January 6, 2022

Secretary Deb Haaland
Secretary of the Interior
U.S. Department of the Interior
1849 C St., N.W.
Washington, D.C. 20240
doiexecsec@ios.doi.gov

Assistant Secretary Shannon Estenoz
Assistant Secretary, Fish and Wildlife and Parks
U.S. Department of the Interior
1849 C St., N.W.
Washington, D.C. 20240
shannon_estenoz@ios.doi.gov

Deputy Director Martha Williams
Principal Deputy Director
U.S. Fish and Wildlife Service
1849 C St., N.W.
Washington, D.C. 20240
martha_williams@fws.gov

RE: Sixty-day Notice of Intent to Sue for Violations of the Endangered Species Act Concerning Denial of Protection for Kirtland’s Snake (Clonophis kirtlandii)

Dear Secretary Haaland, Assistant Secretary Estenoz, and Deputy Director Williams:

The Center for Biological Diversity (“Center”), Hoosier Environmental Council, and Prairie Rivers Network provide this sixty-day notice of intent to sue the U.S. Fish and Wildlife Service (“Service”) for violations of the Endangered Species Act of 1973 (“ESA”)\(^1\) in connection with the Service’s October 5, 2017, finding that the Kirtland’s snake (Clonophis kirtlandii) does not warrant listing as a threatened or endangered species.\(^2\) The Service’s arbitrary and unlawful decision deprives the Kirtland’s snake of the protection it needs to survive against habitat destruction and

\(^{1}\) 16 U.S.C. § 1531 et seq.
other ongoing threats.

The Service’s decision that the Kirtland’s snake does not warrant listing as threatened or endangered was arbitrary and unlawful for several reasons explained in further detail below. First, the Service failed to consider the inadequacy of existing regulatory mechanisms in place to protect the Kirtland’s snake from ongoing threats to its survival. Second, the Service failed to follow the best available science by dismissing evidence that climate change will have a substantial disruptive effect on the Kirtland’s snake. Third, the Service erred in its consideration of whether the Kirtland’s snake was endangered or threatened in a significant portion of its range.

The Center for Biological Diversity, Hoosier Environmental Council, and Prairie Rivers Network provide this letter pursuant to the sixty-day notice requirement of the citizen suit provision of the ESA. This letter incorporates the sixty-day notice of intent to sue that the Center sent to you on April 7, 2021, regarding the Kirtland’s snake and twenty other species, which we have included here as Attachment A. If the Service does not remedy the violations of law outlined in this letter within sixty days, the Center for Biological Diversity, Hoosier Environmental Council, and Prairie Rivers Network will file suit in federal court to resolve this matter.

**Background**

**I. The Kirtland’s Snake**

The Kirtland’s snake is a small, non-venomous snake. It is fossorial, meaning it spends most of its time underground, in or near crayfish burrows. To that end, the Kirtland’s snake requires moist soil environments to survive and is always found in close proximity to a water source. When above ground, it is almost always found under natural or artificial cover rather than basking in the sun. These traits make the Kirtland’s snake relatively difficult to detect.

Unfortunately, Kirtland’s snake populations are declining. Historically, the Kirtland’s snake existed in 139 counties across nine states—Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, Pennsylvania, Tennessee, and Wisconsin. As of 2017,

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5 U.S. Fish and Wildlife Service Midwest Region, Kirtland’s Snake (*Clonophis Kirtlandii*) Species Status Assessment 6 (2017) [hereinafter SSA].
6 Id.
7 Id.
8 Id. at 18.
9 Id. at 17–18.
however, the species’ extant range was substantially smaller, covering just sixty counties across seven states—Illinois, Indiana, Kentucky, Michigan, Missouri, Ohio, and Tennessee.\textsuperscript{10} It is estimated that the Kirtland’s snake has experienced population declines of up to 90\% in recent decades.\textsuperscript{11}

The primary threats contributing to the decline of the Kirtland’s snake are development and associated habitat destruction, degradation, and fragmentation.\textsuperscript{12} This includes the substantial wetland habitat loss throughout the Midwest over the last century,\textsuperscript{13} as well as the ongoing conversion of undeveloped wetlands and grasslands for agricultural and residential uses.\textsuperscript{14} While some of the dwindling Kirtland’s snake populations persist in urban areas, often inhabiting vacant lots near streams or wetlands, these surviving groups are likely remnants of populations that have been mostly extirpated by urbanization and development.\textsuperscript{15} Kirtland’s snake populations also face threats related to climate change. One model has indicated that they face greater declines in climatic suitability than other reptiles in the Great Lakes region.\textsuperscript{16} In general, this model predicted that areas of climatic suitability within the snake’s current range will steadily decline, while new areas of climatic suitability not currently occupied will develop prohibitively far away in Ontario and New York.\textsuperscript{17} Other threats contributing to population decline include road mortality and water and soil pollution (largely from agricultural pesticides).\textsuperscript{18}

Accordingly, most states with extant Kirtland’s snake populations list the species as threatened or endangered under their own frameworks for threatened or endangered species.\textsuperscript{19} However, as discussed in more detail below, these state designations tend to focus on the prohibition of collection, sale, or possession of the species rather than

\begin{footnotesize}
\textsuperscript{10} Id. at 21. The Service considers a species to be “extant” if the last date of observation of the species is within 15 years, and there is no evidence that the habitat has been destroyed since the last date of observation. Id. at 20.

\textsuperscript{11} See Ctr. For Biological Diversity, Petition to List 404 Aquatic, Riparian and Wetland Species From the Southeastern United States as Threatened or Endangered under the Endangered Species Act 247 (2010) [hereinafter Petition to List].

\textsuperscript{12} Id.

\textsuperscript{13} See SSA at 26.

\textsuperscript{14} See id. at 34.

\textsuperscript{15} Petition to List at 246.

\textsuperscript{16} SSA at 32. The climate model on which the Service relied predicts that, under the best-case-scenario, 28\% of current Kirtland’s snake habitats in 2050 will not be climatically similar to their present state, and under the worst-case-scenario, 86\% of Kirtland’s snake habitats will not be climatically similar. By 2080, under the model’s best-case-scenario, 67\% of the habitats will be dissimilar, and under the worst-case-scenario, 97\% of the habitats will be dissimilar.

\textsuperscript{17} See id.

\textsuperscript{18} See Petition to List at 247–48.

\textsuperscript{19} SSA at 26.
\end{footnotesize}
on the necessary task of preserving the snake’s habitat.\textsuperscript{20}

\section{Statutory Framework}

The Endangered Species Act is “the most comprehensive legislation for the preservation of endangered species ever enacted by any nation.”\textsuperscript{21} The ESA is intended to protect and recover species that the Service determines to be “endangered” or “threatened.”\textsuperscript{22} “Endangered” means the species “is in danger of extinction throughout all or a significant portion of its range.”\textsuperscript{23} “Threatened” means the species is “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.”\textsuperscript{24}

When making listing determinations, the ESA requires that the Service use five enumerated factors to determine whether any species is endangered or threatened:

(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.\textsuperscript{25}

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.\textsuperscript{26} In evaluating these factors, the Service must make listing determinations “solely on the basis of the best scientific and commercial data available . . . and after taking into account those efforts, if any, being made by a State . . . to protect such species.”\textsuperscript{27}

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\textsuperscript{20} See \textit{id.} at 26–27.  
\textsuperscript{22} 16 U.S.C. §§ 1531(b), 1533(a).  
\textsuperscript{23} \textit{Id.} § 1532(6).  
\textsuperscript{24} \textit{Id.} § 1532(20).  
\textsuperscript{25} \textit{Id.} § 1533(a)(1).  
\textsuperscript{26} 50 C.F.R. § 424.11(c); \textit{see also Fed’n of Fly Fishers v. Daley}, 131 F. Supp. 2d 1158, 1164 (N.D. Cal. 2000) (“These factors are listed in the disjunctive; any one or a combination can be sufficient for a finding that a particular species is endangered or threatened.”).  
\textsuperscript{27} 16 U.S.C. § 1533(b)(1)(A).
The lawfulness of the Service’s listing decisions is governed by Administrative Procedure Act (“APA”) standards of review.\(^ {28}\) The APA directs that courts “shall” set aside agency actions, findings, or conclusions that are determined to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.”\(^ {29}\) In reviewing whether an agency decision is arbitrary and capricious, courts must “ensure that the agency considered the relevant factors and articulated a rational connection between the facts found and the choices made.”\(^ {30}\) An “agency rule would be arbitrary and capricious if the agency has relied on factors which Congress has not intended it to consider, 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.”\(^ {31}\)

### III. Prior Listing Procedures

The Center, along with other interested parties, first petitioned the Service to list the Kirtland’s snake on April 20, 2010.\(^ {32}\) In September 2011, the Service issued a ninety-day finding, stating that listing the Kirtland’s snake as threatened or endangered may be warranted.\(^ {33}\) On June 17, 2014, the Center filed a complaint against the Service for not meeting the statutory petition deadlines, namely the requirement that the Service publish a listing decision within twelve months of receiving a petition.\(^ {34}\) Per a settlement agreement, the Service agreed to publish a twelve-month finding regarding the Kirtland’s snake by September 30, 2017.\(^ {35}\) The Service published the twelve-month finding in the Federal Register on October 5, 2017—more than seven years after the original listing petition.\(^ {36}\) In the twelve-month finding, the Service arbitrarily decided that listing the Kirtland’s snake as threatened or endangered was unwarranted.\(^ {37}\)

\(^ {29}\) Id. § 706(2)(A).
\(^ {30}\) Greater Yellowstone Coal., Inc. v. Servheen, 665 F.3d 1015, 1023 (9th Cir. 2011).
\(^ {32}\) SSA at 1.
\(^ {33}\) Id.
\(^ {35}\) SSA at 1.
\(^ {36}\) Twelve-Month Finding, 82 Fed. Reg. at 46,641.
\(^ {37}\) See id. at 46,642.
Violations of the Endangered Species Act

I. The Service Failed to Consider the Inadequacy of Existing Regulatory Mechanisms.

The Service failed to consider properly the “inadequacy of existing regulatory mechanisms” for two reasons. First, the Service failed to consider that the existing state regulatory mechanisms do nothing to address the primary threats to the Kirtland’s snake. Second, even if the Service identified the right threats, its analysis of this factor was still grossly insufficient.

The Service acted arbitrarily by failing to consider that the existing state regulations do nothing to address the primary threats to the Kirtland’s snake. The “inadequacy of existing regulatory mechanisms” listing factor requires the Service to consider not just whether any regulatory mechanisms exist at all to protect the species under consideration but whether those existing regulatory mechanisms are adequate to mitigate the main threats to the species. Development and habitat disturbances pose the primary threats to the Kirtland’s snake’s survival. Climate change also poses a substantial threat to the species as it will reduce the area of suitable habitat in the Kirtland’s snake’s current range. The existing state regulations do nothing to mitigate these primary threats. Rather, the existing state-level regulatory mechanisms in place to protect the Kirtland’s snake focus instead on prohibiting collection of the species. However, the twelve-month listing decision expressly states that “there are no data indicating that collection is affecting the species.” Regulations prohibiting capture will not save the Kirtland’s snake if its habitat is threatened despite the existence of foreign efforts to reduce harvest and disturbance because those existing regulatory mechanisms did nothing to mitigate the primary threat to polar bears of sea ice loss; see also Ctr. for Biological Diversity v. Zinke, 900 F.3d 1053, 1071 (9th Cir. 2018) (finding that the Service’s reliance on local conservation efforts (fish ladders) in deciding not to list the arctic grayling was arbitrary and capricious since those measures did nothing to mitigate the main threat to the species of intolerable water temperatures).

39 See In re Polar Bear Endangered Species Act Listing & 4(d) Rule Litig., 794 F. Supp. 2d 65, 104, 112–13 (D.D.C. 2011), aff’d sub nom. In re Polar Bear Endangered Species Act Listing & Section 4(d) Rule Litig.--MDL No. 1993, 709 F.3d 1 (D.C. Cir. 2013) (upholding the Service’s decision to list the polar bear as threatened despite the existence of foreign efforts to reduce harvest and disturbance because those existing regulatory mechanisms did nothing to mitigate the primary threat to polar bears of sea ice loss); see also Ctr. for Biological Diversity v. Zinke, 900 F.3d 1053, 1071 (9th Cir. 2018) (finding that the Service’s reliance on local conservation efforts (fish ladders) in deciding not to list the arctic grayling was arbitrary and capricious since those measures did nothing to mitigate the main threat to the species of intolerable water temperatures).
40 SSA at 32. See also discussion infra Background and Section II.
41 See U.S. Fish and Wildlife Serv., Species Assessment and Listing Priority Assignment Form for Kirtland’s Snake (Clonophis Kirtlandii) 13-14 (2017) [hereinafter SAF].
42 Id. at 11.
destroyed. Thus, the Service’s decision not to list the Kirtland’s snake was arbitrary and capricious because it failed to consider whether the existing regulatory mechanisms were adequate to reduce the primary threats to the Kirtland’s snake.

Additionally, the Service’s perfunctory analysis of the existing regulatory mechanisms in states with extant Kirtland’s snake populations was insufficient. The Service did not articulate express consideration of the existing-regulations factor (factor D) at all in the twelve-month finding. Rather, the Service only noted within the analysis of the overutilization factor (factor B) that “six states list the Kirtland’s snake as threatened or endangered under State laws, most of which regulate possession of listed species.” The Service’s cursory analysis of this factor is particularly troubling in light of the fact that the Service previously stated in its own ninety-day finding that state designations and regulatory mechanisms such as those for the Kirtland’s snake are inadequate to provide meaningful protections to species, particularly to those species that are less popular when compared to “charismatic and game species.” According to the Service, regulations that prohibit taking—such as those at issue here—are “not comprehensive, are generally poorly enforced, and are not adequate to protect wildlife from other threats.” Despite this, the Service engaged in no meaningful analysis to justify the apparent change in position between those statements and the twelve-month finding. Because the Service “entirely failed to consider an important aspect of the problem”—namely, the required factor of inadequacy of existing regulatory mechanisms—the Service’s decision was arbitrary and capricious.

II. The Service Violated the ESA’s Best Available Science Standard by Dismissing the Effects of Climate Change on the Kirtland’s Snake.

When making listing decisions, the Service is required to rely on the best available scientific evidence, even if that evidence is uncertain or inconclusive. Courts have

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44 See id. at 46,642 (expressly referencing factors A, B, C, and E, but not factor D).
45 Id. at 46,641; see also SAF at 11 (engaging in similarly cursory analysis of factor B).
47 SSA at 26–27.
50 In re Polar Bear, 794 F. Supp. 2d at 106 (“It is well-settled in the D.C. Circuit that FWS is entitled—and, indeed, required—to rely upon the best available science, even if that science is uncertain or even ‘quite inconclusive.’” (citing Sw. Ctr. for Biological Diversity v. Babbitt, 215 F.3d 58, 60 (D.C. Cir. 2000)).
consistently held that the best available science standard “does not require that [the Service] act only when it can justify its decision with absolute confidence.” 51 Indeed, “judicial and administrative interpretations of the ESA have consistently construed the statute’s ‘best available data’ standard as requiring far less than ‘conclusive evidence.’” 52 This interpretation is consistent with Congress’s intent that “preventive action to protect species be taken sooner rather than later,” “before a species is ‘conclusively’ headed for extinction.” 53

The Service ignored this best available science requirement by dismissing as uncertain the evidence of deleterious effects of climate change on the Kirtland’s snake’s ability to persist in its current habitat. 54 The Service reasoned that it does not know how the Kirtland’s snake will respond to climatic changes or whether the species will be able to colonize in new climatically suitable areas, so the Service dismissed the evidence of climate change as “too uncertain.” 55

However, the evidence in the record clearly indicates that climate change will substantially alter the climatic conditions in much of the Kirtland’s snake’s known locations such that those locations will become unsuitable for the Kirtland’s snake as the species exists today. 56 Moreover, the Service itself acknowledged that it would be unlikely that the Kirtland’s snake would move hundreds of miles to inhabit new climatically suitable areas—in Ontario, Canada, and Western New York. 57

To the extent that the Kirtland’s snake’s response to climate change is uncertain, the Service’s approach directly contradicts the congressional intent to protect species “sooner rather than later” 58 and to “give the benefit of the doubt to the species.” 59 Thus, the Service’s decision not to list the Kirtland’s snake on these grounds was arbitrary.

51 Ariz. Cattle Growers’ Ass’n v. Salazar, 606 F.3d 1160, 1164 (9th Cir. 2010), cert denied, 562 U.S. 1216 (2011).
53 Id.
54 See SAF at 14.
55 See id.
56 Id.
57 Id.
58 Defs. of Wildlife, 958 F. Supp. at 680.
III. The Service Erred in Analyzing Whether the Snake was Endangered or Threatened in a “Significant Portion of its Range.”

The Service erred in determining whether the Kirtland’s snake was threatened or endangered in a “significant portion of its range” (SPR). The ESA requires listing a species as endangered when it is “in danger of extinction throughout all or a significant portion of its range.” The Service’s SPR analysis in the Kirtland’s snake evaluation was flawed in three key ways. First, the Service’s interpretation of “significant” is arbitrary as it renders the SPR language in the ESA superfluous and restates a policy that courts vacated. Second, the Service failed to consider whether the snake is endangered or threatened in an SPR but instead considered whether threats are “concentrated.” Third, the Service misapplied its unlawful concentration analysis when it failed to identify concentrated threats facing the snake.

Before and after the Kirtland’s snake listing decision, courts have repeatedly found arbitrary under the APA the interpretation of “significant” that the Service advanced here yet again. In *Defenders of Wildlife v. Norton*, the Secretary of the Interior asserted that for a species to be endangered or threatened in an SPR, it must “face[] threats in enough key portions of its range that the entire species is in danger of extinction, or will be within the foreseeable future.” The U.S. Court of Appeals for the Ninth Circuit rejected this definition as arbitrary because the Service’s interpretation conflated the terms “all” and “significant portion” and rendered Congress’ addition of the SPR language superfluous. After the Ninth Circuit’s decision, the Service published a policy that classified a portion of a species’ range “significant” if that “portion’s contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range.” In March 2017, in *Center for Biological Diversity v. Jewell*, the U.S. District Court for the District of Arizona found that this reworded policy again rendered the SPR language superfluous. In May 2018, in *Desert Survivors v. U.S.*

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60 16 U.S.C. § 1532(6) (emphasis added). Threatened species are those “likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” 16 U.S.C. § 1532(20).
61 *Defs. of Wildlife v. Norton*, 258 F.3d 1136, 1141 (9th Cir. 2001) (emphasis in original).
62 *Id.* at 1141.
64 *Id.* at 958.
65 *Id.*
The Service’s interpretation of “significant” in the Kirtland’s snake evaluation is arbitrary as it renders the SPR language superfluous and does not meaningfully differ from the policies courts have vacated. The Service considered a portion of the Kirtland’s snake’s range significant if “without that portion, the species in the remainder of its range warrants listing.” This interpretation, which the Service adopted in 2017 after the result in Center for Biological Diversity v. Jewell, arbitrarily merges the SPR analysis with the analysis of the entire range. Under this interpretation, whenever it is appropriate to list a species based on threats in an SPR, “a species should properly be determined to be endangered or threatened throughout all of its range.” The Service admitted here that the court in Center for Biological Diversity v. Jewell found that this definition “does not give sufficient independent meaning to the SPR phrase.” The Service nevertheless persisted in using the definition, claiming the court had misunderstood its interpretation. Nonetheless, the Service’s interpretation of “significant” here suffers the same problems as the policy that courts correctly vacated in Jewell and again in Desert Survivors.

The Service also erred by only evaluating threats in the SPR that are geographically “concentrated” in certain portions of the range. The Service determined that if “the threats to the species are essentially uniform throughout its range, then the species is not likely to be in danger of extinction or likely to become so in the foreseeable future in any portion of its range.” This is problematic because threats that occur throughout a species’ range may impact different portions differently. Even in situations where threats are uniform, a species can still be endangered in an SPR because of small population size, population isolation or other intrinsic factors. In contravention of the Service’s statutory obligation, the Service’s errant methodology allowed the Service to avoid analyzing whether widespread threats that do not endanger the snake in the entirety of its range may nevertheless endanger it in an

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66 Desert Survivors v. U.S. Dep’t of Interior, 321 F. Supp. 3d 1011, 1072–73 (N.D. Cal. 2018). Although the Arizona court limited its holding to vacatur in Arizona, see Ctr. for Biological Diversity, 2017 WL 8788052, the California court did not limit its holding to a geographic area. See generally Desert Survivors, 336 F. Supp. 3d. 67 SAF at 17 (emphasis in original). 68 Ctr. for Biological Diversity, 248 F. Supp. 3d at 956 (emphasis added). 69 SAF at 21. 70 See id. 71 Id. at 22. 72 See Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., 246 F. Supp. 3d 1272, 1286 (N.D. Cal. 2017) (finding that the Service could not properly address whether a population is vulnerable in a particular range without evaluating the “population’s isolation and small and declining numbers”).
Even if lawful, the Service incorrectly applied its concentrated threat analysis when it found the snake did not face any concentrated threats. Instead of thoroughly evaluating whether threats were concentrated, the Service issued a conclusory statement that it found no concentrated threats, citing a lack of data. However, the Kirtland’s snake faces threats from development and associated habitat loss and wetland modification; agricultural pesticides; and climate change—all of which may affect a concentrated area of the snake’s habitat. Without a more thorough evaluation, observers are “unable to conclude whether the agency considered ‘an important aspect of the problem.’”

The Service did not evaluate thoroughly the threats from wetland development, agricultural pesticides, or climate change, although all three may constitute concentrated threats. First, wetland conversion for agricultural and residential uses, although occurring throughout the Midwest, does not occur uniformly throughout the snake’s range. Not every region develops at the same rate or in the same capacity. Moreover, isolated and small remnant populations that occupy remaining habitats are “highly vulnerable to extirpation by further development.” Thus, they are affected differently than more robust populations in other areas. The Service did not directly address how development and population isolation may interreact to create a concentrated threat. Second, urban and agricultural development likely do not pose a threat in the same area. Yet, the Service seemingly did not evaluate whether agricultural pesticides occur in concentrated areas or at all. Finally, the Service cited evidence that climate change would affect portions of the snake’s range at different rates and to different extents. However, the Service summarily dismissed

73 See SAF at 15, 23 (finding no portion of the range “where potential threats are concentrated or substantially greater than in other portions of its range.”).
74 See Petition to List at 247.
75 See SSA at 29.
76 Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., 488 F. Supp. 3d 1219, 1232 (S.D. Fla. 2020) (quoting State Farm, 463 U.S. at 43) (“FWS should explain why threats are uniform across the range notwithstanding non-uniform rates of inundation.”).
77 See SSA at 26, 34.
78 Petition to List at 247.
79 See SAF at 15, 23.
80 See id. at 15 (failing to discuss the threat from pesticides in the concentration analysis).
81 See SSA at 29–33 (failing to discuss the threat from pesticides generally).
82 See id. at 32 (“Climatic suitability changes begin in the south and western portions of the range and spread north and east over time.”); id. at 31–32 (“[I]ncreases in winter and spring precipitation are expected particularly in the northern portion of the Midwest, while drier summers are predicted in the southern portion[.]”); see also Ctr.
the possibility that climate change may pose a concentrated threat. Because the Service failed to do a comprehensive analysis and ignored possible concentrated threats, the Service’s cursory evaluation was arbitrary, even under its own flawed terms.

**Conclusion**

In sum, as documented in this letter and the attached prior April 7, 2021 notice, the Service’s determination that listing the Kirtland’s snake is not warranted is arbitrary and capricious and violates the ESA. If the Service does not act to correct these violations within sixty days, the Center, Hoosier Environmental Council, and Prairie Rivers Network will pursue litigation in federal court. Please contact us should you have any questions or if you would like to discuss this matter.

Sincerely,

Mark Templeton, Clinical Professor of Law  
Robert Weinstock, Assistant Clinical Professor of Law  
Natalie Griffin, Student Law Clerk*  
Sarah Leitner, Student Law Clerk*  
Abrams Environmental Law Clinic  
University of Chicago Law School  
6020 S. University Avenue  
Chicago, IL 60637  
templeton@uchicago.edu  
rweinstock@uchicago.edu  
natgriffin@lawclinic.uchicago.edu  
sleitner@lawclinic.uchicago.edu  
(773) 702-9611

*Counsel for the Center for Biological Diversity, Hoosier Environmental Council, and Prairie Rivers Network

* Not admitted to practice in any state

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* See SAF at 15, 23.
April 7, 2021

VIA EMAIL AND CERTIFIED MAIL

Deb Haaland
Secretary of Interior
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C.  20240

Shannon Estenoz,
Principal Deputy Assistant Secretary, Fish and Wildlife and Parks
U.S. Department of the Interior
1849 C Street, N.W.
Washington, D.C.  20240

Martha Williams
Principal Deputy Director
U.S. Fish and Wildlife Service
1849 C Street, N.W.
Washington, D.C.  20240

RE: Sixty-day notice of violations of the Endangered Species Act over unlawful denial of listing of 21 species as threatened or endangered

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, Noah Greenwald, and other interested parties for unlawfully denying protection for 21 species as endangered or threatened (Appendix A). This letter is being provided to you pursuant to the 60-day notice requirement of the citizen suit provision of the Endangered Species Act (“ESA”). Id. § 1540(g)(2)(C).

In denying these 21 species badly needed protections, the Service failed to follow the best available science by ignoring clear threats to their survival and lack of protections to address these threats. In particular, the Service drastically underestimated the future impacts of climate change on 13 of these species by spuriousely pointing to uncertainty of impacts or by truncating how far into the future impacts were considered, in some cases looking a mere 20 years into the future. The Service also failed to properly consider whether all but one of the 21 species were endangered or threatened in a significant portion of their range as required by the ESA, despite clear risks to their survival across portions of their range.
Statutory Framework

The Endangered Species Act is "the most comprehensive legislation for the preservation of endangered species ever enacted by any nation." \(^1\) The ESA is intended to protect and recover species that the Service determines to be "endangered" or "threatened." \(^2\) "Endangered" means the species "is in danger of extinction throughout all or a significant portion of its range." \(^3\) "Threatened" means the species is "likely to become an endangered species within the foreseeable future in all or a significant portion of its range." \(^4\) The definition of "species" includes "subspecies" and "distinct population segments of any species of vertebrate fish or wildlife which interbreeds when mature." \(^5\)

Section 4 of the ESA permits private parties to petition the Service to add a particular species to the Service's formal list of threatened and endangered species. \(^6\) The Service is then directed to make a preliminary finding within 90 days. \(^7\) Assuming it finds "substantial information indicating that the petitioned action may be warranted," the Service must publish that finding and proceed to conduct a full scientific review of the species' status. \(^8\) Based on that review, the Service has 12 months to either issue a "not warranted" finding (thus rejecting the petition) or a proposed regulation adding the species to either the endangered or threatened list. \(^9\) If the Service proposes to list the species under either category, it then has 12 more months to make a final decision. \(^10\)

When making listing determinations, the ESA requires the Service to determine "whether any species is an endangered species or a threatened species because of five enumerated factors:

(A) the present or threatened destruction, modification, or curtailment of a species' habitat or range;
(B) overutilization for commercial, recreational, scientific, or educational purposes;
(C) predation or disease;
(D) the inadequacy of existing regulatory mechanisms; and
(E) other manmade or natural factors affecting the species' continued existence. \(^11\)

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. \(^12\) In evaluating these factors,

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3 Id. § 1532(6).
4 Id. § 1532(20).
5 Id. § 1532(16).
6 Id. § 1533(b)(3)(A).
7 Id.
8 Id.
9 Id. § 1533(b)(3)(B).
10 Id. § 1533(b)(6)(A).
11 Id. § 1533(a)(1).
12 Id.; 50 C.F.R. § 424.11(c); see also Fed'n of Fly Fishers v. Daley, 131 F. Supp. 2d 1158, at 1164 (N.D. Cal. 2000) ("These factors are listed in the disjunctive; any one or a combination can be sufficient for a finding that a particular species is endangered or threatened.").
the Service must make listing determinations “solely on the basis of the best scientific and commercial data available.”

The lawfulness of the Service’s listing decisions is governed by Administrative Procedure Act ("APA") standards of review. The APA directs that courts "shall" set aside agency actions, findings, or conclusions that are determined to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." In reviewing whether an agency decision is arbitrary and capricious, courts must "ensure that the agency considered the relevant factors and articulated a rational connection between the facts found and choices made." An "agency rule would be arbitrary and capricious if the agency relied on factors which Congress has not intended it to consider, 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.

The Foreseeable Future and Reliance on False Uncertainty

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." In 2009, the Department of Interior Solicitor issued a guidance interpreting the phrase "foreseeable future," concluding the Secretary has "broad discretion with respect to what constitutes the foreseeable future... as long as the rationale is articulated," and further clarifying:

Since the foreseeable future is uniquely related to population, status, trends, and threats for each species and since species often face multiple threats, the Secretary is likely to find varying degrees of foreseeability with respect to the various threats... the Secretary should not use an arbitrary "default" time period that is either absolute (e.g., 25 years) or based solely on the generation time of the species at issue.

In 2019, the Trump administration issued new regulations that similarly specified:

The Services will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. The Services need not identify the foreseeable future in terms of a specific period of time.

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15 Id. § 706(2)(A).
16 Greater Yellowstone Coal., Inc. v. Servheen, 665 F.3d 1015, 1023 (9th Cir. 2011).
18 Id. § 1532(20).
19 M-37021 at 13-14.
20 50 C.F.R. § 424.11(d).
In direct contravention to this guidance and the regulations, the Service arbitrarily used a “default” time period for 11 of the 21 species. The default time periods used by the Service fall well short of available predictions for climate change and other threats and thus failed to follow the best available science for these 11 species. As such, the not warranted findings for these species are arbitrary and capricious and in violation of the ESA.

One of the Service’s primary justification for truncating analysis of foreseeable future to such short time-periods was that predictions further into the future would be speculative and uncertain. Courts, however, have consistently held that the best available science standard “does not require that [the Service] act only when it can justify its decision with absolute confidence.” Rather, “[e]ven if the available scientific and commercial data were quite inconclusive, [the Service] may—indeed must—still rely on it.” Requiring the best available science, as opposed to scientific certainty, “is in keeping with congressional intent” that the Service “take preventive measures before a species is ‘conclusively’ headed for extinction.” Including the species where the Service truncated the analysis of foreseeable future, the agency arbitrarily relied on uncertainty of climate impacts in violation of the ESA’s best available science standard for 13 of the 21 species.

The Cedar Key mole skink, a small lizard that makes its home in the beach wrack washed up by high tide, is a case in point. The skink is clearly threatened by sea-level rise driven by climate change. In analyzing impacts of sea-level rise, however, the Service limited analysis of foreseeable future to 2050 despite well-accepted and peer-reviewed models of sea-level rise that extend to 2100, concluding:

[Although we expect that SLR will increase over time, we did not extend our foreseeable future beyond 30 years due to too much uncertainty in the projections that far out and the divergence among the Low, Medium, and High SLR projections beyond 2050.]

As such, the Service ignored available information, which under all scenarios showed increased threat to the skink’s survival. This head in the sand approach runs directly counter to the ESA’s clear mandate to protect species before it is too late.

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21 Ariz. Cattle Growers’ Ass’n v. Salazar, 606 F.3d 1160, 1164 (9th Cir. 2010), cert denied, 131 S. Ct. 1471 (2011).
24 U.S. Fish and Wildlife Service. 2018. Species status assessment report for the Cedar Key mole skink (Platystomus egregius insularis), Version 1.2. April 2018. Atlanta, GA, at 19. For the Cedar Key mole skink, the Service also unlawfully failed to rely on the best available science regarding climate change and sea level rise, instead basing its decision on science it acknowledged was outdated. Id. at iv, 45, 58. The Center successfully challenged this precise failure for the Florida Keys mole skink on substantially the same facts and law in federal district court, resulting in remand. Ctr. for Biological Diversity v. U.S. Fish & Wildlife Serv., No. 2:19-CV-14243, 2020 U.S. Dist. LEXIS 169065, at *20 (S.D. Fla. Sep. 15, 2020). The Service also failed to base its decision on analysis of the combined effects of all five listing factors, namely, the combined effect of development, sea level rise, and storm surge. The Service also ignored an important aspect of the problem, including how these threats affect the loose, dry sand Skinks require to feed, breed, nest, and traverse their environment.
Endangered or Threatened in a Significant Portion of Range

Under the Endangered Species Act, the Service must list a species if it is found to be either “endangered” or “threatened” throughout “all or a significant portion of its range.” In adding the phrase “significant portion of its range” (“SPR”) to the ESA, Congress recognized that it “represented a significant shift in the definition in existing law which consider[ed] a species to be endangered only when it is threatened with worldwide extinction.”

In 2014, the Service issued a policy interpreting the SPR phrase that, consistent with congressional mandate, recognized that the SPR language provides an “independent basis for listing.” Despite this recognition, however, the Service’s policy failed to provide such an independent basis, defining SPR in a manner that rendered the phrase indistinguishable from a species being endangered or threatened in all of its range. The policy states:

A portion of the range of a species is ‘significant’ if the species is not currently endangered or threatened throughout all of its range, but the portion’s contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range.

Because this definition functionally equates a species being endangered in an SPR with being endangered in all of its range, the policy has been struck down as unlawful and vacated by two courts. Although now invalidated by the courts, the Service’s not warranted findings for seven of the 21 species used this definition and thus these findings are unlawful and not in accordance with the ESA.

The policy has a second problem that infected the not warranted findings for 15 of the 21 species. As an initial step in determining whether any portion of range is significant, the policy adds a requirement that is not contemplated by the ESA nor consistent with its purposes, stating:

In practice, a key part of this analysis will be whether the threats are geographically concentrated in some way. If the threats to the species are affecting it uniformly throughout its range, no portion is likely to warrant further consideration.

Based on this guidance, the Service avoided analyzing whether 15 species in this notice are endangered or threatened in an SPR by instead looking at threats (e.g. habitat destruction, invasive species) and making a cursory conclusion that they are uniform across the species’ range and thus no portion can be considered significant. In doing so, however, the Service failed to consider the status of the species in significant portions of range. This is problematic because even if threats occur across the range of a species, they can affect species differently in portions

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25 Defenders of Wildlife, 258 F.3d 1136, 1141 (9th Cir. 2001).
26 Federal Register 79: 37588.
27 Federal Register 79: 37587
29 Federal Register 79: 37586.
of their range based on differences in status, such as small population size or population isolation.

To date, one court has addressed this issue and found the Service was in error when it only considered whether there was a concentration of threats and ignored the status of a species, finding for the Humboldt marten that:

> Even if the Service sufficiently explained away the wildfire, climate change, and rodenticide risks, if it failed to recognize the California population’s isolation and small and declining numbers, it could not have properly assessed whether that sub-population was, as the Species Report found, “especially vulnerable to extirpation.” The Court directs the Service to reconsider its SPR analysis in light of its revised analysis of the five ESA factors. 30

As with the marten, the 15 species in this notice have populations or portions of their range where they are vulnerable to extinction, but the Service failed to consider whether they are threatened or endangered in an SPR, as required by the ESA, based on a conclusion that threats are not concentrated.

The holiday darter, a colorful fish that lives in clean rivers in Georgia and Tennessee, demonstrates why this approach is so problematic. The darter currently has seven populations, six of which are presently considered to have low resiliency. Under future scenarios, three of these populations will disappear under the status quo and four will disappear under the worst-case scenario. 31 Rather than determine whether these imperiled populations constitute an SPR necessitating listing of the darter, however, the Service instead summarily concluded:

> The threats affecting the holiday darter are occurring throughout its entire range; therefore, there is not a meaningful geographical concentration of threats. As a result, even if we were to undertake a detailed “significant portion of its range” analysis, there would not be any portions of the species’ range where the threats are harming the species to a greater degree such that it may be in danger of extinction in that portion. 32

This conclusion is not based on the best available science and in direct contravention of the ESA’s requirement to list species as endangered or threatened in an SPR.

It’s also clear that despite the Service’s cursory conclusion to the contrary, threats to the survival of these 15 species are in fact concentrated and thus the determination that they are not endangered or threatened in an SPR is arbitrary and capricious. The Service’s status assessments for each of these 15 species clearly identify threats that impact particular populations or portions of range of these species, such that they are concentrated (Table 1).

32 Federal Register 82: 46193.
Table 1. Concentrated threats impacting 15 species denied protections.

<table>
<thead>
<tr>
<th>Scientific</th>
<th>Common Name</th>
<th>Concentrated Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammodramus maritimus macgillivrae</td>
<td>MacGillivray’s Seaside sparrow</td>
<td>1. Mangrove encroachment; 2. Tidal impoundments</td>
</tr>
<tr>
<td>Heterodon simus</td>
<td>Southern Hog-nosed Snake</td>
<td>1. Urbanization; 2. Invasive fire ants</td>
</tr>
<tr>
<td>Gyrynophilus gulolineatus</td>
<td>Berry Cave salamander</td>
<td>1. Mining; 2. Residential Development; 3. Parasites; 4. Urbanization</td>
</tr>
<tr>
<td>Plestiodon egregius insularis</td>
<td>Cedar Key Mole Skink</td>
<td>1. Sea-level rise; 2. Development</td>
</tr>
<tr>
<td>Pediomelum pentaphyllum</td>
<td>Chihuahua Scurfpea</td>
<td>1. Declining precipitation; 2. Surface disturbance</td>
</tr>
<tr>
<td>Cicindela marginipennis</td>
<td>Cobblestone Tiger Beetle</td>
<td>1. Dams; 2. Urbanization</td>
</tr>
<tr>
<td>Orconectes eupunctus</td>
<td>Coldwater Crayfish</td>
<td>1. Invasive crayfish</td>
</tr>
<tr>
<td>Copablepharon fuscum</td>
<td>Sand-verbenca Moth</td>
<td>1. Development; 2. Recreation; 3. Invasive Species; 4. Inundation</td>
</tr>
<tr>
<td>Balduina atropurpurea</td>
<td>Purple Balduina</td>
<td>1. Urbanization; 2. Lack of management</td>
</tr>
<tr>
<td>Percina macrocephala</td>
<td>Longhead Darter</td>
<td>1. Urbanization and Forest Loss</td>
</tr>
<tr>
<td>Clonophis kirtlandii</td>
<td>Kirtland's Snake</td>
<td>1. Agriculture; 2. Urbanization</td>
</tr>
</tbody>
</table>

Conclusion

In sum, the Service’s determinations that listing these 21 species is not warranted are arbitrary and capricious, are contrary to the best available science, and violate the ESA. If the Service does not act to correct these violations within 60 days, the Center will pursue litigation in federal court. Please contact me should you have any questions or if you would like to discuss this matter.

Sincerely,

D. Noah Greenwald
Endangered Species Director
Center for Biological Diversity

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33 The Center has already prevailed on a claim with substantially similar and interrelated facts in federal district court, resulting in remand. *Ctr. for Biological Diversity*, 2020 U.S. Dist. LEXIS 169065 at *28–29.*
P.O. Box 11374
Portland, OR 97211
ngreenwald@biologicaldiversity.org
Appendix A. Twenty-one species arbitrarily found to not warrant protection as endangered or threatened under the Endangered Species Act.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific</th>
<th>Date</th>
<th>Cite</th>
<th>Foreseeable Future</th>
<th>Reliance on Climate Uncertainty</th>
<th>Significant Portion of Range Issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doll's-daisy</td>
<td>Boltonia montana</td>
<td>3-Dec-20</td>
<td>85 FR 78029</td>
<td></td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Purple Lilliput</td>
<td>Toxolasma lividus</td>
<td>29-Sep-20</td>
<td>85 FR 61384</td>
<td>20-30 years</td>
<td></td>
<td>Definition</td>
</tr>
<tr>
<td>Sand-verbena Moth</td>
<td>Copablepharon fuscum</td>
<td>19-Dec-19</td>
<td>84 FR 69707</td>
<td>30 years</td>
<td>Yes</td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Purple Balduina</td>
<td>Balduina atropurpurea</td>
<td>19-Dec-19</td>
<td>84 FR 68707</td>
<td>40 years</td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Southern hog-nosed snake</td>
<td>Heterodon simus</td>
<td>07-Oct-19</td>
<td>84 FR 53336</td>
<td>30-40 years</td>
<td>Yes</td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Berry Cave salamander</td>
<td>Gyrinophilus gulolineatus</td>
<td>07-Oct-19</td>
<td>84 FR 53336</td>
<td></td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Cobblestone Tiger Beetle</td>
<td>Cicindela marginipennis</td>
<td>07-Oct-19</td>
<td>84 FR 53336</td>
<td></td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Longhead Darter</td>
<td>Percina macrocephala</td>
<td>07-Oct-19</td>
<td>84 FR 53336</td>
<td></td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Brook Floater</td>
<td>Alasmidonta varicosa</td>
<td>15-Aug-19</td>
<td>84 FR 41694</td>
<td>30 years</td>
<td></td>
<td>Definition</td>
</tr>
<tr>
<td>Chihuahua scurfpea</td>
<td>Pediomelum pentaphyllum</td>
<td>04-Apr-19</td>
<td>84 FR 13237</td>
<td></td>
<td></td>
<td>Concentration of Threats</td>
</tr>
<tr>
<td>Ashy Darter</td>
<td>Etheostoma cinereum</td>
<td>04-Apr-19</td>
<td>84 FR 13237</td>
<td></td>
<td></td>
<td>Definition</td>
</tr>
<tr>
<td>Species</td>
<td>Scientific Name</td>
<td>Date</td>
<td>FR Number</td>
<td>Year</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
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<tr>
<td>Barrens Darter</td>
<td><em>Etheostoma forbesi</em></td>
<td>04-Apr-19</td>
<td>84 FR 13237</td>
<td>30 years</td>
<td>Concentration of Threats</td>
<td></td>
</tr>
<tr>
<td>Coldwater Crayfish</td>
<td><em>Orconectes eupunctus</em></td>
<td>04-Apr-19</td>
<td>84 FR 13237</td>
<td></td>
<td>Concentration of Threats</td>
<td></td>
</tr>
<tr>
<td>Arkansas Mudalia</td>
<td><em>Leptoctis arkansensis</em></td>
<td>04-Apr-19</td>
<td>84 FR 13237</td>
<td></td>
<td>Concentration of Threats</td>
<td></td>
</tr>
<tr>
<td>MacGillivray’s seaside sparrow</td>
<td><em>Ammodramus maritimus macgillivraii</em></td>
<td>19-Dec-18</td>
<td>83 FR 65127</td>
<td>30 years</td>
<td>Concentration of Threats</td>
<td></td>
</tr>
<tr>
<td>Cedar Key mole skink</td>
<td><em>Plestiodon egregius insularis</em></td>
<td>19-Dec-18</td>
<td>83 FR 65127</td>
<td>30 years</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Tinian monarch</td>
<td><em>Monarcha takatsukasae</em></td>
<td>19-Dec-18</td>
<td>83 FR 65127</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Bicknell’s thrush</td>
<td><em>Catharus bicknelli</em></td>
<td>05-Oct-17</td>
<td>82 FR 46618</td>
<td>30 years</td>
<td>Definition</td>
<td></td>
</tr>
<tr>
<td>Kirtland’s snake</td>
<td><em>Clonophis kirtlandii</em></td>
<td>05-Oct-17</td>
<td>82 FR 46618</td>
<td></td>
<td>Definition, concentration of threats</td>
<td></td>
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<tr>
<td>Bridled Darter</td>
<td><em>Percina kusha</em></td>
<td>04-Oct-17</td>
<td>82 FR 46183</td>
<td>30 years</td>
<td>Concentration of Threats</td>
<td></td>
</tr>
<tr>
<td>Holiday Darter</td>
<td><em>Etheostoma brevirostrum</em></td>
<td>04-Oct-17</td>
<td>82 FR 46183</td>
<td>20 years</td>
<td>Concentration of Threats</td>
<td></td>
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</tbody>
</table>