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11
12 **IN THE UNITED STATES DISTRICT COURT**
13 **FOR THE DISTRICT OF ARIZONA**
14 **TUCSON DIVISION**

15
16 _____)
17 CENTER FOR BIOLOGICAL DIVERSITY,)
18)
19 Plaintiff,)
20)
21 v.)
22)
23 DEB HAALAND, *Secretary, U.S.*)
24 *Department of the Interior;*)
25 MARTHA WILLIAMS, *Director*)
26 *U.S. Fish and Wildlife Service,*)
27)
28 Defendants.)
29 _____)

Case No. _____

**COMPLAINT FOR
DECLARATORY AND
INJUNCTIVE RELIEF**

30
31 **INTRODUCTION**

32 1. The Endangered Species Act requires the listing of species as endangered and
33 threatened, as well as the designation of “critical” habitat for such species. This case challenges
34 the United States Fish and Wildlife Service’s (“FWS”) inadequate critical habitat designations
35 for the northern Mexican gartersnake (*Thamnophis eques megalops*) and the narrow-headed
36 gartersnake (*Thamnophis rufipunctatus*). These species were both listed as threatened throughout
37 their range in July 2014 and, while critical habitat was originally proposed simultaneously with
38 listing, it was never finalized.

1 2. Instead, in April 2020, FWS undertook a sweeping revision of its original
2 proposal leading to a drastic, unsupported reduction in the amount of habitat that the agency
3 itself had previously recognized as meeting the statutory definition of critical habitat for these
4 species. FWS accomplished this in two steps: first by declaring thousands of acres with recent
5 evidence of species presence to be “unoccupied,” and then by declaring, with no rational
6 explanation, all purportedly unoccupied habitat off the table for purposes of designation. Neither
7 step is consistent with the law or the best available science.

8 3. Rather, the highly flawed critical habitat designations for the northern Mexican
9 and narrow-headed gartersnakes violate the Endangered Species Act (“ESA”), 16 U.S.C. §§
10 1531-1544, in numerous ways, and place both the survival and recovery of these species in
11 jeopardy. FWS failed to rely on the best available science in revising the list of physical and
12 biological features (“PBFs”) essential to the conservation of the species and also failed to rely on
13 the best available science when developing the criteria for defining the areas occupied by the
14 species, as well as the criteria for identifying critical habitat boundaries; the agency also failed to
15 meaningfully respond to expert comments and scientific evidence set forth by Plaintiff Center for
16 Biological Diversity and other experts on these myriad issues. In addition, FWS failed to
17 adequately address the question of genetic and population health or provide a rational
18 explanation as to why unoccupied habitat was not essential to species conservation, particularly
19 in response to well-reasoned comments and studies provided by subject matter experts.

20 4. For these reasons, as explained in further detail below, FWS has violated the ESA
21 and its implementing regulations, and acted in a manner that is “arbitrary, capricious, an abuse of
22 discretion, or otherwise not in accordance with law,” and “without observance of procedure
23 required by law” in violation of the Administrative Procedure Act (“APA”), 5 U.S.C. §

1 706(2)(A), (D). Accordingly, the final critical habitat designations for the northern Mexican
2 gartersnake and narrow-headed gartersnake, respectively, should be remanded and FWS should
3 be ordered promptly to reevaluate these designations to ensure that they are based on the best
4 available science and actually provide for—rather than undercut—the species’ survival and
5 recovery.

6 **JURISDICTION**

7 5. This Court has jurisdiction over this action pursuant to 28 U.S.C. § 1331, 16
8 U.S.C. § 1540(g), and 5 U.S.C. § 702.

9 **PARTIES**

10 6. Plaintiff Center for Biological Diversity (“the Center”) is a 501(c)(3) non-profit
11 corporation headquartered in Tucson, Arizona, with offices in a number of states and Mexico.
12 The Center works through science, law, and policy to secure a future for all species, great or
13 small, hovering on the brink of extinction. The Center is actively involved in species and habitat
14 protection issues throughout the United States and the world, including protection of plant and
15 animal species from the impacts of climate change, wildfires, and human-caused habitat
16 destruction. In addition to more than 1.7 million supporters and online activists throughout the
17 United States and the world, the Center has more than 70,000 members. The Center brings this
18 action on its own institutional behalf and on behalf of its members, some of whom regularly
19 enjoy and will continue to enjoy educational, recreational, and scientific activities concerning the
20 northern Mexican gartersnake and the narrow-headed gartersnake.

21 7. Plaintiff’s members use and enjoy the areas where the threatened northern
22 Mexican and narrow-headed gartersnakes are found for a variety of purposes, including hiking,
23 fishing, camping, viewing and photographing scenery and wildlife, and engaging in other

1 vocational, scientific, and recreational activities. Plaintiff's members derive scientific, aesthetic,
2 recreational, vocational, and spiritual benefits from these areas—including specific areas
3 designated as critical habitat for these species, as well as areas excluded by FWS from the final
4 critical habitat designations for these species.

5 8. Plaintiff's members use these areas (whether included in or excluded from the
6 final critical habitat designations) to engage in activities specific to their concrete interests in
7 observing, photographing, and conserving these two gartersnake species and the habitat
8 necessary for their survival and recovery. For instance, Dr. Robin Silver—a co-founder and
9 longtime member of the Center—has visited threatened northern Mexican and narrow-headed
10 gartersnake habitat to look for and photograph (or attempt to photograph) these gartersnakes and
11 their habitat on numerous occasions. *See, e.g., infra* ¶ 29 (Image of Narrow-Headed Gartersnake,
12 taken by Dr. Robin Silver). Dr. Silver last visited gartersnake critical habitat on August 10, 2023,
13 specifically the East Fork of the Black River.

14 9. Plaintiff's members intend to, and have plans to, continue to use and enjoy the
15 areas where the threatened northern Mexican and narrow-headed gartersnakes are found—
16 including specific areas designated as critical habitat for these species, as well as areas originally
17 proposed for, but ultimately excluded from, designation as critical habitat—frequently and on an
18 ongoing basis in the future, including during the remainder of 2023 and 2024. For example, Dr.
19 Silver has concrete plans to visit gartersnake habitat (including habitat specifically included in
20 and/or excluded from FWS's final critical habitat designations) multiple times this summer and
21 fall as part of his personal and professional endeavors, as well as in 2024.

22 10. The health, aesthetic, recreational, inspirational, spiritual, scientific, and
23 educational interests of the Plaintiff and its members have been and will continue to be adversely

1 affected and irreparably injured if Defendants’ ongoing violations of the ESA and the APA
2 continue. The relief sought will redress Plaintiff’s and its members’ injuries by ensuring that the
3 critical habitat designations for the northern Mexican gartersnake and narrow-headed gartersnake
4 are consistent with the best available science, the conservation mandate of the ESA, and the
5 statutory requirement that FWS promote (rather than undercut) these species’ survival and
6 recovery.

7 11. Defendant Martha Williams is the Director of FWS, an agency within the U.S.
8 Department of Interior, and is directly responsible for the supervision, management, and control
9 of the agency. Accordingly, she is responsible for overseeing FWS’s actions challenged in this
10 lawsuit, and is sued in her official capacity.

11 12. Defendant Deb Haaland is the Secretary of the U.S. Department of the Interior
12 and is ultimately responsible for overseeing the work of FWS, an agency within the Department
13 of the Interior. She is sued in her official capacity.

14 **STATUTORY AND REGULATORY FRAMEWORK**

15 **A. Endangered Species Act**

16 13. The ESA is the “most comprehensive legislation for the preservation of
17 endangered species ever enacted by any nation.” *Tenn. Valley Auth. v. Hill*, 437 U.S. 153, 180
18 (1973). “The plain intent of Congress in enacting this statute was to halt and reverse the trend
19 toward species extinction, whatever the cost.” *Id.* at 184. Congress enacted the ESA to provide
20 both “a means whereby the ecosystems upon which endangered and threatened species depend
21 may be conserved, [and] to provide a program for the conservation of such endangered species
22 and threatened species.” 16 U.S.C. § 1531.

1 14. The ESA was enacted not merely to forestall the extinction of species, but also to
2 allow a species to recover to the point where it may be delisted. *See* 16 U.S.C. § 1532(3)
3 (defining “conservation” as all methods that can be employed to “bring any endangered species
4 or threatened species to the point at which the measures provided pursuant to this [Act] are no
5 longer necessary”).

6 15. Under the ESA, a species may be listed as endangered or threatened. An
7 endangered species is one that is “in danger of extinction throughout all or a significant portion
8 of its range” and a threatened species is “any species which is likely to become an endangered
9 species within the foreseeable future throughout all or a significant portion of its range.” 16
10 U.S.C. § 1532(6), (20). Once listed as such, both endangered and threatened species are entitled
11 to broad legal protections under the ESA.

12 16. One of the key protections afforded to listed species is the designation of critical
13 habitat. *See* 16 U.S.C. § 1533(a)(3). “In fashioning the ESA, it was Congress’ understanding that
14 the preservation of species’ habitat is essential to the preservation of the species itself.” *Ctr. for*
15 *Biological Diversity v. Kempthorne*, 607 F. Supp. 2d 1078, 1086 (D. Ariz. 2009) (internal
16 citations and quotations omitted). As such, critical habitat designations must be made “on the
17 basis of the best scientific data available and after taking into consideration the economic impact,
18 the impact on national security, and any other relevant impact, of specifying any particular area
19 as critical habitat.” 16 U.S.C. § 1533(b)(2). The agency’s duty to determine critical habitat is set
20 forth in section 4 of the Act.

21 17. Critical habitat can include both occupied and unoccupied areas; it is defined in
22 the statute as both “the specific areas within the geographical area occupied by the species, at the
23 time it is listed in accordance with the provisions of section 1533 of this title, on which are found

1 those physical or biological features (I) essential to the *conservation* of the species and (II) which
2 may require special management considerations or protection,” as well as areas that are
3 unoccupied at the time the species is listed, “upon a determination by the Secretary that such
4 areas are essential for the *conservation* of the species.” 16 U.S.C. § 1532(5)(A)(i), (ii) (emphasis
5 added).

6 18. FWS promulgated regulations implementing section 4 of the ESA and
7 enumerating the criteria for designating critical habitat, which are codified at 50 C.F.R. § 424.12.
8 These regulations have undergone substantial revision in recent years. As currently drafted, FWS
9 regulations require that after determining that designation of critical habitat is “prudent and
10 determinable,” *see* 50 C.F.R. § 424.12(a), the Secretary “will identify specific areas within the
11 geographical area occupied by the species at the time of listing and any specific areas outside the
12 geographical area occupied by the species to be considered for designation as critical habitat.” *Id.*
13 at § 424.12(b).

14 19. In making this designation, the regulations provide that FWS “will identify the
15 geographical area occupied by the species at the time of listing,” *id.* at § 424.12(b)(1)(i), and will
16 also “[i]dentify physical and biological features essential to the conservation of the species at an
17 appropriate level of specificity using the best available scientific data”; the regulations further
18 provide that “[t]his analysis will vary between species and may include consideration of the
19 appropriate quality, quantity, and spatial and temporal arrangements of such features in the
20 context of the life history, status, and conservation needs of the species.” *Id.* at § 424.12(b)(1)(ii).
21 The agency must then “[d]etermine the specific areas within the geographical area occupied by
22 the species that contain the physical or biological features essential to the conservation of the

1 species,” as well as “which of these features may require special management considerations or
2 protection.” *Id.* at § 424.12(b)(1)(iii)-(iv).

3 20. In addition, section 424.12(b)(2) specifies the conditions under which the
4 Secretary may designate “specific areas outside the geographical area occupied by the species”
5 as critical habitat. In 2019, the Trump administration substantially revised this subsection,
6 thereby modifying the approach to designating unoccupied areas as critical habitat. The agency
7 previously evaluated occupied and unoccupied areas concurrently in determining which areas are
8 essential for a species’ conservation. Under the 2019 revisions, however, FWS may not evaluate
9 unoccupied areas unless several conditions are first satisfied:

10 The Secretary will designate as critical habitat, at a scale determined by the
11 Secretary to be appropriate, specific areas outside the geographical area occupied
12 by the species only upon a determination that such areas are essential for the
13 conservation of the species. When designating critical habitat, the Secretary will
14 first evaluate areas occupied by the species. The Secretary *will only consider*
15 *unoccupied areas to be essential where a critical habitat designation limited to*
16 *geographical areas occupied would be inadequate to ensure the conservation of*
17 *the species.* In addition, for an unoccupied area to be considered essential, the
18 Secretary *must determine that there is a reasonable certainty both that the area will*
19 *contribute to the conservation of the species and that the area contains one or more*
20 *of those physical or biological features essential to the conservation of the species.*

21
22 50 C.F.R. § 424.12(b)(2) (emphases added); *see also* Final Rule, 84 Fed. Reg. 45,020
23 (Aug. 27, 2019) (finalizing and explaining this revision).

24 21. The 2019 revisions thus significantly curtailed FWS’s authority and discretion to
25 designate unoccupied areas as critical habitat. The updated regulations instituted a two-step
26 approach that prevents FWS from even considering unoccupied areas in its initial evaluation. In
27 addition, it further narrowed FWS’s discretion by requiring both that any unoccupied areas
28 ultimately included in the critical habitat designation contain “one or more of the physical or
29 biological features essential to the conservation of the species” and that there is a “reasonable

1 certainty . . . that the area will contribute to the conservation of the species.” 50 C.F.R. §
2 424.12(b)(2).

3 22. A legally sufficient designation of critical habitat is vital to the effective
4 functioning of other safeguards in the ESA. In particular, section 7 of the ESA requires that
5 every federal agency “shall, in consultation with and with the assistance of [FWS] insure that any
6 action authorized, funded, or carried out by such agency . . . is not likely to . . . result in the
7 destruction or adverse modification of [critical] habitat” 16 U.S.C. § 1536(a)(2).

8 **B. Administrative Procedure Act**

9 23. FWS’s decisions implementing the ESA are governed the APA standard of
10 review. Under the APA, a reviewing court must “hold unlawful and set aside agency action,
11 findings, and conclusions” found to be “arbitrary, capricious, an abuse of discretion, or otherwise
12 not in accordance with law.” *Id.* § 706(2)(A). An agency action is arbitrary and capricious if the
13 agency “relied on factors which Congress has not intended it to consider, entirely failed to
14 consider an important aspect of the problem, offered an explanation for its decision that runs
15 counter to the evidence before the agency,” or if the agency’s decision “is so implausible that it
16 could not be ascribed to a difference in view or the product of agency expertise.” *Motor Vehicle*
17 *Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

18 **FACTUAL BACKGROUND**

19 **A. Northern Mexican Gartersnake and Narrow-Headed Gartersnake**
20 **Background and Original Proposed Critical Habitat**

21 24. The northern Mexican gartersnake is a wetland and riparian-obligate snake found
22 in the southwestern United States and parts of Mexico. It is one of ten subspecies currently
23 recognized under *Thamnophis eques*, has the largest historical distribution of these subspecies,
24

1 and is the only subspecies known to occur in the United States. In the United States, the species
2 is found primarily in Arizona and, to a lesser extent, New Mexico.



3
4 Northern Mexican Gartersnake (photo © Andy Holycross)

5
6 25. The northern Mexican gartersnake is a medium-sized member of the family
7 *Colubridae* with a maximum known length of 112 centimeters (cm). It ranges in background
8 color from olive to olive-brown to olive-gray. Three stripes run the length of the body, with a
9 yellow stripe down the back that darkens toward the tail. The pale yellow to light-tan lateral
10 stripes distinguish the northern Mexican gartersnake from other gartersnake species because a
11 portion of the lateral stripe is found on the fourth scale row. Paired black spots extend along the
12 dorsolateral fields. A light-colored crescent extends behind the corners of the mouth.

13 26. Northern Mexican gartersnakes have suffered extensive population declines in
14 recent decades throughout their ranges in the United States likely due to a combination of factors
15 acting synergistically, including but not limited to: loss or degradation of habitat, loss of native
16 prey populations, and introduced non-native predator populations.

1 27. The narrow-headed gartersnake is a riparian-obligate snake also found in Arizona
2 and New Mexico. It is a highly aquatic, fish-eating specialist with native and soft-rayed non-
3 native fish as their primary prey.



4
5 Narrow-headed Gartersnake (photo © Robin Silver)
6

7 28. The narrow-headed gartersnake is more easily identifiable among the five
8 gartersnake species in Arizona in large part due to the snake's long, narrow snout and pointed
9 facial appearance. They also have a reddish brown, charcoal, tan, or olive background color, with
10 paired red, reddish brown, dark brown, or grey blotches on the back. The belly is lighter colored,
11 often yellowish or greenish, and may have dark irregular markings. Younger snakes have more
12 striking markings, while older adults lose their pattern.

13 29. Like the northern Mexican gartersnake, narrow-headed gartersnakes have also
14 suffered extensive population declines throughout their ranges in the United States in recent
15 decades likely due to a combination of factors acting synergistically, including but not limited to:

1 loss or degradation of habitat, loss of native prey populations, and introduced non-native
2 predator populations.

3 30. Both snakes have become increasingly ecologically and genetically isolated and
4 as a result of the continuing threats and drastic population declines described above, the northern
5 Mexican and narrow-headed gartersnakes were jointly listed as threatened throughout their range
6 in July 2014 (which for the northern Mexican gartersnake also extends into Mexico). *See* Final
7 Rule, Threatened Status for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake,
8 79 Fed. Reg. 38,678 (July 8, 2014).

9 **B. Revised Proposed Critical Habitat Designations**

10 31. FWS originally proposed to designate 421,423 acres of critical habitat for the
11 northern Mexican gartersnake and 210,289 acres for the narrow-headed gartersnake, but this
12 proposed designation was never finalized. *See* Proposed Rule, Designation of Critical Habitat for
13 the Northern Mexican Gartersnake and Narrow-Headed Gartersnake, 78 Fed. Reg. 41,550 (July
14 10, 2013). Rather than finalize this proposal, in April 2020, FWS issued a revised proposed rule
15 drastically reducing the amount of proposed critical habitat for each species.
16

17 32. For the northern Mexican gartersnake, FWS’s new rule proposed to designate
18 only 27,784 acres—a 93% reduction from the original proposal. For the narrow-headed
19 gartersnake, FWS’s new rule proposed to designate only 18,701 acres—a 91% reduction from
20 the original proposal. *See* Revised Proposed Rule, Designation of Critical Habitat for the
21 Northern Mexican Gartersnake and Narrow-Headed Gartersnake, 85 Fed. Reg. 23,608 (Apr. 28,
22 2020).

23 33. These sweeping reductions resulted from a number of changes to both the list of
24 physical and biological features (“PBFs”) developed by the agency—comprising those elements

1 that are considered essential to the conservation of the species—as well as the criteria used by
2 FWS to identify areas occupied by the species at the time of listing and delineate specific critical
3 habitat boundaries. One consequential effect of these changes was that large areas were
4 reclassified as “unoccupied,” which had previously been considered “occupied” under the
5 original proposed rule only seven years earlier. In conjunction with the agency’s revision of the
6 regulations making it far more difficult to designate unoccupied areas, this all but guaranteed that
7 large, purportedly “unoccupied” areas would be excluded from the final designation.

8 34. The agency ultimately finalized protection for only 20,326 acres as critical habitat
9 for the northern Mexican gartersnake on April 28, 2021. *See* Final Rule, Designation of Critical
10 Habitat for the Northern Mexican Gartersnake, 86 Fed. Reg. 22,518 (Apr. 28, 2021). FWS
11 separately finalized protection for only 23,785 acres as critical habitat for the narrow-headed
12 gartersnake on October 21, 2021. *See* Final Rule, Designation of Critical Habitat for the Narrow-
13 Headed Gartersnake, 86 Fed. Reg. 58,474 (Oct. 21, 2021). For each species, FWS concluded that
14 these critical habitat designations were sufficient to satisfy its obligations under the ESA to
15 conserve these species.

16 **C. Changes to List of Physical and Biological Features that Dramatically**
17 **Reduced Agency’s Proposed Critical Habitat**
18

19 35. In its revised proposed critical habitat designation, FWS made a number of
20 unsupported changes to its list of physical and biological features—those elements that are
21 considered essential to the conservation of the species—which, in turn, drastically reshaped the
22 habitat areas that would be considered for designation while leaving out large swaths of land
23 previously recognized as habitat. Principal among these changes were agency revisions with
24 regard to ephemeral streams, overland terrestrial habitat, and nonnative predators.
25

1 1. *Stream Flow*

2 36. The revised proposed rule “clarif[ied] the spectrum of stream flow regimes” by
3 defining perennial, spatially intermittent, and ephemeral reaches of streams. 85 Fed. Reg. at
4 23,613. For the northern Mexican gartersnake, FWS determined that only streams with perennial
5 or spatially intermittent flow would be considered to serve as habitat. Thus, unlike the original
6 proposed rule, ephemeral streams were excluded from being considered habitat except for those
7 ephemeral reaches that “connect perennial or spatially intermittent perennial streams to lentic
8 wetlands.” 86 Fed. Reg. at 22,536 (enumerating PBF #7).

9 37. Both the Center and Dr. Erika Nowak—an expert snake biologist whose own
10 work was cited and relied upon repeatedly by FWS in the critical habitat rulemaking—submitted
11 comments objecting to the exclusion of these biologically important stream reaches. The Center
12 explained that even those ephemeral streams not lying between perennial stretches “are used on a
13 seasonable basis by gartersnakes” and should be included as habitat for both snakes. *See* Letter
14 from Center for Biological Diversity to U.S. Fish and Wildlife Service, Comments on Revised
15 Proposed Rule for Designation of Critical Habitat for the Northern Mexican Gartersnake and
16 Narrow-Headed Gartersnake at 2 (June 29, 2020) (hereinafter “Center Comment Letter”).

17 38. Dr. Nowak similarly explained that there was no scientific basis for removing the
18 ephemeral stream reaches and that “[g]iven the findings of Cotten et al. (2013), Cotten et al.
19 (2017), Myrand (2019), and Nowak et al. (2019) demonstrating both species’ use of ephemeral
20 or intermittent stream reaches, it is not clear why end reaches of ephemeral or intermittent
21 streams have been removed as critical habitat for *T. e. megalops* and *T. rufipunctatus*.” *See* Letter
22 from Erika M. Nowak, PhD, Comments on Revised Proposed Rule for Designation of Critical

1 Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake at 6, 9
2 (hereinafter “Nowak Comment Letter”).

3 39. Nonetheless, in the final critical habitat rule, FWS excluded from the designation
4 all ephemeral streams that did not link to perennial reaches. *See* 86 Fed. Reg. at 22,536, 22,528.
5 In doing so, the agency failed to address or discuss the studies provided by Dr. Nowak showing
6 that these ephemeral stream reaches do indeed serve as important habitat for both species of
7 gartersnakes. Nor did FWS specifically respond to Dr. Nowak’s comments on this issue, despite
8 her well-established status as a leading subject matter expert on the species.

9 2. *Overland Areas*

10 40. While the original proposed rule recognized the importance of overland areas for
11 both the northern Mexican and narrow-headed gartersnakes for a number of essential life cycle
12 functions and included this additional terrestrial space, the 2020 rule specifically excluded this
13 habitat. This change alone reduced the proposed critical habitat designation for the northern
14 Mexican gartersnake by 285,837 acres or 68 percent. 85 Fed. Reg. at 23,617.

15 41. The original proposed rule emphasized that both the northern Mexican and
16 narrow-headed gartersnakes “rely on terrestrial habitat for thermoregulation, gestation, shelter,
17 protection from predators, immigration, emigration, and brumation.” 78 Fed. Reg. at 41,553-
18 41,554. As such, at the time, FWS determined that the critical habitat designation would
19 “provide terrestrial space required by northern Mexican and narrow-headed gartersnakes to
20 engage in normal behaviors such as foraging, basking, gestation, brumation, establishing home
21 ranges, dispersal, and so forth.” 78 Fed. Reg. at 41,556-57. In fact, 5 of the 14 critical habitat
22 units in the original proposal included additional terrestrial space—beyond what was already

1 included from the incorporated 600-foot lateral extent—into critical habitat. 85 Fed. Reg. at
2 23,616 (discussing original proposed rule).

3 42. The 2020 revised proposed rule, however, excluded these overland areas in their
4 entirety. Even after noting that “[d]ata are still lacking to explain how the species moves through
5 the overland areas between perennial or intermittent aquatic features,” FWS undertook a series of
6 attenuated steps to “deduce that it is more likely that gartersnakes are using these more densely
7 vegetated areas that provide more cover to successfully move between aquatic sites in these
8 grasslands. Based on this information, we are not including the overland terrestrial space
9 between springs, seeps, streams, and stock tanks.” 85 Fed. Reg. at 23,617.

10 43. In their comments, the Center and Dr. Nowak each expressed alarm that these
11 vital habitat areas would be left unprotected. Specifically, the Center discussed and submitted
12 with its comments scientific studies showing that these overland areas are important to semi-
13 aquatic snakes and are essential to several life-cycle functions, including brumation
14 (overwintering), dispersal, and thermoregulation for gestating females. *See* Center Comment
15 Letter at 5-8. Dr. Nowak shared these concerns and noted that the agency’s analysis “appears to
16 be predicated on the active season activity patterns” and that “specific upland habitats used
17 during the overwinter period . . . are not included.” *See* Nowak Comment Letter at 3. Dr. Nowak
18 provided citations to a number of telemetry studies documenting this overwintering use. She
19 concluded by noting that, due to FWS’s failure to include overland terrestrial space, “features
20 critical to the survival of the species have been omitted” and the agency’s assertion that the new
21 designation “better represents our current understanding of the life history of the northern
22 Mexican gartersnake” was “factually incorrect.” *Id.*

1 44. In its final decision, FWS left this portion of the rule unchanged, failed to address
2 the studies raised in comments by the Center and Dr. Nowak showing the important life-cycle
3 function of these overland areas, and simply referred back to its original, cursory justification in
4 the revised proposed rule. *See* 86 Fed. Reg. at 22,529.

5 3. *Absence of Nonnative Species*

6 45. The revised proposed rule described the absence or low level of nonnative species
7 as essential for the conservation of both the northern Mexican and narrow-headed gartersnakes.
8 For both gartersnake species, the proposal required an absence of nonnative predators including
9 certain fish species, bullfrogs, and crayfish, “or occurrence of these nonnative species at low
10 enough levels such that recruitment of northern Mexican gartersnakes is not inhibited and
11 maintenance of viable prey populations is still occurring.” 85 Fed. Reg. 23,624 (listed as a
12 physical and biological feature for both species).

13 46. During the rulemaking, both Plaintiff and Dr. Nowak submitted comments that
14 the absence of nonnative species was not based on the best available science. As the Center
15 explained, FWS itself has observed that while predation by and competition with nonnative
16 species has impacted these gartersnakes, in some instances they have survived despite these
17 threats and the impact is not uniform across all populations. *See* Center Comment Letter at 9-10.

18 47. Dr. Nowak likewise pointed out that there is documentation of both species “in
19 stream reaches with aquatic communities dominated by non-native vertebrates and crayfish.” Dr.
20 Nowak cited to multiple studies supporting this observation, and concluded that therefore “the
21 ‘best available science’ does not support excluding potential or occupied habitat based on the
22 habitat containing ‘an abundance of non-native predators.’” *See* Nowak Comment Letter at 5-6.

1 48. Despite these objections, FWS left its final rule unchanged. In doing so, the
2 agency failed to meaningfully address the studies raised by Dr. Nowak and failed to coherently
3 respond to the legal and biological criticisms raised in the comments. *See* 86 Fed. Reg. at 22,530,
4 22,536; 86 Fed. Reg. at 58,485-86, 58,490.

5 **D. Changes to Criteria Used to Identify Critical Habitat that Further Reduced**
6 **Agency’s Proposed Critical Habitat**
7

8 49. In addition to this arbitrary narrowing of the physical and biological features,
9 which had the effect of eliminating large swaths of habitat from protection, FWS also made
10 drastic changes to the criteria it used to identify and delineate specific critical habitat areas:
11 specifically, under what conditions an area would be deemed “occupied” and—even if a stream
12 were deemed occupied—how much of the stream would be included in the designation. Both of
13 these changes made further unjustified cuts in the already drastically reduced critical habitat
14 proposal.

15 *1. Occupancy*

16 50. The revised proposed rule made two sweeping changes to how the agency
17 determined whether a particular area was occupied. Together, these changes substantially
18 reduced the size of the proposed designation even further.

19 51. First, FWS replaced the analytical window for determining occupancy at the time
20 of listing from “1980 or later” to “1998 or later.” 85 Fed. Reg. at 23,619. FWS justified changing
21 the chronological cut-off primarily by emphasizing the lifespan of individual gartersnakes:
22 “[b]ased on this information, we estimate maximum longevity for each gartersnake species is 15
23 years, so that it is reasonable to conclude that a gartersnake detected in 1998 or later represents a
24 population that could still be present at the time of proposed listing in 2013, depending on the
25 extent of threats in the area. Although it is possible that gartersnakes are still extant in areas

1 where they were detected only during the 1980s, we have determined that the best available
2 information reflecting occupancy at the time of listing supports a more recent date of records
3 since 1998.” 85 Fed. Reg. at 23,618. In addition, FWS observed that there had been a
4 “significant decline in both species over the past 50 years” and, on that basis, stated that “we
5 conclude that many areas that were occupied by the species in surveys during the 1980s are
6 likely no longer occupied because those populations have disappeared.” *Id.*

7 52. Second, the agency adopted stricter guidelines for *how many* physical and
8 biological features would be required in any given stream in order for it to be deemed “occupied”
9 at the time of listing—which, in turn, serves as a basis for it to be included in the ultimate critical
10 habitat designation. In the 2013 original proposed rule, FWS stated that it would “consider[] a
11 stream or geographic area as occupied if it is within the historical range of the species, contains
12 suitable habitat, and meets both of the following: (1) [h]as a last known record for either species
13 dated 1980 or later, and (2) has at least one native prey species also present.” 78 Fed. Reg. at
14 41,556. However, in the 2020 revised proposed rule, the agency stated that “we determined that a
15 stream, stream reach, or lentic water body was occupied at the time of listing for each
16 gartersnake species if it is within the historical range of the species, *contains all PBFs for the*
17 *species*, (although the PBFs concerning prey availability and presence of nonnative predators are
18 often in degraded condition), and a last known record of occupancy in 1998 or later.” 85 Fed.
19 Reg. at 23,619 (emphases added). This newly imposed rigidity effectively magnified the flaws
20 discussed above regarding the presence of nonnative species: in addition to this requirement not
21 being based on the best available science, it also served to single-handedly exclude a number
22 streams, stream reaches, and lentic water bodies with nonnative species that would have been

1 considered occupied absent this new requirement that *all* PBFs must be present to be deemed
2 “occupied” habitat.

3 53. During the rulemaking, both the Center and Dr. Nowak submitted comments
4 explaining that each of these changes ignored the best available science. First, Plaintiff explained
5 that the cut-off year should not be pushed forward to 1998 and that frequent discoveries of “new”
6 gartersnake populations and the FWS’s own cautionary words from the original proposed rule
7 acknowledging that these gartersnakes are “cryptic, secretive, difficult to detect, quick to escape
8 underwater, and capable of persisting in low or very low population densities,” all of which
9 supported maintaining the earlier 1980 cut-off year. *See* Center Comment Letter at 8-9.

10 54. Dr. Nowak shared these concerns and explained, with supporting studies, that “in
11 fact, it does not seem reasonable to conclude that streams that were not documented as occupied
12 at the time of listing are truly not occupied. Instead, given the cryptic nature of both species . . . ,
13 a current lack of documented occupancy may be more of a reflection of incomplete survey effort
14 than of true non-occupancy.” *See* Nowak Comment Letter at 3-4.

15 55. In addition, Plaintiff noted that by rigidly excluding critical habitat solely on the
16 basis of the proliferation of nonnative species (by finding these areas of habitat unoccupied on
17 the basis of flimsy science that failed to support that conclusion), the 2020 proposed rule
18 arbitrarily—and in a manner inconsistent with the agency’s own findings about the variability of
19 this threat—eliminated areas from consideration that should be included as critical habitat. *See*
20 Center Comment Letter at 8-10. Dr. Nowak, as noted above, also explained that “the best
21 available science’ does not support excluding potential or occupied habitat based on the habitat
22 containing ‘an abundance of non-native predators.’” *See* Nowak Comment Letter at 5-6.

1 56. In its final decision, FWS summarily dismissed these concerns, failed to respond
2 directly to these well-reasoned comments by subject matter experts, and maintained both the
3 1998 cutoff and the requirement that all PBFs be present in the final designations. *See* 86 Fed.
4 Reg. 22,529-30, 22,537; 86 Fed. Reg. 58,485, 58,491.

5 2. *Stream Length*

6 57. The revised proposed rule also instituted new criteria for how much of the *length*
7 of an occupied stream would be included in critical habitat. Under the 2013 proposed rule, if a
8 stream had at least one known record for the gartersnake and at least one record of a native prey
9 species currently present, the entire stream length would be included in the critical habitat
10 designation. *See* 85 Fed. Reg. at 23,619 (discussing original proposed rule). However, the 2020
11 revised proposed rule imposed a number of additional criteria to exclude portions of streams.
12 First, the agency determined that it would only include the length of stream 2.2 miles upstream
13 and downstream “from a known gartersnake observation record.” 85 Fed. Reg. at 23,619. In
14 addition, the new rule eliminated stream reaches that had previously been included for, among
15 other reasons, having a prey base where “nonnative aquatic predators outnumbered native prey
16 species.” *Id.* Only stream reaches that “have positive observation records of the species dated
17 1998 or later both upstream and downstream of the stream reach and have all of the PBFs” were
18 considered occupied. *Id.*

19 58. The Center's comments explained that the stream length criteria were arbitrarily
20 based on “a rigid interpretation of individual snake movements, rather than the population at
21 large.” *See* Center Comment Letter at 10-11. Specifically, the Center pointed out that, as applied,
22 this criterion would effectively sever large river stretches, including on the Gila River with some
23 of the highest-quality remaining riparian habitat, simply because an individual snake had not

1 | been observed in particular stretch since 1998—even if the river was otherwise qualifying
2 | habitat. *Id.* Dr. Nowak’s comments agreed that “the idea of dividing a short (e.g. < 6km)
3 | perennial headwater stream . . . into occupied and ‘unoccupied’ reaches based on limited survey
4 | data seems odd” and “it is entirely conceivable that the species would use an [sic] stream’s entire
5 | wetted length, rather than sticking to certain reaches.” *See* Nowak Comment Letter at 4. Indeed,
6 | for this purpose “it is more robust to consider the distance that all individuals in a local
7 | population *could* move.” *Id.* (emphasis added).

8 | 59. Notwithstanding these serious scientific and legal concerns, and without
9 | meaningfully responding to them, FWS’s final decision maintained the stream length criteria in
10 | the final designations, allowing the agency to effectively sever otherwise intact streams based
11 | solely on limited observational data. *See* 86 Fed. Reg. at 22,529; 86 Fed. Reg. at 58,485.

12 | **E. Agency’s Decision to Exclude All Unoccupied Areas**

13 | 60. Having arbitrarily and drastically reduced the amount of habitat deemed occupied
14 | through the changes enumerated above, the revised proposed rule also opted not to include *any*
15 | purportedly unoccupied areas in its critical habitat proposal for either species. In doing so, FWS
16 | offered the same convoluted explanation for each species:

17 | We are not currently proposing to designate any areas outside the geographical area
18 | occupied by the species because we have not identified any unoccupied areas that
19 | meet the definition of critical habitat. We are not aware of any other areas within
20 | the historical range of the species that maintain perennial water, have suitable prey,
21 | and support an aquatic community that is not dominated by nonnative predators.
22 | Therefore, although there may be a future need to expand the area occupied by one
23 | or both gartersnake species to reach recovery, there are no unoccupied areas that
24 | are currently essential to the species conservation and that should be designated as
25 | critical habitat.

26 | 85 Fed. Reg. 23,608 at 23,624 (discussing determination to exclude unoccupied areas for both
27 | species).

1 61. In their comments, both the Center and Dr. Nowak explained that, even assuming
2 the validity of the FWS’s rationale for deeming so much of the species’ habitat as presently
3 unoccupied, the failure to designate these areas as essential to these species’ conservation
4 undermines the survival and recovery of the species, contrary to the fundamental purpose of
5 critical habitat designation. For example, the Center cited and added to the administrative record
6 a 2018 genomic study of both gartersnakes (Wood, et al. 2018) providing compelling evidence of
7 a lack of genetic diversity and connectivity, as well as low effective population sizes at almost all
8 sites, indicating a risk of inbreeding depression. *See* Center Comment Letter at 11-13 (June 29,
9 2020) (citing Wood, D.A., Emmons, I.D., Nowak, E.M., Christman, B.L., Holycross, A.T.,
10 Jennings, R.D., and Vandergast, A.G., 2018, Conservation genomics of the Mogollon narrow-
11 headed gartersnake (*Thamnophis rufipunctatus*) and northern Mexican gartersnake (*Thamnophis*
12 *eques megalops*)).

13 62. The Center explained that “without designating [the purportedly] unoccupied
14 habitat, the northern Mexican gartersnake and narrow-headed gartersnake will each remain in
15 highly fragmented and isolated population segments that will diminish and wink out through low
16 genetic diversity, high inbreeding and/or stochastic misfortunes that befall very small
17 populations.” *Id.* at 14.

18 63. Dr. Nowak’s comments echoed these concerns. She also cited the Wood et al.
19 2018 study as the best available scientific evidence on this point, and explained that “[r]estricting
20 designation of critical habitat to that which is currently occupied [according to FWS] may
21 contribute to the extinction of both species, due to currently highly fragmented populations,”
22 particularly in light of other changes to the protected critical habitat in the revised proposed rule.
23 Nowak Comment Letter at 1 (citing Wood, et al. 2018) (emphasis added).

1 64. Ultimately, FWS declined to include *any* unoccupied habitat in its designations.
2 Notably, FWS’s final designations did not cite or discuss the 2018 Wood et al. study raised by
3 both Dr. Nowak and Plaintiff. The agency’s only response on the issue of unoccupied habitat
4 was cursory, superficial, and contrary to the best available science. Despite recognizing the threat
5 presented by such small populations, the agency stated only that:

6 While we know the conservation of the species will depend on increasing the
7 number and distribution of populations of the northern Mexican gartersnake, not all
8 of its historical range will be essential to the conservation of the species, and we
9 are *unable to delineate any specific unoccupied areas that are essential at this time.*
10 . . . Any specific areas essential to the species’ conservation within these watersheds
11 *are not currently identifiable due to our limited understanding regarding the ideal*
12 *configuration for the development of future habitat to support the northern Mexican*
13 *gartersnake’s persistence, the ideal size, number, and configuration of these*
14 *habitats.*

15 86 Fed. Reg. 22,518 at 22,530 (emphases added); *see also* 86 Fed. Reg. 22,518 at 22,537
16 (repeating the same justification in presenting the agency’s final critical habitat
17 designation). FWS did not explain why areas that it had previously recognized as
18 “occupied” within the last several decades should not at least be deemed “unoccupied areas
19 that are essential at this time.” *Id.* Nor did the agency explain why this habitat was not
20 essential to species conservation.

21 65. FWS provided the identical response in the Final Rule for the narrow-headed
22 gartersnake. *See* 86 Fed. Reg. 58,474 at 58,486; *see also* 86 Fed. Reg. 58,474 at 58,491
23 (repeating the same justification in presenting FWS’s final critical habitat designation).

PLAINTIFFS’ CLAIM FOR RELIEF

Claim I – FWS’s Violations of the ESA and the APA

26 66. Plaintiffs hereby incorporate paragraphs 1-65 by reference.

1 67. Critical habitat designations must be made “on the basis of the best scientific data
2 available and after taking into consideration the economic impact, the impact on national
3 security, and any other relevant impact, of specifying any particular area as critical habitat.” 16
4 USC § 1533(b)(2). In addition, the goal in designating critical habitat is not just species’
5 survival, but recovery: “the whole point behind designating critical habitat is to identify those
6 physical and biological features of the occupied area and/or those unoccupied areas that are
7 essential to the conservation of a species with the aim of arriving at the point where the species is
8 recovered, i.e., no longer in need of the measures provided for in the ESA.” *Ctr. for Biological*
9 *Diversity v. Kelly*, 93 F. Supp. 3d 1193, 1201 (D. Idaho 2015)

10 68. By failing to consider the best available science in designating critical habitat for
11 the northern Mexican and narrow-headed gartersnakes—including by failing to rely on the best
12 available science in revising the list of physical and biological features essential to conservation
13 of the species, as well as the criteria for identifying areas occupied by the species at the time of
14 listing and the criteria for delineating critical habitat boundaries—and failing to meaningfully
15 respond to the expert comments and scientific evidence that highlighted these defects, FWS
16 violated section 4(b)(2) of the ESA, 16 U.S.C. § 1533(b)(2), its implementing regulations, and
17 acted arbitrarily and capriciously in violation of the APA, 5 U.S.C. § 706(2).

18 69. By failing to address, let alone analyze, the question of genetic and population
19 health or to provide a rational explanation as to why unoccupied habitat was not essential to
20 species conservation, particularly in response to well-reasoned comments and studies provided
21 by subject matter experts, FWS violated section 4(b)(2) of the ESA, 16 U.S.C. § 1533(b)(2), its
22 implementing regulations, and acted arbitrarily and capriciously in violation of the APA, 5
23 U.S.C. § 706(2).

