

**SOUTHEAST
BEAVER ALLIANCE**



September 4, 2025

Via E-mail to traci.wood@dcnr.alabama.gov

Traci Wood, SWG/SWAP Coordinator
Alabama Department of Conservation and Natural Resources
64 N. Union Street, Suite 468
Montgomery, Alabama 36130

Re: Draft 2025 State Wildlife Action Plan

Dear Ms. Wood,

The Southeast Beaver Alliance, a collaborative group made up of environmental professionals, submits these comments regarding the draft of Alabama's revised State Wildlife Action Plan ("SWAP"). We are pleased to offer our general support for the plan, as well as suggestions for your consideration as you work to finalize the SWAP. In particular, we highlight the beaver as an important ally for conservation of aquatic and wetland ecosystems which house species of greatest conservation need ("SGCN") in Alabama.

Conservation of keystone or umbrella species that are considered common or less rare should still be prioritized since their cascading benefits can protect and restore threatened and endangered species. For instance, the beaver (*Castor canadensis*) is a common keystone species and ecosystem engineer that creates native wetland habitats throughout Alabama. They are associated with many ecological systems in the state, including spray cliffs, wet meadows, early successional habitats, freshwater streams, rivers, lakes, and ponds, piedmont pools, depressions, and impoundments, floodplains, forests, and other freshwater wetlands. This species provides many ecological services and should be prioritized in conservation actions. Alabama Department of Conservation and Natural Resources ("ADCNR") elegantly summarizes the importance of these ecosystem engineers:

[T]he beaver can be termed a keystone species. Impoundments created by beavers damming a stream evolve into valuable wetlands that provide habitats that support a complex biodiversity of plant and animal life. In addition, the dam site and created wetland trap sediments, excess nutrients, and pollutants (toxic pesticides and other toxins). These are broken down and decomposed through metabolic processes, resulting in much cleaner water flowing downstream. Beaver ponds also minimize runoff from heavy rainfall easing downstream flooding and soil erosion. Not only does the dam site complex slow the forces of water during periods of heavy rainfall, it also retains a reservoir of water that helps maintain a constant downstream flow during periods of drought.

Beaver ponds increase wildlife carrying capacity by providing a valuable water source during long periods of drought. Rich, moist soils associated with these sites produce an abundance of lush nutritious plant species, which are consumed as food or used for cover by many different wildlife species. There is certainly no dispute the wetlands created by beavers result into a valuable life sustaining ecosystem complex from which our environment greatly benefits....

Learning to live with beavers is usually the best way to retain peace of mind and reconcile human and beaver conflicts...The total removal of beavers can result in the loss of very beneficial wildlife habitat.¹

Despite the potential of beaver-created and -maintained habitat to contribute to a variety of species conservation efforts, the draft SWAP contains little discussion of actions to facilitate beaver conservation. Among other benefits, beaver activity can help manage and conserve SGCN. We ask that Alabama's 2025 SWAP include further research on the benefits of beavers to ecosystems in Alabama and specific provisions for beaver conservation when related to the restoration and maintenance of habitat of SGCN.

Alabama has experienced an estimated 50% loss in wetlands from its original 8 million acres.² As ADCNR has recognized, beavers can play a key role in wetland conservation and restoration. Beaver dams serve as a natural wetland creation mechanism by slowing the velocity of water, encouraging lateral spreading, and saturating larger areas of soil.³ Beavers create a complex wetland habitat ranging in age and successional stage that is more resilient to flooding, drought, and other symptoms of climate change and enhances adjoining habitat for other species, including SGCNs.⁴

Established beaver dams are also capable of withstanding significant flood events while slowing down floodwaters and reducing erosion and other damage downstream.⁵ Areas dammed by beaver increase water storage capacity and can reroute water to longer subsurface flow paths. These mechanisms create a buffer against drought for the wetland and downstream habitats and improve groundwater storage and aquifer recharge.⁶ The benefits multiple beaver dam-pond pairs provide ecosystems include: (i) maximizing habitat diversity and providing migration pathways and refugia for diverse organisms; (ii) "maximizing lateral and vertical connectivity across the entire river corridor, while limiting longitudinal connectivity," leading to "enhanc[ed]

¹ Rick Claybrook, *Leave it to Beaver*, Outdoor Alabama (last visited Aug. 8, 2025), <https://www.outdooralabama.com/rodents/leave-it-beaver>.

² *Alabama State Wetland Program Summary*, National Association of Wetland Managers (Aug. 31, 2015), https://www.nawm.org/pdf_lib/state_summaries/alabama_state_wetland_program_summary_083115.pdf.

³ U.S. Fish & Wildlife Serv., *The Beaver Restoration Guidebook: Working with Beaver to Restore Streams, Wetlands, and Floodplains* 4 (M.M. Pollock, G.M. Lewallen, K. Woodruff, C.E. Jordan and J.M. Castro eds., 2023) [hereinafter "Guidebook"].

⁴ *See id.* at 5.

⁵ *See* Emily Fairfax & Cherie Westbrook, *The Ecology and Evolution of Beavers: Ecosystem Engineers that Ameliorate Climate Change*, 55 Ann. Rev. of Ecology, Evolution, and Systematics 323, 334 (2024).

⁶ *Id.* at 335–36.

storage of surface and subsurface water, sediment, nutrients, and organic matter;” and (iii) reducing peak flows and sediment transport if one dam fails.⁷

The storage of sediment and nutrients within beaver ponds can also help filter pollutants and improve downstream water quality.⁸ Beaver wetlands also reduce the effects of wildfire and provide refugia to a host of wildlife species during wildfires, although most of this evidence base consists of studies in the western United States.⁹ We recommend ADCNR research the effects of beaver wetlands on wildfires within the state, especially given the increase of wildfire risk projected for the southeast.¹⁰

These beaver-created, climate change-resistant ecosystems can also increase biodiversity and reverse habitat loss.¹¹ Beaver-created wetlands generally have a positive impact on terrestrial invertebrate diversity,¹² the abundance of waterfowl, and the abundance and diversity of fish species.¹³ On a landscape scale, beavers can increase overall plant species richness “by creating a new mosaic of terrestrial and aquatic vegetation habitats.”¹⁴

Prioritizing beavers can protect and enhance dozens of SGCN listed in the Alabama SWAP. Species of the highest conservation need which rely on beaver ponds include the Eastern Black Rail, Tricolor Bat, Gray Bat, Indiana Bat, Ironcolor shiner, Tennessee heelsplitter, Rainbow Snake, River Frog, Water Purslane, Green Pitcherplant, and Dwarf Bladderwort.¹⁵

Species of high conservation need which rely on the ecosystem services of beavers include the, King rail, Rusty Blackbird, Mud salamander, Rafinesque's Big-eared Bat, Meadow

⁷ Ellen Wohl and Shreeram Inamdar, *Beaver Versus Human: The Big Differences in Small Dams*, 12 WIREs Water 12:e70019, at 17 (March 27, 2025).

⁸ Graham A. Puttock, et al., *Eurasian beaver activity increases water storage, attenuates flow and mitigates diffuse pollution from intensively-managed grasslands*, 576 Sci. Total Env't 430 (2017), <https://doi.org/10.1016/j.scitotenv.2016.10.122>.

⁹ See Emily Fairfax, et al., *Impacts of beaver dams on riverscape burn severity during megafires in the Rocky Mountain region, western United States*, 562 Geological Soc'y Am. 131 (Feb. 15, 2024).

¹⁰ Victoria M. Donovan et al., *Increasing Large Wildfire in the Eastern United States*, 50 Geophysical Research Letters, e2023GL107051 (2023), <https://doi.org/10.1029/2023GL107051>.

¹¹ Fairfax & Westbrook, *supra* n.5 at 337.

¹² Brian M. Bush & Scott A. Wissinger, *Chapter 12: Invertebrates in Beaver-Created Wetlands and Ponds*, in *Invertebrates in Freshwater Wetlands: An Int'l Perspective on their Ecology* 411, 432 (Darold Batzer and Dani Boix eds., 2016).

¹³ David R. Butler, *The Reintroduction of the Beaver into the South*, 31 Se. Geographer 39, 41 (1991).

¹⁴ See Annegret Larsen, et al., *Dam builders and their works: Beaver influences on the structure and function of river corridor hydrology, geomorphology, biogeochemistry and ecosystems*, 218 Earth-Science Revs. (May 2021), at 31.

¹⁵ Mississippi SWAP 2025 SGCN List (Miss. Wildlife, Fisheries & Parks, June 17, 2025), <https://perma.cc/GF4U-2NUQ?type=standard> [hereinafter “Miss. SGCN”]; Linda Chafin, *Georgia's Natural Communities and Associated Rare Plant and Animal Species Thumbnail Accounts* 69 (Ga. Dep't of Nat. Res. 2011), <https://perma.cc/BM66-UD2N>; *Dwarf Bladderwort*, NatureServ Explorer (last updated Aug. 1, 2025), <https://perma.cc/C5F5-EYEZ>; Lisa Kruse et al., *Plants Technical Team Report* 46 (Ga. Dep't of Nat. Res., Feb. 19, 2025 DRAFT) (hereinafter

Plants Technical Report); Rainbow Snake, NatureServ Explorer (last updated Aug 1. 2025), https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.105967/Farancia_erytrogramma.

Jumping Mouse, Southeastern Myotis, Eastern Chicken Turtle, Hoary Bat, Northern Yellow Bat, Least crayfish, Finelined Pocketbook, Coldwater Darter.¹⁶

Other SGCN which rely on beaver-created habitat include the American Black Duck, American Woodcock, Black bear, Starhead topminnow, Little blue heron, Prothonotary Warbler, Tricolored Heron, Wood Stork, Bluespotted Sunfish, Southern creekmussel, Alligator Snapping Turtle, Four-toed Salamander.¹⁷

The above are not exhaustive lists of the plants and animals in need of conservation help in Alabama that can and do benefit from beaver habitats. We recommend that ADCNR research other SGCN species that benefit from beaver habitats and consider acknowledging in the 2025 SWAP the important role that beavers play in Alabama's ecosystems, how they may benefit the state's diverse groups of flora and fauna, and how they can contribute to the conservation of these SGCN.

Despite the benefits from beavers, Alabama's 2025 SWAP highlights valid concerns about the presence of beavers. Flooding acts as a nuisance for landowners and can damage infrastructure. We recommend ADCNR research use of flow devices and fencing across a variety of beaver-influenced ecosystems to minimize disruption to landowners and other species. These tools, when installed by trained professionals, can be used to manage water levels, leading to an increased tolerance for the presence of beavers so communities may benefit from their ecological services.

Additionally, we strongly urge ADCNR to prioritize the use of flow devices and other nonlethal tools for beaver management as needed for the preservation of habitat for SGCN, and to utilize trapping as a last resort. We recommend that the 2025 SWAP include public education about nonlethal management tools, such as flow devices that address flooding concerns, as well as wrapping trees in wire¹⁸ and fencing off other vegetation to address tree damage. We also encourage ADCNR to work with other agencies and municipalities to adopt nonlethal management strategies.

Where a site is unsuitable for the presence of beavers but would still benefit from the impacts of their activity, using beaver mimicry such as beaver dam analogs ("BDA"), post assisted log structures ("PALS"), and other low-tech, process-based restoration methods would similarly benefit the ecosystem. The Corps of Engineers recently released a draft of the updated Nationwide Permit 27 to explicitly include these restoration methods.¹⁹

¹⁶ Miss. SCGN; Chafin at 43, 69; Todd Schneider & Tim Keyes, *Birds Technical Team Report for Georgia's 2025 State Wildlife Action Plan* 11 (Ga. Dep't of Nat. Res., Feb. 19, 2025 DRAFT); Plants Technical Report at __;

¹⁷ Miss. SCGN; Bruce Batt, *Understanding Waterfowl: Beaver Ponds and Breeding Ducks*, Ducks Unlimited (June 24, 2015), <https://perma.cc/7ZD4-HTW5>; Chafin at 69; J. Daren Riedle, et al., *Microhabitat Use, Home Range, and Movements of the Alligator Snapping Turtle, Macrochelys Temminckii, in Oklahoma*, 51 *Herpetological Conservation and Biology* 35, 37 (March 2006).

¹⁸ See Cherie J. Westbrook and Kirby England, *Relative Effectiveness of Four Different Guards in Preventing Beaver Cutting of Urban Trees*, 7 *J. of Urban Ecology*, <https://doi.org/10.1093/jue/juab021>.

¹⁹ See *id.* at 69.

Because of the numerous benefits of beaver activity and beaver mimicry structures to ecosystems generally and SGCN specifically, we ask that Alabama's 2025 SWAP support further research on the ecosystem benefits of beaver activity and beaver mimicry structures within Alabama, especially regarding groundwater recharge, drought resilience, stream temperature, habitat creation from woody debris, and beaver conservation related to the preservation and maintenance of habitat of related SGCN. We also encourage ADCNR to pursue conservation actions that improve and preserve hydrologic connectivity and hydrologic and geomorphic integrity including restoration methods which use beavers or beaver mimicry.

We urge ADCNR to actively encourage and promote maintaining beaver habitat in natural areas to create, restore, and maintain freshwater marshes, as well as other ecosystems reliant on beaver activity. We also urge ADCNR to focus on the benefits brought by the presence of this keystone species, and to utilize and encourage the public to use the non-lethal management strategies highlighted above.

We appreciate this opportunity to support and provide feedback on Alabama's Draft 2025 SWAP. We look forward to working with ADCNR to help conserve and restore the ecosystems which house the state's rich biodiversity. If you have any questions or would like to discuss these comments further, please contact us at southeastbeaver@gmail.com.

Sincerely,

Tony Able
Chair

Catherine Crafa
Vice Chair