

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2020-0011;
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RIN 1018-BD96

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Northern Mexican Gartersnake and Narrow-Headed Gartersnake

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Revised proposed rule; request for public comments.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are revising our proposed designation of critical habitat for the northern Mexican gartersnake (*Thamnophis eques megalops*) and narrow-headed gartersnake (*Thamnophis rufipunctatus*) under the Endangered Species Act, as amended (Act). In total, approximately 27,784 acres (11,244 hectares) in La Paz, Mohave, Yavapai, Gila, Cochise, Santa Cruz, and Pima Counties in Arizona, and in Grant County in New Mexico, fall within the boundaries of the revised proposed critical habitat designation for the northern Mexican gartersnake; and 18,701 acres (7,568 hectares) in Greenlee, Graham, Apache, Yavapai, Gila, and Coconino Counties in Arizona, as well as in Grant, Hidalgo, and Catron Counties in New Mexico, fall within the boundaries of the revised proposed critical habitat designation for the narrow-headed gartersnake. We also announce the availability of a draft economic analysis of the revised proposed designation of critical habitat for northern Mexican and narrow-headed gartersnakes. We request comments from all interested parties on this revised proposed rule and the associated draft economic analysis. Comments submitted on our July 10, 2013, proposed rule need not be resubmitted as they will be fully considered in the preparation of the final rule. If we finalize this rule as proposed, it would extend the Act's protections to these species' critical habitat.

DATES: We will accept comments on this revised proposed rule or the draft economic analysis that are received or postmarked on or before June 29, 2020. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on

the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by June 12, 2020.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal:

<http://www.regulations.gov>. In the Search box, enter FWS-R2-ES-2020-0011, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment Now!"

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS-R2-ES-2020-0011, U.S. Fish and Wildlife Service, MS: JAO/1N, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

We request that you send comments only by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the Information Requested, below, for more information).

Availability of supporting materials: The draft economic analysis is available at <http://www.fws.gov/southwest/es/arizona/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0011, and at the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

For the critical habitat designation, the coordinates or plot points or both from which the maps are generated are included in the administrative record and are available at <http://www.fws.gov/southwest/es/arizona/>, at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2020-0011 and at the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this critical habitat designation will also be available at the Fish and Wildlife Service website and Field Office set out above, and may also be included in the preamble and/or at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Jeff Humphry, Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Fish and Wildlife Office, 9828 North 31st Ave #C3, Phoenix, AZ 85051-2517; telephone 602-242-0210. Persons who use a telecommunications device for the deaf

(TDD), may call the Federal Relay Service at 800-877-8339.

SUPPLEMENTARY INFORMATION:**Executive Summary**

Why we need to publish a rule. Critical habitat shall be designated, to the maximum extent prudent and determinable, for any species determined to be an endangered or threatened species under the Act. Both gartersnakes are listed as threatened under the Act (79 FR 38678; July 8, 2014). Designations and revisions of critical habitat can only be completed by issuing a rule.

What this document does. This is a revised proposed rule to designate critical habitat for northern Mexican gartersnake and narrow-headed gartersnake under the Act.

For reasons described later in this document, this revised proposed rule reduces the proposed critical habitat designation from what we proposed on July 10, 2013, as follows:

- For the northern Mexican gartersnake, the proposed designation is reduced from approximately 421,423 acres (170,544 hectares) to approximately 27,784 acres (11,244 hectares); and

- For the narrow-headed gartersnake, the proposed designation is reduced from approximately 210,189 acres (85,060 hectares) to approximately 18,701 acres (7,568 hectares).

The basis for our action. Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species.

Peer review. In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying

the role of peer review of listing actions under the Act, we sought the expert opinions of eight independent specialists on the July 10, 2013, proposed rule to ensure that our critical habitat proposal was based on scientifically sound data, assumptions, and analyses. We received responses from three of the peer reviewers. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding critical habitat for the two gartersnakes. Peer reviewers' substantive comments have been addressed or incorporated into this revised proposed rule. Because we will consider all comments and information we receive during the comment period, our final determinations may differ from this proposal. Such final decisions would be a logical outgrowth of this proposal, as long as we: (1) Base the decisions on the best scientific and commercial data available after considering all of the relevant factors; (2) do not rely on factors Congress has not intended us to consider; and (3) articulate a rational connection between the facts found and the conclusions made, including why we changed our conclusion.

Information Requested

We intend that any final action resulting from this revised proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned government agencies, Native American tribes, the scientific community, industry, or any other interested party concerning this revised proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as "critical habitat" under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including information to inform the following factors that the regulations identify as reasons why designation of critical habitat may be not prudent:

(a) The species is threatened by taking, collecting, or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(b) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(c) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States; or

(d) No areas meet the definition of critical habitat.

(2) Specific information on:

(a) The amount and distribution of northern Mexican or narrow-headed gartersnake habitat;

(b) Which areas, that were occupied at the time of listing (2013) and that contain the physical or biological features essential to the conservation of these species, should be included in the designation and why;

(c) What period of time should be used to ascertain occupancy at time of listing (2013) and why, and whether or not data from 1998 to the present should be used in this determination;

(d) Whether it is appropriate to use information from a long-term dispersal study on neonate, juvenile, and adult age classes of the Oregon gartersnake (*Thamnophis atratus hydrophilus*) in a free-flowing stream environment in northern California (Welsh *et al.* 2010, *entire*) as a surrogate for juvenile northern Mexican gartersnake and narrow-headed gartersnake dispersal;

(e) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change; and

(f) What areas not occupied at the time of listing are essential for the conservation of these species and why. We particularly seek comments regarding:

(i) Whether occupied areas are inadequate for the conservation of the species; and

(ii) Specific information that informs the determination of whether unoccupied areas will, with reasonable certainty, contribute to the conservation of the species and contain at least one physical or biological feature essential to the conservation of the species.

(3) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed critical habitat.

(4) Information on the projected and reasonably likely impacts of climate change on the northern Mexican or narrow-headed gartersnake and proposed critical habitat.

(5) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation, and the benefits of including or excluding areas that may be impacted.

(6) Information on the extent to which the description of probable economic

impacts in the draft economic analysis is a reasonable estimate of the likely economic impacts.

(7) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act, in particular for those lands discussed in each critical habitat unit and in tables 3a and 3b, below.

(8) Whether we could improve or modify our approach to designating critical habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made "solely on the basis of the best scientific and commercial data available."

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register** (see **DATES**, above). Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing. For the immediate future, we will provide these public hearings using webinars that will be announced on the Service's website, in addition to the **Federal Register**. The use of these virtual public hearings is consistent with our regulation at 50 CFR 424.16(c)(3).

Previous Federal Actions

On July 10, 2013, we published in the **Federal Register** (78 FR 41550) a proposed rule to designate critical habitat for northern Mexican gartersnake and narrow-headed gartersnake. In that proposed rule, we proposed to designate approximately 421,423 acres (ac) (170,544 hectares (ha)) as critical habitat in 14 units for the northern Mexican gartersnake and 210,189 ac (85,060 ha) as critical habitat in 6 units for the narrow-headed gartersnake. That proposal had a 60-day comment period, ending September 9, 2013. We received substantive comments during the comment period that have contributed to the current revised proposed rule.

Background

It is our intent to discuss in this document only those topics directly relevant to the designation of critical habitat for northern Mexican gartersnake and narrow-headed gartersnake. For more information on the two species, their corresponding habitats, and previous Federal actions concerning the two species, refer to the proposed designation of critical habitat published in the **Federal Register** on July 10, 2013 (78 FR 41550). The proposed rule is available online at <http://www.regulations.gov> (at Docket No. FWS-R2-ES-2020-0011) or from the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the

species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary of the Interior (*i.e.*, range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.*, migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Designation also does not allow the government or public to access private lands, nor does designation require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the

Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement "reasonable and prudent alternatives" to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features that occur in specific occupied areas, we focus on the specific features that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. When designating critical habitat, the Secretary will first evaluate areas occupied by the species. The Secretary will only consider unoccupied areas to be essential where a critical habitat designation limited to geographical areas occupied by the species would be inadequate to ensure the conservation of the species. In addition, for an unoccupied area to be considered essential, the Secretary must determine that there is a reasonable certainty both that the area will contribute to the conservation of the

species and that the area contains one or more of those physical or biological features essential to the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the Act's prohibitions on taking any individual of

the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts, if new information available at the time of these planning efforts calls for a different outcome.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the Secretary may, but is not required to, determine that a designation would not be prudent in the following circumstances:

(i) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(iii) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(iv) No areas meet the definition of critical habitat; or

(v) The Secretary otherwise determines that designation of critical habitat would not be prudent based on the best scientific data available.

As discussed in the final listing rule published on July 8, 2014 (79 FR 38678), there is currently no imminent threat of take attributed to collection or vandalism identified under Factor B for these species, and identification and mapping of critical habitat is not expected to initiate any such threat. In our proposed listing rule for the northern Mexican gartersnake and

narrow-headed gartersnake (78 FR 41500; July 10, 2013), we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to these species and that those threats in some way can be addressed by section 7(a)(2) consultation measures. The species occurs wholly in the jurisdiction of the United States, and we are able to identify areas that meet the definition of critical habitat. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) has been met and because there are no other circumstances the Secretary has identified for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for these species.

Critical Habitat Determinability

Having determined that designation is prudent, under section 4(a)(3) of the Act we must find whether critical habitat for the Mexican gartersnake and narrow-headed gartersnake is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

(i) Data sufficient to perform required analyses are lacking, or

(ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of "critical habitat."

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We reviewed the available information pertaining to the biological needs of these species and habitat characteristics where these species are located. This and other information represent the best scientific and commercial data available and led us to conclude that the designation of critical habitat is determinable for the Mexican gartersnake and narrow-headed gartersnake.

Changes From Previously Proposed Critical Habitat

In this document, we are revising our proposed critical habitat designations for the northern Mexican gartersnake and narrow-headed gartersnake (78 FR 41550; July 10, 2013). We based these revisions on information we received during the comment period on the July 10, 2013, proposed rule, as well as on relevant scientific research conducted after the publication of that proposed rule. After the publication of the proposed rule, we found that there was

substantial scientific disagreement in the criteria we used to define what areas were occupied at the time of listing for each species, and the criteria we used to identify the lateral extent of critical habitat boundaries. We also received additional information including locations of each species at the time of listing, and the biological needs and corresponding habitat characteristics of each species. We also note that we no longer use primary constituent elements (PCEs) to identify areas as critical habitat. The Service eliminated primary constituent elements due to redundancy with the physical or biological features (PBFs). This change in terminology is in accordance with a February 11, 2016 (81 FR 7414), rule to implement changes to the regulations for designating critical habitat. We used the comments and additional information to revise: (1) The PBFs that are essential to the conservation of the species and which may require special management considerations or protection under the Act, (2) the criteria used to define the areas occupied at the time of listing for each species, and (3) the criteria used to identify critical habitat boundaries. We then apply the revised PBFs and identification criteria for each gartersnake species along with additional information we received regarding where these PBFs exist on the landscape to determine the geographic extent of each critical habitat unit. Finally, we provide clarification of some of the terms we used to define critical habitat for each species.

Primary Constituent Elements

Background

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral

or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkali soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, the Service may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

Previous Proposed Rule’s Primary Constituent Elements

As stated above, we now use only PBFs that are essential to the conservation of the species to describe critical habitat. We have modified the PCEs from the previous critical habitat rule, which are now PBFs in this rule. For your convenience, we are providing the PCEs from the previous proposed critical habitat rule for you to compare the changes.

The northern Mexican gartersnake’s previous PCEs were:

- (1) Aquatic or riparian habitat that includes:
 - a. Perennial or spatially intermittent streams of low to moderate gradient that possess appropriate amounts of in-channel pools, off-channel pools, or backwater habitat, and that possess a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions,

such as flows capable of processing sediment loads; or

- b. Lentic wetlands such as livestock tanks, springs, and cienegas; and

- c. Shoreline habitat with adequate organic and natural inorganic structural complexity to allow for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities (e.g., boulders, rocks, organic debris such as downed trees or logs, debris jams, small mammal burrows, or leaf litter); and

- d. Aquatic habitat with characteristics that support a native amphibian prey base, such as salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations.

- (2) Adequate terrestrial space (600 feet (ft) (182.9 meter (m)) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient natural structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation (extended inactivity).

- (3) A prey base consisting of viable populations of native amphibian and native fish species.

- (4) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

The narrow-headed gartersnake’s previous PCEs were:

- (1) Stream habitat, which includes:
 - a. Perennial or spatially intermittent streams with sand, cobble, and boulder substrate and low or moderate amounts of fine sediment and substrate embeddedness, and that possess appropriate amounts of pool, riffle, and run habitat to sustain native fish populations;

- b. A natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads;

- c. Shoreline habitat with adequate organic and natural inorganic structural complexity (e.g., boulders, cobble bars, vegetation, and organic debris such as downed trees or logs, debris jams), with appropriate amounts of shrub- and sapling-sized plants to allow for

thermoregulation, gestation, shelter, protection from predators, and foraging opportunities; and

d. Aquatic habitat with no pollutants or, if pollutants are present, levels that do not affect survival of any age class of the narrow-headed gartersnake or the maintenance of prey populations.

(2) Adequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient natural structural characteristics to support life-history functions such as gestation, immigration, emigration, and brumation.

(3) A prey base consisting of viable populations of native fish species or soft-rayed, nonnative fish species.

(4) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of narrow-headed gartersnakes and maintenance of viable native fish or soft-rayed, nonnative fish populations (prey) is still occurring.

Stream Flow

In the July 10, 2013, proposed rule (78 FR 41550) under PCE 1 for each species we use the terms “perennial” and “spatially intermittent,” but we did not include a definition of perennial or spatially intermittent flow.

In this revised proposed rule, we are defining the terms perennial, spatially intermittent, and ephemeral as related to stream flow in PBF 1 for each gartersnake species. We are clarifying the spectrum of stream flow regimes that provide stream habitat for each gartersnake species based on stream flow definitions in Levick *et al.* (2008, p. 6) and Stromberg *et al.* (2009, p. 330). A perennial stream or portion of a stream is defined as having surface flow continuously year round, except for infrequent periods of severe drought (Levick *et al.* 2008, p. 6). An intermittent stream is a stream where portions flow continuously only at certain time of the year (Levick *et al.* 2008, p. 6). An intermittent stream flows when it receives water from a spring, a ground-water source, or a surface source (such as melting snow [*i.e.*, seasonal]). During the dry seasons, frequently compounded by high evapotranspiration of watershed vegetation, the ground water table may drop below the elevation of the streambed, causing surface flow to cease or reduce to a series of separate pools or short areas of flow (Gordon *et al.* 2004, p. 51). An ephemeral stream is

usually dry except for brief periods immediately following precipitation, and its channel is at all times above the groundwater table (Levick *et al.* 2008, p. 6). In the range of each gartersnake species, many streams have reaches with year-round water that are separated by intermittent or ephemeral reaches of flow, as a result of differences in geology along the stream. This variation of flow along a stream is common enough in the Southwest that hydrologists use the terms “interrupted,” “perennial interrupted,” or “spatially intermittent” to describe the spatial segmentation of a dryland stream into reaches that are perennial, intermittent, or ephemeral (Levick *et al.* 2008, p. 6; Stromberg *et al.* 2009, p. 330; Stromberg *et al.* 2013, p. 413). A stream that is interrupted, perennially interrupted, or spatially intermittent has perennial flow occurring in areas with shallow bedrock or high hydraulic connectivity to regional aquifers, and ephemeral to intermittent flow occurring in areas with deeper alluvial basins or greater distance from the headwaters (Stromberg *et al.* 2009, p. 330). The spatial patterning of wet and dry reaches on spatially intermittent streams changes through time in response to climatic fluctuations and to human modifications of the landscape (Stromberg *et al.* 2009, p. 331). In the remainder of this document, we use the terms “perennial,” “spatially intermittent,” and “ephemeral” in accordance with the above definitions.

For northern Mexican gartersnake, streams that have perennial or spatially intermittent flow can provide stream habitat for the species. Ephemeral reaches of streams can serve as habitat for northern Mexican gartersnakes, and are included in critical habitat as a separate PBF (#7) if such reaches are between perennial sections of a stream that were occupied at the time of listing. Streams that have ephemeral flow over their entire length do not usually provide habitat for the northern Mexican gartersnake, but are considered critical habitat when they may serve as corridors between perennial streams and lentic aquatic habitats including springs, cienegas, and natural or constructed ponds (livestock tanks) that were occupied at the time of listing.

For narrow-headed gartersnake, streams that have perennial flow or limited spatially intermittent flow that is primarily perennial provide stream habitat for the species. Narrow-headed gartersnakes have been documented in pools and shallow portions of an intermittent flow reach of the Blue River with wet areas separated by dry segments of 0.6 to 1.2 miles (1 to 2

kilometers (km)) in length (Cotten *et al.* 2017, p. 687). The wetted areas where gartersnakes were detected also had abundant native prey of the narrow-headed gartersnake, indicating that these areas may provide greater foraging opportunities during low flow periods (Cotten *et al.* 2017, p. 687). However, ephemeral reaches of streams do not provide habitat for narrow-headed gartersnakes. Within the range of the narrow-headed gartersnake, perennial streams become ephemeral as they approach their headwaters. However, narrow-headed gartersnakes have not been found in these ephemeral reaches because their fish prey base is likely absent and there is no upstream perennial habitat, so the ephemeral reaches do not provide connectivity.

Hydrologic Processes

In the previous proposed critical habitat rule, hydrologic processes of a stream were captured in PCE 1 as part of a component of aquatic habitat: “[aquatic habitat that possesses] a natural, unregulated flow regime that allows for periodic flooding or, if flows are modified or regulated, a flow regime that allows for adequate river functions, such as flows capable of processing sediment loads.” These processes are not the aquatic habitat or terrestrial habitat components themselves, but the flow regime and physical hydrologic and geomorphic connection that create and maintain a stream channel and continuously redefine the boundary between aquatic and riparian habitat used by both gartersnake species.

Both gartersnake species are dependent on terrestrial and aquatic habitat for all of their life-history functions, so it is important that hydrologic processes are present to maintain both the terrestrial and aquatic components of habitat for both gartersnake species. Therefore, we established a PBF (#2) for hydrological processes that is separate from the aquatic and terrestrial habitat PBF (#1).

Lentic Wetlands

For northern Mexican gartersnake, we removed lentic wetlands included in PCE 1 of the previous proposed rule and created a separate PBF (#6) that includes the aquatic and terrestrial components of these habitats.

Shoreline Habitat

In the previous proposed rule, shoreline habitat is included in PCE 1. For northern Mexican gartersnake, PCE 1 was “aquatic or riparian habitat” and for the narrow-headed gartersnake it was “stream habitat.” For both gartersnakes, we defined shoreline

habitat as areas having “adequate organic and inorganic structural complexity” with examples such as boulders, rocks, and organic debris for thermoregulation, gestation, shelter, protection from predators, and foraging opportunities.

In this revised proposed rule, we are no longer including the term “shoreline habitat,” because shorelines fluctuate and can include both terrestrial and aquatic habitat features used by either gartersnake species. Instead, a component of PBF 1 focuses on the organic and natural inorganic structural features important to each gartersnake species that fall within the stream channel that encompasses a fluctuating shoreline.

Water Quality

In the July 10, 2013, proposed rule, for the northern Mexican gartersnake under PCE 1, we state: “Aquatic habitat with characteristics that support a native amphibian prey base, such as salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present at levels that do not affect survival of any age class of the northern Mexican gartersnake or the maintenance of prey populations” (78 FR 41550, July 10, 2013, p. 78 FR 41584). In that proposed rule, for the narrow-headed gartersnake under PCE 1, we state: “Aquatic habitat with no pollutants or, if pollutants are present, levels that do not affect survival of any age class of the narrow-headed gartersnake or the maintenance of prey populations” (78 FR 41550, July 10, 2013, p. 78 FR 41601).

In this revised proposed rule, we are removing the specific salinity and pH requirement for habitat characteristics that support a native amphibian prey base for the northern Mexican gartersnake. As mentioned in the July 10, 2013, proposed rule, while native leopard frogs can be the primary prey base for adult northern Mexican gartersnakes in some areas, these gartersnakes feed on a variety of organisms that do not necessarily require the salinity and pH specified in the PCE (78 FR 41550, July 10, 2013, pp. 78 FR 41553–41554). Because we do not have salinity and pH values needed for the variety of aquatic organisms that the different age classes of northern Mexican gartersnakes eat, we are making this PBF more general. We did not make substantive changes to the relevant PBF component for narrow-headed gartersnake.

Prey Base

In the July 10, 2013, proposed rule, we described a wholly native prey base

of amphibians and fish for the northern Mexican gartersnake in PCE 3, but in PCE 4, we state that nonnative fish are also prey for the species. In the discussion of PBFs, we noted that northern Mexican gartersnakes consume primarily amphibians and fishes, but that occasional invertebrates and other vertebrate taxa may be eaten opportunistically (78 FR 41550, July 10, 2013, p. 78 FR 41554) and that the success of northern Mexican gartersnake populations is, in some cases, tied to nonnative prey species consisting of larval and juvenile bullfrogs. We did not include these other taxa and bullfrogs in the PCEs because they are either relatively rare in the diet (in the case of invertebrates and other vertebrates) or in the case of bullfrogs, the adult frogs prey voraciously on gartersnake, and so despite the fact that the snakes eat the juveniles, the presence of bullfrogs indicates that the habitat is degraded.

We received additional information regarding the prey base of northern Mexican gartersnake. Additional research confirms that in some areas where native aquatic prey species are not available, viable populations of northern Mexican gartersnakes likely rely on bullfrogs and nonnative, soft-rayed and potentially spiny-rayed fish as a primary food source (Emmons *et al.* 2016, pp. 556–557; Emmons and Nowak 2016a, p. 44; Emmons and Nowak 2013, pp. 6, 15; Lashway 2012, p. 7). In other areas where native ranid frogs are no longer present, we have additional information to support that northern Mexican gartersnakes consume other anurans (frogs and toads), small mammals, lizards, and invertebrate species (Caldwell 2014, p. 1; d’Orgeix *et al.* 2013, p. 214; Emmons and Nowak 2016b, p. 9; Manjarriez *et al.* 2017, table 1).

In this revised proposed rule, for northern Mexican gartersnake, we are removing the requirement for a wholly native prey base and including the additional prey species described above in PBF 3. We also used “anurans” (frogs and toads) instead of “amphibians” to more accurately describe the gartersnake’s primary prey. We do not make substantive changes to PBF 3 for narrow-headed gartersnake.

Primary Constituent Elements/Critical Habitat Boundaries

Terrestrial Space Along Streams

In the previous proposed rule, PCE 2 for both gartersnakes included “[a]dequate terrestrial space (600 ft (182.9 m) lateral extent to either side of bankfull stage) adjacent to designated stream systems with sufficient structural

characteristics to support life-history functions such as gestation, immigration, emigration, and brumation [extended inactivity]” (78 FR 41550, July 10, 2013, pp. 78 FR 41584 and 78 FR 41601). In the discussion of the PBFs and PCEs, we stated that the northern Mexican gartersnake has been found up to 330 ft (100 m) away from permanent water (Rosen and Schwalbe 1988, p. 27), and the narrow-headed gartersnake has been found up to 650 ft (200 m) from water (Nowak 2006, pp. 19–21; 78 FR 41550, July 10, 2013, p. 78 FR 41557). We then state that “[b]ased on the literature, we expect the majority of terrestrial activity for both species occurs within 600 ft (182.9 m) of permanent water in lotic habitat” and that “we believe a 600-ft (182.9-m) lateral extent to either side of bankfull stage will sufficiently protect the majority of important terrestrial habitat; provide brumation, gestation, and dispersal opportunities; and reduce the impacts of high flow events, thereby providing adequate protection to proposed critical habitat areas” (78 FR 41550, July 10, 2013, p. 78 FR 41557). We go on to say that we determined 600-ft (182.9-m) lateral extent from bankfull width for four biological reasons, including maintaining the biological integrity and natural dynamics of the river system and associated riparian habitat, nutrient recharge, general aquatic habitat values, and providing adequate space for normal gartersnake behaviors.

We received numerous comments and additional scientific information regarding our definition of adequate terrestrial space for the two gartersnakes in two general categories. First, using a single distance of 600 ft (182.9 m) lateral extent from bankfull stage for both gartersnake species includes areas outside the area typically used by each gartersnake species and can include areas that do not have any of the PBFs essential to the conservation of each species, especially in higher order streams (Nowak 2006, pp. 19–20; Jennings and Christman 2012, pp. 8–12; Emmons and Nowak 2016a, p. 30; Myrand *et al.* 2017 p. 36). Second, using “bankfull width” as a measurement point for the lateral extent of critical habitat is difficult to determine on the ground as evidenced by our lack of mapping it as such in the July 10, 2013, proposed rule. Instead, we mapped critical habitat as a 1,200-ft (366-m) polygon surrounding the centerline of a stream (78 FR 41550, July 10, 2013, pp. 78 FR 41585, 78 FR 41601). We discuss both issues below.

At the time of the publication of the July 10, 2013, proposed rule, most of the

information we had on locations of both gartersnake species was from studies where traps were set within water to capture gartersnakes and then gartersnakes were subsequently released. This survey method does not provide information on how these species use terrestrial habitat. Nowak *et al.* (2006, entire), the study we referenced in our July 10, 2013, proposed rule, was the first study that used radio-telemetered narrow-headed gartersnakes to look at habitat use. This study only reported an individual narrow-headed gartersnake moving in a straight-line distance of 650 ft (200 m) from water location, which we used to inform lateral extent of critical habitat for both gartersnake species because this was the best available information. However, since the publication of the 2013 proposed rule, E. Nowak (2015) provided the Service a correct interpretation of her telemetry data for this individual and for the other narrow-headed gartersnakes recorded in this study. Nowak clarified that the narrow-headed gartersnake was found on a steep slope approximately 390 ft (150 m) above a stream in a narrow canyon in a brumation site (Nowak 2006, p. 17). Nowak further clarified that other narrow-headed gartersnakes were recorded using brumation sites on the steep slope, reporting horizontal distances from brumation sites to stream centerline between 276 and 328 ft (84 and 100 m). Nowak (2006, pp. 19–20) also reported at least five other individual narrow-headed gartersnakes overwintering at brumation sites not on steep slopes at 66 to 98 ft (20 to 30 m) from water. The important difference in the distance from the stream is dependent on the adjacent terrestrial topography. If the topography is steep slopes, then the gartersnake is found farther from the stream, but this additional distance is vertical, not horizontal, from the stream bank.

Since we published the 2013 proposed rule, researchers have completed additional telemetry studies for each gartersnake species that provide information on how each gartersnake species uses terrestrial habitat (Jennings and Christman 2012; Boyarski *et al.* 2015; Emmons and Nowak 2016a; Myrand *et al.* 2017; Sprague 2017; Nowak *et al.* 2019). For northern Mexican gartersnake, telemetry studies indicate home ranges of individuals ranging from 1.7 acres (0.7 ha) at a highly modified lentic site to 47.0 acres (19.04 ha) along a spatially intermittent stream (Boyarski *et al.* 2015, p. 12; Emmons and Nowak 2016a, pp. 27–28; Nowak *et al.* 2019, p. 31). Maximum

longitudinal length within these home ranges varied from approximately 148 ft (45 m) at the lentic site to 2,736 ft (834 m) along the spatially intermittent stream (Boyarski *et al.* 2015, p. 12; Emmons and Nowak 2016a, pp. 27–28; Nowak *et al.* 2019, p. 31). Mean distance to water of northern Mexican gartersnake locations ranged from 3.87 to 312.5 ft (1.18 to 95.25 m) along Tonto Creek in north-central Arizona (Nowak *et al.* 2019, p. 40). These studies of northern Mexican gartersnake indicate that this species overwinters in rodent burrows, cavities below boulders and rock fields, and below debris piles located 1.6 ft (0.5 m) to approximately 558 ft (170 m) from the water's edge (Boyarski *et al.* 2015, p. 8; Emmons and Nowak 2016a, p. 30; Myrand *et al.* 2017, p. 21). Brumation sites were located an average of 129 ft (39.27 m) from the water's edge in two different areas along the Verde River in Arizona (Emmons and Nowak 2016a, p. 30). Nowak *et al.* (2019, p. 36) reported brumation sites for 14 northern Mexican gartersnakes that ranged from 2 to 1,257 ft (0.7 to 383 m) from the water's edge along the Tonto River in Arizona. Overwintering of seven gartersnakes at brumation sites was also recorded within 230 ft (70 m) of ponds, and one gartersnake overwintered at a site approximately 1,115 ft (350 m) from a pond (Boyarski *et al.* 2015, pp. 8, 11).

For narrow-headed gartersnake, telemetry studies in New Mexico on the Tularosa River, Gila River, and Whitewater Creek found individuals an average of 58.7 ft (17.9 m) from water, with a maximum distance of 285 ft (87 m) across four different sites on the three streams with a sample size of 69 individuals (Jennings and Christman 2012, pp. 9–10). Researchers found most snakes within 3.28 ft (1 m) of the water's edge (Jennings and Christman 2012, pp. 9–10). Narrow-headed gartersnakes were found with lowest average distance of 22.7 ft (6.9 m) during the dry season of 2010, and highest average distance of 88.3 ft (26.9 m) during the wet season in 2010 (Jennings and Christman 2012, pp. 9–10). Although, Nowak (2006, p. 19) reported that the maximum distance moved by one individual was 650 ft (200 m) from water on a steep hillside in a narrow canyon, she also reported that during the active season, she most often found individuals outside of water under boulders, small rocks, and broken concrete slabs located less than 328 ft (100 m) from the water's edge within the floodplain of Oak Creek and West Fork Oak Creek, Arizona.

Based on a review of this new information, clarification of Nowak's data, and comments we received, it is

likely that 600 ft (182.9 m) does not accurately capture the lateral extent of terrestrial habitat used by either species. Consequently, we have modified the lateral extent boundary of critical habitat for both species. For northern Mexican gartersnake, we are defining the lateral extent to include the wetland or riparian zone adjacent to a stream or lentic water body, whichever is greater. Delineating based on riparian zone rather than delineating a set distance more accurately captures the foraging habitat used by the northern Mexican gartersnake. As described above in this section and under "Hydrologic Processes," most northern Mexican gartersnake detections ranged from in water in the stream channel up to meadows or woodlands within the floodplain at the limit of the riparian zone. We are defining the riparian zone as the strip of vegetation along a stream that is of distinct composition and density from the surrounding uplands, or the area between the stream channel and the upland terrestrial ecosystem (Levick *et al.* 2008, pp. 6, 47). Although northern Mexican gartersnakes have been found in a variety of vegetation types within this riparian zone (*i.e.*, grasses, shrubs, and wetland plants), the underlying characteristic of this habitat needed by the gartersnake appears to be dense vegetation or other natural structural components that provide cover for the species. Size of the riparian zone and composition of plants within the riparian zone varies widely across the range of northern Mexican gartersnake. The width of critical habitat for northern Mexican gartersnake along streams varies from approximately 50 to 7,000 ft (15 to 2,134 m). Because the width of wetland and riparian zone varies along and among streams, and some streams have little to no riparian habitat but have wetland habitat that includes some terrestrial components, delineating these areas rather than delineating a set distance from the stream channel better captures the needed habitat for the northern Mexican gartersnake.

For narrow-headed gartersnake, we have modified the lateral extent boundary of critical habitat to include aquatic and terrestrial features within 89 ft (27 m) of the active channel of a stream. This distance captures the greatest average distance moved from the water during the wet season on the Tularosa River in New Mexico from a 3-year study with a sample size of 69 individuals at two different sites (Jennings and Christman 2012, p. 12). This is the largest study to date.

In addition, we have modified the delineation of where terrestrial habitat

begins. We chose to use the active channel instead of bankfull width because the active channel effectively defines a river or stream as a feature on the landscape (Mersel and Lichvar 2014, pp. 11–12). The active channel is established and maintained by flows that occur with some regularity (several times per year to several times per decade), but not by very rare and extremely high flood events. The outer limits of the active channel can generally be defined by three primary indicators that together form a discernable mark on the landscape: A topographic break in slope, change in vegetation characteristics, and change in sediment characteristics (Mersel and Lichvar 2014, pp. 13–14). The active channel is often a fairly obvious and easy feature to identify in the field, allowing for rapid and consistent identification (Mersel and Lichvar 2014, p. 14). Further, the active channel can be consistently recognized by the public.

These changes in determining lateral extent from streams have reduced the proposed critical habitat designation by 3,458 ac (1,399 ha), or less than 1 percent, of the area included in the July 10, 2013, proposed rule for critical habitat for northern Mexican gartersnake, and 41,927 ac (16,967 ha), or 20 percent, of the area included in that proposed rule for critical habitat for narrow-headed gartersnake (see tables 1a and 1b, below).

In addition, we are no longer including terrestrial space as a separate PBF, but are including both terrestrial and aquatic features that make up a stream in a single PBF (PBF 1) that more accurately captures the habitat requirements essential to each gartersnake species.

Overland Areas for Northern Mexican Gartersnake

In the July 10, 2013, proposed rule, for northern Mexican gartersnake, 5 of the 14 critical habitat units included additional terrestrial space beyond the 600-ft (182.9-m) lateral extent from bankfull stage of streams (overland areas or terrestrial space). In the discussion of space for individual and population growth for normal behavior under PBFs, we state that “records for northern Mexican gartersnakes from semi-remote livestock tanks and spring sources suggest the species moves across the local landscape as part of its foraging ecology.” (78 FR 41550, July 10, 2013, p. 78 FR 41554), and we cite observations by Drummond and Marcias-Garcia (1983, pp. 24, 35) of northern Mexican gartersnakes wandering hundreds of meters away

from water, as well as Rosen and Schwalbe (1988, p. 27) observing a northern Mexican gartersnake 330 ft (100 m) away from permanent water. We described these areas as overland areas or terrestrial space between springs, seeps, streams, and stock tanks. We did not include these areas in a PCE, but we included them in the proposed designation of critical habitat. Upland areas that are distant from riparian habitat that the snakes use for foraging may be used while moving between habitats, but specific habitat attributes in these areas that are essential to the snakes have not been identified. In determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, the Act directs us to consider the physical or biological features (or PCEs under our previous regulations) that are essential to the conservation of the species and that may require special management considerations or protection. A common characteristic of these overland areas was the presence of natural or constructed livestock ponds within a grassland landscape in southern Arizona, although we did not define or discuss the scope of this grassland landscape in the July 10, 2013, proposed rule. We did not know how northern Mexican gartersnakes used the grassland landscape in between water features, so we used property and watershed boundaries to delineate large landscapes that encompassed the features that the species may use. We used a U.S. Geological Survey (USGS) Hydrological Unit Code (HUC) level 10 watershed boundary to delineate the Upper Santa Cruz River Subbasin Unit. We used property ownership boundaries to delineate the following units and subunits: Buenos Aires National Wildlife Refuge Unit, Las Cienegas National Conservation Area Subunit and Cienega Creek Natural Preserve Subunit in the Cienega Creek Subbasin Unit, Appleton-Whittell Research Ranch Subunit and Canelo Hills Cienega Preserve Subunit in the Babocomari River Subbasin Unit, and San Bernardino National Wildlife Refuge Unit. While property boundaries can delineate individual land management prescriptions and affect the likelihood for species persistence, property boundaries themselves are not linked to the PBFs that are essential to the conservation of northern Mexican gartersnake, where more accurate mapping methods are available, they should be used as an alternative to property boundaries. These overland areas encompassed 290,620 acres

(47,441 ha) in the previous proposed rule, but only 12,745 acres (5,158 ha) had water bodies within them that contained PCE 1 and PCE 2, and were considered occupied at the time of listing. In other words, 96 percent of these lands included in critical habitat did not have PCEs for northern Mexican gartersnake as defined in the July 10, 2013, proposed rule.

Upon further inspection of all known locations of the species, no northern Mexican gartersnakes have been detected in the aforementioned overland areas in southern Arizona outside of stream floodplains. These eight lentic sites occupied at the time of listing, including natural and constructed ponds, all fall within a stream floodplain, although some of these streams are ephemeral. Data are still lacking to explain how the species moves through the overland areas between perennial or intermittent aquatic features, but we used our re-assessment of gartersnake locations in relation to stream floodplains, along with additional information obtained since the publication of the July 10, 2013, proposed rule, to refine the definition of terrestrial space used by the species. There is new information about how northern Mexican gartersnakes exploit seasonal amphibian prey species in ephemeral waters during the rainy season when prey is abundant within these grassland landscapes in southern Arizona (d’Orgeix *et al.* 2013, entire; Caldwell 2014, entire). After the first heavy rains of the monsoon season in 2012, northern Mexican gartersnakes were found foraging on seasonal amphibian prey (spadefoot (*Spea multiplicata*)) and basking at the bases of Sacaton grass (*Sporobolus wrightii*) in and around a ponded area within an ephemeral section of the floodplain in O’Donnell Canyon. These northern Mexican gartersnakes were 0.75 miles (1.2 km) overland and 1.49 miles (2.3 km) along O’Donnell Canyon upstream of the closest known population of northern Mexican gartersnakes at Finley Tank (d’Orgeix 2013, p. 214). Caldwell (2014, p. 1) also found northern Mexican gartersnakes in wetted ephemeral habitat within the Cienega Creek floodplain: One in an off-channel marsh, and one in pool of water on a road that also contained spadefoot larva and metamorphs. We also have updated information on telemetered snakes moving in other terrestrial habitats along stream channels in northern Arizona (Emmons and Nowak 2013, entire; Emmons and Nowak 2016a, entire; Myrand *et al.* 2017, entire), as described earlier. This research has also

shown that when northern Mexican gartersnakes were surface active in habitats with perennial stream flow in northern Arizona, they were observed outside of water concealed under dense vegetative most of the time. While we do not have similar information for gartersnakes in grassland habitats, ephemeral channels in southern Arizona usually have more vegetative cover than the surrounding uplands, so we can deduce that it is more likely that gartersnakes are using these more densely vegetated areas that provide more cover to successfully move between aquatic sites in these grasslands. Based on this information, we are not including the overland terrestrial space between springs, seeps, streams, and stock tanks. In this revised proposed rule, we are including the springs, seeps, streams, and stock tanks and the ephemeral drainages that connect these wetlands to perennial streams. The resulting proposed critical habitat better represents our current understanding of the life history of the northern Mexican gartersnake and the habitat characteristics that facilitate its life-history functions. Consequently, no units or subunits include overland grassland areas, and all areas considered occupied under this revised proposed rule are adjusted in size to appropriately reflect the PBFs (see table 1a, below).

The removal of overland terrestrial space in these large grasslands has reduced the proposed critical habitat designation for northern Mexican gartersnake by 285,837 ac (115,674 ha), or 68 percent, of the area included in the July 10, 2013, proposed rule.

Elevation

In the July 10, 2013, proposed rule, we erroneously included some areas that are not within the elevation range of narrow-headed gartersnake, including portions of the West Fork Gila River, Black Canyon, Iron Creek, Diamond Creek, and Whitewater Creek.

In this revised proposed rule, we add the elevation range of each corresponding gartersnake species as a PBF to capture the range of where each species has been documented and exclude the areas that are outside the elevation ranges where the species occur. This reduces the proposed critical habitat designation by 2,320 ac (939 ha), or 1 percent, of the area included in the July 10, 2013, proposed rule for critical habitat for narrow-headed gartersnake (see table 1b, below).

Changes to Criteria Used To Identify Critical Habitat

Occupancy Records

On July 10, 2013, we published proposed rules to list both gartersnake species (78 FR 41500) and to designate critical habitat for both gartersnake species (78 FR 41550). On July 8, 2014, we published a final rule (79 FR 38678) listing both species.

In the proposed rule to designate critical habitat (78 FR 41550; July 10, 2013), we considered an entire stream as occupied at the time of listing for each corresponding gartersnake if it was within the historical range of the species, contained aquatic and terrestrial components of habitat defined by PCE 1 and PCE 2, had at least one record of the species dated 1980 or later, and had at least one native prey species present (78 FR 41550, July 10, 2013, p. 78 FR 41556). For the northern Mexican gartersnake, we also considered large overland areas (grasslands) within specific land ownership or watershed as occupied if they met the above criteria. We have reconsidered the use the criteria of one record of the species dated 1980 or later as a proxy for what was occupied at the time of listing. We received comments that using records dated 1980 or later to determine which streams are occupied at the time of listing is inconsistent with definitions we used to define the status of the northern Mexican gartersnake in prior Service status assessment documents, that our approach is not supported by the scientific literature, and that low gartersnake detection probabilities do not justify a broad historical approach to designate critical habitat. Thus, in this revised proposed rule, we take a more accurate approach (described below) to conclude what areas were likely occupied at the time of listing in 2014.

For northern Mexican gartersnake, the definition of occupancy we used to determine critical habitat in the July 10, 2013, proposed rule is significantly different from the criteria that we used to define what areas we considered the northern Mexican gartersnake extant or extirpated in other previous Service documents. In the 2006 and 2008 12-month findings (71 FR 56228, September 26, 2006; and 73 FR 71788, November 25, 2008, respectively), as well as in updates to the “Species Assessment and Listing Priority Form” described in our annual candidate notices of review (see 73 FR 75176, December 10, 2008; 74 FR 57804, November 9, 2009; 75 FR 69222, November 10, 2010; 76 FR 66370, October 26, 2011), “extant” was defined

as areas where the species is expected to reliably occur in appropriate habitat as supported by museum records or recent, reliable observations. Based on this definition, only 42 percent of the total area considered occupied at the time of listing by the species in the July 10, 2013, proposed critical habitat designation was considered extant from 2006 to 2011. From 2006–2011, the Service defined “extirpated” as that there have been no individuals reported for a decade or longer at a site within the historical distribution of the species, despite survey efforts, and there is no expectation of natural recovery at the site due to the presence of known or strongly suspected causes of extirpation. Furthermore, the Service defined “unknown” as the species occurred based on museum records (mostly historically) but access is restricted, or survey data unavailable or insufficient, or where threats could preclude occupancy. Of the total area considered occupied by the species in the July 10, 2013, proposed critical habitat designation, 16 percent would have been considered extirpated, 23 percent would have been considered unknown, and 19 percent would have had no status based on the 2006–2011 definitions of status for northern Mexican gartersnake. In the July 10, 2013, proposed listing rule (78 FR 41500), we changed how we defined status to correspond with our definition of “occupied” in the July 10, 2013, proposed critical habitat rule (78 FR 41550). The most significant change in those 2013 publications was that we considered a gartersnake species extant in an area if it had been reported in an area in the past 33 years regardless of negative survey efforts or threats precluding occupancy. We justified using records of each species from the 1980s to determine that an area was occupied at the time of listing by stating that “both species of gartersnake are cryptic, secretive, difficult to detect, quick to escape underwater, and capable of persisting in low or very low population densities that make positive detections nearly impossible in structurally complex habitat” (78 FR 41550, July 10, 2013, p. 78 FR 41556). For narrow-headed gartersnake, we had no previous Service documents that addressed occupancy of the species.

For this revised proposed rule, we reassessed occupancy at the time of listing for each gartersnake by reviewing all records for each gartersnake that we used in the July 10, 2013, proposed critical habitat rule in conjunction with expected survivorship of each species, subsequent surveys in areas that had no

detection of the corresponding gartersnake species, and changes in threats that may have prevented occupancy at time of listing.

Understanding longevity of a species can inform how long we can reasonably expect a species is still extant in an area, regardless of detection probability. The oldest estimated northern Mexican gartersnake is between 14 and 16 years old, although growth rate calculations are still preliminary (M. Ryan 2020). The longest years between recaptures from these mark-recapture studies is 9 years (M. Ryan 2020, pers. comm.). Narrow-headed gartersnakes may live up to 10 years or longer in the wild (Rosen and Schwalbe 1988, p. 38). An individual narrow-headed gartersnake captured in the wild as an adult was kept in captivity for 11 years; and estimated to be 16 years old (M. Ryan 2020). Based on this information, we estimate maximum longevity for each gartersnake species is 15 years, so that it is reasonable to conclude that a gartersnake detected in 1998 or later represents a population that could still be present at the time of proposed listing in 2013, depending on the extent of threats in the area. Although it is possible that gartersnakes are still extant in areas where they were detected only during the 1980s, we have determined that the best available information reflecting occupancy at the time of listing supports a more recent date of records since 1998.

In the July 10, 2013, proposed critical habitat rule, 8 percent of the critical habitat designation for northern Mexican gartersnake and 17 percent of the designation for narrow-headed gartersnake was considered occupied at the time of listing, based solely on records of the corresponding species dated before 1998. For northern Mexican gartersnake, these areas included Mule Creek Unit, Upper Salt River Subbasin Unit, and Agua Fria River Subbasin Unit in their entirety, and Bear Canyon Creek Subunit in San Pedro River Subbasin Unit and Turkey Creek Subunit in Babocomari River Subbasin Unit. For narrow-headed gartersnake, areas included Turkey Creek Subunit in Upper Gila River Subbasin Unit; and Salt River, White River, Carrizo Creek, Cibecue Creek, and Diamond Creek subunits in Upper Salt River Subbasin Unit. We note that the San Bernardino National Wildlife Refuge Unit did not have a verified northern Mexican gartersnake record dated 1998 or later. This unit was not included in the revised proposed rule. In addition, Parker Canyon and Parker Canyon Lake were specifically mentioned as part of the occupied

Upper Santa Cruz River Unit for northern Mexican gartersnake in the July 10, 2013, proposed rule, but the last detection of the species in this area was in 1979 (Holycross *et al.* 2006, appendix A). Redrock Canyon does not have a record of the northern Mexican gartersnake, and was also erroneously included in the July 10, 2013, proposed rule. Instead, the species was found in nearby Cott Tank Drainage and is included in this revised proposed rule (Jones 2009). For narrow-headed gartersnake, we note that the Gila River Subunit in the Middle Gila River Subbasin Unit had no records of the species and was erroneously included in the July 10, 2013, proposed rule. In addition, East Fork Gila River had no confirmed post-1980 records of the species and was erroneously included in the July 10, 2013, proposed rule (Probst 2015).

Based on our analyses in the rule listing the two gartersnakes (79 FR 38678; July 8, 2014), we conclude that there has been a significant decline in both species over the past 50 years. This decline appeared to accelerate during the two decades immediately before listing occurred. From this observation, we conclude that many areas that were occupied by the species in surveys during the 1980s are likely no longer occupied because those populations have disappeared. To determine where loss of populations was likely, we reviewed survey efforts after 1989 that did not detect gartersnakes in some of the areas mentioned above, and portions of other units and subunits included in the July 10, 2013, proposed critical habitat rule. We analyzed this to determine whether the cryptic nature of the species was a valid argument for considering areas that only have gartersnake records from the 1980s as still occupied at the time of listing in 2013. All of the surveys conducted since the 1980s included at least the same amount or more search effort than those surveys that detected each species in the 1980s. Since 1998, researchers have detected each gartersnake species in many areas where they were found in the 1980s. Areas where each gartersnake was found after 1997 are included in this revised proposed rule. This includes portions of 9 of the 13 units for northern Mexican gartersnake, and portions of 6 of the 7 units for narrow-headed gartersnake from the July 10, 2013, proposed rule. Resurveyed areas with no confirmed detection of northern Mexican gartersnakes since the 1980s include Mule Creek (Hotle *et al.* 2012, p. 1), Black River (Holycross *et al.* 2006, p. 30), Big Bonito Creek (Holycross *et al.*

2006, p. 64), Verde River downstream of Beasley Flat (Holycross *et al.* 2006, p. 26; Emmons and Nowak 2012, pp. 11–13), Agua Fria River (Holycross *et al.* 2006, pp. 15–18; Burger 2016, p. 3), Little Ash Creek (Holycross *et al.* 2006, p. 19; Emmons and Nowak 2012, p. 32; Burger 2016, p. 3), and Black Draw and lentic habitats on San Bernardino National Wildlife Refuge (Radke 2006).

Resurveyed areas with no confirmed detection of narrow-headed gartersnakes since the 1980s include the Gila River Subunit downstream of the Middle Box (Christman and Jennings 2017, pp. 4–12; Jennings *et al.* 2017, pp. 13–14; Jennings *et al.* 2018, pp. 10–13; Jennings and Christman 2019, p. 5); San Francisco River downstream of confluence with Whitewater Creek (Holycross *et al.* 2006, p. 66; Hellekson 2012), and Salt River (Holycross *et al.* 2006, pp. 38–39). It is reasonable to conclude that areas surveyed within 15 years of listing with no detection of the corresponding gartersnake species were not occupied at the time of listing. Survey efforts in these areas were comparable to or greater than surveys conducted in the 1980s that detected the species. Additionally, comparable surveys did detect gartersnakes in other areas where the species was present in the 1980s. Finally, we would expect that some populations would be lost during the decades preceding listing when numbers of both gartersnakes were declining. These declines are what eventually led to the need to list both species.

As explained extensively in the final listing rule for both gartersnake species (79 FR 38678, July 8, 2014, pp. 79 FR 38688–79 FR 38702), aquatic vertebrate survey efforts throughout the range of both species indicate that native prey species of both gartersnakes have decreased or are absent, while nonnative predators, including bullfrogs, crayfish, and spiny-rayed fish, continue to increase in many of the areas where both gartersnakes were present in the 1980s (Emmons and Nowak 2012, pp. 11–14; Gibson *et al.* 2015, pp. 360–364; Burger 2016, pp. 21–32; Emmons and Nowak 2016a, pp. 43–44; Christman and Jennings 2017, p. 14; Hall 2017, pp. 12–13; Jennings *et al.* 2018, p. 19). We acknowledge that both gartersnake species are extant in some areas that have abundant nonnative, aquatic predators, some of which also are prey for gartersnakes, so presence of nonnative aquatic predators is not always indicative of absence of these gartersnakes (Emmons and Nowak 2012, p. 31; Emmons and Nowak 2016a, p. 13; Emmons *et al.* 2016, entire; Nowak *et al.* 2016, pp. 5–6; Lashway 2015, p. 5). We

also acknowledge that we do not have a good understanding of why gartersnake populations are able to survive in some areas with aquatic predators and not in other areas (Burger 2016, pp. 13–15). However, we think it is reasonable to conclude that streams, stream reaches, and lentic water bodies were not occupied at the time of listing if they have only gartersnake records older than 1998 and have experienced a rapid decline in native prey species coupled with an increase in nonnative aquatic predators since gartersnakes were detected in these areas in the 1980s.

In summary, through this review of gartersnake occupancy, we determined that a stream, stream reach, or lentic water body was occupied at the time of listing for each gartersnake species if it is within the historical range of the species, contains all PBFs for the species, (although the PBFs concerning prey availability and presence of nonnative predators are often in degraded condition), and a last known record of occupancy in 1998 or later. As a result, six subunits in five units of critical habitat for northern Mexican gartersnake and nine subunits in four units of critical habitat for narrow-headed gartersnake included in the July 10, 2013, proposed rule are no longer included in this revised proposed critical habitat designation their entirety. This change reduced the proposed critical habitat designation by 35,426 ac (14,336 ha), or 9 percent, of the area included in the July 10, 2013, proposed rule for northern Mexican gartersnake, and 47,535 ac (19,237 ha), or 23 percent, of the area included in that proposed rule for narrow-headed gartersnake (see tables 1a and 1b, below). Other units and subunits are shortened in length due to our definition of occupancy as described below under *Stream Length*.

We included gartersnake detections of each gartersnake that occurred after the species was listed because these areas were likely occupied at the time of listing in 2014. Both of these species are cryptic in nature and may not be detected without intensive surveys. Because populations for these species are generally small, isolated, and in decline it is not likely that the species have colonized new areas since 2014; these areas were most likely occupied at the time of listing, but either had not been surveyed or the species were present but not detected during surveys. However, we did not include streams or lentic water bodies where gartersnakes

were released for recovery purposes after the species was listed that had not been historically occupied by the species. This added one new unit and five subunits in four existing units of critical habitat for northern Mexican gartersnake (7,040 ac (2,848 ha)) and five subunits in two units of critical habitat for narrow-headed gartersnake (1,181 ac (478 ha)) in this revised proposed rule (see tables 1a and 1b, below).

Stream Length

In the July 10, 2013, proposed critical habitat rule, if a stream had at least one known record for the each gartersnake species and at least one record of a native prey species currently present, the entire stream length was included in proposed critical habitat. In the discussion, we stated, “With respect to length (in proposed designations based on flowing streams), the proposed areas were designed to provide sufficient aquatic and terrestrial habitat for normal behaviors of northern Mexican and narrow-headed gartersnakes of all age classes” (78 FR 41550, p. 78 FR 41556). We received numerous general comments and comments on specific stream reaches that are not habitat for the corresponding gartersnake.

In this revised proposed rule, for each gartersnake species, we used comments we received and reports on water availability, prey availability, and gartersnake surveys to re-evaluate all streams and determine which stream reaches contain PBFs and where PBFs are lacking. Stream reaches that lack PBFs include areas where water flow became completely ephemeral along an otherwise perennial or spatially intermittent stream, hydrologic processes needed to maintain streams could not be recovered, nonnative aquatic predators outnumbered native prey species, or streams were outside the elevation range. In addition, reaches with multiple negative surveys without a subsequent positive survey or reaches that have no records of the corresponding gartersnake species are not included, as described above under *Occupancy Records*. We do include stream reaches that lack survey data for the corresponding gartersnake, if they have positive observation records of the species dated 1998 or later both upstream and downstream of the stream reach and have all of the PBFs.

We also reviewed the best available information we have on home range size and potential dispersal distance for each gartersnake species to inform upstream

and downstream boundaries of each unit and subunit of critical habitat. As explained earlier, the maximum longitudinal distance measured across home range areas of northern Mexican gartersnake tracked for at least one year was 4,852 ft (1,478.89 m) for one individual, and ranged from 587.9 to 2,580 ft (179.2 to 481.58 m) for eight other northern Mexican gartersnakes (Nowak *et al.* 2019, pp. 24–25). Maximum longitudinal distance measured across home range areas of narrow-headed gartersnakes ranged from 82 to 285 feet (25 to 87 m) (Jennings and Christman 2012, pp. 9–10). These longitudinal home range distances were all determined from adult gartersnakes, and did not inform how juvenile gartersnakes are dispersing along a stream. Juvenile dispersal is important because snakes of different age classes behave differently, and juvenile gartersnakes may move farther along a stream as they search for and establish suitable home ranges than do adults with established home ranges. Because we have no information on how juvenile northern Mexican gartersnakes and narrow-headed gartersnakes disperse, we used information from a long-term dispersal study on neonate, juvenile, and adult age classes of the Oregon gartersnake (*Thamnophis atratus hydrophilus*) in a free-flowing stream environment in northern California (Welsh *et al.* 2010, entire). This is the only dispersal study available for another aquatic *Thamnophis* species in the United States, so we used it as a surrogate for determining upstream and downstream movements of both northern Mexican and narrow-headed gartersnakes, which are also aquatic *Thamnophis* species. The greatest movement was made by a juvenile recaptured as an adult 2.2 mi (3.6 km) upstream from the initial capture location (Welsh *et al.* 2010, p. 79). Therefore, in this revised proposed rule, we delineate upstream and downstream critical habitat boundaries of a stream reach at 2.2 mi (3.6 km) from a known gartersnake observation record.

These changes in determining stream length reduced the proposed critical habitat designation by 72,955 ac (29,524 ha), or 17 percent, of the area included in the July 10, 2013, proposed rule for critical habitat for northern Mexican gartersnake, and 101,597 ac (41,115 ha), or 48 percent, of the area included in that proposed rule for critical habitat for narrow-headed gartersnake (see tables 1a and 1b, below).

TABLE 1a—CHANGES TO NORTHERN MEXICAN GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS

Previous unit	Previous subunit	New unit	New subunit	Length miles (kilometers)		Area acres (hectares)	
				Previous	New	Previous	New
Upper Gila River.		Upper Gila River Subbasin.		148 (239)	13 (21)	21,135 (8,553)	1,132 (458)
			Gila River	148 (239)	9 (14)	21,135 (8,553)	1,028 (416)
			Duck Creek	0	4 (6)	0	104 (42)
Mule Creek		<i>Removed*</i>		19 (30)	0	2,579 (1,044)	0
Upper Salt River.		<i>Removed*</i>		156 (251)	0	22,218 (8,991)	0
	Black River		<i>Removed*</i>	114 (184)	0	16,392 (6,634)	0
	Big Bonito Creek.		<i>Removed*</i>	42 (67)	0	5,826 (2,358)	0
Tonto Creek		Tonto Creek ...		65 (105)	32 (52)	8,936 (3,616)	4,302 (1,741)
Verde River		Verde River Subbasin.		201 (323)	61 (99)	29,191 (11,813)	5,246 (2,123)
	Upper Verde River.		Verde River	140 (225)	35 (56)	20,526 (8,307)	4,133 (1,672)
	Oak Creek		Oak Creek	39 (62)	23 (37)	5,533 (2,239)	1,014 (410)
	Spring Creek ..		Spring Creek ..	23 (36)	4 (6)	3,131 (1,267)	99 (40)
Agua Fria River		<i>Removed*</i>		56 (91)	0	7,946 (3,215)	0
	Agua Fria River Mainstem.		<i>Removed*</i>	49 (80)	0	6,989 (2,828)	0
	Little Ash Creek.		<i>Removed*</i>	10 (11)	0	957 (387)	0
Bill Williams River.		Bill Williams River Subbasin.		36 (58)	29 (46)	5,412 (2,190)	4,049 (1,639)
			Bill Williams River.	36 (58)	15 (24)	5,412 (2,190)	1,805 (730)
			Big Sandy River.	0	8 (13)	0	932 (377)
			Santa Maria River.	0	5 (9)	0	1,312 (531)
		Lower Colorado River.		0	n/a	0	4,467 (1,808)
Buenos Aires NWR.		Arivaca Cienega.		n/a	3 (5)	117,313 (47,475)	211 (86)
Cienega Creek Subbasin.		Cienega Creek Subbasin.		n/a	46 (73)	50,393 (20,393)	2,030 (821)
	Cienega Creek		Cienega Creek ¹ .	7+ (11+)	30 (48)	1,113 (450)	1,613 (653)
	Cienega Creek Natural Preserve.		<i>Removed*</i>	n/a	n/a	4,260 (1,724)	0
	Las Cienegas NCA ² .		<i>Removed*</i>	n/a	n/a	45,020 (18,219)	0
			Empire Gulch and Empire Wildlife Pond.	n/a	7 (11)	n/a	326 (132)
			Gardner Canyon and Maternity Wildlife Pond.	n/a	7 (11)	n/a	74 (30)
			Unnamed Drainage and Gaucho Tank.	n/a	2 (3)	n/a	15 (6)
Redrock Canyon.		<i>Removed*</i> ³ ..		14 (23)	0	1,972 (798)	0
Upper Santa Cruz River Subbasin ⁴ .		Upper Santa Cruz River Subbasin.		n/a	23 (36)	113,895 (46,092)	496 (201)
			Sonoita Creek	0	3 (5)	0	224 (91)
			Cott Tank Drainage.	n/a	2 (3)	0	13 (5)
			Santa Cruz River.	14 (22)	7 (11)	n/a	161 (65)

TABLE 1a—CHANGES TO NORTHERN MEXICAN GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS—Continued

Previous unit	Previous subunit	New unit	New subunit	Length miles (kilometers)		Area acres (hectares)	
				Previous	New	Previous	New
			Unnamed Drainage and Pasture 9 Tank.	n/a	5 (7)	n/a	42 (17)
			Unnamed Drainage and Sheehy Spring.	n/a	2 (3)	n/a	25 (10)
			Scotia Canyon FS799 Tank ...	n/a	4 (7)	n/a	31 (13)
			Unnamed Wildlife Pond.	n/a	n/a	n/a	0.7 (0.3)
			Removed* (Parker Canyon).	n/a	n/a	n/a	0.1 (<0.1)
			Removed* (6 (9))	6 (9)	0	n/a	0
San Pedro River Subbasin.		Upper San Pedro River Subbasin.		165 (266)	35 (57)	23,690 (9,587)	5,850 (2,367)
	San Pedro River.		San Pedro River.	158 (255)	22 (35)	22,669 (9,174)	5,126 (2,074)
	Bear Canyon Creek.		Removed*	7 (11)	0	1,022 (414)	0
			House Pond ...	0	n/a	0	0.6 (0.2)
Babocomari River Subbasin.		Incorporated ⁵		45 (72)	n/a	14,334 (5,801)	n/a
	Babocomari River.		Babocomari River.	24 (24)	6 (10)	3,454 (1,398)	404 (164)
	Turkey Creek		Removed*	12 (19)	0	1,678 (679)	0
	Appleton-Whittell Research Ranch.		Removed* ⁶ ...	n/a	n/a	7,798 (3,156)	0
	Canelo Hills Cienega Preserve.		Removed* ⁶ ...	n/a	n/a	213 (86)	0
	Post Canyon ...		Post Canyon ...	6+ (9+)	3 (5)	795 (322)	77 (31)
	O'Donnell Canyon.		O'Donnell Canyon.	3+ (5+)	4 (7)	398 (161)	239 (97)
			Unnamed Drainage and Finley Tank.	n/a	0.5 (0.7)	n/a	3 (1)
San Bernardino NWR.		Removed*		n/a	n/a	2,387 (966)	0
Totals				932 (1,500)	241 (388)	421,423 (170,544)	27,784 (11,244)

Note: Numbers may not sum due to rounding.

* "Removed" means this unit or subunit, which was proposed as critical habitat for the northern Mexican gartersnake in the July 10, 2013, proposed rule (78 FR 41550), is not included in this revised proposed critical habitat designation.

¹ Portions of Cienega Creek in the Cienega Creek Natural Preserve and Las Cienegas National Conservation Area are now included in Cienega Creek subunit.

² All new named subunits in the Cienega Creek Subbasin unit were included in the July 10, 2013, proposed rule's Las Cienegas National Conservation Area (NCA) subunit.

³ The gartersnake record was in Cott Tank Drainage not Redrock Canyon so is now captured in the Cott Tank Drainage subunit.

⁴ All new named subunits except for Sonoita Creek were included in the July 10, 2013, proposed rule's Upper Santa Cruz River Subbasin unit.

⁵ The named subunits of the Babocomari River Subbasin unit in the July 10, 2013, proposed rule (78 FR 41550) are now incorporated into the Upper San Pedro River Subbasin unit.

⁶ Portions of these two subunits are now included in Post Canyon, O'Donnell Canyon, and Unnamed Drainage and Finley Tank subunits.

TABLE 1b—CHANGES TO NARROW-HEADED GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS

Previous unit	Previous subunit	New unit	New subunit	Length miles (kilometers)		Area acres (hectares)	
				Previous	New	Previous	New
Upper Gila River Subbasin.	.....	Upper Gila River Subbasin.	.....	325 (526)	104 (167)	49,903 (20,195)	5,429 (2,197)
	Gila River .....	.....	Gila River	148 (239)	46 (74)	21,135 (8,553)	3,510 (1,420)
	Turkey Creek .....	.....	Removed* .....	.....	0	2,338 (946)	0
	West Fork Gila River.	.....	West Fork Gila River.	37 (60)	12 (19)	5,169 (2,092)	562 (228)
	Little Creek ....	.....	Little Creek ....	.....	7 (11)	2,236 (905)	162 (65)
	Middle Fork Gila River.	.....	Middle Fork Gila River.	37 (60)	14 (23)	4,964 (2,009)	569 (230)
	Iron Creek .....	.....	Iron Creek	12 (20)	2 (3)	1,731 (701)	58 (23)
	Gillita Creek ...	.....	Gillita Creek ...	12 (20)	6 (10)	1,704 (690)	149 (60)
	East Fork Gila River.	.....	Removed*	28 (44)	0	3,579 (1,148)	0
	Black Canyon Diamond Creek.	.....	Black Canyon Diamond Creek.	26 (42) 25 (41)	10 (16) 6 (10)	3,503 (1,418) 3,545 (1,435)	251 (102) 169 (68)
Middle Gila River Subbasin.	.....	Removed*	63 (101)	0	8,814 (3,567)	0	
San Francisco River Subbasin.	Gila River .....	.....	Removed*	3 (5)	0	432 (175)	0
	Eagle Creek ...	Eagle Creek ¹ .....	.....	60 (97)	7 (11)	8,382 (3,392)	336 (136)
Upper Salt River Subbasin.	.....	San Francisco River Subbasin.	.....	301 (476)	129 (207)	45,075 (18,241)	4,905 (1,985)
	San Francisco River.	.....	San Francisco River.	163 (263)	71 (115)	23,178 (9,380)	3,120 (1,263)
	Whitewater Creek.	.....	Whitewater Creek.	.....	9 (14)	2,289 (1,145)	208 (84)
	Saliz Creek ....	.....	Saliz Creek	8 (13)	8 (13)	1,099 (445)	218 (88)
	Tularosa River	.....	Tularosa River	35 (56)	20 (32)	4,728 (1,913)	829 (336)
	n/a .....	.....	Negrito Creek	0	13 (21)	0	337 (136)
	South Fork Negrito Creek.	.....	South Fork Negrito Creek.	11 (17)	8 (13)	1,483 (600)	192 (78)
	.....	Blue River Subbasin.	.....	n/a	64 (103)	n/a	2,971 (1,202)
	Blue River .....	.....	Blue River	53 (86)	52 (84)	7,432 (3,007)	2,504 (1,013)
	Campbell Blue Creek.	.....	Campbell Blue Creek.	22 (26)	7 (11)	3,008 (1,217)	361 (146)
Dry Blue Creek.	.....	Dry Blue Creek.	9 (15)	4 (6)	1,320 (534)	106 (43)	
Tonto Creek ....	.....	Black River Subbasin.	.....	352 (654)	51 (82)	58,014 (23,478)	1,607 (650)
	Salt River .....	.....	Removed*	86 (139)	0	12,877 (5,211)	0
	White River ....	.....	Removed*	18 (29)	0	2,588 (1,047)	0
	Carrizo Creek .....	.....	Removed*	64 (104)	0	9,033 (1,229)	0
	Cibecue Creek .....	.....	Removed*	48 (77)	.....	6,669 (2,699)	.....
	Diamond Creek.	.....	Removed*	22 (36)	0	3,117 (1,261)	0
	Black River ....	.....	Black River	114 (184)	23 (37)	16,384 (6,630)	763 (309)
	n/a .....	.....	Bear Wallow Creek.	0	6 (10)	0	174 (71)
	n/a .....	.....	North Fork Bear Wallow Creek.	0	2 (3)	0	61 (25)
	n/a .....	.....	Reservation Creek.	0	5 (8)	0	132 (54)
	n/a .....	.....	Fish Creek	0	4 (6)	0	107 (43)
	n/a .....	.....	East Fork Black River.	0	12 (19)	0	370 (150)
	Canyon Creek	Canyon Creek ¹ .....	.....	53 (85)	8 (13)	7,346 (2,973)	232 (94)
	.....	Tonto Creek ...	.....	91 (146)	41 (66)	12,795 (5,178)	1,390 (562)
	Tonto Creek ...	.....	Tonto Creek ...	54 (87)	28 (45)	7,712 (3,121)	1,078 (436)
Houston Creek .....	.....	Houston Creek	15 (24)	1 (2)	2,046 (828)	18 (7)	
Haigler Creek	.....	Haigler Creek	22 (35)	12 (19)	3,037 (1,229)	294 (119)	

TABLE 1b—CHANGES TO NARROW-HEADED GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS—Continued

Previous unit	Previous subunit	New unit	New subunit	Length miles (kilometers)		Area acres (hectares)	
				Previous	New	Previous	New
Verde River .....	.....	Verde River Subbasin.	.....	248 (400)	58 (93)	35,586 (14,401)	1,832 (741)
	Verde River .....	.....	Verde River	128 (205)	27 (43)	18,721 (7,576)	923 (374)
	Oak Creek .....	.....	Oak Creek	51 (83)	24 (39)	7,369 (2,982)	748 (303)
	West Fork Oak Creek.	.....	West Fork Oak Creek.	16 (26)	7 (11)	2,137 (865)	161 (65)
	East Fork Verde River.	.....	Removed*	53 (86)	0	7,360 (2,978)	0
Totals .....	.....	.....	.....	1,380 (2,221)	461 (742)	210,189 (85,060)	18,701 (7,568)

Note: Numbers may not sum due to rounding.

*“Removed” means this unit or subunit, which was proposed as critical habitat for the narrow-headed gartersnake in the July 10, 2013, proposed rule (78 FR 41550), is not included in this revised proposed critical habitat designation.

¹Eagle Creek and Canyon Creek were proposed as a critical habitat subunits for the narrow-headed gartersnake in the July 10, 2013, proposed rule (78 FR 41550), but are their own units in this revised proposed critical habitat designation.

Physical or Biological Features

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkali soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features

may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species. In considering whether features are essential to the conservation of the species, the Service may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

Summary of Essential Physical or Biological Features

We derive the specific PBFs essential to the conservation of northern Mexican and narrow-headed gartersnakes from studies of this species’ habitat, ecology, and life history as described above. Additional information can be found in the final listing rule published in the **Federal Register** on July 8, 2014 (79 FR 38678); the previous proposed critical habitat rule (78 FR 41550; July 10, 2013), as well as comments we received on previous proposed critical habitat rule; and information in this rule under Changes from Previously Proposed Critical Habitat, above. We have determined that the following PBFs are essential to the conservation of northern Mexican and narrow-headed gartersnakes.

Northern Mexican Gartersnake

1. Perennial or spatially intermittent streams that provide both aquatic and terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of northern Mexican gartersnakes and contain:

(A) Slow-moving water (walking speed) with in-stream pools, off-channel pools, and backwater habitat;

(B) Organic and natural inorganic structural features (e.g., boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the stream channel for thermoregulation, shelter, foraging opportunities, and protection from predators;

(C) Terrestrial habitat adjacent to the stream channel that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators; and

(D) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.

2. Hydrologic processes that maintain aquatic and terrestrial habitat through:

(A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network; and

(B) Physical hydrologic and geomorphic connection between a stream channel and its adjacent riparian areas.

3. Prey base of primarily native anurans, fishes, small mammals, lizards, and invertebrate species.

4. An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.

5. Elevations from 130 to 8,500 ft (40 to 2,590 m).

6. Lentic wetlands including off-channel springs, cienegas, and natural and constructed ponds (small earthen impoundment) with:

(A) Organic and natural inorganic structural features (e.g., boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the ordinary high water mark for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators;

(B) Riparian habitat adjacent to ordinary high water mark that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, and protection from predators; and

(C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.

7. Ephemeral channels that connect perennial or spatially intermittent perennial streams to lentic wetlands in southern Arizona where water resources are limited.

Narrow-Headed Gartersnake

1. Perennial streams or spatially intermittent streams that provide both aquatic and terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of narrow-headed gartersnakes and contain:

(A) Pools, riffles, and cobble and boulder substrate, with low amount of fine sediment and substrate embeddedness;

(B) Organic and natural inorganic structural features (e.g., cobble bars, rock piles, large boulders, logs or stumps, aquatic and wetland vegetation, logs, and debris jams) in the stream channel for basking, thermoregulation, shelter, prey base maintenance, and protection from predators;

(C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of narrow-headed gartersnakes is not inhibited; and

(D) Terrestrial habitat within 89 ft (27 m) of the active stream channel that includes boulder fields, rocks, and rock structures containing cracks and crevices, small mammal burrows, downed woody debris, and vegetation for thermoregulation, shelter sites, and protection from predators.

2. Hydrologic processes that maintain aquatic and riparian habitat through:

(A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network, as well as maintenance of native fish populations; and

(B) Physical hydrologic and geomorphic connection between the active stream channel and its adjacent terrestrial areas.

3. Prey base of native fishes, or soft-rayed, nonnative fish species.

4. An absence of nonnative predators, such as fish species of the families Centrarchidae and Ictaluridae, bullfrogs, and crayfish, or occurrence of nonnative predators at low enough densities such that recruitment of narrow-headed gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.

5. Elevations of 2,300 to 8,200 ft (700 to 2,500 m).

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection. In this revised proposed critical habitat rule, we are not changing any of the special management considerations for either gartersnake species' proposed critical habitat.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species that are essential for the species' conservation to be considered for designation as critical habitat. We are

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

To identify areas proposed for critical habitat for the northern Mexican and narrow-headed gartersnakes, we used a variety of sources for species data including riparian species survey reports, museum records, heritage data from State wildlife agencies, peer-reviewed literature, agency reports, and interviews with species experts. Holycross *et al.* (in press, entire) was a key source of information for vouchered historical and current records of both gartersnake species across their respective ranges. Other sources for current records of the northern Mexican gartersnake included Cotten *et al.* (2014, entire), Holycross *et al.* (2006, entire), and Rosen *et al.* (2001, entire). Christman and Jennings (2017, entire), Hellekson (2012), Jennings *et al.* (2017, entire), Jennings and Christman (2019, entire), and Jennings *et al.* (2018) were important sources of information pertaining to narrow-headed gartersnake status in New Mexico. In addition to reviewing gartersnake-specific survey reports, we also focused on survey reports and heritage data from State wildlife agencies for fish and amphibians as they captured important data on the existing community ecology that affects the status of these gartersnakes within their ranges. In addition to species data sources, we used publicly available geospatial datasets depicting water bodies, stream flow, vegetation type, and elevation to identify areas proposed for critical habitat.

The maps define the critical habitat designation, as modified by any accompanying regulatory text, presented at the end of this document under Proposed Regulation Promulgation. We include more detailed information on the proposed boundaries of the critical habitat designation in the preamble of this document. We will make the

coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0011, on our internet site at <http://www.fws.gov/southwest/es/arizona>, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT** above).

Areas Occupied at the Time of Listing

We are proposing for designation of critical habitat lands that we have determined were occupied at the time of listing and contain one or more of the physical or biological features to support life-history processes essential to the conservation of the species. As explained under *Occupancy Records*, above, this proposed critical habitat designation does not include all streams known to have been occupied by the species historically or the entire stream known to have been occupied by the species historically. Instead, it focuses on occupied streams or stream reaches within the historical range with positive survey records from 1998 to 2019 that have retained the necessary PBFs that will allow for the maintenance and expansion of existing populations. In summary, for areas within the geographic area occupied by the species at the time of listing, we delineated critical habitat unit boundaries using the following criteria:

Northern Mexican Gartersnake

1. We mapped records of observations of northern Mexican gartersnake from 1998 to 2019. We then examined these areas to determine if northern Mexican gartersnake could still occur in them, as described below.

2. We identified streams in which northern Mexican gartersnakes were found since 1980 (used flowline layer in the USGS National Hydrography Dataset to represent stream centerlines).

3. We identified and removed upstream and downstream ends of streams that were below 130 ft or above 8,500 ft elevation using USGS National Elevation Dataset.

4. We identified perennial, intermittent, and ephemeral reaches of streams. We removed end reaches of streams that are ephemeral based on FCode attribute of the flowline layer in the USGS National Hydrography Dataset or information from peer review and public comments. We identified native prey species along each stream using geospatial datasets, literature, peer review, and public comments.

5. We identified prey species along each stream using geospatial datasets, literature, peer review, and public

comments. We removed stream reaches that were documented to not contain prey species.

6. We identified and removed stream reaches with an abundance of nonnative predators including fish, crayfish, or bullfrogs. (We used a combination of factors to determine nonnative presence and impact to the species. This evaluation included records from 1980 by looking at subsequent negative survey data for northern Mexican gartersnakes along with how the nonnative predator community had changed since those gartersnakes were found, in addition to the habitat condition and complexity. Most of the areas surveyed in the 1980s that had been re-surveyed with negative results for gartersnakes had significant changes to the nonnative predator community, which also decreased prey availability for the gartersnakes. These areas were removed from revised proposed critical habitat.)

7. We identified and removed stream reaches where stocking or management of predatory sportfish is a priority and is conducted on a regular basis.

8. We identified and included those stream reaches on private land without public access that lack survey data but that have positive survey records from 1998 forward both upstream and downstream of the private land and have stream reaches with PBFs 1 and 2.

9. We used a surrogate species to determine potential neonate dispersal along a stream, which is 2.2 miles (3.5 km). We then identified the most upstream and downstream records of northern Mexican gartersnake along each continuous stream reach determined by criteria 1 through 8, above, and extended the stream reach to include this dispersal distance.

10. After identifying the stream reaches that met the above parameters, we then connected those reaches between that have the PBFs. We consider these areas between survey records occupied because the species occurs upstream and downstream and multiple PBFs are present that allow the species to move through these stream reaches.

11. We identified the springs, cienegas, and natural or constructed ponds (livestock tanks) in which records of observations of the species from 1998 to 2019 were found and included them in this revised proposed critical habitat.

12. We identified ephemeral reaches of occupied perennial or intermittent streams that serve as corridors between springs, cienegas, and natural or constructed ponds (livestock tanks).

13. We identified and included the wetland and riparian area adjacent to

streams, springs, cienegas, and ponds to capture the wetland and riparian habitat needed by the species for thermoregulation, foraging, and protection from predators. We used the wetland and riparian layers of the Service's National Wetlands Inventory dataset and aerial photography in Google Earth Pro to identify these areas.

Narrow-headed Gartersnake

1. We mapped records of narrow-headed gartersnake from 1998 to 2019. We then examined these areas to determine if narrow-headed gartersnake could still occur here, as described below.

2. We identified the streams in which narrow-headed gartersnakes were found since 1998 (used flowline layer in the USGS National Hydrography Dataset to represent stream centerlines).

3. We identified and removed upstream and downstream ends of streams that were below 2,300 ft or above 8,200 ft in elevation using USGS National Elevation Dataset.

4. We identified perennial, intermittent, and ephemeral reaches of streams. We removed end reaches of streams that are ephemeral or intermittent based on FCode attribute of the flowline layer in the USGS National Hydrography Dataset or information from peer review and public comments.

5. We identified native and nonnative prey species along each stream using geospatial datasets, literature, peer review, and public comments. We removed stream reaches that did not have prey species.

6. We identified and removed stream reaches with an abundance of nonnative predators including fish, crayfish, and bullfrogs. (We examined a combination of factors to determine nonnative presence and impact to the species. This included evaluating gartersnake records from 1998 by looking at subsequent negative survey data for narrow-headed gartersnakes along with how the nonnative predator community had changed since those gartersnakes were found, in addition to the habitat condition and complexity. Most of the areas surveyed in the 1980s that had been re-surveyed with negative results for gartersnakes had significant changes to the nonnative predator community, which also decreased prey availability for the gartersnakes. These areas were removed from revised proposed critical habitat.)

7. We identified and removed stream reaches where stocking or management of predatory sportfish is a priority and is conducted on a regular basis.

8. We identified and included those stream reaches on private land without

public access that lack survey data but that have positive narrow-headed gartersnake survey records from 1998 forward both upstream and downstream of the private land and have stream reaches with PBFs 1 and 2.

9. We used a surrogate species to determine potential neonate dispersal along a stream, which is 2.2 mi (3.5 km). We then identified the most upstream and downstream records of narrow-headed gartersnake along each continuous stream reach determined by criteria 1 through 8, above, and extended the reach to include this dispersal distance.

10. After identifying the stream reaches that met the above parameters, we then connected those reaches between that had the PBFs. We consider these areas between survey records occupied because the species occurs upstream and downstream and multiple PBFs are present that allow the species to move through these stream reaches.

11. We identified the average distance narrow-headed gartersnakes moved laterally from the water's edge in streams, which is 89 ft (27 m), to capture the wetland and terrestrial habitat needed by the species for thermoregulation and protection from predators. We used the wetland layer of the Service's National Wetlands

Inventory dataset and aerial photography in Google Earth Pro to identify the water's edge in streams.

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for northern Mexican and narrow-headed gartersnakes. However, constructed fish barriers in streams within the proposed designated critical habitat are part of the designation and are needed to manage the exclusion of nonnative species. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect

the physical or biological features in the adjacent critical habitat.

We are proposing for designation of critical habitat lands that we have determined were occupied at the time of listing and contain one or more of the physical or biological features that are essential to support life-history processes of the species.

Proposed Critical Habitat Designation

Northern Mexican Gartersnake

We are proposing 241 stream mi (388 km) within the identified wetland and riparian habitat needed for basking, cover, and foraging, totaling 27,784 ac (11,244 ha) in nine units as the revised proposed critical habitat for northern Mexican gartersnake. Land ownership within proposed critical habitat for the northern Mexican gartersnake in acres is broken down as follows: Federal (62 percent), State (Arizona and New Mexico) (5 percent), Tribal (0.3 percent), and private (32 percent) (see table 2a, below). The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for northern Mexican gartersnake. We consider all units occupied at the time of listing, and all units contain essential PBFs that may require special management considerations or protection.

TABLE 2a—LAND OWNERSHIP AND SIZE OF NORTHERN MEXICAN GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS
[Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land ownership by type acres (hectares)				Total size acres (hectares)
		Federal	State	Tribal	Private	
1. Upper Gila River Subbasin.	Gila River .....	.....	22 (9)	.....	1,006 (407)	1,028 (416)
	Duck Creek .....	.....	.....	.....	104 (42)	104 (42)
Unit Total .....	.....	.....	22 (9)	.....	1,110 (449)	1,132 (458)
2. Tonto Creek .....	.....	3,337 (1,350)	.....	.....	966 (391)	4,302 (1,741)
Unit Total .....	.....	3,337 (1,350)	.....	.....	966 (391)	4,302 (1,741)
3. Verde River Subbasin	Verde River	646 (261)	570 (231)	88 (36)	2,829 (1,145)	4,133 (1,672)
	Oak Creek	193 (78)	134 (54)	.....	687 (278)	1,014 (410)
	Spring Creek	17 (7)	1 (<1)	.....	80 (32)	99 (40)
Unit Total .....	.....	856 (346)	705 (285)	88 (36)	3,597 (1,456)	5,246 (2,123)
4. Bill Williams River Subbasin.	Bill Williams River	1,002 (405)	202 (82)	.....	601 (243)	1,805 (730)
	Big Sandy River	339 (137)	.....	.....	593 (240)	932 (377)
	Santa Maria River	780 (316)	.....	.....	532 (215)	1,312 (531)
Unit Total .....	.....	2,121 (858)	202 (82)	.....	1,727 (699)	4,049 (1,639)
5. Lower Colorado River .....	.....	4,467 (1,808)	.....	.....	.....	4,467 (1,808)
Unit Total .....	.....	4,467 (1,808)	.....	.....	.....	4,467 (1,808)
6. Arivaca Cienega .....	.....	149 (60)	1 (<1)	.....	62 (25)	211 (86)
Unit Total .....	.....	149 (60)	1 (<1)	.....	62 (25)	211 (86)
7. Cienega Creek Subbasin	Cienega Creek	755 (306)	308 (125)	.....	550 (222)	1,613 (653)
	Empire Gulch and Empire Wildlife Pond.	268 (109)	57 (23)	.....	.....	326 (132)

TABLE 2a—LAND OWNERSHIP AND SIZE OF NORTHERN MEXICAN GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS—Continued

[Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land ownership by type acres (hectares)				Total size acres (hectares)
		Federal	State	Tribal	Private	
	Gardner Canyon and Maternity Wildlife Pond.	74 (30)				74 (30)
	Unnamed Drainage and Gaucho Tank.	15 (6)				15 (6)
Unit Total		1,112 (451)	366 (148)		550 (222)	2,030 (821)
8. Upper Santa Cruz River Subbasin.	Sonoita Creek				224 (91)	224 (91)
	Cott Tank Drainage	13 (5)				13 (5)
	Santa Cruz River		70 (28)		91 (37)	161 (65)
	Unnamed Drainage and Pasture 9 Tank.		36 (15)		5 (2)	42 (17)
	Unnamed Drainage and Sheehy Spring.		5 (2)		20 (8)	25 (10)
	Scotia Canyon	31 (13)				31 (13)
	FS799 Tank	0.7 (0.3)				0.7 (0.3)
Unit Total	Unnamed Wildlife Pond				0.1 (<0.1)	0.1 (<0.1)
9. Upper San Pedro River Subbasin.	San Pedro River	4,911 (1,988)	111 (45)		340 (138)	496 (201)
	Babocomari River				215 (87)	5,126 (2,074)
	O'Donnell Canyon	197 (80)	8 (3)		199 (81)	404 (164)
	Post Canyon	58 (24)			181 (73)	239 (97)
	Unnamed Drainage and Finley Tank.	30 (12)			47 (19)	77 (31)
	House Pond				3 (1)	3 (1)
	Unit Total		0.6 (0.2)			0.6 (0.2)
Unit Total		5,197 (2,103)	8 (3)		645 (261)	5,850 (2,367)
Grand Total		17,284 (6,995)	1,414 (572)	88 (36)	8,996 (3,640)	27,784 (11,244)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for northern Mexican gartersnake, below.

Upper Gila River Subbasin Unit

The Upper Gila River Subbasin Unit is located in southwestern New Mexico southeast of the towns of Cliff and Gila, in Grant County. This unit consists of 1,132 ac (458 ha) along 13 stream mi (21 km) in two subunits with 9 stream mi (14 km) along the Gila River and 4 stream mi (6 km) along Duck Creek. The New Mexico Department of Game and Fish, New Mexico State land department, and private entities manage lands within this unit. Several reaches of the Gila River have been adversely affected by channelization and diversions, which have reduced or eliminated base flow. As a whole, this unit contains PBFs 1, 2, and 5, but PBFs 3 and 4 are in degraded condition. PBFs 6 and 7 do not apply to this unit. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water

diversions; channelization; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

Lands owned by Freeport McMoRan in the Upper Gila River Subbasin Unit on the Gila River and Duck Creek are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 515 ac (208 ha), or 45 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Tonto Creek Unit

The Tonto Creek Unit is generally located near the towns of Gisela and Punkin Center, Arizona, in Gila County. This unit consists of 4,302 ac (1,741 ha) of critical habitat along 32 stream mi (52 km) of Tonto Creek. The downstream end of critical habitat is the spillway elevation of Theodore Roosevelt Lake (2,120 ft (646 m)) near the confluence with Bumblebee Creek. The Tonto National Forest is the primary land manager in this unit, with additional lands privately owned. Some reaches along Tonto Creek experience seasonal

drying because of regional groundwater pumping, while others are affected by diversions. Development along private reaches of Tonto Creek may also affect terrestrial characteristics of northern Mexican gartersnake habitat. Mercury has been detected in fish samples within Tonto Creek, and further research is necessary to determine if mercury is bioaccumulating in the resident food chain. Theodore Roosevelt Lake is a nonnative sport fishery and supports predators of the northern Mexican gartersnake, so that the northern Mexican gartersnake may be subject to higher mortality from predation by nonnative fish at the downstream end of this unit, especially when the lake level is at spillway elevation. In general, this unit contains PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. PBFs 6 and 7 do not apply to this unit. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions causing loss of base flow; flood-control

projects; and development of areas adjacent to or within proposed critical habitat.

Verde River Subbasin Unit

The Verde River Subbasin Unit is generally located near the towns of Cottonwood, Cornville, and Camp Verde, Arizona, in Yavapai County. This unit consists of 5,246 ac (2,123 ha) along 61 stream mi (98 km) in three subunits: 35 stream mi (56 km) of the Verde River, including Tavasci Marsh and Peck Lake; 23 stream mi (37 km) of Oak Creek; and 4 stream mi (6 km) of Spring Creek. The Verde River Subbasin Unit occurs on lands managed by the U.S. Forest Service on Coconino and Prescott National Forests; National Park Service (NPS) at Tuzigoot National Monument; Arizona Game and Fish Department at Bubbling Ponds and Page Springs fish hatcheries; Arizona State Parks at Deadhorse Ranch and Verde River Greenway State Natural Area; Arizona State Trust; Yavapai-Apache Nation; and private entities. Crayfish, bullfrogs, and nonnative, spiny-rayed fish are present in some of this unit. Proposed groundwater pumping of the Big Chino Aquifer may adversely affect future base flow in the Verde River. Development along the Verde River has eliminated habitat along portions of the Verde River through the Verde Valley. As a whole, this unit contains PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions; existing and proposed groundwater pumping potentially resulting in drying of habitat; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

Lands in the Verde River Subunit include The Nature Conservancy's Verde Springs Preserve, Verde Valley property, Yavapai-Apache Nation, and Salt River Project's Camp Verde Riparian Preserve. Lands owned by the Yavapai-Apache Nation, and lands within Salt River Project's Camp Verde Riparian Preserve are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. Lands in Oak Creek Subunit include Arizona Game and Fish Department's (AGFD) Bubbling Ponds and Page Springs fish hatcheries, which are also being considered for exclusion from the final rule for critical habitat. A total of 460 ac (186 ha), or 9 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Bill Williams River Subbasin Unit

The Bill Williams River Subbasin Unit is generally located in western Arizona, northeast of Parker, Arizona, in La Paz and Mohave Counties. This unit consists of 4,049 ac (1,639 ha) along 29 stream mi (46 km) in three subunits: 15 stream mi (24 km) of Bill Williams River; 8 stream mi (13 km) of Big Sandy River; and 5 stream mi (9 km) of Santa Maria River. The Bill Williams River Subbasin Unit occurs on lands managed by the Bureau of Land Management (BLM) within the Rawhide Mountains Wilderness, Swansea Wilderness, and Three Rivers Riparian Area of Critical Environmental Concern (ACEC); Arizona State Parks at Alamo Lake State Park; Arizona State Land Department; and private landowners. This unit contains lowland leopard frogs and native fish appear to be largely absent, although longfin dace have been detected in the Santa Maria River Subunit. As a whole, this unit contains PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. PBFs 6 and 7 do not apply to this unit. Crayfish and several species of nonnative, spiny-rayed fish maintain populations in reaches of the three rivers included in the Bill Williams River Subbasin Unit. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit and flood-control projects.

Lands within the AGFD's Planet Ranch Conservation and Wildlife Area property in the Bill Williams River Subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 329 ac (133 ha), or 8 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Lower Colorado River Unit

The Colorado River Unit is generally located in western Arizona in Mojave County. This unit consist of 4,467 ac (1,808 ha) within the floodplain of the Colorado River but does not include the main channelized portion of the river. This unit falls completely within the Service's Havasu National Wildlife Refuge. Several species of nonnative, spiny-rayed fish maintain robust populations in this unit. In general, this unit contains PBFs 1, 2, and 5, but PBFs 3 and 4 are in degraded condition. PBFs 6 and 7 do not apply to this unit. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that

are present in this unit and flood-control projects. No areas within this unit are considered for exclusion.

Arivaca Cienega Unit

The Arivaca Cienega Unit is generally located in southern Arizona, in and around the town of Arivaca in Pima County, Arizona. This unit consists of 211 ac (86 ha), along 3 stream mi (5 km) of Arivaca Creek within Arivaca Cienega. This unit occurs on lands managed by the Service at Buenos Aires National Wildlife Refuge, Arizona State Land Department, and private landowners. Drought, bullfrogs, and crayfish are a concern in the Arivaca Cienega Unit. In general, this unit contains PBFs 2 and 5, but PBFs 1, 3, and 4 are in degraded condition. PBFs 6 and 7 do not apply to this unit. The physical or biological features in this unit may require special management consideration due to loss of perennial flow, as well as competition with, and predation by, nonnative species that are present in this unit. No areas within this unit are considered for exclusion.

Cienega Creek Subbasin Unit

The Cienega Creek Subbasin Unit is generally located in southern Arizona southeast of the city of Tucson and town of Vail, north of the town of Sonoita, west of the Rincon Mountains, and east of the Santa Rita Mountains in Pima County. This unit consists of 2,030 ac (821 ha) along 46 stream mi (73 km) in four subunits: 30 stream mi (48 km) of Cienega Creek; 7 stream mi (11 km) of Empire Gulch, including Empire Wildlife Pond; 2 stream mi (3 km) of an unnamed drainage to Gaucho Pond, including Gaucho Pond; and 7 stream mi (11 km) of Gardner Canyon, including Maternity Wildlife Pond. The unnamed drainage to Gaucho Pond is an ephemeral channel that may serve as a movement corridor for northern Mexican gartersnakes. The Cienega Creek Subbasin Unit occurs on lands managed by BLM on Las Cienegas National Conservation Area (NCA), Arizona State Land Department, Pima County on Cienega Creek Preserve, and private landowners. Recent, ongoing bullfrog eradication on and around Las Cienegas NCA has reduced the threat of bullfrogs in much of this unit. As a whole, this unit contains PBFs 1, 2, 3, 5, 6, and 7, but PBF 4 is in degraded condition. Special management may be required to maintain or develop the physical or biological features, including continuing to promote the recovery or expansion of native leopard frogs and fish, continuing bullfrog management, and eliminating or

reducing other predatory nonnative species.

Lands within Pima County's Cienega Creek Natural Preserve in the Cienega Creek Subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 543 ac (220 ha), or 27 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below). However, Pima County has requested that these lands not be excluded from the final rule.

Upper Santa Cruz River Subbasin Unit

The Santa Cruz River Subbasin Unit is generally located in southern Arizona, south of the town of Sonoita and within the town of Patagonia, southeast of the Santa Rita Mountains, and west of the Patagonia Mountains in Santa Cruz and Cochise Counties. This unit consists of 496 ac (201 ha) along 23 stream mi (36 km) in eight subunits: FS 799 Tank; an unnamed wildlife pond; 3 stream mi (5 km) of Sonoita Creek; 4 stream mi (7 km) of Scotia Canyon; 2 stream mi (3 km) of Cott Tank Drainage; 7 stream mi (11 km) of Santa Cruz River; 5 stream mi (7 km) of an unnamed drainage to Pasture 9 Tank, including Pasture 9 Tank; and 2 stream mi (3 km) of an unnamed drainage to Sheehy Spring, including Sheehy Spring. The latter two unnamed drainages are ephemeral channels that may serve as movement corridors for northern Mexican gartersnakes. The Upper Santa Cruz River Subbasin Unit occurs on lands managed by Coronado National Forest, Arizona State Parks at San Rafael State Natural Area, Arizona State Land Department, and private landowners (including The Nature Conservancy at Patagonia-Sonoita Creek Preserve and San Rafael Cattle Company at San Rafael Ranch). Native fish, bullfrogs, Sonoran tiger salamanders, and Chirichua leopard frogs provide prey for northern Mexican gartersnakes in the Santa Cruz River Subbasin Unit. Bullfrogs and nonnative spiny-ray fish remain an issue in this unit. As a whole, this unit contains PBFs 1, 2, 3, 5, 6, and 7, but PBF 4 is in degraded condition. Special management may be required to maintain or develop the physical or

biological features, including continuing to promote the recovery or expansion of native leopard frogs and fish, and eliminating or reducing predatory nonnative species.

Lands within the San Rafael Cattle Company's San Rafael Ranch in the Santa Cruz River Subunit, Unnamed Drainage and Pasture 9 Tank Subunit, and Unnamed Drainage and Sheehy Spring Subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. Lands within The Nature Conservancy's Patagonia-Sonoita Creek Preserve in the Sonoita Creek Subunit, as well as the Unnamed Wildlife Pond Subunit, which are both on private lands, are also being considered for exclusion. A total of 238 ac (96 ha), or 48 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Upper San Pedro River Subbasin Unit

The Upper San Pedro River Subbasin Unit is generally located in southeastern Arizona, east and west of Sierra Vista and south of the town of Elgin, in Cochise and Santa Cruz Counties. This unit consists of 5,850 ac (2,367 ha) in six subunits along 35 stream mi (57 km): 22 stream mi (35 km) of the San Pedro River; 6 stream mi (10 km) of the Babocomari River; 4 stream mi (7 km) in O'Donnell Canyon; 3 stream mi (5 km) in Post Canyon; 0.5 stream mi (0.7 km) in an ephemeral drainage to Finley Tank, including Finley Tank; and House Pond. The Upper San Pedro River Subbasin Unit occurs primarily on lands managed by BLM on the San Pedro River Riparian and Las Cienegas NCAs, and also includes lands managed by the U.S. Forest Service on Coronado National Forest, Arizona State Land Department, and private entities. The unit includes portions of the Canelo Hills Preserve owned by The Nature Conservancy and portions of the Appleton-Whittell Research Ranch managed by several private and Federal landowners. Native fish and leopard frogs occur in House Pond and O'Donnell Canyon subunits and provide a prey base for northern Mexican gartersnakes. Crayfish, bullfrogs, and nonnative, spiny-rayed fish occur in the

San Pedro River and Babocomari subunits and are an ongoing threat to northern Mexican gartersnakes. As a whole, this unit contains PBFs 1, 2, 5, 6, and 7, but PBFs 3 and 4 are in degraded condition. The physical or biological features in Upper San Pedro River Subbasin Unit may require special management consideration due to competition with, and predation by, predatory nonnative species that are present in this unit.

Lands owned by The Nature Conservancy at Canelo Hills Preserve and lands owned by the National Audubon Society at Appleton-Whittell Research Ranch in the O'Donnell Canyon Subunit are being considered for exclusion from the final rule for critical habitat. In addition, Fort Huachuca has requested the Service to consider for exclusion based on national security lands managed by BLM, Arizona State Land Department, and private entities within the San Pedro River and Babocomari River subunits. A total of 5,320 ac (2,152 ha), or 91 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Narrow-Headed Gartersnake

We are proposing 461 stream mi (742 km) within a 89-ft (27-m) lateral extent of the active stream channel, totaling 18,701 ac (7,568 ha) comprising 8 units as critical habitat for the narrow-headed gartersnake in Greenlee, Graham, Apache, Yavapai, Gila, and Coconino Counties in Arizona, as well as in Grant, Hidalgo, and Catron Counties in New Mexico. Land ownership within proposed critical habitat for the narrow-headed gartersnake is broken down as follows: Federal (66 percent), State (Arizona and New Mexico) (2 percent), Tribal (3 percent), and private (29 percent) (see table 2b, below). The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for narrow-headed gartersnake. We consider all units occupied at the time of listing, and all units contain essential PBFs that may require special management considerations or protection.

TABLE 2b—LAND OWNERSHIP AND SIZE OF NARROW-HEADED GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS
[Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land ownership by type acres (hectares)				Size of unit
		Federal	State	Tribal	Private	
1. Upper Gila River Subbasin.	Gila River	1,123 (455)	119 (48)	.....	2,267 (917)	3,510 (1,420)

TABLE 2b—LAND OWNERSHIP AND SIZE OF NARROW-HEADED GARTERSNAKE PROPOSED CRITICAL HABITAT UNITS—Continued

[Area estimates reflect all land within critical habitat unit boundaries. County-owned lands are considered as private lands.]

Unit	Subunit	Land ownership by type acres (hectares)				Size of unit
		Federal	State	Tribal	Private	
2. San Francisco River Subbasin.	West Fork Gila River	358 (145)	154 (62)	.....	51 (20)	562 (228)
	Little Creek	157 (64)	5 (2)	.....	.....	162 (65)
	Middle Fork Gila River	569 (230)	.....	.....	.....	569 (230)
	Iron Creek	58 (23)	.....	.....	.....	58 (23)
	Gilita Creek	149 (60)	.....	.....	.....	149 (60)
	Black Canyon	245 (99)	.....	.....	6 (2)	251 (102)
	Diamond Creek	169 (68)	.....	.....	.....	169 (68)
Unit Total .....	.....	2,827 (1,144)	278 (113)	.....	2,323 (940)	5,429 (2,197)
3. Blue River Subbasin	San Francisco River	1,679 (680)	.....	.....	1,441 (583)	3,121 (1,263)
	Whitewater Creek	112 (45)	.....	.....	96 (39)	208 (84)
	Saliz Creek	182 (74)	.....	.....	36 (15)	218 (88)
	Tularosa River	338 (137)	.....	.....	492 (199)	829 (336)
	Negrito Creek	272 (110)	.....	.....	65 (26)	337 (136)
	South Fork Negrito Creek ..	171 (69)	.....	.....	21 (9)	192 (78)
	Unit Total	2,753 (1,114)	2,152 (871)
4. Eagle Creek	Blue River	2,105 (852)	399 (162)	2,504 (1,013)
	Campbell Blue Creek	300 (121)	.....	.....	61 (25)	361 (146)
	Dry Blue Creek	106 (43)	.....	.....	.....	106 (43)
Unit Total .....	.....	2,510 (1,016)	.....	.....	460 (186)	2,971 (1,202)
5. Black River Subbasin .....	.....	99 (40)	.....	236 (96)	1 (<1)	336 (136)
	Black River	653 (264)	.....	111 (45)	.....	763 (309)
	Bear Wallow Creek	127 (51)	.....	47 (19)	.....	174 (71)
	North Fork Bear Wallow Creek	61 (25)	.....	.....	.....	61 (25)
	Reservation Creek	96 (39)	.....	36 (14)	.....	132 (54)
	Fish Creek	107 (43)	.....	.....	.....	107 (43)
	East Fork Black River	370 (150)	.....	.....	.....	370 (150)
Unit Total .....	.....	1,414 (572)	.....	194 (78)	.....	1,607 (650)
6. Canyon Creek .....	.....	155 (63)	.....	77 (31)	.....	232 (94)
	Tonto Creek	1,003 (406)	.....	.....	75 (30)	1,078 (436)
	Houston Creek	16 (6)	.....	.....	2 (1)	18 (7)
7. Verde River Subbasin	Haigler Creek	266 (108)	.....	.....	28 (11)	294 (119)
	.....	1,285 (520)	.....	.....	105 (43)	1,390 (562)
	Verde River	823 (333)	.....	.....	101 (41)	923 (374)
	Oak Creek	360 (146)	51 (21)	.....	337 (136)	748 (303)
8. Verde River Subbasin	West Fork Oak Creek	161 (65)	.....	.....	.....	161 (65)
	Unit Total	1,343 (544)	51 (21)	.....	437 (177)	1,832 (741)
Total .....	.....	12,386 (5,013)	329 (133)	507 (205)	5,479 (2,217)	18,701 (7,568)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for narrow-headed gartersnake, below.

Gila River Subbasin Unit

The Gila River Subbasin Unit is generally located in southwestern New Mexico, east of Glenwood, and west and north of Silver City in Grant and Hidalgo Counties, New Mexico. This unit consists of 5,429 ac (2,197 ha) in 8

subunits along 104 stream mi (167 km): 46 stream mi (74 km) of the Gila River, 12 stream mi (19 km) of West Fork Gila River, 14 stream mi (23 km) of Middle Fork Gila River, 10 stream mi (16 km) of Black Canyon, 6 stream mi (10 km) of Diamond Creek, 6 stream mi (10 km) of Gilita Creek, 2 stream mi (3 km) of Iron Creek, and 7 stream mi (11 km) of Little Creek. The Gila River Subbasin Unit consists of lands primarily managed by the U.S. Forest Service on

the Gila National Forest; BLM within the Lower Box and Middle Gila Box ACECs and Gila Lower Box Wilderness Study Area; NPS on Gila Cliff Dwellings National Monument; New Mexico Department of Game and Fish on Heart Bar Wildlife Area, Redrock State Wildlife Experimental Area, and Gila Bird Area; State Trust lands; and private ownership, including lands owned by Freeport McMoRan Corporation.

Some reaches of the Gila River have been adversely affected by channelization and water diversions. In November 2014, the New Mexico Interstate Stream Commission provided notice to the Secretary of the Interior that the State of New Mexico intends to construct the New Mexico Unit of the Central Arizona Project as authorized by the Colorado River Basin Project Act of 1968 (Central Arizona Project 2015, p. 5–6). The New Mexico Unit of the Central Arizona Project will divert up to 14,000 ac-ft per year from the upper Gila River and its tributaries for consumptive use in New Mexico. However, the Secretary of the Interior denied an extension to divert additional funding, and no record of decision for a project design was issued by a December 31, 2019, deadline. Therefore, the future of the project is unknown. Historically, the West and Middle Forks Gila River maintained large populations of bullfrogs and nonnative, spiny-rayed fish. Wildfires have burned at both moderate and high severity within the unit and likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods can reduce populations of both nonnative predatory species and native prey species for narrow-headed gartersnakes in affected streams for many years. The Gila River, West Fork Gila River, Little Creek, Iron Creek, Black Canyon, and Diamond Creek subunits have PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. The Middle Fork Gila River Subunit has PBF 1, 2, 4, and 5 but PBF 3 is in degraded condition. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions; channelization; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

Lands owned by Freeport McMoRan Corporation along the Gila River in the Gila River Subunit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 563 ac (228 ha), or 10 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

San Francisco River Subbasin Unit

The San Francisco River Subbasin Unit is generally located in southwestern New Mexico near the towns of Glenwood and Reserve, and east of Luna, in Catron County. This unit consists of 4,905 ac (1,985 ha) in 6

subunits along 129 stream mi (207 km): 71 stream mi (115 km) of San Francisco River, 9 stream mi (14 km) of Whitewater Creek, 8 stream mi (13 km) of Saliz Creek, 20 stream mi (32 km) of Tularosa River, 13 stream mi (21 km) of Negrito Creek, and 8 stream mi (13 km) of South Fork Negrito Creek. The San Francisco River Subbasin Unit consists of lands managed primarily by the U.S. Forest Service on Gila National Forest and private landowners.

Water diversions have dewatered sections of the San Francisco River Subunit in the upper Alma Valley and at Pleasanton, New Mexico. The San Francisco River Subunit also has historically maintained populations of bullfrogs, crayfish, and nonnative, spiny-rayed fish at various densities along its course. Wildfires have burned at both moderate and high severity within the unit and likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods can reduce populations of both nonnative predatory species and native prey species for narrow-headed gartersnakes in affected streams for many years. San Francisco River Subunit has PBFs 1, 2, and 5, but PBFs 3 and 4 are in degraded condition. Whitewater Creek Subunit has PBFs 1, 2, 4, and 5, but PBF 3 is in degraded condition. Tularosa River, Saliz Creek, Negrito Creek, and subunits have PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. South Fork Negrito Creek Subunit has adequate PBFs. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions that reduce base flow; potential for high-intensity wildfires; and human recreation and development of areas adjacent to proposed critical habitat. No areas within this unit are considered for exclusion.

Blue River Subbasin Unit

The Blue River Subbasin Unit is generally located near the east central border of Arizona northeast of Clifton in Greenlee County, and just into west-central New Mexico in Catron County. This unit consists of a total of 2,971 ac (1,202 ha) along 64 stream mi (103 km): 52 stream mi (84 km) of Blue River, 7 stream mi (11 km) of Campbell Blue Creek, and 4 stream mi (6 km) of Dry Blue Creek. Blue River Subbasin Unit consists of lands managed primarily by the U.S. Forest Service on Gila and Apache-Sitgreaves National Forests, and private landowners. The fish community of the Blue River is highly diverse and largely native, but

nonnative fish are present. Native fish restoration is actively occurring in the Blue River, including construction of a fish barrier, mechanical removal of nonnative fish, and repatriation and monitoring of federally listed warm-water fishes (Robinson and Crowder 2015, p. 24; Robinson and Love-Chezem 2015, entire). Wildfires have burned at both moderate and high severity within the unit and likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods can reduce populations of both nonnative predatory species and native prey species for narrow-headed gartersnakes in affected streams for many years. The Blue River and Dry Blue Creek subunits have PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. Campbell Blue Creek Subunit has PBFs 1, 2, 4, and 5, but PBF 3 may be in degraded condition. The physical or biological features in this unit may require special management consideration to maintain or develop physical or biological features, including preventing reinvasion of nonnative species, and continuing to reestablish native prey species. No areas within this unit are considered for exclusion.

Eagle Creek Unit

The Eagle Creek Unit is generally located in eastern Arizona near Morenci and includes portions of Graham and Greenlee Counties. This unit consists of a total of 336 ac (136 ha) along 7 stream mi (11 km) of Eagle Creek. The majority of lands within this unit are managed by the San Carlos Apache Tribe and the U.S. Forest Service on the Gila National Forest. This unit has PBFs 1, 2, 3, and 5, but PBF 4 is deficient. Special management in this unit may be required to maintain or develop the physical or biological features, including the elimination or reduction of crayfish and nonnative, spiny-rayed fish, as well as maintenance of adequate base flow in Eagle Creek.

Lands owned by the San Carlos Apache Tribe in the Eagle Creek Unit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 236 ac (96 ha), or 70 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Black River Subbasin Unit

The Black River Subbasin Unit is generally located along the Mogollon Rim in east-central Arizona, east of Maverick and west of Hannigan Meadow, and includes portions of Apache, Graham, and Greenlee

Counties. This unit consists of a total of 1,607 ac (650 ha) in 6 subunits along 51 stream mi (82 km): 23 stream mi (37 km) of Black River, 6 stream mi (10 km) of Bear Wallow Creek, 2 stream mi (3 km) of North Fork Bear Wallow Creek, 5 stream mi (8 km) of Reservation Creek, 4 stream mi (6 km) of Fish Creek, and 12 stream mi (19 km) of East Fork Black River. The majority of lands within this unit are managed by the U.S. Forest Service on Apache-Sitgreaves National Forest, with additional lands managed by the White Mountain Apache and San Carlos Apache Tribes.

Water in the Black River Subbasin is diverted for use at the Morenci Mine, which may affect base flow. Wildfires have burned at both moderate and high severity within the unit and likely resulted in significant flooding with excessive ash and sediment loads. These sediment and ash-laden floods can reduce populations of both nonnative predatory species and native prey species for narrow-headed gartersnakes in affected streams for many years. In general, this unit has PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat.

Lands owned by the White Mountain Apache and San Carlos Apache Tribes along the Black River, Bear Wallow Creek, and Reservation Creek of the Black River Subbasin Unit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 195 ac (79 ha), or 12 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Canyon Creek Unit

The Canyon Creek Unit is generally located along the Mogollon Rim in east-central Arizona, and falls within Gila County. This unit consists of 232 ac (94 ha) along 8 stream mi (13 km) of Canyon Creek. The Tonto National Forest manages the majority of lands within this unit; however, the White Mountain Apache Tribe also has land within this unit. This unit contains sufficient physical or biological features, but these features may require special management consideration including preventing invasion by nonnative predatory species as well as the potential for high-intensity wildfires.

Lands owned by the White Mountain Apache Tribe in the Canyon Creek Unit are being considered for exclusion from the final rule for critical habitat under section 4(b)(2) of the Act. A total of 77 ac (31 ha), or 33 percent, of this unit are being considered for exclusion (see *Application of Section 4(b)(2) of the Act*, below).

Tonto Creek Subbasin Unit

The Tonto Creek Subbasin Unit is generally located southeast of Payson, Arizona, and northeast of the Phoenix metropolitan area, in Gila County. This unit consists of a total of 1,390 ac (562 ha) in 3 subunits along 41 stream mi (66 km): 28 stream mi (45 km) of Tonto Creek, 1 stream mi (2 km) of Houston Creek, and 12 stream mi (19 km) of Haigler Creek. Land ownership or land management within this unit consists of lands managed by the U.S. Forest Service on Tonto National Forest in the Hellgate Wilderness and privately owned lands.

Some reaches along Tonto Creek experience seasonal drying as a result of regional groundwater pumping, while others are or may be affected by diversions or existing or planned flood control projects. Development along private reaches of Tonto Creek may also affect terrestrial characteristics of narrow-headed gartersnake habitat. Mercury has been detected in fish samples within Tonto Creek, and further research is necessary to determine if mercury is bioaccumulating in the resident food chain. In general, this unit has PBFs 1, 2, 3, and 5, but PBF 4 is in degraded condition. The physical or biological features in this unit may require special management consideration due to competition with, and predation by, nonnative species that are present in this unit; water diversions; flood-control projects; potential for high-intensity wildfires; and development of areas adjacent to or within proposed critical habitat. No areas within this unit are considered for exclusion.

Verde River Subbasin Unit

The Verde River Subbasin Unit is generally located near Perkinsville and Sedona, Arizona, west of Paulden, Arizona, in Coconino and Yavapai Counties. This unit consists of 1,832 ac (741 ha) in 3 subunits along 58 stream mi (93 km): 27 stream mi (43 km) of Verde River, 24 stream mi (39 km) of Oak Creek, and 7 stream mi (11 km) of West Fork Oak Creek. Verde River Subbasin Unit occurs on lands managed by the U.S. Forest Service on Prescott and Coconino National Forests, Arizona State Parks at Redrock State Park, and

private entities. Proposed groundwater pumping of the Big Chino Aquifer may adversely affect future base flow in the Verde River. In general, the physical or biological features in this unit are sufficient, but may require special management consideration due to competition with, and predation by, nonnative species that are present; water diversions; groundwater pumping potentially resulting in drying of habitat; potential for high-intensity wildfires; and human development of areas adjacent to proposed critical habitat. No areas within this unit are considered for exclusion.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

We published a final rule with a revised definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal

agency—do not require section 7 consultation.

Compliance with the requirements of section 7(a)(2) of the Act is documented through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Service Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinitiate formal consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law) and, subsequent to the previous consultation, we have listed a new species or designated critical habitat that may be affected by the Federal action, or the action has been modified in a manner that affects the species or critical habitat in a way not considered in the previous consultation. In such situations, Federal agencies sometimes may need to request reinitiation of consultation with us, but the regulations also specify some exceptions to the

requirement to reinitiate consultation on specific land management plans after subsequently listing a new species or designating new critical habitat. See the regulations for a description of those exceptions.

Application of the “Adverse Modification” Standard

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate 7(a)(2) of the Act by destroying or adversely modifying such habitat, or that may be affected by such designation.

Activities that the Services may, during a consultation under section 7(a)(2) of the Act, find are likely to destroy or adversely modify critical habitat include, but are not limited to:

(1) Actions that would alter the amount, timing, or frequency of flow within a stream or the quantity of available water within wetland habitat such that the prey base for either gartersnake species, or the gartersnakes themselves, are appreciably diminished or threatened with extirpation. Such activities could include, but are not limited to: Water diversions; channelization; construction of any barriers or impediments within the active river channel; removal of flows in excess of those allotted under a given water right; construction of permanent or temporary diversion structures; groundwater pumping within aquifers associated with the river; or dewatering of isolated within-channel pools or stock tanks. These activities could result in the reduction of the distribution or abundance of important gartersnake prey species, as well as reduce the distribution and amount of suitable physical habitat on a regional landscape for the gartersnakes themselves.

(2) Actions that would significantly increase sediment deposition or scouring within the stream channel or pond that is habitat for the northern Mexican or narrow-headed gartersnake,

or one or more of their prey species within the range of either gartersnake species. Such activities could include, but are not limited to: Poorly managed livestock grazing; road construction; commercial or urban development; channel alteration; timber harvest; prescribed fires or wildfire suppression; off-road vehicle or recreational use; and other alterations of watersheds and floodplains. These activities could adversely affect the potential for gartersnake prey species to survive or breed. They may also reduce the likelihood that their prey species, leopard frogs for northern Mexican gartersnake for example, could move among subpopulations in a functioning metapopulation. This would, in turn, decrease the viability of metapopulations and their component local populations of prey species.

(3) Actions that would alter water chemistry beyond the tolerance limits of a gartersnake prey base. Such activities could include, but are not limited to: Release of chemicals, biological pollutants, or effluents into the surface water or into connected groundwater at a point source or by dispersed release (non-point source); aerial deposition of known toxicants, such as mercury, that are positively correlated to regional exceedances of water quality standards for these toxicants; livestock grazing that results in waters heavily polluted by feces; runoff from agricultural fields; roadside use of salts; aerial pesticide overspray; runoff from mine tailings or other mining activities; and ash flow and fire retardants from fires and fire suppression. These actions could adversely affect the ability of the habitat to support survival and reproduction of gartersnake prey species.

(4) Actions that would remove, diminish, or significantly alter the structural complexity of key natural structural habitat features in and adjacent to aquatic habitat. These features may be organic or inorganic, may be natural or constructed, and include (but are not limited to) boulders and boulder piles, rocks such as river cobble, downed trees or logs, debris jams, small mammal burrows, or leaf litter. Such activities could include, but are not limited to: Construction projects; flood control projects; vegetation management projects; or any project that requires a 404 permit from the U.S. Army Corps of Engineers. These activities could result in a reduction of the amount or distribution of these key habitat features that are important for gartersnake thermoregulation, shelter, protection from predators, and foraging opportunities.

(5) Actions and structures that would physically block movement of gartersnakes or their prey species within or between regionally proximal populations or suitable habitat. Such actions and structures include, but are not limited to: Urban, industrial, or agricultural development; reservoirs stocked with predatory fishes, bullfrogs, or crayfish; highways that do not include reptile and amphibian fencing and culverts; and walls, dams, fences, canals, or other structures that could physically block movement of gartersnakes. These actions and structures could reduce or eliminate immigration and emigration among gartersnake populations, or that of their prey species, reducing the long-term viability of populations.

(6) Actions that would directly or indirectly result in the introduction, spread, or augmentation of predatory nonnative species in gartersnake habitat, or in habitat that is hydrologically connected, even if those segments are occasionally intermittent, or introduction of other species that compete with or prey on either gartersnake species or their prey base, or introduce pathogens such as *Batrachochytrium dendrobatidis*, which is a serious threat to the amphibian prey base of northern Mexican gartersnakes. Possible actions could include, but are not limited to: Introducing or stocking nonnative, spiny-rayed fishes, bullfrogs, crayfish, tiger salamanders, or other predators of the prey base of northern Mexican or narrow-headed gartersnakes; creating or sustaining a sport fishery that encourages use of nonnative live fish, crayfish, tiger salamanders, or frogs as bait; maintaining or operating reservoirs that act as source populations for predatory nonnative species within a watershed; constructing water diversions, canals, or other water conveyances that move water from one place to another and through which inadvertent transport of predatory nonnative species into northern Mexican or narrow-headed gartersnake habitat may occur; and moving water, mud, wet equipment, or vehicles from one aquatic site to another, through which inadvertent transport of pathogens may occur. These activities directly or indirectly cause unnatural competition with and predation from nonnative predators on these gartersnake species, leading to significantly reduced recruitment within gartersnake populations and diminishment or extirpation of their prey base.

(7) Actions that would deliberately remove, diminish, or significantly alter the native or nonnative, soft-rayed fish

component of the narrow-headed gartersnake prey base within occupied habitat for a period of 7 days or longer. In general, these actions typically occur in association with fisheries management, such as the application of piscicides in conjunction with fish barrier construction. These activities are designed to completely remove target fish species from a treatment area and, if the area is fishless for an extended period of time, could result in starvation of a resident narrow-headed gartersnake population.

Exemptions

Application of Section 4(a)(3) of the Act

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that: “The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan [INRMP] prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.” There are no Department of Defense lands with a completed INRMP within the proposed critical habitat designation.

Exclusions

Consideration of Impacts Under Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making the determination to exclude a particular area, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

The first sentence in section 4(b)(2) of the Act requires that we take into consideration the economic, national security or other relevant impacts of designating any particular area as

critical habitat. We describe below the process that we undertook for taking into consideration each category of impacts and our analyses of the relevant impacts.

Consideration of Economic Impacts

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas proposed. We then identify which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.” The “without critical habitat” scenario represents the baseline for the analysis, which includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (e.g., under the Federal listing as well as other Federal, State, and local regulations). The baseline, therefore, represents the costs of all efforts attributable to the listing of the species under the Act (i.e., conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary 4(b)(2) exclusion analysis.

For this particular designation, we developed an incremental effects memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed

designation of critical habitat. The information contained in our IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the northern Mexican gartersnake and the narrow-headed gartersnake (Industrial Economics 2019, entire). We began by conducting a screening analysis of the proposed designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out the geographic areas in which the critical habitat designation is unlikely to result in probable incremental economic impacts. In particular, the screening analysis considers baseline costs (*i.e.*, absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the species. The screening analysis filters out particular areas of critical habitat that are already subject to such protections and are, therefore, unlikely to incur incremental economic impacts. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. The screening analysis also assesses whether units are unoccupied by the species and may require additional management or conservation efforts as a result of the critical habitat designation for the species which may incur incremental economic impacts. This screening analysis, combined with the information contained in our IEM, are what we consider our draft economic analysis (DEA) of the proposed critical habitat designation for the northern Mexican gartersnake and the narrow-headed gartersnake. The DEA is summarized in the narrative below.

Executive Orders (E.O.s) 12866 and 13563 direct Federal agencies to assess the costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consistent with the E.O. regulatory analysis requirements, our effects analysis under the Act may take into consideration impacts to both directly and indirectly affected entities, where practicable and reasonable. If sufficient data are available, we assess to the extent practicable the probable impacts to both directly and indirectly affected entities. As part of our

screening analysis, we considered the types of economic activities that are likely to occur within the areas likely affected by the critical habitat designation. In our evaluation of the probable incremental economic impacts that may result from the proposed designation of critical habitat for the northern Mexican gartersnake and the narrow-headed gartersnake, first we identified, in the IEM dated October 10, 2019, probable incremental economic impacts associated with the following categories of activities: (1) Federal lands management (National Park Service, U.S. Forest Service, Bureau of Land Management, Service, Department of Defense); (2) grazing (U.S. Forest Service, Bureau of Indian Affairs, Bureau of Land Management); (3) groundwater pumping (U.S. Forest Service, Bureau of Land Management, Department of Defense); (4) in-stream dams and diversions (Bureau of Land Management, Bureau of Reclamation, Service, Department of Defense); (5) dredging (Army Corps of Engineers, U.S. Forest Service, Bureau of Land Management, Natural Resources Conservation Service, National Park Service, Bureau of Indian Affairs); (6) water supply (Bureau of Reclamation, Army Corps of Engineers, Service, Bureau of Indian Affairs); (7) conservation and restoration (Natural Resources Conservation Service, Service, U.S. Forest Service, Department of Defense, Bureau of Land Management, National Park Service); (8) mining (U.S. Forest Service, Bureau of Land Management); (9) fire management (National Park Service, U.S. Forest Service, Bureau of Land Management, Bureau of Indian Affairs, Department of Defense); (10) vegetation and forest management (National Park Service, U.S. Forest Service, Bureau of Land Management); (11) transportation, including road and bridge construction and maintenance (Department of Transportation, Department of Defense, Bureau of Land Management, National Park Service, U.S. Forest Service, Customs and Border Protection, Bureau of Indian Affairs, Army Corps of Engineers); (12) recreation, including, but not limited to, sport fishing, sport-fish stocking, and off-highway vehicle use (National Park Service, U.S. Forest Service, Bureau of Land Management); (13) border protection and national security (U.S. Customs and Border Protection, Department of Defense); (14) renewable energy (Bureau of Indian Affairs, Department of Transportation, Bureau of Land Management); and (15) commercial or residential development (Army Corps of Engineers). We

considered each industry or category individually. Additionally, we considered whether their activities have any Federal involvement. Critical habitat designation generally will not affect activities that do not have any Federal involvement; under the Act, designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. In areas where the northern Mexican gartersnake or the narrow-headed gartersnake is present, Federal agencies already are required to consult with the Service under section 7 of the Act on activities they fund, permit, or implement that may affect the species. If we finalize this revised proposed critical habitat designation, consultations to avoid the destruction or adverse modification of critical habitat would be incorporated into the existing consultation process.

In our IEM, we attempted to clarify the distinction between the effects that will result from the species being listed and those attributable to the critical habitat designation (*i.e.*, difference between the jeopardy and adverse modification standards) for the northern Mexican gartersnake's and the narrow-headed gartersnake's critical habitat. The following specific circumstances help to inform our evaluation: (1) The essential physical or biological features identified for critical habitat are the same features essential for the life requisites of the species, and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to the northern Mexican gartersnake and the narrow-headed gartersnake would also likely adversely affect the essential physical or biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of this proposed designation of critical habitat.

The proposed critical habitat designation for the northern Mexican gartersnake 27,784 ac (11,244 ha) comprising 9 units. Land ownership within proposed critical habitat for the northern Mexican gartersnake in acres is broken down as follows: Federal (62 percent), State (Arizona and New Mexico) (5 percent), Tribal (0.3 percent), and private (32 percent) (see table 2a, above). All units are considered occupied.

The proposed critical habitat designation for the narrow-headed gartersnake 18,701 ac (7,568 ha)

comprising 8 units. Land ownership within proposed critical habitat for the narrow-headed gartersnake in acres is broken down as follows: Federal (66 percent), State (Arizona and New Mexico) (2 percent), Tribal (3 percent), and private (29 percent) (see table 2b, above). All units are considered occupied.

In these areas, any actions that may affect the species would also affect designated critical habitat because the species is so dependent on habitat to fulfill its life-history functions. Therefore, any conservation measures to address impacts to the species would be the same as those to address impacts to critical habitat. Consequently, it is unlikely that any additional conservation efforts would be recommended to address the adverse modification standard over and above those recommended as necessary to avoid jeopardizing the continued existence of the both gartersnakes. Further, every unit of proposed critical habitat overlaps with the ranges of a number of currently listed species and designated critical habitats. Therefore, the actual number of section 7 consultations is not expected to increase at all. The consultation would simply have to consider an additional species or critical habitat unit. While this additional analysis will require time and resources by the Federal action agency, the Service, and third parties, the probable incremental economic impacts of the critical habitat designation are expected to be limited to additional administrative costs and would not be significant (Industrial Economics 2019, entire). This is due to all units being occupied by either the northern Mexican gartersnake or the narrow-headed gartersnake.

Based on consultation history for the gartersnakes, the number of future consultations, including technical assistances, is likely to be no more than 21 per year. The additional administrative cost of addressing adverse modification in these consultations is likely to be less than \$61,000 in a given year, including costs to the Service, the Federal action agency, and third parties (Industrial Economics 2019 p. 14), with approximately \$28,000 for formal consultations, \$32,000 for informal consultations, and \$1,100 for technical assistances. This is based on an individual technical assistance costing \$410, informal consultation costing \$2,500, and formal consultation costing \$9,600. Therefore, the incremental costs associated with critical habitat are unlikely to exceed \$100 million in any

single year and, therefore, would not be significant.

To predict which units of proposed critical habitat are likely to experience the highest estimated incremental costs, we consider both the geographic distribution of historical formal consultations as well as the geographic distribution of land area. The units with the most historical formal consultations as well as the most acres of proposed critical habitat—and therefore the highest probability of intersecting with projects or activities with a Federal nexus that require consultation—are most likely to result in the highest incremental costs. Based on these criteria, Units 3 and 9 for the northern Mexican gartersnake are likely to result in the highest costs, with 30 percent and 15 percent of the 5.4 annual formal consultations occurring respectively in these units (Industrial Economics 2019, p. 16). In Unit 3, this would result in a cost of approximately \$15,500; of this, the third-party cost is estimated to be less than 20 percent, or approximately \$3,100. In Unit 9, this would result in a cost of approximately \$7,700; of this, the third-party cost is estimated to be less than 20 percent, or approximately \$1,500.

For the narrow-headed gartersnake, Units 1 and 2 are likely to result in the highest costs, with 6 percent and 11 percent of the 5.4 annual formal consultations occurring respectively in these units (Industrial Economics 2019, p. 17). In Unit 1, this would result in a cost of approximately \$3,100; of this, the third-party cost is estimated to be less than 20 percent, or approximately \$600. In Unit 2, this would result in a cost of approximately \$5,700; of this, the third-party cost is estimated to be less than 20 percent, or approximately \$1,100. Therefore, impacts that are concentrated in any geographic area or sector would not be likely because of this critical habitat designation.

As we stated earlier, we are soliciting data and comments from the public on the draft economic analysis, as well as all aspects of this revised proposed rule and our required determinations. We may revise the proposed rule or supporting documents to incorporate or address information we receive during the public comment period. In particular, we may exclude an area from critical habitat if we determine that the benefits of excluding the area outweigh the benefits of including the area, provided the exclusion will not result in the extinction of this species.

During the development of a final designation, we will consider any additional economic impact information we receive through the public comment

period, and as such areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

Exclusions Based on Economic Impacts

The first sentence of section 4(b)(2) of the Act requires the Service to consider the economic impacts (as well as the impacts on national security and any other relevant impacts) of designating critical habitat. In addition, economic impacts may, for some particular areas, play an important role in the discretionary 4(b)(2) exclusion analysis under the second sentence of section 4(b)(2). In both contexts, the Service will consider the probable incremental economic impacts of the designation. When the Service undertakes a discretionary 4(b)(2) exclusion analysis with respect to a particular area, we will weigh the economic benefits of exclusion (and any other benefits of exclusion) against any benefits of inclusion (primarily the conservation value of designating the area). The conservation value may be influenced by the level of effort needed to manage degraded habitat to the point where it could support the listed species. The Service will use its discretion in determining how to weigh probable incremental economic impacts against conservation value. The nature of the probable incremental economic impacts and not necessarily a particular threshold level triggers considerations of exclusions based on probable incremental economic impacts. For example, if an economic analysis indicates high probable incremental impacts of designating a particular critical habitat unit of low conservation value (relative to the remainder of the designation), the Services may consider exclusion of that particular unit.

Considerations Based on National Security Impacts

Section 4(a)(3)(B)(i) of the Act may not cover all Department of Defense (DoD) lands or areas that pose potential national-security concerns (e.g., a DoD installation that is in the process of revising its INRMP for a newly listed species or a species previously not covered). If a particular area is not covered under section 4(a)(3)(B)(i), national-security or homeland-security concerns are not a factor in the process of determining what areas meet the definition of “critical habitat.” Nevertheless, when designating critical habitat under section 4(b)(2), the Service must consider impacts on national security, including homeland security, on lands or areas not covered by section

4(a)(3)(B)(i). Accordingly, we will always consider for exclusion from the designation areas for which DoD, Department of Homeland Security (DHS), or another Federal agency has requested exclusion based on an assertion of national-security or homeland-security concerns.

We cannot automatically exclude requested areas. When DoD, DHS, or another Federal agency requests exclusion from critical habitat on the basis of national-security or homeland-security impacts, it must provide a reasonably specific justification of an incremental impact on national security that would result from the designation of that specific area as critical habitat. That justification could include demonstration of probable impacts, such as impacts to ongoing border-security patrols and surveillance activities, or a delay in training or facility construction, as a result of compliance with section 7(a)(2) of the Act. If the agency requesting the exclusion does not provide us with a reasonably specific justification, we will contact the agency to recommend that it provide a specific justification or clarification of its concerns relative to the probable incremental impact that could result from the designation. If the agency provides a reasonably specific justification, we will defer to the expert judgment of DoD, DHS, or another Federal agency as to: (1) Whether activities on its lands or waters, or its activities on other lands or waters, have national-security or homeland-security implications; (2) the importance of those implications; and (3) the degree to which the cited implications would be adversely affected in the absence of an exclusion. In that circumstance, in conducting a discretionary 4(b)(2) exclusion analysis, we will give great weight to national-security and homeland-security concerns in analyzing the benefits of exclusion.

Congress has provided to the Secretary of Homeland Security a number of authorities necessary to carry out the Department's border security mission. One of those authorities is found at section 102 of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, as amended ("IIRIRA"). In section 102(a) of IIRIRA, Congress provided that the Secretary of Homeland Security shall take such actions as may be necessary to install additional physical barriers and roads (including the removal of obstacles to detection of illegal entrants) in the vicinity of the United States border to deter illegal crossings in areas of high illegal entry into the United States. In section 102(b) of IIRIRA, Congress

mandated the installation of additional fencing, barriers, roads, lighting, cameras, and sensors on the southwest border. Finally, in section 102(c) of IIRIRA, Congress granted to the Secretary of Homeland Security the authority to waive all legal requirements that he determines are necessary to ensure the expeditious construction of barriers and roads authorized by section 102 of IIRIRA. On May 15, 2019, the Secretary of Homeland Security issued waivers for legal requirements covering border barrier activities directly in the vicinity of the gartersnakes' known range and proposed critical habitat (84 FR 21798).

Exclusions Based on National Security Impacts

We received comments from the U.S. Army installation at Fort Huachuca requesting that we exclude from the final designation of critical habitat the San Pedro River and Babocomari River subunits within the San Pedro River Subbasin Unit that fall within the San Pedro Riparian National Conservation Area (SPRNCA) managed by the BLM, as well as the lands owned by the Arizona State Land Department and private landowners. This includes 92 percent of the San Pedro River Subunit and all of the Babocomari River Subunit.

San Pedro River Subunit and Babocomari River Subunit

The area being requested for exclusion is part of the SPRNCA and is managed by the BLM and comprised of Federal, State, and private lands. The Army's rationale for the exclusion was that any additional restrictions to ground-water pumping and water usage could affect their ability to increase staffing when needed, or carry out missions critical to national security. The Army also stated that designation of lands within the SPRNCA would increase its regulatory burden and disrupt its operations related to national security. The Army pointed to its continued land stewardship actions and its commitment to protecting natural resources on the base. We are considering this area for exclusion based on impacts to national security.

Considerations of Other Relevant Impacts

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive due to the protection from destruction of adverse modification as a result of actions with a Federal nexus; the educational benefits of mapping essential habitat for

recovery of the listed species; and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When considering the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation, or in the continuation, strengthening, or encouragement of partnerships.

In the case of northern Mexican and narrow-headed gartersnakes, the benefits of critical habitat include public awareness of the presence of northern Mexican and narrow-headed gartersnakes and the importance of habitat protection, and, where a Federal nexus exists, increased habitat protection for northern Mexican and narrow-headed gartersnakes due to protection from destruction or adverse modification of critical habitat. Additionally, continued implementation of an ongoing management plan that provides equal to or more conservation than a critical habitat designation would reduce the benefits of including that specific area in the critical habitat designation.

We evaluate the existence of a conservation plan when considering the benefits of inclusion. We consider a variety of factors, including, but not limited to, whether the plan is finalized; how it provides for the conservation of the essential physical or biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction of the species. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including

whether there are permitted conservation plans covering the species in the area such as HCPs, safe harbor agreements, or candidate conservation agreements with assurances, or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

Based on the information provided by entities seeking exclusion, as well as any additional public comments we receive, we will evaluate whether any lands in the proposed critical habitat areas are appropriate for exclusion from the final designation under section 4(b)(2) of the Act. If the analysis indicates that the benefits of excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat, then the Secretary may exercise his discretion to exclude the lands from the final designation.

Private or Other Non-Federal Conservation Plans or Agreements and Partnerships, in General

We sometimes exclude specific areas from critical habitat designations based in part on the existence of private or other non-Federal conservation plans or agreements and their attendant partnerships. A conservation plan or agreement describes actions that are designed to provide for the conservation needs of a species and its habitat, and may include actions to reduce or mitigate negative effects on the species caused by activities on or adjacent to the area covered by the plan. Conservation plans or agreements can be developed by private entities with no Service involvement, or in partnership with the Service.

We evaluate a variety of factors to determine how the benefits of any exclusion and the benefits of inclusion are affected by the existence of private or other non-Federal conservation plans or agreements and their attendant partnerships when we undertake a discretionary 4(b)(2) exclusion analysis. A non-exhaustive list of factors that we will consider for non-permitted plans or agreements is shown below. These factors are not required elements of plans or agreements, and all items may not apply to every plan or agreement.

(i) The degree to which the plan or agreement provides for the conservation of the species or the essential physical

or biological features (if present) for the species;

(ii) Whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan or agreement will be implemented;

(iii) The demonstrated implementation and success of the chosen conservation measures;

(iv) The degree to which the record of the plan supports a conclusion that a critical habitat designation would impair the realization of benefits expected from the plan, agreement, or partnership;

(v) The extent of public participation in the development of the conservation plan;

(vi) The degree to which there has been agency review and required determinations (e.g., State regulatory requirements), as necessary and appropriate;

(vii) Whether National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) compliance was required; and

(viii) Whether the plan or agreement contains a monitoring program and adaptive management to ensure that the conservation measures are effective and can be modified in the future in response to new information.

We are considering exclusions related to the following non-permitted (e.g., no safe harbor agreement or habitat conservation plan under the Act) voluntary plans that afford some protections to one or both gartersnakes species: The AGFD management plans for Bubbling Ponds and Page Springs State Fish Hatcheries and for Planet Ranch Conservation and Wildlife Area, and Freeport McMoRan Corporation management plans for spikedace and loach minnow. We also recognize our strong conservation partner in The Nature Conservancy, who manages exclusively for native aquatic species on their properties but do not have conservation management plans in place, per se.

AGFD Management Plans

The AGFD owns lands included in proposed critical habitat for northern Mexican gartersnake within the Oak Creek Subunit (142 ac (57 ha)) in the Verde River Subbasin Unit, and within the Bill Williams River Subunit (329 ac (133 ha)) in the Bill Williams River Subbasin Unit. The AGFD has implemented management actions at its Bubbling Ponds and Page Springs State Fish Hatcheries that benefit northern Mexican gartersnakes, including research on home range and habitat use of the species, maintaining fallow ponds as habitat for the species, and creating

new gartersnake ponds as funds become available (Jones 2019). The AGFD also has an operational management plan for the Planet Ranch Conservation and Wildlife Area that they acquired in 2015 (AGFD 2018, entire). This property is along the Bill Williams River and within the Bill Williams River subunit of proposed critical habitat for northern Mexican gartersnake. The operational management plan includes habitat improvements that will be implemented and funded by the Lower Colorado River Multi-Species Conservation Program described above that could benefit the northern Mexican gartersnake (AGFD 2018, pp. 12–18). In addition, AGFD has a fully funded gartersnake biologist and has drafted a “Gartersnake Research and Management Strategy” for Arizona (Cotten *et al.* 2014, entire).

Freeport McMoRan Corporation (FMC) Management Plans

The FMC currently has a management plan that focuses on conservation for listed spikedace and loach minnow on the middle section of the upper Gila River that confers benefits to northern Mexican and narrow-headed gartersnakes (FMC 2011, p. 7). Freeport McMoRan owns 515 ac (208 ha) of proposed critical habitat for northern Mexican gartersnake on the Gila River and Duck Creek in the Upper Gila River Subbasin Unit, and 563 ac (228 ha) of proposed critical habitat for narrow-headed gartersnakes on the Gila River in the Gila River Subbasin Unit that are included in this management plan. Here, FMC manages more than 7.2 mi (11.6 km) along this section of the Gila River, much of which is owned by the Pacific Western Land Company (PWLC), a subsidiary of FMC, and is included in the U-Bar Ranch. FMC's land and water rights in the Gila/Cliff Valley support operations at the Tyrone Mine in addition to its agricultural operations along the Gila River. Under FMC's existing management system, the riparian zone adjacent to the Gila River has expanded in width, benefitting the endangered southwestern willow flycatcher and other riparian species including the two gartersnakes. Surveys show that there are low levels of nonnative fishes in the Gila/Cliff Valley segment of the Gila River stream reach as well. Specific conservation measures in the Gila River Subbasin Unit of critical habitat that confer protections to both gartersnakes include a voluntary water conservation program in which FMC has enrolled 1,450 cubic feet per second (cfs) (2,876 ac-ft) of its annual average diversion rights through 2018, and maintenance of a minimum of 25

cfs (18,099 ac-ft per year) flow levels in the Gila River during periods of drought (FMC 2011, p. 10)

The Nature Conservancy

The Nature Conservancy owns three properties that include 597 ac (242 ha) of proposed critical habitat for northern Mexican gartersnake in Arizona. These properties include the Verde Valley Preserve with 16 ac (6 ha) of proposed critical habitat for northern Mexican gartersnake in the Verde River subunit, Canelo Hills Cienega Preserve with 1.8 ac (0.7 ha) of the O'Donnell Canyon Subunit, and the Patagonia-Sonoita Creek Preserve with 123 ac (50 ha) of the Sonoita Creek Subunit. The Nature Conservancy manages these properties for the benefit of aquatic and riparian species, although not all of them have management plans.

Private or Other Non-Federal Conservation Plans Related to Permits Under Section 10 of the Act

HCPs for incidental take permits under section 10(a)(1)(B) of the Act provide for partnerships with non-Federal entities to minimize and mitigate impacts to listed species and their habitat. In some cases, HCP permittees agree to do more for the conservation of the species and their habitats on private lands than designation of critical habitat would provide alone. We place great value on the partnerships that are developed during the preparation and implementation of HCPs.

Candidate conservation agreements with assurances (CCAAs) and safe harbor agreements (SHAs) are voluntary agreements designed to conserve candidate and listed species, respectively, on non-Federal lands. In exchange for actions that contribute to the conservation of species on non-Federal lands, participating property owners are covered by an "enhancement of survival" permit under section 10(a)(1)(A) of the Act, which authorizes incidental take of the covered species that may result from implementation of conservation actions, specific land uses, and, in the case of SHAs, the option to return to a baseline condition under the agreements. The Service also provides enrollees assurances that we will not impose further land-, water-, or resource-use restrictions, or require additional commitments of land, water, or finances, beyond those agreed to in the agreements.

When we undertake a discretionary 4(b)(2) exclusion analysis, we will always consider areas covered by an approved CCAA/SHA/HCP, and generally exclude such areas from a

designation of critical habitat if three conditions are met:

1. The permittee is properly implementing the CCAA/SHA/HCP, and is expected to continue to do so for the term of the agreement. A CCAA/SHA/HCP is properly implemented if the permittee is, and has been, fully implementing the commitments and provisions in the CCAA/SHA/HCP, implementing agreement, and permit.

2. The species for which critical habitat is being designated is a covered species in the CCAA/SHA/HCP, or very similar in its habitat requirements to a covered species. The recognition that the Services extend to such an agreement depends on the degree to which the conservation measures undertaken in the CCAA/SHA/HCP would also protect the habitat features of the similar species.

3. The CCAA/SHA/HCP specifically addresses the habitat of the species for which critical habitat is being designated and meets the conservation needs of the species in the planning area.

We are aware of the following plans related to permits under section 10 of the Act that fulfill the above criteria, and are considering the exclusion of non-Federal lands covered by these plans that provide for the conservation of northern Mexican or narrow-headed gartersnakes from the final designation: AGFD's SHA for topminnow and desert pupfish in Arizona (AGFD and USFWS 2007), AGFD's SHA for Chiricahua leopard frog in Arizona (AGFD and USFWS 2006), Lower Colorado River Multi-Species HCP (Lower Colorado Multi-Species Conservation Program 2018), Pima County Multi-Species HCP (Pima County 2016), Salt River Project (SRP) Roosevelt HCP (SRP 2002) and Horseshoe-Bartlett HCP (SRP 2008), and San Rafael Ranch Low-effect HCP (Harlow 2015).

AGFD's SHA for Topminnow and Desert Pupfish in Arizona

Signed in 2007, the AGFD's SHA for topminnow and desert pupfish is an umbrella document under which individual landowners in the entire Arizona range of these native fish species on non-Federal and tribal lands may participate. Topminnow and desert pupfish are prey species of the northern Mexican gartersnake. Three private landowners within the range of the northern Mexican gartersnake hold certificates of inclusion in this SHA: San Rafael Cattle Company for the 18,365-acre (7,482-ha) San Rafael Ranch in the San Rafael Valley, a private rancher for a <1 acre (<2.5 ha) property in the San Rafael Valley, and National

Audubon Society for <1 acre (<2.5 ha) of the Appleton-Whittell Research Ranch. The San Rafael Cattle Company maintains permanent water in 44 earthen stocktanks on the San Rafael Ranch that also serve as habitat for native aquatic species. The private rancher maintains permanent water in an earthen pond on his property that serves as habitat for native aquatic species. Appleton-Whittell Research Ranch is managed for the benefit of native species through a cooperative partnership among the National Audubon Society, U.S. Forest Service (USFS), BLM, The Nature Conservancy, Swift Current Land & Cattle Co., LLC, and the Research Ranch Foundation.

There are 116 ac (47 ha) of private lands on the San Rafael Ranch and 0.1 ac (<0.1 ha) of private lands on the second private ranch included in proposed critical habitat for the northern Mexican gartersnake within the Upper Santa Cruz River Subbasin Unit. There are 214 ac (87 ha) of private lands within Appleton-Whittell Research Ranch that are proposed as critical habitat for northern Mexican gartersnake within the Upper San Pedro River Subbasin Unit. Details of subunit breakdown are in table 2a, above. San Rafael Cattle Company, the second private rancher, and Audubon Research Ranch must maintain aquatic habitats free of nonnative predators, including bullfrogs and warmwater sportfish, in accordance with each certificate of inclusion. To date, Gila topminnow have been released into two stock tanks on the San Rafael Ranch, and desert pupfish have been released into a wildlife pond on the Appleton-Whittell Research Ranch. All of these sites also provide habitat for northern Mexican gartersnake.

AGFD's SHA for Chiricahua Leopard Frog in Arizona

Signed in 2006, the AGFD SHA for Chiricahua leopard frog is an umbrella document under which individual landowners in the entire Arizona range of this species on non-Federal and tribal lands may participate. Chiricahua leopard frogs are a primary prey species of the northern Mexican gartersnake. Four private landowners within the range of the northern Mexican gartersnake hold certificates of inclusion in this SHA: San Rafael Cattle Company, The Nature Conservancy, National Audubon Society, and an additional private ranch. Under each certificate of inclusion in the SHA, the four landowners must maintain aquatic habitats free of nonnative predators, including bullfrogs and warmwater sportfish. The San Rafael Cattle

Company holds a certificate of inclusion for two pastures on 2,673 ac of the San Rafael Ranch in the San Rafael Valley. There are 5 ac (2 ha) within one of these pastures included in the unnamed drainage and Pasture 9 Tank subunit of proposed critical habitat for northern Mexican gartersnake in the Upper Santa Cruz River Subunit. This area is also covered by the San Rafael Ranch HCP, which is described below. To date, Chiricahua leopard frogs have been released into one stock tank on the San Rafael Ranch that also provides habitat for northern Mexican gartersnakes. This is in addition to the stock tank where Gila topminnows have been released on the ranch.

National Audubon Society holds a certificate of inclusion for 1,409 ac on the Appleton-Whittell Research Ranch. There are 191 ac (77 ha) on this property included in O'Donnell Canyon, Post Canyon, and Unnamed drainage & Finley Tank subunits of proposed critical habitat for northern Mexican gartersnake. To date, Chiricahua leopard frogs have been released into two locations on this property that also provide habitat for northern Mexican gartersnakes.

Another private rancher holds a certificate of inclusion for 79 ac (32 ha) on lands adjacent to the Appleton-Whittell Research Ranch. There are 15 ac (6 ha) within this ranch included in the Post Canyon Subunit of proposed critical habitat for the northern Mexican gartersnake.

The Nature Conservancy holds a certificate of inclusion for its Ramsey Canyon Preserve in Ramsey Canyon, which is adjacent to proposed critical habitat for the gartersnake in the House Pond Subunit. Both Ramsey Canyon Preserve and House Pond are occupied by a Chiricahua leopard frog metapopulation that is likely prey for the northern Mexican gartersnake in this area. Although the gartersnake has yet to be detected in Ramsey Canyon, it is currently extant in House Pond Subunit in Brown Canyon, the canyon immediately north of Ramsey Canyon.

Lower Colorado River Multi-Species HCP

The Lower Colorado River Multi-species Conservation Program (LCR MSCP) is a joint effort by 6 Federal agencies, 3 States, 6 Tribes, 36 cities, and water and power authorities with management authority for storage, delivery, and diversion of water; hydropower generation, marketing, and delivery; and land management or Native American Trust responsibilities along 400 mi (644 km) of the Lower Colorado River. In 2005, the Service

issued a 50-year incidental take permit to the Bureau of Reclamation to address take of 6 species listed under the Act and 21 other species from water delivery and power generation along the Lower Colorado River. At this time, the northern Mexican gartersnake was considered extirpated from the lower Colorado River and is not included in the LCR MSCP. In 2018, the Bureau of Reclamation amended the LCR MSCP to address effects to the northern Mexican gartersnake, which was subsequently found in 2015 at Beal Lake on Havasu National Wildlife Refuge (NWR), which is included in the permit area. The LCR MSCP includes conservation measures to avoid and minimize direct effects of implementing covered activities and the LCR MSCP on the northern Mexican gartersnake, and the potential effects of habitat loss expected to be minimized with the creation of 1,496 ac (605 ha) of replacement habitat. Lands within the Lower Colorado River Unit are covered by the LCR MSCP, but are all Federal lands and are not proposed for exclusion from critical habitat designation. However, conservation measures also include funding for habitat improvements on Planet Ranch within the Bill Williams River Subunit that could benefit the northern Mexican gartersnake.

Pima County Sonoran Desert Conservation Plan and Multi-Species HCP

Through its Sonoran Desert Conservation Plan (SDCP), Pima County, Arizona, has been implementing measures that benefit the northern Mexican gartersnake since 2001. In 2016, the Service issued a 30-year incidental take permit for the Pima County Multi-Species Habitat Conservation Plan (MSHCP) to address incidental take from residential and non-residential development, renewable energy projects, relocation of utilities, ranch-management activities, recreation, and conservation and mitigation activities. The MSHCP is part of the SDCP and addresses 44 species, including the northern Mexican gartersnake. Under the SDCP and MSCP, Pima County manages lands that fall within proposed critical habitat for the northern Mexican gartersnake. There are 12 mi (19 km) of Cienega Creek within 543 ac (220 ha) of proposed critical habitat for northern Mexican gartersnake within the Cienega Creek Subunit of the Cienega Creek Subbasin Unit. The 3,797-acre Cienega Creek Natural Preserve is owned by the Pima County Flood Control District and is protected as a "unique riparian ecosystem" by a declaration of

restrictions, covenants, and conditions by the Pima County Board of Supervisors in 1987 (Pima County Flood Control District 1987, p. 1). Management objectives of this preserve include preservation and protection of the perennial stream flow and existing riparian vegetation of Cienega Creek and its associated floodplain (Pima County Department of Transportation and Flood Control District 1994, p. 2–1). Protections to northern Mexican gartersnakes on this property exists through chapter 30 of title 16 of the Pima County Floodplain Management Ordinance (Pima County Code Ordinance Number 2010–FC5). Chapter 30 of the Floodplain Management Ordinance effectively minimizes habitat loss for northern Mexican gartersnake by protecting riparian habitat from development and requiring mitigation for disturbances to riparian habitat that exceed one-third of an acre. Pima County requested that lands within the Cienega Creek Natural Preserve remain in critical habitat for the northern Mexican gartersnake.

Salt River Project Roosevelt and Horseshoe-Bartlett HCPs

In 2003, the Service issued an incidental take permit for the SRP Roosevelt HCP (SRP 2002) to address incidental take from operation of Roosevelt Dam and Lake for four riparian bird species, including southwestern willow flycatcher, bald eagle, Yuma clapper rail, and western yellow-billed cuckoo. As part of its mitigation measures for these bird species under the Roosevelt HCP, SRP has acquired and will manage in perpetuity 471 ac (191 ha) of riparian and adjacent upland habitat offsite along the Gila and Verde Rivers, some of which may also confer benefits to the two gartersnakes (SRP 2002, p. 143; SRP 2013, p. 17).

Subsequently in 2008, the Service issued another incidental take permit to SRP for the SRP Horseshoe-Bartlett HCP to address incidental take from the operation of Horseshoe and Bartlett reservoirs of listed species as well as both gartersnakes, which were not listed at the time of permit issuance. Mitigation measures in the Verde River watershed included in the Horseshoe-Bartlett HCP designed to benefit the two gartersnakes include reducing nonnative fish reproduction, recruitment, and movement at Horseshoe Reservoir; increasing native fish populations, distribution, and relative abundance in the Verde River; and working to maintain water flows in the Verde River above Horseshoe Reservoir through watershed management activities (SRP

2008, pp. 193–196). Mitigation also included acquisition and management in perpetuity of 50 ac (20 ha) of riparian habitat along the Verde River and 150 ac (61 ha) of riparian habitat offsite along the Gila River, some of which may benefit the two gartersnakes (SRP 2008, pp. 179–184). Private lands, as well as acquisitions or conservation easements made to date for both of SRP's HCPs that fall within proposed critical habitat for northern Mexican gartersnake, include 515 ac (208 ha) of private lands in the Gila River and Duck Creek subunits, and 96 ac (39 ha) of private lands in the Verde River Subunit (SRP 2014, pp. 27–30; SRP 2014a, p. 11). SRP-owned lands that fall within proposed critical habitat for narrow-headed gartersnake include 563 ac (228 ha) of the Gila River Subunit. Management actions on the Camp Verde Riparian Preserve property on the Verde River that may benefit the two gartersnakes include acquiring water rights; creating conservation easements; maintaining fencing around riparian areas, including log-jams that allow normal hydrologic processes to continue unimpeded while excluding livestock; planting native species above riparian areas to improve watershed conditions; and monitoring groundwater and stream flow levels.

San Rafael Ranch Low-Effect HCP

In 2016, the Service issued a 30-year incidental take permit for the San Rafael Ranch low-effect HCP (Harlow 2015) to address incidental take from cattle ranching operations of Sonoran tiger salamander, northern Mexican gartersnake, Gila chub, and Huachuca springsnail. Measures to minimize take emphasize the use of riparian pastures and dispersed grazing, maintaining existing and developing new livestock ponds that also serve as habitat for covered species including the northern Mexican gartersnake, and undertaking recovery actions for listed species in cooperation with the Service and AGFD. The incidental take permit boundary includes the 18,500-acre San Rafael Ranch. Portions of the Santa Cruz River, Unnamed drainage and Pasture 9 Tank, and Unnamed drainage and Sheehy Spring subunits (116 ac (47 ha)) of proposed critical habitat for northern Mexican gartersnake fall within the incidental take permit boundary. Implementation of winter grazing only in riparian pastures along the Santa Cruz River and managed grazing of upland pastures would maintain habitat for northern Mexican gartersnakes. Maintaining fencing and managing trespass cattle limits grazing of riparian pastures to the non-growing season and lessens impacts to proposed critical

habitat. Maintenance of stock tanks will also help address nonnative predator populations in proposed critical habitat.

Tribal Lands

Several Executive Orders, Secretarial Orders, and policies relate to working with Tribes. These guidance documents generally confirm our trust responsibilities to Tribes, recognize that Tribes have sovereign authority to control tribal lands, emphasize the importance of developing partnerships with tribal governments, and direct the Service to consult with Tribes on a government-to-government basis.

A joint Secretarial Order that applies to both the Service and the National Marine Fisheries Service (NMFS), Secretarial Order 3206, *American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act* (June 5, 1997) (S.O. 3206), is the most comprehensive of the various guidance documents related to tribal relationships and Act implementation, and it provides the most detail directly relevant to the designation of critical habitat. In addition to the general direction discussed above, S.O. 3206 explicitly recognizes the right of Tribes to participate fully in the listing process, including designation of critical habitat. The Order also states, "Critical habitat shall not be designated in such areas unless it is determined essential to conserve a listed species. In designating critical habitat, the Services shall evaluate and document the extent to which the conservation needs of the listed species can be achieved by limiting the designation to other lands." In light of this instruction, when we undertake a discretionary 4(b)(2) exclusion analysis, we will always consider exclusions of tribal lands under section 4(b)(2) of the Act prior to finalizing a designation of critical habitat, and will give great weight to tribal concerns in analyzing the benefits of exclusion.

However, S.O. 3206 does not preclude us from designating tribal lands or waters as critical habitat, nor does it state that tribal lands or waters cannot meet the Act's definition of "critical habitat." We are directed by the Act to identify areas that meet the definition of "critical habitat" (*i.e.*, areas occupied at the time of listing that contain the essential physical or biological features that may require special management or protection and unoccupied areas that are essential to the conservation of a species), without regard to landownership. While S.O. 3206 provides important direction, it

expressly states that it does not modify the Secretaries' statutory authority.

Fort Apache Native Fish Management Plan

The White Mountain Apache Tribe's Fort Apache Indian Reservation (Fort Apache) encompasses approximately 1,680,000 ac (679,872 ha) in east-central Arizona. Fort Apache includes 6 percent of the Black River Subbasin Unit (92 ac (37 ha)) and 33 percent of Canyon Creek Unit (77 ac (31 ha)) of proposed critical habitat for narrow-headed gartersnake. The Salt River and Black River serve as the boundary between Fort Apache and the San Carlos Apache Reservations. In May 2014, the White Mountain Apache Tribe and the Service drafted a native fish's management plan for Fort Apache that includes the federally endangered loach minnow, federally threatened Apache trout, and four other native fish species currently extant on Fort Apache (White Mountain Apache Tribe and Service 2014, p. 2). This plan supersedes their 2000 Loach Minnow Management Plan (White Mountain Apache Tribe 2000, entire). The draft 2014 management plan identifies several Tribal regulation and management efforts they think are beneficial to loach minnow and would also confer benefits to the gartersnakes, including Resolution 89–149, which designates streams and riparian zones as Sensitive Fish and Wildlife areas, requiring that authorized programs ensure these zones remain productive for fish and wildlife. The White Mountain Apache Tribe additionally adopted a Water Quality Protection Ordinance in 1999 to "promote the health of Tribal waters and the people, plants and wildlife that depend on them through holistic management and sustainable use." The draft 2014 management plan also includes an objective to identify Native Fish Management Units within each of the watersheds on Fort Apache and develop initial management recommendations for each Native Fish Management Unit, considering native fish and aquatic and riparian obligates, including, but not limited to, species such as leopard frogs and gartersnakes (White Mountain Apache Tribe and AFWCO 2014, p. 21).

San Carlos Apache Tribe Fishery Management Plan

The San Carlos Apache Reservation encompasses approximately 1,850,000 ac (748,668 ha) in east-central Arizona. This reservation includes 6 percent (102 ac (41 ha)) of the Black River Subbasin Unit and 70 percent (236 ac (96 ha)) of the Eagle Creek Unit of proposed critical habitat for narrow-headed gartersnake.

The Salt River and Black River serve as the boundary between the San Carlos Apache Reservation and Fort Apache. The San Carlos Apache Tribe Fishery Management Plan (FMP; San Carlos Apache Tribe 2005, entire) was adopted in 2005, via Tribal Resolution SEP-05-178. This management plan addresses both sportfish and native fish management on the San Carlos Apache Reservation. Although sportfish have not been intentionally stocked in streams on the reservation since 1975, sportfish continue to be stocked in lentic waters including lakes, ponds, and stocktanks throughout the San Carlos Apache Reservation. The FMP has several goals relevant to native fish management, which may confer benefits to the gartersnakes by supporting conservation of their prey species. These goals include development and implementation of integrated, watershed-based approaches to fishery resource management; conserving, enhancing, and maintaining existing native fish populations and their habitats as part of the natural diversity of the San Carlos Apache Reservation, and preventing, minimizing, or mitigating adverse impacts to all native fishes, especially threatened or endangered species, and their habitats when consistent with the Reservation as a permanent home and abiding place for San Carlos Apache Tribal members; restoring extirpated native fishes and degraded natural habitats when appropriate and economically feasible; increasing Tribal awareness of native fish conservation and values; and aggressively pursuing funding adequate

to support all Tribal conservation and management activities for all native fishes and their habitats (San Carlos Apache Tribe 2005, pp. 63-71).
 Yavapai-Apache Nation Tribal Resolution 46-2006
 The Yavapai-Apache Nation includes 207 ac (84 ha) of proposed critical habitat for northern Mexican gartersnake in the Verde River Subunit. Yavapai-Apache Nation approved Tribal Resolution 46-2006, “confirming and declaring a riparian conservation corridor and management plan for the Verde River” that affords protections to both gartersnakes. This resolution requires the Yavapai-Apache Nation to “preserve the physical and biological features found within the riparian corridor of the Verde River essential to native wildlife species, including species listed as endangered or threatened by the federal government under the Endangered Species Act” (Yavapai-Apache Nation 2006, p. 1). The riparian corridor is defined as a 300-ft (91-m) buffer from centerline of the Verde River on their lands (Yavapai-Apache Nation 2006, p. 1). Within this corridor, the Yavapai-Apache resolves to coordinate with the Service on actions that may adversely impact habitat essential to the conservation and/or recovery of federally listed species (Yavapai-Apache Nation 2006, p. 2). In addition, stocking of nonnative fishes is specifically prohibited by the resolution (Yavapai-Apache Nation 2006, p. 2).
 We scheduled a meeting with these tribes and other interested tribes prior to publication of this revised proposed

rule to give them as much time as possible to comment.
Summary of Exclusion We Are Considering
 Based on the information provided by entities seeking exclusion, as well as any additional public comments we receive, we will evaluate whether certain lands in the proposed critical habitat are appropriate for exclusion from the final designation under section 4(b)(2) of the Act. If the analysis indicates that the benefits of excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat, then the Secretary may exercise his discretion to exclude the lands from the final designation. The areas described above that we are considering excluding under section 4(b)(2) of the Act from the final critical habitat designation 7,405 ac (2,997 ha) for northern Mexican gartersnake and 1,072 ac (434 ha) for narrow-headed gartersnake, which represents 27 percent and 6 percent of the proposed designation for each gartersnake species, respectively. Tables 3a and 3b, below, provide approximate areas (ac, ha) of lands that meet the definition of critical habitat for each gartersnake species but are under our consideration for possible exclusion under section 4(b)(2) of the Act from the final critical habitat rule. Additionally, we will consider excluding any other areas where we determine that the benefits of exclusion outweigh the benefits of inclusion based upon the information we have when we finalize a critical habitat designation.

TABLE 3a—AREAS IDENTIFIED FOR POSSIBLE EXCLUSION FOR THE NORTHERN MEXICAN GARTERSNAKE BY CRITICAL HABITAT UNIT AND SUBUNIT

Unit subunit	Landowner, property name	Ownership type	Area in acres (hectares)	Portion of unit or subunit
Upper Gila River Subbasin Unit				
Gila River	Freeport McMoRan (Freeport McMoRan Corporation management plans).	Private	500 (202)	48%
Duck Creek	Freeport McMoRan (Freeport McMoRan Corporation management plans).	Private	15 (6)	14%
Unit total being considered for exclusion.	.....	.....	515 (208)	45%
Verde River Subbasin Unit				
Verde River	The Nature Conservancy, Verde Valley Preserve and Verde Valley property.	Private	16 (6)	0.4%
	Salt River Project, Camp Verde Riparian Preserve (Roosevelt and Horseshoe-Bartlett HCPs).	Private	96 (39)	2%
	Yavapai-Apache Nation	Tribal	207 (84)	5%
Oak Creek	Arizona Game and Fish Department, Bubbling Ponds Hatchery and Page Springs Hatchery (State Wildlife Action Plan).	State	142 (57)	14%

TABLE 3a—AREAS IDENTIFIED FOR POSSIBLE EXCLUSION FOR THE NORTHERN MEXICAN GARTERSNAKE BY CRITICAL HABITAT UNIT AND SUBUNIT—Continued

Unit subunit	Landowner, property name	Ownership type	Area in acres (hectares)	Portion of unit or subunit
Unit total being considered for exclusion.	.....	.....	460 (186)	9%
Bill Williams River Subbasin Unit				
Bill Williams River	Arizona Game and Fish Department, Planet Ranch Conservation and Wildlife Area (State Wildlife Action Plan).	State	329 (133)	18%
Unit total being considered for exclusion.	.....	.....	329 (133)	8%
Cienega Creek Subbasin Unit				
Cienega Creek	Pima County, Cienega Creek Natural Preserve (Pima County MSCP).	Private	543 (220)	34%
Unit total being considered for exclusion.	.....	.....	543 (220)	27%
Upper Santa Cruz River Subbasin Unit				
Sonoita Creek	The Nature Conservancy, Patagonia-Sonoita Creek Preserve.	Private	123 (50)	55%
Santa Cruz River	San Rafael Cattle Company, San Rafael Ranch (San Rafael Ranch Low-effect HCP).	Private	91 (37)	57%
Unnamed Drainage and Pasture 9 Tank.	San Rafael Cattle Company, San Rafael Ranch (AGFD's SHA, San Rafael Ranch Low Effect HCP).	Private	5 (2)	12%
Unnamed Drainage and Sheehy Spring.	San Rafael Cattle Company, San Rafael Ranch (AGFD's SHA, San Rafael Ranch Low Effect HCP).	Private	20 (8)	80%
Unnamed Wildlife Pond	Private Ranch (AGFD's SHA)	Private	0.07 (0.03)	100%
Unit total being considered for exclusion.	.....	.....	238 (96)	48%
Upper San Pedro River Subbasin Unit				
San Pedro River (Fort Huachuca requested exclusion).	Bureau of Land Management, San Pedro Riparian National Conservation Area (national security).	Federal	4,496 (1,820)	88%
Babocomari River (Fort Huachuca requested exclusion).	Private (national security)	Private	215 (87)	4%
	Bureau of Land Management, San Pedro Riparian National Conservation Area (national security).	Federal	195 (79)	49%
	Arizona State Land Department (national security).	State	8 (3)	2%
O'Donnell Canyon	Private (national security)	Private	199 (81)	49%
	National Audubon Society, Appleton-Whittell Research Ranch (AGFD's SHA).	Private	173 (70)	72%
Post Canyon	The Nature Conservancy, Canelo Hills Preserve.	Private	1.8 (0.7)	0.8
	National Audubon Society, Appleton-Whittell Research Ranch (AGFD's SHA).	Private	15 (6)	19%
	Private Ranch (AGFD's SHA)	Private	15 (6)	19%
Unnamed Drainage and Finley Tank.	National Audubon Society, Appleton-Whittell Research Ranch (AGFD's SHA).	Private	3 (1)	100%
Unit total being considered for exclusion.	.....	.....	5,320 (2,152)	91%
Grand Total .....	.....	.....	7,405 (2,997)	27%

TABLE 3b—AREAS CONSIDERED FOR EXCLUSION FOR THE NARROW-HEADED GARTERSNAKE BY CRITICAL HABITAT UNIT AND SUBUNIT

Unit subunit	Landowner, property name	Ownership type	Area in acres (hectares)	Portion of unit or subunit
Upper Gila River Subbasin Unit				
Gila River	Freeport McMoRan (Freeport McMoRan Corporation management plans).	Private	563 (228)	10%
Unit total being considered for exclusion.	.....	.....	563 (228)	10%
Eagle Creek Unit				
Eagle Creek	San Carlos Apache Tribe	Tribal	236 (96)	70%
Unit total being considered for exclusion.	.....	.....	236 (96)	70%
Black River Subbasin Unit				
Black River	*San Carlos Apache Tribe	Tribal	55 (22)	7%
Bear Wallow Creek	White Mountain Apache Tribe	Tribal	56 (23)	7%
	San Carlos Apache Tribe	Tribal	48 (19)	27%
Reservation Creek	White Mountain Apache Tribe	Tribal	<.01 (<.01)	<.01%
	White Mountain Apache Tribe	Tribal	36 (15)	27%
Unit total being considered for exclusion.	.....	.....	195 (79)	12%
Canyon Creek Unit				
Canyon Creek	White Mountain Apache Tribe	Tribal	77 (31)	33%
Unit total being considered for exclusion.	.....	.....	77 (31)	33%
Grand Total .....	.....	.....	1,072 (434)	6%

We specifically request comments on the inclusion or exclusion of such areas in our final designation of critical habitat for the northern Mexican gartersnake and narrow-headed gartersnake (see *Public Comments* under Request for Information, above).

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your

comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order (E.O.) 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant,

feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this proposed rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 et seq.), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact

on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Under the RFA, as amended, and as understood in the light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking only on those entities directly regulated by the rulemaking itself and, therefore, are not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies would be directly regulated if we adopt this revised proposed critical habitat designation. There is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies

are not small entities. Therefore, because no small entities would be directly regulated by this rulemaking, the Service certifies that, if made final as proposed, the revised proposed critical habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether this revised proposed designation would result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that, if made final, the revised proposed critical habitat designation will not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required.

Executive Order 13771—Reducing Regulation and Controlling Regulatory Costs

This proposed rule is not an Executive Order (E.O.) 13771 (“Reducing Regulation and Controlling Regulatory Costs”) (82 FR 9339, February 3, 2017) regulatory action because this rule is not significant under E.O. 12866.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. In our economic analysis, we did not find that the proposed critical habitat designation would significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.), we make the following finding:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a

condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not think that this rule would significantly or uniquely affect small governments. The lands being proposed for critical habitat designation are owned by Pima County, private landowners, Tribes, the States of New Mexico and Arizona, and the Federal Government (U.S. Forest Service, National Park Service, Bureau of Land Management, and U.S. Fish and

Wildlife Service). In addition, based in part on an analysis conducted for the previous proposed designation of critical habitat and extrapolated to this designation, we do not expect this rule to significantly or uniquely affect small governments. Small governments will be affected only to the extent that any programs or actions requiring or using Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. Further, we do not believe that this rule would significantly or uniquely affect small governments because it will not produce a Federal mandate of \$100 million or greater in any year, that is, it is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments and, as such, a Small Government Agency Plan is not required. Therefore, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for northern Mexican gartersnake and narrow-headed gartersnake in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed for the proposed designation of critical habitat for northern Mexican gartersnake and narrow-headed gartersnake, and it concludes that, if adopted, this designation of critical habitat does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this proposed rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this proposed critical habitat designation with, appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the proposed rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The proposed designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical or biological features of the habitat necessary for the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) of the Act would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule would not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the

Act. To assist the public in understanding the habitat needs of the species, this proposed rule identifies the elements of physical or biological features essential to the conservation of the species. The proposed designated areas of critical habitat are presented on maps, and the proposed rule provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) is not required. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). However, when the range of the species includes States within the Tenth Circuit, such as that of northern Mexican and narrow-headed gartersnakes, under the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we undertake a NEPA analysis for critical habitat designation. We invite the public to comment on the extent to which this proposed critical habitat designation may have a significant impact on the human environment, or fall within one of the categorical exclusions for actions that have no individual or cumulative effect on the quality of the human environment.

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive

Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

The tribal lands in Arizona included in this proposed designation of critical habitat are the lands of the White Mountain Apache Tribe, San Carlos Apache Tribe, and Yavapai Apache Nation. We used the criteria described above under Criteria Used To Identify Critical Habitat to identify tribal lands that are occupied by the northern Mexican and narrow-headed gartersnakes that contain the features essential for the conservation of these species. We began government-to-government consultation with these tribes on November 29, 2011, in a pre-notification letter informing the tribes that we had begun an evaluation of the northern Mexican and narrow-headed

gartersnakes for listing purposes under the Act. We will consider these areas for exclusion from the final critical habitat designation to the extent consistent with the requirements of section 4(b)(2) of the Act. We sent notification letters on March 12, 2013, to each tribe that described the exclusion process under section 4(b)(2) of the Act and invited them to meet to discuss the listing process and engage in conversation with us about the proposal to the extent possible without disclosing pre-decisional information. During an April 2, 2019, coordination meeting with these tribes, we informed them that we were revising the proposed critical habitat designation for the two gartersnakes and would have meetings with them as early as legally possible regarding the revisions. We plan to meet with these tribes and any other interested tribes in early April 2020 so that we can provide ample time to comment. We will continue to work with tribal entities during the development of a final rule for the designation of critical habitat for the northern Mexican and narrow-headed gartersnakes

References Cited

A complete list of references cited in this rulemaking is available on the internet at <http://www.regulations.gov> and upon request from the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rulemaking are the staff members of the Arizona Ecological Services Field Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. Amend § 17.11(h) by revising the entries for “Gartersnake, narrow-headed” and “Gartersnake, northern Mexican” under REPTILES in the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * *				
REPTILES				
* * * * *				
Gartersnake, narrow-headed ...	<i>Thamnophis rufipunctatus</i>	Wherever found	T	79 FR 38677, 7/8/2014; 50 CFR 17.95(c). ^{CH}
Gartersnake, northern Mexican	<i>Thamnophis eques megalops</i>	Wherever found	T	79 FR 38677, 7/8/2014; 50 CFR 17.42(g); ^{4d} 50 CFR 17.95(c). ^{CH}
* * * * *				

■ 3. In § 17.95, amend paragraph (c) by adding, in the same alphabetical order that the species appear in the table at § 17.11(h), entries for “Narrow-headed Gartersnake (*Thamnophis rufipunctatus*)” and “Northern Mexican Gartersnake (*Thamnophis eques megalops*)” to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *
(c) *Reptiles.*
* * * * *

Narrow-Headed Gartersnake (*Thamnophis rufipunctatus*)

(1) Critical habitat units are depicted for Apache, Coconino, Gila, Graham, Greelee, and Yavapai Counties in Arizona, and Catron, Grant, and Hidalgo Counties in New Mexico, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of narrow-headed gartersnake consist of the following components:

(i) Perennial streams or spatially intermittent streams that provide both aquatic and terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of narrow-headed gartersnakes and contain:

(A) Pools, riffles, and cobble and boulder substrate, with low amount of fine sediment and substrate embeddedness;

(B) Organic and natural inorganic structural features (e.g., cobble bars, rock piles, large boulders, logs or

stumps, aquatic and wetland vegetation, logs, and debris jams) in the stream channel for basking, thermoregulation, shelter, prey base maintenance, and protection from predators;

(C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of narrow-headed gartersnakes is not inhibited; and

(D) Terrestrial habitat within 89 feet (27 meters) of the active stream channel that includes boulder fields, rocks, and rock structures containing cracks and crevices, small mammal burrows, downed woody debris, and vegetation for thermoregulation, shelter sites, and protection from predators.

(ii) Hydrologic processes that maintain aquatic and riparian habitat through:

(A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network, as well as maintenance of native fish populations; and

(B) Physical hydrologic and geomorphic connection between the active stream channel and its adjacent terrestrial areas.

(iii) Prey base of native fishes, or soft-rayed, nonnative fish species.

(iv) An absence of nonnative predators, such as fish species of the families Centrarchidae and Ictaluridae, bullfrogs, and crayfish, or occurrence of nonnative predators at low enough densities such that recruitment of narrow-headed gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.

(v) Elevations of 2,300 to 8,200 feet (700 to 2,500 meters).

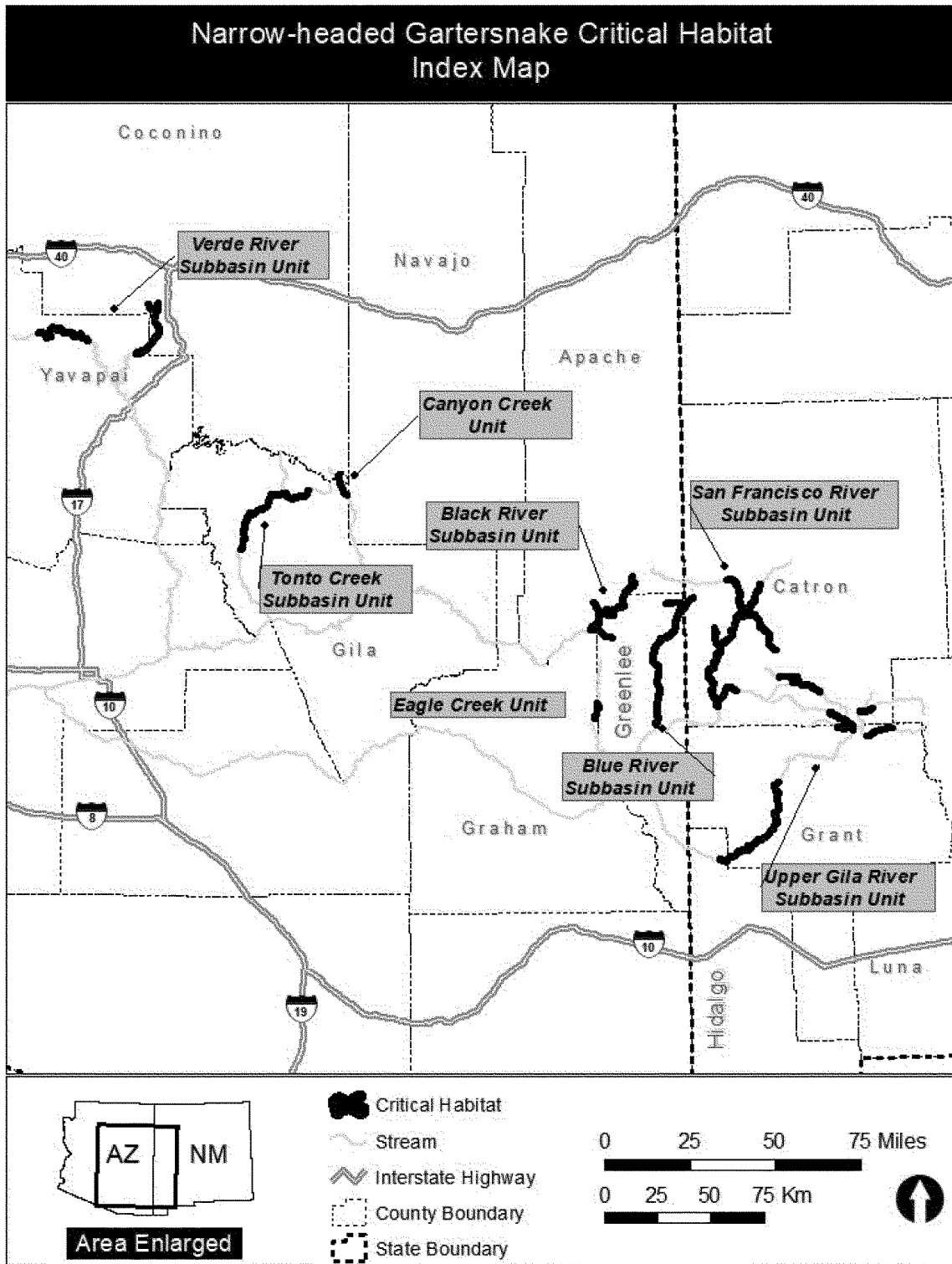
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) *Critical habitat map units.* Data layers defining map units included the U.S. Geological Survey's 7.5' quadrangles, National Hydrography Dataset and National Elevation Dataset; the Service's National Wetlands Inventory dataset; and aerial imagery from Google Earth Pro. Line locations for lotic streams (flowing water) and drainages are depicted as the "Flowline" feature class from the National Hydrography Dataset geodatabase. The active channel along a stream is depicted as the "Wetlands" feature class from the Service's National Wetlands Inventory dataset. Any discrepancies between the "Flowline" and "Wetlands" feature classes were

resolved using aerial imagery from Google Earth Pro. Elevation range is masked using the "Elev_Contour" feature class of the National Elevation Dataset. The administrative boundaries for Arizona and New Mexico were obtained from the Arizona Land Resource Information Service and New Mexico Resource Geographic Information System, respectively. This includes the most current (as of the effective date of this rule) geospatial data available for land ownership, counties, States, and streets. Locations depicting critical habitat are expressed as decimal degree latitude and longitude in the World Geographic Coordinate System projection using the 1984 datum (WGS84). The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site at <http://www.fws.gov/southwest/es/arizona/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0011, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) *Note:* Index map follows:

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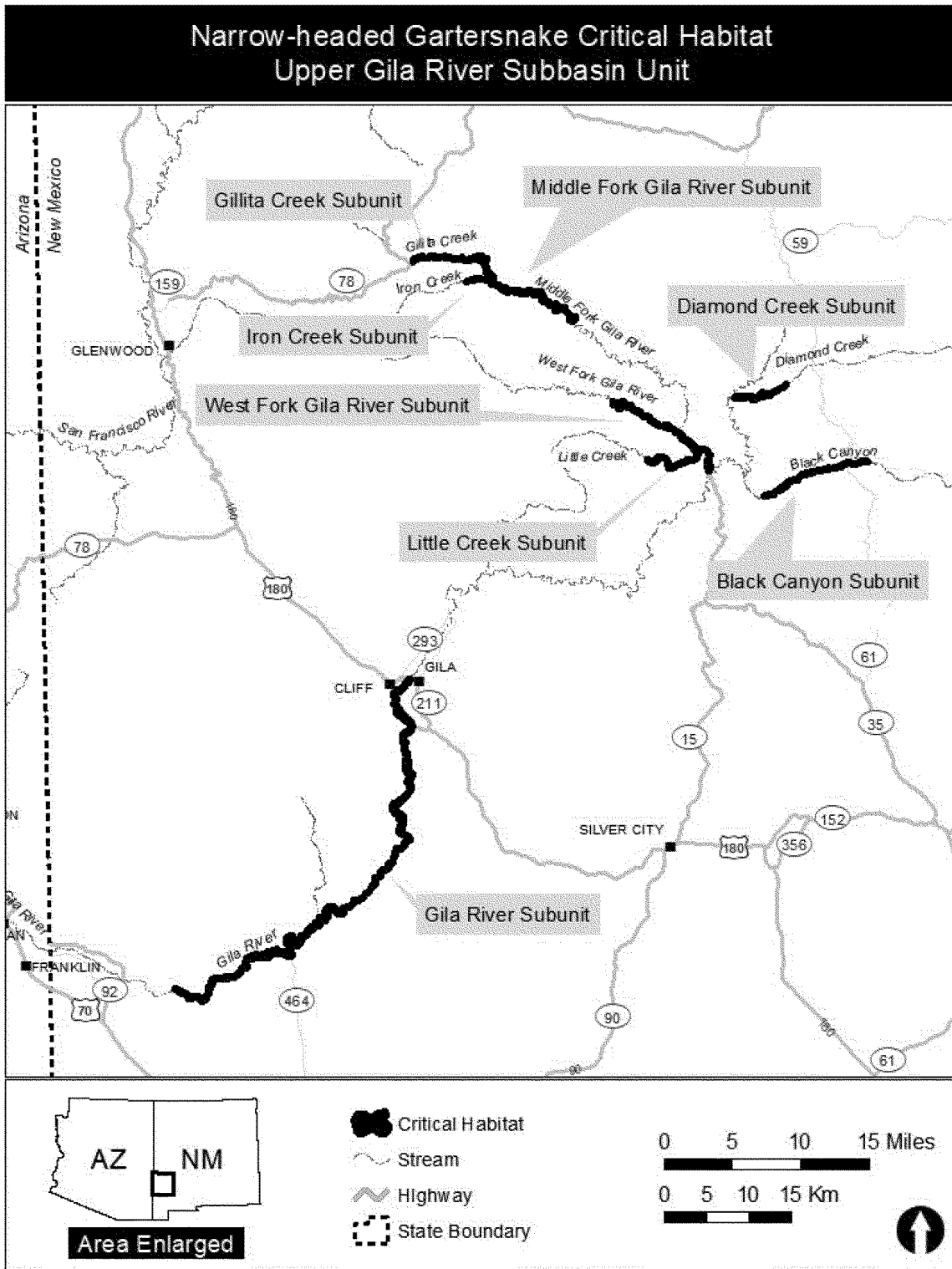
(6) Unit 1: Upper Gila River Subbasin Unit, Grant and Hidalgo Counties, New Mexico.

(i) *General description:* Unit 1 consists of 5,429 ac (2,197 ha) in Grant

and Hidalgo Counties, and is composed of lands in Federal (2,827 ac (1,144 ha)), State (278 ac (113 ha)), and private (2,323 ac (940 ha)) ownership in eight subunits west of the town of Glenwood,

north of Silver City, and South of Gila and Cliff.

(ii) Map of Unit 1 follows:

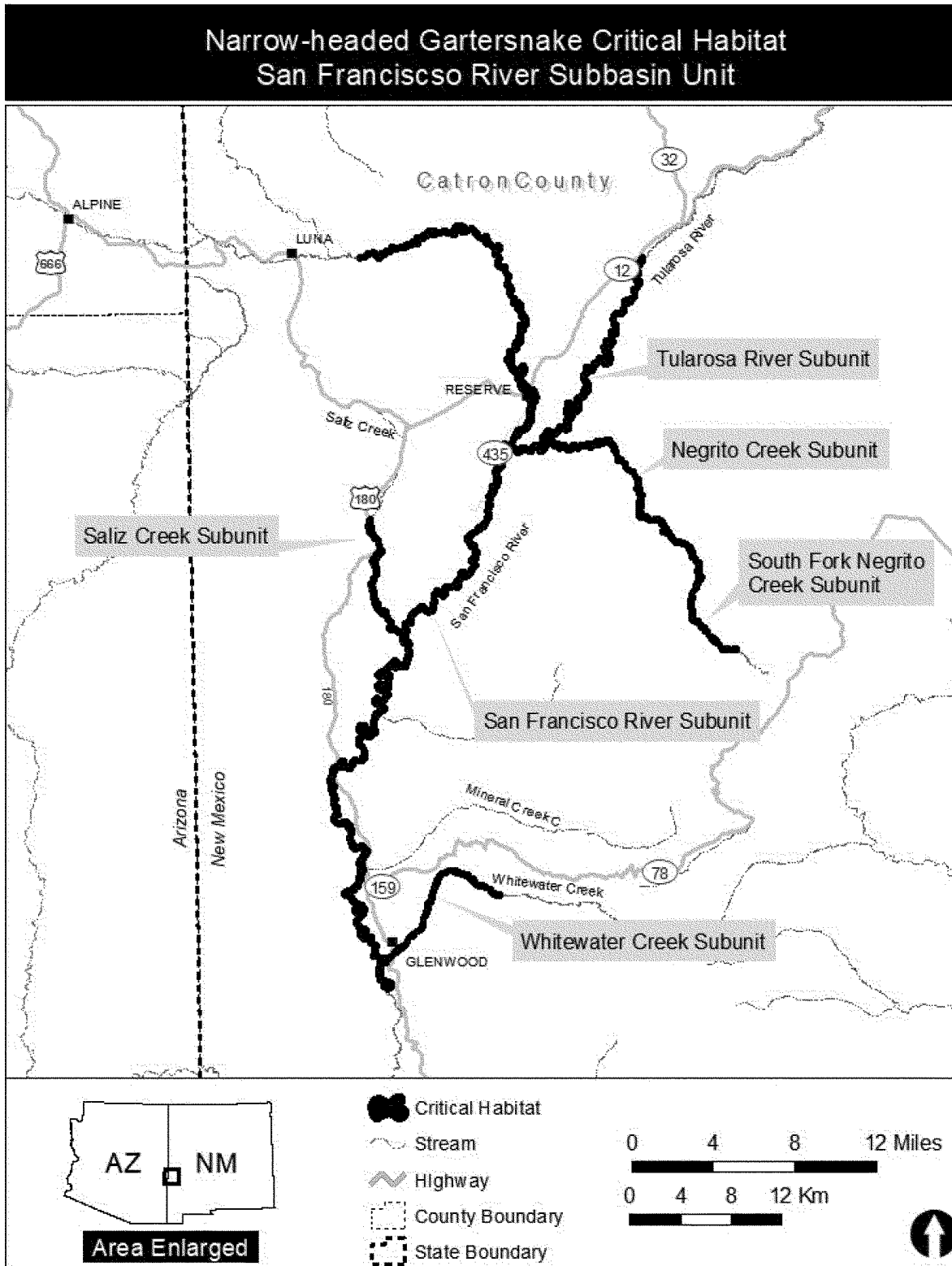


(7) Unit 2: San Francisco River Subbasin Unit, Catron County, New Mexico.

(i) *General description:* Unit 2 consists of 4,905 ac (1,985 ha) in Catron County, and is composed of lands in Federal (2,753 ac (1,114 ha)) and private

(2,152 ac (871 ha)) ownership in six subunits near the towns of Glenwood and Reserve.

(ii) Map of Unit 2 follows:



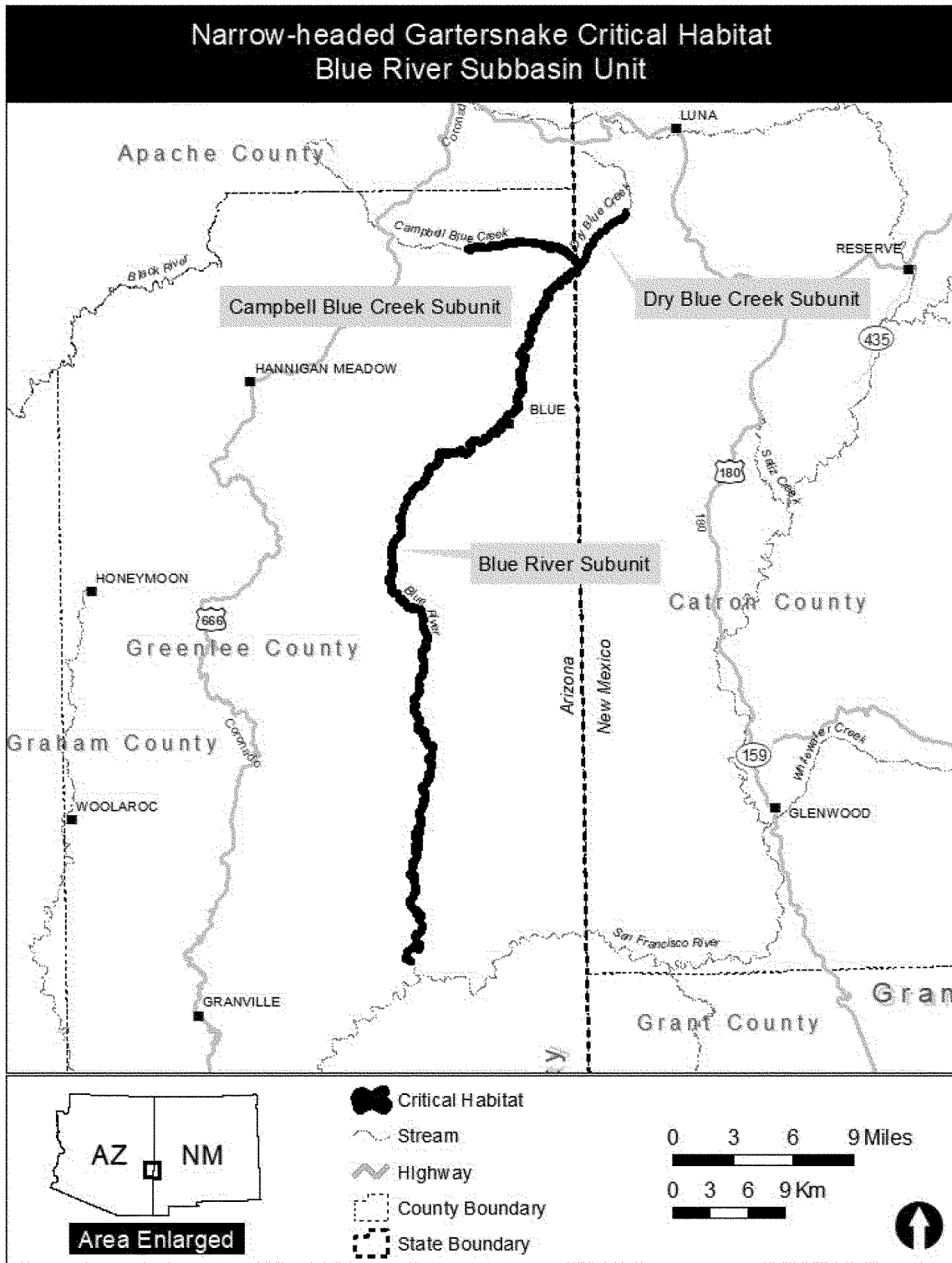
(8) Unit 3: Blue River Subbasin Unit, Greenlee County, Arizona, and Catron County, New Mexico.

(i) *General description:* Unit 3 consists of 2,971 ac (1,202 ha) in

Greenlee County, Arizona, and Catron County, New Mexico, and is composed of lands in Federal (2,510 ac (1,016 ha)) and private (460 ac (186 ha)) ownership

in three subunits near the towns of Blue, Arizona, and Luna, New Mexico.

(ii) Map of Unit 3 follows:



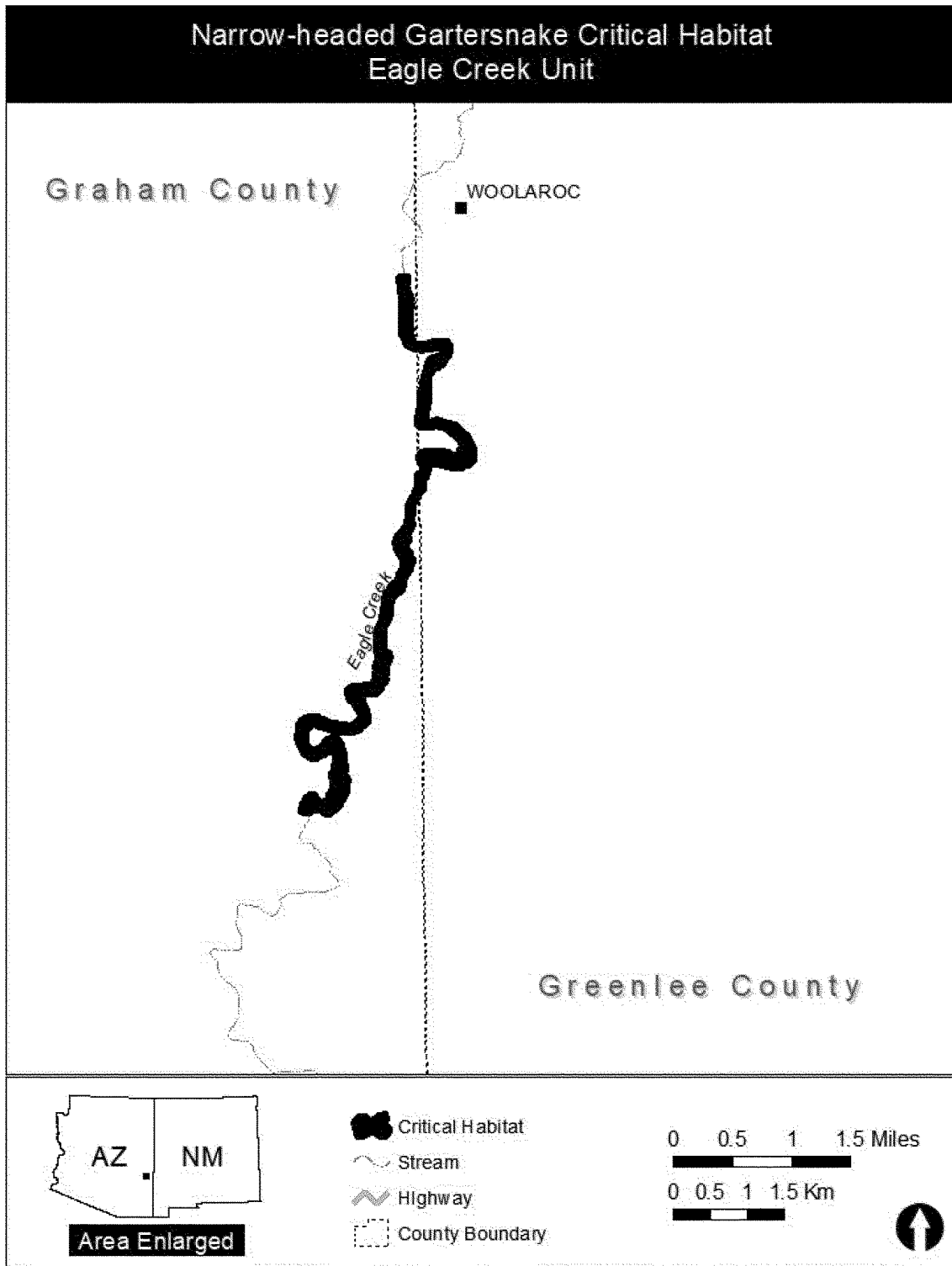
(9) Unit 4: Eagle Creek Unit, Graham and Greenlee Counties, Arizona.

(i) *General description:* Unit 4 consists of 336 ac (136 ha) in Graham

and Greenlee Counties, and is composed of lands in Federal (99 ac (40 ha)), Tribal (236 ac (96 ha)), and private (1 ac

(<1 ha)) ownership near the town of Morenci.

(ii) Map of Unit 4 follows:



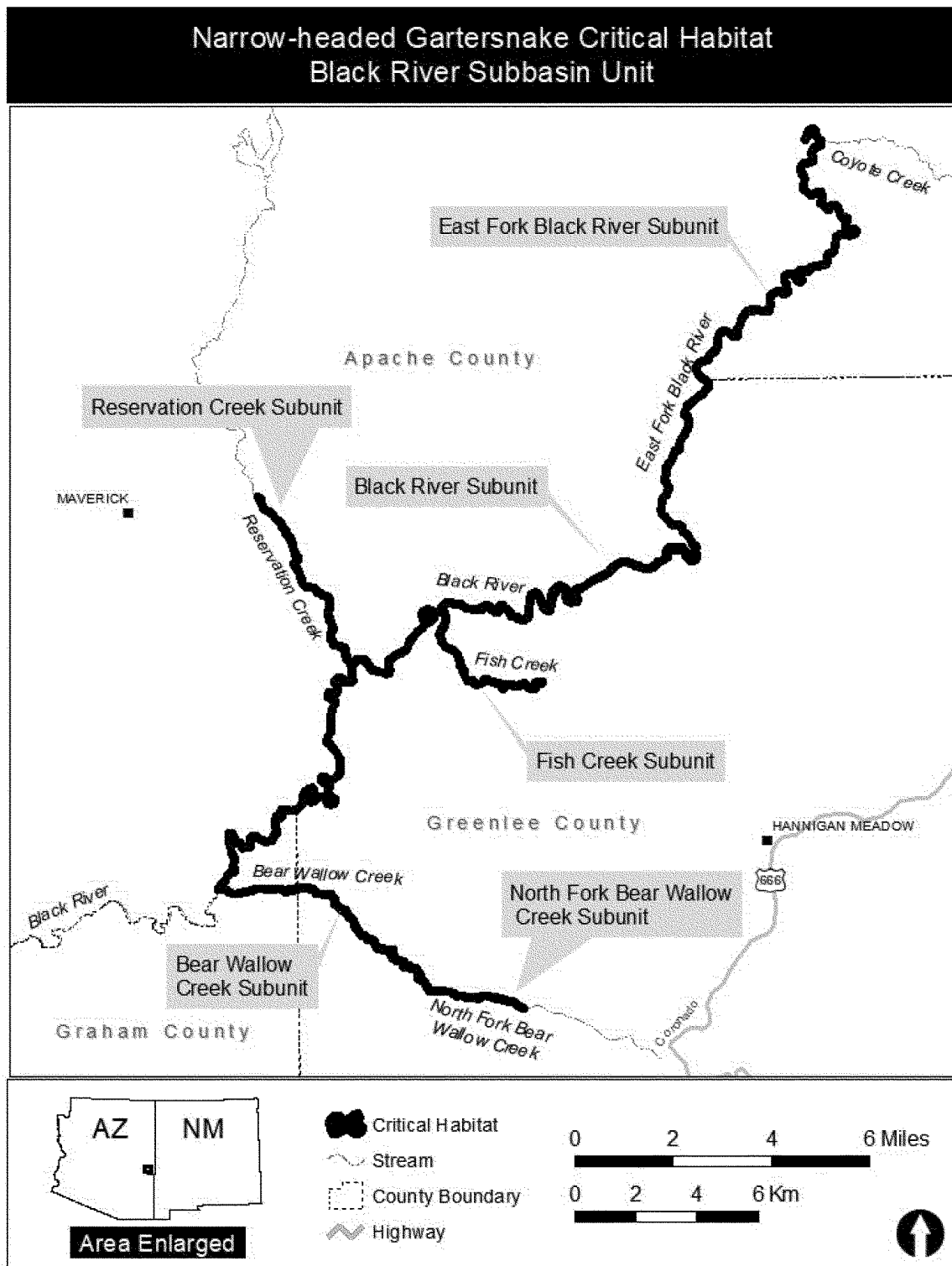
(10) Unit 5: Black River Subbasin Unit, Apache, Graham, and Greenlee Counties, Arizona.

(i) *General description:* Unit 5 consists of 1,607 ac (650 ha) in Apache,

Graham, and Greenlee Counties, and is composed of lands in Federal (1,414 ac (572 ha)) and Tribal (194 ac (78 ha)) ownership in six subunits near the

towns of Maverick and Hannigan Meadow.

(ii) Map of Unit 5 follows:



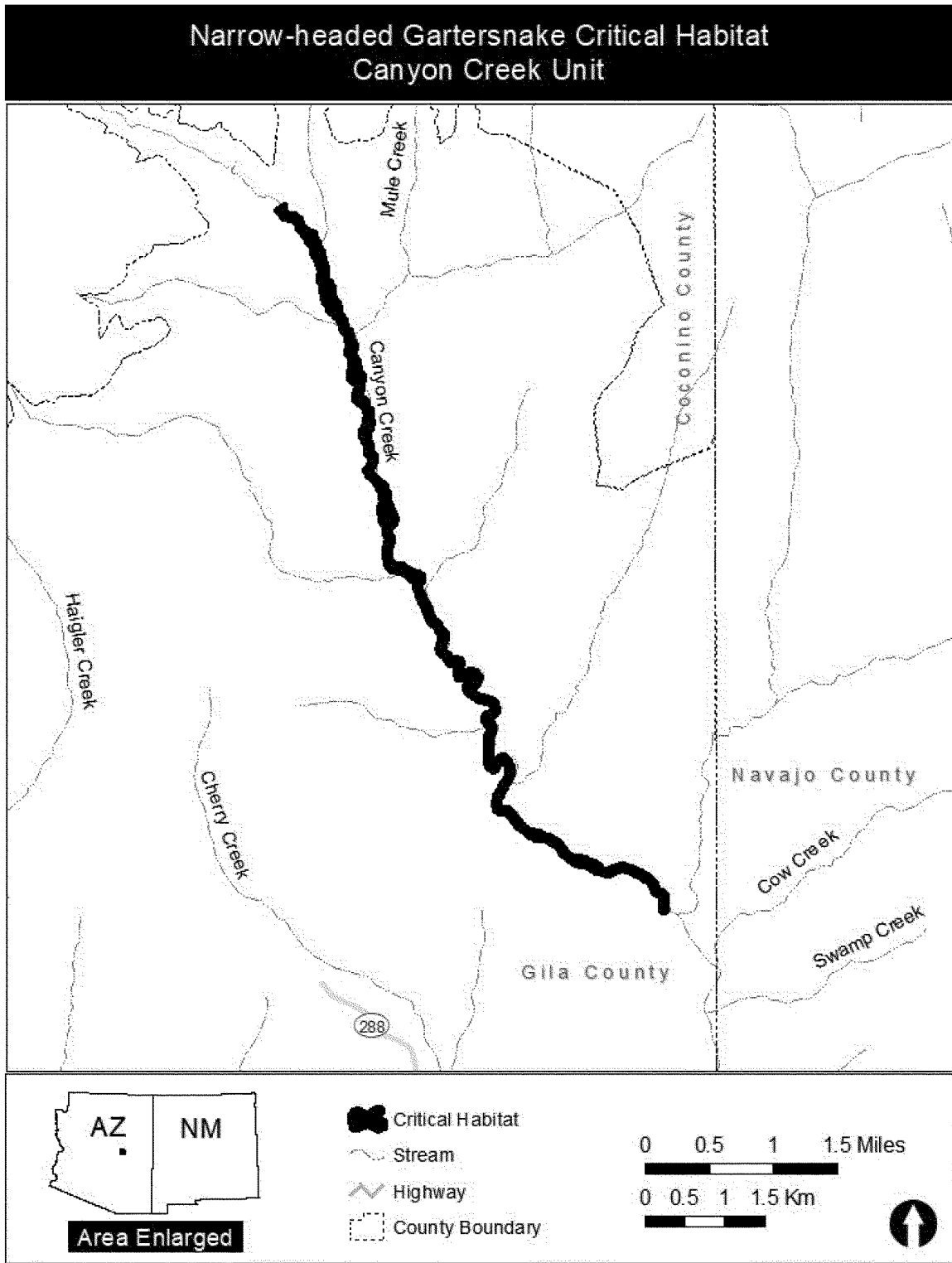
(11) Unit 6: Canyon Creek Unit, Gila County, Arizona.

(i) *General description:* Unit 6 consists of 232 ac (94 ha) in Gila

County, and is composed of lands in Federal (155 ac (63 ha)) and Tribal (77

ac (31 ha)) ownership southwest of the town of Heber.

(ii) Map of Unit 6 follows:



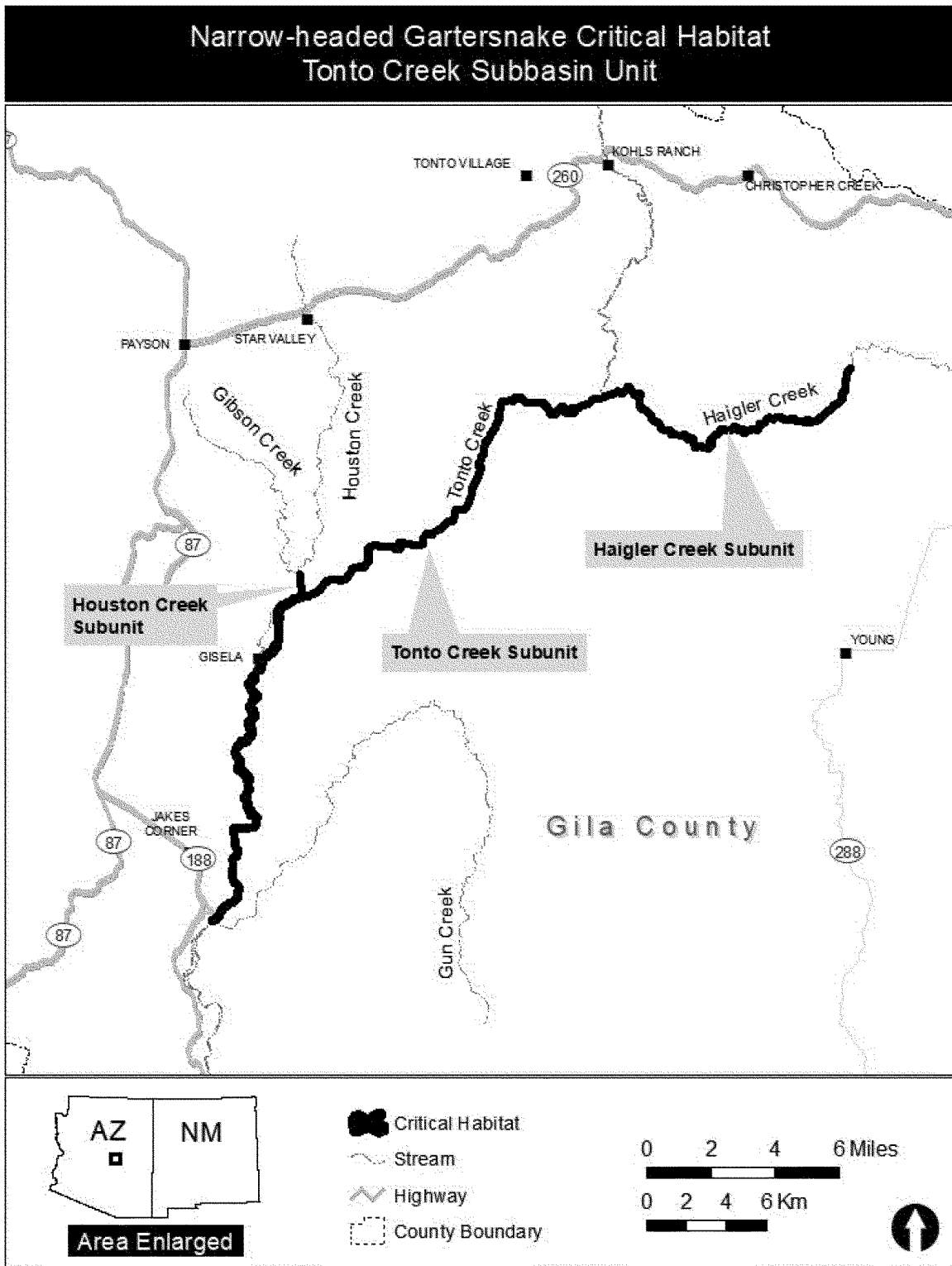
(12) Unit 7: Tonto Creek Subbasin Unit, Gila County, Arizona.

(i) *General description:* Unit 7 consists of 1,390 ac (562 ha) in Gila

County, and is composed of lands in Federal (1,285 ac (520 ha)) and private (105 ac (42 ha)) ownership in three

subunits near the towns of Jakes Corner and Gisela.

(ii) Map of Unit 7 follows:



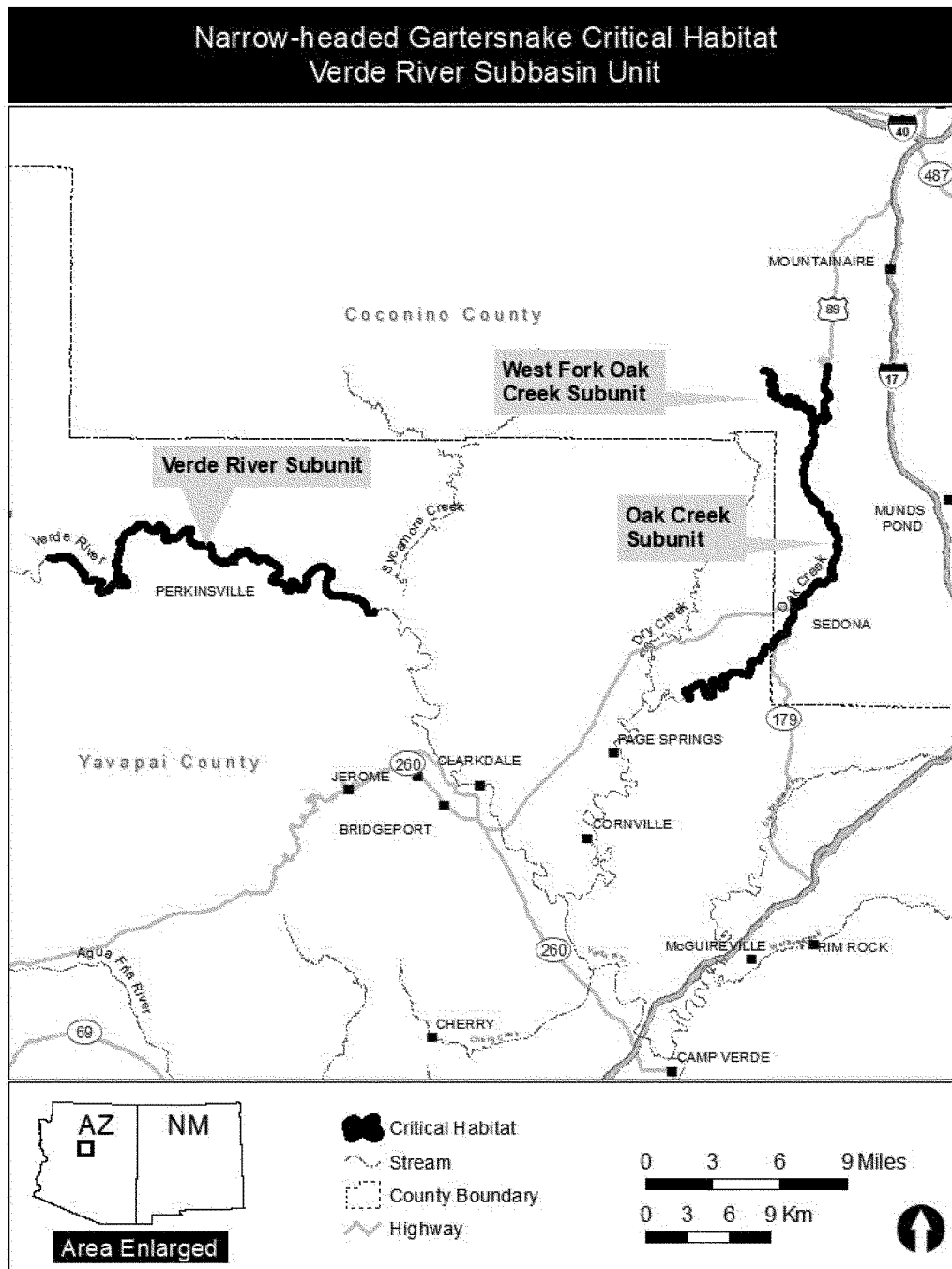
(13) Unit 8: Verde River Subbasin Unit, Coconino and Yavapai Counties, Arizona.

(i) *General description:* Unit 8 consists of 1,832 ac (741 ha) in

Coconino and Yavapai Counties, and is composed of lands in Federal (1,343 ac (544 ha)), State (51 ac (21 ha)), and private (437 ac (177 ha)) ownership in

three subunits near the towns of Sedona and Perkinsville.

(ii) Map of Unit 8 follows:

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Northern Mexican Gartersnake
(*Thamnophis eques megalops*)

(1) Critical habitat units are depicted for La Paz, Mohave, Yavapai, Gila, Cochise, Santa Cruz, and Pima Counties in Arizona, and Grant County in New Mexico, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of northern Mexican gartersnake consist of the following components:

(i) Perennial or spatially intermittent streams that provide both aquatic and

terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of northern Mexican gartersnakes and contain:

(A) Slow-moving water (walking speed) with in-stream pools, off-channel pools, and backwater habitat;

(B) Organic and natural inorganic structural features (*e.g.*, boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the stream channel for thermoregulation, shelter, foraging opportunities, and protection from predators;

(C) Terrestrial habitat adjacent to the stream channel that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators; and

(D) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.

(ii) Hydrologic processes that maintain aquatic and terrestrial habitat through:

(A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network; and

(B) Physical hydrologic and geomorphic connection between a stream channel and its adjacent riparian areas.

(iii) Prey base of primarily native anurans, fishes, small mammals, lizards, and invertebrate species.

(iv) An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.

(v) Elevations from 130 to 8,500 feet (40 to 2,590 meters).

(vi) Lentic wetlands including off-channel springs, cienegas, and natural and constructed ponds (small earthen impoundment) with:

(A) Organic and natural inorganic structural features (*e.g.*, boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the ordinary high water mark for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators;

(B) Riparian habitat adjacent to ordinary high water mark that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, and protection from predators; and

(C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.

(vii) Ephemeral channels that connect perennial or spatially interrupted streams to lentic wetlands in southern Arizona where water resources are limited.

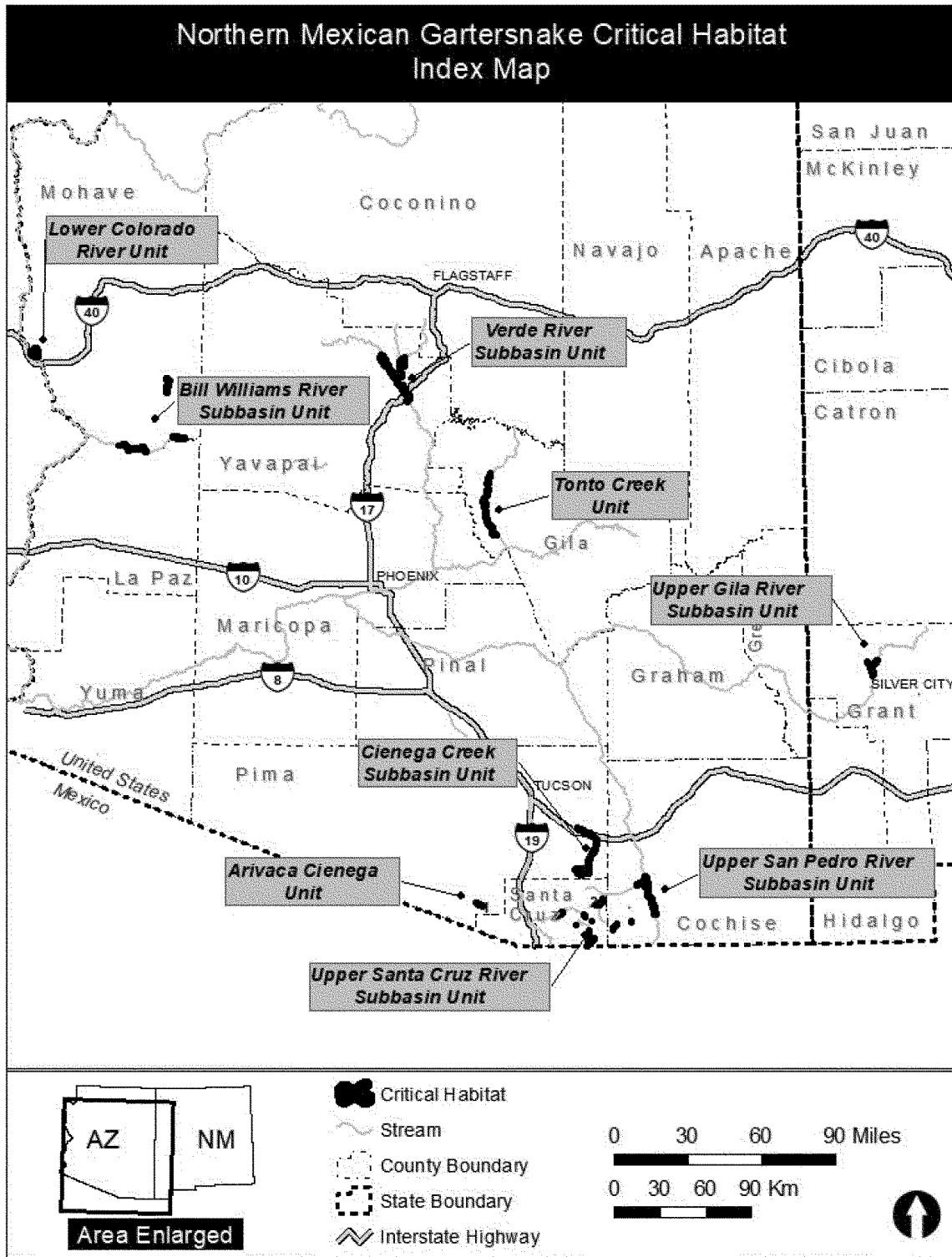
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) *Critical habitat map units.* Data layers defining map units included the U.S. Geological Survey's 7.5' quadrangles, National Hydrography Dataset, and National Elevation Dataset; the Service's National Wetlands Inventory dataset; and aerial imagery from Google Earth Pro. Line locations for lotic streams (flowing water) and drainages are depicted as the "Flowline" feature class from the National Hydrography Dataset geodatabase. Point locations for lentic sites (ponds) are depicted as "NHDPPoint" feature class from the National Hydrography Dataset geodatabase. Extent of riparian habitat

surrounding lotic streams and lentic sites is depicted by the greater of the "Wetlands" and "Riparian" features classes of the Service's national Wetlands Inventory dataset and further refined using aerial imagery from Google Earth Pro. Elevation range is masked using the "Elev_Contour" feature class of the National Elevation Dataset. Administrative boundaries for Arizona and New Mexico were obtained from the Arizona Land Resource Information Service and New Mexico Resource Geographic Information System, respectively. This includes the most current (as of the effective date of this rule) geospatial data available for land ownership, counties, States, and streets. Locations depicting critical habitat are expressed as decimal degree latitude and longitude in the World Geographic Coordinate System projection using the 1984 datum (WGS84). The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the Service's internet site at <http://www.fws.gov/southwest/es/arizona/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0011, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) *Note:* Index map follows:

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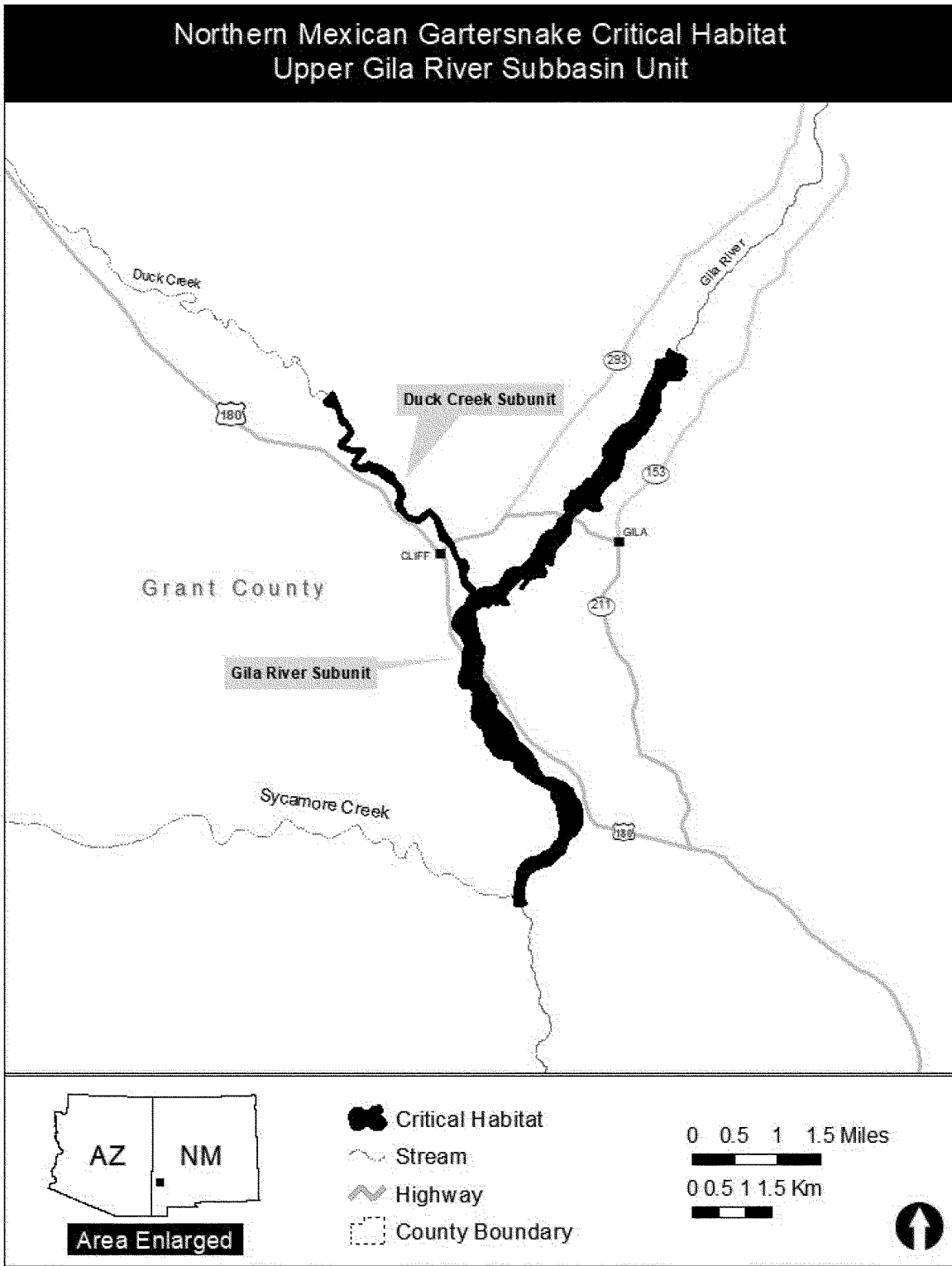


(6) Unit 1: Upper Gila River Subbasin Unit, Grant County, New Mexico.
 (i) *General description:* Unit 1 consists of 1,132 ac (458 ha) in Grant

County, and is composed of lands in State (22 ac (9 ha)), and private (1,110

ac (449 ha)) ownership in two subunits near the towns of Cliff and Gila.

(ii) Map of Unit 1 follows:



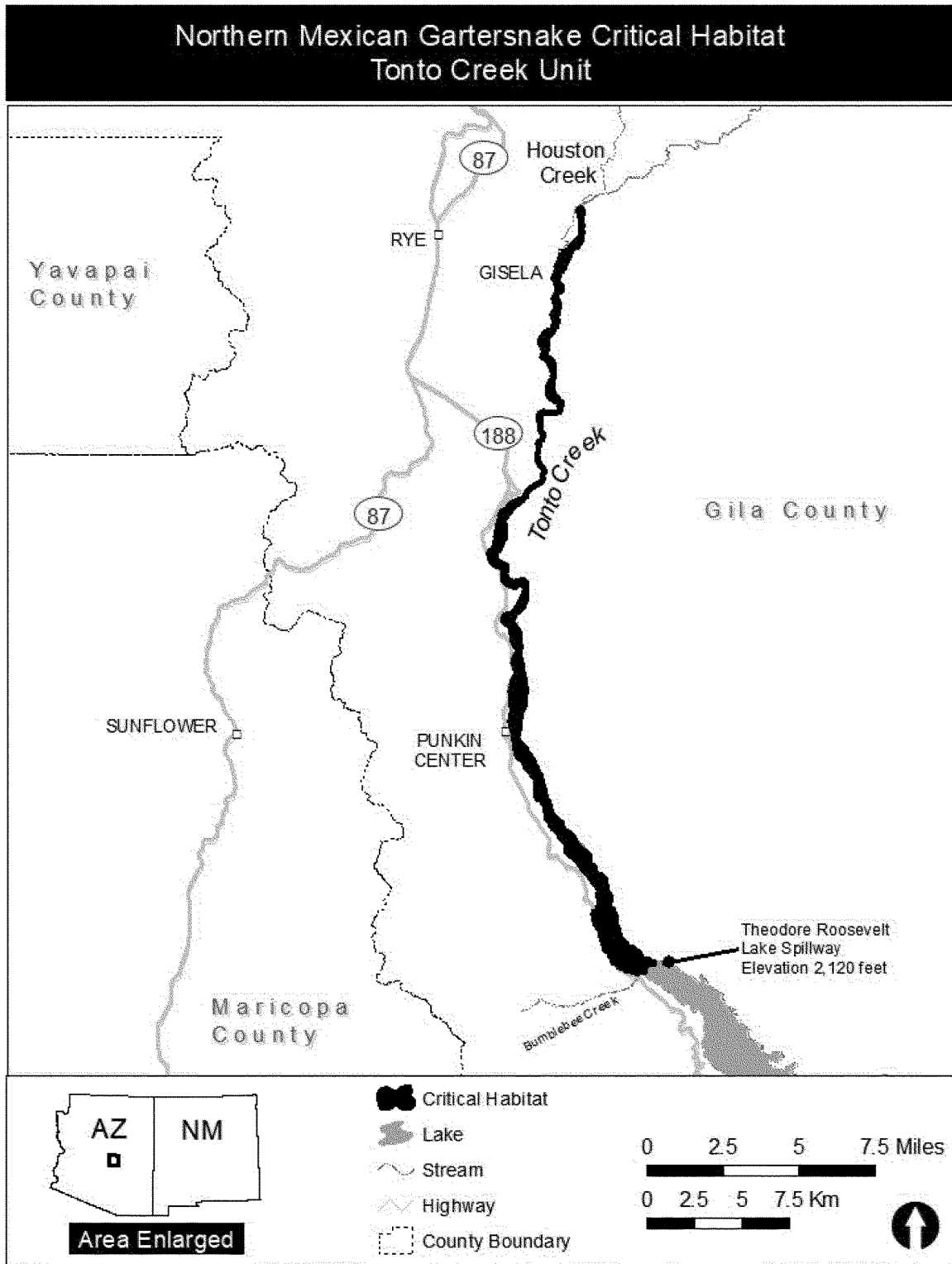
(7) Unit 2: Tonto Creek Unit, Gila County, Arizona.

(i) *General description:* Unit 2 consists of 4,302 ac (1,741 ha) in Gila

County, and is composed of lands in Federal (3,337 ac (1,350 ha)), and

private (966 ac (391 ha)) ownership near the towns of Gisela and Punkin Center.

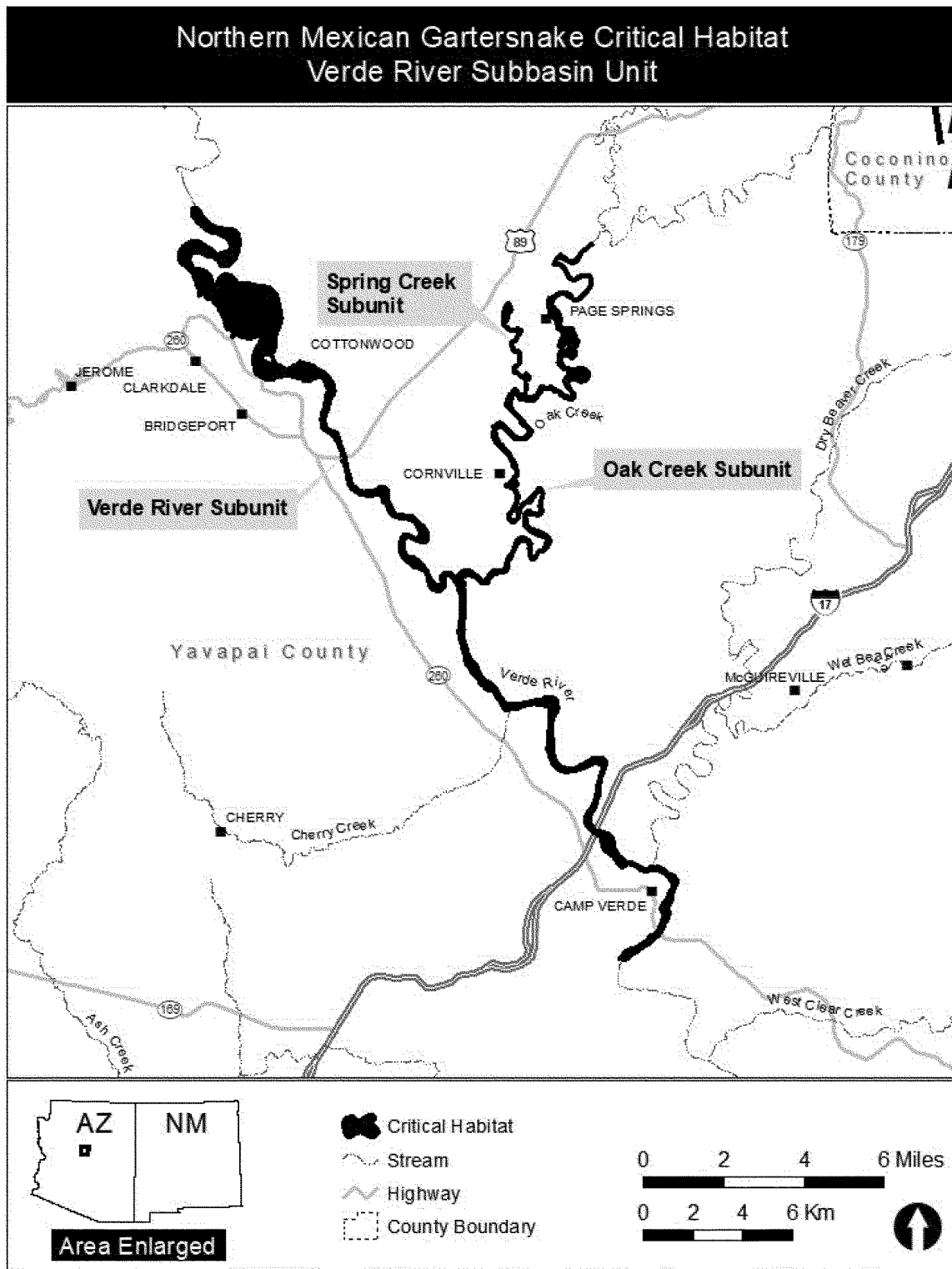
(ii) Map of Unit 2 follows:



(8) Unit 3: Verde River Subbasin Unit, Yavapai County, Arizona.
 (i) *General description:* Unit 3 consists of 5,246 ac (2,123 ha) in

Yavapai County, and is composed of lands in Federal (856 ac (346 ha)), State (705 ac (285 ha)), Tribal (88 ac (36 ha)), and private (3,597 ac (1,456 ha))

ownership in three subunits near the towns of Cottonwood, Cornville, Page Springs, and Camp Verde.
 (ii) Map of Unit 3 follows:

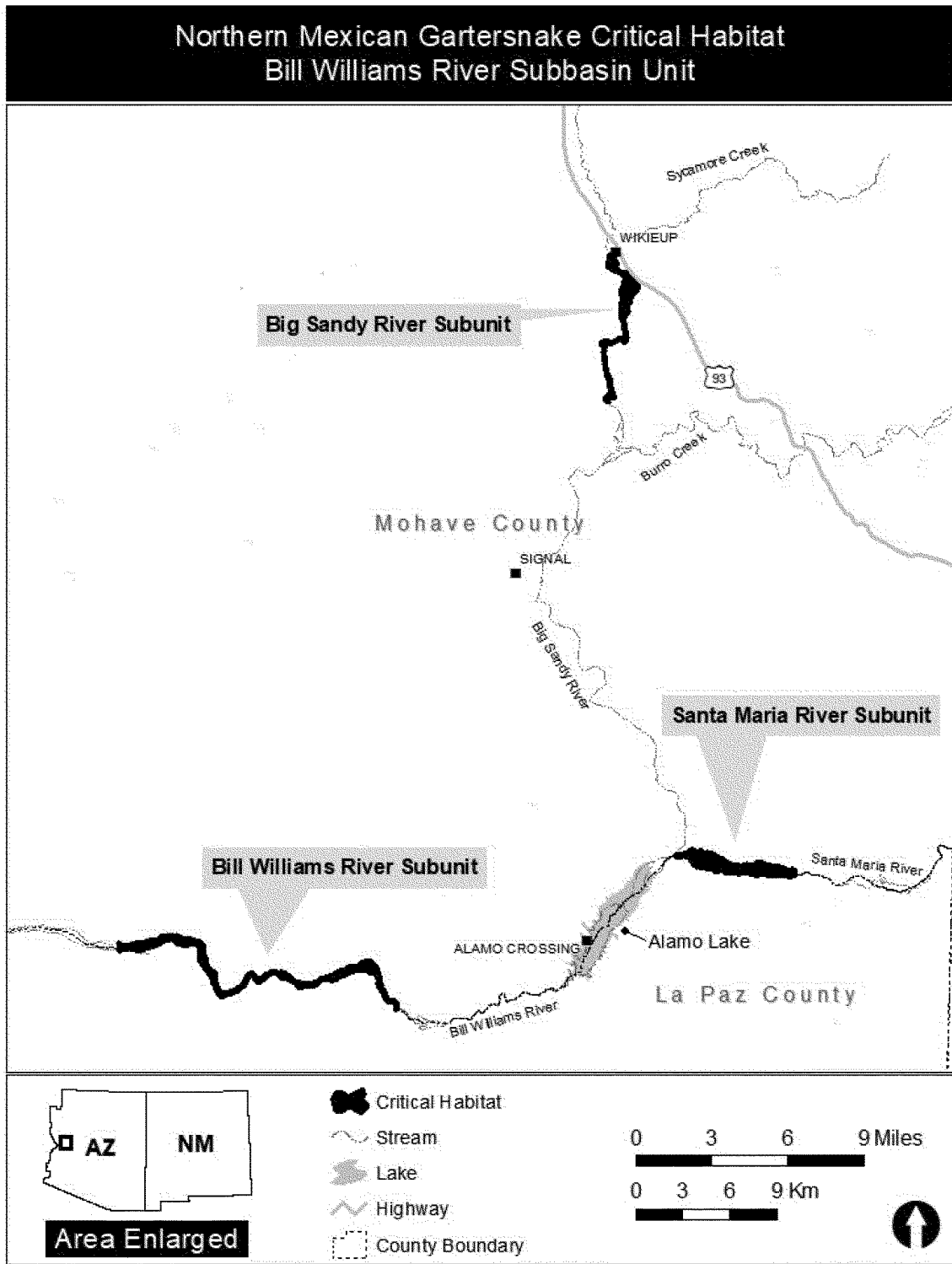


(9) Unit 4: Bill Williams River Subbasin Unit, La Paz and Mohave Counties, Arizona.

(i) *General description:* Unit 4 consists of 4,049 ac (1,639 ha) in La Paz and Mohave Counties, and is composed of lands in Federal (2,121 ac (858 ha)),

State (202 ac (82 ha)), and private (1,727 ac (699 ha)) ownership in three subunits near the towns of Parker and Signal.

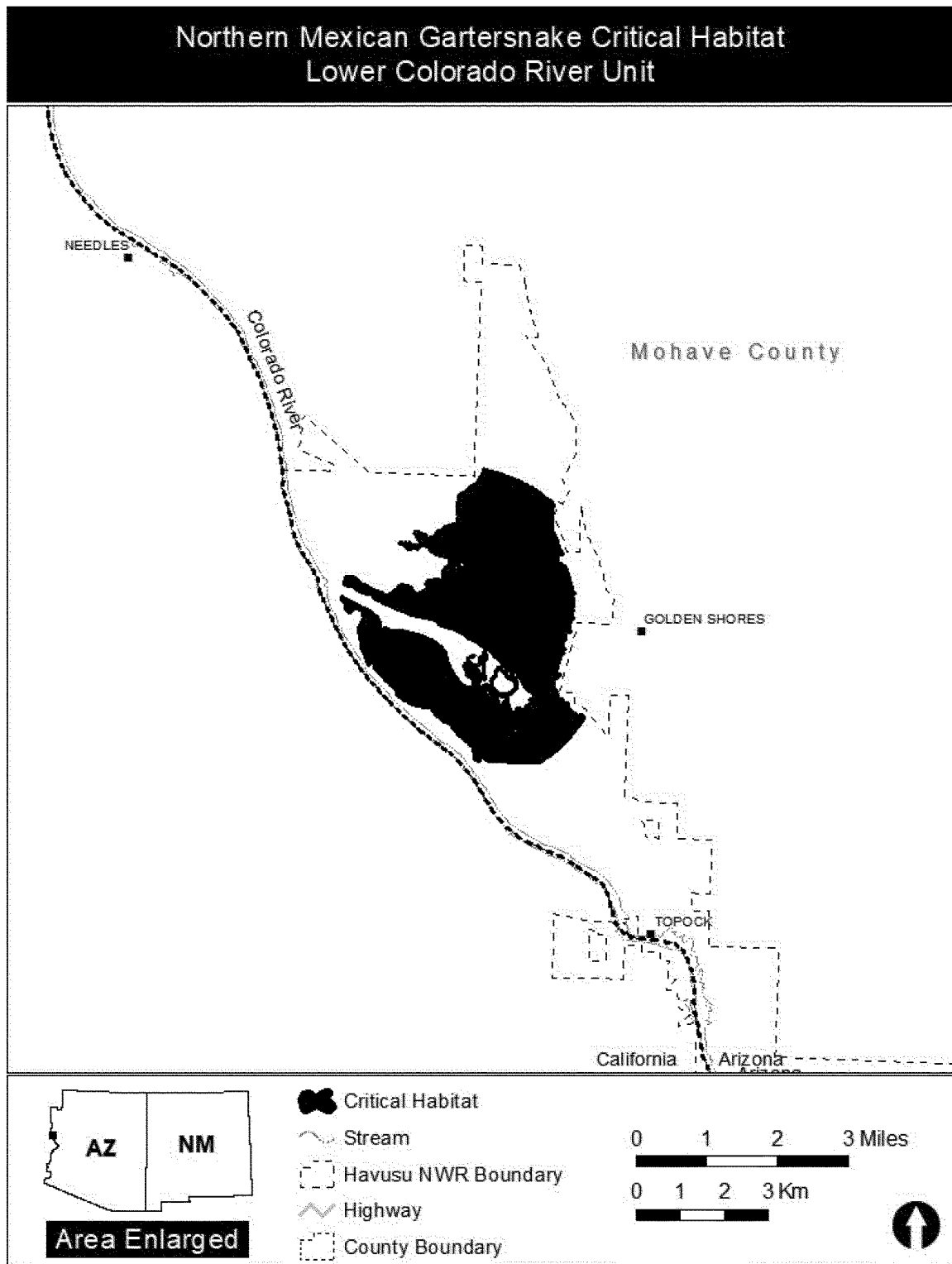
(ii) Map of Unit 4 follows:



(10) Unit 5: Lower Colorado River Unit, Mojave County, Arizona.

(i) *General description:* Unit 5 consists of 4,467 ac (1,808 ha) in Mojave County and is composed of lands in

Federal ownership within the Havasu National Wildlife Refuge.
(ii) Map of Unit 5 follows:



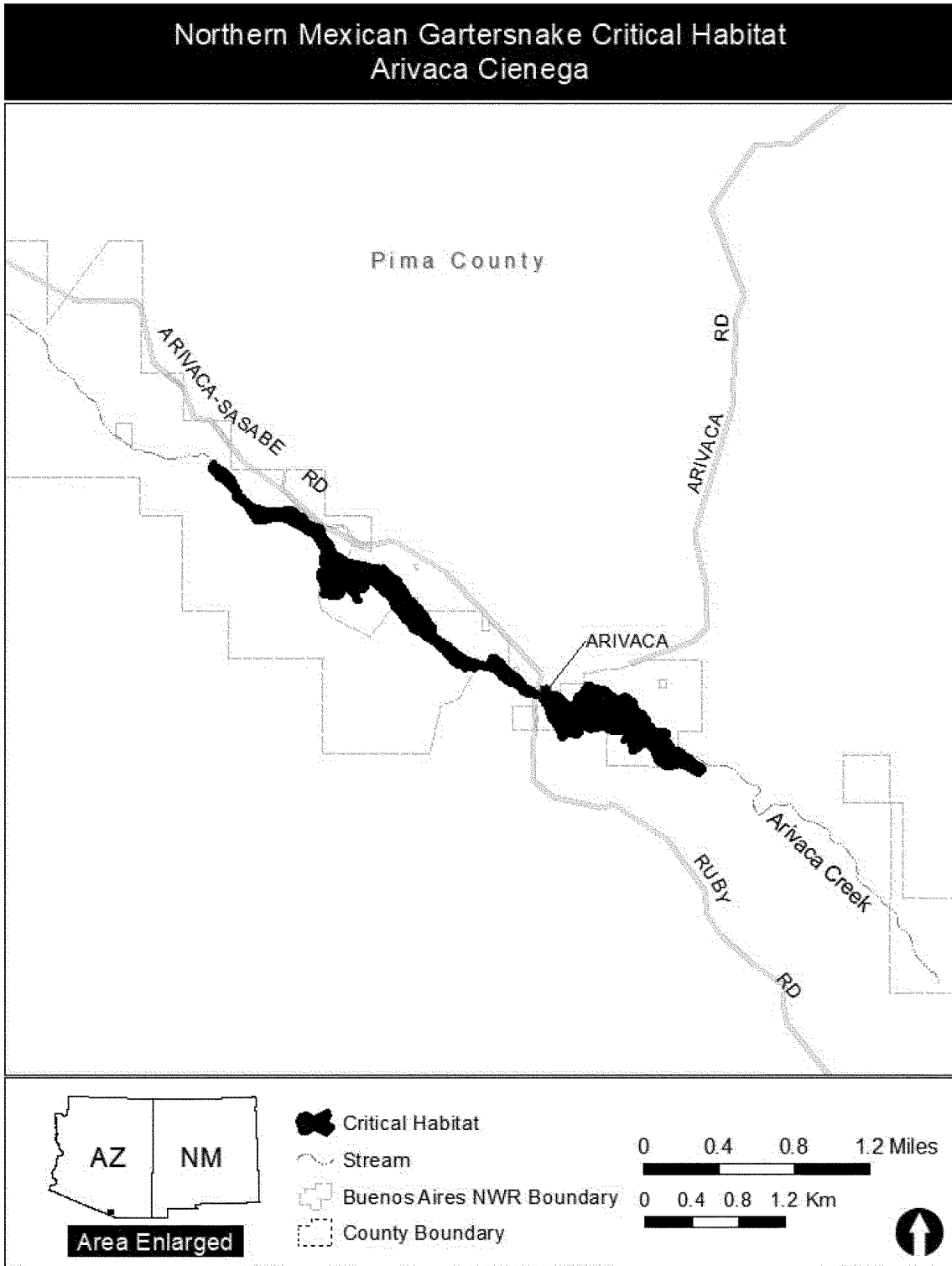
(11) Unit 6: Arivaca Cienega Unit, Pima County, Arizona.

(i) *General description:* Unit 6 consists of 211 ac (86 ha) in Pima

County and is composed of lands in Federal (149 ac (60 ha)), State (1 ac (<1

ha)), and private (62 ac (25 ha)) ownership near the town of Arivaca.

(ii) Map of Unit 6 follows:



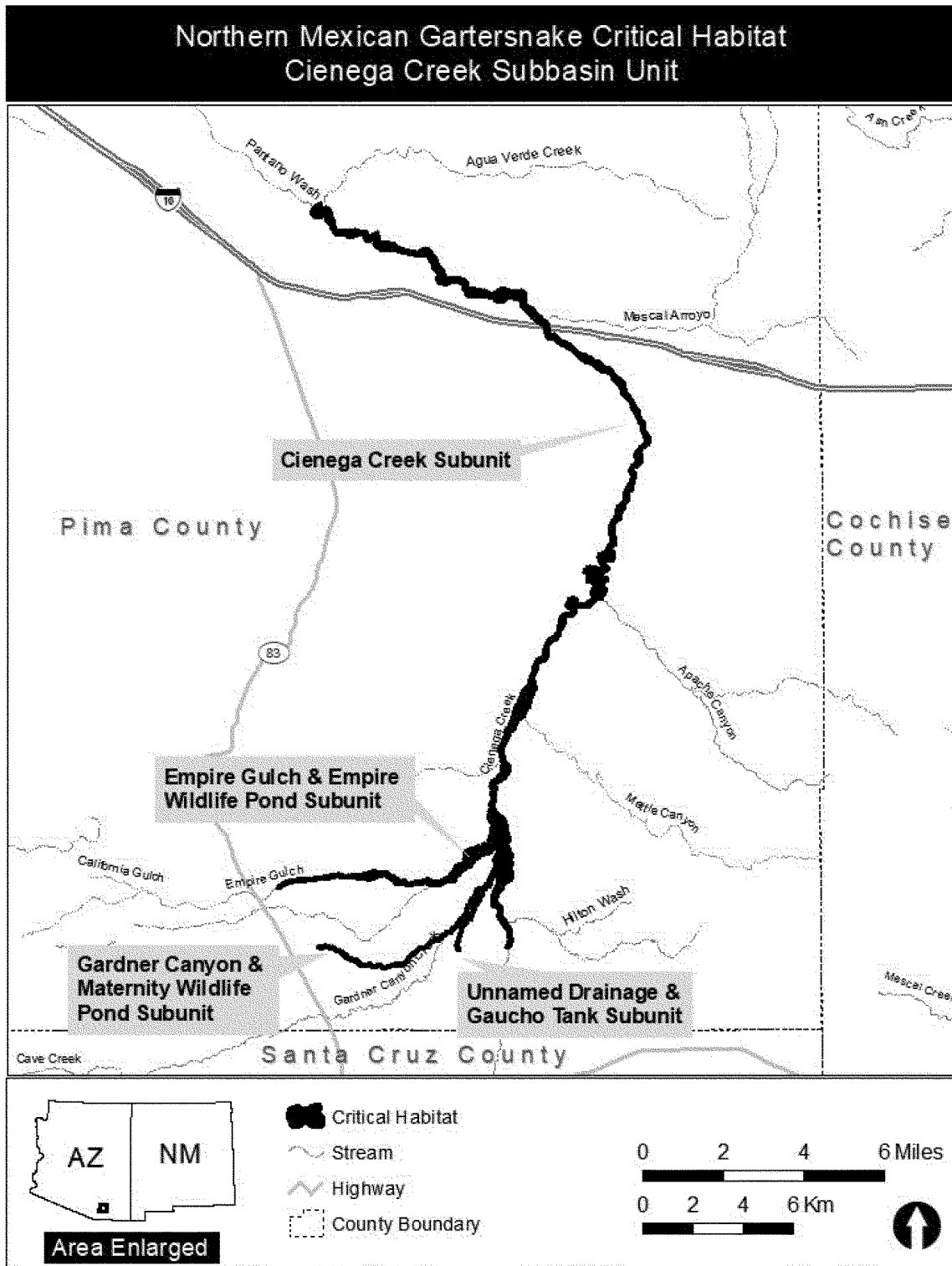
(12) Unit 7: Cienega Creek Subbasin Unit, Pima County, Arizona.

(i) *General description:* Unit 7 consists of 2,030 ac (821 ha) in Pima

County and is composed of lands in Federal (1,112 ac (451 ha)), State (366 ac (148 ha)), and private (550 ac (220 ha))

ownership in four subunits near the towns of Tucson, Vail, and Sonoita.

(ii) Map of Unit 7 follows:

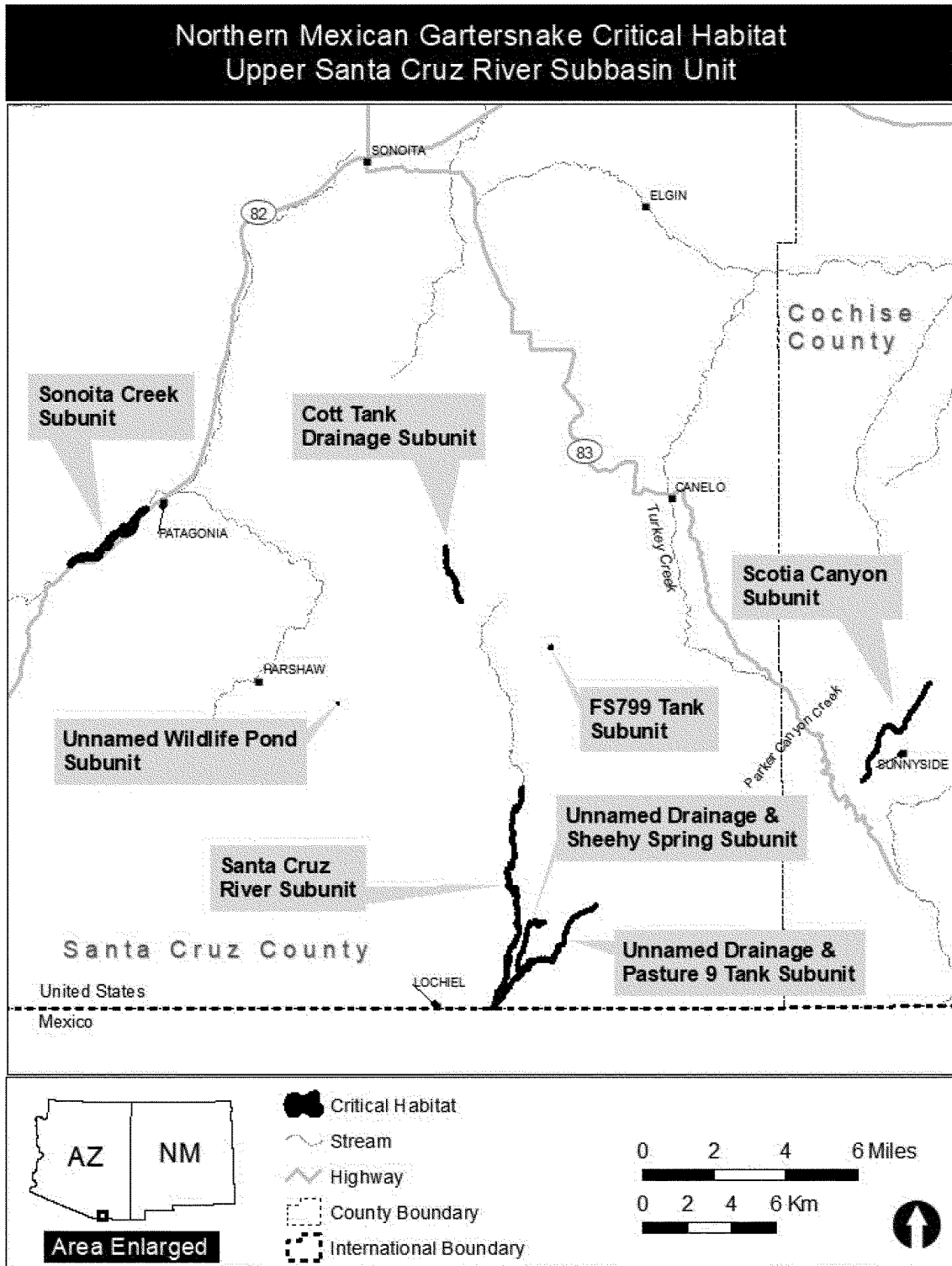


(13) Unit 8: Upper Santa Cruz River Subbasin Unit, Santa Cruz and Cochise Counties, Arizona.

(i) *General description:* Unit 8 consists of 496 ac (201 ha) in Santa Cruz and Cochise Counties, and is composed of lands in Federal (45 ac (18 ha)), State

(111 ac (45 ha)), and private (340 ac (138 ha)) ownership in eight subunits near the towns of Sonoita and Patagonia.

(ii) Map of Unit 8 follows:



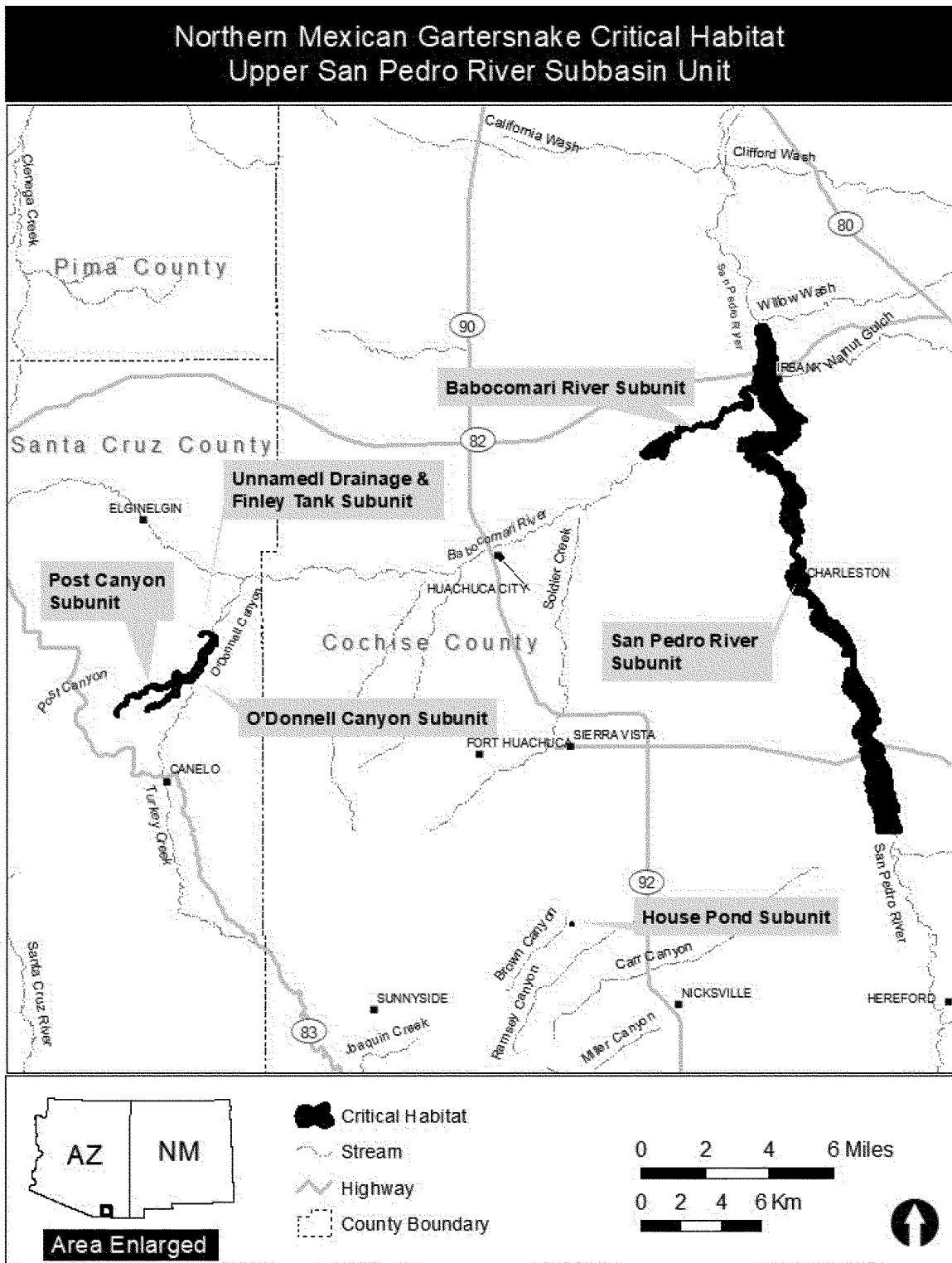
(14) Unit 9: Upper San Pedro River Subbasin Unit, Cochise and Santa Cruz Counties, Arizona.

(i) *General description:* Unit 9 consists of 5,850 ac (2,367 ha) in

Cochise and Santa Cruz Counties, and is composed of lands in Federal (5,197 ac (2,103 ha)), State (8 ac (3 ha)), and private (645 ac (261 ha)) ownership in

six subunits near the towns of Sierra Vista and Elgin.

(ii) Map of Unit 9 follows:



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Aurelia Skipwith,

Director, U.S. Fish and Wildlife Service.

[FR Doc. 2020-08069 Filed 4-27-20; 8:45 am]

BILLING CODE 4333-15-P

Essential Physical or Biological Features of Proposed Critical Habitat Northern Mexican Gartersnake April 28, 2020

1. Perennial or spatially intermittent streams that provide both aquatic and terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of northern Mexican gartersnakes and contain:
 - (A) Slow-moving water (walking speed) with in-stream pools, off-channel pools, and backwater habitat;
 - (B) Organic and natural inorganic structural features (e.g., boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the stream channel for thermoregulation, shelter, foraging opportunities, and protection from predators;
 - (C) Terrestrial habitat adjacent to the stream channel that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators; and
 - (D) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.
2. Hydrologic processes that maintain aquatic and terrestrial habitat through:
 - (A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network; and
 - (B) Physical hydrologic and geomorphic connection between a stream channel and its adjacent riparian areas.
3. Prey base of primarily native anurans, fishes, small mammals, lizards, and invertebrate species.
4. An absence of nonnative fish species of the families Centrarchidae and Ictaluridae, bullfrogs (*Lithobates catesbeianus*), and/or crayfish (*Orconectes virilis*, *Procambarus clarki*, etc.), or occurrence of these nonnative species at low enough levels such that recruitment of northern Mexican gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.
5. Elevations from 130 to 8,500 ft (40 to 2,590 m).
6. Lentic wetlands including off-channel springs, cienegas, and natural and constructed ponds (small earthen impoundment) with:
 - (A) Organic and natural inorganic structural features (e.g., boulders, dense aquatic and wetland vegetation, leaf litter, logs, and debris jams) within the ordinary high water mark for thermoregulation, shelter, foraging opportunities, brumation, and protection from predators;
 - (B) Riparian habitat adjacent to ordinary high water mark that includes riparian vegetation, small mammal burrows, boulder fields, rock crevices, and downed woody debris for thermoregulation, shelter, foraging opportunities, and protection from predators; and
 - (C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of northern Mexican gartersnakes is not inhibited.
7. Ephemeral channels that connect perennial or spatially intermittent perennial streams to lentic wetlands in southern Arizona where water resources are limited.

**Essential Physical or Biological Features of Proposed Critical Habitat
Narrow-headed Gartersnake
April 28, 2020**

1. Perennial streams or spatially intermittent streams that provide both aquatic and terrestrial habitat that allows for immigration, emigration, and maintenance of population connectivity of narrow-headed gartersnakes and contain:
 - (A) Pools, riffles, and cobble and boulder substrate, with low amount of fine sediment and substrate embeddedness;
 - (B) Organic and natural inorganic structural features (e.g., cobble bars, rock piles, large boulders, logs or stumps, aquatic and wetland vegetation, logs, and debris jams) in the stream channel for basking, thermoregulation, shelter, prey base maintenance, and protection from predators;
 - (C) Water quality that is absent of pollutants or, if pollutants are present, at levels low enough such that recruitment of narrow-headed gartersnakes is not inhibited; and
 - (D) Terrestrial habitat within 89 ft (27 m) of the active stream channel that includes boulder fields, rocks, and rock structures containing cracks and crevices, small mammal burrows, downed woody debris, and vegetation for thermoregulation, shelter sites, and protection from predators.
2. Hydrologic processes that maintain aquatic and riparian habitat through:
 - (A) A natural flow regime that allows for periodic flooding, or if flows are modified or regulated, a flow regime that allows for the movement of water, sediment, nutrients, and debris through the stream network, as well as maintenance of native fish populations; and
 - (B) Physical hydrologic and geomorphic connection between the active stream channel and its adjacent terrestrial areas.
3. Prey base of native fishes, or soft-rayed, nonnative fish species.
4. An absence of nonnative predators, such as fish species of the families Centrarchidae and Ictaluridae, bullfrogs, and crayfish, or occurrence of nonnative predators at low enough densities such that recruitment of narrow-headed gartersnakes is not inhibited and maintenance of viable prey populations is still occurring.
5. Elevations of 2,300 to 8,200 ft (700 to 2,500 m).



Questions and Answers: Two Gartersnakes - Revision to Proposed Critical Habitat

Arizona Ecological Services Field Office

<https://www.fws.gov/southwest/es/arizona/>

Contacts: Alejandro Morales 602-889-5954

Q: What is this proposal?

A: The U.S. Fish and Wildlife Service is publishing a revised proposed critical habitat rule for the northern Mexican gartersnake and the narrow-headed gartersnake. In our revised proposed rule, we recommend designating 27,784 acres of critical habitat for the northern Mexican gartersnake and 18,701 acres of critical habitat for the narrow-headed gartersnake. This is a 93.4% and 91.1% reduction in acreage, respectively, compared to the original proposed critical habitat rule published in 2013. This recommended reduction from the 2013 proposed rule follows our consideration of the best available scientific information for areas identified within the critical habitat rule, including a revised rule set based on information obtained subsequent to the 2013 proposed rule. This revision better reflects the areas that provide habitat for these species consistent with the definition of critical habitat. We have a court ordered settlement agreement to submit a proposed rule by April 13, 2020.

Q: Why is critical habitat necessary?

A: Critical habitat identifies geographic areas that contain features essential for the conservation of a threatened or endangered species. The proposal is only for currently occupied habitat in areas that may require special management considerations or protection. Some of the benefits of critical habitat include conserving the most essential areas and features for the species, helping to educate state and county governments and private entities; and reducing the likelihood of people causing inadvertent harm to the species.

Q: What accounts for the reduction in acreage in the revised proposed critical habitat rule for the two gartersnakes?

A: During the comment period for the 2013 proposed rule, we received substantive comments regarding the proposed critical habitat for both gartersnakes. Commenters and peer reviewers disagreed with the way that we determined occupancy at the time of listing and included areas

that were not habitat for either species: evidence indicated that our criteria were likely to lead to a critical habitat designation that did not meet the regulatory definition of critical habitat. . We also received additional information including locations of each species at the time of listing, the biological needs, and corresponding habitat characteristics of each species. It is likely that recovery of both species would require additional habitat; however, we were unable to identify additional habitat that has the physical and biological features essential to the species, or where those features would be likely to be found in the future. Historically occupied sites that are no longer occupied are dominated by nonnative species, and/or lack native prey in sufficient densities to support the species, making it unlikely that these areas could serve as habitat for these species. We have considered all the best scientific information for areas identified within the revised proposed critical habitat rule and acreage has been reduced to reflect the areas that provide habitat for these species that are consistent with the definition of critical habitat.

Q: Where do these snakes live?

A: Narrow-headed gartersnakes are strictly fish-eaters found in rocky higher-elevation streams along the Mogollon Rim, from northern and eastern Arizona into southwestern New Mexico. Northern Mexican gartersnakes have a varied diet consisting primarily of amphibians but also fish, lizards, small rodents, worms, and leaches. Northern Mexican gartersnakes live in dense vegetation along the banks or in the shallows of wetlands (cienegas and stock tanks), and stream pool or backwater habitats in Arizona, southwestern New Mexico, and northern Mexico. Both gartersnake species are fairly secretive and spend much of their time on land under cover of vegetation and rock piles in habitat adjacent to aquatic habitats.

Q: Aren't gartersnakes common? What's endangering these snakes?

A: Many species of gartersnake occur throughout much of North America, and gartersnakes are often a child's first exposure to reptiles in the wild. Northern Mexican gartersnake and narrow-headed gartersnake populations have declined primarily from interactions with predatory nonnative species such as warm-water sportfish, brown trout, bullfrogs, and crayfish. These nonnative species compete with and prey upon both the gartersnakes themselves and their native prey species causing both mortality of gartersnakes and starvation within populations. Drought and large-scale wildfires that diminish surface water or degrade streamside (riparian) vegetation are also significant threats, particularly where they co-occur in the presence of nonnative species. Collectively, threats to the snakes have reduced and fragmented their populations, and those of most of their native prey species, such that the gartersnakes' resiliency, redundancy and representation across their ranges have been significantly compromised. Efforts to control nonnative predators and restore native aquatic and riparian communities could significantly benefit both gartersnakes and all native aquatic or riparian vertebrates throughout their range.

Q: Does critical habitat mean you can't build anything?

A: This proposed critical habitat designation identifies areas that are particularly important to the conservation of these two gartersnakes and are consistent with the definition of critical habitat, where actions of federal agencies are analyzed to prevent the incidental adverse modification of their habitat. It does not mean no development can occur in the area, only that federal agencies must consult with the U.S. Fish and Wildlife Service if they are conducting, funding, or permitting activities that may affect the species. Designation of critical habitat does not affect land ownership, establish a refuge or preserve, and has no impact on private landowners taking actions on their land that do not require federal funding or permits.

Q: What other benefits will this critical habitat designation have?

A: Healthy, native, aquatic ecosystems contain some of the highest levels of biodiversity in the Southwest. Aquatic ecosystem protection and conservation is an American value, and critical to many species of aquatic insects, fish, amphibians, reptiles, waterfowl and other wildlife, as well as humans. Efforts to manage threats and protect the habitat of the two gartersnakes will require coordination with partners, states, and tribes in order to encourage healthy aquatic communities and preserve our unique natural heritage for future generations to enjoy.

Q: What is the purpose of the draft economic analysis that accompanies this proposal?

A: We are required to take into consideration the economic impact, and any other relevant impact, of designating particular areas as critical habitat. We may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species. We have prepared a draft economic analysis to inform our consideration of excluding areas that have been proposed for critical habitat designation.

The draft economic analysis estimates \$61,000 in economic impacts resulting from critical habitat designation each year. These costs are largely attributed to incremental administrative costs associated with addressing “adverse modification” during formal consultations with federal agencies.

Q: How are you working with the states?

A: The Service is working closely with the Arizona Game and Fish Department and New Mexico Department of Game and Fish to develop species status assessments for the narrow-headed and northern Mexican gartersnake that will lead to recovery planning to address threats to these two species. We recognize that management of nonnative sportfish as a resource is important for the States and we will continue to work with them to balance this resource and the conservation needs of the two gartersnake species.

Q: How are you working with tribes?

A: The Service will continue to work closely with tribes to address concerns or issues related to excluding critical habitat on tribal lands. We recognize the sovereign authorities of tribes and are committed to abiding by our agreements and working with them to address their needs and the conservation needs of the two gartersnake species.

Q: How are you working with other partners?

A: The Service works with a variety of partners on conservation efforts for both gartersnake species. In addition to the state wildlife agencies, these partners include academic institutions, non-governmental organizations, zoos, counties, and other non-Federal partners. As a result, there are several conservation plans in place that benefit one or both of the species in Arizona and New Mexico. These efforts also address some of the special management needs of habitat for the species. .

Q: How are you working with private landowners?

A: Projects or activities that occur on private land would not be affected by the proposed critical habitat unless they require a federal permit or funding. All units proposed as critical habitat were occupied at the time of listing by the northern Mexican gartersnake or narrow-headed gartersnake. Federal projects occurring in these areas, such as a federal permit or funding for efforts on private land that could affect the two gartersnake species would likely require consultation with the Service, regardless of critical habitat designation. A number of private landowners have long-term conservation plans in place that provide benefits to one or both of the gartersnakes.

Q: How do I provide my input or comment on the proposed critical habitat rule for the gartersnakes?

A: All comments can be submitted [here](#).