

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

CENTER FOR BIOLOGICAL DIVERSITY,
P.O. Box 11374
Portland, OR 97211

Plaintiff,

v.

DEB HAALAND, in her official capacity as
Secretary of the U.S. Department of the Interior,
1849 C Street NW
Washington, D.C. 20240,

U.S. FISH AND WILDLIFE SERVICE,
1849 C Street NW
Washington, D.C. 20240,

and

MARTHA WILLIAMS, in her official capacity
as Director of the U.S. Fish and Wildlife Service,
1849 C Street NW
Washington, D.C. 20240

Defendants.

Case No. 23-221

**COMPLAINT FOR DECLARATORY
AND INJUNCTIVE RELIEF**

INTRODUCTION

1. Plaintiff Center for Biological Diversity (“Center”) challenges the unlawful decision of the U.S. Fish and Wildlife Service (“Service”) to deny Endangered Species Act (“ESA”) protections to the southern hognose snake (*Heterodon simus*). 84 Fed. Reg. 53,342 (Oct. 7, 2019) (“not-warranted finding”). Defendants’ failure to list the southern hognose

snake violated their mandatory duties under the ESA, 16 U.S.C. § 1533, and deprives the snake of critical protections that are necessary to ensure its continued survival and recovery.

2. The southern hognose snake is among the rarest and most threatened snake species in North America. It is fossorial, spending most of its time underground in burrows it creates with its unique, upturned snout, and is adapted to living in the sandy, fire-dependent forest communities of North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi.

3. The snake is highly imperiled due to extensive habitat loss and ongoing threats such as timber harvest, urbanization, habitat fragmentation, road mortality, climate change, invasive species, the commercial pet trade, and disease. As a result of these threats, the Service predicts that only a quarter of historic populations will remain in the foreseeable future, and that those that persist will be isolated.

4. Recognizing the species' precipitous decline, the Center petitioned the Service to list the southern hognose snake as a threatened or endangered species under the ESA over a decade ago. On July 1, 2015, the Service concluded that the Center's petition presented substantial information indicating that listing the species may be warranted.

5. However, despite its own science indicating that the snake has experienced substantial population declines and faces myriad significant threats to its continued existence, on October 7, 2019, the Service denied the species ESA protections. 84 Fed. Reg. 53,342.

6. In finding that the southern hognose snake is not threatened or endangered, the Service flouted the ESA's mandate that the agency rely solely on the best available science when making listing determinations, for it discounted all but two of the numerous threats the species faces. Indeed, in its explanation for why it found that the snake does not warrant

listing, the Service relied solely on the results of a model that did not analyze, for instance, the impacts of timber harvest; habitat fragmentation; road mortality; climate change-induced weather events such as drought and storms; invasive species; human persecution and harassment; collection for the pet trade; or disease—all threats the Service itself identified as important factors impacting the snake's continued existence.

7. The Service also failed to provide a rational explanation between the information before it and its decision not to list the species as threatened or endangered. The Service's own analysis indicates that the species has declined considerably and will continue to do so into the foreseeable future. However, despite the bleak picture of the snake's status and projected viability painted by the Service, it issued a not-warranted finding that wholly contradicts that picture without providing legally adequate justification for doing so.

8. Compounding its errors, the Service produced a flawed analysis to determine whether the species is threatened or endangered in a significant portion of its range—an independent basis for listing the Service is required to analyze. The agency applied the incorrect statutory standard and rested its analysis on the false legal and factual premise that none of the threats facing the snake are geographically concentrated in any portion of its range.

9. For these and additional reasons, the Service's not-warranted finding for the southern hognose snake fails to follow the best available science, violates the ESA, and is arbitrary and capricious. To remedy these violations, the Center seeks an order vacating the Service's not-warranted finding and remanding the matter to the Service to issue a new finding regarding whether the snake warrants protection under the ESA as an endangered or threatened species by a date certain.

JURISDICTION AND VENUE

10. Plaintiff brings this action pursuant to the ESA citizen suit provision, 16 U.S.C. § 1540(g), and the Administrative Procedure Act (“APA”), 5 U.S.C. § 702, which waive Defendants’ sovereign immunity.

11. This Court has jurisdiction pursuant to 28 U.S.C. § 1331 (federal question jurisdiction); 28 U.S.C. §§ 2201–2202 (declaratory judgments and further relief); 16 U.S.C. §1540(c) (district court jurisdiction); 16 U.S.C. §1540 (g)(1)(C) (action arising under the ESA citizen-suit provision); and 5 U.S.C. §§ 702–704 (APA).

12. Venue is proper in the District of Columbia pursuant to 16 U.S.C. § 1540(g)(3)(A) and 28 U.S.C. § 1391(e), as this civil action is brought against an agency of the United States and officers and employees of the United States acting in their official capacities and under the color of legal authority, and because no real property is involved in this action. Plaintiff also maintains an office in this judicial district.

13. Pursuant to the ESA citizen suit provision, Plaintiff provided the Secretary of the U.S. Department of the Interior and the Service with 60 days’ notice of intent to sue for ESA violations on November 14, 2022, more than 60 days prior to the filing of this Complaint.

PARTIES

14. Plaintiff CENTER FOR BIOLOGICAL DIVERSITY is a national, non-profit conservation organization that works through science, law, and the media to protect imperiled species and their habitats. The Center has more than 84,000 members, including many who live and recreate in the southern hognose snake’s historic range. The Center is headquartered in Tucson, Arizona, with offices throughout the United States.

15. Plaintiff brings this action on behalf of its organization, and its staff and members who maintain professional, scientific, recreational, aesthetic, economic, spiritual, and other legally protected interests in the southern hognose snake and its habitat. The Center's members and staff live near and/or regularly visit areas where the southern hognose snake is known or believed to exist, in hopes of viewing this increasingly rare species.

16. For instance, Center member and herpetologist Will Harlan, who resides in North Carolina, travels to the southern hognose snake's habitat at least four to six times each year to attempt to observe the species and to enjoy its habitat. Mr. Harlan has observed the snake in the Florida Panhandle's Apalachicola National Forest and in Florida's Homosassa Wildlife Management Area. He regularly takes trips to Georgia's Okefenokee National Wildlife Refuge and the North Carolina Sand Hills in search of the snake and to recreate in its habitat. He has searched for the snake in other locations within its range across the Southeast over the past three decades and will continue to do so regularly.

17. Center member and herpetologist Adrian Macedo has searched for the southern hognose snake in Alabama and Mississippi without success. He recreates in the southern hognose snake's range yearly, and has specific plans to travel to Aiken, South Carolina in November 2023 to search for the species and to camp and hike in its habitat.

18. The Service's decision to deny ESA protections to the southern hognose snake has caused Plaintiff and its members, including Mr. Harlan and Mr. Macedo, to suffer a concrete and particularized injury that is actual and imminent. Without the protections provided by listing the southern hognose snake as an endangered or threatened species pursuant to the ESA, the species will likely continue to decline towards extinction, and

Plaintiff and its members will continue to suffer injury unless the relief sought in this complaint is granted.

19. Defendant UNITED STATES FISH AND WILDLIFE SERVICE is a federal agency within the Department of the Interior. The Secretary of the Interior has delegated to the Service the authority to administer the ESA for non-marine species. 50 C.F.R. § 402.01(b). This authority encompasses findings and proposed and final listing determinations for the southern hognose snake.

20. Defendant MARTHA WILLIAMS is the Director of the U.S Fish and Wildlife Service and is charged with ensuring agency decisions comply with the law. Plaintiff sues Defendant Williams in her official capacity.

21. Defendant DEB HAALAND is the Secretary of the Interior (“Secretary”) and has the ultimate responsibility to administer and implement the provisions of the ESA regarding the southern hognose snake, and to comply with all other federal laws applicable to the U.S. Department of the Interior. Plaintiff sues Defendant Haaland in her official capacity.

STATUTORY AND REGULATORY BACKGROUND

The Endangered Species Act

22. The ESA “represent[s] the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180 (1978). The “plain intent of Congress in enacting [the ESA] was to halt and reverse the trend toward species extinction, whatever the cost.” *Id.* at 184.

23. The statute seeks to “provide a program for the conservation of ... endangered species and threatened species” and “to provide a means whereby ecosystems upon which endangered species and threatened species depend may be conserved.” 16 U.S.C. § 1531(b). The

ESA requires that “all Federal departments and agencies ... seek to conserve endangered species and threatened species and ... utilize their authorities in furtherance of the purposes” of the statute. *Id.* § 1531(c)(1).

24. The ESA protects imperiled species only if the Service lists them as threatened or endangered. Once a species is listed, they receive numerous substantive protections. For example, section 7 of the ESA requires all federal agencies to ensure that their actions do not “jeopardize the continued existence” of any listed species or “result in the destruction or adverse modification” of a listed species’ “critical habitat.” *Id.* § 1536(a)(2). Section 9 of the ESA prohibits, among other things, “any person” from intentionally or incidentally “taking” listed species without a lawful authorization from the Service. *Id.* §§ 1538(a)(1)(B), 1539. Other provisions require the Service to designate “critical habitat” for listed species, *id.* § 1533(a)(3); to “develop and implement” recovery plans for listed species, *id.* § 1533(f); and authorize the Service to make federal funds available to states to assist their efforts to preserve and protect threatened and endangered species. *Id.* § 1535(d).

25. The ESA defines a “species” as “any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature.” *Id.* § 1532(16).

26. The ESA requires the Service to determine whether any species is endangered or threatened because of any of the following factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. *Id.* § 1533(a)(1).

27. If a species meets the definition of “endangered” or “threatened” because of any one or a combination of these five factors, the Service must list the species. *Id.*; 50 C.F.R. § 424.11(c). In evaluating these factors, the Service must make listing determinations “solely on the basis of the best scientific and commercial data available.” 16 U.S.C. § 1533(b)(1)(A).

28. A species is “endangered” when it “is in danger of extinction throughout all or a significant portion of its range.” *Id.* § 1532(6). A species is “threatened” when it is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” *Id.* § 1532(20).

29. Under this plain language, if the Service concludes that a species is an endangered species throughout all of its range, the Service’s inquiry ends, and the Service must publish a proposed rule to list the species as endangered in the Federal Register. *Id.* § 1533(b)(5). If the Service determines that the species is neither endangered nor threatened throughout all of its range, the ESA then requires the agency to examine whether it is endangered or threatened throughout any *significant portion* of that range. And if the Service determines that the species is threatened but not endangered throughout all of its range, it must still examine whether the species is *endangered* in any significant portion of its range.

30. The ESA does not define what constitutes a “significant portion” of a species’ range. In 2014, the Service promulgated a “Final Policy on Interpretation of the Phrase ‘Significant Portion of Its Range’ in the ESA’s Definitions of ‘Endangered Species’ and ‘Threatened Species.’” 79 Fed. Reg. 37,578 (July 1, 2014) (“SPR Policy”).

31. The SPR Policy directs the Service to determine whether: (1) the portions may be significant; and (2) the species may be in danger of extinction in those portions or likely to become so in the foreseeable future. The Service may answer these questions in any order, and if

both questions are answered in the affirmative, the agency must list the species as endangered or threatened. If either question is answered in the negative, however, that is the end of the inquiry. As part of this analysis, the SPR policy directs the service to consider whether any threats facing the species are geographically concentrated in some manner.

32. The requirement that the Service rely on the “best scientific and commercial data available,” 16 U.S.C. § 1533(b)(1)(A) (emphasis added), means that the Service must act based on the science available to the agency, and cannot dismiss threats to or refuse to list a species based on uncertainty alone. Congress’s intention in allowing the Service to list a species as threatened based on the best scientific data available, instead of requiring scientific certainty, was for the Service to act and provide ESA protections to imperiled species before they stood on the brink of extinction and beyond any likely hope of recovery. *See* H.R. Rep. No. 412, 93d Cong., 1st Sess. 5 (1973) (“In the past, little action was taken until the situation became critical and the species was dangerously close to total extinction. This legislation provides us with the means of preventive action.”) (remarks of Rep. Clausen); *id.* (“By heeding the warnings of possible extinction today, we will prevent tomorrow’s crisis.”) (remarks of Rep. Gilman).

33. Any interested person can initiate the listing process by filing a petition with the Service to list a species as endangered or threatened. 16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.14(a).

34. Upon receiving a petition to list a species, the Service has 90 days to determine whether the petition “presents substantial scientific or commercial information indicating that the potential action may be warranted.” 16 U.S.C. § 1533(b)(3)(A); 50 C.F.R. § 424.14(h)(1). This determination is known as a “90-day finding.”

35. If the Service makes a positive 90-day finding in response to a petition, it must publish that finding and proceed with a scientific review of the species' status, known as a "status review." 16 U.S.C. § 1533(b)(3)(A).

36. Upon completing the status review, and within 12 months of receiving the petition, the Service must publish one of three findings: (1) listing is "warranted"; (2) listing is "not warranted"; or (3) listing is "warranted but precluded" by other proposals for listing species, provided certain circumstances are met. *Id.* § 1533(b)(3)(B).

37. If the Service issues a finding that listing the species is "warranted," it must publish a proposed rule to list the species as endangered or threatened in the Federal Register. *Id.* § 1533(b)(5). Within one year of publishing a proposed rule to list a species, the Service must issue a final rule listing the species and designating critical habitat for it. *Id.* § 1533(a)(3), (b)(6)(A), (C).

38. If the Service issues a finding that listing the species is "not warranted," that finding is a final agency action subject to judicial review. *Id.* § 1533(b)(3)(C)(ii).

The Administrative Procedure Act

39. Under the APA's standard of review, a court must hold unlawful and set aside "agency actions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). This standard of review applies to claims brought under the citizen suit provision of the ESA.

40. An agency's action is arbitrary and capricious if the agency "entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a

difference in view or the product of agency expertise.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

FACTUAL BACKGROUND

The Southern Hognose Snake and Threats to Its Continued Existence



41. The southern hognose snake is the smallest of the hog-nosed snakes and has the most restricted geographic distribution—six states in the southeastern United States. The species is thought to be one of the rarest and most threatened snakes in North America, and its decline has been documented since at least the 1980s.

42. A striking, cryptic reptile with specific habitat and diet requirements, the southern hognose snake is fossorial—meaning it spends the vast majority of its time underground—and has a unique, upturned snout used for digging burrows. Its diet is highly specialized, consisting almost entirely of frogs, toads, and lizards. The snake is slow-moving, harmless, and, when threatened by a perceived predator, freezes in a defensive posture or feigns death.

43. The species was historically found in the Coastal Plains of North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Florida. However, it has disappeared from multiple large geographic regions including Alabama, Mississippi, northeastern North Carolina, central Georgia, and the eastern Florida peninsula.

44. The snake is associated with well-drained, sandy soils within the longleaf pine ecosystem, a fire-dependent forest community that has declined by 98 percent due to timber harvest, fire suppression, and other forms of habitat destruction. The species has declined in parallel with the decline of the longleaf pine ecosystem.

45. In total, an estimated 60% of historic southern hognose snake populations have been extirpated (i.e., vanished), and remaining resilient populations are “clustered,” leaving large swaths of unoccupied land between populations.

46. While the loss of longleaf pine is a primary cause of the snake’s decline, the snake has also disappeared from areas that contain suitable habitat. Its disappearance from some of the best remaining longleaf pine habitat indicates that other factors have likely contributed to its extirpation from parts of its range and highlights the myriad other threats to the species’ continued existence.

47. Urbanization and habitat fragmentation—the breaking apart of continuous habitat into many patches—present significant threats to the snake, which has limited ability to move between habitat fragments. In the southeastern United States, urbanization is expected to increase by 139% by 2060, with concentrations of development occurring in the snake’s range.

48. As its habitat becomes increasingly fragmented, the snake becomes increasingly vulnerable to road mortality. The species is highly susceptible to road mortality due to its cryptic coloration and aspects of its behavior such as slow movement, freezing, and death feigning. A high number of southern hognose snake observations are of “dead on road” individuals, and the Service postulates that road mortality has “population level effects and contribut[es] to population declines in parts of the species’ range.” U.S. Fish & Wildlife Service 2019, Species

Status Assessment Report for the Southern Hognose Snake (*Heterodon simus*), Version 1.1, 19 (“SSA”).

49. Climate change will have negative “synergistic effects” on the southern hognose snake. *Id.* at 22. As an ectotherm—an animal that depends on external factors for temperature regulation—the snake is particularly vulnerable to the effects of drought and other climate change-induced weather events. For instance, its reproduction is tied to seasons with particular temperature and precipitation regimes, and a changing climate will result in “bust” years with little reproductive success.

50. Climate change will also cause further declines in longleaf pine. Increased warming will increase the risk of wildfire and insect, wind, and disease damage to the southeast’s forests and will reduce the number of suitable days to implement prescribed fire in the fire-dependent longleaf pine ecosystem.

51. Moreover, sea level rise (“SLR”) is expected to eliminate coastal habitat in portions of the snake’s range and, in some instances, “coastal populations [will] experience[] a ‘squeezing’ effect where there is a loss of land cover from SLR on one side and loss due to urbanization on another.” *Id.* at 62–63.

52. The red imported fire ant (*Solenopsis invicta*), an invasive species that rapidly colonized the southeast and is responsible for declines in other herptiles, is thought to have been among the “main factors” leading to the snake’s extirpation from Mississippi and Alabama. *Id.* at 20. The snake’s anti-predatory defenses, such as crypsis and immobility, are thought to make the species particularly susceptible to ant attacks, causing direct and indirect mortality.

53. Feral hogs (*Sus scrofa*), another invasive species, are known to have significant impacts to native ecosystems within the southern hognose snake’s range through direct

consumption of herptiles and indirectly through rooting and soil disturbance. The snake may be particularly vulnerable to these impacts because it is fossorial and because hogs reduce the availability of the snake's prey. One population of feral hogs can consume an estimated 3.16 million reptiles and amphibians per year.

54. Beyond their indirect impacts, such as through urbanization, humans are a direct threat to the species. Even though southern hognose snakes are harmless, their defensive posturing leads some people to assume they are dangerous and to kill them. Non-lethal harassment can also harm the snake by causing stress.

55. Reptile collectors also threaten the snake. Within the last several decades their numbers in the pet trade have expanded; from 1990-1994, 135 wild-caught southern hognose snakes were reportedly sold in Florida. And according to Enge (2005), the actual numbers of some species harvested is twice what is reported.

56. Snake fungal disease (*Ophidiomyces ophiodiicola*) is an emerging threat to North American snakes that has been implicated in widespread mortality across the eastern United States. The disease is considered a threat to the southern hognose snake because the pathogen colonizes soil, has been detected in every state within the species' current range, has been detected in other species sharing the same taxonomic family, and is likely to impact more severely species persisting at small population sizes.

57. The southern hognose snake's ecology makes the species too slow to adapt to the plethora of threats it faces. Additionally, most threats confronting the snake also impact frogs, toads, and lizards, the snake's prey base.

58. Compounding these threats, because a majority of southern hognose snake populations have been extirpated and remaining resilient populations are geographically isolated,

the species is particularly vulnerable to population-level effects of stochastic and demographic events, such as severe weather and years of low reproduction.

The Species Status Assessment and Not-Warranted Finding

59. In response to the decline of the southern hognose snake, the Center petitioned the Service to list the southern hognose snake as threatened or endangered on July 11, 2012. Roughly three years later, the Service published a 90-day finding in the Federal Register concluding that the petition presented substantial information indicating that listing the southern hognose snake may be warranted. 80 Fed. Reg. 37,578 (July 1, 2015).

60. Another four years later, in 2019, the Service completed the SSA to compile the alleged best available science regarding the species. Critically, the SSA does not result in a recommendation of whether the species' warrants listing as endangered or threatened.

61. The SSA assesses the snake's current population status and future viability. The Service defines "viability" as the species' ability to sustain populations in the wild over time. SSA at iv.

62. To assess viability, the SSA analyzes the "3Rs"—a species' resiliency (ability to withstand stochastic events), representation (ecological diversity across the species' range and ability to adapt to changing conditions), and redundancy (ability to withstand catastrophic events). In doing so, the SSA paints a grim picture of the southern hognose snake's viability, finding that of its 222 populations, just 49 populations are extremely likely to remain. SSA at B-36.

63. Using occurrence records from 1880 to 2018, the Service identified nine areas that contain southern hognose snake populations, called "representative units." The units that are still occupied have all experienced population losses between 50 and 85.7% and show significant

declines in resiliency. *Id.* at 50-54. The snake's range has also contracted, as all populations at the northeastern and western extent of its range have been extirpated and remaining populations are clustered. *Id.* at 54.

64. The Service evaluated future viability for the snake by incorporating a habitat suitability analysis, three stressor scenarios, and seven management scenarios into a model. *Id.* at 55. The model used spatial analysis to predict changes in land cover and fire frequency under various levels of urbanization, sea level rise, and management effort. A stochastic simulation model was then used to project population persistence at year 2040, 2060, and 2080. The model assumed that "more resilient" populations occur on protected lands and in highly suitable habitat. *Id.* at B-19.

65. Several key threats to the snake were not included in the model, including the impacts of timber harvest, habitat fragmentation, road mortality, red imported fire ants, feral hogs, climate change-induced weather events, harassment and persecution, collection for the pet trade, and disease. SA at 29-30.

66. Even without including most of the threats the species faces, the Service's modeling indicates that by 2040, as a result of sea level rise and urbanization, only 34.7% of southern hognose snake populations will remain under what it considered the most likely scenario, by 2060 27.9% will remain, and by 2080 just 25.7% will remain. SSA at B-36. The Service further estimates that by 2040, only 3.6% of populations will exhibit the highest degree of resiliency, and by 2060, zero populations will exhibit the highest degree of resiliency. *Id.* at 78.

67. Following the SSA's analysis of the alleged best available science, the Service prepared a separate Species Assessment and Listing Priority Assignment Form ("SA") for the

southern hognose snake, the document which forms the basis of the Service's "finding" as to whether the species is threatened or endangered in all or a significant portion of its range.

68. The SA includes a "summary of threats" section. There, the Service admits that "[t]he primary threats to the southern hognose snake include habitat loss, conversion, fragmentation; fire suppression; timber harvesting; conversion of land to agriculture; urbanization; road mortality; climate change; persecution, harassment, and collection for the pet trade; and invasive species." SA at 29. The Service further admits that disease may play a role in the species' viability. *Id.*

69. The Service asserts that these threats act synergistically and may be more harmful cumulatively than alone, and while there exists some uncertainty about precise impacts, that uncertainty did not prevent the Service from making a "credible assessment" regarding their direction and magnitude. *Id.*

70. The SA concludes with a "finding" section that contains the Service's analysis regarding whether the southern hognose snake is endangered or threatened in all of its range, and its analysis as to whether the species is endangered or threatened in a significant portion of its range ("SPOIR" analysis). The finding section contains the Service's reasoning for its not-warranted finding.

71. In reliance on SA's finding, on October 7, 2019, the Service published a not-warranted determination for the southern hognose snake, denying the species ESA protections. 84 Fed. Reg. 53,342 (Oct. 7, 2019).

72. In its finding, the Service contends that the southern hognose snake is not endangered because "extinction is not likely now, given the current redundancy and representation that supports presence in the variety of ecoregions it currently occupies" and

because “populations persist across much of its historic range.” SA at 30. The Service also asserts that the species is “fairly resilient” and has “sufficient redundancy.” 84 Fed. Reg. 53,342 (Oct. 7, 2019). The Service concludes that the species is not currently in danger of extinction because “the remaining resilient populations across the range of the representative units indicate the species has remained viable across much of its historic range”. SA at 30.

73. The Service states that the southern hognose snake is not threatened because, based on the results of the model alone, it “is expected to retain viability with resilient populations across much of its current range” and “representation will remain relatively high with 7 out [of] 9 representative units remaining occupied with multiple populations.” *Id.* at 31.

74. In its SPOIR analysis, the Service found that the southern hognose snake is not threatened or endangered in a significant portion of its range because the Service found “no concentration of threats in any portion of the southern hognose snake range at a biologically meaningful scale.” *Id.* at 32. The Service declined to analyze the issue further.

FIRST CLAIM FOR RELIEF

Violation of the ESA and APA

The Service Arbitrarily Concluded that the Southern Hognose Snake Does Not Warrant Listing Under the ESA Contrary to the Best Available Science

75. Plaintiff realleges and incorporates by reference the preceding paragraphs.

76. The Service “shall . . . determine whether any species is an endangered species or a threatened species” because of any one or combination of five listing factors. 16 U.S.C. § 1533(a)(1). When doing so, the Service must rely “solely on the basis of the best scientific and commercial data *available*.” 16 U.S.C. § 1533(b)(1)(A) (emphasis added).

77. Under the APA, a reviewing court “shall hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A). An agency’s decision is arbitrary and capricious if the agency entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise.

78. Defendants’ finding that listing the southern hognose snake as a threatened or endangered species is not warranted violates the ESA and is arbitrary in several respects.

79. For instance, the Service’s model, which served as the basis for its not-warranted finding, excluded key threats to the snake’s continued existence and relied on flawed assumptions.

80. The model did not analyze the “primary threats” of habitat fragmentation, road mortality, timber harvest, red imported fire ants, feral hogs, climate change impacts such as severe weather, collection for the pet trade, harassment and persecution, or disease. And the model assumed that more resilient populations exist on protected lands and in highly suitable habitat despite evidence before the agency indicating that the species is absent from some of the best existing longleaf pine habitat.

81. According to the best available science, the unmodeled threats are significant to the viability of the snake and the species lacks the adaptive capacity to respond to them. The Service’s acknowledgment of the model’s limitations does not meet the ESA’s institutionalized caution mandate or the requirement that the Service base its findings on the best available

science and does not alleviate the Service of its duty to rationally apply the five listing factors when determining whether a species is threatened or endangered.

82. Although there may be “some inherent uncertainty” regarding the impact the threats are having on the species, the Service found that this uncertainty would not have “prevent[ed the Service] from making a credible assessment of the likely direction and magnitude of those impacts[.]” SA at 30. Indeed, under the ESA, uncertainty does not alleviate the Service from its duty to rely on the best available science.

83. Beyond the threats excluded from the model due to alleged “uncertainty,” the Service wholly excluded any examination of road mortality from the model’s analysis, a source of mortality the Service states “is occurring at a rate that is likely having population level effects and contributing to population declines in parts of the species’ range.” SSA at 19. The Service also failed to explain why it did not model the effects of timber harvest, an activity the Service itself identified as a “primary threat[.]” to the species. SA at 29.

84. Critically, the Service did not otherwise address these “primary threats”, *id.*, in its explanation of its not-warranted finding. The Service must explain how the numerous unmodeled threats impacting the southern hognose snake’s survival do not threaten the snake with extinction.

85. Even with its limitations, the Service’s modeling shows that the southern hognose snake is a threatened or endangered species. For instance, as the agency itself found, *zero* populations will exhibit the highest degree of resiliency in the foreseeable future. SSA at 78. This is significant because, as the SSA explains, “for the southern hognose snake to maintain viability, it needs to have resilient populations that are able to withstand stochastic events and maintain ecological and genetic diversity.” *Id.*

86. Moreover, the Service only briefly acknowledged the range contraction that has occurred and failed to grapple with the impacts that flow from it, and from the significant loss of populations generally. The agency must provide a rational explanation for why the lost and threatened portions of its range are insignificant to the survival of remaining populations before denying the species ESA protections.

87. The Service also failed to evaluate whether, in light of each threat the species faces, existing regulatory mechanisms are adequate to protect the species. In doing so, the Service excluded a required analysis from its not-warranted finding.

88. For these and additional reasons, the Service's not-warranted finding is contrary to the best available science, dismisses threats that warrant protection, violates the ESA, and is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with the law. 16 U.S.C. § 1533; 5 U.S.C. § 706(2)(A).

SECOND CLAIM FOR RELIEF

Violation of the ESA and APA

The Service's Significant Portion of the Range Analysis Is Unlawful

89. The Center realleges and incorporates by reference the preceding paragraphs.

90. A species is "endangered" if it is "in danger of extinction throughout all *or a significant portion of its range*," and "threatened" if it "is likely to become an endangered species within the foreseeable future throughout all *or a significant portion of its range*." 16 U.S.C. § 1532(6), (20) (emphasis added).

91. The Service found that the southern hognose snake is not endangered or threatened in a significant portion of its range because the agency "found no concentration of

threats in any portion of the southern hognose snake range at a biologically meaningful scale.” SA at 32.

92. This analysis violates the ESA because it applies the wrong standard and because many of the threats facing the southern hognose snake are indeed concentrated in portions of its range.

93. Nothing in the ESA requires that threats be concentrated in some area for a species to be threatened or endangered in a significant portion of its range. The statutory standard the Service is required to apply in its determination focuses on the species’ conservation status; that is, whether the snake is *endangered or threatened* throughout all or a significant portion of its range. 16 U.S.C. § 1532(6), (20) (emphasis added).

94. In addition to failing to apply the SPOIR standard set forth in the ESA, the Service’s conclusion that there is no “concentration of threats” disregarded the best available science and is undercut by the agency’s own findings that numerous threats are geographically concentrated within the snake’s range.

95. For instance, the SSA states that “*coastal populations* of southern hognose snakes are predicted to be directly impacted by inundation of upland habitat directly along the coast by rising sea levels, resulting in loss of habitat.” SSA at 23 (emphasis added). And there are other threats that the best available science indicates are not uniform across its range including timber harvest, urbanization, habitat fragmentation and conversion, road mortality, invasive species, drought, unusual precipitation events and flooding, hurricanes, persecution and harassment, collection for the pet trade, and disease. *See, e.g., id.* at 16–18, 20, 21, 24–25.

96. The Service’s finding that the snake is not threatened or endangered in a significant portion of its range is therefore arbitrary and contrary to the best available science.

97. Accordingly, the Service's not-warranted finding violates the ESA and is arbitrary, capricious, an abuse of discretion, and otherwise not in accordance with the law. 16 U.S.C. § 1533; 5 U.S.C. § 706(2)(A).

REQUEST FOR RELIEF

THEREFORE, Plaintiff respectfully request that this Court:

- (1) Declare unlawful, set aside, and vacate Defendants' not-warranted finding;
- (2) Remand the not-warranted finding to Defendants for further analysis and order the Service to issue a new listing determination by a date certain that is consistent with the ESA, APA, and this Court's order;
- (3) Award Plaintiff reasonable attorneys' fees, costs, and expenses; and
- (4) Grant Plaintiff such further and additional relief as the Court may deem just and proper.

DATE: January 26, 2023

Respectfully submitted,

/s/ Ryan Adair Shannon

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