>	Fish	Endangered	GA, TN	River/Stream/Freshwater	5Y Status Review completed 10/21/14	
FWS	Conasauga logperch	<i>Percina jenkinsi</i>	Fish	Endangered	GA, TN	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Roanoke logperch	<i>Percina rex</i>	Fish	Endangered	VA, NC	River/Stream/Freshwater	5Y Status Review begins 9/7/18	
FWS/ NMFS	Smalltooth sawfish	<i>Pristis pectinata</i>	Fish	Endangered	GA	Coastal/Marine	5Y Status Review completed 10/1/10	
FWS	Pallid sturgeon	<i>Scaphirhynchus albus</i>	Fish	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 12/4/14	
FWS	Alabama sturgeon	<i>Scaphirhynchus suttkusi</i>	Fish	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Alabama cavefish	<i>Speoplatyrhinus poulsoni</i>	Fish	Endangered	AL	Caves	5Y Status Review completed 8/21/17	
FWS	Duskytail darter	<i>Etheostoma percnum</i>	Fish	Endangered; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review completed 7/27/12	50 C.F.R. § 17.84(q)
FWS	Boulder darter	<i>Etheostoma wapiti</i>	Fish	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 10/2/17	50 C.F.R. § 17.84(o)
FWS	Smoky madtom	<i>Noturus baileyi</i>	Fish	Endangered; Experimental Population	TN, NC	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.84(r)
FWS	Pygmy madtom	<i>Noturus stanauli</i>	Fish	Endangered; Experimental Population	TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.84(t)
FWS	Rusty patched bumble bee	<i>Bombus affinis</i>	Insect	Endangered	VA	Forest	Listed Endangered 1/11/17	



Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Spruce-fir moss spider	<i>Microhexura montivaga</i>	Insect	Endangered	NC, TN, VA	Forest	5Y Status Review completed 12/2/14	
FWS	Saint Francis' satyr butterfly	<i>Neonympha mitchellii francisci</i>	Insect	Endangered	NC	Forest	5Y Status Review completed 12/26/13	
FWS	Mitchell's satyr butterfly	<i>Neonympha mitchellii mitchellii</i>	Insect	Endangered	AL, VA	Forest	5Y Status Review completed 8/1/14	
FWS	Cumberland elktoe	<i>Alasmidonta atropurpurea</i>	Invertebrate	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 7/16/15	
FWS	Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	Invertebrate	Endangered	NC, VA	River/Stream/Freshwater	5Y Status Review begins 9/7/18	
FWS	Appalachian elktoe	<i>Alasmidonta raveneliana</i>	Invertebrate	Endangered	NC, TN	River/Stream/Freshwater	5Y Status Review completed 8/28/17	
FWS	Fat threeridge (mussel)	<i>Amblema neislerii</i>	Invertebrate	Endangered	GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Slender campeloma	<i>Campeloma decampi</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Spectaclecase (mussel)	<i>Cumberlandia monodonta</i>	Invertebrate	Endangered	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 6/16/17	
FWS	Altamaha spinymussel	<i>Elliptio spinosa</i>	Invertebrate	Endangered	GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Tar River spinymussel	<i>Elliptio steinstansana</i>	Invertebrate	Endangered	NC	River/Stream/Freshwater	5Y Status Review completed 9/10/14	
FWS	Tan riffleshell	<i>Epioblasma florentina walkeri</i> (=E. walkeri)	Invertebrate	Endangered	AL, NC, TN, VA	River/Stream/Freshwater	5Y Status Review completed 9/26/13	
FWS	Upland combshell	<i>Epioblasma metastrata</i>	Invertebrate	Endangered	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Southern acornshell	<i>Epioblasma othcaloogensis</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Southern combshell	<i>Epioblasma penita</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 9/8/15	
FWS	Green blossom (pearlymussel)	<i>Epioblasma torulosa gubernaculum</i>	Invertebrate	Endangered	TN, VA	River/Stream/Freshwater	5Y Status Review completed 9/1/17	
FWS	Snuffbox mussel	<i>Epioblasma triquetra</i>	Invertebrate	Endangered	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 6/16/17	
FWS	Round ebonyshell	<i>Fusconaia rotulata</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	Listed endangered 10/10/12	
FWS	Shinyrayed pocketbook	<i>Lampsilis</i> (=Hamiota) <i>subangulata</i>	Invertebrate	Endangered	AL, GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Pink mucket (pearlymussel)	<i>Lampsilis abrupta</i>	Invertebrate	Endangered	AL, GA, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 9/29/08	
FWS	Carolina heelsplitter	<i>Lasmigona decorata</i>	Invertebrate	Endangered	NC, SC	River/Stream/Freshwater	5Y Status Review initiated 5/11/18	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Interrupted (=Georgia) rocksnail	<i>Leptoxis foremani</i>	Invertebrate	Endangered	AL, GA	River/Stream/Freshwater	Listed Endangered 11/2/10	
FWS	Plicate rocksnail	<i>Leptoxis plicata</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Flat pebblesnail	<i>Lepyrium showalteri</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Cylindrical lioplax (snail)	<i>Lioplax cyclostomaformis</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Lee County cave isopod	<i>Lirceus usdagalun</i>	Invertebrate	Endangered	VA	River/Stream/Freshwater	5Y Status Review initiated 5/7/12	
FWS	Alabama pearlshell	<i>Margaritifera marrianae</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Coosa moccasinshell	<i>Medionidus parvulus</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Gulf moccasinshell	<i>Medionidus penicillatus</i>	Invertebrate	Endangered	AL, GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Ochlockonee moccasinshell	<i>Medionidus simpsonianus</i>	Invertebrate	Endangered	GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Nashville crayfish	<i>Orconectes shoupi</i>	Invertebrate	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 2/7/17	
FWS	Alabama cave shrimp	<i>Palaemonias alabamiae</i>	Invertebrate	Endangered	AL	Caves	5Y Status Review completed 1/11/16	
FWS	Littlewing pearl mussel	<i>Pegias fabula</i>	Invertebrate	Endangered	AL, NC, TN, VA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Sheepnose mussel	<i>Plethobasus cyphus</i>	Invertebrate	Endangered	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 6/16/17	
FWS	James spinymussel	<i>Pleurobema collina</i>	Invertebrate	Endangered	NC, VA	River/Stream/Freshwater	5Y Status Review initiated 3/24/08	
FWS	Black clubshell	<i>Pleurobema curtum</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 9/8/15	
FWS	Southern clubshell	<i>Pleurobema decisum</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Dark pigtoe	<i>Pleurobema furvum</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Southern pigtoe	<i>Pleurobema GAnum</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Cumberland pigtoe	<i>Pleurobema gibberum</i>	Invertebrate	Endangered	TN	River/Stream/Freshwater	5Y Status Review completed 8/24/15	
FWS	Georgia pigtoe	<i>Pleurobema hanleyianum</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Flat pigtoe	<i>Pleurobema marshalli</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 9/8/15	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Ovate clubshell	<i>Pleurobema perovatum</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Oval pigtoe	<i>Pleurobema pyriforme</i>	Invertebrate	Endangered	AL, GA	River/Stream/Freshwater	5Y Status Review Begins 10/5/18	
FWS	Heavy pigtoe	<i>Pleurobema taitianum</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 9/8/15	
FWS	Rough hornsnail	<i>Pleurocera foremani</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Slabside pearlymussel	<i>Pleuronaia dolabelloides</i>	Invertebrate	Endangered	AL, NC, TN, VA	River/Stream/Freshwater	Listed Endangered 9/26/13	
FWS	Virginia fringed mountain snail	<i>Polygyriscus virginianus</i>	Invertebrate	Endangered	VA	Other	5Y Status Review initiated 5/7/12	
FWS	Fat pocketbook	<i>Potamilus capax</i>	Invertebrate	Endangered	TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Triangular kidneyshell	<i>Ptychobranthus greenii</i>	Invertebrate	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Southern kidneyshell	<i>Ptychobranthus jonesi</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	Listed Threatened 10/10/12	
FWS	Fluted kidneyshell	<i>Ptychobranthus subtentum</i>	Invertebrate	Endangered	TN, VA	River/Stream/Freshwater	Listed Endangered 9/26/13	
FWS	Armored snail	<i>Pyrgulopsis (=Marstonia) pachyta</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Royal marstonia	<i>Pyrgulopsis ogmorhapse</i>	Invertebrate	Endangered	TN	Caves	5Y Status Review completed 12/1/11	
FWS	Rough rabbitsfoot	<i>Quadrula cylindrica strigillata</i>	Invertebrate	Endangered	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 3/24/08	
FWS	Stirrupshell	<i>Quadrula stapes</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 9/8/15	
FWS	Pale lilliput (pearlymussel)	<i>Toxolasma cylindrellus</i>	Invertebrate	Endangered	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	
FWS	Choctaw bean	<i>Villosa choctawensis</i>	Invertebrate	Endangered	AL	River/Stream/Freshwater	Listed Threatened 10/10/12	
FWS	Rayed bean	<i>Villosa fabalis</i>	Invertebrate	Endangered	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 6/16/17	
FWS	Purple bean	<i>Villosa perpurpurea</i>	Invertebrate	Endangered	TN, VA	River/Stream/Freshwater	5Y Status Review begins 9/7/18	
FWS	Anthony's riversnail	<i>Athearnia anthonyi</i>	Invertebrate	Endangered; Experimental Population	NC, TN, AL, GA	River/Stream/Freshwater	5Y Status Review completed 2/8/18	50 C.F.R. § 17.85(a)
FWS	Fanshell	<i>Cyprogenia stegaria</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 9/29/08	50 C.F.R. § 17.85(b)

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Dromedary pearlymussel	<i>Dromus dromas</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Cumberlandian combshell	<i>Epioblasma brevidens</i>	Invertebrate	Endangered; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Oyster mussel	<i>Epioblasma capsaeformis</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	50 C.F.R. § 17.85(a)
FWS	Yellow blossom (pearlymussel)	<i>Epioblasma florentina florentina</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Tubercled blossom (pearlymussel)	<i>Epioblasma torulosa torulosa</i>	Invertebrate	Endangered; Experimental Population	GA, TN, AL	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Turgid blossom (pearlymussel)	<i>Epioblasma turgidula</i>	Invertebrate	Endangered; Experimental Population	TN, AL	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Shiny pigtoe	<i>Fusconaia cor</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 10/23/13	50 C.F.R. § 17.85(b)
FWS	Finerayed pigtoe	<i>Fusconaia cuneolus</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 10/23/13	50 C.F.R. § 17.85(b)
FWS	Cracking pearlymussel	<i>Hemistena lata</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(a)
FWS	Alabama lampmussel	<i>Lampsilis virescens</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(a)
FWS	Birdwing pearlymussel	<i>Lemiox rimosus</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Ring pink (mussel)	<i>Obovaria retusa</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.85(b)
FWS	White wartyback (pearlymussel)	<i>Plethobasus cicatricosus</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 9/9/16	50 C.F.R. § 17.85(b)
FWS	Orangefoot pimpleback (pearlymussel)	<i>Plethobasus cooperianus</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 4/4/18	50 C.F.R. § 17.85(b)

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Clubshell	<i>Pleurobema clava</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 8/8/11	50 C.F.R. § 17.85(a)
FWS	Rough pigtoe	<i>Pleurobema plenum</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 9/1/14	50 C.F.R. § 17.85(b)
FWS	Cumberland monkeyface (pearlymussel)	<i>Quadrula intermedia</i>	Invertebrate	Endangered; Experimental Population	AL, GA, TN, NC, VA	River/Stream/Freshwater	5Y Status Review completed 7/28/11	50 C.F.R. § 17.85(a)
FWS	Appalachian monkeyface (pearlymussel)	<i>Quadrula sparsa</i>	Invertebrate	Endangered; Experimental Population	NC, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 2/17/09	50 C.F.R. § 17.85(b)
FWS	Cumberland bean (pearlymussel)	<i>Villosa trabalis</i>	Invertebrate	Endangered; Experimental Population	AL, NC, VA, TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.85(a)
NMFS	Sei whale	<i>Balaenoptera borealis</i>	Mammal	Endangered	VA, NC, SC, GA, AL	Coastal/Marine	5Y Status Review initiated 3/30/18	
NMFS	Blue whale	<i>Balaenoptera musculus</i>	Mammal	Endangered	VA, NC, SC, GA	Coastal/Marine	N/A (Insufficient data on SE DPS)	
NMFS	Fin whale	<i>Balaenoptera physalus</i>	Mammal	Endangered	VA, NC, SC, GA, AL	Coastal/Marine	5Y Status Review initiated 3/30/18	
FWS	Virginia big-eared bat	<i>Corynorhinus (=Plecotus) townsendii virginianus</i>	Mammal	Endangered	NC, TN, VA	Caves	5Y Status Review begins 9/7/18	
NMFS	North Atlantic right whale	<i>Eubalaena glacialis</i>	Mammal	Endangered	VA, NC, SC, GA	Coastal/Marine	5Y Status Review initiated 7/31/17	
FWS	Carolina northern flying squirrel	<i>Glaucomys sabrinus coloratus</i>	Mammal	Endangered	NC, TN, VA	Forests	5Y Status Review completed 6/28/13	
FWS	Gray bat	<i>Myotis grisescens</i>	Mammal	Endangered	AL, GA, NC, TN, VA	Caves	5Y Status Review initiated 9/8/14	
FWS	Indiana bat	<i>Myotis sodalis</i>	Mammal	Endangered	AL, GA, NC, TN, VA	Caves	5Y Status Review initiated 9/8/14	
FWS	Alabama beach mouse	<i>Peromyscus polionotus ammobates</i>	Mammal	Endangered	AL	Coastal/Marine	5Y Status Review initiated 10/31/16	
FWS	Perdido Key beach mouse	<i>Peromyscus polionotus trissyllepsis</i>	Mammal	Endangered	AL	Coastal/Marine	5Y Status Review completed 12/5/14	
NMFS	Sperm whale	<i>Physeter macrocephalus</i>	Mammal	Endangered	VA, NC, SC, GA, AL	Coastal/Marine	5Y Status Review completed 6/3/15	
FWS	Braun's rock-cress	<i>Arabis perstellata</i>	Plant	Endangered	TN	Forests	5Y Status Review initiated 8/29/17	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Shale barren rock cress	<i>Arabis serotina</i>	Plant	Endangered	VA	Forests	5Y Status Review initiated 2/17/09	
FWS	Cumberland sandwort	<i>Arenaria cumberlandensis</i>	Plant	Endangered	TN	Other	5Y Status Review initiated 7/6/18	
FWS	Guthrie's (=Pyne's) ground-plum	<i>Astragalus bibullatus</i>	Plant	Endangered	TN	Other	5Y Status Review initiated 7/6/18	
FWS	Hairy rattleweed	<i>Baptisia arachnifera</i>	Plant	Endangered	GA	Forests	5Y Status Review initiated 7/6/18	
FWS	Small-anthered bittercress	<i>Cardamine micranthera</i>	Plant	Endangered	NC, VA	River/Stream/Freshwater	5Y Status Review completed 11/25/16	
FWS	Golden sedge	<i>Carex lutea</i>	Plant	Endangered	NC	Other	5Y Status Review completed 8/24/15	
FWS	Morefield's leather flower	<i>Clematis morefieldii</i>	Plant	Endangered	AL, TN	Forests	5Y Status Review initiated 8/29/17	
FWS	Alabama leather flower	<i>Clematis socialis</i>	Plant	Endangered	AL, GA	Other	5Y Status Review completed 8/1/17	
FWS	Leafy prairie-clover	<i>Dalea foliosa</i>	Plant	Endangered	AL, TN	Other	5Y Status Review completed 6/4/15	
FWS	Smooth coneflower	<i>Echinacea laevigata</i>	Plant	Endangered	GA, NC, SC, VA	Forests	5Y Status Review initiated 5/11/18	
FWS	Spreading avens	<i>Geum radiatum</i>	Plant	Endangered	NC, TN	Forests	5Y Status Review completed 3/8/13	
FWS	Rock gnome lichen	<i>Gymnoderma lineare</i>	Plant	Endangered	GA, NC, SC, TN, VA	Other	5Y Status Review completed 3/28/13	
FWS	Roan Mountain bluet	<i>Hedyotis purpurea</i> var. <i>montana</i>	Plant	Endangered	NC, TN, VA	Other	5Y Status Review completed 9/1/17	
FWS	Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	Plant	Endangered	NC, SC	Other	5Y Status Review begins 10/5/18	
FWS	Whorled sunflower	<i>Helianthus verticillatus</i>	Plant	Endangered	AL, GA, TN	Other	Listed Endangered 8/1/14	
FWS	Peter's Mountain mallow	<i>Iliamna corei</i>	Plant	Endangered	VA	Other	5Y Status Review announced 9/7/18	
FWS	Louisiana quillwort	<i>Isoetes louisianensis</i>	Plant	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 5/11/18	
FWS	Black spored quillwort	<i>Isoetes melanospora</i>	Plant	Endangered	GA, SC	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Mat-forming quillwort	<i>Isoetes tegetiformans</i>	Plant	Endangered	GA	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Fleshy-fruit glade-cress	<i>Leavenworthia crassa</i>	Plant	Endangered	AL	Other	Listed Endangered 8/1/14	
FWS	Spring Creek bladderpod	<i>Lesquerella perforata</i>	Plant	Endangered	TN	Other	5Y Status Review initiated 7/6/18	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Pondberry	<i>Lindera melissifolia</i>	Plant	Endangered	AL, GA, NC, SC	River/Stream/Freshwater	5Y Status Review completed 3/3/14	
FWS	Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	Plant	Endangered	NC, SC	Other	5Y Status Review completed 11/16/14	
FWS	Canby's dropwort	<i>Oxypolis canbyi</i>	Plant	Endangered	GA, NC, SC	River/Stream/Freshwater	5Y Status Review completed 7/28/15	
FWS	Short's bladderpod	<i>Physaria globosa</i>	Plant	Endangered	TN	Other	Listed Endangered 8/1/14	
FWS	Ruth's golden aster	<i>Pityopsis ruthii</i>	Plant	Endangered	TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Harperella	<i>Ptilimnium nodosum</i>	Plant	Endangered	AL, GA, NC, SC, VA	River/Stream/Freshwater	5Y Status Review initiated 3/24/08	
FWS	Maui remya	<i>Remya mauiensis</i>	Plant	Endangered	AL, GA, NC, SC, VA	Forests	5Y Status Review initiated 4/12/16	
FWS	Michaux's sumac	<i>Rhus michauxii</i>	Plant	Endangered	GA, NC, SC, VA	Forests	5Y Status Review completed 9/1/14	
FWS	Bunched arrowhead	<i>Sagittaria fasciculata</i>	Plant	Endangered	NC, SC	Forests	5Y Status Review completed 3/24/14	
FWS	Green pitcher-plant	<i>Sarracenia oreophila</i>	Plant	Endangered	AL, GA, NC	River/Stream/Freshwater	5Y Status Review completed 4/1/14	
FWS	Alabama canebrake pitcher-plant	<i>Sarracenia rubra ssp. Alabamensis</i>	Plant	Endangered	AL	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Mountain sweet pitcher-plant	<i>Sarracenia rubra ssp. jonesii</i>	Plant	Endangered	NC, SC	River/Stream/Freshwater	5Y Status Review completed 5/21/13	
FWS	American chaffseed	<i>Schwalbea americana</i>	Plant	Endangered	AL, GA, NC, SC	Forests	5Y Status Review initiated 8/29/17	
FWS	Northeastern bulrush	<i>Scirpus ancistrochaetus</i>	Plant	Endangered	VA	Forests	5Y Status Review announced 9/7/18	
FWS	Fringed campion	<i>Silene polypetala</i>	Plant	Endangered	GA	Forests	5Y Status Review completed 3/15/15	
FWS	White irisette	<i>Sisyrinchium dichotomum</i>	Plant	Endangered	NC, SC	Forests	5Y Status Review announced 10/5/18	
FWS	Gentian pinkroot	<i>Spigelia gentianoides</i>	Plant	Endangered	AL	Forests	5Y Status Review initiated 10/31/16	
FWS	Cooley's meadowrue	<i>Thalictrum cooleyi</i>	Plant	Endangered	GA, NC	River/Stream/Freshwater	5Y Status Review initiated 5/11/18	
FWS	Florida torreyia	<i>Torreya taxifolia</i>	Plant	Endangered	GA	Other	5Y Status Review begins 10/5/18	
FWS	Persistent trillium	<i>Trillium persistens</i>	Plant	Endangered	GA, SC	Forests	5Y Status Review initiated 7/6/18	
FWS	Relict trillium	<i>Trillium reliquum</i>	Plant	Endangered	AL, GA, SC	Forests	5Y Status Review completed 1/19/15	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Tennessee yellow-eyed grass	<i>Xyris tennesseensis</i>	Plant	Endangered	AL, GA, TN	River/Stream/Freshwater	5Y Status Review completed 3/12/14	
FWS	Winged mapleleaf	<i>Quadrula fragosa</i>	Plant	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 5/1/15	50 C.F.R. § 17.85(a)
FWS/ NMFS	Leatherback sea turtle	<i>Dermochelys coriacea</i>	Reptile	Endangered	VA, NC, GA, SC, AL	Coastal/Marine	5Y Status Review initiated 2/5/18	
FWS/ NMFS	Hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Reptile	Endangered	VA, NC, GA, SC, AL	Coastal/Marine	5Y Status Review completed 6/24/13	
FWS/ NMFS	Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Reptile	Endangered	VA, NC, GA, SC, AL	Coastal/Marine	5Y Status Review completed 10/10/12	
FWS	Alabama red-bellied turtle	<i>Pseudemys alabamensis</i>	Reptile	Endangered	AL	River/Stream/Freshwater	5Y Status Review completed 7/12/15	



Table A.2. *Threatened Species*

This table contains a full list of species found in the Southeast that are listed as threatened under the ESA. For each species, the following information is also provided: its jurisdictional agency (FWS, NMFS, or both), its common and scientific names, its taxonomic group, its geographical range within the Southeast, and its broad habitat type. Additionally, we provide the latest federal action taken by the Services regarding listing status, as well as the species-specific 4(d) rule, if applicable. Some species are listed differently based on geographic location, in which case both statuses are given. Listing statuses that differ across state lines are denoted by red text.

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Frosted Flatwoods salamander	<i>Ambystoma cingulatum</i>	Amphibian	Threatened	GA, SC	Forests	5Y Status Review initiated 11/24/14	
FWS	Red Hills salamander	<i>Phaeognathus hubrichti</i>	Amphibian	Threatened	AL	Forests	5Y Status Review completed 5/6/13	
FWS	Red knot	<i>Calidris canutus rufa</i>	Bird	Threatened	AL, GA, NC, SC, VA	Coastal/Marine	Listed Threatened 12/11/14	
FWS	Piping plover	<i>Charadrius melodus</i>	Bird	Threatened	AL, GA, NC, SC, VA	Coastal/Marine	5Y Status Review initiated 9/8/14	
FWS	Wood stork	<i>Mycteria americana</i>	Bird	Threatened	AL, GA, NC, SC	Forests	Downlisted 6/30/14	
FWS/ NMFS	Gulf sturgeon	<i>Acipenser oxyrinchus (=oxyrhynchus) desotoi</i>	Fish	Threatened	AL	Coastal/Marine	5Y Status Review completed 9/22/09	50 C.F.R. § 17.44(v)
NMFS	Oceanic whitetip shark	<i>Carcharhinus longimanus</i>	Fish	Threatened	VA, NC, SC, GA, AL	Coastal/Marine	Listed Threatened 1/30/18	
FWS	Pygmy sculpin	<i>Cottus paulus (=pygmaeus)</i>	Fish	Threatened	AL	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.44(u)
FWS	Blue shiner	<i>Cyprinella caerulea</i>	Fish	Threatened	AL, GA, TN	River/Stream/Freshwater	5Y Status Review completed 10/14/14	
FWS	Spring pygmy sunfish	<i>Elassoma alabamae</i>	Fish	Threatened	AL	River/Stream/Freshwater	Listed Threatened 10/2/13	
FWS	Slackwater darter	<i>Etheostoma boschungii</i>	Fish	Threatened	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.44(c)
FWS	Cherokee darter	<i>Etheostoma scotti</i>	Fish	Threatened	GA	River/Stream/Freshwater	5Y Status Review completed 10/21/14	
NMFS	Giant manta ray	<i>Manta birostris</i>	Fish	Threatened	VA, NC, SC, GA, AL	Coastal/Marine	Listed Threatened 1/22/18	
FWS	Waccamaw silverside	<i>Menidia extensa</i>	Fish	Threatened	NC	River/Stream/Freshwater	5Y Status Review completed 2/7/11	50 C.F.R. § 17.44(s)
FWS	Goldline darter	<i>Percina aurolineata</i>	Fish	Threatened	AL, GA, TN	River/Stream/Freshwater	5Y Status Review completed 5/12/15	
FWS	Snail darter	<i>Percina tanasi</i>	Fish	Threatened	AL, GA, TN	River/Stream/Freshwater	5Y Status Review completed 3/18/13	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Blackside dace	<i>Phoxinus cumberlandensis</i>	Fish	Threatened	TN, VA	River/Stream/Freshwater	5Y Status Review completed 9/16/15	
FWS	Spotfin chub	<i>Erimonax monachus</i>	Fish	Threatened; Experimental Population	AL, NC, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 9/4/09	50 C.F.R. § 17.44(c); 17.84(m)
FWS	Slender chub	<i>Erimystax cahni</i>	Fish	Threatened; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review completed 3/14/14	50 C.F.R. § 17.44(c); 17.84(s)
FWS	Yellowfin madtom	<i>Noturus flavipinnis</i>	Fish	Threatened; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.44(c); 17.84(e)
FWS	Northeastern beach tiger beetle	<i>Cicindela dorsalis dorsalis</i>	Insect	Threatened	VA	Coastal/Marine	5Y Status Review begins 9/7/18	
FWS	Painted snake coiled forest snail	<i>Anguispira picta</i>	Invertebrate	Threatened	TN	Other	5Y Status Review completed 7/29/16	
FWS	Madison cave isopod	<i>Antrolana lira</i>	Invertebrate	Threatened	VA	Caves	5Y Status Review initiated 2/17/09	50 C.F.R. § 17.46(a)
FWS	Big Sandy crayfish	<i>Cambarus callainus</i>	Invertebrate	Threatened	VA	River/Stream/Freshwater	Listed Threatened 4/7/16	
FWS	Lacy elimia (snail)	<i>Elimia crenatella</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Chipola slabshell	<i>Elliptio chipolaensis</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Yellow lance mussel	<i>Elliptio lanceolata</i>	Invertebrate	Threatened	NC, VA	River/Stream/Freshwater	Listed Threatened 4/3/18	
FWS	Purple bankclimber	<i>Elliptoideus sloatianus</i>	Invertebrate	Threatened	AL, GA	River/Stream/Freshwater	5Y Status Review begins 10/5/18	
FWS	Tapered pigtoe	<i>Fusconaia burkei</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	Listed Threatened 10/10/12	
FWS	Narrow pigtoe	<i>Fusconaia escambia</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater		
FWS	Southern sandshell	<i>Hamiota australis</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	Listed Threatened 10/10/12	
FWS	Finelined pocketbook	<i>Lampsilis altilis</i>	Invertebrate	Threatened	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Orangenacre mucket	<i>Lampsilis perovalis</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Round rocksnail	<i>Leptoxis ampla</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Painted rocksnail	<i>Leptoxis taeniata</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review completed 7/8/16	
FWS	Alabama moccasinshell	<i>Medionidus acutissimus</i>	Invertebrate	Threatened	AL, GA, TN	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Suwannee moccasinshell	<i>Medionidus walkeri</i>	Invertebrate	Threatened	GA	River/Stream/Freshwater	Listed Threatened 10/6/16	
FWS	Noonday snail	<i>Mesodon clarki nantahala</i>	Invertebrate	Threatened	NC	River/Stream/Freshwater	5Y Status Review completed 10/30/13	
FWS	Fuzzy pigtoe	<i>Pleurobema strodeanum</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	Listed Threatened 10/10/12	
FWS	Alabama (=inflated) heelsplitter	<i>Potamilus inflatus</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review initiated 11/24/14	
FWS	Rabbitsfoot	<i>Quadrula cylindrica cylindrica</i>	Invertebrate	Threatened	AL, TN	River/Stream/Freshwater	Listed Threatened 9/17/13	
FWS	Tulotoma snail	<i>Tulotoma magnifica</i>	Invertebrate	Threatened	AL	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Northern long-eared bat	<i>Myotis septentrionalis</i>	Mammal	Threatened	AL, GA, NC, SC, VA, TN	Caves	Listed Threatened 4/2/15	50 C.F.R. § 17.40(o)
FWS	West Indian manatee	<i>Trichechus manatus</i>	Mammal	Threatened	AL, GA, NC, SC	Coastal/Marine	Downlisted 4/5/17	50 C.F.R. § 17.103; 17.108; 17.108(a); 17.108(c)
FWS	Sensitive joint-vetch	<i>Aeschynomene virginica</i>	Plant	Threatened	VA, NC	River/Stream/Freshwater	5Y Status Review completed 9/25/13	
FWS	Seabeach amaranth	<i>Amaranthus pumilus</i>	Plant	Threatened	VA, NC, SC	Coastal/Marine	5Y Status Review completed 6/4/18	
FWS	Little amphianthus	<i>Amphianthus pusillus</i>	Plant	Threatened	AL, GA, SC	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	
FWS	Price's potato-bean	<i>Apios priceana</i>	Plant	Threatened	TN, AL	Forests	5Y Status Review completed 9/2/16	
FWS	Georgia rockcress	<i>Arabis GAna</i>	Plant	Threatened	AL, GA	River/Stream/Freshwater	5Y Status Review completed 9/12/14	
FWS	American hart's-tongue fern	<i>Asplenium scolopendrium var. americanum</i>	Plant	Threatened	AL, TN	Other	5Y Status Review completed 10/31/13	
FWS	Virginia round-leaf birch	<i>Betula uber</i>	Plant	Threatened	VA	Forests	5Y Status Review initiated 10/4/10	
FWS	Cumberland rosemary	<i>Conradina verticillata</i>	Plant	Threatened	TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	
FWS	Virginia sneezeweed	<i>Helenium virginicum</i>	Plant	Threatened	VA	River/Stream/Freshwater	5Y Status Review begins 9/7/18	
FWS	Swamp pink	<i>Helonias bullata</i>	Plant	Threatened	GA, NC, SC, VA	Forests	5Y Status Review completed 12/30/14	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Dwarf-flowered heartleaf	<i>Hexastylis naniflora</i>	Plant	Threatened	NC, SC	Forests	5Y Status Review completed 5/2/11	
FWS	Mountain golden heather	<i>Hudsonia montana</i>	Plant	Threatened	NC	Other	5Y Status Review begins 10/5/18	
FWS	Small whorled pogonia	<i>Isotria medeoloides</i>	Plant	Threatened	NC, GA, SC, TN, VA	Forests	5Y Status Review initiated 5/7/12	
FWS	Lyrate bladderpod	<i>Lesquerella lyrata</i>	Plant	Threatened	AL	Other	5Y Status Review initiated 10/31/16	
FWS	Heller's blazingstar	<i>Liatris helleri</i>	Plant	Threatened	NC	Other	5Y Status Review completed 8/3/13	
FWS	Mohr's Barbara's buttons	<i>Marshallia mohrii</i>	Plant	Threatened	AL, GA	Other	5Y Status Review completed 7/21/16	
FWS	White fringeless orchid	<i>Platanthera integrilabia</i>	Plant	Threatened	AL, GA, SC, TN	River/Stream/Freshwater	Listed Threatened 9/13/16	
FWS	Eastern prairie fringed orchid	<i>Platanthera leucophaea</i>	Plant	Threatened	VA	Other	5Y Status Review completed 5/17/16	
FWS	Miccosukee gooseberry	<i>Ribes echinellum</i>	Plant	Threatened	SC	Forests	5Y Status Review completed 6/17/15	
FWS	Kral's water-plantain	<i>Sagittaria secundifolia</i>	Plant	Threatened	AL, GA	Other	5Y Status Review completed 4/29/14	
FWS	Large-flowered skullcap	<i>Scutellaria montana</i>	Plant	Threatened	GA, TN	Forests	5Y Status Review completed 1/8/15	
FWS	Blue Ridge goldenrod	<i>Solidago spithamaea</i>	Plant	Threatened	NC, TN	Other	5Y Status Review begins 10/5/18	
FWS	Virginia spiraea	<i>Spiraea virginiana</i>	Plant	Threatened	GA, NC, VA, TN	River/Stream/Freshwater	5Y Status Review initiated 3/24/08	
FWS	Alabama streak-sorus fern	<i>Thelypteris pilosa</i> var. <i>alabamensis</i>	Plant	Threatened	AL	Other	5Y Status Review completed 3/31/14	
FWS	Gopher tortoise	<i>Gopherus polyphemus</i>	Reptile	Candidate; Threatened	AL, GA, SC	Forests	5Y Status Review initiated 4/9/10	
FWS/ NMFS	Loggerhead sea turtle	<i>Caretta caretta</i>	Reptile	Threatened	VA, NC, GA, SC, AL	Coastal/Marine	5Y Status Review completed 8/27/07	50 C.F.R. § 17.42(b); 223.206
FWS/ NMFS	Green sea turtle	<i>Chelonia mydas</i>	Reptile	Threatened	VA, NC, GA, SC, AL	Coastal/Marine	5Y Status Review completed 3/1/15	50 C.F.R. § 17.42(b); 223.206
FWS	Eastern indigo snake	<i>Drymarchon corais couperi</i>	Reptile	Threatened	AL, GA	Forests	5Y Status Review initiated 7/6/18	
FWS	Black pine snake	<i>Pituophis melanoleucus lodingi</i>	Reptile	Threatened	AL	Forests	Listed Threatened 10/6/15	50 C.F.R. § 17.42(h)
FWS	Flattened musk turtle	<i>Sternotherus depressus</i>	Reptile	Threatened	AL	River/Stream/Freshwater	5Y Status Review completed 7/17/14	

Table A.3. *Experimental Populations*

This table contains a full list of species found in the Southeast that are listed as experimental populations under the ESA. For each species, the following information is also provided: its jurisdictional agency (FWS, NMFS, or both), its common and scientific names, its taxonomic group, its geographical range within the Southeast, and its broad habitat type. Additionally, we provide the latest federal action taken by the Services regarding listing status, as well as the species-specific 4(d) rule, if applicable. Some species are listed differently based on geographic location, in which case both statuses are given. Listing statuses that differ across state lines are denoted by red text.

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Whooping crane	<i>Grus americana</i>	Bird	Experimental Population	AL, GA, VA, NC, TN, SC	Forests	5Y Status Review completed 2/13/12	50 C.F.R. § 17.84(h)
FWS	Duskytail darter	<i>Etheostoma percnurum</i>	Fish	Endangered; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review completed 7/27/12	50 C.F.R. § 17.84(q)
FWS	Boulder darter	<i>Etheostoma wapiti</i>	Fish	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 10/2/17	50 C.F.R. § 17.84(o)
FWS	Smoky madtom	<i>Noturus baileyi</i>	Fish	Endangered; Experimental Population	TN, NC	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.84(r)
FWS	Pygmy madtom	<i>Noturus stanauli</i>	Fish	Endangered; Experimental Population	TN	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.84(t)
FWS	Spotfin chub	<i>Erimonax monachus</i>	Fish	Threatened; Experimental Population	AL, NC, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 9/4/09	50 C.F.R. § 17.44(c); 17.84(m)
FWS	Slender chub	<i>Erimystax cahni</i>	Fish	Threatened; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review completed 3/14/14	50 C.F.R. § 17.44(c); 17.84(s)
FWS	Yellowfin madtom	<i>Noturus flavipinnis</i>	Fish	Threatened; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.44(c); 17.84(e)
FWS	Anthony's riversnail	<i>Athearnia anthonyi</i>	Invertebrate	Endangered; Experimental Population	NC, TN, AL, GA	River/Stream/Freshwater	5Y Status Review initiated 9/29/08	50 C.F.R. § 17.85(a)
FWS	Fanshell	<i>Cyprogenia stegaria</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Dromedary pearlymussel	<i>Dromus dromas</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Cumberlandian combshell	<i>Epioblasma brevidens</i>	Invertebrate	Endangered; Experimental Population	TN, VA	River/Stream/Freshwater	5Y Status Review initiated 10/31/16	50 C.F.R. § 17.85(b)

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Oyster mussel	<i>Epioblasma capsaeformis</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Yellow blossom (pearlymussel)	<i>Epioblasma florentina florentina</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Tubercled blossom (pearlymussel)	<i>Epioblasma torulosa torulosa</i>	Invertebrate	Endangered; Experimental Population	GA, TN, AL	River/Stream/Freshwater	5Y Status Review completed 9/1/17	50 C.F.R. § 17.85(a)
FWS	Turgid blossom (pearlymussel)	<i>Epioblasma turgidula</i>	Invertebrate	Endangered; Experimental Population	TN, AL	River/Stream/Freshwater	5Y Status Review completed 10/23/13	50 C.F.R. § 17.85(a)
FWS	Shiny pigtoe	<i>Fusconaia cor</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 10/23/13	50 C.F.R. § 17.85(b)
FWS	Finerayed pigtoe	<i>Fusconaia cuneolus</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(b)
FWS	Cracking pearlymussel	<i>Hemistena lata</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(a)
FWS	Alabama lampmussel	<i>Lampsilis virescens</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 7/6/18	50 C.F.R. § 17.85(a)
FWS	Birdwing pearlymussel	<i>Lemiox rimosus</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.85(b)
FWS	Ring pink (mussel)	<i>Obovaria retusa</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 9/9/16	50 C.F.R. § 17.85(b)
FWS	White wartyback (pearlymussel)	<i>Plethobasus cicatricosus</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 4/4/18	50 C.F.R. § 17.85(b)
FWS	Orangefoot pimpleback (pearlymussel)	<i>Plethobasus cooperianus</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review initiated 8/8/11	50 C.F.R. § 17.85(b)
FWS	Clubshell	<i>Pleurobema clava</i>	Invertebrate	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 9/1/14	50 C.F.R. § 17.85(a)
FWS	Rough pigtoe	<i>Pleurobema plenum</i>	Invertebrate	Endangered; Experimental Population	AL, TN, VA	River/Stream/Freshwater	5Y Status Review completed 7/28/11	50 C.F.R. § 17.85(b)

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Action	4(d) Rule
FWS	Cumberland monkeyface (pearlymussel)	<i>Quadrula intermedia</i>	Invertebrate	Endangered; Experimental Population	AL, GA, TN, NC, VA	River/Stream/Freshwater	5Y Status Review initiated 2/17/09	50 C.F.R. § 17.85(a)
FWS	Appalachian monkeyface (pearlymussel)	<i>Quadrula sparsa</i>	Invertebrate	Endangered; Experimental Population	NC, TN, VA	River/Stream/Freshwater	5Y Status Review initiated 8/29/17	50 C.F.R. § 17.85(b)
FWS	Cumberland bean (pearlymussel)	<i>Villosa trabalis</i>	Invertebrate	Endangered; Experimental Population	AL, NC, VA, TN	River/Stream/Freshwater	5Y Status Review initiated 9/8/14	50 C.F.R. § 17.85(a)
FWS	Purple cat's paw (pearlymussel)	<i>Epioblasma obliquata obliquata</i>	Invertebrate	Experimental Population	AL	River/Stream/Freshwater	5Y Status Review initiated 9/29/08	50 C.F.R. § 17.85(a)
FWS	Red wolf	<i>Canis rufus</i>	Mammal	Experimental Population	NC	Forests	5Y Status Review completed 10/31/16	50 C.F.R. § 17.84(c)
FWS	Winged mapleleaf	<i>Quadrula fragosa</i>	Plant	Endangered; Experimental Population	AL, TN	River/Stream/Freshwater	5Y Status Review completed 5/1/15	50 C.F.R. § 17.85(a)

## Appendix B: Species in the Southeast under review for listing under the ESA

Table B.1. *Species Under Review*

This table contains a full list of species found in the Southeast that are actively being considered for listing under the ESA. For each species, the following information is also provided: its jurisdictional agency (FWS, NMFS, or both), its common and scientific names, its taxonomic group, its geographical range within the Southeast, and its broad habitat type. Additionally, we provide the latest step in the listing process. For some species, USFWS has announced anticipated next steps in the listing process in the form of a national listing workplan; the estimated dates for next steps are also provided.<sup>1</sup>

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Streamside salamander	<i>Ambystoma barbouri</i>	Amphibian	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Green salamander	<i>Aneides aeneus</i>	Amphibian	Under Review	GA, NC, SC, AL	Forests	90D Finding (7/1/15)	
FWS	Hellbender	<i>Cryptobranchus alleganiensis</i>	Amphibian	Under Review	AL, GA, NC, SC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Cumberland dusky salamander	<i>Desmognathus abditus</i>	Amphibian	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Chamberlain's dwarf salamander	<i>Eurycea chamberlaini</i>	Amphibian	Under Review	GA, NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Berry cave salamander	<i>Gyrinophilus gulolineatus</i>	Amphibian	Candidate	TN	Caves	Warranted but precluded (12/2/16)	Expected Proposed Listing in FY19
FWS	Tennessee cave salamander	<i>Gyrinophilus pallescens</i>	Amphibian	Under Review	GA, AL, TN	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Georgia blind salamander	<i>Haideotriton wallacei</i>	Amphibian	Under Review	GA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Gopher frog	<i>Lithobates capito</i>	Amphibian	Under Review	GA, NC, SC, TN, AL	Forests	90D Finding (7/1/15)	
FWS	Neuse River waterdog	<i>Necturus lewisi</i>	Amphibian	Under Review	NC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY17
FWS	Striped newt	<i>Notophthalmus perstriatus</i>	Amphibian	Candidate	GA	Forests	Warranted but precluded (12/2/16)	Expected Proposed Listing in FY18
FWS	Peaks of Otter salamander	<i>Plethodon hubrichti</i>	Amphibian	Under Review	VA	Forests	90D Finding (9/27/11)	Expected 12M Status Review in FY23

<sup>1</sup> USFWS. *National Listing Workplan: 7-Year Workplan (September 2016 Version)*. <https://www.fws.gov/endangered/esa-library/pdf/Listing%207-Year%20Workplan%20Sept%202016.pdf>



Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	MacGillivray's seaside sparrow	<i>Ammodramus maritimus macgillivraii</i>	Bird	Under Review	SC, GA, NC	Coastal/Marine	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Florida sandhill crane	<i>Grus canadensis pratensis</i>	Bird	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Black rail	<i>Laterallus jamaicensis</i>	Bird	Under Review	AL, GA, NC, SC, VA	Coastal/Marine	Petitioned (4/20/10)	Expected 12M Status Review in FY18
FWS	Black-capped petrel	<i>Pterodroma hasitata</i>	Bird	Under Review	GA, NC, SC, VA	Coastal/Marine	90D Finding (6/21/12)	Expected 12M Status Review in FY18
FWS	Golden-winged warbler	<i>Vermivora chrysoptera</i>	Bird	Under Review	AL, VA, NC, SC, GA, TN	Forests	90D Finding (6/2/11)	Expected 12M Status Review in FY22
FWS	Lake sturgeon	<i>Acipenser fulvescens</i>	Fish	Under Review	TN, GA, AL	River/Stream/Freshwater	Petitioned (5/14/18)	
NMFS	Blueback herring	<i>Alosa aestivalis</i>	Fish	Candidate	VA, NC, SC, GA	Coastal/Marine	12M Status Review Initiated (10/16/17)	
NMFS	Alewife	<i>Alosa pseudoharengus</i>	Fish	Candidate	VA, NC, SC	Coastal/Marine	12M Status Review Initiated (10/16/17)	
FWS	Carolina Pygmy sunfish	<i>Elassoma boehlkei</i>	Fish	Under Review	NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Ashy darter	<i>Etheostoma cinereum</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Barren's darter	<i>Etheostoma forbesi</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Smallscale darter	<i>Etheostoma microlepidum</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Candy darter	<i>Etheostoma osburni</i>	Fish	Candidate	VA	River/Stream/Freshwater	Proposed threatened (10/4/17)	
FWS	Striated darter	<i>Etheostoma striatulum</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Trispot darter	<i>Etheostoma trisella</i>	Fish	Candidate	GA, AL, TN	River/Stream/Freshwater	Proposed threatened (10/4/17)	
FWS	Tuscumbia darter	<i>Etheostoma tuscumbia</i>	Fish	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Saltmarsh topminnow	<i>Fundulus jenkinsi</i>	Fish	Under Review	AL	Coastal/Marine	90D Finding (9/27/11)	Expected 12M Status Review in FY22

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Barren's topminnow	<i>Fundulus julisia</i>	Fish	Candidate	TN	River/Stream/Freshwater	Proposed endangered (1/4/18)	
NMFS	Dwarf seahorse	<i>Hippocampus zosterae</i>	Fish	Candidate	AL	Coastal/Marine	12M Status Review Initiated (7/3/12)	
FWS	Sturgeon chub	<i>Macrhybopsis gelida</i>	Fish	Under Review	TN	River/Stream/Freshwater	12M Status Review Initiated (12/20/17)	
FWS	Sicklefin chub	<i>Macrhybopsis meeki</i>	Fish	Under Review	TN	River/Stream/Freshwater	12M Status Review Initiated (12/20/17)	
FWS	Robust redhorse	<i>Moxostoma robustum</i>	Fish	Under Review	GA, NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Popeye shiner	<i>Notropis ariommus</i>	Fish	Under Review	AL, GA, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Carolina madtom	<i>Noturus furiosus</i>	Fish	Under Review	NC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY17
FWS	Orangefin madtom	<i>Noturus gilberti</i>	Fish	Under Review	NC, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Piebald madtom	<i>Noturus gladiator</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Frecklebelly madtom	<i>Noturus munitus</i>	Fish	Under Review	GA, AL, TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Chesapeake logperch	<i>Percina bimaculata</i>	Fish	Under Review	VA	Coastal/Marine	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Coal darter	<i>Percina brevicauda</i>	Fish	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Halloween darter	<i>Percina crypta</i>	Fish	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Longhead darter	<i>Percina macrocephala</i>	Fish	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Bankhead darter	<i>Percina sipsi</i>	Fish	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Sickle darter	<i>Percina williamsi</i>	Fish	Under Review	NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Virginia stone	<i>Acroneturia kosztarabi</i>	Insect	Under Review	VA	River/Stream/Freshwater	90D Finding (9/27/11)	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Sevier snowfly	<i>Allocapnia brooksi</i>	Insect	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Karst snowfly	<i>Allocapnia cunninghami</i>	Insect	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Linda's roadside-skipper	<i>Amblyscirtes linda</i>	Insect	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Tennessee forestfly	<i>Amphinemura mockfordi</i>	Insect	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Yellow banded bumble bee	<i>Bombus terricola</i>	Insect	Under Review	NC, TN, VA	Other	90D Finding (3/16/16)	Expected 12M Status Review in FY18
FWS	Cobblestone tiger beetle	<i>Cicindela marginipennis</i>	Insect	Under Review	AL, SC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Monarch butterfly	<i>Danaus plexippus plexippus</i>	Insect	Under Review	AL, VA, NC, SC, GA, TN	Other	90D Finding (12/31/14)	Expected 12M Status Review in FY19
FWS	Cherokee clubtail	<i>Gomphus consanguis</i>	Insect	Under Review	AL, TN, GA, VA, NC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Tennessee clubtail	<i>Gomphus sandrius</i>	Insect	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Septima's clubtail	<i>Gomphus septima</i>	Insect	Under Review	AL, NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Margarita River skimmer	<i>Macromia margarita</i>	Insect	Under Review	GA, NC, SC, TN, VA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Smokies needlefly	<i>Megaleuctra williamsae</i>	Insect	Under Review	NC, SC, TN, VA, AL, GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Little oecetis longhorn caddisfly	<i>Oecetis parva</i>	Insect	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Edmund's snaketail	<i>Ophiogomphus edmundo</i>	Insect	Under Review	GA, NC, TN, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Rattlesnake-master borer moth	<i>Papaipema eryngii</i>	Insect	Candidate	NC	Other	Warranted but precluded (12/2/16)	Expected Proposed Listing in FY19
FWS	Overlooked cave beetle	<i>Pseudanopthalmus praetermissus</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	
FWS	Avernus cave beetle	<i>Pseudanopthalmus avernus</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Little Kennedy cave beetle	<i>Pseudanopthalmus cordicollis</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	
FWS	New River Valley (=Narrow) cave Beetle	<i>Pseudanopthalmus egberti</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Cumberland Gap cave beetle	<i>Pseudanophthalmus hirsutus</i>	Insect	Under Review	TN, VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Hubbard's cave beetle	<i>Pseudanophthalmus hubbardi</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Hubricht's cave beetle	<i>Pseudanophthalmus hubrichti</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Crossroads cave beetle	<i>Pseudanophthalmus intersectus</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Shenandoah (=Madden's Cave) beetle	<i>Pseudanophthalmus limicola</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Natural Bridge cave beetle	<i>Pseudanophthalmus pontis</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	South Branch Valley cave beetle	<i>Pseudanophthalmus potomaca potomaca</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Saint Paul cave beetle	<i>Pseudanophthalmus sanctipauli</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Silken cave beetle	<i>Pseudanophthalmus sericus</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Thomas' cave beetle	<i>Pseudanophthalmus thomasi</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Maiden Spring cave beetle	<i>Pseudanophthalmus virginicus</i>	Insect	Under Review	VA	Caves	90D Finding (9/27/11)	
FWS	Blueridge springfly	<i>Remenus kirchneri</i>	Insect	Under Review	VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY21
FWS	Calvert's emerald	<i>Somatochlora calverti</i>	Insect	Under Review	AL, SC	Forests	90D Finding (9/27/11)	
FWS	Regal fritillary	<i>Speyeria idalia</i>	Insect	Under Review	NC, SC, VA	Other	90D Finding (9/18/15)	Expected 12M Status Review in FY22
FWS	Lobed roachfly	<i>Tallaperla lobata</i>	Insect	Under Review	VA	Unknown	90D Finding (9/27/11)	Expected 12M Status Review in FY21
FWS	Three-toothed long-horned caddisfly	<i>Triaenodes tridontus</i>	Insect	Under Review	AL	Unknown	90D Finding (9/27/11)	
FWS	Southern elktoe	<i>Alasmidonta triangulata</i>	Invertebrate	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Brook floater	<i>Alasmidonta varicosa</i>	Invertebrate	Under Review	GA, NC, VA, SC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Rayed creekshell	<i>Anodontooides radiatus</i>	Invertebrate	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	

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FWS	Manitou cavesnail	<i>Antrorbis breweri</i>	Invertebrate	Under Review	AL	Caves	90D Finding (9/27/11)	
FWS	Slenderclaw crayfish	<i>Cambarus cracens</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Spiny scale crayfish	<i>Cambarus jezerinaci</i>	Invertebrate	Under Review	TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Obey crayfish	<i>Cambarus obeyensis</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Pristine crayfish	<i>Cambarus pristinus</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY21
FWS	Little River crayfish	<i>Cambarus spicatus</i>	Invertebrate	Under Review	NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Brawley's Fork crayfish	<i>Cambarus williami</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Mimic crayfish	<i>Distocambarus carlsoni</i>	Invertebrate	Under Review	SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Saluda crayfish	<i>Distocambarus youngineri</i>	Invertebrate	Under Review	SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Acute elimia	<i>Elimia acuta</i>	Invertebrate	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Lily shoals elimia	<i>Elimia annettae</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Spider elimia	<i>Elimia arachnoidea</i>	Invertebrate	Under Review	TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Princess elimia	<i>Elimia bellacrenata</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Cockle elimia	<i>Elimia cochliaris</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Nodulose Coosa River snail	<i>Elimia lachryma</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Round-rib elimia	<i>Elimia nassula</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Engraved elimia	<i>Elimia perstriata</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Elegant elimia	<i>Elimia teres</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Alabama spike	<i>Elliptio arca</i>	Invertebrate	Under Review	GA, AL, TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Delicate spike	<i>Elliptio arctata</i>	Invertebrate	Under Review	AL, GA, SC, TN	River/Stream/Freshwater	90D Finding (9/27/11)	

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FWS	Speckled burrowing crayfish	<i>Fallicambarus danielae</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Atlantic pigtoe	<i>Fusconaia masoni</i>	Invertebrate	Under Review	GA, NC, VA, SC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY17
FWS	Longsolid	<i>Fusconaia subrotunda</i>	Invertebrate	Under Review	AL, GA, NC, VA, TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Tennessee heelsplitter	<i>Lasmigona holstonia</i>	Invertebrate	Under Review	AL, GA, TN, VA, NC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Green floater	<i>Lasmigona subviridis</i>	Invertebrate	Under Review	GA, NC, VA, AL, TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Oblong rocksnail	<i>Leptoxis compacta</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (12/20/17)	
FWS	Spotted rocksnail	<i>Leptoxis picta</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Rye Cove cave isopod	<i>Lirceus culveri</i>	Invertebrate	Under Review	VA	Caves	90D Finding (9/27/11)	Expected 12M Status Review in FY22
FWS	Spiny riversnail	<i>lo fluvialis</i>	Invertebrate	Under Review	TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Cumberland moccasinshell	<i>Medionidus conradicus</i>	Invertebrate	Under Review	AL, GA, NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Round hickorynut	<i>Obovaria subrotunda</i>	Invertebrate	Under Review	GA, AL, TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Alabama hickorynut	<i>Obovaria unicolor</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Shelta cave crayfish	<i>Orconectes sheltae</i>	Invertebrate	Under Review	AL	Caves	90D Finding (9/27/11)	
FWS	Chowanoke crayfish	<i>Orconectes virginensis</i>	Invertebrate	Under Review	NC, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Hardin crayfish	<i>Orconectes wrighti</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Magnificent ramshorn	<i>Planorbella magnifica</i>	Invertebrate	Candidate	NC	River/Stream/Freshwater	Warranted but precluded (12/2/16)	
FWS	Canoe creek pigtoe	<i>Pleurobema atearni</i>	Invertebrate	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Tennessee clubshell	<i>Pleurobema oviforme</i>	Invertebrate	Under Review	TN, VA, AL, NC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Pink pigtoe	<i>Pleurobema rubrum</i>	Invertebrate	Under Review	TN, AL, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Corpulent hornsnail	<i>Pleurocera corpulenta</i>	Invertebrate	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	

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FWS	Tennessee pigtoe	<i>Pleuroaia barnesiana</i>	Invertebrate	Under Review	AL, GA, NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Tallapoosa orb	<i>Quadrula asperata archeri</i>	Invertebrate	Under Review	AL	Unknown	90D Finding (9/27/11)	
FWS	Domed ancyloid	<i>Rhodacmea elatior</i>	Invertebrate	Under Review	TN, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Salamander mussel	<i>Simpsonaias ambigua</i>	Invertebrate	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Reverse pebblesnail	<i>Somatogyrys alcoviensis</i>	Invertebrate	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Tidewater amphipod	<i>Stygobromus indentatus</i>	Invertebrate	Under Review	NC, VA	Other	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Morrison's cave amphipod	<i>Stygobromus morrisoni</i>	Invertebrate	Under Review	VA	Caves	90D Finding (9/27/11)	
FWS	Purple lilliput	<i>Toxolasma lividus</i>	Invertebrate	Under Review	AL, GA, NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Alabama rainbow	<i>Villosa nebulosa</i>	Invertebrate	Under Review	AL, GA, NC, TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Coosa creekshell	<i>Villosa vanuxemensis umbrans</i>	Invertebrate	Under Review	AL, GA, TN	River/Stream/Freshwater	90D Finding (9/27/11)	
NMFS	Bryde's whale	<i>Balaenoptera edeni</i>	Mammal	Candidate	AL	Coastal/Marine	Proposed endangered (12/8/16)	
FWS	Tricolored bat	<i>Perimyotis subflavus</i>	Mammal	Under Review	VA, NC, SC, GA, AL, TN	Forests	90D Finding (12/20/17)	
NMFS	Cuvier's beaked whale	<i>Ziphius cavirostris</i>	Mammal	Under Review	AL	Coastal/Marine	Petitioned (10/12/17)	
FWS	Seaside alder	<i>Alnus maritima</i>	Plant	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY18
FWS	Georgia leadplant	<i>Amorpha georgiana var georgiana</i>	Plant	Under Review	GA, NC, SC	Forests	90D Finding (9/27/11)	
FWS	Water stitchwort	<i>Arenaria fontinalis</i>	Plant	Under Review	TN	Other	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Purpledisk honeycomb-head	<i>Balduina atropurpurea</i>	Plant	Under Review	AL, GA, NC, SC	Other	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Apalachicola wild indigo	<i>Baptisia megacarpa</i>	Plant	Under Review	GA, AL	Forests	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Doll's daisy	<i>Boltonia montana</i>	Plant	Under Review	VA	Other	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Impressed-nerved sedge	<i>Carex impressinervia</i>	Plant	Under Review	AL, NC, SC	Forests	90D Finding (9/27/11)	

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FWS	Ciliate-leaf tickseed	<i>Coreopsis integrifolia</i>	Plant	Under Review	GA, SC	Forests	90D Finding (9/27/11)	
FWS	Venus flytrap	<i>Dionaea muscipula</i>	Plant	Under Review	NC, SC	River/Stream/Freshwater	90D Finding (12/20/17)	
FWS	Small-headed pipewort	<i>Eriocaulon kornickianum</i>	Plant	Under Review	GA	Other	90D Finding (9/27/11)	
FWS	Rockcastle wood-aster	<i>Eurybia saxicastellii</i>	Plant	Under Review	TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Harper's fimbriatylis	<i>Fimbristylis perpusilla</i>	Plant	Under Review	GA, SC, VA, NC, TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Hartwrightia	<i>Hartwrightia floridana</i>	Plant	Under Review	GA	Other	90D Finding (9/27/11)	
FWS	Harper's heartleaf	<i>Hexastylis speciosa</i>	Plant	Under Review	AL	Forests	90D Finding (9/27/11)	
FWS	Yellow anisetree	<i>Illicium parviflorum</i>	Plant	Under Review	GA	Forests	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Thin-wall quillwort	<i>Isoetes microvela</i>	Plant	Under Review	NC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Panhandle lily	<i>Lilium iridollae</i>	Plant	Under Review	AL, SC, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Bog spicebush	<i>Lindera subcoriacea</i>	Plant	Under Review	AL, GA, NC, SC, VA	Forests	90D Finding (9/27/11)	Expected 12M Status Review in FY23
FWS	Boykin's lobelia	<i>Lobelia boykinii</i>	Plant	Under Review	GA, NC, AL, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Raven's seedbox	<i>Ludwigia ravenii</i>	Plant	Under Review	NC, SC, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Curtis' loosestrife	<i>Lythrum curtissii</i>	Plant	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Carolina birds-in-a-nest	<i>Macbridea caroliniana</i>	Plant	Under Review	AL, GA, NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Large-flowered Barbara's-buttons	<i>Marshallia grandiflora</i>	Plant	Under Review	NC, TN	Forests	90D Finding (9/27/11)	
FWS	Godfry's stitchwort	<i>Minuartia godfreyi</i>	Plant	Under Review	AL, GA, NC, SC, TN	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Narrowleaf naiad	<i>Najas filifolia</i>	Plant	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Yellow pond-lily	<i>Nuphar lutea ssp. sagittifolia</i>	Plant	Under Review	NC, SC, VA	Coastal/Marine	90D Finding (9/27/11)	Expected 12M Status Review in FY20
FWS	Tennessee pondweed	<i>Potamogeton TNnsis</i>	Plant	Under Review	NC, TN, VA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	White meadowbeauty	<i>Rhexia parviflora</i>	Plant	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	



Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Panhandle meadowbeauty	<i>Rhexia salicifolia</i>	Plant	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Hairy peduncled beakrush	<i>Rhynchospora crinipes</i>	Plant	Under Review	AL, GA, NC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Eared coneflower	<i>Rudbeckia auriculata</i>	Plant	Under Review	GA, AL	Forests	90D Finding (9/27/11)	
FWS	Sun-facing coneflower	<i>Rudbeckia heliopsidis</i>	Plant	Under Review	AL, GA, NC, SC, VA	Forests	90D Finding (9/27/11)	
FWS	Florida willow	<i>Salix floridana</i>	Plant	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Mountain purple pitcherplant	<i>Sarracenia purpurea var. montana</i>	Plant	Under Review	GA, NC, SC	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Gulf sweet pitcherplant	<i>Sarracenia rubra ssp. gulfensis</i>	Plant	Under Review	GA	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Wherry's sweet pitcherplant	<i>Sarracenia rubra ssp. Wherryi</i>	Plant	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Hall's bulrush	<i>Schoenoplectus hallii</i>	Plant	Under Review	GA, SC	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Ocmulgee skullcap	<i>Scutellaria ocmulgee</i>	Plant	Under Review	GA, SC	Forests	90D Finding (9/27/11)	Expected 12M Status Review in FY19
FWS	Georgia bully	<i>Sideroxylon thornei</i>	Plant	Under Review	GA, AL	Forests	90D Finding (9/27/11)	
FWS	Wireleaf dropseed	<i>Sporobolus teretifolius</i>	Plant	Under Review	AL, GA, NC, SC	Other	90D Finding (9/27/11)	
FWS	Carolina hemlock	<i>Tsuga caroliniana</i>	Plant	Under Review	GA, NC, SC, TN, VA	Forests	90D Finding (9/27/11)	
FWS	Karst pond xyris	<i>Xyris longisepala</i>	Plant	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Gopher tortoise	<i>Gopherus polyphemus</i>	Reptile	Candidate; Threatened	AL, GA, SC	Forests	Warranted but precluded (12/2/16)	Expected Proposed Listing in FY23
FWS	Spotted turtle	<i>Clemmys guttata</i>	Reptile	Under Review	GA, NC, SC, VA	Forests	90D Finding (7/1/15)	Expected 12M Status Review in FY23
FWS	Eastern diamondback rattlesnake	<i>Crotalus adamanteus</i>	Reptile	Under Review	NC, SC, GA, AL	Forests	90D Finding (5/10/12)	
FWS	Wood turtle	<i>Glyptemys insculpta</i>	Reptile	Under Review	VA	River/Stream/Freshwater	90D Finding (9/18/15)	Expected 12M Status Review in FY23
FWS	Escambia map turtle	<i>Graptemys ernsti</i>	Reptile	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	

Agency	Common Name	Scientific Name	Species Group	Status	States Found	Habitat Type	Latest Pending Step	Next Step
FWS	Black-knobbed map turtle	<i>Graptemys nigrinoda</i>	Reptile	Under Review	AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Alabama map turtle	<i>Graptemys pulchra</i>	Reptile	Under Review	GA, AL	River/Stream/Freshwater	90D Finding (9/27/11)	
FWS	Southern hognose snake	<i>Heterodon simus</i>	Reptile	Under Review	AL, GA, NC, SC	Forests	90D Finding (7/1/15)	Expected 12M Status Review in FY19
FWS	Alligator snapping turtle	<i>Macrochelys temminckii</i>	Reptile	Under Review	GA, AL, TN	River/Stream/Freshwater	90D Finding (7/1/15)	Expected 12M Status Review in FY20
FWS	Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	Reptile	Under Review	AL, GA, SC	Other	90D Finding (9/18/15)	Expected 12M Status Review in FY22
FWS	Northern red-bellied cooter	<i>Pseudemys rubriventris</i>	Reptile	Under Review	NC, VA	River/Stream/Freshwater	90D Finding (9/27/11)	Expected 12M Status Review in FY23

## Appendix C: Schedule for species awaiting listing status determinations

Table C.1. *USFWS Workplan for Southeast Species*

In 2016, USFWS released a seven-year National Listing Workplan<sup>2</sup> for addressing the backlog of species awaiting listing determinations. In it, the Service sets internal deadlines to complete steps toward the listing of hundreds of species by 2023. This table lists all of the Southeast species that were included in this plan. For each species, the following information is also provided: the year of its anticipated next step, its common and scientific names, its taxonomic group, and its geographical range within the Southeast. Additionally, we provide the latest step in the listing process, and the next step that is anticipated.

Year	Common Name	Scientific Name	Species Group	States Found	Latest Pending Step	Expected Future Action
2017	Atlantic pigtoe	<i>Fusconaia masoni</i>	Invertebrate	GA, NC, VA, SC	90D Finding (9/27/11)	12M Status Review
2017	Neuse River waterdog	<i>Necturus lewisi</i>	Amphibian	NC	90D Finding (9/27/11)	12M Status Review
2017	Carolina madtom	<i>Noturus furiosus</i>	Fish	NC	90D Finding (9/27/11)	12M Status Review
2018	Striped newt	<i>Notophthalmus perstriatus</i>	Amphibian	GA	Warranted but precluded (12/2/16)	Proposed Listing
2018	Brook floater	<i>Alasmidonta varicosa</i>	Invertebrate	GA, NC, VA, SC	90D Finding (9/27/11)	12M Status Review
2018	Seaside alder	<i>Alnus maritima</i>	Plant	GA	90D Finding (9/27/11)	12M Status Review
2018	MacGillivray's seaside sparrow	<i>Ammodramus maritimus macgillivrayi</i>	Bird	SC, GA, NC	90D Finding (9/27/11)	12M Status Review
2018	Slenderclaw crayfish	<i>Cambarus cracens</i>	Invertebrate	AL	90D Finding (9/27/11)	12M Status Review
2018	Hellbender	<i>Cryptobranchus alleganiensis</i>	Amphibian	AL, GA, NC, SC, TN, VA	90D Finding (9/27/11)	12M Status Review
2018	Ashy darter	<i>Etheostoma cinereum</i>	Fish	TN	90D Finding (9/27/11)	12M Status Review
2018	Barren's darter	<i>Etheostoma forbesi</i>	Fish	TN	90D Finding (9/27/11)	12M Status Review
2018	Longsolid	<i>Fusconaia subrotunda</i>	Invertebrate	AL, GA, NC, VA, TN	90D Finding (9/27/11)	12M Status Review
2018	Florida sandhill crane	<i>Grus canadensis pratensis</i>	Bird	GA	90D Finding (9/27/11)	12M Status Review
2018	Round hickorynut	<i>Obovaria subrotunda</i>	Invertebrate	GA, AL, TN	90D Finding (9/27/11)	12M Status Review
2018	Pink pigtoe	<i>Pleurobema rubrum</i>	Invertebrate	TN, AL, VA	90D Finding (9/27/11)	12M Status Review
2018	Black-capped petrel	<i>Pterodroma hasitata</i>	Bird	GA, NC, SC, VA	90D Finding (6/21/12)	12M Status Review
2018	Yellow banded bumble bee	<i>Bombus terricola</i>	Insect	NC, TN, VA	90D Finding (3/16/16)	12M Status Review
2018	Black rail	<i>Laterallus jamaicensis</i>	Bird	AL, GA, NC, SC, VA	Petitioned (4/20/10)	12M Status Review
2019	Berry cave salamander	<i>Gyrinophilus gulolineatus</i>	Amphibian	TN	Warranted but precluded (12/2/16)	Proposed Listing

<sup>2</sup> USFWS. *National Listing Workplan: 7-Year Workplan (September 2016 Version)*. <https://www.fws.gov/endangered/esa-library/pdf/Listing%20Year%20Workplan%20Sept%202016.pdf>

Year	Common Name	Scientific Name	Species Group	States Found	Latest Pending Step	Expected Future Action
2019	Rattlesnake-master borer moth	<i>Papaipema eryngii</i>	Insect	NC	Warranted but precluded (12/2/16)	Proposed Listing
2019	Purpledisk honeycombhead	<i>Balduina atropurpurea</i>	Plant	AL, GA, NC, SC	90D Finding (9/27/11)	12M Status Review
2019	Cobblestone tiger beetle	<i>Cicindela marginipennis</i>	Insect	AL, SC	90D Finding (9/27/11)	12M Status Review
2019	Carolina Pygmy sunfish	<i>Elassoma boehlkei</i>	Fish	NC, SC	90D Finding (9/27/11)	12M Status Review
2019	Yellow anisetree	<i>Illicium parviflorum</i>	Plant	GA	90D Finding (9/27/11)	12M Status Review
2019	Chowanoke crayfish	<i>Orconectes virginiensis</i>	Invertebrate	NC, VA	90D Finding (9/27/11)	12M Status Review
2019	Longhead darter	<i>Percina macrocephala</i>	Fish	TN	90D Finding (9/27/11)	12M Status Review
2019	Hall's bulrush	<i>Schoenoplectus hallii</i>	Plant	GA, SC	90D Finding (9/27/11)	12M Status Review
2019	Ocmulgee skullcap	<i>Scutellaria ocmulgee</i>	Plant	GA, SC	90D Finding (9/27/11)	12M Status Review
2019	Tidewater amphipod	<i>Stygobromus indentatus</i>	Invertebrate	NC, VA	90D Finding (9/27/11)	12M Status Review
2019	Doll's daisy	<i>Boltonia montana</i>	Plant	VA	90D Finding (9/27/11)	12M Status Review
2019	Purple lilliput	<i>Toxolasma lividus</i>	Invertebrate	AL, GA, NC, TN, VA	90D Finding (9/27/11)	12M Status Review
2019	Monarch butterfly	<i>Danaus plexippus plexippus</i>	Insect	AL, VA, NC, SC, GA, TN	90D Finding (12/31/14)	12M Status Review
2019	Southern hognose snake	<i>Heterodon simus</i>	Reptile	AL, GA, NC, SC	90D Finding (7/1/15)	12M Status Review
2020	Southern elktoe	<i>Alasmidonta triangulata</i>	Invertebrate	GA, AL	90D Finding (9/27/11)	12M Status Review
2020	Obey crayfish	<i>Cambarus obeyensis</i>	Invertebrate	TN	90D Finding (9/27/11)	12M Status Review
2020	Speckled burrowing crayfish	<i>Fallicambarus danielae</i>	Invertebrate	AL	90D Finding (9/27/11)	12M Status Review
2020	Green floater	<i>Lasmigona subviridis</i>	Invertebrate	GA, NC, VA, AL, TN	90D Finding (9/27/11)	12M Status Review
2020	Cumberland moccasinshell	<i>Medionidus conradicus</i>	Invertebrate	AL, GA, NC, TN, VA	90D Finding (9/27/11)	12M Status Review
2020	Frecklebelly madtom	<i>Noturus munitus</i>	Fish	GA, AL, TN	90D Finding (9/27/11)	12M Status Review
2020	Yellow pond-lily	<i>Nuphar lutea ssp. sagittifolia</i>	Plant	NC, SC, VA	90D Finding (9/27/11)	12M Status Review
2020	Sickle darter	<i>Percina williamsi</i>	Fish	NC, TN, VA	90D Finding (9/27/11)	12M Status Review
2020	Canoe creek pigtoe	<i>Pleurobema athearni</i>	Invertebrate	AL	90D Finding (9/27/11)	12M Status Review
2020	Tennessee pigtoe	<i>Pleurobema barnesiana</i>	Invertebrate	AL, GA, NC, TN, VA	90D Finding (9/27/11)	12M Status Review
2020	Cumberland Gap cave beetle	<i>Pseudanophthalmus hirsutus</i>	Insect	TN, VA	90D Finding (9/27/11)	12M Status Review

<b>Year</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Species Group</b>	<b>States Found</b>	<b>Latest Pending Step</b>	<b>Expected Future Action</b>
2020	Avernus cave beetle	<i>Pseudanophthalmus avernus</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Crossroads cave beetle	<i>Pseudanophthalmus intersectus</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Hubbard's cave beetle	<i>Pseudanophthalmus hubbardi</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Hubricht's cave beetle	<i>Pseudanophthalmus hubrichti</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	New River Valley (=Narrow) cave Beetle	<i>Pseudanophthalmus egberti</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Natural Bridge cave beetle	<i>Pseudanophthalmus pontis</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Saint Paul cave beetle	<i>Pseudanophthalmus sanctipauli</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Shenandoah (=Madden's Cave) beetle	<i>Pseudanophthalmus limicola</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Silken cave beetle	<i>Pseudanophthalmus sericus</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	South Branch Valley cave beetle	<i>Pseudanophthalmus potomaca potomaca</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Thomas' cave beetle	<i>Pseudanophthalmus thomasi</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2020	Alligator snapping turtle	<i>Macrochelys temminckii</i>	Reptile	GA, AL, TN	90D Finding (7/1/15)	12M Status Review
2021	Pristine crayfish	<i>Cambarus pristinus</i>	Invertebrate	TN	90D Finding (9/27/11)	12M Status Review
2021	Blueridge springfly	<i>Remenus kirchneri</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2021	Lobed roachfly	<i>Tallaperla lobata</i>	Insect	VA	90D Finding (9/27/11)	12M Status Review
2022	Spiny scale crayfish	<i>Cambarus jezerinaci</i>	Invertebrate	TN, VA	90D Finding (9/27/11)	12M Status Review
2022	Brawley's Fork crayfish	<i>Cambarus williami</i>	Invertebrate	TN	90D Finding (9/27/11)	12M Status Review
2022	Saltmarsh topminnow	<i>Fundulus jenkinsi</i>	Fish	AL	90D Finding (9/27/11)	12M Status Review
2022	Tennessee heelsplitter	<i>Lasmigona holstonia</i>	Invertebrate	AL, GA, TN, VA, NC	90D Finding (9/27/11)	12M Status Review
2022	Popeye shiner	<i>Notropis ariommus</i>	Fish	AL, GA, TN, VA	90D Finding (9/27/11)	12M Status Review
2022	Orangefin madtom	<i>Noturus gilberti</i>	Fish	NC, VA	90D Finding (9/27/11)	12M Status Review
2022	Rye Cove cave isopod	<i>Lirceus culveri</i>	Invertebrate	VA	90D Finding (9/27/11)	12M Status Review

<b>Year</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>Species Group</b>	<b>States Found</b>	<b>Latest Pending Step</b>	<b>Expected Future Action</b>
2022	Piebald madtom	<i>Noturus gladiator</i>	Fish	TN	90D Finding (9/27/11)	12M Status Review
2022	Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	Reptile	AL, GA, SC	90D Finding (9/18/15)	12M Status Review
2022	Golden-winged warbler	<i>Vermivora chrysoptera</i>	Bird	AL, VA, NC, SC, GA, TN	90D Finding (6/2/11)	12M Status Review
2022	Regal fritillary	<i>Speyeria idalia</i>	Insect	NC, SC, VA	90D Finding (9/18/15)	12M Status Review
2023	Gopher tortoise	<i>Gopherus polyphemus</i>	Reptile	AL, GA, SC	Warranted but precluded (12/2/16)	Proposed Listing
2023	Streamside salamander	<i>Ambystoma barbouri</i>	Amphibian	TN, AL	90D Finding (9/27/11)	12M Status Review
2023	Water stitchwort	<i>Arenaria fontinalis</i>	Plant	TN	90D Finding (9/27/11)	12M Status Review
2023	Apalachicola wild indigo	<i>Baptisia megacarpa</i>	Plant	GA, AL	90D Finding (9/27/11)	12M Status Review
2023	Smallscale darter	<i>Etheostoma microlepidum</i>	Fish	TN	90D Finding (9/27/11)	12M Status Review
2023	Bog spicebush	<i>Lindera subcoriacea</i>	Plant	AL, GA, NC, SC, VA	90D Finding (9/27/11)	12M Status Review
2023	AL hickorynut	<i>Obovaria unicolor</i>	Invertebrate	AL	90D Finding (9/27/11)	12M Status Review
2023	Tennessee cave salamander	<i>Gyrinophilus palleucus</i>	Amphibian	GA, AL, TN	90D Finding (9/27/11)	12M Status Review
2023	Georgia blind salamander	<i>Haideotriton wallacei</i>	Amphibian	GA	90D Finding (9/27/11)	12M Status Review
2023	Chesapeake logperch	<i>Percina bimaculata</i>	Fish	VA	90D Finding (9/27/11)	12M Status Review
2023	Northern red-bellied cooter	<i>Pseudemys rubriventris</i>	Reptile	NC, VA	90D Finding (9/27/11)	12M Status Review
2023	Salamander mussel	<i>Simpsonaias ambigua</i>	Invertebrate	TN	90D Finding (9/27/11)	12M Status Review
2023	Spotted turtle	<i>Clemmys guttata</i>	Reptile	GA, NC, SC, VA	90D Finding (7/1/15)	12M Status Review
2023	Wood turtle	<i>Glyptemys insculpta</i>	Reptile	VA	90D Finding (9/18/15)	12M Status Review
2023	Peaks of Otter salamander	<i>Plethodon hubrichti</i>	Amphibian	VA	90D Finding (9/18/15)	12M Status Review