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RE: Notice of Violations of the Endangered Species Act Regarding a Determination that Protection of the Southern Hognose Snake is Not Warranted

Dear Secretary Haaland,

This letter serves as a 60-day notice of intent to sue the Secretary and U.S. Fish and Wildlife Service (“Service”) from the Center for Biological Diversity (“Center”) for violations of the Endangered Species Act (“ESA”) in denying protection to the southern hognose snake (*Heterodon simus*).¹

The southern hognose snake is endemic to the Coastal Plain of the southeastern United States and is imperiled by habitat loss, habitat fragmentation and conversion, urbanization, road mortality, invasive species, the commercial pet trade, disease, climate change, and other factors. By the Service’s own estimates, the species has already suffered a 60% loss in populations with remaining populations experiencing significant population declines. The Service itself predicts that 72.1% of populations will be extirpated in the foreseeable future. In step with population declines, the range of the southern hognose snake has contracted and the northeastern and western extent of its range have been extirpated. What populations remain are clustered and at greater risk of extirpation due to stochastic, i.e., random, events such as severe storms.

Despite the ongoing threats facing the species and its dramatic decline, on October 7, 2019, the Service determined that the protections of the ESA were “not warranted” for the southern hognose snake.² This

¹ See 16 U.S.C. § 1540(g)(1)(C).

² 84 Fed. Reg. 53342 (Oct. 7, 2019)

determination arbitrarily and capriciously ignores substantial scientific evidence before the agency showing the southern hognose snake faces extinction, fails to follow the best available science, and violates the spirit and letter of the ESA.

The Center for Biological Diversity is a national, non-profit conservation organization supported by more than 1.7 million members and online activists. The Center is dedicated to securing a future for all species, great and small, hovering on the brink of extinction.

I. Background

The southern hognose snake is associated with the xeric longleaf pine savannah, flatwoods, and sandhills of southeastern North Carolina, South Carolina, Georgia, Florida, Alabama, and Mississippi. This specialist species is fossorial and requires well-drained, sandy soils, and it occupies upland habitat dominated by pine or pine-oak woodland with open canopies and a grassy understory. The southern hognose snake's diet consists almost entirely of frogs and toads.



Credit: Patrick Pierson Hill, FWC

The primary cause of the southern species' decline is the loss of longleaf pine forests, a fire-dependent ecosystem that once covered an estimated 92 million acres on the Coastal Plain, but by the 21st century covered less than 3 million acres due to timber harvest and conversion for agriculture. Wildfire has been largely excluded from this landscape since at least the 1930s, resulting in fire-intolerant trees and shrubs that render the forest unsuitable for fire-adapted flora and fauna.

Besides the loss of its native habitat, other threats to the continued existence of the southern hognose snake include habitat fragmentation, urbanization, road mortality, sea level rise, drought, red imported fire ants, feral hogs, fungal disease, pesticides and herbicides, and collection for the commercial pet trade. Because an estimated 60% of southern hognose snake populations have been extirpated and remaining populations are geographically clustered, the species is particularly vulnerable to environmental and demographic stochasticity.

In response to these threats, on July 11, 2012, the Center petitioned the Service to list the southern hognose snake as an endangered or threatened species. On July 1, 2015, 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.³ However, on October 7, 2019, the Service published a "not warranted" determination for the southern hognose snake, denying the species ESA protections.⁴ The Service acknowledged that the southern hognose snake has suffered significant population declines and is impacted by myriad ongoing threats, but nonetheless determined that the species is not endangered or threatened as it is, allegedly, "likely to remain viable into the foreseeable future."⁵

³ 80 Fed. Reg. 37578 (July 1, 2015).

⁴ 84 Fed. Reg. 53342 (Oct. 7, 2019).

⁵ U.S. Fish and Wildlife Service, Species Assessment and Listing Priority Form at 31 (Oct. 7, 2019) ("SA").

II. Statutory Framework

Congress passed the ESA to conserve endangered and threatened species and the ecosystems upon which they depend.⁶ The Supreme Court’s review of the ESA’s “language, history, and structure” convinced the Court “beyond a doubt” that “Congress intended endangered species to be afforded the highest of priorities.”⁷ As the Court found, “the plain intent of Congress in enacting this statute was to halt and reverse the trend toward species extinction, whatever the cost.”⁸

The ESA requires the Secretary of the Interior to determine whether any species is “endangered” or “threatened.”⁹ A species is “endangered” if it “is in danger of extinction throughout all or a significant portion of its range.”¹⁰ A species is “threatened” if it “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”¹¹ A “species” “includes 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.”¹²

In making all listing determinations, the Secretary must consider five statutory listing criteria: (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.¹³ If a species meets the definition of threatened or endangered because it is imperiled by any one or a combination of these five factors, the Secretary must list the species.¹⁴ The Secretary must base all listing determinations “solely on the basis of the best scientific and commercial data available.”¹⁵

Any person may petition the Service to list a species under the ESA.¹⁶ After receiving a petition to add a species to the endangered species list, the Service “shall make a finding as to whether the petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted.”¹⁷ “If such a petition is found to present such information, [the Service] shall promptly commence a review of the status of the species concerned[,]” and promptly publish its findings.¹⁸ Within 12 months of receiving the petition, the Service shall find that “[t]he petitioned action is not warranted,” that “the petitioned action is warranted,” or that “[t]he petitioned action is warranted, but . . . is precluded by pending proposals to determine whether any species is an endangered species or threatened species,” and “expeditious progress is being made to add qualified species to” the list.¹⁹ A negative twelve-month finding is subject to judicial review under the ESA.²⁰

⁶ 16 U.S.C. § 1531(b).

⁷ *Tennessee Valley Authority v. Hill*, 437 U.S. 153, 174 (1978).

⁸ *Id.* 437 U.S. at 184.

⁹ 16 U.S.C. § 1533(a).

¹⁰ 16 U.S.C. § 1532(6).

¹¹ *Id.* § 1532(20).

¹² *Id.* § 1532(16).

¹³ *Id.* § 1533(a)(1).

¹⁴ *Id.* § 1533(1).

¹⁵ *Id.* § 1533(b)(1)(A).

¹⁶ *Id.* § 1533(b)(3).

¹⁷ *Id.* § 1533(b)(3)(A).

¹⁸ *Id.*

¹⁹ *Id.* § 1533(b)(3)(B).

²⁰ *Id.* § 1533 (b)(3)(C)(ii).

No matter how imperiled a species might be, it does not receive any protection under the ESA until it is officially listed under Section 4 of the Act as either threatened or endangered.²¹ As a result, Congress described Section 4 of the ESA²² as “[t]he cornerstone of effective implementation of the Endangered Species Act”²³ Once a species is listed under the ESA, an array of statutory protections applies. For example, the Service must designate “critical habitat” for listed species,²⁴ and “develop and implement” recovery plans for listed species.²⁵ The Service also is authorized to acquire land for the protection of listed species,²⁶ and make federal funds available to states to assist in their efforts to preserve and protect threatened and endangered species.²⁷ Additionally, Section 9 of the statute prohibits various activities including the “take” of all endangered species.²⁸ “Take” means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”²⁹

III. The Service’s Species Status Assessment for the Southern Hognose Snake

To inform its listing decision, the Service prepared a “species status assessment” (“SSA”). 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). That document paints a grim picture of the species’ viability, finding that it has likely already experienced a loss of 60% of its total populations.³⁰

Using occurrence records, the Service identified nine areas that contain southern hognose snake populations, called “representative units.” Of those nine representative units, the species has been extirpated from two, a third is at high risk of extirpation, and a fourth is at moderate risk of losing redundancy.³¹ The units that are still occupied have all experienced a loss of at least 50% of historic populations and show significant declines in resiliency.³² There has also been a loss of latitudinal and longitudinal variability within the range as all of the populations at the northeastern and western extent of its range have been extirpated, and remaining populations are clustered.³³ This population clustering reduces the species’ ability to survive stochastic and demographic events, such as severe storms and years of low reproduction.

The Service evaluated future conditions and viability for the southern hognose snake by incorporating into a model a habitat suitability analysis, three stressor scenarios, and seven management scenarios.³⁴ The stressor scenarios modeled were low, medium, and high levels of urbanization and sea level rise under status quo management.³⁵ The management scenarios modeled were “decreased management,” “improved management,” “protect more populations,” and “protect even more populations.”³⁶ The

²¹ 16 U.S.C. § 1533.

²² *Id.*

²³ S. Rep. No. 418, 97th Cong., 2d Sess. at 10; *see also* H. Rep. No. 567, 97th Cong., 2d Sess. at 10.

²⁴ 16 U.S.C. § 1533(a)(3).

²⁵ *Id.* §1533(f).

²⁶ *Id.* § 1534.

²⁷ *Id.* § 1535(d).

²⁸ 16 U.S.C. § 1538(a).

²⁹ *Id.* § 1532(19).

³⁰ U.S. Fish and Wildlife Service 2019. Species Status Assessment Report for the Southern Hognose Snake (*Heterodon simus*) Version 1.1 U.S. Fish and Wildlife Service, Southeast Region, Atlanta, Georgia at 54. (“SSA”).

³¹ *Id.*; *Id.* at 70.

³² *Id.* at 54.

³³ *Id.*

³⁴ SSA at 55.

³⁵ *Id.* at 58.

³⁶ *Id.* at 58-59.

Service asserts that the most likely scenario consists of medium levels of sea level rise and urbanization under status quo management.³⁷

The model analyzed only the threats of sea level rise and urbanization, for according to the SSA, it was “not able to include all the factors that may be influencing viability for the southern hognose snake ... because spatial data for these stressors was not available across the species’ range or at all, such as impacts from invasive feral hogs and red imported fire ants.”³⁸ Further, the SSA acknowledges that the model could not fully account for the fact that “many – or most – population boundaries include some proportion of unsuitable habitat that, in some cases, could be causing a single population defined in [the] study to be functioning as several isolated subpopulations [and] it is likely that smaller, isolated subpopulations would each have lower growth rates and persistence probabilities than a single large population.”³⁹ In other words, the model did not analyze the impacts of habitat fragmentation.

The SSA also states that “there are likely other important climate related factors that were not included in the model, but are likely to affect habitat suitability and population persistence,” such as “projected increases in temperature and decreases in precipitation due to climate change [that] are likely to further constrain the ability to implement prescribed fire [and] lower habitat suitability and consequently population persistence for most, if not all populations of southern hognose snake.”⁴⁰ Additionally, “projected increases in mean temperature will result in increase in soil temperature, which has the potential to negatively impact burrowing species such as the southern hognose snake” and “there is [also] a great amount of uncertainty in how the longleaf pine ecosystem will respond to climate change (e.g. range contraction vs. shifting range), and any changes in the total acreage or distribution of longleaf pine will likely impact the southern hognose snake.”⁴¹

Even without including most of the threats the species faces, the Service’s modeling indicates that by 2040, 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.⁴² 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.⁴³

³⁷ *Id.*

³⁸ *Id.* at B-18.

³⁹ *Id.* at B-20.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² SSA at B-36.

⁴³ SSA at 78.

Table B-8. Distribution of southern hognose snake populations (N = 222) in each category of population persistence in 2040, 2060, and 2080, for the seven scenarios. *Indicates the numbers are reported at cumulative totals and percentage.

Population persistence category	Scenario							
	Current	Low Stressor	Med Stressor	High Stressor	Decreased Mgmt	Improved Mgmt	Protect More Pops.	Protect Even More Pops.
Year - 2040								
*Extremely Likely on Landscape (Extant) 95-100%	49 (22.1%)	8 (3.6%)	8 (3.6%)	8 (3.6%)	5 (2.3%)	10 (4.5%)	15 (6.8%)	16 (7.2%)
*Highly Likely on Landscape 90-94.9%	59 (26.6%)	23 (10.4%)	23 (10.4%)	23 (10.4%)	20 (9.0%)	24 (10.8%)	32 (14.4%)	32 (14.4%)
*Very Likely on Landscape 80-89.9%	68 (30.6%)	44 (19.8%)	45 (20.3%)	45 (20.3%)	43 (19.4%)	46 (20.7%)	54 (24.3%)	54 (24.3%)
*More Likely than Not 50-79.9%	89 (40.1%)	76 (34.2%)	77 (34.7%)	77 (34.7%)	74 (33.3%)	77 (34.7%)	78 (35.1%)	82 (36.9%)
Unlikely (Extirpated) < 50%	133 (59.9%)	146 (65.8%)	145 (65.3%)	145 (65.3%)	148 (66.7%)	145 (65.3%)	144 (64.9%)	140 (63.1%)
Year - 2060								
*Extremely Likely on Landscape (Extant) 95-100%	49 (22.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.5%)	4 (1.8%)	4 (1.8%)
*Highly Likely on Landscape 90-94.9%	59 (26.6%)	9 (4.1%)	10 (4.5%)	9 (4.1%)	0 (0%)	15 (6.8%)	24 (10.8%)	24 (10.8%)
*Very Likely on Landscape 80-89.9%	68 (30.6%)	27 (12.2%)	28 (12.6%)	27 (12.2%)	24 (10.8%)	31 (14.0%)	41 (18.5%)	42 (18.9%)
*More Likely than Not 50-79.9%	89 (40.1%)	63 (28.4%)	62 (27.9%)	62 (27.9%)	62 (27.9%)	64 (28.8%)	74 (33.3%)	75 (33.8%)
Unlikely (Extirpated) < 50%	133 (59.9%)	159 (71.6%)	160 (72.1%)	160 (72.1%)	160 (72.1%)	158 (71.2%)	148 (66.7%)	147 (66.2%)
Year - 2080								
*Extremely Likely on Landscape (Extant) 95-100%	49 (22.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.5%)	2 (0.9%)
*Highly Likely on Landscape 90-94.9%	59 (26.6%)	4 (1.8%)	4 (1.8%)	4 (1.8%)	0 (0%)	5 (2.3%)	15 (6.8%)	15 (6.8%)
*Very Likely on Landscape 80-89.9%	68 (30.6%)	20 (9.0%)	20 (9.0%)	20 (9.0%)	14 (6.3%)	14 (6.3%)	35 (15.8%)	36 (16.2%)
*More Likely than Not 50-79.9%	89 (40.1%)	57 (25.7%)	57 (25.7%)	57 (25.7%)	56 (25.2%)	58 (26.1%)	66 (29.7%)	70 (31.5%)
Unlikely (Extirpated) < 50%	133 (59.9%)	165 (74.3%)	165 (74.3%)	165 (74.3%)	166 (74.8%)	164 (73.9%)	156 (70.3%)	152 (68.5%)

Figure 1. The Service's Population Persistence Analysis Report for the southern hognose snake.⁴⁴ The Service considers the "medium stressor" scenario the "most likely" scenario.

IV. The Service's Species Assessment and Listing Priority Assignment Form for the Southern Hognose Snake

Relying on the SSA, the Service prepared a Species Assessment and Listing Priority Assignment Form ("SA") for the southern hognose snake. This document summarizes the science contained in the SSA and concludes with the Service's "finding" as to whether the species is threatened or endangered in all or a significant portion of its range.

After echoing the grim findings contained in the SSA, the Service found the southern hognose snake not warranted for listing as an endangered species because "while resilience may be reduced into the future, primarily due to loss of high quality and quantity habitat, extinction is not likely now, given the current redundancy and representation that supports presence in the variety of ecoregions it currently occupies."⁴⁵ The Service then lists several bleak statistics, such as that 60% of populations are likely extirpated, before stating that "40 percent of known populations are more likely than not (>50% probability) to remain on the landscape and 30 percent are considered very likely to remain on the landscape (>80% probability), demonstrating a fairly high level of resilience."⁴⁶

⁴⁴ SSA at B-36.

⁴⁵ SA at 30.

⁴⁶ *Id.*

In its analysis of whether the southern hognose snake meets the definition of a threatened species, while the SSA projected the species' viability to year 2080, the Service defined the "foreseeable future" as 30-40 years, asserting that this timeframe was chosen "based on factors that influence the species now and the projections that determined the future condition of the species."⁴⁷ The Service then states that "the species' viability is expected to continue to decline," "redundancy is expected to decline as populations with >50% probability of persistence are expected to decrease from 89 populations to between 62 and 70 populations (depending on scenario)," and "population resiliency is also expected to decline" as "populations with >80% probability of persistence are expected to decline from 68" to "28 populations for the most likely scenario."⁴⁸ The Service further states that "resilient populations within each representative unit will become more clustered and isolated with more of the unit likely becoming unoccupied."⁴⁹ The Service concludes its finding as to whether the southern hognose snake is threatened by stating that the species is not threatened because it is not in danger of extinction in the foreseeable future.⁵⁰ At no point in its finding does the Service mention the threats unaddressed by the SSA's model.

In its "Significant Portion of the Range Analysis," the Service found that the southern hognose snake is not threatened or endangered in a significant portion of its range because there is "no concentration of threats in any portion of the southern hognose snake range at a biologically meaningful scale."⁵¹ The Service provided no detail with respect to how it reached this conclusion and declined to analyze the issue further.⁵²

V. Legal Violations

A. The Service's determination that the southern hognose snake does not warrant listing is arbitrary and capricious, contrary to the best available science, and in violation of the ESA.

The Service violated the ESA when it failed to explain how the southern hognose snake's current and projected status does not warrant its listing as a threatened or endangered species. The Service also failed to follow its own science indicating the southern hognose snake faces myriad ongoing threats to its viability when it determined that the species is not likely to become threatened or endangered in the foreseeable future.

The Service fails to provide a rational explanation for how the species' current population status supports the agency's determination that the southern hognose snake is not currently threatened or endangered. Regarding future viability, the Service's modeling indicates that by 2040, only 34.7% of southern hognose snake populations will remain under what it considered the most likely scenario, and by 2060 27.9% will remain.⁵³ 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.⁵⁴ This is significant, for 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."⁵⁵ The Service's finding that the southern hognose snake is not likely to be threatened

⁴⁷ *Id.*

⁴⁸ *Id.* at 31.

⁴⁹ *Id.*

⁵⁰ *Id.*

⁵¹ *Id.* at 32.

⁵² *Id.* at 33 ("no portions warrant further consideration through a more detailed analysis").

⁵³ SSA at B-36.

⁵⁴ SSA at 78.

⁵⁵ *Id.*

or endangered in the foreseeable future is wholly inconsistent with its own projections' forecast that no resilient populations will remain in the foreseeable future.

Moreover, the results of the Service's model only accounted for the impacts of two threats—sea level rise and urbanization—and did not account for the impacts of, among other threats: habitat fragmentation; road mortality; climate change-induced threats such as drought, abnormal precipitation events, storms, and flooding; invasive species; herbicides; human persecution and collection for the pet trade; or disease—all threats that the SSA itself identifies as factors affecting the southern hognose snake's viability.⁵⁶ The Service provides little justification for discounting these threats, which it admits are “acting synergistically to impact the southern hognose snake,” and which cumulatively “may be more harmful than a single factor alone.”⁵⁷ Indeed, although the Service states that there is “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[.]”⁵⁸ As a result, the agency's failure to account for those threats is unexplainable. Uncertainty does not alleviate the Service of its statutory duty to rely on the best available science—even where that science is imperfect⁵⁹—and the Service's failure to do so renders its finding unlawful.

In the face of overwhelming evidence of the species' decline, the Service provided few reasons for its determination that the southern hognose snake is not threatened or endangered, and none are adequate. First, the Service states that the species is “fairly resilient” because “populations persist across much of the species' historical range and 70 percent are likely to remain on the landscape” and because “more than two populations [exist] in six of its nine representative units.”⁶⁰ These statements paint a picture that is not consistent with the best available science or the SSA's analysis.

All southern hognose snake populations have declined significantly in resilience.⁶¹ In its not-warranted determination, however, the Service makes no mention of the fact that all remaining populations have experienced declines between 50 and 85.7%, or of the population clustering that has resulted in significant range-wide gaps. It is also unclear what the Service is referring to when it asserts that “70 percent are likely to remain on the landscape.” The Service may be referring to the SSA's finding that, *of the populations that still exist*, 40% are “more likely than not” to remain on the landscape and 30% are “very likely” to remain on the landscape. If so, it's unclear how this statistic supports the Service's conclusion that the species demonstrates a “fairly high level of resilience,” and the Service's failure to provide context results in a misleading characterization of the southern hognose snake's status. It is also possible the Service is referencing its projection that in year 2040, under what it deems the most likely scenario, *of the 40% of populations that are likely to remain*, 70% will persist.⁶² In either case, the Service chose an arbitrary point in time to concoct a misleading statement that does not accurately represent the southern hognose snake's status.

Second, the Service's not-warranted determination states that the southern hognose snake is not warranted for listing because “the species is expected to retain viability with resilient populations across much of its

⁵⁶ SA at 31 (Oct. 7, 2019).

⁵⁷ SSA at 30.

⁵⁸ *Id.*

⁵⁹ *See Sw. Ctr. for Biological Diversity v. Babbitt*, 215 F.3d 58, 60 (D.C. Cir. 2000) (“Even if the available scientific and commercial data were quite inconclusive, he may--indeed must--still rely on it at that stage.”); *Ctr. For Biological Diversity v. Zinke*, 900 F.3d 1053; 2018 U.S. App. LEXIS 22947 (9th Cir. 2018) (holding that an agency must explain why uncertainty favors agency action).

⁶⁰ 84 Fed. Reg. 53342 (Oct. 7, 2019).

⁶¹ SSA at 63-64.

⁶² *Id.* at B-36.

current range” and “representation will remain relatively high with seven of nine representative units remaining occupied with multiple populations.”⁶³ This is a mischaracterization of the southern hognose snake’s future viability. The Service omits the SSA’s conclusion that, among other bleak statistics, by 2060 not a single population will be highly resilient.⁶⁴ Further, by 2060, a total of 72.1% populations will be extirpated under the “most likely” scenario.⁶⁵ And again, these projections take into account only two of several threats the species faces, a critical fact the Service’s finding fails to mention.

Finally, the Service failed to adequately analyze the impact the loss of 60% of historic southern hognose snake populations has had on the species, particularly given the range contraction that has resulted from the fact that “multiple large geographic regions only contain populations that are likely extirpated, including Alabama, Mississippi, northeastern North Carolina, central Georgia, and the eastern Florida Peninsula.”⁶⁶ 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.⁶⁷ Its failure to address the significant impact the loss of populations and range has had on the species – leading to decreases in genetic diversity and a weakened ability for the species to survive stochastic and catastrophic events – renders the Service’s finding arbitrary, capricious, and in violation of the ESA.

The Service provides no rational connection or explanation between the species’ current status, the predications of its future persistence modeling, the additional threats not modeled, and the decision that listing is not warranted. The not-warranted determination is therefore arbitrary and capricious, contrary to the best available science, and in violation of the ESA.

B. The Service failed to determine if the southern hognose snake is at risk of becoming an endangered species in the foreseeable future, violating the ESA.

The ESA requires the Service to list a species as threatened if it is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”⁶⁸ Contrary to this mandate, the Service instead assesses the likelihood of *extinction* in the foreseeable future rather than endangerment. The Service’s finding states that it has “determined the southern hognose snake is not in danger of extinction within the foreseeable future [and] therefore it is not likely to become an endangered species in the foreseeable future such that it meets the definition of a threatened species.”⁶⁹ This conclusion conflates the state of being threatened with that of being endangered and is in violation of the ESA.

The Service fails to provide a rational explanation for its determination that the southern hognose snake is not threatened in all or a significant portion of its range, and it is unclear in what situation the Service would find a species to be threatened. The Service’s determination that the southern hognose snake is not threatened because it is not currently in danger of extinction violates the ESA.

⁶³ 84 Fed. Reg. 53342 (Oct. 7, 2019); SA at 31.

⁶⁴ SSA at 54, 78.

⁶⁵ *Id.* at 64.

⁶⁶ *Id.* at vi.

⁶⁷ See *Humane Soc’y of the U.S. v. Zinke*, 865 F.3d 585, 605–06 (D.C. Cir. 2017) (explaining that “range loss can result[] in a species for which distribution and abundance is restricted, gene flow is inhibited, or population redundancy is reduced to such a level that the entity is now vulnerable to extinction or likely to become so within the foreseeable future throughout all or a significant portion of its current range” (citations omitted)).

⁶⁸ 16 U.S.C § 1532(20).

⁶⁹ SA at 31.

C. The Service’s “Determination of Status Throughout a Significant Portion of its Range” analysis is arbitrary and capricious.

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.”⁷⁰ This conclusion is contrary to the best available science and violates the ESA.

First, the Service’s interpretation of “significant portion of its range,” in which the Service holds that if “the threats of the species are essentially uniform throughout its range, then the species could not be in danger of extinction or likely to become so in the foreseeable future in any biologically meaningful portion of its range,”⁷¹ violates the plain text of the ESA. 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.”⁷² The plain language of the ESA therefore requires the Service to ask if a species is endangered or threatened in a significant portion of its range because of any one, or combination of, several enumerated factors.⁷³ Nothing in the ESA or the plain meaning of “significant portion of its range” requires those threats to be concentrated in any one area. The Service completely failed to conduct this analysis for the southern hognose snake based on the false premise that there is no concentration of threats within its range.

Even if it were lawful for the Service’s “significant portion of its range” determination to hinge on whether threats to the southern hognose snake are concentrated, the Service still violated the ESA in denying the southern hognose snake protection because many threats to the species are indeed concentrated in certain portions of its range. For instance, the SSA acknowledges 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.”⁷⁴ And there are other threats that are not uniform across its range, including urbanization, invasive species, collection for the pet trade, drought, unusual precipitation events and flooding, hurricanes, and disease.⁷⁵ Because the Service erroneously determined that there exists no concentration of threats within the southern hognose snakes’ range it failed to evaluate whether any of these threats, alone or cumulatively, threaten the species in a significant portion of its range, rendering its determination arbitrary and capricious.

VI. CONCLUSION

If the Service does not remedy these violations, the Center for Biological Diversity intends to pursue legal action. If you believe any of the foregoing to be in error, have any questions, or wish to discuss this matter, please do not hesitate to contact us.

Sincerely,

Chelsea Stewart-Fusek

⁷⁰ SA at 32.

⁷¹ *Id.*

⁷² 16 U.S.C. § 1532(6), (20).

⁷³ *Id.* § 1533(a)(1).

⁷⁴ SSA at 23. (emphasis added).

⁷⁵ *Id.* 16, 20, 25. Fungal disease may impact populations in some areas more than others, for it is frequently a secondary expression in individuals suffering from other stresses, such as habitat degradation, invasive species, or pollution.

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