



North Carolina Chapter The Wildlife Society

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Public Comments Processing
Attn: FWS-R4-ES-2025-0210

US Fish and Wildlife Service (USFWS)
Department of the Interior
5275 Leesburg Pike
Falls Church, VA 22041-3803

Re: Comment on Support of Endangered and Threatened Wildlife and Plants; Threatened Species Status With Section 4(d) Rule for Southern Hognose Snake:

- **50 CFR Part 17- [Docket No. FWS-R4-ES-2025-0210; FXES1111090FEDR-256-FF09E21000], RIN 1018-BI23**

Dear U.S. Fish and Wildlife Service, Southern Hognose Team,

The North Carolina Chapter of the Wildlife Society ([NCTWS](#)) would like to express its support for the proposed listing of the southern hognose snake (*Heterodon simus*) as a threatened species under the ESA 4(d) rule. NCTWS is an association of more than 300 wildlife professionals from federal and state agencies, academia, industry, and conservation organizations involved in wildlife research, education, and habitat management. Given our professional experience throughout North Carolina, a state that lies within the southern hognose snake's range, we support this listing as it aids our work in wildlife conservation.

The southern hognose snake is one of 3 *Heterodon* species native to the US and was historically distributed in fire-maintained sandy upland communities of the Coastal Plain in all southern states (NC, SC, GA, FL, AL, LA, MS)(Conant and Collins, 1998). In North Carolina, the species is especially associated with natural communities containing a significant longleaf pine (*Pinus palustris*) component once prevalent across the sandhills and southeastern coastal regions of North Carolina. Southern hognose snake populations have declined concurrently with the decline

of these natural communities. Southern hognose snakes are [imperiled in all areas of their natural distribution](#). The snakes have not been reported in Mississippi and Alabama and may have been extirpated from those regions for at least 2 decades (Tuberville et al., 2000). The species is considered critically imperiled in North Carolina, South Carolina, and Georgia. A local study in North Carolina indicated that the snake has become extremely rare or absent across much of its former range in North Carolina (Beane et al. 2024). [The Southern Hognose Conservation Plan for NC](#) indicates the species has been reported recently in only 13 of the 20 counties where it was historically present. Population monitoring and conservation practices tailored to address threats affecting the persistence of the southern hognose are imperative to minimize further decline and maintain and expand the species' habitat.

Specifically, the threats to the long-term persistence of southern hognose snakes include habitat loss, driven by land conversion (e.g., to urban or agricultural uses) and fire exclusion, invasive red imported fire ants, and use in the pet trade (Beane et al. 2014; Crawford et al. 2020). While the species can persist in [agricultural or suburban areas with suitable sandy soils](#), the increase in road density and traffic volume associated with urban/suburban sprawl fragments habitat and reduces successful completion of the species' life cycle. Red imported fire ants, which are expanding their range, hinder the snake's fossorial habit (Beane et al. 2014). Furthermore, increasing popularity in the pet trade has put pressure on existing wild populations of the southern hognose snake (Kelly 2011; Florida Fish & Wildlife). Moreover, the species is difficult to study due to its elusive nature and declining population.

The USFWS species status report documents a 60% decline in the species' global population, with 70% of the remaining population expected to be lost without intervention (USFWS, 2019). A recent study estimated that 74% of known populations are likely to be extirpated by 2080 (Crawford et al. 2020). There is an urgent need to develop effective conservation strategies under the ESA 4(d) rule to protect this species and designate critical habitat in North Carolina and all southern states within its historical range.

Although [ongoing efforts](#) to restore longleaf pine communities have had some success, the southern hognose is still declining, possibly due to a combination of threats described above. The snake is a [state-threatened species in NC](#), and the state's conservation plan outlines strategies to increase and restore populations of the southern hognose snake through habitat acquisition, connectivity, and restoration. The plan emphasizes habitat restoration via prescribed fire, red imported fire ant management, and education and outreach programs to encourage conservation activities on private lands. In addition to state agency efforts, there are ongoing small-scale conservation efforts, such as [Project Simus](#), which works to better understand the species in NC, and [The Sandhills Conservation Partnership](#), which works to restore habitat for southern hognose snakes and other wildlife species associated with fire-maintained longleaf pine communities. However, federal listing and an adequate regulatory framework will boost regionwide public-private collaborations to enhance the quality and connectivity of southern hognose snake habitat, thereby supporting long-term recovery and expansion of the species' populations.

Recommendations

- **Habitat Restoration:** Habitat availability for the southern hognose snake is strongly influenced by soil characteristics, vegetation conditions (i.e., layer of grasses and forbs in the understory), and the use of prescribed fire. NCTWS recommends expanding (through private collaborations & land acquisition) and improving habitat (including wetland mosaics for primary prey) on currently unprotected lands, thereby reducing the estimated rate of population decline (Crawford et al. 2020; Stonecypher 2023). The listing will help determine the critical habitat for the snake and inform habitat restoration efforts.
- **Invasive Fire Ant Control:** Fire ant control and targeted management, such as hot-water control methods, could also mitigate predation threats (King, 2024). This is an important strategy to maintain core snake habitat and associated populations.

In conclusion, the southern hognose snake is a specialist that inhabits fire-maintained longleaf pine woodlands and savannahs in North Carolina and other regions of the southeastern US. “Prohibitions and exceptions to the prohibitions,” as stated in the proposed rule, are an essential part of listing the snake as a threatened species, but will be inadequate to protect this species long-term. The populations will not recover without identifying critical habitat that can be maintained and restored, as mandated by the ESA 4(d) provision. Critical habitat should be determinable using existing data from North Carolina’s conservation plan and regionwide conservation and management efforts as mentioned above. We therefore urge USFWS to coordinate with state and private/nonprofit organizations across all southern states to obtain the necessary information to designate critical habitat for the southern hognose snake and to strengthen the proposed rule to support successful long-term conservation and recovery of the species.

Sincerely,

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