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50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Listing and Designation of Critical Habitat for the Chiricahua Leopard Frog; Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R2–ES–2010–0085;4500030114]

RIN 1018–AX12

Endangered and Threatened Wildlife and Plants; Listing and Designation of Critical Habitat for the Chiricahua Leopard Frog

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), are designating critical habitat for the Chiricahua leopard frog (*Lithobates chiricahuensis*) under the Endangered Species Act of 1973, as amended (Act). In total, we are designating approximately 10,346 acres (4,187 hectares) as critical habitat for the Chiricahua leopard frog in Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai Counties, Arizona; and Catron, Grant, Hidalgo, Sierra, and Socorro Counties, New Mexico. In addition, because of a taxonomic revision of the Chiricahua leopard frog, we reassessed the status of and threats to the currently described species *Lithobates chiricahuensis* and are listing the currently described species as threatened.

DATES: This rule is effective on April 19, 2012.

ADDRESSES: This final rule and the associated final economic analysis and final environmental assessment are available on the Internet at *http://www.regulations.gov.* Comments and materials received, as well as supporting documentation used in preparing this final rule, are available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021; telephone 602–242–0210; facsimile 602–242–2513.

FOR FURTHER INFORMATION CONTACT: Steve Spangle, Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021; by telephone (602/242–0210); or by facsimile (602/242–2513). If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Background

It is our intent to discuss in this final rule only those topics directly relevant to the listing and development and designation of critical habitat for the Chiricahua leopard frog under the Act (16 U.S.C. 1531 *et seq.*). For more information on the biology and ecology of the Chiricahua leopard frog refer to the final listing rule (67 FR 40790; June 13, 2002) or our April 2007 final recovery plan, which are available from the Arizona Ecological Services Field Office (see **ADDRESSES** section). For information on Chiricahua leopard frog critical habitat, refer to the proposed rule to reassess the listing status and propose critical habitat for the Chiricahua leopard frog published in the **Federal Register** on March 15, 2011 (76 FR 14126). Information on the associated draft economic analysis for the proposed rule to designate critical habitat was published in the **Federal Register** on September 21, 2011 (76 FR 58441).

Previous Federal Actions

We published a proposed rule to list the Chiricahua leopard frog as threatened in the **Federal Register** on June 14, 2000 (65 FR 37343). We published a final rule listing the species as threatened on June 13, 2002 (67 FR 40790). Included in the final rule was a special rule (see 50 CFR 17.43(b)) to exempt operation and maintenance of livestock tanks on non-Federal lands from the section 9 take prohibitions of the Act. The special rule remains in place and is not affected by this final rule, except that we are making an editorial change to revise the heading of 50 CFR 17.43(b) to reflect the currently described species *Lithobates chiricahuensis.* For further information on actions associated with listing the species, please see the final listing rule (67 FR 40790; June 13, 2002).

In a May 6, 2009, order from the Arizona District Court, the Secretary of the Interior was required to publish a critical habitat prudency determination for the Chiricahua leopard frog and, if found prudent, a proposed rule to designate critical habitat by December 8, 2010. Because of unforeseen delays related to species taxonomic issues, which required an inclusion of a threats analysis, we requested a 3-month extension to the court-ordered deadlines for both the proposed and final rules. On November 24, 2010, the extension was granted and new deadlines of March 8, 2011, for the proposed rule and March 8, 2012, for the final rule were established for completing and submitting the critical habitat rules to the **Federal Register**.

We published a proposed rule to reassess the listing status and propose critical habitat for the Chiricahua leopard frog in the **Federal Register** on March 15, 2011 (76 FR 14126) with a request for public comments. On September 21, 2011, we made available the draft environmental assessment and draft economic analysis for the proposed designation of critical habitat and reopened the public comment on the proposed rule (76 FR 58441).

Summary of Comments and Recommendations

We requested written comments from the public on the reassessment of listing status and proposed designation of critical habitat for the Chiricahua leopard frog during two comment periods. The first comment period associated with the publication of the proposed rule (76 FR 14126) opened on March 15, 2011, and closed on May 16, 2011. We also requested comments on the reassessment of listing status, proposed critical habitat designation, associated draft economic analysis, and associated draft environmental assessement during a comment period that opened September 21, 2011, and closed on October 21, 2011 (76 FR 58441). We did not receive any requests for a public hearing. We also contacted appropriate Federal, Tribal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule, draft economic analysis, and draft environmental assessment during these comment periods.

During the first comment period, we received 48 submissions from the public. During the second comment period, we received 14 submissions. Most submissions addressed the proposed critical habitat designation, the draft environmental assessment, or the draft economic analysis, while others provided no substantive information useful to the development of this final rule. All substantive information provided during comment periods has either been incorporated directly into this final rule or is addressed below. Comments we received were grouped into six general issues specifically relating to the proposed critical habitat designation for the Chiricahua leopard frog, and are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR

34270), we solicited expert opinions from four knowledgeable individuals with scientific expertise that included familiarity with the species or taxa, the geographic region in which the species occurs, and conservation biology principles. We received responses from one of the peer reviewers.

We reviewed all comments we received from the peer reviewer for substantive issues and new information regarding critical habitat for the Chiricahua leopard frog. The peer reviewer generally concurred with our methods and conclusions, and provided additional suggestions to improve the final critical habitat rule. Peer reviewer comments are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Reviewer Comments

Comment 1: The peer reviewer suggested we provide clarification on the geographic range and distribution of the species by defining what is meant by the term ''major drainage'' and how their current and historical distribution regarding ''localities'' relate to these areas.

Our Response: The term ''major drainage'' refers to rivers that are large and are perennial or were historically perennial. Examples of major drainages include the upper Gila, Verde, Salt, and San Pedro Rivers, etc. Because habitat for the Chiricahua leopard frog could include a variety of wetted environments, we use the term ''localities'' to incorporate habitat including stock tanks, streams, cienegas, and other similar areas in a general sense so as to avoid an unnecessarily inclusive description of occupied or formerly occupied habitat. A more detailed account of the species' current and historical distribution can be found in the original listing of the species in 2002 (67 FR 40790) and in the 2007 recovery plan (Service 2007).

Comment 2: The peer reviewer and others suggested various editorial changes to the final rule.

Our Response: We evaluated all of the suggested editorial changes, and we incorporated them, as appropriate, into this final rule.

Comment 3: The peer reviewer stated that our discussion of dispersal habitat focuses on protection of areas to facilitate movement among local populations and asked how longer distance dispersal corridors will be protected (e.g., among populations in different habitat units) to maintain the species throughout its range.

Our Response: We treated dispersal habitat within the context of our current knowledge of the species' natural history, and in particular, its dispersal capabilities. This rationale is provided in our discussion of the ''1–3–5 rule'' in the *Dispersal* section below.

Comment 4: The peer reviewer stated that the rationale for each primary constituent element (PCE) is clear, but requiring critical habitat units to meet all of these relatively narrow criteria may be too restrictive. The peer reviewer also stated that other areas that contain most of the elements and have high restoration potential for ''missing'' elements should also be considered.

Our Response: We used the best scientific information available in determining the PCEs for the Chiricahua leopard frog. The PCEs are the elements of physical or biological features that together provide for a species' life-history processes and are essential to the conservation of the species. We amended the PCEs after the publication of the proposed rule, and included the amended PCEs in our September 21, 2011, publication (76 FR 58441). In designating critical habitat, we based our evaluation of areas on those that contain the physical or biological features essential to the conservation of the Chiricahua leopard frog and which may require special management. In this designation, we include only areas that contain one or more of the PCEs, and note within each unit description the special management actions needed for that unit.

Comment 5: The peer reviewer stated that it appeared as though the recovery plan formed the basis for the proposed critical habitat units and suggested making this clear in the beginning of the section entitled ''*Criteria Used To Identify Critical Habitat.*''

Our Response: In this final rule, we emphasize the use of the recovery plan in the designation of critical habitat.

Comments From States

Section 4(i) of the Act states, ''the Secretary shall submit to the State agency a written justification for his failure to adopt regulations consistent with the agency's comments or petition.'' Comments received from the States regarding the proposal to designate critical habitat for the Chiricahua leopard frog are addressed below.

Comment 6: In the discussion of climate change, it was stated that Chiricahua leopard frog ''can often withstand drying of stock tanks for 30 days or more.'' Caution should be used in making this claim as it is an untested hypothesis. Chiricahua leopard frogs may appear during the rainy season at a site that has been dry for 30 days or fewer, but they may have recolonized the site from another occupied site within the metapopulation.

Our Response: We exercised caution in expressing our understanding of the Chiricahua leopard frogs' ability to withstand drought by amending this passage to state, ''Because of their evolutionary history, southwestern leopard frogs may be able to withstand drying of stock tanks for a longer period of time than nonnative species that evolved in wetter climates in the eastern United States, which could provide southwestern leopard frog a selective advantage.''

Comment 7: Under PCE 1(h), the absence of the organism *Batrachochytrium dendrobatidis* (chytrid fungus) is impossible to know with certainty.

Our Response: We amended the PCEs after the publication of the proposed rule and included the amended PCEs in our September 21, 2011, publication (76 FR 58441). The amended PCEs, while providing necessary specificity, are general enough to account for the inherent level of uncertainty that pertains to the presence or absence of *Batrachochytrium dendrobatidis.* PCE 1(d) currently states, ''Absence of chytridiomycosis, or if present, then environmental, physiological, and genetic conditions are such that allow persistence of Chiricahua leopard frogs.'' This change applies the best scientific and commercial data available in addressing a known, serious threat to the Chiricahua leopard frog.

Comment 8: We received a recommendation to state the level of uncertainty that exists regarding the current knowledge of how exactly the defined metapopulations function in reality, compared to how we describe metapopulations.

Our Response: Our current understanding of metapopulations is an amalgamation of past field observations, the literature, and how unoccupied, but suitable, habitat can contribute to the metapopulation dynamic. Inevitably and over time, it is the species itself, in the wild, which will define the configuration of any given metapopulation, which may or may not comport with our current understanding of existing metapopulations. We have revised the language in this final rule to better describe our understanding of metapopulation function.

Comment 9: One comment stated that Peña Blanca Lake should not be included as critical habitat because the long-term persistence of Chiricahua leopard frogs there, in the wake of planned warm-water fish stockings, remains uncertain. Therefore, the lake is

not essential to the conservation of the species.

Our Response: Peña Blanca Lake currently meets the definition of critical habitat as defined in section 3 of the Act because it occurs within the geographical area occupied by the species at the time it was listed, in accordance with the Act, and it has the features essential to the conservation of the species and which may require special management considerations or protection. Our rationale for retaining this unit's designation is provided below in the ''Final Critical Habitat Designation'' section.

Comment 10: Trail Tank in the Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit have had a history of bullfrog (*Lithobates catesbeianis*) occupation and no previous records of Chiricahua leopard frog. It should be excluded from critical habitat. Bullfrog eradication efforts in 2010 proved unsuccessful.

Our Response: We view Trail Tank as an important component to critical habitat in the Crouch, Gentry, and Cherry Creeks, as well as Parallel Canyon Unit, because of their potential to support a robust population of Chiricahua leopard frogs in a unit where occupied sites tend to be of small size with small numbers of frogs. While we acknowledge that May 2010 bullfrog removal efforts were unsuccessful at Trail Tank, additional removal efforts occurred in May of 2011, and appear to have been successful. Our discussion of Trail Tank, in our rationale for designating the Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit as critical habitat, is provided below under ''Final Critical Habitat Designation.''

Public Comments

General Comments Issue 1: Expansion of Critical Habitat

Comment 11: Expand designation of critical habitat to include 8 miles of Cienega Creek north of the confluence of Cienega Creek and Empire Gulch, which is important flood plain habitat where ephemeral sinkholes and semi-permanent marshes exist.

Our Response: In the Las Cienegas National Conservation Area Unit, we designated areas where the Chiricahua leopard frog maintained breeding populations, or was suspected to, at the time of listing or currently. Our records do not indicate the recommended area of expansion meets these predetermined criteria. Furthermore, should this area support breeding populations in the future, ongoing management of the area should be commensurate with their persistence.

Comment 12: Designate critical habitat in springs, and intermittent or perennial (or both) streams, on a more landscape- or watershed-level to better address the risk of habitat fragmentation, offer more connectedness for metapopulation dynamics, protect habitat, and manage against nonnatives to achieve the necessary landscape-level opportunity to recover the Chiricahua leopard frog. One commenter suggested that we designate critical habitat for all sites that have been occupied since 1990.

Our Response: As required by section 4(b) of the Act, we used the best scientific and commercial data available in determining areas within the geographical area occupied at the time of listing that contain the features essential to the conservation of the Chiricahua leopard frog and may require special management considerations or protection, and areas outside of the geographical area occupied at the time of listing that are essential for the conservation of the species. We also relied heavily on the recovery criteria formulated in collaboration and outlined in the 2007 recovery plan for the Chiricahua leopard frog. The suggestions identified immediately above were not specifically commensurate with these criteria and were therefore not used in the designation process.

Comment 13: A commenter requested expansion of critical habitat in the eastern slope of the Santa Rita Mountains and in the vicinity of the proposed Rosemont Mine to include California Tank, East Tank, and Upper Enzenberg, Box, Sycamore, Sawmill, and Gardner Canyons, because these sites were either occupied at the time of listing, are currently occupied, or may be essential to the conservation of the species.

Our Response: We are not aware of any records that document breeding of the Chiricahua leopard frog at these sites. The lack of historical records that document breeding in these areas may demonstrate that, while they may be important for metapopulation dynamics as demonstrated by intermittent occupation over time, they may not be suitable as breeding habitat and therefore are not essential to the conservation of the species. Therefore, these sites are not included in our critical habitat designation because they do not meet the definition of critical habitat under the Act for the Chiricahua leopard frog.

Comment 14: Expand critical habitat designation in the Left Prong of Dix Creek Unit within the Right and Left Prongs of Dix Creek to include the following tanks: Draw Tank, Bull Canyon Tank, Bobby Tank, Middle Tank, Rattlesnake Gap Tank, Rattlesnake Tank No. 1, Rattlesnake Tank No. 2, and Buckhorn Tank. Connect the designations along the drainages between the above tanks with extant populations from the Rattle Snake Gap Complex, then continue up Dix Creek Left Prong proposed critical habitat, and continue upstream through Bull Canyon and unnamed drainages to connect occupied or seasonal habitats or both. It is also recommended to include the short segment of Dix Creek Right Prong/Left Prong confluence up the Right Prong of Dix Creek to Sycamore Canyon. Further, it is recommended that the Service designate critical habitat from Highway 78 southward along Coal Creek to include habitat where frogs may retreat seasonally or during periods of low water availability. The commenter noted that both lowland leopard frogs (*Lithobates yavapaiensis*) and Chiricahua leopard frogs were identified in surveys, and not all observations of leopard frogs in this area were identified to species.

Our Response: Please see our response to Comments 12.

Comment 15: Expand critical habitat designation into the tributary adjacent to and west of Three Forks near the Campbell Blue and Coleman Creeks Unit.

Our Response: Please see our response to Comments 12.

Comment 16: Expand critical habitat designation in the Peloncillo Mountains Unit on the Diamond A Ranch, Western Division (Canoncito Ranch) to include more dispersal habitat.

Our Response: The Diamond A Ranch, Western Division (Canoncito Ranch) in the Peloncillo Mountains Unit is excluded as designated critical habitat under section 4(b)(2) of the Act. Please review our rationale and analysis for this exclusion under the section ''Exclusions'' below.

Comment 17: Expand critical habitat designation in the following units: Garcia Tank, Buenos Aires National Wildlife Refuge Central Tanks, Bonita, Upper Turner, and Mojonera Tanks, Sycamore Canyon, and Peña Blanca Lake and Spring and associated tanks to include the California Gulch, Ruby, Chimney Canyon, Arivaca Lake, and Airvaca Cienega to protect Chiricahua leopard frogs against nonnative predators.

Our Response: Please see our response to Comments 12.

General Comments Issue 2: Exclusion or Reduction of Critical Habitat

Comment 18: The High Lonesome Well Unit does not provide any more conservation benefit than a zoo and should not be considered critical habitat.

Our Response: We reevaluated the High Lonesome Well Unit and have determined that it does not meet the definition of critical habitat, because it does not have the physical or biological features that are essential for the conservation of the species. After further evaluation, the unit does not contain the terrestrial habitat that provides opportunities for foraging and basking, and that is immediately adjacent to or surrounding breeding aquatic and riparian habitat, which is a component of primary constituent element 1. Therefore, we have removed the High Lonesome Well Unit from this final critical habitat designation.

Comment 19: The West Fork Gila River Unit is within the Gila Wilderness Area on the Gila National Forest, and designating it as critical habitat provides no further conservation value for the species. In addition, this population is known to have chytridiomycosis, and the most recent surveys in 2009 failed to detect any Chiricahua leopard frogs, therefore precluding this unit from meeting PCE (1).

Our Response: We carefully reviewed the best available scientific and commercial data and concluded that the West Fork Gila River Unit both meets the definition of critical habitat described in the ''Critical Habitat'' section below and meets the goals and objectives outlined in the final recovery plan for this species. In addition, the commenter provides no rationale to indicate the unit does not meet the definition of critical habitat or does meet exclusion criteria under section 4(b)(2) of the Act. Please review our rationale and analysis for designating this unit under the section ''Final Critical Habitat Designation'' below.

Comment 20: The threat of chytridiomycosis in the Ash and Bolton Springs Unit makes it unsuitable as critical habitat.

Our Response: The Ash and Bolton Springs Unit meets the definition of critical habitat under the Act for the Chiricahua leopard frog because it was occupied at the time of listing and contains the features essential to the conservation of the species and requires special management considerations or protection. Not all PCEs are currently present, or required to be present, for a given unit to meet the definition of critical habitat under the Act. The commenter provides no additional rationale to indicate the unit does not meet the definition of critical habitat or does meet exclusion criteria under section 4(b)(2) of the Act.

Comment 21: The proposal speaks to a dry section of the West Fork dividing the proposed segment: ''the Upper West Fork is divided into two perennial segments by a 1.2-mi (2.0-km) long ephemeral reach between Turkeyfeather Creek and Whiskey Creek.'' Whiskey Creek is upstream of the proposed segment of stream, and this statement is not relevant to the proposal. In addition, Turkeyfeather Creek was not occupied at time of listing, and there are no historic records from the ephemeral stream. The only intermittent part of the stream is at the spring itself and extending approximately 0.10 mi downstream of the spring. The outflow from the spring is captured in a small cement spring box with a 1-inch pipe extending out of the box as an overflow. The flow from the spring seldom makes it to Turkeyfeather Creek itself. We do not believe that Turkeyfeather Creek is suitable habitat for the frog.

Our Response: White Creek was mistakenly identified as Whiskey Creek in our proposed rule. This has been corrected in this final rule. Our records indicate that the area within this unit as described was occupied at the time of listing and has the features essential to the conservation of the species and which may require special management considerations or protection to minimize impacts to existing threats. No further justification as to why the unit does not meet the definition of critical habitat or does meet exclusion criteria under section 4(b)(2) of the Act was provided.

Comment 22: Exclude from critical habitat designation all private lands (Ladder Ranch) in the Seco Creek, Cuchillo Negro Warm Springs and Creek, and South Fork Palomas Creek Units.

Our Response: The Ladder Ranch is excluded from designated critical habitat under section 4(b)(2) of the Act. Please review our rationale and analysis for this exclusion under the section ''Exclusions'' below.

Comment 23: North Tank and Rosewood Tank Unit should be excluded from critical habitat designation because including them represents adverse effects to the grazing operation on the Magoffin Ranch, and is a disincentive to promote conservation of endangered and threatened species within the ranching community.

Our Response: The Magoffin Ranch (North Tank and Rosewood Tank Unit) is excluded as designated critical habitat under section 4(b)(2) of the Act. Please review our rationale and analysis for this exclusion under the section ''Exclusions'' below.

Comment 24: All critical habitat should be excluded in Recovery Unit 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico) and portions of Recovery Unit 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Mexico).

Our Response: We carefully reviewed the best available scientific and commercial data and concluded that critical habitat we are designating within Recovery Units 1 and 2 both meets the definition of critical habitat described in the ''Critical Habitat'' section below and meets the goals and objectives outlined in the final recovery plan for this species. No further justification as to why these units do not meet the definition of critical habitat or do meet exclusion criteria under section 4(b)(2) of the Act was provided. Please review our rationale and analysis for designating these units under the section ''Final Critical Habitat Designation'' below.

Comment 25: The Concho Bill and Deer Creek Unit is not essential to the conservation of the Chiricahua leopard frog.

Our Response: We carefully reviewed the best available scientific and commercial data and concluded that the Concho Bill and Deer Creek Unit both meets the definition of critical habitat described in ''Critical Habitat'' section below and meets the goals and objectives outlined in the final recovery plan for this species. In addition, the commenter provided no rationale to indicate the unit does not meet the definition of critical habitat or does meet exclusion criteria under section 4(b)(2) of the Act. Please review our rationale and analysis for designating this unit under the section ''Final Critical Habitat Designation'' below.

General Comments Issue 3: Threats Analysis

Comment 26: Chiricahua leopard frogs are sensitive to cadmium and copper above certain levels according to Little and Calfee (2008, pp. 6–10). The Service should differentiate potential effects to the species from the footprint of the Rosemont Mine versus the general area of the mine. We are concerned that Eastern Slope of the Santa Rita Mountains and Las Cienegas National Conservation Area Units might be adversely affected by pollution from Rosemont Mine, once in operation.

Our Response: We agree that Chiricahua leopard frogs are vulnerable to effects from contaminants associated

with mining operations and provide discussion on this issue under the section ''*A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range.''* If the Rosemont Mine begins operation, potential effects to, and legal protections, for the Chiricahua leopard frog will be evaluated, in accordance with applicable provisions under the Act, at that time, and are not constrained to the footprint of the proposed mine.

Comment 27: In discussing chytrid presence in the Seco Creek Unit, it was stated that ''no frogs have tested positive since then (i.e., 2001)''. More accurately, in June 2007, a single sample (out of 7) from Artesia Well and a single sample (out of 9) from LM Bar Well tested positive for chytrid. Both of these were considered ''weak positive'' by the laboratory and may have been false positives. Extensive testing since then has failed to produce additional positive tests.

Our Response: We have updated our analysis and discussion of this unit to reflect this information.

Comment 28: The proposed rule stated that within the West Fork Gila River Unit '' * * * nonnative predators are present, including fish, crayfish, and bullfrogs. Even though a cooperative restoration project between the Service, the U.S. Forest Service, and New Mexico Department of Game and Fish is underway to restore native fish and remove nonnative predatory fish in this unit, the frog population is currently threatened by nonnative predators and chytridiomycosis (Service 2009, pp. 15–16).'' This statement is incorrect; there are no nonnative predatory fish (Gila trout and speckled dace are the only fish present), there are no crayfish, and there are no bullfrogs in the unit.

Our Response: We have updated our analysis and discussion of this unit to reflect this information.

Comment 29: Periodic Chiricahua leopard frog die-offs resulting from chytridiomycosis have not been observed in the Las Cienegas National Conservation Area Unit. They probably do occur, and probably are a key factor, but it is also possible that other factors are responsible for the rarity of the Chiricahua leopard frog in the Cienega Creek bottomlands.

Our Response: The final recovery plan notes the presence of chytridiomycosis in Cienega Creek (Service 2007, p. 61). We have amended our discussion of this unit to remove the statement regarding periodic die-offs.

Comment 30: Effects of climate change are downplayed in the proposed rule, with significant effects predicted for winter precipitation. Warmer and dryer conditions will force more contact between Chiricahua leopard frogs and nonnative predators, to the detriment of Chiricahua leopard frogs.

Our Response: We used the best available scientific and commercial data to inform our analysis of the effects of climate change on the Chiricahua leopard frog, including the inherent uncertainty that pertains to evaluating the effects of climate change. The effects of climate change are inextricably related to effects from other threats and are difficult to predict or interpret without more definitive data of higher resolution. This discussion was expanded upon in this final rule. Please review our analysis below of the potential effects of climate change under listing Factor E, ''*Other Natural or Manmade Factors Affecting Its Continued Existence''* below.

Comment 31: The Service falsely relied on Fleischner (1994), Belsky (1999), and Jones (2000) on describing the effects of livestock grazing on Chiricahua leopard frogs. These studies discuss uncontrolled grazing when grazing in endangered and threatened species' habitat is controlled.

Our Response: These studies detail potential effects of grazing to habitat. We evaluated the effects of grazing on the Chiricahua leopard frog both historically and present day. We appreciate the conservation actions undertaken by the ranching community and those partnerships we have formed in furthering the goals and objectives of Chiricahua leopard frog conservation and recovery, and we recognize the intrinsic value of their continued participation in this effort.

Comment 32: Regarding the Scotia Canyon, Beatty's Guest Ranch (excluded), and Carr Barn Pond Units, the copper mine in Cananea, Sonora, pumps 10,000 to 12,000 acre feet of groundwater and then redirects surplus water into the Rio Sonora basin which flows to Hermosillo, Sonora. This should be discussed.

Our Response: We understand (although not specifically stated) the implication of groundwater pumping on potential effects to surface flows to the upper San Pedro River. However, these units do not rely on surface flow in the upper San Pedro River for their water supply and are, therefore, unaffected by groundwater pumping activities in Mexico.

Comment 33: The Service should focus on the threat of (Chiricahua leopard frog) surveyors spreading the chytrid fungus.

Our Response: Several precautions are listed in the final recovery plan (Service 2007, Appendix G), such as dedicating equipment, disinfecting equipment, etc., which are taught at annual survey training workshops, required as permit stipulations, and followed by surveyors to prevent the accidental spread of chytrid fungus. These precautions are also mandated as permit conditions for those with section 10(a)(1)(A) permits authorized by the Service. Whatever small risk may be associated with this form of disease transmission, it is countered by the important data collected by the surveys themselves, in helping meet the conservation and recovery goals for the species.

Comment 34: The Service should clearly define what is meant by ''poor'' livestock management.

Our Response: We consider poor livestock management to mean grazing conducted in a manner not in accordance with approved allotment management plans or otherwise considered adverse to maintaining natural habitat characteristics. We have updated this discussion below in Factor A, ''*The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range''* of this final rule.

Comment 35: If Chiricahua leopard frogs do not persist in water affected by livestock feces, what steps will be required by livestock producers with waters that support the species? What about elk feces?

Our Response: We did not state that Chiricahua leopard frogs do not persist in water affected by livestock feces. We stated that Chiricahua leopard frogs likely do not persist in waters severely polluted with cattle feces (Service 2007, p. 34). We understand that in most circumstances where frogs occur in tanks actively used by livestock, livestock feces are likely present in the water, and frogs are not appreciably affected by their presence. We also acknowledge the potential that in tanks that have limited water and are subjected to intense livestock activity, adverse affects to the Chiricahua leopard frog are likely from concentrated amounts of livestock feces, which could limit a population's persistence. We are not aware of any Chiricahua leopard frog populations that are adversely affected as a result of elk feces, but presume similar adverse effects are likely under the same rationale. Furthermore, we are not requiring ranchers to manage their livestock tanks specifically with this factor in mind, but rather prefer to pursue opportunities to work with the ranching community to meet both the needs of the species and the needs of their livestock operations.

General Comments Issue 4: General Biology

Comment 36: The Service must analyze whether Chiricahua leopard frogs along Mogollon Rim are a separate species.

Our Response: We specifically discuss issues pertinent to Chiricahua leopard frog taxonomy under the ''*Species Information''* section below. Since the publication of the proposed rule, Hekkala *et al.* (2011) published a phylogenetic analysis of the (considered extinct) Vegas Valley leopard frog (*Lithobates fisheri*) and other North American Ranidae (North American frogs of the same family) DNA and placed *L. fisheri* within Chiricahua leopard frog (*Lithobates chiricahuensis*) (using archival and contemporary nuclear and mitochondrial DNA). Hekkala *et al.* (2011) ascribed the northwestern-most populations of *L. chiricahuensis* from the Mogollon Rim to *L. fisheri,* although specific populations were not identified. Populations of *L. chiricahuensis* outside this zone were not recommended for taxonomic revision. Data likely support ascribing all known populations of *L. chiricahuensis* to *L. fisheri,* although Hekkala *et al.* (2011) did not make that recommendation. The phylogenetic tree in Hekkala *et al.* (2011; Fig. 2b.) is a subset of a larger phylogenetic tree that is still under construction by genetic researchers. As a subset, the resolution of the data is not sufficient to support recognizing individual populations of *L. chiricahuensis* as *L. fisheri* at this time. Completion of ongoing rangewide research, with sufficient genetic resolution, of the more comprehensive phylogeny of western leopard frogs is expected to be available in 3 to 4 years and will provide additional information for analysis necessary to make informed management or listing decisions.

Comment 37: The proposed rule states, '' * * * the maximum distance moved by a telemetered Chiricahua leopard frog in New Mexico was 2.2 mi (3.5 km) in one direction along a drainage.'' In a New Mexico State Wildlife Grant Report entitled, ''Distribution and Movement of Chiricahua leopard frog on the Ladder Ranch and adjacent National Forest Lands, Sierra County, New Mexico,'' authored by Carter Kruse and Bruce Christman in 2005, it was reported that a single frog moved at least 3.1 mi (5 km), one way during a 3-day rain event in the Seco drainage (page 18), which is substantially farther than discussed in the proposed rule.

Our Response: We did not receive a copy of this report, and we therefore are unable to verify its findings. However, upon receipt of this reference, we will add this information to our current understanding of the species' dispersal capabilities. However, for this final critical habitat rule, no changes have been made based on this information.

Comment 38: Specifically, on page 14151, the proposed rule states that ''Chiricahua leopard frogs are known to breed at all of the above mentioned wells except Sawmill and Johnson Wells * * * Frogs were extant at Davis Well, LM Bar Well, North Seco Well, Pague Well, and Sucker Ledge at the time of listing.'' We offer two corrections: Chiricahua leopard frog reproduction has been documented at Johnson Well each of the last 3 years, and Chiricahua leopard frogs were extant and breeding at Fish Well, in addition to the other sites listed, at the time of listing.

Our Response: The sites noted by the commenter are on the Ladder Ranch which is excluded as critical habitat under section 4(b)(2) of the Act and discussed below under ''Exclusions.''

Comment 39: Chiricahua leopard frogs in the Las Cienegas National Conservation Area Unit are less than 6 miles (10 km) from the nearest recently occupied site in the Eastern Slope of the Santa Rita Mountains Unit. In the 1970s, a key study site for the Chiricahua leopard frog was halfway between the nearest recently occupied sites. Thus, 35 years ago or less, there were likely metapopulation dynamics active between these units.

Our Response: While, historically, such a metapopulation dynamic is feasible, we do not possess records to verify such a dynamic. Therefore, we consider the Eastern Slope of the Santa Rita Mountains Unit as a disjunct metapopulation and the Las Cienegas National Conservation Area Unit as an isolated population because of the distance between the nearest occupied sites between units is more than 8.0 mi (13 km) straight-line distance away, which is not within a reasonable dispersal distance for the Chiricahua leopard frog.

Comment 40: How do the 43 proposed units (39 designated units) correspond to the 85 percent reduction in occupied sites (in reference to statements made in the final listing rule and subsequent Service documents regarding rangewide reductions in occupied habitat), and how will the critical habitat designation achieve the recovery criteria in the recovery plan?

Our Response: Under section 3(5)(A)(ii) of the Act, we have authority to designate specific areas outside the geographic areas occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination that such areas are essential for the conservation of the species. In this final designation, we have identified two units that were not known to be occupied at the time of listing, but which we consider essential for the conservation of the species. Also, the recovery criteria in the final recovery plan (Service 2007, p. 55) for the Chiricahua leopard frog was an important factor in our methodology used to designate critical habitat. In order to meet recovery criteria outlined in the recovery plan, we designated multiple critical habitat units in each recovery unit.

General Comments Issue 5: PBFs, PCEs, and Special Management

Comment 41: The Service should reconsider whether the buffer zones proposed are to protect PCEs from effects caused by livestock grazing or from those posed by airborne pollution.

Our Response: At this time, we feel that applying a buffer zone to protect against the effects of livestock grazing would be arbitrary, because we do not know how large to make the buffer to protect from those effects. However, in ponds designated as critical habitat, most of which are impoundments for watering cattle or other livestock, designated critical habitat extends for 20 ft (6.1 m) beyond the high water line or to the boundary of the riparian and upland vegetation edge, whichever is greatest. We used this 20-ft (6.1-m) extension because the frogs are commonly found foraging and basking within 20 feet of the shoreline of tanks. In regards to effects posed by airborne pollution, no reasonable spatial distance is guaranteed to protect PCEs from airborne pollutants by the very nature of their movement vector. Therefore, we did not consider airborne pollution as a determinant in describing buffer areas.

Comment 42: Regarding the PCE that requires, ''Emergent and or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof; but emergent vegetation does not completely cover the surface of water bodies,'' this PCE is not clearly essential in our experience, as sites with minimal vegetation cover can support substantial Chiricahua leopard frog populations. Under the PCE that requires, ''Absence of chytridiomycosis, or if chytridiomycosis is present, then conditions that allow persistence of Chiricahua leopard frogs with the disease (e.g., water temperatures that do not drop below 20 °C (68 °F), pH of greater than 8

during at least part of the year),'' the temperature conditions stated are vague and not clearly in line with observations, as we have populations where temperatures do drop below these values for several months per year.

Our Response: According to our review of the best available scientific and commercial data and the opinion of species experts, the importance of available cover (*i.e.,* emergent and or submerged vegetation, root masses, undercut banks, fractured rock substrates) for the Chiricahua leopard frog cannot be overstated. Available cover is a fundamental component in the defensive behavior of the species, provides varied thermoregulation opportunities, is an important consideration in maintaining an invertebrate prey base, and also serves as substrate for egg mass deposition. In the presence of nonnative species, adequate cover becomes even more critical to an individual frogs' survival. With respect to temperature conditions specified in the proposed rule, we eliminated temperature-specific conditions in an amended PCE as stated under the ''*Primary Constituent Elements for the Chiricahua Leopard Frogs''* section below.

Comment 43: The Service should focus on promoting disturbance in riparian habitat, such as controlled grazing, in order to accommodate the native species' advantage to a disturbance regime in riparian habitat.

Our Response: In the context of evaluating the response of native species versus nonnative species to disturbance regimes in riparian habitat, we consider, in an evolutionary context, disturbance from natural hydrological processes (such as flooding). Native riparian species have evolved in the presence of dynamic hydrologic processes over millions of years, and it is these hydrological disturbance events that prepare seedbeds and provide conditions for germination for native riparian species. For purposes of this critical habitat designation, the concept of promoting disturbance in riparian habitat via controlled grazing in order to accommodate native species is not substantially useful information.

Comment 44: The PBFs and PCEs should include considerations for a landscape of appropriate size free from known or likely populations of nonnative species highly deleterious to populations of the Chiricahua leopard frog.

Our Response: We considered both the importance of space for individual and population growth and for normal behavior, and sites for breeding, reproduction, or rearing (or development) of offspring in our development of the PBFs 1 through 5 and PCEs 1 and 2. Special management that will result from critical habitat designation, such as nonnative species control, should promote these habitat characteristics on a local level, if not landscape level. Such landscape-level management against nonnatives has already proven successful in several areas within Recovery Units 1 and 2.

Comment 45: Why did you change PCE (1)(a) to remove the minimum of 6.0 foot in diameter and 20 inches in depth for breeding pools and ponds?

Our Response: During periods of drought, or less than average rainfall, breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in non-drought years. Regardless of the effects of drought on any given breeding site, we are aware of pools that fall short of the 6.0 foot in diameter and 20 inches in depth criteria that have regularly contained breeding populations in most years, such as the West Prong Gentry Creek in Recovery Unit 5. These sites still provide important habitat for the species.

Comment 46: If Chiricahua leopard frogs are to persist in Peña Blanca Lake after stocking with predatory nonnative fish species, the vegetation should be controlled to prevent suitable habitat for bullfrogs.

Our Response: We note that the designation of critical habitat for the Chiricahua leopard frog does not require this specific management, nor does any other critical habitat designation require management. Subsequent to draining and dredging Peña Blanca Lake, a concerted effort began in 2008 to clear the area of bullfrogs. The effort appears to be successful, and Chiricahua leopard frogs have benefited. We agree that, if bullfrogs were to successfully recolonize Peña Blanca Lake, shoreline habitat complexity would make their elimination difficult if not impossible without another draining and dredging effort. However, management of this area will continue to concentrate on preventing bullfrogs from recolonizing the area and eliminating those that do recolonize in habitat suitable for these efforts. Furthermore, in a May 2011, section 7 consultation for sportfish stocking of the lake, conservation measures were established that require shoreline habitat to be managed in a manner to retain its complexity, which will provide some level of protection to resident Chiricahua leopard frogs from potential predation from sportfish.

General Comments Issue 6: Legal/Policy/Economics

Comment 47: Designating critical habitat might place a burden on ranching.

Our Response: 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. Also, we conducted an economic analysis of this critical habitat designation, including analyzing the impacts to ranching. Even though there may be some incremental costs to livestock management entities, because of costs related to section 7 consultations in regards to grazing on Forest Service lands, we have found no significant economic impacts are likely to result from this designation (Industrial Economics 2012, pp. ES–5, A–3, A–7).

Comment 48: The Service should consider the cumulative impact of listings and critical habitat designations in New Mexico on private agricultural producers.

Our Response: For listing actions, the Act requires that we make determinations ''solely on the basis of the best available scientific and commercial data available'' (16 U.S.C. 1533(b)(1)(A). So, we do not conduct economic or environmental analyses or environmental assessments when making listing determinations. However, for critical habitat designations, including this one, we are required to prepare draft and final economic analyses and environmental assesessment rules. However, we are required and have prepared draft and final economic analysis and environmental assessment documents, which consider the impacts of critical habitat designation. Those documents consider impacts to private agricultural producers in Arizona and New Mexico and have generally found no significant economic or environmental impacts due to this critical habitat designation. The final economic analysis and final environmental assessment are available on the Internet at *http://www.regulations.gov.*

In regards to considering the cumulative impact of listings and critical habitat designations, in 2001, the U.S. Tenth Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of proposed critical habitat, regardless of whether those impacts are attributable co-extensively to other causes. Since that decision, however, courts in other cases have held that an incremental analysis of impacts stemming solely from the critical habitat rulemaking is proper. Most recently, in 2010, the U.S. Ninth Circuit Court of Appeals came to similar conclusions during its review of critical habitat designations. In order to address the divergent opinions of the courts and provide the most complete information to decision-makers, the economic analysis for this rule describes the baseline protections afforded the Chiricahua leopard frog absent critical habitat designation, and monetizes the potential incremental impacts precipitated specifically by the designation of critical habitat for the species.

Comment 49: The Service should invite coordination with local governmental entities in affected counties relative to any further development of proposed rules.

Our Response: We place a high priority on coordinating with local and State governments within the framework of relevant federal laws. However, we do not understand exactly what the commenter's expectations are regarding coordination with local governmental entities in affected counties relative to any further development of proposed rules. The Act does not delineate a unique role of coordination with counties. However, when proposed rules are developed, we invite and encourage comments from affected counties during the open public comment period.

Comment 50: Designating critical habitat will incentivize landowners to allow bullfrogs to take over stock tanks or allow tanks to dry up when not in use to alleviate regulatory burden. Instead the Service should not designate critical habitat and allow landowners to move frogs around to tanks suitable for occupation.

Our Response: The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. See our response to comments 47 and 53.

Comment 51: In ponds proposed as critical habitat, most of which are impoundments for watering cattle or other livestock, proposed critical habitat extends for 20 ft (6.1 m) beyond the high water line or to the boundary of the riparian and upland vegetation edge, whichever is greatest. This definition of critical habitat, as it applies to private landowners, is vague and therefore unenforceable.

Our Response: The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. See our response to comment 47.

Comment 52: Please do not let critical habitat designation negatively affect the ongoing environmental education program at Brown Canyon Ranch.

Our Response: One of the benefits to designating critical habitat is its value in educating the public on endangered and threatened species conservation. The designation of critical habitat in Brown Canyon will not impact the environmental education program at Brown Canyon Ranch. Alternatively, designating critical habitat may prove beneficial to these purposes, and the Service supports and promotes such positive endeavors.

Comment 53: Control of nonnatives is difficult, if not impossible, in many circumstances, but working with private landowners could help further the goal if critical habitat were not designated.

Our Response: As previously stated, the designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Also, critical habitat designation does not require property owners to undertake affirmative actions to promote the recovery of the species. However, the majority of Chiricahua leopard frog habitat and localities are on Federal lands, mostly lands managed by the U.S. Forest Service. We believe that building partnerships and promoting voluntary cooperation of landowners are essential to improving the status of species on non-Federal lands, and are necessary for implementing recovery actions, such as reestablishing listed species and restoring and protecting habitat.

Comment 54: Designation of critical habitat could diminish private land value.

Our Response: In this final critical habitat designation, only 26 percent of the lands designated as critical habitat are private lands, and there is no evidence that designation of critical habitat in this case will diminish land values (Industrial Economics 2012, p. 2–17). We acknowledge that public attitudes about the limits or restrictions that critical habitat may impose can cause real economic effects to property owners, regardless of whether such limits are likely. Thus, there may be a stigma effect on a property that is designated as critical habitat due to perceived limitations or restrictions, which may result in a lower market value than an identical property that is not within the boundaries of critical habitat. However, we have no evidence that private land values will diminish with this designation. In fact, we believe that, because this designation may increase protection of scenic habitat, there may be aesthetic values resulting in increased properties values (Industrial Economics 2012, p. 2–17).

Comment 55: We recommend the Service consider working with private landowners proactively in conservation and recovery versus enforcing restrictions, etc.

Our Response: The Service has a long history of working proactively with private and public land managers to further conservation and recovery goals for this species while simultaneously accounting for their multiple-use and/or commercial needs of these lands. Examples of such relationships are numerous but perhaps none are more pertinent that those discussed in detail under the section ''Exclusions'' below.

Comment 56: The proposed rule does not meet Data Quality Act standards, because it ignores the best scientific information available and bases many of its conclusions on supposition and speculation about the future.

Our Response: In accordance with section 4 of the Act, we are required to use, and we used, the best available scientific and commercial information to make this critical habitat decision. Further, we followed the criteria, established procedures, and guidance from 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. As such, we relied upon primary and original sources of information in this designation of critical habitat.

In order to meet these ''best available scientific and commercial information'' standards, we found information from many different sources, including the recovery plan, 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. Also, in accordance with our peer review policy published on July 1, 1994 (59 FR

34270), we solicited expert opinions from knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. Additionally, we requested comments or information from other concerned governmental agencies, Native American Tribes, the scientific community, industry, and any other interested parties concerning the proposed rule. Comments and information we received helped inform this final rule.

In conclusion, we believe that we have used the best available scientific and commercial information for the listing and designation of critical habitat for the Chiricahua leopard frog.

Comment 57: The Service stated that while Hermann et al. (2009, pp. 12–17) indicates that Chiricahua leopard frogs do not currently suffer from a lack genetic variability, it does not preclude the possibility that individual populations may suffer from genetic or demographic problems. This speculation is a violation of the Data Quality Act.

Our Response: The statement that ''* * * it does not preclude the possibility that individual populations may suffer from genetic or demographic problems'' pertains to the inherent level of uncertainty of how changes in the species' status and threats may influence population genetics in the foreseeable future. The Service's use of this information does not result in speculation by the Service.

Comment 58: The Services' presumption that there are ''future'' threats clearly fails to pass Data Quality Act standards, because that presumption is based solely on speculation and surmise contradicted by the best scientific and commercial information available.

Our Response: See our response to comment 56.

Comment 59: The designation of 5,200 acres of land in Arizona may place an economic burden on the livestock and mining industries in Arizona and may also risk discouraging private partnerships that could further recovery of the species.

Our Response: We discuss how the designation of critical habitat may or may not affect the responsibilities of land owners and managers under the ''*Background''* under the section ''Critical Habitat'' heading below. We recommend review of this section for clarification of the actual, versus perceived, effects of critical habitat designation. Also, we conducted an economic analysis of this designation, and found that even though there may be some incremental costs to livestock management entities related to section 7 consultations, no significant economic impacts on livestock and mining industries are likely to result from this designation (Industrial Economics 2012, pp. ES–5, A–3, A–7).

Comment 60: We are concerned that the conservation efforts for the Chiricahua leopard frog will become another Service action where new rules are put in place that limit or restrict ''multiple use'' of land and resources. Throughout Apache County, once productive private, State, or Federal land has become so encumbered with use restrictions, requirements, and liabilities that the natural resources they once provided are no longer economically available or contributing to the local economy.

Our Response: 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.

Comment 61: The Apache County Board of Supervisors requests we coordinate with them to discuss the consistencies, conflicts, opportunities for coordination, and coordinated monitoring associated with this rulemaking.

Our Response: We accepted comments on the proposed rule, draft economic analysis, and draft environmental assessment during two comment periods for a total of 90 days. As such, we complied with all requirements for public participation in our rulemaking process, under the Act and the Administrative Procedures Act (5 U.S.C. Subchapter II).

Economic Analysis

Comment 62: The Service should provide a detailed assessment about who will bear the costs in ''management changes, use reduction, or loss of property rights, such as depreciation of land values.'' The comment also suggested that the Service conduct a takings implication assessment to analyze the effects of critical habitat designation on land and water rights where appropriate.

Response: The draft economic analysis (DEA) discusses potential direct and indirect impacts of the Chiricahua leopard frog critical habitat designation in Chapters 2 and 4. In Chapter 2, the analysis discusses the possibility that the designation might affect property values both positively and negatively. Because of the extensive conservation efforts already in place for the Chiricahua leopard frog, and because the Service is already excluding portions of 10 critical habitat units (due to existing leopard frog protections in these areas), neither direct nor indirect property value impacts are anticipated to result from the designation. The analysis finds that any impacts to property value or other property rights would occur regardless of critical habitat designation and are therefore not attributable to the Chiricahua leopard frog designation.

Comment 63: One comment noted that the DEA erroneously stated that the Chiricahua leopard frog was listed as endangered rather than threatened in 2002.

Response: This is corrected in the final economic analysis (FEA).

Comment 64: The DEA states that the Service is considering portions of nine critical habitat units for exclusion, when in fact portions of 10 critical habitat units are being considered. With the addition of Unit 43 (Palomas) to the proposed rule, the Ladder Ranch lands within this unit are also being considered for exclusion (as stated in the draft environmental assessment).

Response: This is corrected in the FEA.

Comment 65: The DEA did not adequately address potential impacts on local businesses. The analysis also focused almost exclusively on the administrative costs to the Federal agencies for consultation related to the designation of critical habitat, and did not examine the potential impact to local economies already struggling with high unemployment and widespread poverty. Finally, the DEA must analyze, fully disclose, and explain how the rule may impact local businesses.

Response: Appendix A of the DEA considers potential impacts of the critical habitat designation on small entities and the energy industry. The DEA considers publicly available information in estimating the incremental costs of the proposed critical habitat designation on small entities, including any information about potential impacts to local communities.

Environmental Assessment

Comment 66: The potential impacts of climate change are complicated and overly downplayed in the draft environmental assessment.

Response: We have added a discussion of climate change in section 1.8.1 of the final environmental assessment.

Comment 67: A proposed open pit copper mine seriously threatens both units 8 and 9.

Response: In September 2011, Coronado National Forest published a draft environmental impact statement (EIS) on the proposed mine. Using information from that EIS, we added section 3.11 Mining to the final environmental assessment to address potential impacts.

Comment 68: One commenter felt that we should elevate the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) analysis to the level of an EIS.

Response: The level of impacts to the environment from this critical habitat designation do not rise to the level of significance to trigger the requirement to produce an EIS.

Comment 69: One commenter quotes from the Service's Handbook on NEPA Policies and Responsibilities: ''We encourage public scoping for an Environmental Assessment, because it helps satisfy NEPA's purposes in section 101(b).''

Response: In the proposed rule to designate critical habitat, dated March 15, 2011, and published in the **Federal Register** (76 FR 14126), we requested public review and comment on several aspects of the proposed designation, including a draft environmental assessment. Also, we conducted public outreach efforts, including posting information on the Service's National, Regional, and Field Office Web sites.

Comment 70: One commenter suggested that the draft environmental assessment did not have sufficient information on the impacts of the proposed designation, and that the Secretary of the Interior should defer making a designation of critical habitat until such time as this information is available.

Response: The commenter does not suggest what necessary information is lacking. The Act requires us to use the best available scientific and commercial data in making decisions. We believe this standard was met, and we are finalizing the critical habitat designation.

Comment 71: One commenter suggested that the draft environmental assessment does not meet the requisite Data Quality Act of 2000 standards. Instead it blatantly ignored scientific information and based many of its conclusions on supposition and speculation.

Response: The commenter does not cite the ways the document violates the Data Quality Act, or the scientific information that has been ignored. We believe that the draft environmental assessment relied on the best available scientific and commercial information. It based its conclusions on a reasonable assessment of the likely frequency, nature, and outcomes of incremental section 7 consultations, and discussed these in chapters 3 through 5.

Comment 72: The draft environmental assessment uses the term ''unknown'' more than 18 times, yet page 96 of the draft environmental assessment concludes that ''The impacts do not pose any uncertain, unique, or unknown risks.'' With the number of unknown details listed throughout the draft environmental assessment and the overly general nature of this NEPA document, it is clear that there are unknown risks that the conclusion on page 96 of the draft environmental assessment fails to recognize.

Response: The commenter's examples fall into two categories of unknowns: (1) The number of section 7 consultations likely to be conducted in the future affecting a given resource, agency, or activity (accounting for 9 of the 17 specific instances mentioned); and (2) the specific details and locations of such projects (accounting for 8 of the 17 specific instances mentioned). Given the consultation histories that are relevant (and cited throughout the draft environmental assessment), we do not believe that the frequency or nature of likely consultations will be such to cause significant impacts, regardless of whether or not the precise number and nature of those consultations can be predicted.

Comment 73: The Service should correct the draft environmental assessment by including data that support analysis of the effects of implementing critical habitat. The analysis should focus on the effects of critical habitat on each proposed critical habitat unit.

Response: The designation of critical habitat itself does not produce direct impacts on the natural environment, nor does it directly impose limits on land management activities on private property. Its impacts occur through consultations conducted with Federal agencies (and, rarely, non-Federal project proponents who request Federal funding or authorization) under section 7 of the Act. For this reason, we feel it is appropriate to focus the impact discussion on the effects that critical habitat designation will have on the number, types, and outcomes (including conservation measures, project modifications, costs, or delays) of consultations. Please see the final environmental assessment for more information.

Comment 74: There is a lack of actual environmental consequence determinations for each of the proposed critical habitat units. Per NEPA, the definition of effects clearly considers the ecological component to be the backbone of effects determinations.

Response: The designation of critical habitat is intended to provide for the protection of the physical or biological features essential to the conservation of a listed species. Impacts from critical habitat designation occur through the outcomes of new, re-initiated, or expanded consultations under section 7 of the Act, rather than through direct physical impacts on the ground. For this reason, we feel it is appropriate to focus the impact discussion in the environmental assessment on the effects critical habitat designation will have on the number, types, and outcomes of consultations.

Comment 75: One commenter suggested that the Service revise the environmental assessment to provide information about how the implementation of the proposed critical habitat will change the ecosystems that make up the proposed critical habitat areas. If it is determined that there will be no change in the environment conditions of the various proposed critical habitat areas due to the critical habitat designation, or that no true benefits will be realized from designating critical habitat, then the Service should select the ''No Action'' alternative and not burden the public with the cost of unnecessary Federal actions.

Response: We do not believe that ecological impacts will occur because of this critical habitat designation. The benefits of critical habitat include public awareness of Chiricahua leopard frog presence and the importance of habitat protection, and in cases where a Federal nexus exists, increased habitat protection for Chiricahua leopard frogs due to the protection from adverse modification or destruction of critical habitat.

Summary of Changes From Proposed Rule

In the March 15, 2011, proposed rule (76 FR 14126), we proposed to designate approximately 11,136 acres (4,510 hectares) in 40 units as critical habitat

for the Chiricahua leopard frog. Then, in September 21, 2011 (76 FR 58441), we proposed approximately 331 acres (133 hectares) in three additional units, and amended the PCEs to provide more clarification by making them more objective and measurable. In this final listing rule, we are designating approximately 10,386 acres (4,187 hectares) as critical habitat in 39 units for the Chiricahua leopard frog.

We have fewer units in this final rule because we exclude the Pasture 9 Tank Unit, Beatty's Guest Ranch Unit, and Ramsey and Brown Canyons Unit under the provisions of section 4(b)(2) of the Act (see the unit descriptions under the Final Critical Habitat Designation section and the Exclusion section, below). Also, we reevaluated the High Lonesome Well Unit, and we have determined that it does not meet the definition of critical habitat (see our response to comment 18, above, and the unit description under the Final Critical Habitat Designation section, below). Therefore, we have removed the High Lonesome Well Unit from this final critical habitat designation.

Threatened Status for the Chiricahua Leopard Frog

Background

Due to a taxonomic revision of the Chiricahua leopard frog, we reassessed the status of and threats to the currently described species. It is our intent to discuss below only those topics directly relevant to the listing of the Chiricahua leopard frog as threatened in this section of the final rule. For more information on the Chiricahua leopard frog, refer to the final listing rule published in the **Federal Register** on June 13, 2002 (67 FR 40790) and the species' recovery plan (Service 2007).

Species Information

Description

When we listed the Chiricahua leopard frog as a threatened species on June 13, 2002 (67 FR 40790), we recognized the scientific name as *Rana chiricahuensis.* Since that time, the genus name *Lithobates* was proposed by Frost *et al.* (2006, p. 249) and adopted by the Society for the Study of Amphibians and Reptiles in their most recent listing of scientific and standard English names of North American amphibians and reptiles north of Mexico (Crother 2008, p. 7). With the publication of this final rule, we officially accept the new scientific name of the Chiricahua leopard frog as *Lithobates chiricahuensis.*

In addition, the Ramsey Canyon leopard frog (*Lithobates subaquavocalis*), found on the eastern slopes of the Huachuca Mountains, Cochise County, Arizona, has recently been subsumed into *L. chiricahuensis* (Crother 2008, p. 7) and was noted by the Service as part of the listed entity in a 90-day finding on 192 species from a petition to list 475 species (74 FR 66866; December 16, 2009). Goldberg *et al.* (2004, pp. 313–319) examined the relationships between the Ramsey Canyon leopard frog (*L. subaquavocalis*) and the Chiricahua leopard frog (*L. chiricahuensis*). Genetic analysis showed no evidence that Ramsey Canyon leopard frog was a separate species from the Chiricahua leopard frog (Goldberg *et al.* 2004, p. 315). The Society for the Study of Amphibians and Reptiles later adopted these leopard frogs as the same species, *L. chiricahuensis* (Crother 2008, p. 7). Therefore, we no longer recognize the Ramsey Canyon leopard frog (*L. subaquavocalis*) as a distinct species and consider it to be synonymous with the Chiricahua leopard frog (*L. chiricahuensis*). In this final rule, we present our analysis of the threats to the species given this taxonomic revision to determine if it is appropriate to list the Chiricahua leopard frog as threatened throughout its range (see Summary of Factors Affecting the Species below).

Northern populations of the Chiricahua leopard frog in the Mogollon Rim region of east-central Arizona east to the eastern bajada of the Black Range in New Mexico are physically separated from populations to the south. Previous work had suggested these two separate divisions might be distinct species (Platz and Grudzien 1999, p. 51). Goldberg *et al.* (2004, p. 315) demonstrated that frogs from these two regions showed a 2.4 percent average divergence in mitochondrial DNA sequences. However, more recent work using both mitochondrial DNA and nuclear microsatellites from frog tissues throughout the range of the species provides no evidence of multiple taxa within what we now consider to be the Chiricahua leopard frog (Herrman *et al.* 2009, p. 18).

The Chiricahua leopard frog is distinguished from other members of the leopard frog complex by a combination of characters, including a distinctive pattern on the rear of the thigh consisting of small, raised, cream-colored spots or tubercles (wart-like projections) on a dark background; folds on the back and sides that, towards the rear, are interrupted and deflected towards the middle of the body; stocky body proportions; relatively rough skin on the back and sides; eyes that are positioned relatively high on the head; and often green coloration on the head and back (Platz and Mecham 1979, p. 347.1; Degenhardt *et al.* 1996, pp. 85–87). The species also has a distinctive call consisting of a relatively long snore of 1 to 2 seconds in duration (Platz and Mecham 1979, p. 347.1; Davidson 1996, tracks 58, 59). Overall body lengths of adults range from approximately 2.1 inches (in) (5.3 centimeters (cm)) to 5.4 in (13.7 cm) (Platz and Mecham 1979, p. 347.1; Stebbins 2003, pp. 236–237).

Life History

The life history of the Chiricahua leopard frog can be characterized as a complex life cycle, consisting of eggs and larvae that are entirely aquatic and adults who are primarily aquatic but may be terrestrial at times. Females attach spherical masses of fertilized eggs, ranging in number from 300 to 1,485 eggs, to submerged vegetation (Sredl and Jennings 2005, p. 547). Egg masses of Chiricahua leopard frogs have been reported in all months, but reports of egg laying (oviposition) in June and November through January are uncommon (Zweifel 1968, pp. 45–46; Frost and Bagnara 1977, p. 449; Frost and Platz 1983, p. 67; Scott and Jennings 1985, p. 16; Sredl and Jennings 2005, p. 547). Frost and Platz (1983, p. 67) divided egg-laying activity into two distinct periods with respect to elevation. Populations at elevations below 5,900 feet (ft) (1,798 meters (m)) tend to lay eggs from spring through late summer, with most activity taking place before June. Populations above 5,900 ft (1,798 m) bred in June, July, and August. Scott and Jennings (1985, p. 16) found a similar seasonal pattern of reproductive activity in New Mexico (February through September), as did Frost and Platz (1983, p. 67), although they did not note elevational differences. Additionally, Scott and Jennings (1985, p. 16) noted reduced egg laying in May and June. Zweifel (1968, p. 45) noted that breeding in the early part of the year appeared to be limited to sites where water temperatures do not get too low, such as spring-fed sites. Chiricahua leopard frogs at warm springs may lay eggs year-round due to elevated water temperatures as compared to most breeding habitat (Scott and Jennings 1985, p. 16).

Eggs hatch in approximately 8 to 14 days depending on temperature (Sredl and Jennings 2005, p. 547). After hatching, tadpoles remain in the water, where they feed and grow. Tadpoles turn into juvenile frogs in 3 to 9 months (Sredl and Jennings 2005, p. 547). Juvenile frogs are typically 1.4 to 1.6 in (35 to 40 millimeters (mm)) in overall body length. Males reach sexual

maturity at 2.1 to 2.2 in (5.3 to 5.6 cm), a size they can attain in less than a year (Sredl and Jennings 2005, p. 548).

The diet of the Chiricahua leopard frog includes primarily invertebrates such as beetles, true bugs, and flies, but fish and snails are also taken (Christman and Cummer 2006, pp. 9–18). An adult was documented eating a hummingbird in southeastern Arizona (Field *et al.* 2003, p. 235). Chiricahua leopard frogs can be found active both day and night, but adults tend to be active more at night than juveniles (Sredl and Jennings 2005, p. 547). Chiricahua leopard frogs presumably experience very high mortality (greater than 90 percent) in the egg and early tadpole stages, high mortality when the tadpole turns into a juvenile frog, and then relatively low mortality when the frogs are adults (Zug *et al.* 2001, p. 303; Service 2007, pp. C10–C12). Under ideal conditions, Chiricahua leopard frogs may live as long as 10 years in the wild (Platz *et al.* 1997, p. 553).

Geographical Range and Distribution

The range of the Chiricahua leopard frog includes central and southeastern Arizona; west-central and southwestern New Mexico; and in Mexico, northeastern Sonora, the Sierra Madre Occidental of northwestern and west-central Chihuahua, and possibly as far south as northern Durango (Platz and Mecham 1984, p. 347.1; Degenhardt *et al.* 1996, p. 87; Sredl and Jennings 2005, p. 546; Brennan and Holycross 2006, p. 44; Lemos-Espinal and Smith 2007, pp. 287, 579; Rorabaugh 2008, p. 32). The distribution of the species in Mexico is unclear due to limited survey work and the presence of closely related taxa (especially *Lithobates lemosespinali* (no common name)) in the southern part of the range of the Chiricahua leopard frog. Based on 2010 data, the species still occurs in most major drainages in Arizona and New Mexico where it occurred historically; the exception to this is the Little Colorado River drainage in Arizona. In Arizona and New Mexico, the species likely occurs at about 14 and 16 to 19 percent of its historical localities, respectively (Service 2007, p. 6).

Habitat

Within its geographical range, breeding populations of this species historically inhabited a variety of aquatic habitats (Service 2007, p. 3); however, the species is now limited primarily to headwater streams and springs, and livestock tanks into which nonnative fish, bullfrogs, crayfish (*Orconectes virilis*), and barred tiger salamanders (*Ambystoma mavortium mavortium*) have not yet invaded or been introduced, or where the numbers of nonnative predators are low and habitats are complex, allowing Chiricahua leopard frogs to coexist with these species (Service 2007, p. 15). The large valley-bottom cienegas (mid-elevation wetland communities typically surrounded by relatively arid environments), rivers, and lakes where the species occurred historically are populated with nonnative predators at densities with which the Chiricahua leopard frog cannot coexist.

Dispersal

Although one of the most aquatic of southwestern leopard frogs (Degenhardt *et al.* 1996, p. 86), Chiricahua leopard frogs are known to move among aquatic sites, and such movements are crucial for conserving metapopulations. A metapopulation is a set of local populations that interact via individuals moving between local populations (Hanski and Gilpin 1991, p. 7). If local populations are extirpated through drought, disease, or other factors, the populations can be recolonized via dispersal from adjacent populations. Hence, the long-term viability of metapopulations may be enhanced over that of isolated populations, even though local populations experience periodic extirpations. To determine whether metapopulation structure exists in a specific group of local populations, the dispersal capabilities of the frog must be understood. Based on a review of available information, the recovery plan (Service 2007, pp. D–2, D–3, K–3) provides a rule of thumb on dispersal capabilities. Chiricahua leopard frogs are reasonably likely to disperse 1.0 mile (mi) (1.6 kilometers (km)) overland, 3.0 mi (4.8 km) along ephemeral or intermittent drainages (water existing only briefly), and 5.0 mi (8.0 km) along perennial water courses (water present at all times of the year), or some combination thereof not to exceed 5.0 mi (8.0 km). This is often referred to as the ''1–3–5 rule'' of dispersal. It should be noted that inevitably and over time, it is the species itself, in the wild, which will define the configuration of any given metapopulation. Ultimately, the resultant configuration of persistent wild metapopulations may or may not comport with our current understanding of metapopulation dynamics. We will continue to examine metapopulation dynamics of wild populations and make management recommendations or modifications as required, over time.

Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for adding species to the Federal Lists of Endangered and Threatened Wildlife and Plants (Lists). A species may be determined to be endangered or threatened due to one or more of the five factors described in section 4(a)(1) of the Act: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; and (E) other natural or manmade factors affecting its continued existence. The final listing rule for the Chiricahua leopard frog (67 FR 40790; June 13, 2002) contained a discussion of these five factors, as did the proposed listing rule (65 FR 37343; June 14, 2000). Threats discussed in the previous listing rules are still affecting the Chiricahua leopard frog today. Please refer to these rules or the Chiricahua leopard frog recovery plan (Service 2007, pp. 18–45) for a more detailed analysis of the threats affecting the species. Because we no longer recognize the Ramsey Canyon leopard frog as a distinct species and consider it to be synonymous with the Chiricahua leopard frog, we reanalyzed factors relevant to the entire listed entity below. However, because all the threats from the previous rules still apply, we provide a summary of those below.

A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

The recovery plan lists the following threats to habitat or range of the Chiricahua leopard frog: Mining, including mining-related contaminants; other contaminants; dams; diversions; stream channelization; groundwater pumping; woodcutting; urban and agricultural development; road construction; grazing by livestock and elk; climate change; and altered fire regimes (Service 2007, pp. 31–37). Although these threats are widespread and varied, a threats assessment that was accomplished as part of the recovery plan showed chytridiomycosis and predation by nonnative species as consistently more important threats than these habitat-based factors (Service 2007, pp. 20–27).

Chiricahua leopard frogs are fairly tolerant of variations in water quality, but likely do not persist in waters severely polluted with cattle feces

(Service 2007, p. 34), or runoff from mine tailings or leach ponds (Rathbun 1969, pp. 1–3; U.S. Bureau of Land Management 1998, p. 26; Service 2007, p. 36). Furthermore, variation in pH, ultraviolet radiation, and temperature, as well as predation stress, can alter the potency of chemical effects (Akins and Wofford 1999, p. 107; Monson *et al.* 1999, pp. 309–311; Reylea 2004, pp. 1081–1084). Chemicals may also serve as a stressor that makes frogs more susceptible to disease, such as chytridiomycosis (see discussion under Factor C below) (Parris and Baud 2004, p. 344). The effects of pesticides and other chemicals on amphibians can be complex because of indirect effects on the amphibian environment, direct lethal and sublethal effects on individuals, and interactions between contaminants and other factors associated with amphibian decline (Sparling 2003, pp. 1101–1120; Reylea 2008, pp. 367–374).

A copper mine (the Rosemont Mine) has been proposed in the northeastern portion of the Santa Rita Mountains, Pima County, Arizona (Recovery Unit 2), the footprint of which includes several sites recently occupied by Chiricahua leopard frogs. Recent research indicates that Chiricahua leopard frog tadpoles are sensitive to cadmium and copper above certain levels (Little and Calfee 2008, pp. 6–10), making the introduction of copper into Chiricahua leopard frog habitat a possible significant threat. A draft environmental impact statement was prepared by the U.S. Forest Service in September 2011, which confirmed that Chiricahua leopard frogs could be adversely affected by direct and indirect impacts of the mining operation, including effects from mercury, cadmium, and selenium contamination (U.S. Forest Service 2011, p. 396).

The continued threat of wildfire has never been more visible than that represented by the 2011 fire season in Arizona. A minimum of five wildfires occurred in Arizona that adversely affected the status of the Chiricahua leopard frog. The largest wildfire in Arizona State history, the Wallow Fire, started in the White Mountains on May 28, 2011. The Wallow Fire consumed 538,049 acres (217,741 ha), including in the area around Cambell Blue and Coleman Creeks. The Horseshoe II Fire started on May 8, 2011, grew to 222,954 acres (90,226 ha), and affected the majority of land area in the Chiricahua Mountains. We are not certain how occupied habitat in Cave Canyon will respond to such a widespread fire and subsequent precipitation events. The Murphey Complex and Greaterville fires both occurred in the spring of 2011, potentially affecting designated critical habitat in the Santa Rita Mountains (Florida Canyon and Eastern Slope of the Santa Mountains Units) and Pajarito Mountains (Sycamore Canyon and Peña Blanca Lake and Spring and Associated Tanks Units), respectively.

On June 12, 2011, the Monument Fire started 4 miles east of Hereford, Arizona, ultimately consuming 30,526 acres (12,353 ha) and significantly affecting a portion of the Huachuca Mountains, including the Beatty Guest Ranch in Miller Canyon. On June 27, 2011, over 120 adult and larvae Chiricahua leopard frogs were salvaged from the Beatty Guest Ranch in anticipation of destructive floods and sedimentation that occurred shortly thereafter, filling with sediment the ponds that formerly contained a robust population of Chiricahua leopard frogs. Chiricahua leopard frogs persist on Beatty Guest Ranch but only as a small fraction of their former numbers in habitat that has been severely adversely affected and faces an uncertain future.

The Southwest Endangered Species Act Team (2008, pp. iii–IV–5) published ''Chiricahua leopard frog (*Lithobates* [*Rana*] *chiricahuensis*) considerations for making effects determinations and recommendations for reducing and avoiding adverse effects,'' which includes detailed descriptions of how many different types of projects, including fire management, construction, native fish recovery, and livestock management projects, may affect the frog and its habitat. This document, in addition to the recovery plan (Service 2007, pp. 31–37), can be referenced for more information about habitat-related threats. Habitat-related threats to the Chiricahua leopard frog, while not the most important factors threatening the species, currently affect and will continue to affect the species in the future.

B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

Even though the final listing rule (67 FR 40790; June 13, 2002) discussed over-collection for the pet trade as a possible threat, we have no information that leads us to believe that overutilization for commercial, recreational, scientific, or educational purposes is currently a threat to the Chiricahua leopard frog, or will become a threat in the future.

C. Disease and Predation

The threats assessment conducted during the preparation of the recovery plan (Service 2007, pp. 18–45) found that disease (chytridiomycosis) and predation by nonnative species (bullfrogs, crayfish, fish, and barred tiger salamanders) are the most significant threats to the Chiricahua leopard frog.

Disease

In some areas, Chiricahua leopard frog populations are known to be seriously affected by chytridiomycosis. Chytridiomycosis is an introduced fungal skin disease caused by the organism *Batrachochytrium dendrobatidis* or ''*Bd.*'' Voyles *et al.* (2009) hypothesized that *Bd* disrupts normal regulatory functioning of frog skin, and evidence suggests that electrolyte depletion and osmotic imbalance that occur in amphibians with severe chytridiomycosis are sufficient to cause mortality. This disease has been associated with numerous population extirpations, particularly in New Mexico, and with major die-offs in other populations of Chiricahua leopard frogs (Service 2007, p. 26).

Predation

Prior to the invasion of predatory, nonnative species (bullfrog, crayfish, fish species) into perennial waters, the Chiricahua leopard frog was historically found in a variety of aquatic habitat types. Today, leopard frogs in the southwestern United States are so strongly impacted by harmful nonnative species, which are most prevalent in perennial waters, that the leopard frogs' occupied niche is increasingly restricted to the uncommon environments that do not contain these nonnative predators, and these environments now tend to be ephemeral and unpredictable. Witte *et al.* (2008, p. 378) found that sites with disappearances of Chiricahua leopard frogs were 2.6 times more likely to have introduced crayfish than were control sites. Unfortunately, few sites with bullfrogs were included in the Witte *et al.* (2008, pp. 375–383) study, and at many sites, there was no identification of the species of fish present.

Summary of Factor C

Overall, the Chiricahua leopard frog has made modest population gains in Arizona in spite of disease and predation, but is apparently declining in New Mexico because of these threats (Service 2011, pp. 25–27). We consider disease, specifically chytridiomycosis, and predation by nonnative species to have significant impacts on Chiricahua leopard frog populations now, and we anticipate those impacts will continue in the future.

D. Inadequacy of Existing Regulatory Mechanisms

The Chiricahua leopard frog is currently listed as a threatened species (67 FR 40790; June 13, 2002) with a special rule (see 50 CFR 17.43(b)) to exempt operation and maintenance of livestock tanks on non-Federal lands from the section 9 take prohibitions of the Act. Even with regulatory protections of the Act currently in place, nonnative species used for fishing baits in Chiricahua leopard frog habitats pose a significant threat to the Chiricahua leopard frog; use of these nonnative species as fishing baits presents a vehicle for the distribution of these often predatory or competitive bait species into frog habitat and for the dissemination of deadly diseases to the frog. Picco and Collins (2008, pp. 1585–1587) found tiger salamanders infected with chytridiomycosis in Arizona bait shops, and tiger salamanders infected with ranavirus (a genus of viruses known to effect amphibians and reptiles) in Arizona, New Mexico, and Colorado bait shops. Furthermore, they found that 26 to 67 percent of anglers released tiger salamanders bought as bait into the waters where they fish, and 4 percent of bait shops released tiger salamanders into the wild after they were housed in shops with infected animals, despite the fact that release of live salamanders is prohibited by Arizona Revised Statute 17–371. This study shows how current wildlife laws and regulations fail to prevent the spread of amphibian diseases via the tiger salamander bait trade. Even though the Chiricahua leopard frog is currently listed under the Act as a threatened species, additional regulation or increased enforcement of existing regulations or both are needed to stem the spread of amphibian diseases via use of live salamanders as bait. Therefore, we consider the inadequacy of current regulatory mechanisms to prevent the spread of amphibian diseases via the bait trade to be a threat to the Chiricahua leopard frog now and in the future.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

Small Populations

Among the potential threats in this category discussed in the Chiricahua leopard frog recovery plan (Service 2007, pp. i–M–17) and the final listing rule (67 FR 40790; June 13, 2002), are genetic and stochastic effects that manifest in small populations. Specifically, small populations are vulnerable to extirpation due to random variations in age structure and sex ratios, as well as from disease or other natural events that a larger population is more likely to survive. Inbreeding depression and loss of genetic diversity in small populations can also reduce the fitness of individuals and the ability of a population to adapt to change. The recent genetic study revealed no systemic lack of genetic diversity within the Chiricahua leopard frog as a species (Herrmann *et al.* 2009, pp. 12–17). In fact, populations were quite variable; up to 16 different genetic groupings were found. This does not preclude the possibility that individual populations may suffer from genetic or demographic problems, but the study shows the species retains good genetic variability.

Climate Change

The Chiricahua leopard frog recovery plan (Service 2007, pp. 40–43) describes anticipated effects of climate change on the Chiricahua leopard frog. The plan cited literature indicating that temperatures rose in the 20th century and warming is predicted to continue over the 21st century (Service 2007, pp. 40–43). Climate models are less certain about predicted trends in precipitation, but the southwestern United States is expected to become warmer and drier. Since the recovery plan was prepared, the Intergovernmental Panel on Climate Change (IPCC) (2007, pp. 1–8) published a report stating that global warming is occurring and that precipitation patterns are being affected.

According to the IPCC report, global mean precipitation is anticipated to increase, but not uniformly (IPCC 2007, p. 8). In the American Southwest and elsewhere in the middle latitudes, precipitation is expected to decrease. There is also high confidence that many semi-arid areas like the western United States will suffer a decrease in water resources due to climate change, as a result of less annual mean precipitation and reduced length of snow season and snow depth (IPCC 2007, p. 8). Although most climate models predict a drying trend in the 21st century in the southwestern United States, these predictions are less certain than predicted warming trends. The models do not predict summer precipitation well, and typically at least half of precipitation within the range of the Chiricahua leopard frog occurs in the summer months (Brown 1982, pp. 58–62; Guido 2008, p. 5). Furthermore, there have been no trends either in summer rainfall over the last 100 years in Arizona (Guido 2008, pp. 3–5), or since 1955 in annual precipitation in the western United States (van Mantgem *et al.* 2009, p. 523). On the other hand, all severe, multi-year droughts in the southwestern United States and northwestern Mexico have been associated with La Niña events (Seager *et al.* 2007, p. 3), during which sea surface temperatures in the tropical Pacific decline. Climate models predict that drought driven by La Niña events will be deeper and more profound than any during the last several hundred years (Seager *et al.* 2007, p. 3).

Drought has likely contributed to loss of Chiricahua leopard frog populations since the species was originally listed in 2002, and has likely affected the species historically. Drought conditions in the southwestern United States have arisen over time, and can range from short term to long term in duration. Stock tank populations are particularly vulnerable to loss, because they tend to dry out during periods of below normal precipitation. These trends are likely to continue, but the situation is complicated by interactions with other factors. For example, the effects of drought cannot be separated from the effects of nonnative species, because drought will affect those predators as well as populations of Chiricahua leopard frogs. The interaction between predators and drought resistance of frog habitats is often a delicate balance. Stock tanks are likely an important habitat for Chiricahua leopard frogs in part because these sites dry out periodically, which rids them of most aquatic predators. Because of their evolutionary history, southwestern leopard frogs may be able to withstand drying of stock tanks for a longer period of time than nonnative species that evolved in wetter climates in the eastern United States, which could provide southwestern leopard frogs a selective advantage. However, if stock tanks remain dry for extended periods of time, neither leopard frogs nor introduced predators may be capable of persisting. Drought will reduce habitats of both leopard frogs and introduced predators, but exactly how that will affect the Chiricahua leopard frog will probably be site-specific. Chiricahua leopard frogs can often withstand drying of stock tanks for short to moderate periods of time, whereas fish and bullfrogs may not (Service 2011; p. 29). At this time, it is difficult to predict how drought will impact the overall species' status, but Chiricahua leopard frog sites could be buffered from the effects of drought by occupying sites that have alternative supplies of water, such as wells. Even though drought may contribute to loss of site-specific populations, we do not consider short to moderate periods of drought that causes stock tanks to dry out to be a threat to the species or its

habitat. However, we consider prolonged drought that appreciably affects habitat on a regional scale to be a threat to the species.

Additionally, the effects of chytridiomycosis on frogs are related to water temperature. Sites where Chiricahua leopard frogs coexist with the disease are typically at lower elevations and are warmer sites (Service 2007, p. 26). As a result, if temperatures increase as predicted, it is possible that more populations will be able to persist with the disease. Thus climate change, particularly in the form of increased water temperatures, may not pose an impact to the Chiricahua leopard frog into the future.

Summary of Factor E

The Chiricahua leopard frog recovery plan (Service 2007) describes genetic and stochastic effects that manifest in small populations and the anticipated effects of climate change on the Chiricahua leopard frog as potential threats to the species. Herrmann *et al.*'s recent genetic study (2009, pp. 12–17), however, revealed no systemic lack of genetic diversity within Chiricahua leopard frog populations. Moreover, the effects of climate change are inextricably related to effects from other threats and are difficult to predict or interpret without more definitive data of higher resolution. Therefore, we are unable to conclusively state that climate change, in and of itself, will adversely affect the Chiricahua leopard frog in the foreseeable future. However, long-term periods of drought can be a factor affecting the species' continued existence that poses significant impacts to the Chiricahua leopard frog's habitat now and in the future.

Listing Determination

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the Chiricahua leopard frog. In summary, the most significant threats to the Chiricahua leopard frog include the effects of the disease chytridiomycosis, which has been associated with major die-offs in some populations of Chiricahua leopard frogs (Service 2007, pp. B8–B88), predation by nonnative species (Factor C), and drought (Factor E). According to the June 13, 2002, final listing rule (67 FR 40790) and 2007 recovery plan, additional factors affecting the species include degradation and loss of habitat as a result of water diversions and large-scale groundwater pumping, livestock management practices (such that grazing is not in accordance with approved allotment management plans or otherwise considered adverse to maintaining natural habitat characteristics), altered fire regimes due to fire suppression, mining, contaminants, agricultural development, and other human activities; and inadequate regulatory mechanisms regarding introduction of nonnative bait species (Factors A and D) (67 FR 40790, June 13, 2002; Sredl and Jennings 2005, pp. 546–549; Service 2007, pp. B1–B88).

Since the time of listing, the species has made modest population gains in Arizona as a result of cooperative head-starting (rearing frogs in captivity from eggs through metamorphosis) campaigns and active partnerships and cooperation in management of occupied habitat. However the Chiricahua leopard frog continues to decline in New Mexico. Overall in the United States, the status of the Chiricahua leopard frog is improving. The status and trends for the species are unknown in Mexico. A recovery program is underway in the United States, and reestablishment of populations, creation of refugial populations, and habitat enhancement and creation have helped stabilize or improve the status of the species in some areas (Service 2011, pp. 6–9). Although progress has been made to secure some existing populations and establish new populations (Service 2011, pp. 6–9), the status of the species continues to be affected by threats such that the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Due primarily to ongoing conservation measures and the existence of relatively robust populations and metapopulations, we have determined that the species is not in immediate danger of extinction (i.e., on the brink of extinction) (Service 2011, p. 30). However, because we believe that the present threats are likely to continue in the future (such as chytrid fungus and nonnative predators spreading and increasing in prevalence and range, and affecting more populations of the leopard frog, thus increasing the threats in the foreseeable future), we have determined that the Chiricahua leopard frog is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Therefore, we determine that the Chiricahua leopard frog meets the definition of a threatened species under the Act.

Special Rule Under Section 4(d) of the Act

The June 13, 2002, final rule (67 FR 40790) listing the Chiricahua leopard frog as threatened included a special rule as defined under section 4(d) of the Act to ease the general take prohibitions for livestock use at or maintenance activities of livestock tanks located on private, State, or Tribal lands (see 50 CFR 17.43(b)). Under section 4(d) of the Act, the Secretary may publish a special rule that modifies the standard protections for threatened species in the Service's regulations at 50 CFR 17.31, which implement section 9 of the Act, with special measures that are determined to be necessary and advisable to provide for the conservation of the species. Based on changes made to the listed entity, we reevaluated the existing 4(d) rule to see if its measures are still necessary and advisable to the conservation of the species and appropriate to apply in the expanded range of the species. We determined that the measures of the 4(d) rule are appropriate and should be applied to the whole range. Therefore, we are not changing any conditions of the June 13, 2002, special rule, and it shall remain in effect as identified in our regulations at 50 CFR 17.43(b). We are, however, making an editorial change to 50 CFR 17.43(b) to revise the paragraph's heading to reflect to currently described species *Lithobates chiricahuensis.*

The special rule replaces the Act's general prohibitions against take of the Chiricahua leopard frog with special measures tailored to the conservation of the species on all non-Federal lands. Through the maintenance and operation of the stock tanks for cattle, habitat is provided for the leopard frogs; hence there is a conservation benefit to the species. Under the special rule, take of Chiricahua leopard frog caused by livestock use of or maintenance activities at livestock tanks located on private, State, or Tribal lands would be exempt from section 9 of the Act. A livestock tank is defined as an existing or future impoundment in an ephemeral drainage or upland site constructed primarily as a watering site for livestock. The rule targets tanks on private, State, and Tribal lands to encourage landowners and ranchers to continue to maintain these tanks as they provide habitat for the frogs. Livestock use and maintenance of tanks on Federal lands will be addressed through the section 7 process. When a Federal action, such as permitting livestock grazing on Federal lands, may affect a listed species, consultation between us and the action agency is required under section 7 of the Act. The conclusion of consultation may include mandatory changes in livestock programs in the form of measures to minimize take of a

listed animal or to avoid jeopardizing the continued existence of a listed species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, and local agencies; private organizations; and individuals. The Act provides for possible cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed wildlife are discussed in Effects of Critical Habitat Designation and are further discussed, in part, below.

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the Department of Defense, U.S. Fish and Wildlife Service, U.S. Forest Service, and Bureau of Land Management; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. The prohibitions, codified at 50 CFR 17.21 for endangered wildlife and 50 CFR 17.31 for threatened wildlife, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these), import, export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered or threatened wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 for endangered species and 50 CFR 17.32 for threatened wildlife. You may obtain permits for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that will or will not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within the range of the listed species. The following activities could potentially result in a violation of section 9 of the Act; this list is not comprehensive:

(1) Unauthorized collecting, handling, possessing, selling, delivering, carrying, or transporting of the species, including import or export across State lines and international boundaries, except for properly documented antique specimens of these taxa at least 100 years old, as defined by section 10(h)(1) of the Act.

(2) Unauthorized release of nonnative species that compete with or prey upon the Chiricahua leopard frog within the States of Arizona or New Mexico.

(3) The unauthorized release of biological control agents that attack any life stage of this species.

(4) Unauthorized modification of the channel or water flow of any stream or water body in which the Chiricahua leopard frog is known to occur.

(5) Unauthorized activities that result in the introduction or spread of the chytrid fungus.

(6) Unauthorized recreational activities.

(7) Unauthorized livestock grazing.

(8) Unauthorized construction and maintenance of roads and utility corridors or various types of development.

(9) Unauthorized fire suppression, fuels management, or use of prescribed fire.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Requests for copies of the regulations concerning listed animals and general inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Endangered Species Permits, P.O. Box 1306, Albuquerque, NM 87103; telephone: 505–248–6633; facsimile: 505–248–6788.

Critical Habitat

Background

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.

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 under 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. Such designation does not allow the government or public to access private lands. Such designation does not 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 consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to 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 within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are the elements of physical or biological features that together provide for a species' life-history processes and are essential to the conservation of the species.

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. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial 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 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 insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. 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.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derived the specific physical or biological features (PBFs) required for the Chiricahua leopard frog from the studies of this species' habitat, ecology, and life history as described below. These needs are identified in the species' recovery plan (Service 2007), particularly in the Habitat Characteristics and Ecosystems section of Part 1: Background (pp. 15–18); in the Recovery Strategy in Part 11: Recovery (pp. 49–51); in Appendix C—Population and Habitat Viability Analysis (pp. C8–C35); and in Appendix D—Guidelines for Establishing and Augmenting Chiricahua Leopard Frog Populations, and for Refugia and Holding Facilities (pp. D2–D5). Additional insight is provided by Degenhardt *et al.* (1996, pp.

85–87), Sredl and Jennings (2005, pp. 546–549), and Witte *et al.* (2008, pp. 5–8). We have determined that Chiricahua leopard frogs require the physical or biological features described below.

Space for Individual and Population Growth and for Normal Behavior

Generally, Chiricahua leopard frogs need aquatic breeding and overwintering sites, both in the context of metapopulations and as isolated populations. Based upon our understanding of the best available science, a metapopulation should consist of at least four local populations that exhibit regular recruitment, three of which are continually in existence. Local populations should be arranged in geographical space in such a way that no local population will be greater than 5.0 mi (8.0 km) from at least one other local population during some part of the year unless facilitated dispersal is planned (Service 2007, p. K–3). Movement of frogs among local populations is reasonably certain to occur if those populations are separated by no more than 1.0 mi (1.6 km) overland, 3.0 mi (4.8 km) along ephemeral or intermittent drainages, 5.0 mi (8.0 km) along perennial water courses, or some combination thereof not to exceed 5.0 mi (8.0 km) (the ''1–3–5 rule'' of dispersal, see *''Dispersal''* in the Threatened Status for the Chiricahua Leopard Frog section above). Metapopulations should include at least one large, healthy subpopulation (e.g., at least 100 adults) in order to achieve an acceptable level of viability as a larger unit. If aquatic habitats can be managed for persistence through drought periods (e.g., supplying water via a pipeline or a well, lining a pond), overall metapopulation viability may be achievable with a smaller number of individuals per subpopulation (e.g., 40 to 50 adults) (Service 2007, p. K–3).

Isolated breeding populations are also necessary for the conservation of the frog because they buffer against disease and disease organisms that can spread rapidly through a metapopulation as infected individuals move among aquatic sites. An isolated, but robust, breeding population should be beyond the reasonable dispersal distance (see *''Dispersal''* in the Threatened Status for the Chiricahua Leopard Frog section) from other Chiricahua leopard frog populations, contain at least 60 adults, and exhibit a diverse age class distribution that is relatively stable over time. A population of 40 to 50 adults can also be robust or strong if it resides in a drought-resistant habitat (Service 2007, p. K–5). At least two metapopulations and one isolated robust population are needed in each Recovery Unit to meet the recovery criteria in the recovery plan (Service 2007, p. 53).

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

Chiricahua leopard frogs are fairly tolerant of variations in water quality, but likely do not persist in waters severely polluted with cattle feces (Service 2007, p. 34) or runoff from mine tailings or leach ponds (Rathbun 1969, pp. 1–3; U.S. Bureau of Land Management 1998, p. 26; Service 2007, p. 36). Furthermore, variation in pH, ultraviolet radiation, and temperature, as well as predation stress, can alter the potency of chemical effects (Akins and Wofford 1999, p. 107; Monson *et al.* 1999, pp. 309–311; Reylea 2004a, pp. 1081–1084). Chemicals may also serve as a stressor that makes frogs more susceptible to disease, such as chytridiomycosis (Parris and Baud 2004, p. 344). The effects of pesticides and other chemicals on amphibians can be complex because of indirect effects on the amphibian environment, direct lethal and sublethal effects on individuals, and interactions between contaminants and other factors associated with amphibian decline (Sparling 2003, pp. 1101–1120; Reylea 2008, pp. 367–374).

Cover or Shelter

Chiricahua leopard frogs are most often encountered in or very near water, generally at breeding locations. Only rarely are they found very far from water. They can be found basking or foraging in riparian vegetation and on open banklines out to the edge of riparian vegetation. These upland areas provide essential foraging and basking sites. A combination of open ground and vegetation cover is desirable for basking and foraging, respectively. Vegetation in these areas provide habitat for prey species and protection from terrestrial predators (those living on dry land). In particular, Chiricahua leopard frogs use these upland areas during the summer rainy season.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

Aquatic breeding habitat is essential for providing space, food, and cover necessary to sustain all life stages of Chiricahua leopard frogs. Suitable breeding habitat consists of permanent or nearly permanent aquatic habitats from about 3,200 to 8,900 ft (975 to 2,715 m) elevation with deep (greater than 20 in (0.5 m)) pools in which nonnative predators are absent or occur at such low densities and in complex habitats to allow persistence of Chiricahua leopard frogs (Service 2007, pp. 15–18, D–3). Included are cienegas or springs, pools, livestock tanks, lakes, reservoirs, streams, and rivers. Sites as small as 6.0-ft (1.8-m) diameter steel troughs can serve as important breeding sites, particularly if that population is part of a metapopulation that can be recolonized from adjacent sites if extirpation occurs. Some of the most robust extant breeding populations are in earthen livestock watering tanks. Absence of the disease chytridiomycosis is crucial for population persistence in some regions, particularly in west-central New Mexico and at some other locales, as well. However, some populations persist with the disease (e.g., sites between Interstate 19 and the Baboquivari Mountains, Arizona) with few noticeable effects on demographics or survivorship. Persistence with disease is enhanced in warm springs and at lower elevations with warmer water (Service 2007, pp. 22–27, B67).

To be considered essential breeding habitat, water must be persistent enough to support breeding, tadpole development to metamorphosis (change into a frog), and survival of frogs. Tadpole development lasts 3 to 9 months, and some tadpoles overwinter (Sredl and Jennings 2005, p. 547). Juvenile and adult frogs need moisture for survival, including sites for hibernation. Overwintering sites of Chiricahua leopard frogs have not been investigated; however, hibernacula (shelter occupied during winter by inactive animals) of related species include sites at the bottom of well-oxygenated ponds, burial in mud, or moist caves (Service 2007, p. 17). Given these requirements, sites that dry out for 1 month or more will not provide essential breeding or overwintering habitat. However, occasional drying for short periods (less than 1 month) may be beneficial in that the Chiricahua leopard frogs can survive, but nonnative predators, particularly fish, and in some cases, bullfrogs and barred tiger salamanders, may be eliminated during the dry period (Service 2007, p. D3). Water quality requirements at breeding sites include having a pH equal to or greater than 5.6 (Watkins-Colwell and Watkins-Colwell 1998, p. 64), salinities less than 5 parts per thousand (Ruibal 1959, pp. 318–319), and very little chemical pollutants, including but not limited to heavy metals, pesticides, mine runoff, and fire retardants, where the pollutants do not exceed the tolerance of Chiricahua leopard frogs (Rathbun 1969, pp. 1–3; U.S. Bureau of

Land Management 1998, p. 26; Boone and Bridges 2003, pp. 152–167; Calfee and Little 2003, pp. 1527–1531; Sparling 2003, pp. 1109–1111; Relyea 2004b, pp. 1741–1746; Service 2007, p. 36; Little and Calfee 2008, pp. 6–10). White (2004, pp. 53–54, 73–79, 136–140) provides specific pesticide use guidelines for minimizing impacts to the Chiricahua leopard frog.

Essential aquatic breeding sites require some open water. Chiricahua leopard frogs can be eliminated from sites that become entirely overgrown with cattails (*Typha* sp.) or other emergent plants. At the same time, Chiricahua leopard frogs need some emergent or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof as refugia from predators and extreme climatic conditions (Sredl and Jennings 2005, p. 547). In essential breeding habitat, if nonnative crayfish, predatory fish, bullfrogs, or barred tiger salamanders are present, they occur only as rare dispersing individuals that do not breed, or are at low enough densities in habitats that are complex and with abundant escape cover (e.g., aquatic and emergent vegetation cover, diversity of moving and stationary water) that persistence of both Chiricahua leopard frogs and nonnative species can occur (Sredl and Howland 1995, pp. 383–384; Service 2007, pp. 20–22, D3; Witte *et al.* 2008, pp. 7–8).

Habitats That Are Protected From Disturbance or Are Representative of the Historical, Geographical, and Ecological Distribution of the Chiricahua Leopard Frog

In some areas, Chiricahua leopard frog populations are known to be seriously affected by the fungal skin disease chytridiomycosis. This disease has been associated with numerous population extirpations, particularly in Recovery Unit 6 in New Mexico (Service 2007, pp. 5–6, 24–27). The Chiricahua leopard frog appears to be less susceptible to mortality from the disease in warmer waters, which may occur at lower elevations. The precise temperature that affects survivorship in the presence of the fungus is unknown. Survivorship in the presence of *Bd* may depend on a variety of factors; however, at Cuchillo Negro Warm Springs, Sierra County, New Mexico, Chiricahua and plains leopard frogs (*Lithobates blairi*) become uncommon to nonexistent where winter water temperatures drop below about 20 degrees Celsius (°C) (68 degrees Fahrenheit (°F)) (Christman 2006a, p. 8). A pH of greater than 8 during at least part of the year may also limit the ability of the disease to be an effective pathogen (Service 2007, pp. 26–27). Furthermore, based on experience in Arizona, particularly the Huachuca Mountains, if Chiricahua leopard frogs are absent for a period of months or years, the disease may drop out of the system or become scarce enough that frogs can persist again if reestablished. Essential breeding habitats either lack chytridiomycosis or include conditions such as warmer waters or lower elevations that allow for persistence of Chiricahua leopard frogs with the disease.

Dispersal Habitat

Dispersal habitat provides routes for connectivity and gene flow among local populations within a metapopulation, which enhances the likelihood of persistence and allows for recolonization of sites that are lost due to drought, disease, or other factors (Hanski and Gilpin 1991, pp. 4–6; Service 2007, p. 50). Detailed studies of dispersal and metapopulation dynamics of Chiricahua leopard frogs have not been conducted; however, Jennings and Scott (1991, pp. 1–43) noted that maintenance of corridors used by dispersing juveniles and adults that connect separate populations may be critical to conserving populations of frogs. As a group, leopard frogs are surprisingly good at dispersal. In Michigan, young northern leopard frogs (*Lithobates pipiens*) commonly move up to 0.5 mi (0.8 km) from their birthplace, and three young males established residency up to 3.2 mi (5.2 km) away from where they were born (Dole 1971, p. 221). Movement may occur via dispersal of frogs or passive transport of tadpoles along stream courses. The maximum distance moved by a radio-telemetered Chiricahua leopard frog in New Mexico was 2.2 mi (3.5 km) in one direction along a drainage (Service 2007, p. 18). In 1974, Frost and Bagnara (1977, p. 449) noted passive or active movement of Chiricahua and plains leopard frogs for 5 mi (8 km) or more along East Turkey Creek in the Chiricahua Mountains, Arizona. In August 1996, Rosen and Schwalbe (1998, p. 188) found up to 25 young adult and subadult (fully metamorphosed but not sexually mature) Chiricahua leopard frogs at a roadside puddle in the San Bernardino Valley, Arizona. They believed that the only possible origin of these frogs was a stock tank located 3.5 mi (5.5 km) away. In September 2009, 15 to 20 Chiricahua leopard frogs were found at Peña Blanca Lake, west of Nogales. The nearest likely source population was Summit Reservoir, a straight line distance of 3.1 mi (4.9 km) overland or approximately 4.4 mi (7.0 km) along intermittent drainages (Service 2010b, pp. 7–8).

Movements away from water do not appear to be random. Streams are important dispersal corridors for young northern leopard frogs (Seburn *et al.* 1997, pp. 68–70). Displaced northern leopard frogs will return to their place of origin, and may use olfactory, visual, or auditory cues, and possibly celestial orientation, as guides (Dole 1968, pp. 395–398; 1972, pp. 275–276; Sinsch 1991, pp. 542–544). Based on this and other information (Service 2007, pp. 12–14) and as noted in the Dispersal section above, Chiricahua leopard frogs are reasonably likely to disperse 1.0 mi (1.6 km) overland, 3.0 mi (4.8 km) along ephemeral or intermittent drainages, 5.0 mi (8.0 km) along perennial (continuous) water courses, or some combination thereof not to exceed 5.0 mi (8.0 km). Dispersal habitat must provide corridors through which Chiricahua leopard frogs can move among aquatic breeding sites in metapopulations. These dispersal habitats will often be drainages connecting aquatic breeding sites, and may include ephemeral, intermittent, and perennial waters that are not suitable for breeding. The most likely dispersal routes may include combinations of ephemeral, intermittent, and perennial drainages, as well as uplands. Some vegetation cover for protection from predators, and aquatic sites that can serve as buffers against desiccation (drying) and stop-overs for foraging (feeding), are desirable along dispersal routes. A lack of barriers that would block dispersal is critical. Features on the landscape likely to serve as partial or complete barriers to dispersal include cliff faces and urban areas (Service 2007, p. D–3), reservoirs 50 acres (ac) (20 hectares (ha)) or more in size that are stocked with nonnative fish or other nonnative predators, highways, major dams, walls, or other structures that physically block movement (Andrews *et al.* 2008, pp. 124–132; Eigenbrod *et al.* 2009, pp. 32–40; 75 FR 12818, March 17, 2010). The effects of highways on frog dispersal can be mitigated with frog fencing (barriers to movement that may redirect individuals to preferred passageways) and culverts (Service 2007, pp. I7–I8). Unlike some other species of leopard frogs, Chiricahua leopard frogs have only rarely been found in association with agricultural fields; hence, agriculture may also serve as a barrier to movement.

Primary Constituent Elements for the Chiricahua Leopard Frog

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the Chiricahua leopard frog in areas occupied at the time of listing, focusing on the features' PCEs. We consider PCEs to be the elements of the physical or biological features that provide for a species' life-history processes, are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to the Chiricahua leopard frog are:

(1) Aquatic breeding habitat and immediately adjacent uplands exhibiting the following characteristics:

(a) Standing bodies of fresh water (with salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present), including natural and manmade (e.g., stock) ponds, slow-moving streams or pools within streams, off-channel pools, and other ephemeral or permanent water bodies that typically hold water or rarely dry for more than a month. During periods of drought, or less than average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in non-drought years.

(b) Emergent and/or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof, but emergent vegetation does not completely cover the surface of water bodies.

(c) Nonnative predators (e.g., crayfish, bullfrogs, nonnative fish) absent or occurring at levels that do not preclude presence of the Chiricahua leopard frog.

(d) Absence of chytridiomycosis, or if present, then environmental, physiological, and genetic conditions are such that allow persistence of Chiricahua leopard frogs.

(e) Upland habitats that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat.

(2) Dispersal and nonbreeding habitat, consisting of areas with ephemeral (present for only a short time), intermittent, or perennial water that are generally not suitable for breeding, and associated upland or riparian habitat that provides corridors (overland movement or along wetted drainages) for frogs among breeding sites in a metapopulation with the following characteristics:

(a) Are not more than 1.0 mile (1.6 kilometers) overland, 3.0 miles (4.8 kilometers) along ephemeral or intermittent drainages, 5.0 miles (8.0 kilometers) along perennial drainages, or some combination thereof not to exceed 5.0 miles (8.0 kilometers).

(b) In overland and nonwetted corridors, provide some vegetation cover or structural features (e.g., boulders, rocks, organic debris such as downed trees or logs, small mammal burrows, or leaf litter) for shelter, forage, and protection from predators; in wetted corridors, provide some ephemeral, intermittent, or perennial aquatic habitat.

(c) Are free of barriers that block movement by Chiricahua leopard frogs, including, but not limited to, urban, industrial, or agricultural development; reservoirs that are 50 acres (20 hectares) or more in size and contain nonnative predatory fish, bullfrogs, or crayfish; highways that do not include frog fencing and culverts; and walls, major dams, or other structures that physically block movement.

With the exception of impoundments, livestock tanks, and other constructed waters, 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.

With this designation of critical habitat, we intend to identify the physical or biological features essential to the conservation of the species, through the identification of the elements of the features, the primary constituent elements, that support the life-history processes of the species. Because not all life-history functions require both PCEs 1 and 2, not all areas designated as critical habitat will contain both PCEs. Each of the areas designated in this rule has been determined to contain one or both of the PCEs.

Under our regulations, we are required to identify the PCEs within the geographical area occupied by the Chiricahua leopard frog at the time of listing that are essential to the conservation of the species and which may require special management considerations or protections. The PCEs are laid out in a specific spatial arrangement and quantity determined to be essential to the conservation of the species. All designated critical habitat units are within the species' historical geographical range in the United States and contain one or both PCEs to support life-history functions. In addition, all but one designated critical habitat unit, Carr Barn Pond, are currently occupied by Chiricahua leopard frogs. Carr Barn Pond was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species. This unit is needed as a future site for frog colonization or reestablishment, and Chiricahua leopard frogs can persist in this unit with a reasonable level of effort to control nonnative predators.

Special Management Considerations or Protections

When designating critical habitat, we assess the physical or biological features within the geographical area occupied by the species at the time of listing that contain features that are essential to the conservation of the species and which may require special management considerations or protection.

All areas designated as critical habitat will require some level of management to address the current and future threats to the Chiricahua leopard frog and to maintain or restore the PCEs. Special management in aquatic breeding sites will be needed to ensure that these sites provide water quantity, quality, and permanence or near permanence; cover; and absence of extraordinary predation and disease that can affect population persistence. In dispersal habitat, special management will be needed to ensure frogs can move through those sites with reasonable success. The designation of critical habitat does not imply that lands outside of critical habitat do not play an important role in the conservation of the Chiricahua leopard frog. Federal activities that may affect areas outside of critical habitat are still subject to review under section 7 of the Act if they may affect the Chiricahua leopard frog because effects to the species and its critical habitat must be considered independently. The prohibitions of section 9 of the Act also continue to apply both inside and outside of designated critical habitat.

A detailed discussion of activities influencing the Chiricahua leopard frog and its habitat can be found in the final listing rule (67 FR 40790; June 13, 2002) and the recovery plan (Service 2007, pp. 18–45). The recovery plan also contains recovery-unit-specific threat assessments (Service 2007, pp. B1–B88). Activities that may warrant special management of the physical or biological features that define essential habitat (appropriate quantity and distribution of PCEs) for the Chiricahua leopard frog include, but are not limited to, introduction of nonnative predators;

introduction or spread of chytridiomycosis; inappropriate livestock grazing; water diversions and development; construction and maintenance of roads and utility corridors; fire suppression, fuels management, and prescribed fire. These activities have the potential to affect the PCEs if they are conducted within or adjacent to designated units.

Criteria Used To Identify Critical Habitat

As required by section 4(b) of the Act, we used the best scientific and commercial data available in determining areas within the geographical area occupied at the time of listing that contain the features essential to the conservation of the Chiricahua leopard frog and require special management considerations or protection, and specific areas outside of the geographical area occupied at the time of listing that are essential for the conservation of the species. We also relied heavily on the recovery criteria outlined in the 2007 recovery plan for the Chiricahua leopard frog (Service 2007, pp. 31–37). Areas occupied at the time of listing are identified and described in Rorabaugh (2010, pp. 7–17) and information cited therein for Arizona, and for New Mexico in Jennings (1995, pp. 10–21), Painter (2000, pp. 10–21), and the final listing rule at 67 FR 40793 (June 13, 2002). We have also reviewed available information that pertains to the habitat requirements of this species. The following were particularly useful: Degenhardt *et al.* (1996, pp. 85–87), Sredl and Jennings (2005, pp. 546–549), Service (2007, pp. 15–18, 47–48), and Witte *et al.* (2008, pp. 5–8).

Units occupied at the time of listing include the specific areas occupied by Chiricahua leopard frogs in June 2002, that contain sufficient PCEs to support life-history functions essential for the conservation of the species. Included are sites where the species was breeding as well as areas where dispersing individuals were present, and other sites for which the breeding status was unknown. If metapopulation structure was known or suspected, dispersal habitats connecting breeding populations within metapopulations are also designated.

Sites not known to be occupied at the time of listing in June 2002 are also designated as critical habitat if we have determined them to be essential to the conservation of the species. Specifically, we assessed whether they are needed to meet the following recovery criterion from the recovery plan: at least two metapopulations located in different drainages (defined here as USGS 10-digit Hydrologic Units) plus at least one isolated and robust population occurring in each Recovery Unit and exhibiting long-term persistence and stability (even though local populations may go extinct in metapopulations; Service 2007, p. 53). If sites are needed to meet that criterion, they are designated as critical habitat in this rule. At the time of listing, one of the units being designated as critical habitat was unoccupied, and for 10 additional units, their occupancy status was unknown (discussed below under Final Critical Habitat Designation). For purposes of this designation of critical habitat, the 10 units with unknown occupancy at the time of listing are being considered unoccupied at the time of listing. However, all 11 of these units are currently occupied and contain one or both PCEs. The specific areas defined by these units, which were unoccupied or not known to be occupied at the time of listing, are being designated as critical habitat because they are considered to be essential to the conservation of the species, will help meet the population goals in the recovery criterion discussed above, contain the PCEs, and currently contain known breeding populations of Chiricahua leopard frogs, which are relatively scarce (33 populations in Arizona and 20 to 23 in New Mexico).

Recovery planning is focused on these existing breeding populations and building on them with habitat rehabilitation and population reestablishments to construct metapopulations and isolated robust populations needed to meet the recovery criterion. Such work is underway in all Recovery Units, but is further along in some than others. In particular, Recovery Units 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Sonora), 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Sonora), 3 (Chiricahua Mountains-Malpai Borderlands-Sierra Madre), 4 (Pinaleño-Galiuro-Dragoon Mountains, Arizona), 5 (Mogollon Rim—Verde River, Arizona), and 8 (Black-Mimbres-Rio Grande, New Mexico) are moving towards meeting the above-cited recovery criterion, and metapopulations and isolated, robust populations have been or are being identified (Rorabaugh 2010, pp. 17–30; Service 2010a, pp. 2–7; 2010b, pp. 2–9). In these Recovery Units, unoccupied sites have sometimes been identified by the Service, in cooperation with the recovery team steering committees and local recovery groups, where population reestablishment is needed to complete a metapopulation or to establish an isolated, robust population (Rorabaugh 2010, pp. 17–30; Service 2010a, pp. 2–7; 2010b, pp. 2–9). As previously noted, the Carr Barn Pond unit is the only unoccupied site being designated as critical habitat.

Identification of such recovery sites in Recovery Units 6 (White Mountains-Upper Gila, Arizona and New Mexico) and 7 (Upper Gila-Blue River, Arizona and New Mexico) is more difficult, because less progress in recovery has been made in these areas. The recovery plan identifies management areas, which are areas within Recovery Units with the greatest potential for successful recovery actions and threat alleviation (Service 2007, p. 49). Within Recovery Units 6 and 7, critical habitat is being designated at specific sites within management areas with the greatest potential for building metapopulations and isolated, robust populations. As in other Recovery Units, existing breeding populations were considered to be either subpopulations in metapopulations or isolated, robust populations. Metapopulations were identified with these existing breeding populations at sites occupied at the time of listing that contain PCEs sufficient to support life-history functions essential for the conservation of the species, and at an unoccupied site with one or more PCEs or the potential to support PCEs with a reasonable level of restoration work or special management. In metapopulations, all of these sites are within reasonable dispersal distance (the ''1–3–5 rule'' described above) of each other. In Recovery Unit 7, enough sites could not be found that meet the definition of critical habitat to construct two metapopulations and one isolated, robust population. Similarly, in Recovery Unit 6, one metapopulation exists, plus several isolated populations, but we have not been able to find aquatic sites that meet the definition of critical habitat to build a second metapopulation. In particular, other aquatic sites, some of which were occupied at the time of listing, lack the PCEs sufficient to support life-history functions essential for the conservation of the species, primarily due to presence of chytridiomycosis, which is a very serious threat in Recovery Unit 6. This Recovery Unit will require further investigation, and habitat restoration or creation may be needed to provide additional habitat for breeding Chiricahua leopard frog populations that can contribute to meeting the population goals in the recovery criterion discussed above.

Also, included in this critical habitat designation are dispersal corridors

between sites within a metapopulation. These corridors were selected as the most likely routes for dispersal of frogs among sites, based on reasonable dispersal distances along perennial and ephemeral or intermittent drainages, or via overland routes where PCE 2 is present. Our selection of routes assumes perennial drainages are better dispersal corridors than ephemeral or intermittent drainages, and the ephemeral or intermittent drainages are better dispersal corridors than overland routes. We also assume that, if all else is equal, the shorter the route the more likely Chiricahua leopard frogs will successfully disperse. In addition, we considered the presence of waterfalls, steep slopes, and other obstacles that may be difficult for a frog to negotiate.

When determining critical habitat boundaries within this final rule, 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 for Chiricahua leopard frogs. 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 final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will 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 designating as critical habitat lands that we have determined were occupied at the time of listing that require special management considerations or protection, and contain sufficient physical or biological features to support life-history processes essential for the conservation of the species. We are also designating lands outside of the geographical area occupied at the time of listing that we have determined are essential for the conservation of Chiricahua leopard frogs.

Units are designated based on sufficient elements of physical or biological features being present to support Chiricahua leopard frog life processes. Some units contain all of the identified elements of physical or biological features and support multiple life processes. Some segments contain only some elements of the physical or biological features necessary to support the Chiricahua leopard frog's particular use of that habitat.

Final Critical Habitat Designation

We are designating 39 units as critical habitat for the Chiricahua leopard frog. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the species. All 39 units we are designating as critical habitat are within the species' geographical range, including areas occupied at the time of listing and areas not known to be occupied at the time of listing but identified as essential for the conservation of the species (Platz and Mecham 1984, p. 347.1). Table 1 below shows the specific occupancy status of each unit at the time of listing and currently, based on the most recent data available. The approximate area of each designated critical habitat unit is shown in Table 2. The 39 areas designated as critical habitat are grouped by Recovery Unit.

TABLE 1—OCCUPANCY OF CHIRICAHUA LEOPARD FROG BY CRITICAL HABITAT UNITS

Critical habitat unit	Occupied at time of listing?	Currently occupied?
Recovery Unit 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico)		
Twin Tanks and Ox Frame Tank Unit	No*	Yes.
Garcia Tank Unit	Yes	Yes.
Buenos Aires NWR Central Tanks Unit	Yes	Yes.
Bonita, Upper Turner, and Mojonera Tanks Unit	Yes	Yes.
Sycamore Canyon Unit	Yes	Yes.
Peña Blanca Lake and Spring and Associated Unit Tanks	Yes	Yes.
Recovery Unit 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Mexico)		
Florida Canyon Unit	No*	Yes.
Eastern Slope of the Santa Rita Mountains Unit	No*	Yes.
Las Cienegas National Conservation Area Unit	Yes	Yes.
Scotia Canyon Unit	No	Yes.
Carr Barn Pond Unit	Yes	No.
Ramsey and Brown Canyons Unit	Yes	Yes.
Recovery Unit 3 (Chiricahua Mountains-Malpai Borderlands-Sierra Madre, Arizona, New Mexico, and Mexico)		
Peloncillo Mountains Unit	Yes	Yes.
Cave Creek Unit	Yes	Yes.
Leslie Creek Unit	Yes	Yes.
Recovery Unit 4 (Piñaleno-Galiuro-Dragoon Mountains, Arizona)		
Deer Creek Unit	Yes	Yes.
Oak Spring and Oak Creek Unit	No*	Yes.
Dragoon Mountains Unit	Yes	Yes.
Recovery Unit 5 (Mogollon Rim-Verde River, Arizona)		
Buckskin Hills Unit	Yes	Yes.
Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit	Yes	Yes.

TABLE 1—OCCUPANCY OF CHIRICAHUA LEOPARD FROG BY CRITICAL HABITAT UNITS—Continued

Critical habitat unit	Occupied at time of listing?	Currently occupied?
Ellison and Lewis Creeks Unit	No*	Yes.
Recovery Unit 6 (White Mountains-Upper Gila, Arizona and New Mexico)		
Concho Bill and Deer Creek Unit	No*	Yes.
Campbell Blue and Coleman Creeks Unit	Yes	Yes.
Tularosa River Unit	Yes	Yes.
Deep Creek Divide Area Unit	Yes	Yes.
Main Diamond Creek Unit	Yes	Yes.
Beaver Creek Unit	No*	Yes.
Kerr Canyon Unit	Yes	Yes.
West Fork Gila River Unit	Yes	Yes.
Recovery Unit 7 (Upper Gila-Blue River, Arizona and New Mexico)		
Left Prong of Dix Creek Unit	No*	Yes.
Rattlesnake Pasture Tank and Associated Tanks Unit	No*	Yes.
Coal Creek Unit	No*	Yes.
Blue Creek Unit	Yes	Yes.
Recovery Unit 8 (Black-Mimbres-Rio Grande, New Mexico)		
Seco Creek Unit	Yes	Yes.
Alamosa Warm Springs Unit	Yes	Yes.
Cuchillo Negro Warm Springs and Creek Unit	Yes	Yes.
Ash and Bolton Springs Unit	Yes	Yes.
Mimbres River Unit	Yes	Yes.
South Fork Palomas Creek Unit	Yes	Yes.

*Occupancy unknown at time of listing. However, for purposes of this designation of critical habitat, these units are classified as unoccupied at the time of listing.

TABLE 2—CRITICAL HABITAT UNITS FOR THE CHIRICAHUA LEOPARD FROG

[Area estimates reflect all land within critical habitat unit boundaries. Note that grazing allotments are not considered in private ownership.]

Critical habitat unit	Land ownership by type acres (hectares)			Size of unit in acres (hectares)
	Federal	State	Private	
Recovery Unit 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico)				
Twin Tanks and Ox Frame Tank Unit	0	1.3 (0.5)	0.4 (0.2)	1.7 (0.7)
Garcia Tank Unit	0.7 (0.3)	0	0	0.7 (0.3)
Buenos Aires NWR Central Tanks Unit	1,720 (696)	0	0	1,720 (696)
Bonita, Upper Turner, and Mojonera Tanks Unit	201 (81)	0	0	201 (81)
Sycamore Canyon Unit	262 (106)	0	7 (3)	269 (109)
Peña Blanca Lake and Spring and Associated Tanks Unit	202 (82)	0	0	202 (82)
Recovery Unit 1 Total	2,385.7 (965.3)	1.3 (0.5)	7.4 (3.2)	2,394.4 (969.0)
Recovery Unit 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Mexico)				
Florida Canyon Unit	4 (2)	0	0	4 (2)
Eastern Slope of the Santa Rita Mountains Unit	172 (70)	0	14 (6)	186 (76)
Las Cienegas National Conservation Area Unit	1,364 (552)	186 (75)	0	1,550 (627)
Scotia Canyon Unit	70 (29)	0	0	70 (29)
Carr Barn Pond Unit	0.6 (0.3)	0	0	0.6 (0.3)
Ramsey and Brown Canyons Unit	58 (24)	0	44 (18)	102 (42)
Recovery Unit 2 Total	1,668.6 (677.3)	186 (75)	58 (24)	1,912.6 (776.3)
Recovery Unit 3 (Chiricahua Mountains-Malpai Borderlands-Sierra Madre, Arizona, New Mexico, and Mexico)				
Peloncillo Mountains Unit	366 (148)	0	0	366 (148)
Cave Creek Unit	234 (95)	0	0	234 (95)
Leslie Creek Unit	26 (11)	0	0	26 (11)
Recovery Unit 3 Total	626 (253)	0	0	626 (253)

TABLE 2—CRITICAL HABITAT UNITS FOR THE CHIRICAHUA LEOPARD FROG—Continued

[Area estimates reflect all land within critical habitat unit boundaries. Note that grazing allotments are not considered in private ownership.]

Critical habitat unit	Land ownership by type acres (hectares)			Size of unit in acres (hectares)
	Federal	State	Private	
Recovery Unit 4 (Piñaleno-Galiuro-Dragoon Mountains, Arizona)				
Deer Creek Unit	17 (7)	69 (28)	34 (14)	120 (49)
Oak Spring and Oak Creek Unit	27 (11)	0	0	27 (11)
Dragoon Mountains Unit	74 (30)	0	0	74 (30)
Recovery Unit 4 Total	118 (48)	69 (28)	34 (14)	221 (89)
Recovery Unit 5 (Mogollon Rim-Verde River, Arizona)				
Buckskin Hills Unit	232 (94)	0	0	232 (94)
Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit	334 (135)	64 (26)	6 (3)	404 (164)
Ellison and Lewis Creeks Unit	83 (34)	0	15 (6)	98 (40)
Recovery Unit 5 Total	649 (263)	64 (26)	21 (8)	734 (297)
Recovery Unit 6 (White Mountains-Upper Gila, Arizona and New Mexico)				
Concho Bill and Deer Creek Unit	17 (7)	0	0	17 (7)
Campbell Blue and Coleman Creeks Unit	174 (70)	0	0	174 (70)
Tularosa River Unit	335 (135)	0	1,575 (637)	1,910 (772)
Deep Creek Divide Area Unit	408 (165)	0	102 (41)	510 (206)
Main Diamond Creek Unit	53 (21)	0	0 (0)	53 (21)
Beaver Creek Unit	132 (54)	0	25 (10)	157 (64)
Kerr Canyon Unit	19 (8)	0	6 (2)	25 (10)
West Fork Gila River Unit	177 (72)	0	0	177 (72)
Recovery Unit 6 Total	1,315 (532)	0	1,708 (690)	3,023 (1,222)
Recovery Unit 7 (Upper Gila-Blue River, Arizona and New Mexico)				
Left Prong of Dix Creek Unit	13 (5)	0	0	13 (5)
Rattlesnake Pasture Tank and Associated Tanks Unit	59 (24)	0	0	59 (24)
Coal Creek Unit	7 (3)	0	0	7 (3)
Blue Creek Unit	24 (10)	0	12 (5)	36 (15)
Recovery Unit 7 Total	103 (42)	0	12 (5)	115 (47)
Recovery Unit 8 (Black-Mimbres-Rio Grande, New Mexico)				
Seco Creek Unit	66 (27)	0	0	66 (27)
Alamosa Warm Springs Unit	0.2 (0.1)	25 (10)	54 (22)	79.2 (32.1)
Cuchillo Negro Warm Springs and Creek Unit	3 (1)	3 (1)	0	6 (2)
Ash and Bolton Springs Unit	0	0	49 (20)	49 (20)
Mimbres River Unit	0	0	1,097 (444)	1,097 (444)
South Fork Palomas Creek Unit	23 (9)	0	0	23 (9)
Recovery Unit 8 Total	92.2 (37.1)	28 (11)	1,200 (486)	1,320.2 (534.1)
Total	6,958 (2,816)	348 (141)	3,040 (1,230)	10,346 (4,187)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units below, and reasons why they meet the definition of critical habitat for the Chiricahua leopard frog. Unless indicated otherwise below, the physical or biological features of critical habitat in stream and riverine lotic (actively moving water) systems are contained within the riverine and riparian ecosystems formed by the wetted channel and adjacent floodplains within 328 lateral ft (100 lateral m) on either side of bankfull stage. Bankfull stage is generally considered to be that level of stream discharge reached just before flows spill out onto the adjacent floodplain. The discharges that occur at bankfull stage, in combination with the range of flows that occur over a length of time, govern the shape and size of the river channel (Rosgen 1996, pp. 2–2 to 2–4; Leopold 1997, pp. 62–63, 66). The use of bankfull stage and 328 ft (100 m) on either side recognizes the naturally dynamic nature of riverine systems and recognizes that floodplains are an integral part of the stream ecosystem.

Ephemeral drainages (containing water for only brief periods) designated as critical habitat for dispersal corridors among breeding sites in metapopulations will, in some cases, be less distinct than the stream or river

reaches where Chiricahua leopard frogs breed. Nonetheless, these ephemeral drainages will still be defined by wetland plant species, denser or taller specimens of upland species, channel characteristics such as sandy or gravelly soils that contrast with upland soils, the presence of cut banks, or some combination of these. Where dispersal corridors cross uplands, designated critical habitat is 328 ft (100 m) wide, the centerline of which is the line delineated on our critical habitat maps and legal descriptions.

In ponds designated as critical habitat, most of which are impoundments for watering cattle or other livestock, designated critical habitat extends for 20 ft (6.1 m) beyond the high water line or to the boundary of the riparian and upland vegetation edge, whichever is greatest. Chiricahua leopard frogs are commonly found foraging and basking within 20 feet of the shoreline of tanks. In addition, designated critical habitat extends upstream from ponds from the extent of the boundary for 328 ft (100 m) from the high water line. The designated critical habitat extends to 328 ft (100 m) upstream because there is often a riparian drainage coming into the tank, and Chiricahua leopard frogs are likely moving along those drainages. Also, the high water line is defined as that water level which, if exceeded, results in overflow of the pond. In most cases, this is the elevation of the spillway (dam) in livestock impoundments.

Recovery Unit 1 (Tumacacori-Atascosa-Pajarito Mountains, Arizona and Mexico)

Twin Tanks and Ox Frame Tank Unit

This unit consists of 1.3 ac (0.5 ha) of lands owned by the Arizona State Land Department and 0.4 ac (0.2 ha) of private lands in the Sierrita Mountains, Pima County, Arizona. Twin Tanks is on lands owned and managed by the Arizona State Land Department and consists of two tanks in proximity to each other as well as a drainage running between them. Ox Frame Tank is on private lands.

Occupancy of these livestock tanks at the time of listing is unknown, as they were not surveyed for frogs until 2007. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because these sites are important breeding sites for recovery. Twin Tanks held more than 1,000 frogs in 2008, and is a robust breeding population. Ox Frame and Twin tanks are too far apart (4.3 mi (7.0 km) overland) across rugged terrain to expect frogs to move between these sites. Hence, these tanks serve as isolated populations. The Twin Tanks area is less than 0.5 mi (0.8 km) upslope of active mining at Freeport McMoRan's Sierrita Copper Mine and could be affected from expansion of mining activities, creation of aerial pollutants that could affect water chemistry or quality, and possible effects to the frog's prey base. Addtionally, this unit contains both PCEs 1 and 2.

Both sites are also at risk of introduction of nonnative predators, such as bullfrogs and nonnative crayfish. Presence of chytridiomycosis at these tanks has not been investigated.

Garcia Tank Unit

This unit consists of 0.7 ac (0.3 ha) of Federal land located on the Buenos Aires National Wildlife Refuge (NWR), Pima County, Arizona. It is a double tank; the southwest or downstream impoundment is more dependable at holding water than the upstream tank. However, both parts of the tank are designated as critical habitat. Garcia Tank is designated as critical habitat, because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

A breeding site, Garcia Tank was known to have been occupied in 2002 and 2006. Leopard frogs were noted in 2010, but they were not identified to species (the lowland leopard frog is also known to occur in the area). It is about 3.6 mi (5.8 km) over land across dissected and hilly terrain to the next nearest population at Lower Carpenter Tank. The nearest known populations to the east are on the Coronado National Forest and are more than 9.0 mi (14 km) away. Hence, this site is isolated and is managed as an isolated, robust population. The features essential to the conservation of the species in this unit may require special management considerations or protection to ensure these characteristics persist over time. The greatest threats needing special management are introductions of or colonization by nonnative species, such as bullfrogs and crayfish, and drought that could greatly reduce or eliminate the aquatic habitat. If necessary, in the wake of sustained drought, alternative water supplies or interim measures may be necessary in the form of water hauling or a supply well.

Buenos Aires National Wildlife Refuge (NWR) Central Tanks Unit

This unit, consisting of 1,720 ac (696 ha) of Federal land within the Buenos Aires NWR, Pima County, Arizona, includes former cattle tanks and other waters used as breeding and dispersal sites, plus intervening and connecting drainages and uplands. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains the features essential to the conservation of the species (PCEs 1 and 2 are present).

Breeding sites at permanent or nearly permanent tanks (Carpenter, Rock, State, Triangle, and New Round Hill) support the most stable metapopulation known within the range of the species. Chongo Tank, where a population was established in 2009, may become a sixth breeding site. Seven other tanks support frogs periodically to regularly, and breeding and recruitment likely take place at these tanks in wet cycles (periods marked by successional precipitation events). Frogs occupied Carpenter, Rock, and Triangle Tanks in 2002, at or about the time of listing. Tanks designated for designation include Carpenter, Rock, State, Triangle, New Round Hill, Banado, Choffo, Barrel Cactus, Sufrido, Hito, Morley, McKay, and Chongo Tanks. McKay Tank is a cluster of three tanks, all of which are designated as critical habitat. Also designated as critical habitat are the intervening drainages, including: (1) Puertocito Wash from Triangle Tank north through and including Aguire Lake to New Round Hill Tank, then upstream to the confluence with Las Moras Wash, and upstream in Las Moras Wash to Chongo Tank; (2) an unnamed drainage from Puertocito Wash upstream to McKay Tank; (3) an unnamed drainage from Puertocito Wash upstream to Rock Tank, including Morley Tank, then upstream in an unnamed drainage to the top of that drainage, directly overland to an unnamed drainage, and then upstream to Hito Tank and downstream to McKay Tank; (4) from Sufrido Tank downstream in an unnamed drainage to its confluence with an unnamed drainage running between Rock and Morley tanks; (5) Lopez Wash from Carpenter Tank downstream to Aguire Lake; (6) an unnamed drainage from its confluence with Lopez Wash upstream to Choffo Tank; (7) an unnamed drainage from its confluence with Lopez Wash upstream to State Tank; (8) an unnamed drainage from Banado Tank downstream to its confluence with an unnamed drainage, then upstream in that drainage to Barrel Cactus Tank; and (9) an unnamed drainage from Banado Tank upstream to a saddle, then directly downslope to Lopez Wash.

The features essential to the conservation of the species in this unit

may require special management considerations or protection to alleviate the threats from bullfrogs and disease. In this unit, bullfrogs remain a threat, but efforts are underway to eliminate the last known populations of bullfrogs in the Altar Valley (on the Santa Margarita Ranch to the south of Buenos Aires NWR). Frogs in this area have tested positive for chytridiomycosis, but the disease appears to have little effect on population persistence.

Bonita, Upper Turner, and Mojonera Tanks Unit

This unit includes 201 ac (81 ha) of Federal lands in the Coronado National Forest in the Pajarito and Atascosa Mountains, Santa Cruz County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains the features essential to the conservation of the species (both PCEs 1 and 2).

Two breeding sites (Bonita Tank and Mojonera Tank), combined with a dispersal site or site where breeding and recruitment may occur in wet years (Upper Turner Tank), form the center of a future metapopulation. Three additional waters—Sierra Tank East, Sierra Tank West, and Sierra Well—require special management to increase breeding potential in these areas. Frogs currently occupy Bonita and Mojonera Tanks, and Bonita Tank was occupied at the time of listing. Frogs were last found at Upper Turner Tank in 2004. The occupancy status of Mojonera and Upper Turner Tanks at the time of listing is unknown. The designated critical habitat in this unit also includes intervening drainages, uplands, and ephemeral or intermittent waters as follows: (1) From Upper Turner Tank upstream in an unnamed drainage to its confluence with a minor drainage coming in from the east, then directly upslope in that drainage and east to a saddle, and directly downslope to Bonita Canyon, and upstream in Bonita Canyon to Bonita Tank; and (2) from Mojonera Tank downstream in Mojonera Canyon to a sharp bend where the drainage turns west-northwest, then southeast and upstream in an unnamed drainage to a saddle, downslope through an unnamed drainage to its confluence with another unnamed drainage, upstream in that unnamed drainage to a saddle, and then downstream in an unnamed drainage to Sierra Well, to include Sierra Tank West and Sierra Tank East, then directly overland to Upper Turner Tank.

In this unit, special management is needed because bullfrogs are a continuing threat, and illegal border activity and associated law enforcement have resulted in watershed damage. A road on the berm of Upper Turner Tank is scheduled for improvement to access a surveillance tower operated by U.S. Customs and Border Protection. Special management is also needed because frogs in this region have tested positive for chytridiomycosis, but the disease appears to have little effect on population persistence.

Sycamore Canyon Unit

This unit includes 262 ac (106 ha) of Federal lands in the Coronado National Forest and 7 ac (3 ha) of private lands along Atascosa Canyon through Bear Valley Ranch in the Pajarito and Atascosa Mountains, Santa Cruz County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains the features essential to the conservation of the species (PCEs 1 and 2).

Sycamore Canyon is the only lotic (flowing water) site in Recovery Unit 1 capable of supporting breeding subpopulations of Chiricahua leopard frogs. Most other sites are livestock tanks or impounded springs. Sycamore Canyon, Bear Valley Ranch Tank, Rattlesnake Tank, and Atascosa Canyon downstream of Bear Valley Ranch were all occupied by Chiricahua leopard frogs at the time of listing. The occupancy status of the other sites at the time of listing is unknown. Sycamore Canyon, Yank Tank, North Mesa tank, South Mesa Tank, and Bear Valley Ranch Tank are currently occupied. The current occupancy status of Rattlesnake Tank and Atascosa Canyon downstream of Bear Valley Ranch Tank is unknown. Designated critical habitat includes approximately 6.35 mi (10.23 km) of Sycamore Canyon from Ruby Road to the international border, which supports frogs and breeding, although in the driest months (May and June) the stream dries to pools and tinajas (a term used in the American Southwest for water pockets formed in bedrock depressions that occur below waterfalls or are carved out by spring flow or seepage).

A number of livestock tanks in the unit form a viable metapopulation with Sycamore Canyon. Designated critical habitat includes the following tanks and their connecting drainages: (1) From Yank Tank downstream in an unnamed drainage to Sycamore Canyon; (2) from North Mesa Tank downstream in Atascosa Canyon to its confluence with Peñasco Canyon, then from that confluence downstream in Peñasco Canyon to Sycamore Canyon; (3) from Horse Pasture Spring downstream to Peñasco Canyon; (4) from Bear Valley Ranch Tank downstream in an unnamed drainage to Atascosa Canyon; (5) from South Mesa Tank downstream in an unnamed drainage to Peñasco Canyon; and (6) from Rattlesnake Tank downstream in an unnamed canyon to its confluence with another unnamed drainage, then upstream in that drainage to South Mesa Tank.

Special management is required in this unit because bullfrogs have been a continuing problem, although recent control efforts seem to have eliminated them from Sycamore Canyon. Nonnative green sunfish (*Lepomis cyanellus*) have occasionally been found in Sycamore Canyon as well, and they could prey on larval Chiricahua leopard frogs. Pools critical to survival of frogs and tadpoles through the dry season are sensitive to sedimentation and erosion upstream in the watershed of Sycamore Canyon. The earliest records of chytridiomycosis in Arizona are from Sycamore Canyon (1972). A robust population of Chiricahua leopard frogs persists at this site despite the disease and periodic die-offs. Illegal border activity and associated law enforcement have resulted in many trails and new vehicle routes in the area, as well as trampling in the canyon.

Sycamore Canyon is designated a Research Natural Area by the Coronado National Forest and is closed to livestock grazing. Critical habitat is designated for the Sonora chub (*Gila ditaenia*) in Sycamore Canyon from Hank and Yank Spring (about 0.25 mi (0.40 km) downstream of the Ruby Road crossing) downstream to the international border, and in a 25-ft (7.6-m) strip on both sides of the creek (51 FR 16042; April 30, 1986). Much of this unit also lies within the Pajarita Wilderness area. These designations provide some level of protection to Chiricahua leopard frog habitats in Sycamore Canyon because management for Sonora chub conservation is consistent with that for Chiricahua leopard frogs. However, the Chiricahua leopard frog may require additional measures.

Peña Blanca Lake and Spring and Associated Tanks Unit

This unit includes 202 ac (82 ha) of Federal lands in the Coronado National Forest, Santa Cruz County, Arizona. This area is designated as critical habitat because it was occupied at the time of listing and contains PCEs 1 and 2, which support the life-history functions essential for the conservation of the species.

This unit is a metapopulation that includes Peña Blanca Lake, Peña Blanca Spring, Summit Reservoir, Tinker Tank, Thumb Butte Tank, and Coyote Tank.

These sites were all occupied in 2009. Chiricahua leopard frogs and tadpoles were found in Peña Blanca Lake in 2009 and 2010, after the lake had been drained and then refilled, which eliminated the nonnative predators. However, early in 2010, rainbow trout (*Oncorhynchus mykiss*) were stocked back into the lake, and plans are underway to reestablish a variety of warm water, predatory fish (such as largemouth bass (*Micropterus salmoides*)) in the spring of 2012. Despite the stocking of rainbow trout, Peña Blanca Lake now contains a robust breeding population of Chiricahua leopard frogs, one of the largest single populations throughout its range. In April 2011, surveys of the lake confirmed that Chiricahua leopard frogs remained extant. In September 2011, surveys of the lake estimated the Chiricahua leopard frog population to number between 300 to 500 individuals, which is likely a low estimate, because only a single night survey was performed, and the shoreline habitat was complex, making observations difficult. During that survey, Chiricahua leopard frogs were calling, indicating that fall breeding may have been occurring.

In 2002, Chiricahua leopard frogs were only known to occur at Peña Blanca Spring. Occupancy status at the time of listing for the other sites is unknown. Designated critical habitat also includes: (1) From Summit Reservoir directly southeast to a saddle on Summit Motorway, then downslope to an unnamed drainage and downstream in that drainage to its confluence with Alamo Canyon, then downstream in Alamo Canyon to its confluence with Peña Blanca Canyon, then downstream in Peña Blanca Canyon to Peña Blanca Lake, to include Peña Blanca Spring; (2) from Thumb Butte Tank downstream in an unnamed drainage to its confluence with Alamo Canyon; (3) from Tinker Tank downstream in an unnamed drainage to its confluence with Alamo Canyon, then downstream in Alamo Canyon to the confluence with the drainage from Summit Reservoir; and (4) from Coyote Tank downstream in an unnamed drainage to its confluence with Alamo Canyon, and then downstream in Alamo Canyon to the confluence with the drainage from Tinker Tank, to include Alamo Spring.

Special management is required in this unit because nonnative predators, particularly bullfrogs and sportfish, remain a serious threat. A concerted effort began in 2008 to clear the area of bullfrogs. The effort appears to be successful, and Chiricahua leopard frogs have clearly benefited because their population has grown exponentially in Peña Blanca Lake. However, there is a continuing threat of recolonization or purposeful introduction of bullfrogs, and management of this area will continue to concentrate on preventing bullfrogs from recolonizing the area and eliminating those that do. As discussed, warmwater sportfish at Peña Blanca Lake are scheduled to be stocked in the spring of 2012, which will affect the suitability of the lake as Chiricahua leopard frog habitat. However, in a May 2011, section 7 consultation for sportfish stocking of the lake, conservation measures were established that require shoreline habitat to be managed in a manner to retain its complexity, which will provide some level of protection to resident Chiricahua leopard frogs from potential predation from sportfish. In that consultation, we determined that, given the number of conservation measures (which included managing against bullfrogs and ensuring the persistence of dense shoreline vegetation), the proposed stocking of warmwater fish would not result in adverse modification of this critical habitat unit. Given the robust population of Chiricahua leopard frogs that currently occurs in the lake and protection offered by attributes of existing shoreline habitat, we recognize the value of Peña Blanca Lake as essential for the conservation of Chiricahua leopard frogs, even with the presence of warmwater sportfish. Chiricahua leopard frogs in this region have tested positive for chytridiomycosis; however, the disease appears to have little effect on population persistence.

Recovery Unit 2 (Santa Rita-Huachuca-Ajos Bavispe, Arizona and Mexico)

Florida Canyon Unit

Florida Canyon includes 4 ac (2 ha) of Federal lands in the Coronado National Forest in the Santa Rita Mountains, Pima County, Arizona.

Chiricahua leopard frogs currently occupy this site; however, its occupancy status at the time of listing is unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it can be managed as a breeding population to provide overall stability to the species' status. A single frog was found in 2008, which was augmented with frogs from elsewhere in the Santa Rita Mountains in 2009. The site is too far from other known breeding populations to be part of a metapopulation (the next nearest population is about a 5-mi (8-km) straight-line distance away in Unit 8; hence, it will be managed as an isolated population). PCE 1 is present and was enhanced in 2010, with the addition of a steel tank for breeding. Included in the designation is approximately 1,521 ft (463 m) of Florida Canyon from a silted-in dam to the downstream end of the Florida Workstation property.

The major threat is scarcity of water, particularly during long periods of drought. Also, fire in the watershed could result in scouring and sedimentation in the pools important as habitat for the frog. The addition of a steel tank provides dependable water for breeding that is safe from erosion or sedimentation events. Chyridiomycosis and introduced predators are potential threats, but neither has been recorded at this site.

Eastern Slope of the Santa Rita Mountains Unit

This unit includes 172 ac (70 ha) of Federal lands in the Coronado National Forest and 14 ac (6 ha) of private lands in the Greaterville area in Pima County, Arizona.

Included in the critical habitat designation are two metal troughs in Louisiana Gulch, Greaterville Tank, Los Posos Gulch Tank, and the Granite Mountain Tank complex. The Granite Mountain Tank complex includes two impoundments and a well. All but Los Posos Gulch Tank are currently occupied breeding sites; however, the occupancy status at the time of listing for these sites is unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it represents one of only two known occupied areas that support or likely support breeding activity for the Chiricahua leopard frog in the Santa Rita Mountains. More than 60 Chiricahua leopard frogs were observed at Los Posos Gulch Tank in 2008. It was once thought to be a robust breeding site; however, it dried, and Chiricahua leopard frogs disappeared in 2009. These four sites collectively form a metapopulation. A number of other sites in this region have been found to support dispersing Chiricahua leopard frogs; however, only a few frogs and no breeding have been observed at these sites, so they are thought to represent dispersing frogs. The occupancy status of these other sites at the time of listing is also unknown. Designated critical habitat also includes intervening drainages as follows: (1) From Los Posos

Gulch upstream to a saddle, then downslope in an unnamed drainage to the confluence with another unnamed drainage, then upstream and south in that drainage to a saddle, and downslope through an unnamed drainage to its confluence with Ophir Gulch, then in Ophir Gulch to upper Granite Mountain Tank, to include an ephemeral tank near upper Granite Mountain Tank and a well; (2) from Greaterville Tank downstream in an unnamed drainage to Ophir Gulch; and (3) Louisiana Gulch from the metal tanks upstream to the headwaters of Louisiana Gulch then across a saddle and downslope through an unnamed drainage to its confluence with Ophir Gulch. Additionally, this unit has both PCEs 1 and 2.

The major threat in this unit is limited surface water. The breeding habitat at Louisiana Gulch, although limited to two 6.0-ft (1.8-m) diameter steel tanks, is dependable because it is fed by a well. The other tanks are filled by runoff and susceptible to drying during drought. Nonnative predators and chytridiomycosis are not known to be imminent threats in this area.

Las Cienegas National Conservation Area Unit

This unit is in Pima County, Arizona, and includes 1,364 ac (552 ha) of Bureau of Land Management lands and 186 ac (75 ha) of Arizona State Land Department lands, including an approximate 4.33-mi (6.98-km) reach of Empire Gulch and 1.91 mi (3.08 km) of Cienega Creek, including the Cinco Ponds. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCEs 1 and 2 to support life-history functions essential for the conservation of the species. Close to 60 metamorphosed Chiricahua leopard frogs and 400 tadpoles were released to Las Cienegas Natural Conservation Area during the fall of 2011.

At the time of listing, Empire Gulch was occupied. However, the occupancy status of Cinco Ponds at that time is unknown. Currently, Chiricahua leopard frogs are extant at Empire Gulch and Cinco Ponds. Frogs breed in a reach of Empire Gulch near Empire Ranch. This reach includes: (1) Empire Gulch from a pipeline road crossing above the breeding site downstream to Cienega Creek; and (2) Cienega Creek from the Empire Gulch confluence upstream to the approximate end of the wetted reach and where the creek bends hard to the east, to include Cinco Ponds. An enclosed Chiricahua leopard frog facility exists along Empire Gulch and is used to headstart eggs and tadpoles for release to augment the wild population. Frogs may breed periodically at Cinco Ponds. These sites are too far (more than an 8.0-mi (13-km) straight-line distance) from the next nearest population, which is in Eastern Slope of the Santa Rita Mountains; thus, the population(s) in this unit currently acts as an isolated population(s).

Special management is required in this unit to improve habitat, control disease, and remove nonnative species. A collaborative, multi-partner recovery program for the Chiricahua leopard frog is ongoing at Las Cienegas; the program is funded by a substantial grant from the National Fish and Wildlife Foundation. The program focuses on creating opportunities for Chiricahua leopard frog head-starting, improving habitat, and removing nonnative species. Significant progress has been made to eliminate bullfrogs from the area, but bullfrogs are still present and represent a persistent problem. Chiricahua leopard frogs suffer from chytridiomycosis in this unit; however, the Chiricahua leopard frogs are persisting with the disease. Crayfish occur within a few miles and pose a significant threat if they reach Cienega Creek or Empire Gulch.

Empire Gulch and Cienega Creek downstream of its confluence with Empire Gulch is designated critical habitat for the federally endangered Gila chub (*Gila intermedia*) (70 FR 66663; November 2, 2005). The chub and the federally endangered Gila topminnow (*Poeciliopsis occidentalis*) (32 FR 4001; March 11, 1967) occur in Cienega Creek adjacent to Empire Gulch. The Gila topminnow also occurs in Empire Gulch. Neither species occurs in Cinco Ponds. Where these federally listed species occur with the Chiricahua leopard frog, some level of protection may be afforded to Chiricahua leopard frog habitat when a Federal nexus exists for projects that may affect one of these other federally listed species.

Pasture 9 Tank

This was a proposed unit that includes 0.5 ac (0.2 ha), and is a former cattle pond entirely on private lands of the San Rafael Ranch, San Rafael Valley, Santa Cruz County, Arizona. For this final rule, we are excluding all 0.5 ac (0.2 ha) in this unit under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act,* below). Therefore, this unit is not being designated as critical habitat in this final rule.

Scotia Canyon Unit

This unit includes 70 ac (29 ha) in Scotia Canyon, Huachuca Mountain, Cochise County, Arizona, and is entirely on Federal lands in the Coronado National Forest. Chiricahua leopard frogs were reestablished in this canyon via a translocation in 2009; the last record of a Chiricahua leopard frog in the canyon before that was 1986. Scotia Canyon was not occupied at the time of listing. We consider this unit to be essential to the conservation of the Chiricahua leopard frog because of its potential to host a stable breeding population of Chiricahua leopard frogs in the future and the effort that has been dedicated to the area to mitigate threats posed by nonnative predators. Additionally, this unit has both PCEs 1 and 2.

The unit encompasses an approximate 1.36-mi (2.19-km) reach of the canyon with perennial pools, as well as a perennial travertine (a form of limestone) seep; a spring-fed, perennial impoundment (Peterson Ranch Pond); and an ephemeral impoundment adjacent to Peterson Ranch Pond. There is also a perennial or nearly perennial impoundment in the channel downstream of the travertine seep. Breeding habitat occurs at Peterson Ranch Pond and possibly at other perennial or nearly perennial pools.

Currently, this site is isolated from other populations. Hence this site is managed as an isolated population, but there is some potential for creating connectivity to the metapopulation in Ramsey and Brown Canyons via population reestablishment in Garden Canyon at Fort Huachuca. Scotia Canyon, with its pond and stream habitats, has the potential to host a robust population.

Special management is required in this unit to remove nonnative predators and disease, protect from catastrophic wildlife, and improve aquatic habitat. Scotia Canyon, and sites around it, have been the subject of intensive bullfrog eradication and habitat enhancement work in preparation for the 2009 reestablishment of the Chiricahua leopard frog. However, bullfrog reinvasion is a significant, continuing threat, and other nonnative predators could potentially reach Scotia Canyon via natural or human-assisted releases. In addition, barred tiger salamanders from the Peterson Ranch Pond tested positive for chytridiomycosis in 2009; however, in 2010, the Chiricahua leopard frogs appeared to be persisting in that same pond. Arizona Game and Fish Department biologists and Coronado National Forest staff visited the site on April 5, 2011, and verified the continued presence of salamanders (2 mature brachiates were observed). Nonetheless, disease has resulted in extirpations elsewhere in the Huachuca

Mountains, and is considered a serious threat in Scotia Canyon. Further, heavy fuel loads could result in a catastrophic wildfire, which would have significant detrimental effects on the frog and its aquatic habitats. Finally, a road through the canyon is eroded in places and contributes sediment to the stream; it receives much use by recreationists and U.S. Customs and Border Protection.

The critical habitat designation for the Chiricahua leopard frog largely overlaps that of critical habitat for the endangered *Lilaeopsis schaffneriana* var. *recurva* (Huachuca water-umbel). The occurrence of critical habitat and listed species provide some level of protection to Chiricahua leopard frog habitat in this unit when a Federal nexus exists on a project that may affect the endangered plant *Lilaeopsis schaffneriana* var. *recurva* (Huachuca water-umbel). However, the Chiricahua leopard frog may require additional measures to facilitate conservation and recovery in these areas.

Beatty's Guest Ranch Unit

This was a proposed unit that includes 10 ac (4.0 ha) of private lands in Miller Canyon on the east slope of the Huachuca Mountains, Cochise County, Arizona. For this final rule, we are excluding all 10 ac (4.0 ha) in this unit under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act,* below). Therefore, this unit is not being designated as critical habitat in this final rule.

Carr Barn Pond Unit

This unit includes 0.6 ac (0.3 ha) of Federal lands in the Coronado National Forest in the Huachuca Mountains, Cochise County, Arizona. Carr Barn Pond is an impoundment with a small, lined pond with water provided from a well. During runoff events, the size of the pond expands considerably and then gradually shrinks back to the lined section.

This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

As with Beatty's Guest Ranch, Ramsey and Brown Canyons, this unit has been the subject of a conservation agreement and much intensive management for the Ramsey Canyon (= Chiricahua) leopard frog. The Coronado National Forest created and now maintains Carr Barn Pond consistent with the Ramsey Canyon (= Chiricahua) leopard frog conservation agreement, to which they are a signatory. This site was occupied at the time of listing and was occupied into 2009, but the population has since been eliminated, probably by chytridiomycosis. This site is too far away (3.4 mi (5.4 km) from Ramsey and Brown Canyons and about 3.0 mi (4.8 km) from Beatty's Guest Ranch by way of a straight-line distance over rugged terrain) to be part of a metapopulation; hence, it is currently considered isolated. There is some potential for connecting it to Scotia Canyon, and Ramsey and Brown Canyons (see discussion above), but additional habitat creation or enhancement and population reestablishment would be needed.

The features essential to the conservation of the species in this unit may require special management considerations or protection to alleviate the threats from nonnative predators and disease. Disease is a serious threat that can be an impediment to viable frog populations. The population has been eliminated after chytridiomycosis die-offs three times. Twice the population has subsequently been reestablished through translocations. Largemouth bass have been introduced illegally into the pond and then removed, and bullfrogs periodically invade the site, but are promptly removed before they breed.

Ramsey and Brown Canyons Unit

This unit includes 44 ac (18 ha) of private lands in Ramsey Canyon and 58 ac (24 ha) of Federal lands in the Coronado National Forest in Brown and Ramsey Canyons, Huachuca Mountains, Cochise County, Arizona. Ramsey Canyon was not occupied at the time of listing but Brown Canyon was; therefore, we treat this unit as occupied. The unit currently contains PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

This unit, along with Beatty's Guest Ranch and Carr Barn Pond, has been managed intensively for Ramsey Canyon (= Chiricahua) leopard frog conservation since 1995. This unit is managed as a metapopulation. Places where Chiricahua leopard frogs have bred and that still retain PCE 1 include Ramsey Canyon, and Trout and Meadow Ponds on private lands owned by The Nature Conservancy. These private lands are excluded from designation as critical habitat in the Ramsey Canyon Box. In Brown Canyon, the Wild Duck Pond, House Pond, and the Brown Canyon Box (on Coronado National Forest lands) are designated as critical habitat.

In addition, this critical habitat unit also includes dispersal sites and corridors for connectivity among breeding ponds as follows: (1) From the eastern boundary of The Nature Conservancy's Bledsoe Parcel in the Ramsey Canyon Preserve downstream to a dirt road crossing of Ramsey Canyon at the mouth of the canyon, excluding The Nature Conservancy's University of Toronto Parcel in the Ramsey Canyon Preserve; (2) Brown Canyon from the Box downstream to the Wild Duck Pond and House Pond on the former Barchas Ranch; and (3) from the dirt road crossing of Ramsey Canyon directly overland to House Pond.

The Ramsey Canyon portion of the unit was not occupied at the time of listing, but Brown Canyon was occupied. Both canyons are currently considered occupied. Chiricahua leopard frogs have bred at the Box in Brown Canyon, although the site is too small to support more than just a few frogs. Special management is required in this unit because recent die-offs associated with chytridiomycosis have significantly reduced populations in both canyons. The House and Wild Duck Ponds, as well as Ramsey Canyon, have a history of chytridiomycosis outbreaks. The Ramsey Canyon population has been eliminated twice and then reestablished; the House and Wild Duck Ponds have also undergone repeated disease-related declines and extirpations followed by reestablishments. The populations tend to persist for months or years after reestablishment only to experience chytridiomycosis outbreaks followed by declines or extirpation.

Additional special management is required in this unit because nonnative species, drying, sedimentation, and fire threaten the frog. Nonnative predators threaten populations at the House and Wild Duck Ponds, where bullfrogs have been found periodically and goldfish (*Carassius auratus auratus*) were once introduced. Those two ponds are buffered against drought and drying by a pipeline from a spring and a windmill. However, the Box in Brown Canyon is subject to low water and drying during drought. That latter population depends upon immigration or active reestablishment for long-term persistence. The Trout and Meadow Ponds in Ramsey Canyon are fed by pipelines; thus the water supply is dependable. The Trout Pond could however be filled in with sediment during a flood. Further, a fire in the watershed could threaten aquatic breeding sites in both canyons.

Lands owned by The Nature Conservancy in Ramsey Canyon are known as the Ramsey Canyon Preserve and are managed for preservation of natural features and species, including the Chiricahua leopard frog. The Ramsey Canyon Preserve is also

enrolled in the Arizona Game and Fish Department's Statewide Safe Harbor Agreement, effective July 2010. Under section 4(b)(2) of the Act, the Ramsey Canyon Preserve (16 ac (6.5 ha)) is being excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below).

Recovery Unit 3 (Chiricahua Mountains-Malpai Borderlands-Sierra Madre, Arizona, New Mexico, and Mexico)

High Lonesome Well Unit

This previously proposed unit includes 0.4 ac (0.2 ha) of privately owned lands in the Playas Valley, Hidalgo County, New Mexico. This unit consists of an elevated concrete tank into which Chiricahua leopard frogs were introduced prior to listing (Painter 2000, p. 15). The tank is supplied with water from a windmill and provides water for livestock. The site supports a robust breeding population, but is much too far from other populations to be part of a metapopulation (the nearest population is in Unit 17, 25.4 mi (40.6 km) to the west). Furthermore, although frogs can exit the tank, they cannot get back into the tank.

We reevaluated the High Lonesome Well Unit and have determined that it does not meet the definition of critical habitat, because it does not have the physical or biological features that are essential for the conservation of the species. The unit does not contain the terrestrial habitat that provides opportunities for foraging and basking, and that is immediately adjacent to or surrounding breeding aquatic and riparian habitat, which is a component of PCE 1. Therefore, we have removed the High Lonesome Well Unit from this final critical habitat designation.

Peloncillo Mountains Unit

This unit includes 366 ac (148 ha) of Federal lands in the Coronado National Forest in Hidalgo County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Aquatic habitats in this unit include Geronimo, Javelina, State Line Tanks; Maverick Spring; and pools or ponds in the Cloverdale Cienega and along Cloverdale Creek below Canoncito Ranch Tank. Breeding has occurred in State Line Tank, and possibly other aquatic sites in this unit. Geronimo Tank was occupied at the time of listing. The occupancy status of the other sites at that time is unknown. These tanks and Maverick Spring have recent records of frogs (2007 to the present) and are considered currently occupied, with the exception of State Line Tank. State Line Tank was reported dry in 2011, with no available habitat or refuge for Chiricahua leopard frogs and no frogs observed. It is not known whether the tank incurred damage or drought caused it to dry. However, because Chiricahua leopard frogs disperse from Canoncito Ranch Tank into Cloverdale Cienega, Cloverdale Creek, and surrounding tanks when water is present, State Line Tank still contains PCE 2. This unit is managed as a metapopulation.

Also included in this unit are intervening drainages and uplands needed for connectivity among these aquatic sites, including: (1) Cloverdale Creek from Canoncito Ranch Tank downstream, including Cloverdale Cienega, and excluding portions of Cloverdale Creek and the cienega within private lands of Canoncito Ranch; (2) from Geronimo Tank downstream in an unnamed drainage to its confluence with Clanton Draw, then upstream to the confluence with an unnamed drainage, and upstream in that drainage to its headwaters, across a mesa to the headwaters of an unnamed drainage, then downslope through that drainage to State Line Tank; (3) from State Line Tank upstream in an unnamed drainage to a mesa, then directly overland to the headwaters of Cloverdale Creek, and then downstream in Cloverdale Creek to Javelina Tank; and (4) from Javelina Tank downstream in Cloverdale Creek to the Canoncito Ranch Tank, to include Maverick Spring.

Special management is required in this unit because periodic drought dries most of the aquatic sites completely or to small pools, which limits population growth potential. Nonnative sportfish are present at Geronimo Tank and may preclude successful recruitment. Occurrence of chytridiomycosis in this area has not been investigated, but may also be a limiting factor.

Sky Island Alliance is working with partners to restore the Cloverdale Cienega, which should improve aquatic habitats for Chiricahua leopard frogs. The owner of the Canoncito Ranch has signed onto a safe harbor agreement for the Chiricahua leopard frog. Under section 4(b)(2) of the Act, the private lands in this unit (289 ac (117 ha)) are excluded from the final rule for critical habitat (see *Application of Section 4(b)(2) of the Act,* below).

Cave Creek Unit

This unit includes 234 ac (95 ha) of Federal lands in the Coronado National Forest in the Chiricahua Mountains, Cochise County, Arizona. This unit was occupied at the time of listing, is currently occupied, and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species. Chiricahua leopard frogs and tadpoles were released during the fall of 2011, into a pond on the Southwestern Research Station, where they were initially reared in an onsite ranarium. Released frogs are expected to distribute themselves throughout Cave Canyon during ensuing years.

Included in this unit is an approximate 4.76-mi (7.66-km) reach of Cave Creek and associated ponds in or near the channel, from Herb Martyr Pond downstream to the eastern U.S. Forest Service boundary. PCEs 1 and 2 are present. This site will be managed as a metapopulation.

Herb Martyr Pond is the type locality for the Chiricahua leopard frog; however, no frogs have been observed at the site since 1977. This pond requires special management because the pool behind the dam is entirely silted in, and pools at the base of the dam are probably not adequate for Chiricahua leopard frog survival or reproduction. With restoration, this site could support a breeding population of Chiricahua leopard frogs. The pond below the dam at John Hands appears suitable for occupancy, but Chiricahua leopard frogs have not been recorded there since 1966. Chiricahua leopard frogs were occasionally seen in Cave Creek through 2002.

Special management is required in this unit because scarcity of water can occur in drought years, and bullfrogs occur to the east but have never been recorded in the unit. The current status and past history of chytridiomycosis in this unit are unknown. Rainbow trout were present and occurred concurrently with Chiricahua leopard frogs at Herb Martyr Pond, but no trout are currently known in the unit.

The Southwestern Research Station, owned by the American Museum of Natural History, maintains habitat occupied by the Chiricahua leopard frog, has signed a safe harbor agreement for the Chiricahua leopard frog, and is an active participant in recovery. The Service and Arizona Game and Fish Department (AGFD) are working with additional private landowners downstream of the designated critical habitat to bring them into the safe harbor agreement. Under section 4(b)(2) of the Act, the American Museum of Natural History lands (92 ac (37 ha)) are being excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below).

Leslie Creek Unit

The unit consists of 26 ac (11 ha) of National Wildlife Refuge (NWR) (Federal) lands on Leslie Canyon NWR, Cochise County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

This unit is a stream system with intermittent pools and two small impoundments. The upstream boundary is the Leslie Canyon NWR, and its downstream limit is the crossing of Leslie Canyon Road, an approximate stream distance of 4,094 ft (1,248 m).

Chiricahua leopard frogs were present in this unit at the time of listing and are currently extant. This population is too far (24.8 mi (36.7 km)) from the next nearest breeding site, North Tank, to be part of a metapopulation. Hence it is managed as an isolated population.

Special management is required in this unit because drought and lack of pools are limiting factors in this unit. Also, Chiricahua leopard frogs are positive for chytridiomycosis at this site, and although they are persisting with the disease, the population is not robust, and the effects of the disease may be responsible in part. Bullfrogs occur in ponds to the east, but have never been recorded in Leslie Creek.

The endangered plant *Lilaeopsis schaffneriana* var. *recurva* (Huachuca water-umbel), endangered Yaqui chub (*Gila purpurea*), and endangered Yaqui topminnow (*Poeciliopsis occidentalis sonoriensis*) all occur in Leslie Creek, and the area is managed to conserve the aquatic and riparian habitats of the canyon. While current management prescriptions for the Yaqui fishes will benefit the Chiricahua leopard frog in this area, additional actions may be necessary to conserve and recover the Chiricahua leopard frog in this area. A landowner adjacent to the the refuge has signed a safe harbor agreement for the Chiricahua leopard frog and other species. With future habitat renovations and population reestablishments, there is some potential for developing additional populations of Chiricahua leopard frogs in this area, which could form a metapopulation with the Leslie Canyon population.

Rosewood and North Tanks Unit

This was a proposed unit that includes 19 ac (8 ha) of private land and 78 ac (31 ha) of land owned by the Arizona State Land Department in the San Bernardino Valley, Cochise County, Arizona. For this final rule, we are excluding all 97 ac (39 ha) of this unit under section 4(b)(2) of the Act (see *Application of Section 4(b)(2) of the Act,* below). Therefore, this unit is not being designated as critical habitat in this final rule.

Recovery Unit 4 (Piñaleno-Galiuro-Dragoon Mountains, Arizona)

Deer Creek Unit

This unit consists of 17 ac (7 ha) of Federal lands in the Coronado National Forest, 69 ac (28 ha) of Arizona State Land Department lands, and 34 ac (14 ha) of private lands in the Galiuro Mountains, Graham County, Arizona. This unit was occupied at the time of listing and contains the features essential to the conservation of the species (PCEs 1 and 2).

Included in designated critical habitat are Home Ranch, Clifford's, Vermont, and Middle Tanks, a series of 10 impoundments on the Penney Mine lease, and intervening drainages, primarily Deer Creek, and associated uplands and ephemeral tanks that provide corridors for movement among these tanks. Breeding has been confirmed on Deer Creek above Clifford's Tank, and in Home Ranch and Vermont Tanks, and is suspected in the other three sites named above when water is present long enough for tadpoles to metamorphose into adults (3 to 9 months). Home Ranch Tank supports a large population of Chiricahua leopard frogs. This unit functions as a metapopulation. Intervening drainages include: (1) Deer Creek from a point where it exits a canyon and turns abruptly to the east, upstream to its confluence with an unnamed drainage, upstream in that drainage to a confluence with four other drainages, upstream from that confluence in the western drainage to Clifford's Tank, upstream from that confluence in the west-central drainage to an unnamed tank, then directly overland southeast to another unnamed tank, then downstream from that tank in an unnamed drainage to the aforementioned confluence and upstream in that unnamed drainage to a saddle, and downstream from that saddle in an unnamed drainage to its confluence with an unnamed tributary to Gardner Canyon, and upstream in that unnamed tributary to Home Ranch Tank; (2) from the largest of the Penney Mine Tanks directly overland and southwest to an unnamed tank, and downstream from that tank in an unnamed drainage to the aforementioned confluence, to include another unnamed tank situated in that drainage; (3) from Vermont Tank directly overland and east to Deer Creek; and (4) from Middle Tank upstream in an unnamed drainage to a saddle, and then directly downslope to Deer Creek.

Special management is required in this unit to alleviate periodic drought, which results in breeding sites drying. During a severe drought in 2002, all but one of the waters in the unit dried. Frogs reportedly died for unknown reasons in the 1980s (Goforth 2005, p. 2), possibly indicative of chytridiomycosis; however, no Chiricahua leopard frogs have tested positive for the disease from this unit. The only nonnative aquatic predator recorded in this unit is the barred tiger salamander.

Recovery work has occurred in this unit, including head-starting of egg masses and reestablishment and augmentation of populations. The Service, AGFD, Arizona State Land Department, and an agate miner (Penney Mine Tanks) have drafted a conservation plan for managing habitats on the mine lease, but funds are lacking to implement that plan.

Oak Spring and Oak Creek Unit

This unit consists of 27 ac (11 ha) of Federal lands in the Coronado National Forestin the Galiuro Mountains, Graham County, Arizona.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because this unit contains important breeding sites necessary for recovery. It is just north of Deer Creek, but is too far (about 1.6 mi (2.6 km)) overland (via straight-line distance) from the nearest aquatic sites (Home Ranch and Clifford's Tanks) in that unit. Connectivity is further complicated by a ridgeline between Oak Spring and Home Ranch Tank. Hence, this unit is managed as an isolated population. Additionally, both PCEs 1 and 2 are present in this unit.

This unit is currently occupied; however, the site does not support enough Chiricahua leopard frogs to be considered a robust population. This unit is an approximate 1.06-mi (1.71-km) intermittent reach of an incised canyon punctuated by pools of varying permanence, from Oak Spring downstream in Oak Creek to where a hiking trail intersects the creek. The largest pool, Cattail Pool, typically contains water and supports several breeding Chiricahua leopard frogs. The stream reach designated for critical habitat includes the area where Chiricahua leopard frogs occur.

The primary threat in this unit is extended periods of drought, which have caused all the pools to be subject to reduction or drying. Cattail Pool is spring-fed, and is likely the last pool to dry. Oak Spring is also used for water developments, which may limit the capability of the site to support frogs. Chiricahua leopard frogs have been headstarted and released at this site to augment the population.

Dragoon Mountains Unit

This unit includes 74 ac (30 ha) of Federal lands in the Coronado National Forest in Cochise County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Shaw Tank and Tunnel Spring in Middlemarch Canyon are designated as critical habitat in this unit and are currently occupied breeding sites. The latter is a robust population that was occupied at the time of listing. Shaw Tank is a reestablishment site that was not known to be occupied in 2002.

Also included in the designated critical habitat is Halfmoon Tank, which supported a robust population of Chiricahua leopard frogs until 2002. It is unknown whether this tank supported Chiricahua leopard frogs at the time of listing. PCE 1 at Halfmoon Tank has been compromised by siltation and recent drought, which affects the amount and persistence of water. The tank is in need of renovation so that it may again dependably hold water and support breeding.

Special management is required in this unit because currently not enough breeding sites exist to comprise a metapopulation (four are necessary) in this unit. However, with additional habitat creation or renovation, a metapopulation may be possible, which is needed for this Recovery Unit (the only other metapopulation in this Recovery Unit is in Deer Creek).

Also included in this critical habitat designation are intervening drainages for connectivity, including Stronghold Canyon from Halfmoon Tank to Cochise Spring, then upstream in an unnamed canyon to Shaw Tank, and continuing upstream to the headwaters of that canyon, across a saddle and downstream in Middlemarch Canyon to Tunnel Spring.

Special management is also required in this unit because of scarcity of suitable breeding habitat and loss of that habitat during drought. Tunnel Spring is spring-fed and thus buffered against drought; however, Shaw and Halfmoon Tanks are filled with runoff. Neither nonnative predators nor chytridiomycosis has been noted in these populations and habitats, although if introduced either would constitute an additional threat.

Recovery work, including headstarting of eggs collected from Tunnel Spring and establishment of a new population at Shaw Tank with reared tadpoles and frogs, has been accomplished in this unit, and the U.S. Forest Service's livestock permittee has been a participant in those recovery activities.

Recovery Unit 5 (Mogollon Rim-Verde River, Arizona)

Buckskin Hills Unit

This unit includes 232 ac (94 ha) of Federal lands in the Coconino National Forest in Yavapai County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and has the features essential to the conservation of the species (PCEs 1 and 2).

Included in this designated critical habitat unit are six tanks occupied at the time of listing (Sycamore Basin, Middle, Walt's, Partnership, Black, and Buckskin) that form a metapopulation. Frogs currently occur at Middle and Walt's Tanks. Also included in the critical habitat designation are two tanks occupied in 2001 that probably dried during a drought in 2002: Doren's Defeat and Needed Tanks. The former holds water well in years with average precipitation and is about 0.5 mi (0.8 km) from Partnership Tank and 0.67 mi (1.07 km) from Walt's Tank. Needed Tank may not hold water long enough for breeding, but it provides a habitat for dispersing frogs.

This designated critical habitat also includes drainages and uplands likely used as dispersal corridors among these tanks, including: (1) From Middle Tank downstream in Boulder Canyon to its confluence with an unnamed drainage that comes in from the northwest, to include Black Tank, then upstream in that unnamed drainage to a saddle, to include Needed Tank, downstream from the saddle in an unnamed drainage to its confluence with another unnamed drainage, downstream in that drainage to the confluence with an unnamed drainage, to include Walt's Tank, and upstream in that unnamed drainage to Partnership Tank; (2) from Doren's Defeat Tank upstream in an unnamed drainage to Partnership Tank; (3) from the confluence of an unnamed drainage with Boulder Canyon west to a point where the drainage turns southwest, then directly overland to the top of Sycamore Canyon, and then downstream in Sycamore Canyon to Sycamore Basin Tank; and (4) from Buckskin Tank upstream in an unnamed drainage to the top of that drainage, then directly overland to an unnamed drainage that contains Walt's Tank.

Special management is required in this unit because of nonnative species and drought. Divide Tank, which is adjacent to Highway 260, has supported nonnatives in the past and is a likely place for future illegal stockings of nonnative predatory fish or bullfrogs. If established, nonnatives could spread to sites designated in this rule as critical habitat. All of the tanks designated as critical habitat are filled by runoff; hence, they are vulnerable to drying during drought. When the species was proposed for listing, the populations in the Buckskin Hills were unknown; however, during 2000–2001, frogs were found at 11 sites. After a severe drought in 2002, frogs only remained at Sycamore Basin and Walt's Tanks. Because the tanks depend on runoff, and as most tanks went dry in 2002, protecting more than the minimum four breeding sites needed for a metapopulation is warranted. Chytridiomycosis has not been found in any frogs in the Buckskin Hills; however, the disease occurs in Arizona treefrogs (*Hyla wrightorum*) and western chorus frogs (*Pseudacris triseriata*) less than 10 mi (16 km) to the east, and frogs collected from Walt's Tank subsequently tested positive for the disease in captivity. It is unknown whether they contracted the disease in the wild or while captive.

Much recovery work has been accomplished in this unit, including captive rearing, population reestablishments, tank renovations, erosion control, fencing, and elimination of nonnative predators such as nonnative fish and crayfish.

Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit

This unit includes 334 ac (135 ha) of Federal lands in the Tonto National Forest, 64 ac (26 ha) of AGFD lands, and 6 ac (3 ha) of private lands in Gila County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Included as designated critical habitat are Trail Tank, HY Tank, Carroll Spring, West Prong of Gentry Creek, Pine Spring, and portions of Cherry and Crouch Creeks, all of which provide breeding or potential breeding habitat. Also included are intervening drainages

and uplands needed for connectivity among breeding sites, including: (1) Cherry Creek from Rock Spring upstream to its confluence with an unnamed drainage, upstream in that drainage and across a saddle, then downstream in an unnamed drainage to Trail Tank; (2) Crouch Creek from its headwaters just south of Highway 288 downstream to an unnamed drainage leading to Pine Spring, to include Cunningham Spring and Carroll Spring, then upstream in that unnamed drainage from Crouch Creek to Pine Spring; (3) from HY Tank downstream in an unnamed drainage to Cherry Creek, to include Bottle Spring; (4) from Cunningham Spring east across a low saddle to West Prong of Gentry Creek where the creek turns southwest; and (5) from Bottle Spring south over a low saddle to the headwaters of Crouch Creek.

At the time of listing, Chiricahua leopard frogs occurred in Crouch Creek, Carroll Spring, HY Tank, Bottle Spring, and West Prong of Gentry Creek. Trail Tank has nearly permanent water and is in the Parallel Canyon drainage, but close to the divide with Cherry Creek. In May 2010, it was renovated to remove a breeding population of bullfrogs and green sunfish. Additional follow-up removal of bullfrogs occurred in July 2010 and again in May 2011, after bullfrog tadpoles were rediscovered in Trail Tank in the fall of 2010. Bullfrogs at the nearby ephemeral unnamed 102 Roadside Tank were also eliminated in 2010. Special management is required in this unit because of bullfrogs. Once bullfrogs are confirmed absent, plans will move forward to translocate Chiricahua leopard frogs to Trail Tank.

Chiricahua leopard frogs were moved to Pine Spring in 2006, and habitat work was accomplished there to improve pool habitats. However, no frogs were observed during a site visit in May 2010. The connectivity of Pine Spring to Cunningham Spring and other sites upstream in Crouch Creek is complicated by a waterfall below Cunningham Spring; however, an overland route of less than a mile provides access around the waterfall.

Chiricahua leopard frogs were first noted in Cherry Creek in 2008, just before additional frogs were released into that site. Reproduction has been noted, and Chiricahua leopard frogs were observed in Cherry Creek in 2010.

Special management is required in this unit because of predation by nonnative species, including bullfrogs, crayfish, and sportfish; chytridiomycosis, which was found in a Cherry Creek frog in 2009; and scarcity of water. None of the populations are robust due to the small size of breeding habitats. We believe that Trail Tank may provide enough aquatic habitat for a robust population.

Ellison and Lewis Creeks Unit

This unit includes 83 ac (34) of Federal lands in the Tonto National Forest and 15 ac (6 ha) of private lands in Gila County, Arizona.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it contains important breeding habitat needed for recovery. Chiricahua leopard frogs have occasionally been found in Ellison Creek. In 1998, small numbers of frogs were observed, but were not seen again until 2006. Despite intensive surveys, no frogs were found in 2007 or 2008. In 2009, egg masses from Crouch Creek were headstarted, and tadpoles and subadult frogs were stocked at the four sites listed above as potential breeding sites. Frogs from those releases appeared to be persisting at all four sites in 2010. Additional releases of Crouch Creek frogs occurred in July 2010. Additionally, this unit contains both PCEs 1 and 2.

Included in this critical habitat proposal are potential breeding sites at Moore Saddle Tank #2, Ellison Creek just east of Pyle Ranch, Lewis Creek downstream of Pyle Ranch, and Low Tank. Intervening drainages that provide connectivity among the latter three sites are also designated as critical habitat as follows: (1) Unnamed tributary to Ellison Creek from its confluence with an unnamed drainage downstream to Ellison Creek; (2) then directly west across the Ellison Creek floodplain and over a low saddle to Lewis Creek below Pyle Ranch; (3) then downstream in Lewis Creek to its confluence with an unnamed drainage; and (4) then upstream in that unnamed drainage to Low Tank.

Moore Saddle Tank #2 is about 0.8 mi (1.3 km) overland from Low Tank. Hence, it is within the one-mile overland distance for reasonable dispersal likelihood. However, there are four drainages that bisect that route, and it is likely that any Chiricahua leopard frogs traversing those uplands would move down or upstream in one of those drainages rather than crossing them. As a result, Moore Saddle Tank #2 will be managed as an isolated and potentially robust population, leaving the other sites one short of the four needed to form a metapopulation. However, no other sites in the area are known that contain the PCEs or have the potential for developing the PCEs. Additional exploration of the area, and likely some habitat renovation, will be needed to secure a fourth site.

Recovery Unit 6 (White Mountains-Upper Gila, Arizona and New Mexico)

Concho Bill and Deer Creek Unit

This unit includes 17 ac (7 ha) of Federal lands in the Apache-Sitgreaves National Forest in Apache County, Arizona.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it contains important breeding habitat necessary for recovery. This is an isolated population that was established through captive breeding and translocation of stock from Three Forks, which is also in Recovery Unit 6 in Arizona. Frogs were first released at the spring pool in 2000; subsequent releases have augmented the population. Whether or not the frogs persisted after that initial release until the time of listing is unknown. The population is small, and generally only a few frogs if any are detected during surveys.

Included in this critical habitat designation is a spring at Concho Bill and a meadow-ephemeral stream reach extending for approximately 2,667 ft (813 m) below the spring. Additionally, PCE 1 is present in this unit.

The primary threat is the limited pool habitat for breeding and overwintering, which thus far has limited the size of the population. Small populations are subject to extirpation from random variations in demographics of age structure and sex ratio, and from disease and natural events (Service 2007, p. 38). In addition, crayfish are nearby in the Black River and could invade this site.

Campbell Blue and Coleman Creeks Unit

The unit includes 174 ac (70 ha) of Federal lands in the Apache-Sitgreaves National Forest in Greenlee County, Arizona. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

Included as critical habitat is an approximate 2.04-mi (3.28-km) reach of Campbell Blue Creek from the western boundary of Luce Ranch upstream to the Coleman Creek confluence, and Coleman Creek from its confluence with

Campbell Blue Creek upstream to its confluence with Canyon Creek, an approximate stream distance of 1.04 mi (1.68 km).

This unit is too far from other known Chiricahua leopard frog populations to be considered part of a metapopulation. The nearest population is about 12.2 mi (19.6 km) to the northwest in the Concho Bill and Deer Creek Unit. Frogs were observed in Campbell Blue and Coleman Creeks in 2002, and then again in 2010. No more than a few frogs were seen during surveys (e.g., two were observed in 2010); however, the site is difficult to survey with its complex habitat characteristics, and frogs may easily elude observation.

Special management is required in this unit because crayfish and rainbow trout are present throughout this stream system, which likely limit recruitment of frogs. In 2010, the creeks had numerous beaver (*Castor canadensis*) ponds and vegetation cover that are probably important as protection from predators. Off-channel pools provide better habitat than swiftly moving, shallow creeks. The presence of chytridiomycosis has not been investigated in this unit.

Tularosa River Unit

This unit contains 335 ac (135 ha) of Federal lands in the Gila National Forest and 1,575 ac (637 ha) of private lands in Catron County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

This unit is an approximate 19.3-mi (31.1-km) reach of the Tularosa River from Tularosa Spring downstream to the entrance to the canyon below Hell Hole. Frogs were observed in this reach in 2002, at the time of listing, and continue to persist. This unit is isolated from other populations, but is a large system potentially capable of supporting a robust population.

Special management is required in this unit because in 2009, small numbers of frogs were found at two sites in the unit. The frogs may occur throughout this reach of the river, but breeding is likely limited to isolated localities where nonnative predators are rare or absent. Crayfish and rainbow trout are present, and bullfrogs have recently been found downstream of the Apache Creek confluence and just below Hell Hole. Both bullfrogs and crayfish are relatively recent arrivals to this system. Chytridiomycosis is also present. The first Chiricahua leopard frogs to test positive for the disease in New Mexico (1985) were found at Tularosa Spring. The frogs were found at that site through 2005, but none have been observed since. A robust population was also present nearby at a pond in a tributary to Kerr Canyon, in Kerr Canyon, and at Kerr Spring, but experienced a die-off from chytridiomycosis in 2009; it is unknown if frogs persist in those areas today. Chytridiomycosis is considered a serious threat in this unit.

The designated critical habitat extends just below Hell Hole, but not farther, because Chiricahua leopard frogs have not persisted below Hell Hole since the 1980s, likely because the area lacks the physical or biological features to support life-history functions.

Deep Creek Divide Area Unit

This unit consists of 408 ac (165 ha) of Federal lands in the Gila National Forest and 102 ac (41 ha) of private lands in Catron County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Included as designated critical habitat are three livestock tanks (Long Mesa, Cullum, and Burro Tanks) in the Deep Creek Divide area and connecting reaches of North and South Fork of Negrito Creek above their confluence. Long Mesa Tank is currently occupied; surveys in 2010 did not find frogs at Cullum Tanks or the North Fork of Negrito Creek, although Chiricahua leopard frogs occupied these sites in 2009. Frogs were last found in South Fork of Negrito Creek in 2006, and at Burro Tank in 2002. Four impoundments on private lands along South Fork of Negrito Creek have not been surveyed for frogs; however, it is presumed they serve or once served as habitat for Chiricahua leopard frogs. Long Mesa, Cullum, and Burro Tanks, and the South Fork of Negrito Creek, were occupied at the time of listing.

Also included in this designated critical habitat are intervening drainages and uplands for movement among these breeding sites as follows: (1) From Burro Tank downstream in Burro Canyon to Negrito Creek, then upstream in Negrito Creek to the confluence of South Fork and North Fork of Negrito Creek; (2) from Long Mesa Tank overland and east to Shotgun Canyon, then downstream in that canyon to Cullum Tank; and (3) from Cullum Tank downstream in Shotgun and Bull Basin Canyons to an unnamed drainage, then upstream in that drainage to its confluence with a minor drainage coming off Rainy Mesa from the east-northeast, then upstream in that drainage and across Rainy Mesa to Burro Tank.

Special management is required in this unit because populations have suffered from chytridiomycosis. A complex of tanks, springs, and streams in the Deep Creek Divide area was once a stronghold for the Chiricahua leopard frog on the Gila National Forest. However, most of those populations contracted the disease, suffered die-offs, and disappeared. Chiricahua leopard frogs on the North Fork of Negrito Creek were few in number and appeared sick in 2008. Their possible absence in 2010 may be a result of a disease-related die-off.

Main Diamond Creek Unit

This unit consists of 53 ac (21 ha) of Federal lands in the Gila National Forest and along Main Diamond Creek downstream of Links Ranch, Catron County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

This site currently supports a robust population. Chiricahua leopard frogs may occur periodically or regularly at an impoundment at Links Ranch, but that impoundment also contains bullfrogs and may have sportfish. This designated critical habitat includes an approximate 3,980-ft (1,213-m), perennial or nearly perennial reach of Main Diamond Creek from the downstream (western) boundary of Links Ranch downstream through a meadow to the confluence of a drainage that comes in from the south, which is also where the creek enters a canyon. This population is about a 4.6-mi (7.4-km), straight-line distance over rugged terrain to the next nearest population at Beaver Creek. As a result, it is managed as an isolated, robust population.

Special management is required in this unit because bullfrogs at the impoundment likely prey upon Chiricahua leopard frogs. Also, chytridiomycosis has not been found in this population, but is a potential threat. The creek is primarily privately owned, and the landowner's future plans regarding land management in the area are unknown.

Beaver Creek Unit

This unit consists of 132 ac (54 ha) of Federal lands in the Gila National Forest and 25 ac (10 ha) of private lands near Wall Lake, Catron County, New Mexico. This unit is an approximate 5.59-mi (8.89-km) portion of Beaver Creek beginning at a warm spring and running

downstream to its confluence with Taylor Creek. Below that confluence, the stream is known as the East Fork of the Gila River.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because Beaver Creek could support a robust population as it contains important breeding sites necessary for recovery. The nearest known population of Chiricahua leopard frogs is at Main Diamond Creek, approximately a 4.6-mi (7.4-km), straight-line distance away over rugged terrain. As a result, this site is managed as an isolated population. Additionally, PCE 1 is present in this unit.

Chiricahua leopard frogs are currently present; however, the population is not well studied. The main threat in this unit is nonnative predators. Rainbow trout, bass (*Micropterus* sp.), and bullfrogs reportedly occur along Beaver Creek with Chiricahua leopard frogs, although trout are limited to the cooler waters near the confluence with Taylor Creek (Johnson and Smorynski 1998, pp. 44–45). The mechanisms by which Chiricahua leopard frogs coexist with these nonnative predators are unknown. However, habitat complexity and adequate cover are likely important features that may need special management. Also, if chytridiomycosis is present in this unit, the spring at the upstream end of the unit is a warm spring, which may help frogs survive with the disease (Johnson and Smorynski 1998, p. 45; Service 2007, p. 26).

Kerr Canyon Unit

This unit contains 19 ac (8 ha) of Federal lands in the Gila National Forest land and 6 ac (2 ha) of private land in Catron County, New Mexico. The 1.0-mi (1.6-km) reach extends from Kerr Spring, located on the Gila National Forest, through an intermittent drainage to Kerr Canyon Pond (sometimes referred to as the Kerr Canyon Trick Tank) to include the adjacent private property in Kerr Canyon. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

Our records indicate that this area contained a robust breeding population of Chiricahua leopard frogs from 2002 through 2007 (Service 2008, pp. 1–2). However, during surveys conducted in 2008 and 2009, few individuals were observed (Service 2009a, p. 2). We believe the population experienced a mass mortality event or die-off from chytridiomycosis (Service 2009a, p. 2; Service 2009b, p. 1; Service 2009c, p. 1). Tiger salamanders have also recently been found in Kerr Canyon Pond (Service 2009a, p. 2); however, the abundance of these Chiricahua leopard frog predators is currently unknown. Partial surveys of Kerr Canyon Creek and Pond were conducted in 2010 and 2011, with no Chiricahua leopard frogs observed; however, the area is still considered potentially occupied until more complete surveys can be conducted to determine whether Chiricahua leopard frogs persist in the area.

Kerr Canyon will be managed as an isolated population, as it is currently separated from other populations in Tularosa Creek that are at least 6.5 mi (10.4 km) away. As recently as 2007, Kerr Canyon supported a robust breeding population (Service 2007a, p. 2). However, the current population status is greatly reduced from 2007 numbers, or may possibly be extirpated. We suspect that observed declines in Chiricahua leopard frog abundance can be attributed to chytridiomycosis or predation. Because of the disease and competition with nonnative species, we find that the essential features in this area may require special management considerations or protection.

West Fork Gila River Unit

This unit contains 177 ac (72 ha) of Federal lands in the Gila National Forest in Catron County, New Mexico. This 7.0-mi (11.2-km) reach runs from Turkeyfeather Spring, through an intermittent drainage to the confluence with the West Fork Gila River, then downstream in the West Fork Gila River to confluence with White Creek. Within this unit, the Upper West Fork is divided into two perennial segments by a 1.2-mi (2.0-km) long, ephemeral reach between Turkeyfeather Creek and White Creek. The area within this unit was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

The West Fork Gila River unit was occupied at the time of listing, and Chiricahua leopard frogs are currently present. The species has been observed in West Fork Gila River since 1995, with reproduction observed in 2001 (Blue Earth Ecological Consultants 2002, pp. 16–17; Service 2007, pp. B–64; Service 2009, p. 15). The population is not well studied; however, this section of the West Fork Gila River is long enough that it could support a robust population. This unit will be managed as an isolated population because it is likely occupied by low numbers of frogs and the nearest known, robust breeding population occurs in the Main Diamond Creek Unit, which is more than 5 mi (8 km) away along a perennial water course. Special management is required in this unit because there may be some potential for linking these populations if aquatic habitat between the units could be identified, renovated as needed, and populations of frogs established. However, potential sites and the presence or absence of PCE 2 in these connecting areas have not been investigated in any detail.

Also, special management is required because chytridiomycosis has been found on Chiricahua leopard frogs within this unit. The Gila National Forest considers this unit to be free of nonnative predators.

Recovery Unit 7 (Upper Gila-Blue River, Arizona and New Mexico)

Left Prong of Dix Creek Unit

This unit contains 13 ac (5 ha) of Federal lands in the Apache-Sitgreaves National Forest in Greenlee County, Arizona.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it contains breeding habitat necessary for recovery. Additionally, this unit contains PCE 1.

This reach runs from a warm spring above ''The Hole'' and continues to the confluence with the Right Prong of Dix Creek, an approximate stream distance of 4,248 ft (1,296 m). This population was discovered in 2003; Chiricahua leopard frogs were observed again in 2005. In 2010, the warm spring was not surveyed because a large boulder has lodged itself in the canyon, blocking access to the spring. In 2003, Chiricahua leopard frogs were also reported from below a warm spring in the Right Prong of Dix Creek. However, surveys in 2010 only found lowland leopard frogs. Currently, the population in the Left Prong is isolated.

The next nearest known Chiricahua leopard frog population is at Rattlesnake Pasture Tank, about a 6.0-mi (9.6-km), straight-line distance over rough terrain. A number of stock tanks have potential to connect these two sites and form a metapopulation; however, they have not been investigated in enough detail to understand whether PCEs are present or have the potential to be developed. No

Chiricahua leopard frogs have ever been found in these tanks.

This designated critical habitat overlaps that of critical habitat for Gila chub, which provides a level of protection for this unit. A healthy population of Gila chub, as well as other native fish, occurs in the Left Prong of Dix Creek. A natural rock barrier about a mile below the confluence of the Right and Left Prongs serves as a barrier to upstream movement of nonnative fish from the San Francisco River. The warm waters of the spring may allow persistence of Chiricahua leopard frogs if chytridiomycosis is present or if it colonizes this area in the future. A rough dirt road crosses the left prong of Dix Creek in the designated critical habitat unit. The major related threat is likely sediment flowing into the stream.

Rattlesnake Pasture Tank and Associated Tanks Unit

This unit contains 59 ac (24 ha) of Federal lands in the Apache-Sitgreaves National Forest in Greenlee County, Arizona.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it contains three tanks, along with dispersal corridors, that could help support a metapopulation. Additionally, both PCEs 1 and 2 are present in this unit.

Included in the designated critical habitat are three stock tanks: Rattlesnake Pasture, Rattlesnake Gap, and Buckhorn. Also included are intervening drainages and uplands for connectivity, including: (1) From Rattlesnake Pasture Tank downstream in an unnamed drainage to Red Tank Canyon (including Buckhorn Tank), then upstream in Red Tank Canyon to Rattlesnake Gap Tank; and (2) from Rattlesnake Gap Tank upstream in an unnamed drainage to its confluence with a minor drainage, then upslope to a saddle, and across that saddle and directly downslope to Rattlesnake Pasture Tank.

Chiricahua leopard frogs were discovered at Rattlesnake Pasture Tank in 2003, and are currently extant. The species has not been found at Rattlesnake Gap or Buckhorn Tanks; however, all three tanks are well connected via drainages to allow movement of frogs from Rattlesnake Pasture Tank to the other tanks. Rattlesnake Gap and Buckhorn Tanks have historically contained water. Other tanks in the area, including Cold Spring Mountain Tank and Rattlesnake Tanks #1 and 2, do not hold water for a long enough period to support a breeding population of frogs, and Chiricahua leopard frogs have not been found at these other tanks. The three tanks designated could help support a metapopulation; however, habitat work that secures water availability will be needed to achieve the fourth breeding site of the metapopulation.

The major threat in this unit is nonnative predators, such as tiger salamanders, that occur in all three tanks and likely prey upon Chiricahua leopard frogs. However, a healthy population of Chiricahua leopard frogs occurs with native Arizona tiger salamanders at Rattlesnake Pasture Tank. Three juvenile to small adult bullfrogs, which were likely immigrants from another site, were found at Rattlesnake Gap Tank in June 2010. There is potential for bullfrogs to become established at Rattlesnake Gap Tank. These tanks are filled by rainfall, but Rattlesnake Pasture Tank may be spring-fed as well. Nonetheless, there is some risk that these tanks, particularly Buckhorn Tank, could dry during an extended drought.

Coal Creek Unit

This unit consists of 7 ac (3 ha) of Federal lands in the Apache-Sitgreaves National Forest in Greenlee County, Arizona. This is an approximate 3,447-ft (1,051-m) reach of Coal Creek from Highway 78 downstream to the confluence with an unnamed drainage.

Occupancy status at the time of listing was unknown. We consider this unit to have been unoccupied at the time of listing for the purpose of this critical habitat designation. We have determined this unit to be essential to the conservation of the species because it contains important breeding habitat necessary for recovery. This creek dries to isolated pools, without the effect of snowmelt and summer precipitation, where Chiricahua leopard frogs take refuge. However, during the spring and summer, Coal Creek typically carries water, and the Chiricahua leopard frogs distribute themselves throughout this reach. Additionally, this unit contains PCE 1.

This population was discovered in 2003, and is still considered extant. This unit is isolated from other Chiricahua leopard frog populations; the nearest is Rattlesnake Pasture Tank, which is 5.1 mi (8.2 km) to the west over rugged terrain.

Neither chytridiomycosis nor nonnative predators is known to be a problem in this unit. However, one major threat in this unit is the potential for wildfires that could result in ash flow, sedimentation, and erosion in Coal Creek, which would degrade or eliminate habitat for Chiricahua leopard frogs. Another primary threat is extended drought, during which the aquatic habitats of the frog could be severely limited or could dry out completely, resulting in extirpation of this isolated population.

Blue Creek Unit

This unit includes 24 ac (10 ha) of Bureau of Land Management land and 12 ac (5 ha) of private lands in Grant County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

Included in this unit is an approximate 2.37-mi (3.81-km) reach of Blue Creek from adjacent to a corral on private lands downstream to the confluence of a drainage that comes in from the east. This is an area where Chiricahua leopard frogs currently breed. Additional habitat may occur upstream on private or State lands. However, the private reach immediately above the designated critical habitat lacks breeding pools, and no Chiricahua leopard frogs have been observed (Barnitz 2010, p. 1). The lands upstream of the private land have not been surveyed.

The nearest Chiricahua leopard frog population is at Coal Creek more than a 22 mi (35 km), straight-line distance, which is too great a distance to be considered part of a metapopulation.

Special management is required because the primary limiting factors in this unit are lack of perennial flow and periodic scouring flash flooding during the summer that likely wash tadpoles downstream. In some years, the entire reach goes dry in June; however, in other years with normal to above normal precipitation, frogs breed throughout this reach. Nonnative aquatic predators are absent. Although a Chiricahua leopard frog tested positive for chytridiomycosis in 2009, no die-offs have been noted. Also, special management is required because wildfire could result in ash flow, sedimentation, and erosion in Blue Creek, which would degrade or eliminate habitat for Chiricahua leopard frogs.

Recovery Unit 8 (Black-Mimbres-Rio Grande, New Mexico)

Seco Creek Unit

This unit includes 66 ac (27 ha) of Federal lands in the Gila National Forest in Sierra County, New Mexico. This area

was occupied at the time of listing and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

The designated critical habitat includes the North Fork of Seco Creek from Sawmill Well downstream to its confluence with Middle Seco Creek, to include Sucker Ledge, but excludes the portion of North Seco Creek on private lands. This amounts to an approximate drainage distance of 3.32 miles (5.34 km).

Breeding of Chiricahua leopard frogs has not been observed at Sawmill or Sucker Ledge, but has been observed at Davis Well. At the time of listing, Chiricahua leopard frogs were extant at Sucker Ledge and Davis Well, and the status at Sawmill Well at that time was unknown. The North Fork of Seco Creek, including Sawmill Well, Sucker Ledge, and Davis Well, is currently occupied. PCEs 1 and 2 are present in the unit.

This unit contributes to a metapopulation, and Chiricahua leopard frogs move among these sites and sites on the Ladder Ranch using the intervening creeks. This unit with the areas on the Ladder Ranch comprises the most stable metapopulation in New Mexico.

Special management is required in this unit because chytridiomycosis has caused extirpations in this region, and in 2001, four tadpoles from Seco Creek appeared to show signs of the disease. In June 2007, a single sample (out of seven samples) from Artesia Well and a single sample (out of nine samples) from LM Bar Well tested positive for chytridiomycosis. Both of these were considered ''weak positive'' by the laboratory and may have been false positives. Extensive testing since then has failed to produce additional positive tests. Bullfrogs have been found occasionally on adjacent private lands, but the Ladder Ranch has made efforts to remove and control them to the best of their ability. Barred tiger salamanders occur in most waters in the area and likely prey upon Chiricahua leopard frog tadpoles and small adults, but do not appear to threaten the Chiricahua leopard frog population as a whole.

Turner Endangered Species Fund, Turner Enterprises, and the Ladder Ranch have over a 10-year record of implementing recovery and conservation measures for the Chiricahua leopard frog on the Ladder Ranch. The 156,439-acre Ladder Ranch is owned by Turner Enterprises and is managed for its biodiversity. The Ladder Ranch has been an active participant in the conservation of a number of rare and listed species, including the Mexican wolf (*Canis lupus baileyi*), Bolson tortoise (*Gopherus flavomarginatus*), Chiricahua leopard frog, black-tailed prairie dog (*Cynomys ludovicianus*), American bison (*Bison bison*), and Rio Grande cutthroat trout (*Oncorhynchus clarki virginalis*). Recovery actions for the Chiricahua leopard frog have included fencing some of the waters from the bison, monitoring and researching Chiricahua leopard frog populations and habitat, maintaining perennial water for frogs, improving habitat for Chiricahua leopard frogs, removing and controlling bullfrogs, using steel rim tanks for refugia populations, and most recently constructing a captive breeding facility to rear Chiricahua leopard frogs for population augmentation and reestablishment to contribute to the range-wide recovery of the Chiricahua leopard frog. The Service has provided funding for the captive-breeding program under the Partners for Fish and Wildlife Program and other granting authorities. The Ladder Ranch maintains captive-propagation facilities for the Chiricahua leopard frog under a section 10(a)(1)(A) enhancement of survival permit from the Service. Under section 4(b)(2) of the Act, private lands on the Ladder Ranch in this unit (310 ac (247 ha)) are excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below).

Alamosa Warm Springs Unit

This unit consists of 54 ac (22 ha) of private, 25 ac (10 ha) of New Mexico State, and 0.2 ac (0.1 ha) of Bureau of Land Management lands at the headwaters of Alamosa Creek, Socorro County, New Mexico. This unit is designated as critical habitat because it was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

Designated critical habitat includes an approximate 4,974-ft (1,516-m) spring run from the confluence of Wildhorse Canyon and Alamosa Creek downstream to the confluence with a drainage that comes in from the north, which is below the gauging station in Monticello Box. This reach includes areas where frogs have been found as recent as 2006 (Christman 2006b, p. 11).

At its source, waters at Alamosa Warm Springs range from 77 to 85 °F (25.0 to 29.3 °C) (Christman 2006b, p. 3). Chytridiomycosis is present in this population, but the Chiricahua leopard frogs persist, presumably aided by the warm waters.

This is a robust breeding population, but it is too far removed from other Chiricahua leopard frogs to be part of a metapopulation. The nearest population is Unit 38, 20.3 mi (32.5 km) to the south-southeast. As a result, this site is managed as an isolated, robust population.

Alamosa Warm Springs is at the northeastern edge of the distribution of the Chiricahua leopard frog. This site is drought-resistant because of perennial spring flow. Nonnative aquatic predators are unknown at this site, but if introduced, they could pose a serious threat to the population. Special management is required in this unit because heavy livestock grazing on the site and in the watershed, and a dirt road through the canyon, have degraded the habitat for Chiricahua leopard frogs, and flooding likely flushes tadpoles out of the unit periodically (Christman 2006b, pp. 5–6).

The endangered Alamosa springsnail (*Tryonia alamosae*) occurs at Alamosa Warm Springs; its presence may provide some additional level of protection to Chiricahua leopard frog. The future land management plans of the landowners are unknown.

Cuchillo Negro Warm Springs and Creek Unit

This unit consists of 3 ac (1 ha) of Bureau of Land Management and 3 ac (1 ha) of New Mexico State lands in Sierra County, New Mexico. This unit was occupied at the time of listing and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Two springs on Bureau of Land Management land are the source of stream that runs for about 6.0 mi (9.6 km) down Cuchillo Negro Creek; however, Chiricahua leopard frogs are rarely found more than 1.2 mi (2.0 km) downstream of the warm springs (Christman 2006a, p. 8). Critical habitat begins at the upper of the two springs and follows Cuchillo Negro Creek downstream to the confluence with an unnamed drainage that comes in from the snorth, excluding the portion of Cuchillo Negro Creek on privately owned lands, for an approximate stream distance of 2,518 feet (768 meters).

Special management is required in this unit because chytridiomycosis is present in this population, and it is likely that Chiricahua leopard frogs persist where the water is warm, but succumb to the disease in the cooler waters downstream. Chiricahua leopard frogs currently persist in very low numbers in this unit.

PCE 1 is present in this unit; however, this site is too far from other Chiricahua leopard frog populations to be considered part of a metapopulation. The nearest population is Seco Creek,

about 12.7 mi (20.3 km) to the south-southwest. Hence, this population is managed as an isolated population.

Chiricahua leopard frogs coexist with plains leopard frogs at this site, and it is likely the plains leopard frogs occasionally prey upon Chiricahua leopard frog tadpoles and small frogs. Plains leopard frogs, however, probably do not threaten the Chiricahua leopard frog. Bullfrogs have been recorded in Cuchillo Negro Creek, but only rarely, and do not appear to breed or persist in the reach with the leopard frogs (Christman 2006a, p. 9).

Special management is required in this unit because the primary threats in this unit are cleaning out of the channel by the Cuchillo Acequia Association, periodic flooding that flushes tadpoles downstream and results in silts in pools, and chytridiomycosis. The springs located on Bureau of Land Management land are the source of downstream irrigation water, and the Cuchillo Acequia Association has maintained two trenches through the springs reportedly to improve flow, although that flow resulted in extensive damage to the springs, stream, and riparian vegetation (67 FR 40802; June 13, 2002).

The private landowner downstream is the Ladder Ranch, and as described above, the ranch is an active participant in Chiricahua leopard frog recovery. Under section 4(b)(2) of the Act, the private lands in this unit (23 ac (9 ha)) are excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below).

Ash and Bolton Springs Unit

This unit consists of 49 ac (20 ha) of private lands east of Hurley in Grant County, New Mexico. This unit was occupied at the time of listing and currently contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species.

Included in this unit are Ash and Bolton Springs, and ephemeral or intermittent drainages and uplands needed for movement of frogs among these two breeding sites as follows: (1) From the spring box at Ash Spring downstream in a drainage to a dirt road crossing; and (2) west and overland from the ruins of an old house below Ash Spring to a low saddle, then downslope into an unnamed drainage, and downstream in that drainage to its confluence with another unnamed drainage, downstream in that unnamed drainage its confluence with another unnamed drainage, then upstream in that unnamed drainage to the top of that drainage and directly downslope and west to another unnamed drainage, downstream in that unnamed drainage to its confluence with Bolton Canyon, and upstream in Bolton Canyon to the locally known Bolton Springs.

Populations of Chiricahua leopard frogs at Ash and Bolton Springs were present at the time of listing and currently persist. These sites were once part of a metapopulation, but all other sites have been extirpated. There may be potential in the future to rebuild a metapopulation through natural recolonization or population reestablishments, if threats can be managed.

The lands are owned by Freeport-McMoRan Copper and Gold Subsidiaries as part of the Chino Copper Mine, which is based in nearby Santa Rita and Hurley. In December 2008, Freeport-McMoRan announced plans to suspend mining and milling activities at Chino. The majority of the work force was laid off in 2009. To our knowledge, no current plans exist to expand the mine into the area designated for critical habitat, and Freeport-McMoRan and its predecessor, Phelps-Dodge, have been cooperative in conservation of the Chiricahua leopard frog.

Special management is required in this unit because chytridiomycosis is a threat. Large numbers of dead frogs were found at Ash Spring in 2007. However, the frogs at Bolton Springs have shown no signs of disease. Both populations exist in small aquatic sites that cannot sustain large populations; hence, they are also vulnerable to variations in environmental conditions and population demographics.

Mimbres River Unit

This unit consists of 1,097 ac (444 ha) of private lands in Grant County, New Mexico. The unit was occupied at the time of listing and currently contains PCE 1 to support life-history functions essential for the conservation of the species.

The unit is divided into two disjunct reaches of the Mimbres River that are separated by a 6.6-mi (10.6-km), intermittent reach. However, the two reaches may be too far apart to reasonably expect frogs to move between the two sites, and the next nearest Chiricahua leopard frog population is in the Ash and Bolton Springs Unit, more than 10 mi (16 km) away from the lower Mimbres River reach across rugged terrain.

Critical habitat in the upper Mimbres River includes an approximate 2.42-mi (3.89-km) reach that begins where the river flows into The Nature Conservancy's property and continues downstream to the confluence with Bear Canyon. The approximate 5.82-mi (9.36-km) lower critical habitat reach begins at the bridge over the Mimbres River just west of San Lorenzo and continues downstream to where it exits the The Nature Conservancy's Disert parcel near Faywood. The two critical habitat reaches are largely perennial, although portions of the river dry out during drought. Chiricahua leopard frogs are currently present in both reaches of the Mimbres River.

The best breeding site in the upper reach is Moreno Spring, which harbors a relatively stable population of Chiricahua leopard frogs. In the upper reach, Chiricahua leopard frogs have been observed to breed in the river and at off-channel pools on nearby private property. Breeding occurs in the lower river reach as well, where an additional robust population is present near San Juan.

Special management is required in this unit because chytridiomycosis is present in this unit. However, frogs are persisting with the disease. Moreno Spring is a warm spring that likely provides some buffer against the effects of the chytridiomycosis. Special management is also required in this unit because agricultural and rural development, water diversions, groundwater pumping, and leveeing and bankline work to protect properties from flooding are threats. Periodic flooding probably washes some tadpoles out of the system and results in silts in pools used for breeding. No bullfrogs or crayfish have been found in this unit; if introduced, they could pose a significant threat.

The threatened Chihuahua chub (*Gila nigrescens*) occurs in the upper reach, and rainbow trout, a nonnative species, occur throughout the areas where there is water. Both trout and chub likely prey upon Chiricahua leopard frog tadpoles. Bear Canyon Reservoir in Bear Canyon near the town of Mimbres reportedly supports populations of channel catfish (*Ictalurus punctatus*), black crappie (*Pomoxis nigromaculatus*), largemouth bass, and bluegill (*Lepomis macrochirus*), and rainbow trout (Johnson and Smorynski 1998, p. 132). These species may escape from the reservoir periodically into the Mimbres River.

Presence of the Chihuahua chub may provide some level of protection to the upper reach. In addition, The Nature Conservancy owns the majority of the river in the upper reach (510 ac (206 ha)) (not including Moreno Spring or Milagros Ranch (formerly known as Emory Oak Ranch)) and significant parcels in the lower reach. These lands, known as The Mimbres River Preseve, are managed for the benefit of the Chihuahua chub, Chiricahua leopard

frog, and other riparian and aquatic resources, although no formal conservation plan has been developed for this area or its resources. Therefore, under section 4(b)(2) of the Act, private lands owned by The Nature Conservancy in this unit (510 ac (206 ha)) are not excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below).

South Fork Palomas Creek Unit

This unit consists of 23 ac (9 ha) of Federal lands in the Gila National Forest land in Sierra County, New Mexico. This 4.5-mi (7.3-km) reach of South Fork Palomas Creek runs downstream from Wagonbed Canyon to the boundary with the Ladder Ranch. This unit was occupied at the time of listing, is currently occupied, and contains both PCEs 1 and 2 to support life-history functions essential for the conservation of the species. Special management is required in this unit to control bullfrogs.

Under section 4(b)(2) of the Act, 106 ac (43 ha) of private lands in this unit, which are part of the Ladder Ranch, are excluded from critical habitat designation (see *Application of Section 4(b)(2) of the Act,* below). Management for the Chiricahua leopard frog on the Ladder Ranch included fencing the ranch's waters from bison that graze the area, reestablishing of populations using wild-to-wild translocations, maintaining of wells and tanks, and controlling bullfrogs. The Ladder Ranch also monitors the Chiricahua leopard frogs and habitats, and has recently initiated a captive-breeding facility and program to rear frogs for population augmentation and reestablishment.

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.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of ''destruction or adverse modification'' (50 CFR 402.02) (see *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service,* 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.,* 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the 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 or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) 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, or 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 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 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the ''Adverse Modification'' Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for Chiricahua leopard frogs. As discussed above, the role of critical habitat is to support life-history needs of the 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 destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore should result in consultation

for the Chiricahua leopard frog include, but are not limited to:

(1) Actions that would significantly increase sediment deposition or scouring within the stream channel or pond that acts as a breeding site or a movement corridor among breeding sites in a metapopulation. Such activities could include, but are not limited to: Excessive sedimentation from livestock grazing; road construction; commercial or urban development; channel alteration; timber harvest; prescribed fires; off-road vehicle or recreational use; and other alterations of watersheds and floodplains. These activities could adversely affect the potential for frogs to survive or breed at a breeding site, and reduce the likelihood that frogs could move among subpopulations in a metapopulation, which in turn would decrease the viability of the metapopulation and its component local populations.

(2) Actions that would alter water chemistry beyond the tolerance limits of the Chiricahua leopard frog (see discussion above, *Primary Constituent Elements for the Chiricahua Leopard Frog*). 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); livestock grazing that results in waters heavily polluted by feces; runoff from agricultural fields; roadside use of salts; aerial persticide 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 Chiricahua leopard frogs at breeding sites. Variances in water chemistry or temperature could also affect the frog's ability to survive with chytridiomycosis.

(3) Actions that would alter the water quantity or permanence of a breeding site or dispersal corridor. If the permanence of an aquatic system declines so that it regularly dries up for more than 1 month each year, it will lose its ability to support breeding Chiricahua leopard frogs. If the quantity of water declines, it may reduce the likelihood that the site will support a population of Chiricahua leopard frogs that is robust enough to be viable over time. Similarly, ephemeral, intermittent, or perennial ponds can be important stop-over points for Chiricahua leopard frogs moving among breeding sites in a metapopulation. Reducing the permanence of these sites may reduce their ability to facilitate frog movements. However, in some cases, increasing permanence can be detrimental as well, in that it could create favorable habitat for predatory fish, bullfrogs, tiger salamanders, or crayfish that otherwise could not exist in the system. Such activities that could cause these effects include, but are not limited to, water diversions, groundwater pumping, watershed degredation, construction or destruction of dams or impoundments, developments or 'improvements' at a spring, channelization, dredging, road and bridge construction, and destruction of riparian or wetland vegetation.

(4) Actions that would directly or indirectly result in introduction of nonnative predators, increase the abundance of extant predators, or introduce disease (particularly chytridiomycosis). Possible actions could include, but are not limited to: Introduction or stocking of fish, bullfrogs, crayfish, tiger salamanders, or other predators on the Chiricahua leopard frog; creating or sustaining a sport fishery that encourages use of live fish, crayfish, tiger salamanders, or frogs as bait; water diversions, canals, or other water conveyance that move water from one place to another and through which inadvertent transport of predators into Chiricahua leopard frog habitat may occur; and movement of water, mud, wet equipment, or vehicles from one aquatic site to another, through which inadvertent transport of chytridiomycosis may occur.

(5) Actions and structures that would physically block movement among breeding sites in a metapopulation. Such actions and structures include, but are not limited to: Urban, industrial, or agricultural development; reservoirs that are 50 ac (20 ha) or more in size and stocked with predatory fish, bullfrogs, or crayfish; highways that do not include frog fencing and culverts; and walls, dams, fences, canals, or other structures that physically block movement. These actions and structures could reduce or eliminate immigration and emigration among breeding sites in a metapopulation, reducing the viability of the metapopulation and its subpopulations.

(6) Actions that would remove or block access to riparian vegetation and banklines within 20 ft (6.1 m) of the high water line of breeding ponds or to the upland edge of the wetland and riparian vegetation community lining breeding sites, whichever is greatest, or that would reduce vegetation in movement corridors among breeding sites in a metapopulation. Such activities could include, but are not limited to: Clearing of riparian or wetland vegetation; saltcedar (*Tamarix* sp.) control; road, bridge, or canal construction; urban development; conversion of river bottomlands to agriculture; stream or drainage channelization; and levee or dike construction. In some cases, thinning of very dense vegetation, such as cattails, which can completely take over an aquatic site, can be beneficial to the frog and its habitat. However, in most cases, vegetation clearing or removal, or blocking access to uplands adjacent to breeding sites, will reduce the quality of foraging and basking habitat, and may increase the likelihood of successful predation because cover has been removed.

We note that the above activities may adversely affect critical habitat. As stated previously, an activity adversely affecting critical habitat must be of a severity or intensity that the PCEs are compromised to the extent that the critical habitat can no longer meet its intended conservation function before a destruction or adverse modification determination is reached. Within the context of the goals and purposes of the recovery strategy in the species' recovery plan, an activity that compromises the PCEs to the point that one or more of the recovery criteria could not be achieved or would be very difficult to achieve in one or more Recovery Units would deteriorate the value of critical habitat to the point that its conservation function could not be met.

Exemptions

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

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

(1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;

(2) A statement of goals and priorities;

(3) A detailed description of management actions to be implemented to provide for these ecological needs; and

(4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: ''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 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 critical habitat designation. Therefore, we are not exempting lands from this final designation of critical habitat for the Chiricahua leopard frog under section 4(a)(3)(B)(i) of the Act.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary must designate and revise 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 that determination, the legislative history is clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

In considering whether to exclude a particular area from the designation, we must identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and determine whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive from the protection from adverse modification or destruction 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 identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation; the continuation, strengthening, or encouragement of partnerships; implementation of a management plan that provides equal to or more conservation than a critical habitat designation would provide; or a combination of these.

In the case of the Chiricahua leopard frog, the benefits of critical habitat include public awareness of Chiricahua leopard frog presence and the importance of habitat protection, and in cases where a Federal nexus exists, increased habitat protection for Chiricahua leopard frogs due to the protection from adverse modification or destruction of critical habitat. The majority of Chiricahua leopard frog habitat and localities are on Federal lands, mostly lands managed by the U.S. Forest Service; however, key aquatic sites are sometimes on non-Federal lands.

Building partnerships and promoting voluntary cooperation of landowners are essential to understanding the status of species on non-Federal lands, and necessary for implementing recovery actions, such as reestablishing listed species and restoring and protecting habitat. Many non-Federal landowners derive satisfaction from contributing to endangered species recovery. We strive to promote these private-sector efforts through the Department of the Interior's Cooperative Conservation philosophy. Conservation agreements with non-Federal landowners (HCPs, safe harbor agreements, other conservation agreements, easements, and State and local regulations) enhance species conservation by extending species protections beyond those available through section 7(a)(2) consultations. In the past decade and a half, we have encouraged non-Federal landowners to enter into conservation agreements, based on our philosophy that voluntary conservation can benefit both landowners and wildlife, and that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (61 FR 63854; December 2, 1996). For the Chiricahua leopard frog, we have often used the Service's Partners for Fish and Wildlife grant program to work with non-Federal partners on recovery projects for this species. This grant program requires a commitment from the participating landowner to maintain the improvements funded by the program for 10 years. We have also worked with private landowners on Chiricahua leopard frog conservation via safe harbor Agreements in Arizona and southwestern New Mexico, a conservation agreement for the Ramsey Canyon (= Chiricahua) leopard frog that protects frogs and their habitats on private and public lands in the Huachuca Mountains of Arizona, and an HCP in southeastern Arizona and southwestern New Mexico.

When we evaluate the existence of a conservation plan when considering the benefits of exclusion, 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 evaluating the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to determine whether the benefits of exclusion outweigh those of inclusion. If we determine that they do, we then determine whether exclusion would result in extinction. If exclusion of an area from critical habitat will result in extinction, we will not exclude that area from the designation.

Based on the information provided by entities seeking exclusion, as well as any additional public comments we received, we evaluated whether certain lands in the proposed critical habitat were appropriate for exclusion from this final designation under section 4(b)(2) of the Act. We are excluding the following areas from critical habitat designation for the Chiricahua leopard frog. Table 3 below provides approximate areas (ac, ha) of lands that

meet the definition of critical habitat but are being excluded under section 4(b)(2) of the Act from the final critical habitat rule.

TABLE 3—AREAS EXCLUDED FROM CRITICAL HABITAT DESIGNATION BY CRITICAL HABITAT UNIT

Unit	Specific area to be excluded	Area meeting the definition of critical habitat in the unit (acres (hectares))	Exclusion in acres (hectares)
Pasture 9 Tank Unit	Entire Pasture 9 Tank Unit	0.5 (0.2)	0.5 (0.2)
Beatty's Guest Ranch Unit	Entire Beatty's Guest Ranch	10 (4)	10 (4)
Ramsey and Brown Canyons Unit	Ramsey Canyon Preserve	123 (50)	16 (6)
Peloncillo Mountains Unit	Canoncito Ranch	655 (265)	289 (117)
Cave Creek Unit	Southwestern Research Station	326 (132)	92 (37)
Rosewood and North Tanks Unit	Entire Rosewood and North Tanks	97 (39)	97 (39)
Seco Creek Unit	Ladder Ranch	676 (274)	610 (247)
Cuchillo Negro Warm Springs and Creek Unit	Ladder Ranch	29 (11)	23 (9)
South Fork Palomas Creek Unit	Ladder Ranch	129 (52)	106 (43)
Totals		1,916 (775)	1,243 (503)

We are excluding these areas because we believe that:

(1) Their value for conservation will be preserved for the foreseeable future by existing protective actions, or

(2) They are appropriate for exclusion under the ''other relevant factor'' provisions of section 4(b)(2) of the Act.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared a draft economic analysis of the proposed critical habitat designation and related factors (Industrial Economics 2011). The draft analysis, dated September 15, 2011, was made available for public review and comment from September 21, 2011, through October 21, 2011 (76 FR 58441). Following the close of the comment period, a final analysis (dated December 9, 2011) of the potential economic effects of the designation was developed taking into consideration the public comments and any new information (Industrial Economics 2011).

The intent of the final economic analysis (FEA) is to quantify the economic impacts of all potential conservation efforts for the Chiricahua leopard frog; some of these costs will likely be incurred regardless of whether or not we designate critical habitat (baseline). The economic impact of the final 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, considering protections already in place for the species (e.g., under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the costs incurred regardless of whether or not 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 are those not expected to occur absent 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 consider in the final designation of critical habitat. The analysis looks retrospectively at baseline impacts incurred since the species was listed, and forecasts both baseline and incremental impacts likely to occur with the designation of critical habitat.

The FEA also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The FEA measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. Decision-makers can use this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the FEA considers economic impacts to activities from 2012 (expected year of final critical habitat designation) through 2031 (Industrial Economics 2011, p. 2–18). The FEA quantifies economic impacts of Chiricahua leopard frog conservation efforts associated with the following categories of activity:

(1) Livestock grazing: Includes draining stock tanks, damage to shoreline habitat, disease transmission, and changes to water quality due to intense livestock use.

(2) Mining: Includes mining operations and associated mining-related contaminants and runoff.

(3) Water diversion and management: Includes groundwater pumping (lowering of the water table), agricultural development, and operations of dams and diversions.

(4) Residential and commercial development and transportation: Includes sedimentation and runoff associated with construction, as well as stream channelization and loss of riparian or wetland vegetation.

(5) Fires and fire suppression activities: Includes ash flow and fire retardants from fires and fire suppression activities.

(6) Nonnative native species introductions and disease: Includes saltcedar control, stocking of nonnative fish, bullfrogs, or crayfish; and disease transmission.

The FEA estimates that no significant economic impacts are likely to result from the designation of critical habitat. Incremental costs are limited to administrative efforts of new and reinitiated consultations to consider adverse modification of critical habitat for the Chiricahua leopard frog. A significant level of baseline protection exists for the Chiricahua leopard frog, addressing a broad range of habitat threats. Nearly all units have some level of conservation, with 59 percent of proposed critical habitat on federally owned land and a number of conservation easements and safe harbor agreements on privately owned land.

However, the FEA does foresee additional administrative costs associated with the designation of critical habitat. In total, incremental administrative efforts are estimated at $1,300,000, or $115,000 on an annualized basis (discounted at 7 percent).

In conclusion, no significant economic impacts are likely to result from the designation of critical habitat, and incremental costs are limited to administrative efforts of new and reinitiated consultations to consider adverse modification of critical habitat. As a result, no areas are being excluded from the final designation based on a disproportionate economic impact to any entity or sector. A copy of the FEA with supporting documents may be obtained by contacting the Arizona Ecological Services Field Office (see **ADDRESSES**) or by downloading from the Internet at *http://www.regulations.gov.*

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. In preparing this rule, we have determined that the lands within the designation of critical habitat for the Chiricahua leopard frog are not owned or managed by DOD, and we therefore anticipate no impact to national security. We are not excluding any lands based on impacts to national security.

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 to national security. We consider a number of factors including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any Tribal issues, 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.

Land and Resource Management Plans, Conservation Plans, or Agreements Based on Conservation Partnerships

We consider a current plan or agreement to provide adequate management or protection if it meets the following criteria:

(1) The plan is finalized, complete, and provides the same or better level of protection from adverse modification or destruction than that provided through a consultation under section 7 of the Act;

(2) There is a reasonable expectation that the conservation management strategies and actions will be effective and implemented for the foreseeable future, based on past practices, written guidance, or regulations;

(3) The plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology that provide for the conservation of the essential physical or biological features of habitat; and

(4) 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.

We believe that the Malpai Borderlands HCP, Malpai Borderlands Safe Harbor Agreement, AGFD Safe Harbor Agreement, and our partnership with the Laddder Ranch fulfill the above criteria, and we are excluding non-Federal lands managed in accordance with these tenants that provide for the conservation of the Chiricahua leopard frog.

Two umbrella safe harbor agreements, the Malpai Borderlands Safe Harbor Agreement and the AGFD Safe Harbor Agreement, under which individual landowners can enroll their lands by signing a Certificate of Inclusion, have been completed for Arizona and southwestern New Mexico. Under the Certificates of Inclusion, landowners commit to certain conservation actions. These agreements have, in some cases, facilitated habitat improvements and translocations of Chiricahua leopard frogs to private lands to establish new populations. Under section 4(b)(2) of the Act, we assessed the appropriateness of exclusions from critical habitat for non-Federal lands in designated critical habitat units that are enrolled under either the AGFD Safe Harbor Agreement or the Malpai Borderlands Safe Harbor Agreement. We believe that these agreements fulfill the above criteria, and are excluding non-Federal lands managed in accordance with these tenants that provide for the conservation of the Chiricahua leopard frog. We also considered exclusions for non-Federal lands that are protected by conservation easements, conservation agreements, or other forms of protective management that benefit the Chiricahua leopard frog and its habitats. Specific units excluded from this critical habitat designation are discussed and described below.

Malpai Borderlands Safe Harbor Agreement

The Malpai Borderlands Safe Harbor Agreement specifies the primary biological objective of establishing and managing metapopulations of Chiricahua leopard frogs on enrolled properties that currently include 289 ac (117 ha) of lands on the Canoncito Ranch and 97 ac (39 ha) on the Magoffin Ranch in southeastern Arizona and southwestern New Mexico. The Malpai Borderlands Safe Harbor Agreement provides for management for existing populations of Chiricahua leopard frogs and establishment of new populations through reestablishment and translocations, which are expected to increase the distribution and numbers of Chiricahua leopard frogs on private lands. The metapopulations created and managed under the Malpai Borderlands Safe Harbor Agreement will be based on ''primary sites'' (sites that reliably hold surface water or retain moisture year-round in all years) and ''secondary sites'' that facilitate the metapopulation dynamic, but may dry one out of every 2 years on average. The Malpai Borderlands Safe Harbor Agreement also calls for special management of regional dispersal habitat between potentially occupied habitats on neighboring land, such as the San Bernardino National Wildlife Refuge.

There are several management actions that provide direct or indirect conservation benefit to Chiricahau leopard frogs under the Malpai Borderlands Safe Harbor Agreement. Examples include: (1) Specific considerations for stock tank construction and maintainance that benefit the Chiricahua leopard frog (construction of double-tanks, refugia sites at single tank systems, fencing, deepening, well drilling, installing pipelines, etc.); (2) managing livestock operations in a manner that specifically minimizes potential adverse effects to Chiricahua leopard frog populations to the maximum extent practicable; (3) avoiding intentional or accidental release of nonnative species to enrolled lands, as well as maintaining vigilance against third parties releasing nonnatives, reporting observations of nonnatives, and controlling nonnatives; and (4) implementing measures to ensure that prescribed fire, herbicide treatments, and other land treatments are conducted in a manner that promotes the long-term maintenance of habitat characteristics essential to Chiricahua leopard frog populations. For specific details of conservation activities implemented under the Malpai Borderlands Safe Harbor

Agreement, please see Malpai Borderlands Group (2004, pp. 10–24).

Benefits of Inclusion—Malpai Borderlands Safe Harbor Agreement

The principle benefit of including an area in a critical habitat designation is the requirement of Federal agencies to ensure that actions that they fund, authorize, or carry out are not likely to result in the destruction or adverse modification of any designated critical habitat, which is the regulatory standard of section 7(a)(2) of the Act under which consultation is completed. Federal agencies must consult with the Service on actions that may affect critical habitat and must avoid destroying, or adversely modifying, critical habitat. Federal agencies must also consult with us on actions that may affect a listed species, and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species (including the Chiricahua leopard frog), and in some locations, the outcome of these analyses will be similar, because effects to habitat will often also result in effects to the species. However, the regulatory standard is different, as the jeopardy analysis investigates the action's impact to survival and recovery of the species, while the adverse modification analysis investigates the action's effects to the designated habitat's contribution to conservation. This will, in many instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may provide greater benefits to the recovery of a species than would listing alone. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of designating lands as critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat. With respect to the Malpai Borderlands Safe Harbor Agreement, we expect any projects that occur on private lands, and that have a Federal nexus and may affect critical habitat, would undergo consultation. Such a project might be a section 404 permit under the Clean Water Act from the U.S. Army Corps of Engineers, for example. In such instances, critical habitat designation on these private lands would provide an additional regulatory benefit to the conservation of the Chiricahua leopard frog by prohibiting adverse modification of habitat essential for the conservation of this species.

Another possible benefit of including lands in critical habitat is public education regarding the potential conservation value of an area that may help focus conservation efforts on areas of high conservation value for certain species. Any information about the Chiricahua leopard frog and its habitat that reaches a wide audience, including parties engaged in conservation activities, is valuable. The inclusion of lands in the Chiricahua leopard frog critical habitat designation that are managed under the tenets of the Malpai Borderlands Safe Harbor Agreement could be beneficial to the species because the critical habitat designation specifically identifies lands essential to the conservation of the species and special management considerations or protection. The process of proposing critical habitat provided an opportunity for peer review and public comment on habitat we determined meets the definition of critical habitat. This process is valuable to landowners and managers in prioritizing conservation and management of identified areas. Information on the Chiricahua leopard frog and its habitat has also been provided to the public in the past through meetings; educational materials and outreach provided by the local, State, and Federal jurisdictions; and general partnerships, coordination, and collaboration with stakeholders in implementing Chiricahua leopard frog recovery programs. In general, we believe the designation of critical habitat for the Chiricahua leopard frog will provide additional information for the public concerning the importance of essential habitat that has not already been available.

In summary, we believe that educational benefits are likely realized when any information about the Chiricahua leopard frog and its habitat reaches a wide audience. The educational benefits of critical habitat designation on lands managed under the tenets of the Malpai Borderlands Safe Harbor Agreement may not be significant due to extensive past outreach, ongoing conservation efforts, the listing of Chiricahua leopard frog as threatened in 2002, the development and implementation of the final recovery plan in 2007, and other interactions concerning Chiricahua leopard frog conservation and recovery.

Benefits of Exclusion—Malpai Borderlands Safe Harbor Agreement

We believe the following benefits would be realized by forgoing designation of critical habitat for the Chiricahua leopard frog on lands managed under the tenets of the Malpai Borderlands Safe Harbor Agreement. These benefits chiefly include allowing for continued meaningful collaboration and effective working partnerships with private landowners to promote conservation of the Chiricahua leopard frog and its habitat.

We have detailed above a history of proactive collaboration and partnerships in the conservation and recovery of the Chiricahua leopard frog with numerous private partners since the species' listing in 2002, and in some examples, several years prior. These partners include the Nature Conservancy, the Ladder Ranch, the Magoffin Ranch, the Beatty Guest Ranch, the Southwestern Research Station, the San Rafael Ranch, and the Canoncito Ranch. These partners have demonstrated, as evidenced by a detailed list of specific activities above, a commitment to Chiricahua leopard frog conservation and recovery on their private lands. Indirectly and in addition, these private landowners serve as ambassadors for Chiricahua leopard frog conservation and recovery in their respective communities or areas, a valuable asset in today's often controversial challenge of listed species conservation and recovery.

Therefore, excluding these lands from critical habitat provides the significant benefit of maintaining and strengthening our existing conservation partnership and fostering new Federal-private partnerships. Through management under the Malpai Borderlands Safe Harbor Agreement, private landowners who are enrolled are committed to management and provide specific protection for the Chiricahua leopard frog and for the physical or biological features essential to the conservation of the species. In most respects, these management prescriptions are equal to or better than what the designation of critical habitat would provide. Exclusion of these private lands from critical habitat will help preserve these important partnerships and will also foster future partnerships and conservation of the Chiricahua leopard frog.

Benefits of Exclusion Outweigh the Benefits of Inclusion—Malpai Borderlands Safe Harbor Agreement

The benefits of excluding these private lands from critical habitat outweigh the benefits of inclusion, based on the conservation-based management tenets under the Malpai Borderlands Safe Harbor Agreement, which have facilitated the specific projects summarized above. Activities on these lands will follow the mitigation strategy or promote site-specific conservation goals and objectives (whichever is applicable) and will be managed into the future for the benefit of the Chiricahua leopard frog.

We reviewed and evaluated the benefits of inclusion and the benefits of exclusion of lands identified for exclusion that are managed under the tenets of the Malpai Borderlands Safe Harbor Agreement as critical habitat for the Chiricahua leopard frog. Including these private lands in the critical habitat designation for the Chiricahua leopard frog will provide little additional regulatory protection under section 7(a) of the Act when there is a Federal nexus, and educational benefits of designation will be redundant with those achieved through listing and our cooperative efforts working with these private landowners to conserve the Chiricahua leopard frog and the physical or biological features essential to the conservation of the species. We recognize there may be some ancillary benefit from other laws such as NEPA (42 U.S.C. 4321 et seq.)resulting from designating these areas as critical habitat; however, we consider these possible benefits to be marginal considering the potential adverse impact that critical habitat designation could have on our partnership with these private landowners. We believe past and future coordination with these private landowners will continue to provide sufficient education regarding the Chiricahua leopard frog habitat conservation needs on their lands, and therefore educational benefits for these areas are small.

The benefits of excluding these private lands from critical habitat are significant. Exclusion of these lands from critical habitat will help preserve the partnership we have developed and reinforce those we are building with other private landowners, and foster future partnerships and development of management plans. We received numerous comments during the public comment period emphasizing that designation of critical habitat on these lands should not occur. We are committed to fostering working relationships with the conservation community, including these private landowners, to further the conservation of the Chiricahua leopard frog and other endangered and threatened species. Therefore, in consideration of the relevant impact to our relationship with these private landowners and other current and future conservation partnerships, we determined the benefits of exclusion outweigh the benefits of inclusion in critical habitat designation for these lands.

Exclusion Will Not Result in Extinction of the Species—Malpai Borderlands Safe Harbor Agreement

We determined that the exclusion of approximately 386 ac (156 ha) of habitat from this final designation of critical habitat for the Chiricahua leopard frog under the Malpai Borderlands Safe Harbor Agreement will not result in extinction of the species. Lands managed under the tenets of the Malpai Borderlands Safe Harbor Agreement provide protection and long-term management of lands that meet the definition of critical habitat for the Chiricahua leopard frog through site-specific habitat management and improvement projects. Additionally, the jeopardy standard of section 7 of the Act for the Chiricahua leopard frog provides assurances that the species will not go extinct as a result of exclusion from critical habitat designation. The consultation requirements of section 7(a)(2) and the attendant requirement to avoid jeopardy to the Chiricahua leopard frog for projects with a Federal nexus will provide significant protection to the species. Therefore, based on the above discussion, the Secretary is exercising his discretion to exclude approximately 289 ac (117 ha) of habitat in the Peloncillo Mountains Unit and the entire 97 ac (39 ha) in the Rosewood and North Tanks Unit from this final critical habitat designation.

AGFD Safe Harbor Agreement

The AGFD (Statewide) Safe Harbor Agreement was finalized in 2006. The purpose of the AGFD's Safe Harbor Agreement is to (1) to establish a program for the conservation of the Chiricahua leopard frog (*Rana chiricahuensis*) on private and other non-Federal lands in Arizona; (2) to provide regulatory assurances to voluntary participants that their conservation efforts will not result in required or imposed additional conservation measures or additional land, water or resource use restrictions beyond those agreed to at the time of enrollment and in the original Agreement; and (3) to provide similar assurances to landowners who do not participate directly in the conservation program established under this Agreement, but may desire regulatory assurances due to their proximity to program participants or other lands harboring Chiricahua leopard frogs (AGFD 2006, p. 1). The Pasture 9 Tank, Beatty's Guest Ranch, Ramsey and Brown Canyons, and Cave Creek Units discussed in the proposed rule (76 FR 14126) are all managed under AGFD Safe Harbor Agreement.

The AGFD Safe harbor Agreement requires several required conservation measures for enrollees, including special instructions and precautions for: (1) Constructing or maintaining stock tanks; (2) managing livestock operations in a manner that specifically minimizes potential adverse effects to Chiricahua leopard frog populations to the maximum extent practicable; (3) committing to avoid intentionally or accidentally releasing nonnative species to enrolled lands, as well as maintaining vigilance against third parties releasing nonnatives, reporting observations of nonnatives, and controlling nonnatives; and (4) implementing measures to ensure that prescribed fire, herbicide treatments, and other land treatments are conducted in a manner that promotes the long-term maintenance of habitat characteristics essential to Chiricahua leopard frog populations that are extant in enrolled properties. Numerous conservation activities are suggested, although not mandatory, in the AGFD Safe Harbor Agreement including Chiricahua leopard frog translocation, construction of a double tank system, construction of small refugia sites at single tank systems, fencing, deepening of pools, well drilling, pipelines, removal of nonnative aquatic predators from otherwise suitable sites, maintenance of existing habitat conditions, enhancement of dispersal corridors, enhancement of stream and cienega habitats, and vegetation enhancement. For specific details of conservation activities implemented under the AGFD Safe Harbor Agreement, please see AGFD (2006, pp. 16–18, 22–24).

Benefits of Inclusion—AGFD Safe Harbor Agreement

The principle benefit of including an area in a critical habitat designation is the requirement of Federal agencies to ensure that actions that they fund, authorize, or carry out are not likely to result in the destruction or adverse modification of any designated critical habitat, which is the regulatory standard of section 7(a)(2) of the Act under which consultation is completed. Federal

agencies must consult with the Service on actions that may affect critical habitat and must avoid destroying, or adversely modifying, critical habitat. Federal agencies must also consult with us on actions that may affect a listed species, and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species (including the Chiricahua leopard frog), and in some locations, the outcome of these analyses will be similar, because effects to habitat will often also result in effects to the species. However, the regulatory standard is different, as the jeopardy analysis investigates the action's impact to survival and recovery of the species, while the adverse modification analysis investigates the action's effects to the designated habitat's contribution to conservation. This will, in many instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may provide greater benefits to the recovery of a species than would listing alone. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of designating lands as critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat. With respect to the AGFD Safe Harbor Agreement, we expect any projects that occur on private lands, have a Federal nexus, and may affect critical habitat would undergo consultation. Such a project might be a section 404 permit under the Clean Water Act from the U.S. Army Corps of Engineers, for example. In such instances, critical habitat designation on these private lands would provide an additional regulatory benefit to the conservation of the Chiricahua leopard frog by prohibiting adverse modification of habitat essential for the conservation of this species.

Another possible benefit of including lands in critical habitat is public education regarding the potential conservation value of an area that may help focus conservation efforts on areas of high conservation value for certain species. Any information about the Chiricahua leopard frog and its habitat that reaches a wide audience, including parties engaged in conservation activities, is valuable. The inclusion of lands in the Chiricahua leopard frog critical habitat designation that are managed under the tenets of the AGFD Safe Harbor Agreement could be beneficial to the species because the critical habitat designation specifically identifies lands essential to the conservation of the species and special management considerations or protection. The process of proposing critical habitat provided an opportunity for peer review and public comment on habitat we determined meets the definition of critical habitat. This process is valuable to landowners and managers in prioritizing conservation and management of identified areas. Information on the Chiricahua leopard frog and its habitat has also been provided to the public in the past through meetings; educational materials and outreach provided by the local, State, and Federal jurisdictions; and through general partnerships, coordination, and collaboration with stakeholders in implementing Chiricahua leopard frog recovery programs. In general, we believe the designation of critical habitat for the Chiricahua leopard frog will provide additional information for the public concerning the importance of essential habitat that has not already been available.

In summary, we believe that educational benefits are likely realized when any information about the Chiricahua leopard frog and its habitat reaches a wide audience. The educational benefits of critical habitat designation on lands managed under the tenets of the AGFD Safe Harbor Agreement may not be significant due to extensive past outreach, ongoing conservation efforts, the listing of Chiricahua leopard frog as threatened in 2002, the development and implementation of the final recovery plan in 2007, and other interactions concerning Chiricahua leopard frog conservation and recovery.

Benefits of Exclusion—AGFD Safe Harbor Agreement

We believe the following benefits would be realized by forgoing designation of critical habitat for the Chiricahua leopard frog on lands managed under the tenets of the AGFD Safe Harbor Agreement. These benefits chiefly include allowing for continued meaningful collaboration and effective working partnerships with private landowners to promote conservation of the Chiricahua leopard frog and its habitat.

We have detailed above a history of proactive collaboration and partnerships in the conservation and recovery of the Chiricahua leopard frog with numerous private partners since the species' listing in 2002, and in some examples, several years prior. These partners include the Nature Conservancy, the Ladder Ranch, the Magoffin Ranch, the Beatty Guest Ranch, the Southwestern Research Station, the San Rafael Ranch, and the Canoncito Ranch. These partners have demonstrated, as evidenced by a detailed list of specific activities above, a commitment to Chiricahua leopard frog conservation and recovery on their private lands. Indirectly and in addition, these private landowners serve as ambassadors for Chiricahua leopard frog conservation and recovery in their respective communities or areas, a valuable asset in today's often controversial challenge of listed species conservation and recovery.

Therefore, excluding these lands from critical habitat provides the significant benefit of maintaining and strengthening our existing conservation partnership and fostering new Federal-private partnerships. Through management under the AGFD Safe Harbor Agreement, these private landowners are committed to management that provides specific protection for the Chiricahua leopard frog and for the physical or biological features essential to the conservation of the species. In most respects, these management prescriptions are equal to or better than what the designation of critical habitat will provide. Exclusion of these private lands from critical habitat would help preserve these important partnerships and will also foster future partnerships and conservation of the Chiricahua leopard frog.

Benefits of Exclusion Outweigh the Benefits of Inclusion—AGFD Safe Harbor Agreement

The benefits of excluding these private lands from critical habitat outweigh the benefits of inclusion, based on the conservation-based management tenets under the AGFD Safe Harbor Agreement which have facilitated the specific projects summarized above. Activities on these lands will follow the mitigation strategy or promote site-specific conservation goals and objectives (whichever is applicable) and will be managed into

the future for the benefit of the Chiricahua leopard frog.

We reviewed and evaluated the benefits of inclusion and the benefits of exclusion of lands identified for exclusion that are managed under the tenets of the AGFD Safe Harbor Agreement as critical habitat for the Chiricahua leopard frog. Including these private lands in the critical habitat designation for the Chiricahua leopard frog will provide little additional regulatory protection under section 7(a) of the Act when there is a Federal nexus, and educational benefits of designation will be redundant with those achieved through listing and our cooperative efforts working with these private landowners to conserve the Chiricahua leopard frog and the physical or biological features essential to the conservation of the species. We recognize there may be some ancillary benefit from other laws such as NEPA resulting from designating these areas as critical habitat; however, we consider these possible benefits to be marginal considering the potential adverse impact that critical habitat designation could have on our partnership with these private landowners. We believe past and future coordination with these private landowners will continue to provide sufficient education regarding the Chiricahua leopard frog habitat conservation needs on their lands, and therefore educational benefits for these areas are small.

The benefits of excluding these private lands from critical habitat are significant. Exclusion of these lands from critical habitat will help preserve the partnership we have developed and reinforce those we are building with other private landowners, and foster future partnerships and development of management plans. We received numerous comments during the public comment period emphasizing that designation of critical habitat on these lands should not occur. We are committed to fostering working relationships with the conservation community, including these private landowners, to further the conservation of the Chiricahua leopard frog and other endangered and threatened species. Therefore, in consideration of the relevant impact to our relationship with these private landowners and other current and future conservation partnerships, we determined the benefits of exclusion outweigh the benefits of inclusion in critical habitat designation for these lands.

Exclusion Will Not Result in Extinction of the Species—AGFD Safe Harbor Agreement

We determined that the exclusion of approximately 118 ac (48 ha) of habitat from this final designation of critical habitat for the Chiricahua leopard frog under the AGFD Safe Harbor Agreement will not result in extinction of the species. Lands managed under the tenets of the AGFD Safe Harbor Agreement provide protection and long-term management of lands that meet the definition of critical habitat for the Chiricahua leopard frog through site-specific habitat management and improvement projects. Additionally, the jeopardy standard of section 7 of the Act for the Chiricahua leopard frog provides assurances that the species will not go extinct as a result of exclusion from critical habitat designation. The consultation requirements of section 7(a)(2) and the attendant requirement to avoid jeopardy to the Chiricahua leopard frog for projects with a Federal nexus will provide significant protection to the species. Therefore, based on the above discussion, the Secretary is exercising his discretion to exclude approximately 118 ac (48 ha) of habitat in the Pasture 9 Tank, Beatty's Guest Ranch, Ramsey and Brown Canyons, and Cave Creek Units from this final critical habitat designation.

Ladder Ranch Chiricahua Leopard Frog Conservation Partnership

The Ladder Ranch Chiricahua Leopard Frog Conservation Partnership includes staff from the Turner Endangered Species Fund, Turner Ranch Properties, and the Ladder Ranch Biodiversity Division in partnership with the Service and the New Mexico Department of Game and Fish. The Ladder Ranch is a 155,553-ac (62,950-ha) private ranch in Sierra County, New Mexico, whose management incorporates the Seco Creek, Cuchillo Negro Warm Springs and Creek, and the South Fork Palomas Creek critical habitat units. The Ladder Ranch provides conservation for the Chiricahua leopard frog based on the tenets of the recovery plan with four main objectives: (1) Maintain wild Chiricahua leopard frog populations on the Ladder Ranch; (2) develop applied research that will inform conservation management; (3) maintain a captive refugia system for Chiricahua leopard frog populations located elsewhere, off-ranch; and (4) use captive breeding to contribute towards rangewide recovery of the species.

The strategy underlying the Ladder Ranch's conservation for the Chiricahua leopard frog is built on the foundation of a robust wild population that inhabits the Seco Creek drainage on the Ladder Ranch, which is the largest Chiricahua leopard frog population in New Mexico. This metapopulation's persistence depends not only on natural intermittent and ephemeral stream habitat and steel and earthen stock tanks within the drainage, but also on dedicated water management by the ranch. The Ladder Ranch staff have implemented several conservation actions that have assisted in securing the Seco Creek metapopulation, including maintaining and improving pond habitat, erecting livestock and wildlife exclosure fences to prevent trampling and overgrazing at earthen ponds, and installing permanent fencing at Johnson, Fish, LM Bar, Pague, and North Seco Wells.

The Ladder Ranch has already conducted much conservation work for the Chiricahua leopard frog, such as habitat improvements, securing permanent water sources for occupied habitat, captive propagation-headstarting-release, radio telemetry research, disease testing, and annual monitoring of both captive and wild populations. A captive facility (ranarium) was also built to house frogs from both on- and off-ranch populations for the purposes of captive breeding for augmentation and restoring offspring to the wild. The Ladder Ranch staff has modified several steel water tanks that are part of the stock water infrastructure to serve as secure captive refugia sites for Chiricahua leopard frogs.

As part of the Ladder Ranch's conservation strategy for the Chiricahua leopard frog, they hope to restore robust populations in unoccupied drainages that contain suitable habitat. To accomplish this goal, the Ladder Ranch will: (1) Protect remaining populations of Chiricahua leopard frogs on the ranch; (2) identify, protect, restore, or create as needed, currently unoccupied recovery sites necessary to support viable populations and metapopulations of Chiricahua leopard frogs; (3) establish new or re-establish former populations at selected recovery sites; (4) augment populations on the ranch as needed to increase persistence; (5) monitor Chiricahua leopard frog populations and their habitats and the implementation activities on-site outlined the recovery plan; (6) implement research needed to support recovery actions and adaptive management; (7) develop cooperative conservation projects, such as a Safe Harbor Agreement; (8) develop and amend management planning on the ranch as needed to implement recovery actions; and (9) practice adaptive

management in which recovery tasks are revised by the Service in coordination with the Chiricahua Leopard Frog Recovery Team as pertinent new information becomes available.

Benefits of Inclusion—Ladder Ranch Chiricahua Leopard Frog Conservation Partnership

The principle benefit of including an area in a critical habitat designation is the requirement of Federal agencies to ensure that actions that they fund, authorize, or carry out are not likely to result in the destruction or adverse modification of any designated critical habitat, which is the regulatory standard of section 7(a)(2) of the Act under which consultation is completed. Federal agencies must consult with the Service on actions that may affect critical habitat and must avoid destroying, or adversely modifying, critical habitat. Federal agencies must also consult with us on actions that may affect a listed species, and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species (including the Chiricahua leopard frog), and in some locations, the outcome of these analyses will be similar, because effects to habitat will often also result in effects to the species. However, the regulatory standard is different, as the jeopardy analysis investigates the action's impact to survival and recovery of the species, while the adverse modification analysis investigates the action's effects to the designated habitat's contribution to conservation. This will, in many instances, lead to different results and different regulatory requirements. Thus, critical habitat designations may provide greater benefits to the recovery of a species than would listing alone. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat.

The consultation provisions under section 7(a) of the Act constitute the regulatory benefits of designating lands as critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Critical habitat may provide a regulatory benefit for the Chiricahua leopard frog when there is a Federal nexus present for a project that might adversely modify critical habitat. With respect to the Service's partnership with the Ladder Ranch, we expect any projects that occur on the ranch that have a Federal nexus and may affect critical habitat would undergo consultation. Such a project might be a section 404 permit under the Clean Water Act from the U.S. Army Corps of Engineers, for example. In such instances, critical habitat designation on the ranch would provide an additional regulatory benefit to the conservation of the Chiricahua leopard frog by prohibiting adverse modification of habitat essential for the conservation of this species.

Another possible benefit of including lands in critical habitat is public education regarding the potential conservation value of an area that may help focus conservation efforts on areas of high conservation value for certain species. Any information about the Chiricahua leopard frog and its habitat that reaches a wide audience, including parties engaged in conservation activities, is valuable. The inclusion of lands in the Chiricahua leopard frog critical habitat designation that are managed under the Ladder Ranch could be beneficial to the species because the critical habitat designation specifically identifies lands essential to the conservation of the species and special management considerations or protection. The process of proposing critical habitat provided an opportunity for peer review and public comment on habitat we determined meets the definition of critical habitat. This process is valuable to landowners and managers in prioritizing conservation and management of identified areas. Information on the Chiricahua leopard frog and its habitat has also been provided to the public in the past through meetings; educational materials and outreach provided by the local, State, and Federal jurisdictions; and general partnerships, coordination, and collaboration with stakeholders in implementing Chiricahua leopard frog recovery programs. In general, we believe the designation of critical habitat for the Chiricahua leopard frog will provide additional information for the public concerning the importance of essential habitat that has not already been available.

In summary, we believe that educational benefits are likely realized when any information about the Chiricahua leopard frog and its habitat reaches a wide audience. The educational benefits of critical habitat designation on the Ladder Ranch may not be significant due to extensive past outreach, ongoing conservation efforts by the ranch, the listing of Chiricahua leopard frog as threatened in 2002, the development and implementation of the final recovery plan in 2007, and other interactions concerning Chiricahua leopard frog conservation and recovery.

Benefits of Exclusion—Ladder Ranch Chiricahua Leopard Frog Conservation Partnership

We believe the following benefits would be realized by forgoing designation of critical habitat for the Chiricahua leopard frog on the Ladder Ranch. The primary benefit includes allowing for continued collaboration and effective working partnership between the Service and the Ladder Ranch to promote conservation of the Chiricahua leopard frog and its habitat.

Based on our partnership with the Ladder Ranch and the number of conservation activities the ranch has implemented for the conservation of the Chiricahua leopard frog, excluding land on the ranch from critical habitat provides the significant benefit of maintaining and strengthening our existing conservation partnership and fostering new Federal-private partnerships with other landowners. The Ladder Ranch is committed to providing protection for the Chiricahua leopard frog. In most respects, the management activities conducted by the Ladder Ranch are equal to or better than what the designation of critical habitat would provide. Exclusion of this private land from critical habitat would help preserve this important partnership and will also foster future partnerships and conservation of the Chiricahua leopard frog.

Benefits of Exclusion Outweigh the Benefits of Inclusion—Ladder Ranch Chiricahua Leopard Frog Conservation Partnership

The benefits of excluding lands owned and managed by the Ladder Ranch from critical habitat outweigh the benefits of inclusion, based on our conservation-based partnership with the ranch. Our partnership with the Ladder Ranch promotes site-specific conservation goals and objectives for the benefit of the Chiricahua leopard frog.

We reviewed and evaluated the benefits of inclusion and the benefits of exclusion of lands identified for exclusion on the Ladder Ranch. Including this private land in the critical habitat designation for the Chiricahua leopard frog will provide little additional regulatory protection under section 7(a) of the Act when there is a Federal nexus, and educational benefits of designation will be redundant with those achieved through listing and our cooperative efforts

working with this private landowner to conserve the Chiricahua leopard frog and the physical or biological features essential to the conservation of the species. We consider the possible benefits of including the Ladder Ranch in critical habitat designation to be marginal considering the potential adverse impact that critical habitat designation could have on our partnership with the private landowner. We believe past and future coordination with this private landowner will continue to provide sufficient education regarding the Chiricahua leopard frog habitat conservation needs on their lands, and therefore educational benefits for these areas are small.

The benefits of excluding the Ladder Ranch from critical habitat based on our conservation partnership are significant. Exclusion of the ranch from critical habitat will help preserve the partnership we have developed and reinforce those we are building with other private landowners, and foster future partnerships and development of management plans. During the public comment period, we received a letter from the Ladder Ranch strongly emphasizing the ranch's desire not to have critical habitat designated on their land. We are committed to fostering working relationships with the conservation community, including the Ladder Ranch, to further the conservation of the Chiricahua leopard frog and other endangered and threatened species. Therefore, in consideration of the relevant impact to our relationship with the Ladder Ranch and other potential private landowners, we determined the benefits of exclusion outweigh the benefits of inclusion in critical habitat designation for these lands.

Exclusion Will Not Result in Extinction of the Species—Ladder Ranch Chiricahua Leopard Frog Conservation Partnership

We determined that the exclusion of approximately 739 ac (299 ha) of habitat from this final designation of critical habitat for the Chiricahua leopard frog based on our conservation partnership with the Ladder Ranch will not result in extinction of the species. Lands managed by the Ladder Ranch for the Chiricahua leopard frog provide protection for the frog through site-specific habitat management and improvement projects. Therefore, the Secretary is exercising his discretion to exclude approximately 739 ac (299 ha) of habitat in the Seco Creek, Cuchillo Negro Warm Springs and Creek, and South Fork Palomas Creek Units from this final critical habitat designation.

Required Determinations

Regulatory Planning and Review—Executive Order 12866

The Office of Management and Budget (OMB) has determined that this rule is not significant and has not reviewed this rule under Executive Order 12866 (Regulatory Planning and Review). OMB bases its determination upon the following four criteria:

(1) Whether the rule will have an annual effect of $100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(2) Whether the rule will create inconsistencies with other Federal agencies' actions.

(3) Whether the rule will materially affect entitlements, grants, user fees, loan programs or the rights and obligations of their recipients.

(4) Whether the rule raises novel legal or policy issues.

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 (SBREFA) of 1996 (5 U.S.C. 801 *et seq.*), whenever an agency must 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 (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an 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. In this final rule, we are certifying that the critical habitat designation for Chiricahua leopard frog will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration (SBA), 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; as well as small businesses. 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 on these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the 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.

To determine if the rule could significantly affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., livestock management, water management, transportation, and development). We apply the ''substantial number'' test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define ''substantial number'' or ''significant economic impact.'' Consequently, to assess whether a ''substantial number'' of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities authorized, funded, or carried out by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect the Chiricahua leopard frog. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal

activities (see *Application of the ''Adverse Modification'' Standard* section).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Chiricahua leopard frog and the designation of critical habitat. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 3 through 4 and Appendix A of the analysis and evaluates the potential for economic impacts related to livestock management, water management, transportation, and development.

Of the four sectors identified having small entities, the FEA estimates that up to 171 small entities may be affected by section 7 consultations stemming from this rule. Annualized incremental economic impacts to small businesses range from $254 per year for transportation and residential and commercial development to $8,390 per year for livestock management (Industrial Economics 2011, pp. A–2 —A–7). A detailed analysis of each sector is presented below.

The FEA estimates that within this designation of critical habitat, the development sector has a total of 3,718 entities, of which 3,542 are small entities. Of these small entities, up to 9 may be impacted by this designation of critical habitat. Stated another way, 0.25 percent of the small entities in the development sector may be impacted by this designation of critical habitat at the regional scale of this analysis. At the national scale, this percentage is much less. The FEA estimates total annualized impacts for the 9 entities to range from $28 to $254. Relative to the SBA's small entity size standard for this sector ($7 million or $33.5 million annual revenues), this forecasted impact would not have a significant economic impact.

The FEA estimates that within this designation of critical habitat, the transportation sector has a total of 165 entities, of which 154 are small entities. Of these small entities, up to 9 may be impacted by this designation of critical habitat. Stated another way, approximately 6 percent of the small entities may be impacted by this designation of critical habitat at the regional scale of this analysis. At the national scale, this percentage is much less. The total annualized incremental impact is estimated to be $254 and relative to the SBA's small entity size standard for this sector ($33.5 million), this would not represent a significant economic impact.

The FEA estimates that within this designation of critical habitat there are 120 entities that engage in water management, and of these entities 104 are small. Of these, up to 18 of these small entities may be impacted by this designation of critical habitat. Stated another way, 17 percent of the small entities engaged in water management may be impacted at the regional scale of this analysis. At the national scale, this percentage is much less. The total annualized impact is estimated to be up to $508 for all entities; relative to SBA's small entity size standard for this sector ($7 million), this would not represent a significant economic impact.

The FEA estimates that within this designation of critical habitat there are a total of 162 entities engaged in livestock management activities; of these 135 are small entities. The FEA estimates that all of the small entities may be affected by this designation of critical habitat at the regional scale of this analysis. However, at the national scale, the percentage of affected small entities is much less. The total annualized incremental impact due to the designation of critical habiat is estimated to be $8,390. Although the highest annualized impact of $8,390 per year for livestock management may represent a significant impact if those costs are borne by only a few small ranchers with annual revenues that are considerably lower than the small entity revenue size standard of $750,000 per year; this is an unlikely outcome. In the extreme case where a single ranch participates in all 135 consultations, annualized impacts to that single entity would be $8,390; however, in the other extreme, if 135 small ranches each participate in a single consultation, annualized impacts to each entity would be approximately $62. If 68 small ranches participate (i.e., the midpoint between 1 and 135), the annualized impacts would be $123 per entity. If only a few did participate, it is unlikely that these entities would be small businesses. Given that the consultations on livestock management activities are projected to occur on U.S. Forest Service allotments and other federally managed areas that are spread over large parts of Arizona and New Mexico, it is unlikely that only a few ranchers would participate in all 135 of the projected consultations. The analysis does not have access to average annual revenues for small entities in the critical habitat units, and thus, cannot estimate annualized impacts as a percent of annual revenues. However, even though there is potential for 135 entities in this sector to be affected by this designation, we anticipate the limited potential impacts to entities in this sector will not be significant. Our determination is based on the fact that any impact to small businesses are indirect and that under the RFA we are only required to evaluate direct impacts resulting from the designation of critical habitat; and as such direct costs are borne by the Federal action agency.

In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on the above reasoning and currently available information, we concluded that this rule will not result in a significant economic impact on a substantial number of small entities. Therefore, we are certifying that the designation of critical habitat for Chiricahua leopard frog will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

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. The Office of Management and Budget (OMB) has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute ''a significant adverse effect'' when compared to not taking the regulatory action under consideration. As none of the outcomes that may constitute ''a significant adverse effect'' are relevant to this analysis, energy-related impacts within the critical habitat designation are not anticipated. The economic analysis finds that extraction, energy production, and distribution are not expected to be affected (Industrial Economics 2011, p. A–8). Thus, based on information in the economic analysis, energy-related impacts associated with Chiricahua leopard frog conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to 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 findings:

(1) This rule will 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 believe that this rule will significantly or uniquely affect small governments because the designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Consequently, we do not believe that the critical habitat designation would significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Chiricahua leopard frog in a takings implications assessment. As discussed above, the designation of critical habitat affects only Federal actions. Although private parties that receive Federal funding, assistance, or 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. The economic analysis found that no significant ecomonic impacts are likely to result from the designation of critical habitat for the Chiricahua leopard frog. A significant level of baseline protection already exists for the frog, which addresses a broad range of habitat threats. The majority of Chiricahua leopard frog habitat and localities are on Federal lands, and a number of conservation easements, habitat conservation plans, and safe harbor agreements provide protections on privately owned lands. Based on information contained in the final economic analysis assessment and described within this document, it is not likely that economic impacts to a property owner would be of a sufficient magnitude to support a takings action. Therefore, the takings implications assessment concludes that this designation of critical habitat for the Chiricahua leopard frog does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this rule does not have significant Federalism effects. A federalism impact summary 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 critical habitat designation with appropriate State resource agencies in Arizona and New Mexico. We received comments from the Arizona Game and Fish Department and the New Mexico Department of Game and Fish and have addressed them in the Summary of Comments and Recommendations section of this rule. The designation of critical habitat in areas currently occupied by the Chiricahua leopard frog may pose nominal additional restrictions to those currently in place and, therefore, may have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to 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 local governments in long-range planning (rather than having them 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) will 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 does not unduly burden the judicial system and that it meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating

critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the elements of physical or biological features essential to the conservation of the Chiricahua leopard frog within the designated areas to assist the public in understanding the habitat needs of the species.

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

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is 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 Chiricahua leopard frog, 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 prepare an environmental assessment. We prepared a draft environmental assessment for critical habitat designation and notified the public of its availability in the **Federal Register** on September 21, 2011 (76 FR 58441).

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 recognized Federal 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. We determined that there are no Tribal lands occupied by the Chiricahua leopard frog at the time of listing that contain the features essential for conservation of the species, and no Tribal lands unoccupied by the Chiricahua leopard frog that are essential for the conservation of the species. Therefore, we are not designating critical habitat for the Chiricahua leopard frog on Tribal lands.

References Cited

A complete list of all references cited 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**).

Author

The primary authors of this 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.

Regulation Promulgation

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

PART 17—[AMENDED]

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

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

■ 2. Amend § 17.11(h) by revising the entry for ''Frog, Chiricahua leopard'' under ''Amphibians'' in the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
AMPHIBIANS							
*	*	*	*	*	*		*
Frog, Chiricahua leopard.	*Lithobates chiricahuensis.*	U.S.A (AZ, NM), Mexico.	Entire	T	726	17.95(d)	17.43(b)
*	*	*	*	*	*		*

§ 17.43–[Amended]

■ 3. Amend § 17.43(b) by removing the word ''*Rana*'' in the paragraph heading and adding in its place the word ''*Lithobates*''.

■ 4. In § 17.95, amend paragraph (d) by adding an entry for ''Chiricahua Leopard Frog (*Lithobates chiricahuensis*),'' in the same alphabetical order that the species appears in the table at § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(d) * * *

Chiricahua Leopard Frog (*Lithobates chiricahuensis*)

(1) Critical habitat units are depicted for Apache, Cochise, Gila, Graham, Greenlee, Pima, Santa Cruz, and Yavapai Counties, Arizona; and Catron, Grant, Hidalgo, Sierra, and Socorro Counties, New Mexico, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the Chiricahua leopard frog are:

(i) Aquatic breeding habitat and immediately adjacent uplands exhibiting the following characteristics:

(A) Standing bodies of fresh water (with salinities less than 5 parts per thousand, pH greater than or equal to 5.6, and pollutants absent or minimally present), including natural and manmade (e.g., stock) ponds, slow-moving streams or pools within streams, off-channel pools, and other ephemeral or permanent water bodies that typically hold water or rarely dry for more than a month. During periods of drought, or less than average rainfall, these breeding sites may not hold water long enough for individuals to complete metamorphosis, but they would still be considered essential breeding habitat in non-drought years.

(B) Emergent and or submerged vegetation, root masses, undercut banks, fractured rock substrates, or some combination thereof, but emergent vegetation does not completely cover the surface of water bodies.

(C) Nonnative predators (e.g., crayfish (*Orconectes virilis*), bullfrogs (*Lithobates catesbeianus*), nonnative predatory fish) absent or occurring at levels that do not preclude presence of the Chiricahua leopard frog.

(D) Absence of chytridiomycosis, or if present, then environmental, physiological, and genetic conditions are such that allow persistence of Chiricahua leopard frogs.

(E) Upland habitats that provide opportunities for foraging and basking that are immediately adjacent to or surrounding breeding aquatic and riparian habitat.

(ii) Dispersal and nonbreeding habitat, consisting of areas with ephemeral (present for only a short time), intermittent, or perennial water that are generally not suitable for breeding, and associated upland or riparian habitat that provides corridors (overland movement or along wetted drainages) for frogs among breeding sites in a metapopulation with the following characteristics:

(A) Are not more than 1.0 mile (1.6 kilometers) overland, 3.0 miles (4.8 kilometers) along ephemeral or intermittent drainages, 5.0 miles (8.0 kilometers) along perennial drainages, or some combination thereof not to exceed 5.0 miles (8.0 kilometers).

(B) In overland and nonwetted corridors, provide some vegetation cover or structural features (e.g., boulders, rocks, organic debris such as downed trees or logs, small mammal burrows, or leaf litter) for shelter, forage, and protection from predators; in wetted corridors, provide some ephemeral, intermittent, or perennial aquatic habitat.

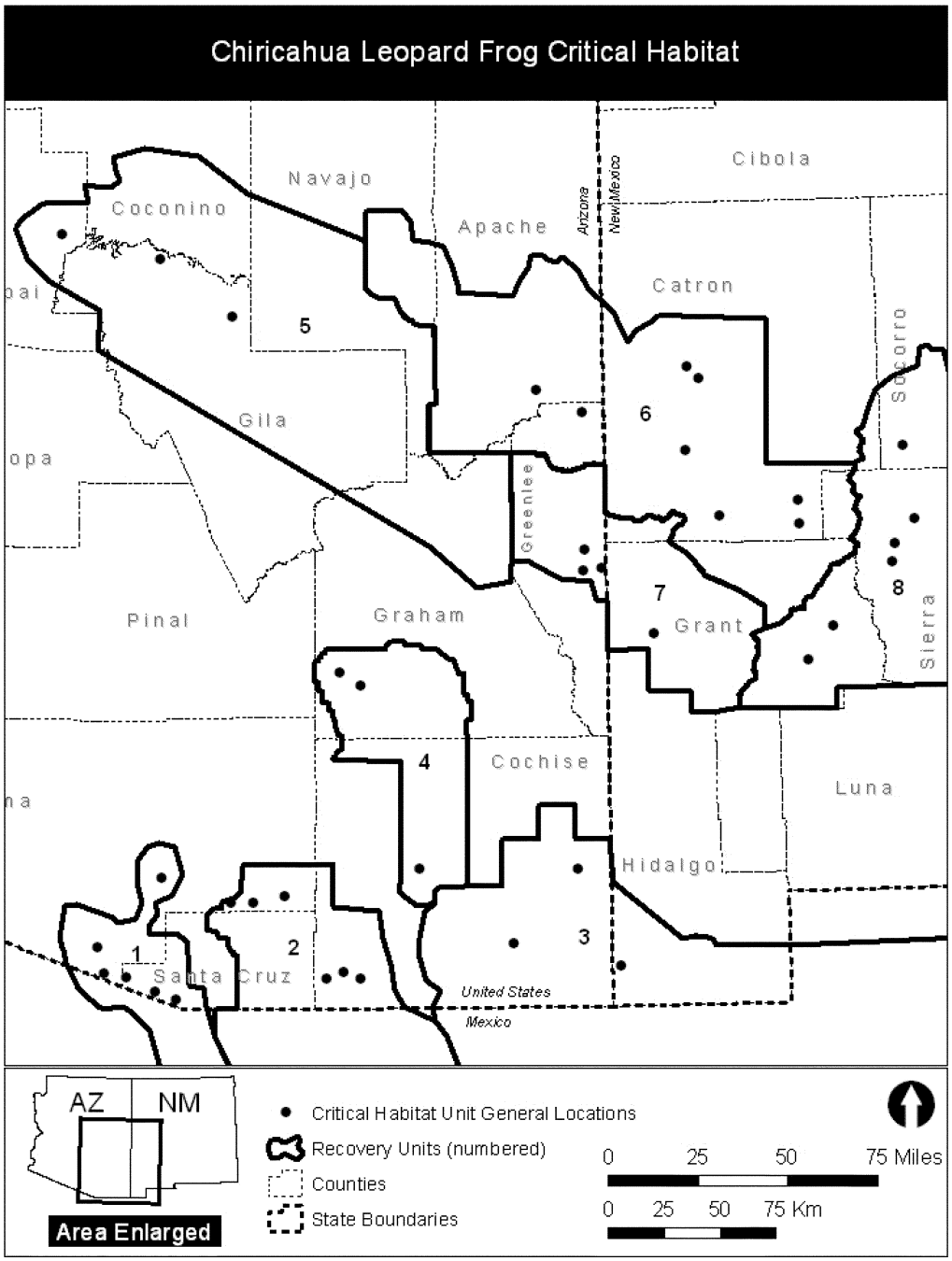
(C) Are free of barriers that block movement by Chiricahua leopard frogs, including, but not limited to, urban, industrial, or agricultural development; reservoirs that are 50 acres (20 hectares) or more in size and contain predatory nonnative fish, bullfrogs, or crayfish; highways that do not include frog fencing and culverts; and walls, major dams, or other structures that physically block movement.

(3) With the exception of impoundments, livestock tanks and other constructed waters, 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 were created on a base of USGS 7.5' quadrangles, the Service's online Lands Mapper, the U.S. Geological Survey National Hydrography Dataset, and imagery from Google Earth. Lentic water bodies were digitized from Google Earth imagery. Point locations for lentic water bodies (still or non-flowing water bodies) were calculated as the geographic centroids of the digitized polygons defining the critical habitat boundaries. Line locations for lotic streams (flowing water) and drainages are depicted as the ''Flowline'' feature class from the National Hydrography Dataset geodatabase. Overland connections were digitized from Google Earth imagery. 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). Information on Chiricahua leopard frog localities was derived from survey forms, reports, publications, field notes, and other sources, all of which reside in our files at the Arizona Ecological Services Field Office, 2321 West Royal Palm Road, Suite 103, Phoenix, AZ 85021. Coordinates given for tanks are the approximate center points of those tanks.

BILLING CODE 4310–55–P

(5) **NOTE:** Index,map of critical habitat units for the Chiricahua leopard frog follows:

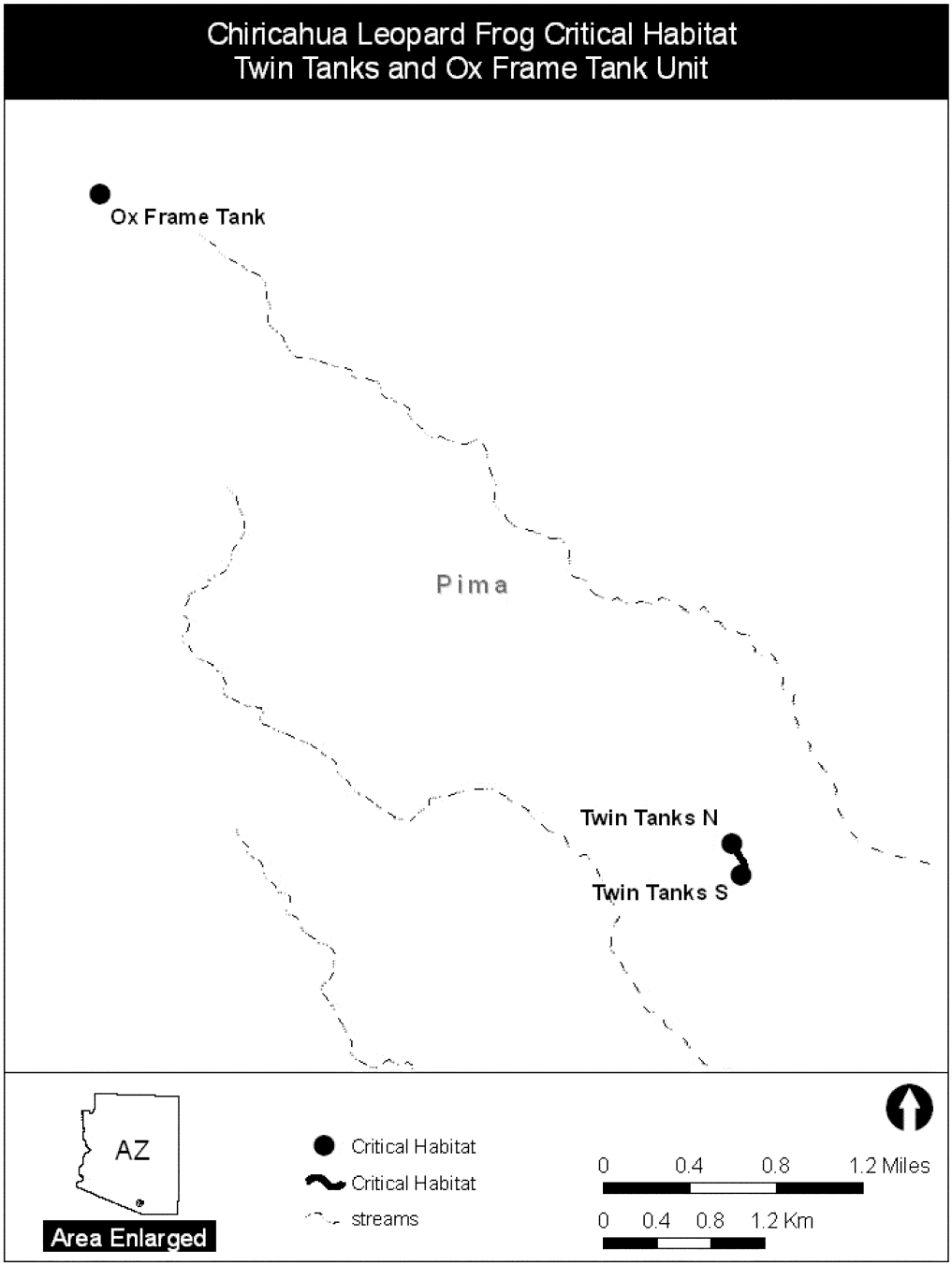


(6) Twin Tanks and Ox Frame Tank Unit, Pima County, Arizona.

(i) Twin Tanks, including the north tank (31.838230 N, 111.149875 W) and south tank (31.836031 N 111.149102 W), and the drainage running between them, a drainage distance of 979 feet (299 meters).

(ii) Ox Frame Tank (31.881882 N, 111.200318 W).

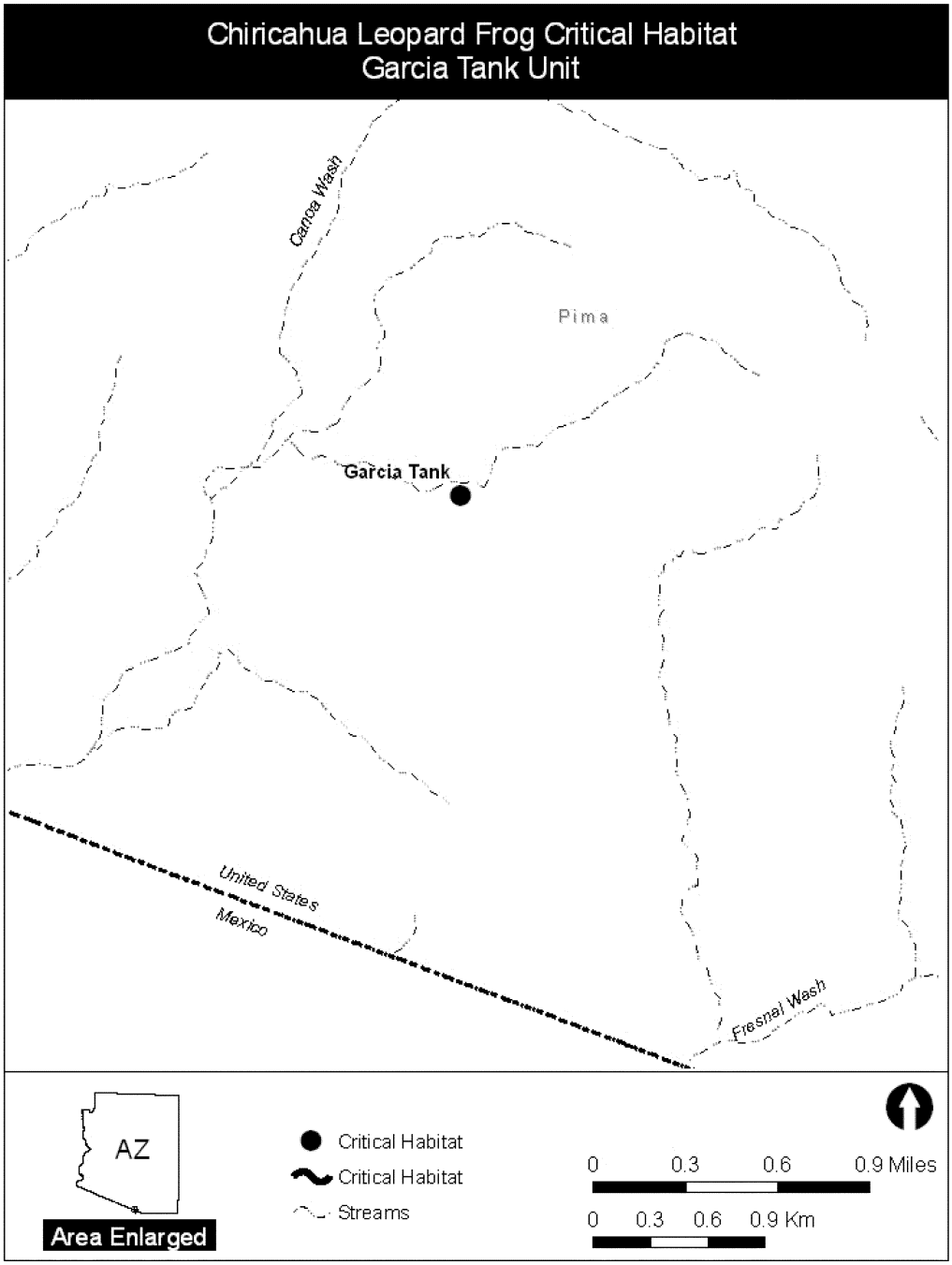
(iii) **NOTE:** Map of Twin Tanks and Ox Frame Tank Unit follows:



(7) Garcia Tank Unit, Pima County, Arizona.

(i) Garcia Tank (31.477060 N, 111.454114 W).

(ii) **NOTE:** Map of Garcia Tank Unit follows:



BILLING CODE 4310–55–C

(8) Buenos Aires National Wildlife Refuge Central Tanks Unit, Pima County, Arizona.

(i) Carpenter Tank (31.528748 N, 111.454642 W).

(ii) Rock Tank (31.583905 N, 111.462366 W).

(iii) State Tank (31.569254 N, 111.477114 W).

(iv) Triangle Tank (31.576105 N, 111.510909 W).

(v) New Round Hill Tank (31.613784 N, 111.489390 W).

(vi) Banado Tank (31.532759 N, 111.474729 W).

(vii) Choffo Tank (31.544627 N, 111.463126 W).

(viii) Barrel Cactus Tank (31.545284 N, 111.490310 W).

(ix) Sufrido Tank (31.566364 N, 111.445892 W).

(x) Hito Tank (31.579462 N, 111.446984 W).

(xi) Morley Tank (31.599057 N, 111.489088 W).

(xii) McKay Tank (31.605788 N, 111.474188 W).

(xiii) Chongo Tank (31.64002 N, 111.50435 W).

(xiv) Arroyo del Compartidero from Triangle Tank (31.576105 N, 111.510909 W) downstream through and including Aguire Lake to an unnamed drainage (31.594035 N, 111.504265 W); then downstream in that unnamed drainage to its confluence with Bailey Wash (31.596674 N, 111.501912 W); then downstream in Bailey Wash to its confluence with Puertocito Wash (31.604618 N, 111.494127 W); then downstream in Puertocito Wash to its confluence with Las Moras Wash (31.636031 N, 111.471749 W), including New Round Hill Tank (31.613784 N, 111.489390 W); and upstream in Las Moras Wash to Chongo Tank (31.64002 N, 111.50435 W), a distance of approximately 8.52 drainage miles (13.70 kilometers).

(xv) An unnamed drainage from its confluence with Puertocito Wash (31.619650 N, 111.483551 W) upstream to McKay Tank (31.605788 N, 111.474188 W, which is a cluster of three tanks), a distance of approximately 1.55 drainage miles (2.50 kilometers).

(xvi) Puertocito Wash from its confluence with Bailey Wash (31.604618 N, 111.494127 W) upstream to Sufrido Tank (31.566364 N, 111.445892 W), including Morley Tank (31.599057 N, 111.489088 W), a distance of approximately 4.60 drainage miles (7.40 kilometers).

(xvii) An innamed drainage from its confluence with Puertocito Wash upstream to Rock Tank (31.583905 N, 111.462366 W), then upstream in an unnamed drainage to the top of that drainage (31.582637 N, 111.456882 W) and directly overland to an unnamed drainage (31.583818 N, 111.455223 W), and then upstream to Hito Tank (31.579462 N, 111.446984 W) and downstream to McKay Tank (31.605788 N, 111.474188 W), a distance of approximately 3.80 drainage miles (6.11 kilometers) and 580 feet (177 meters) overland.

(xviii) Lopez Wash from Carpenter Tank (31.528748 N, 111.454642 W) downstream to its confluence with Aguire Lake (31.590582 N, 111.499589 W), a distance of approximately 6.75 drainage miles (10.87 kilometers).

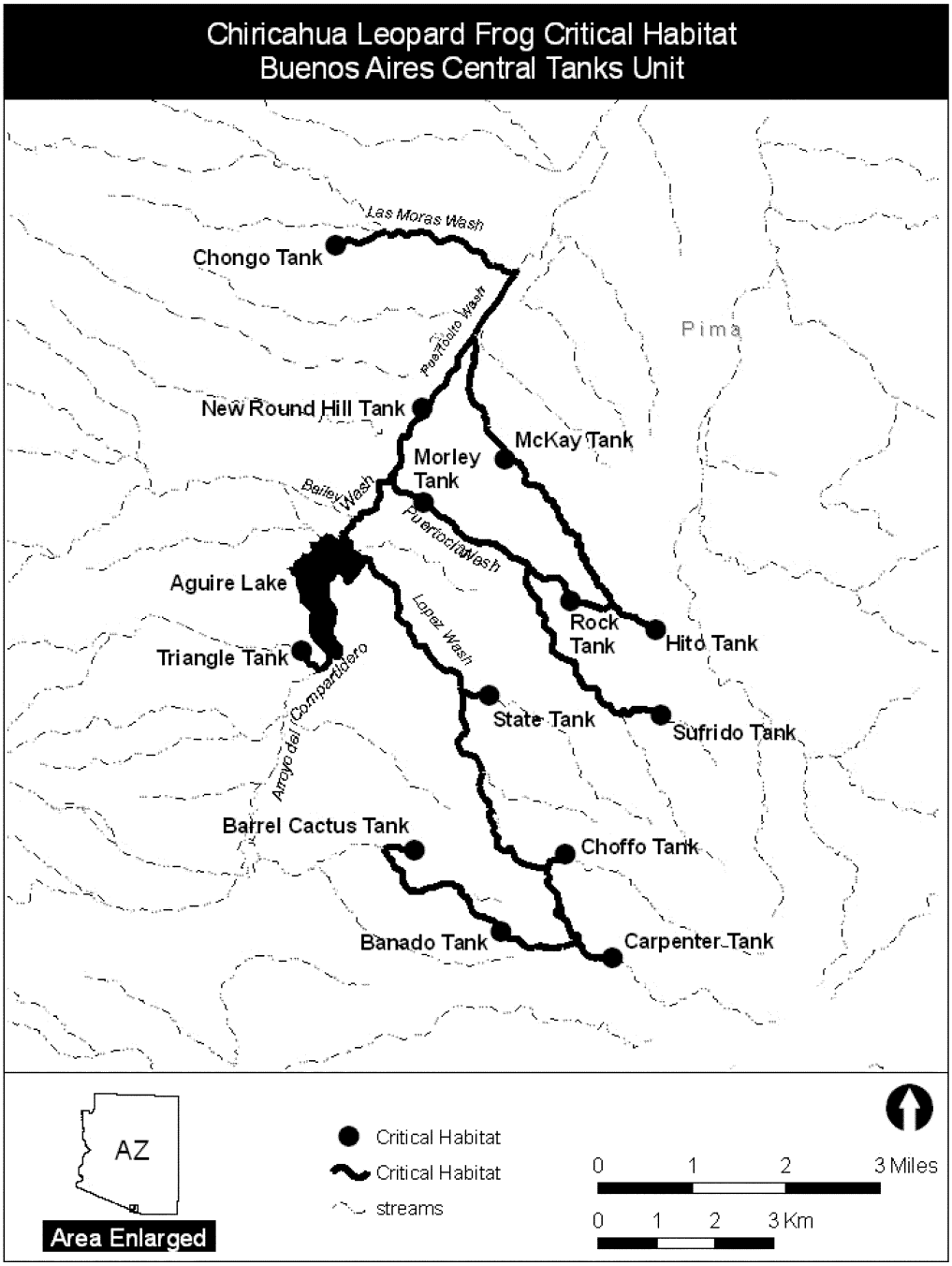
(xix) An unnamed drainage from its confluence with Lopez Wash (31.542605 N, 111.466699 W) upstream to Choffo Tank (31.544627 N, 111.463126 W), a distance of approximately 1,549 drainage feet (472 meters).

(xx) An unnamed drainage from its confluence with Lopez Wash (31.569735 N, 111.482058 W) upstream to State Tank (31.569254 N, 111.477114 W), a distance of approximately 1,613 drainage feet (492 meters).

(xxi) An unnamed drainage from Banado Tank (31.532759 N, 111.474729 W) downstream to the confluence with an unnamed drainage (31.545399 N, 111.496152 W), and then upstream in that drainage to Barrel Cactus Tank (31.545284 N, 111.490310 W), a distance of approximately 2.21 drainage miles (3.56 kilometers).

(xxii) An unnamed drainage from Banado Tank (31.532759 N, 111.474729 W) upstream to a saddle (31.530907 N, 111.463162 W), then directly downslope to Lopez Wash (31.532093 N, 111.462159 W), a distance of approximately 3,831 drainage feet (1,168 meters) and 808 feet (246 meters) overland.

(xxiii) **NOTE:** Map of Buenos Aires NWR Central Tanks Unit follows:


Chiricahua Leopard Frog Critical Habitat
Buenos Aires Central Tanks Unit
Las Moras Wash
Chongo Tank
Pima
New Round Hill Tank
McKay Tank
Morley Tank
Bailey Wash
Aguire Lake
Rock Tank
Hito Tank
Triangle Tank
Lopez Wash
State Tank
Sufrido Tank
Arroyo del Compartidero
Barrel Cactus Tank
Choffo Tank
Banado Tank
Carpenter Tank
AZ
Area Enlarged
Critical Habitat
Critical Habitat
streams
0 1 2 3 Miles
0 1 2 3 Km

(9) Bonita, Upper Turner, and Mojonera Tanks Unit, Santa Cruz County, Arizona.

(i) Bonita Tank (31.43525 N, 111.305505 W).

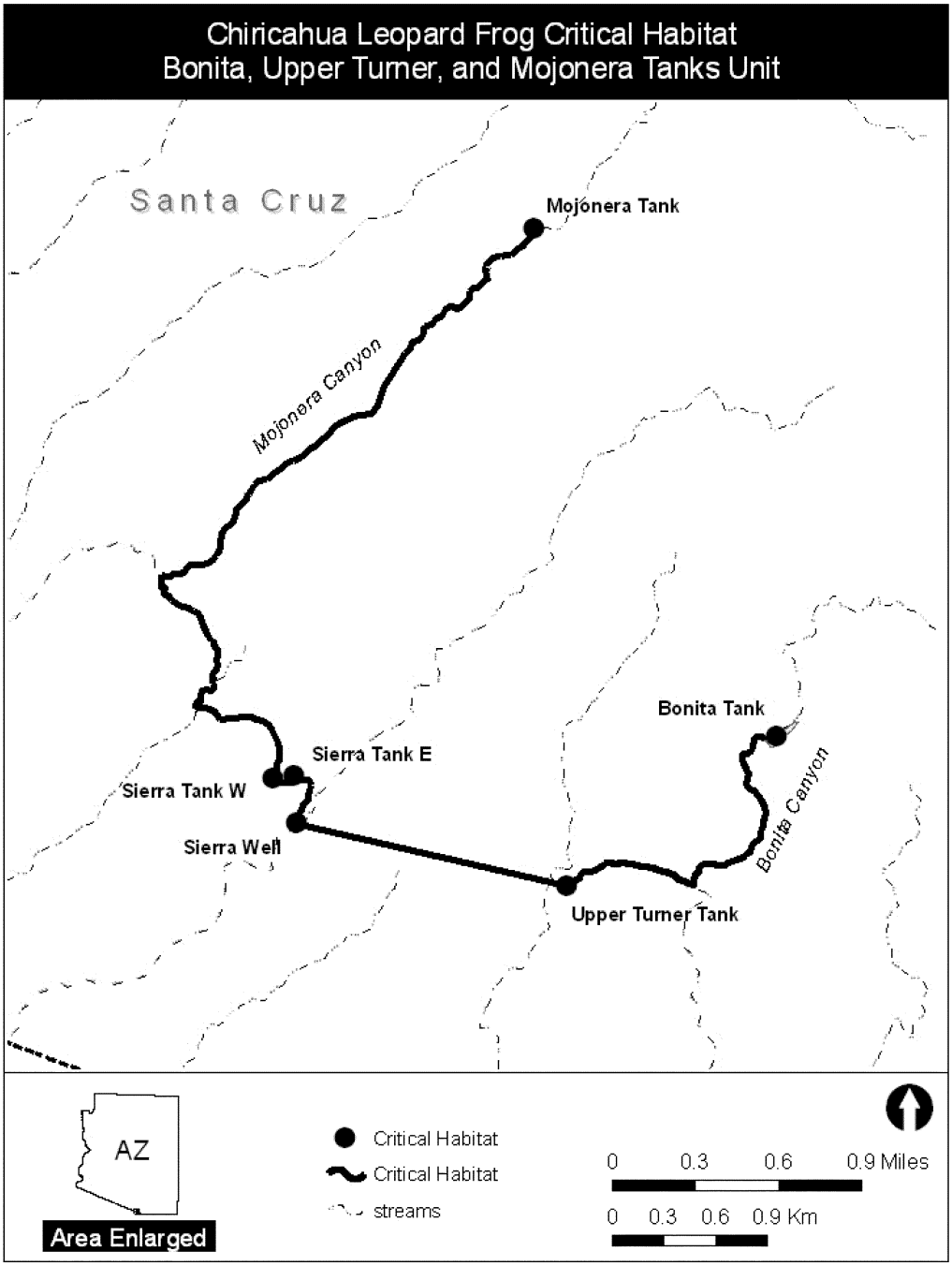
(ii) Upper Turner Tank (31.429690 N, 111.318332 W).

(iii) Mojonera Tank (31.464250 N, 111.320203 W).

(iv) From Upper Turner Tank (31.429690 N, 111.318332 W) upstream in an unnamed drainage to its confluence with a minor drainage coming in from the east (31.431029 N, 111.315846 W), then directly upslope in that drainage and east to a saddle (31.431015 N, 111.314770), and directly downslope through an unnamed drainage to Bonita Canyon (31.429806 N, 111.310325 W), and upstream in Bonita Canyon to Bonita Tank, a distance of approximately 1.29 drainage miles (2.08 kilometers) and 150 feet (46 meters) overland.

(v) From Mojonera Tank (31.464250 N, 111.320203 W) downstream in Mojonera Canyon to a sharp bend where the drainage turns west-northwest (31.445989 N, 111.343181 W); then southeast and upstream in an unnamed drainage to a saddle (31.443358 N, 111.340675 W) and downslope through an unnamed drainage to its confluence with another unnamed drainage (31.438637 N, 111.341044 W); then upstream in that unnamed drainage to a saddle (31.438497 N, 111.337639 W); then downstream in an unnamed drainage to Sierra Well (31.433012 N, 111.334709 W), to include Sierra Tank East (31.435488 N, 111.334736 W) and Sierra Tank West (31.435361 N, 111.336103 W); then directly overland to Upper Turner Tank (31.429690 N, 111.318332 W), a distance of approximately 3.45 drainage miles (5.56 kilometers) and 5,270 feet (1,606 meters) overland.

(vi) **NOTE:** Map of Bonita, Upper Turner, and Mojonera Tanks Unit follows:


Chiricahua Leopard Frog Critical Habitat
Bonita, Upper Turner, and Mojonera Tanks Unit
Santa Cruz
Mojonera Tank
Mojonera Canyon
Bonita Tank
Sierra Tank E
Sierra Tank W
Sierra Well
Bonita Canyon
Upper Turner Tank
AZ
Area Enlarged
Critical Habitat
Critical Habitat
streams
0 0.3 0.6 0.9 Miles
0 0.3 0.6 0.9 Km

(10) Sycamore Canyon Unit, Santa Cruz County, Arizona.

(i) Sycamore Canyon from the Ruby Road bridge (31.434030 N, 111.186537 W) south to the International Boundary (31.379952 N, 111.222937 W), a distance of 6.35 stream miles (10.23 kilometers).

(ii) Yank Tank (31.425426 N, 111.183289 W).

(iii) North Mesa Tank (31.415697 N, 111.167584 W).

(iv) Horse Pasture Spring (31.406812 N, 111.184717 W).

(v) Bear Valley Ranch Tank (31.413617 N, 111.176818 W).

(vi) South Mesa Tank (31.406832 N, 111.164505 W).

(vii) Rattlesnake Tank (31.400654 N, 111.163470 W).

(viii) Yanks Canyon from Yank Tank (31.425426N, 111.183289W) downstream to its confluence with Sycamore Canyon (31.428987 N, 111.190679 W), a distance of approximately 2,822 drainage feet (860 meters).

(ix) From North Mesa Tank (31.415697 N, 111.167584 W) downstream in Atascosa Canyon to its confluence with Peñasco Canyon (31.402594 N, 111.186647 W), then from that confluence downstream in Peñasco Canyon to its confluence with Sycamore Canyon (31.407395 N, 111.195820 W), a distance of approximately 2.91 drainage miles (4.69 kilometers).

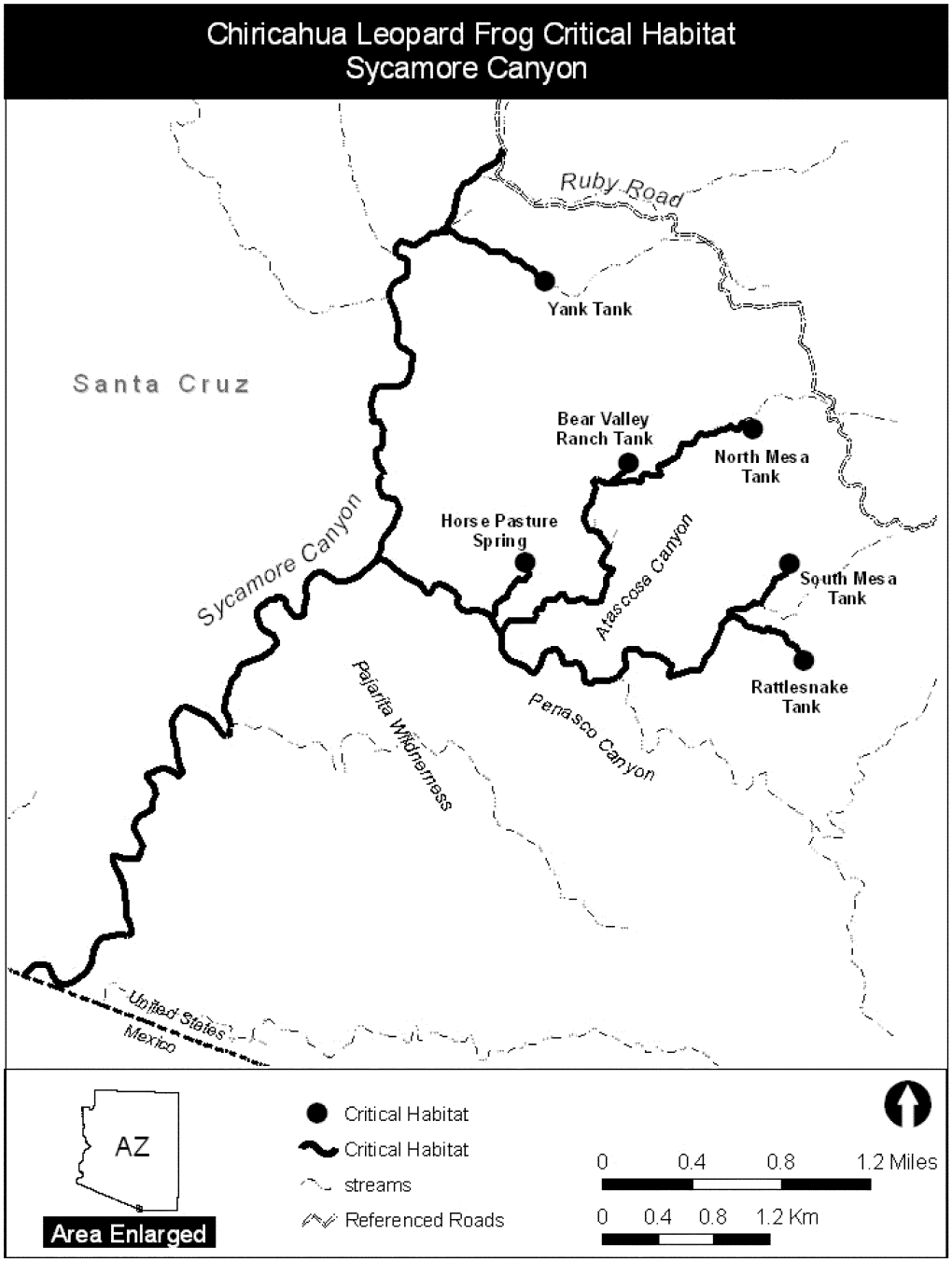
(x) From Horse Pasture Spring (31.406812 N, 111.184717 W) downstream to Peñasco Canyon, a drainage distance of approximately 1,759 feet (536 meters).

(xi) From Bear Valley Ranch Tank (31.413617 N, 111.176818 W) downstream in an unnamed drainage to its confluence with Atascosa Canyon (31.402583 N, 111.186593 W), a drainage distance of approximately 611 stream feet (186 meters).

(xii) From South Mesa Tank (31.406832 N, 111.164505 W) downstream in unnamed drainage to its confluence with another unnamed drainage (31.403615 N, 111.169213 W), then downstream in that unnamed drainage to its confluence with Peñasco Canyon (31.399519 N, 111.177701 W), then downstream in Peñasco Canyon to its confluence with Atascosa Canyon (31.402594 N, 111.186647 W), a drainage distance of approximately 2.05 miles (3.30 kilometers).

(xiii) From Rattlesnake Tank (31.400654 N, 111.163470 W) downstream in an unnamed drainage to its confluence with another unnamed drainage (31.403615 N, 111.169213 W), a drainage distance of approximately 2,274 feet (693 meters).

(xiv) **NOTE:** Map of Sycamore Canyon Unit follows:


Chiricahua Leopard Frog Critical Habitat
Sycamore Canyon
Ruby Road
Yank Tank
Santa Cruz
Bear Valley Ranch Tank
North Mesa Tank
Horse Pasture Spring
Sycamore Canyon
Atascosa Canyon
South Mesa Tank
Rattlesnake Tank
Pajarita Wilderness
Penasco Canyon
United States
Mexico
AZ
Area Enlarged
Critical Habitat
Critical Habitat
streams
Referenced Roads
0 0.4 0.8 1.2 Miles
0 0.4 0.8 1.2 Km

(11) Peña Blanca Lake and Spring and Associated Tanks Unit, Santa Cruz County, Arizona.

(i) Peña Blanca Lake (31.409091 N, 111.084971 W at the dam).

(ii) Peña Blanca Spring (31.388895 N, 111.092297 W).

(iii) Summit Reservoir (31.396565 N, 111.141347 W).

(iv) Tinker Tank (31.380107 N, 111.136359 W).

(v) Coyote Tank (31.369894 N, 111.150751 W).

(vi) Thumb Butte Tank (31.388426 N, 111.118105 W).

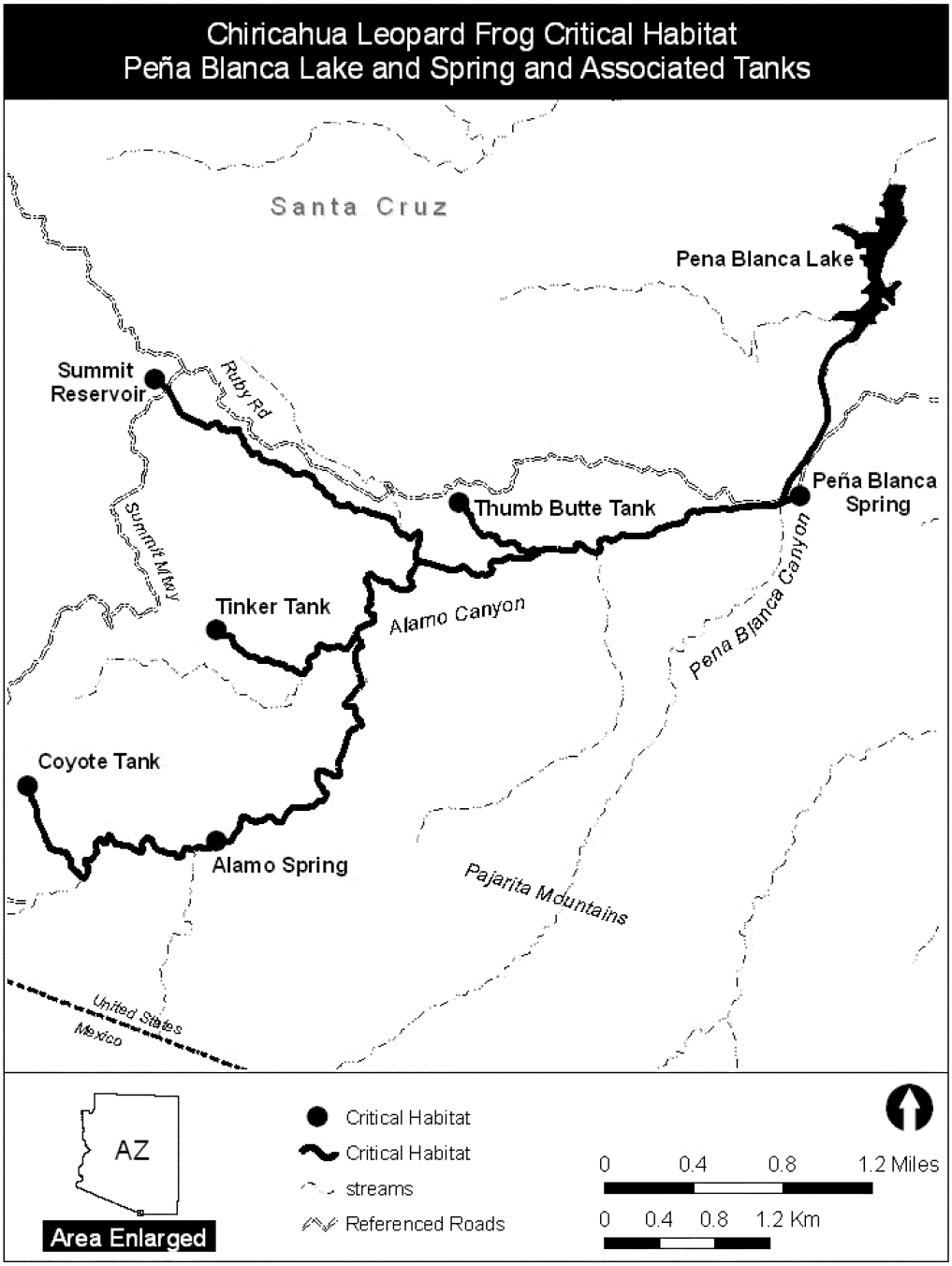
(vii) From Summit Reservoir directly southeast to a saddle on Summit Motorway (31.395580 N, 111.140552 W), then directly downslope to an unnamed drainage at (31.394133 N, 111.139450 W) and downstream in that drainage to its confluence with Alamo Canyon (31.384521 N, 111.121496 W), then downstream in Alamo Canyon to its confluence with Peña Blanca Canyon (31.388301 N, 111.093728 W), then downstream in Peña Blanca Canyon to Peña Blanca Lake (31.409091 N, 111.084971 W at the dam) to include Peña Blanca Spring (31.388895 N, 111.092297 W), a distance of approximately 4.44 drainage miles (7.10 kilometers) and 1,040 feet (317 meters) overland.

(viii) From Thumb Butte Tank (31.388426 N, 111.118105 W) downstream in an unnamed drainage to its confluence with Alamo Canyon (31.385228 N, 111.112132 W), a distance of approximately 2,494 drainage feet (760 meters).

(ix) From Tinker Tank (31.380107 N, 111.136359 W) downstream in an unnamed drainage to its confluence with Alamo Canyon (31.379693 N, 111.126053 W), then downstream in Alamo Canyon to the confluence with the drainage from Summit Reservoir (31.384521 N, 111.121496 W), a distance of approximately 1.55 drainage miles (2.50 kilometers).

(x) From Coyote Tank (31.369894 N, 111.150751 W) downstream in an unnamed drainage to its confluence with Alamo Canyon (31.365839 N, 111.138388 W); then downstream in Alamo Canyon to the confluence with the drainage from Tinker Tank (31.379693 N, 111.126053 W), to include Alamo Spring (31.365993 N, 111.137171 W), a distance of approximately 3.09 drainage miles (4.97 kilometers).

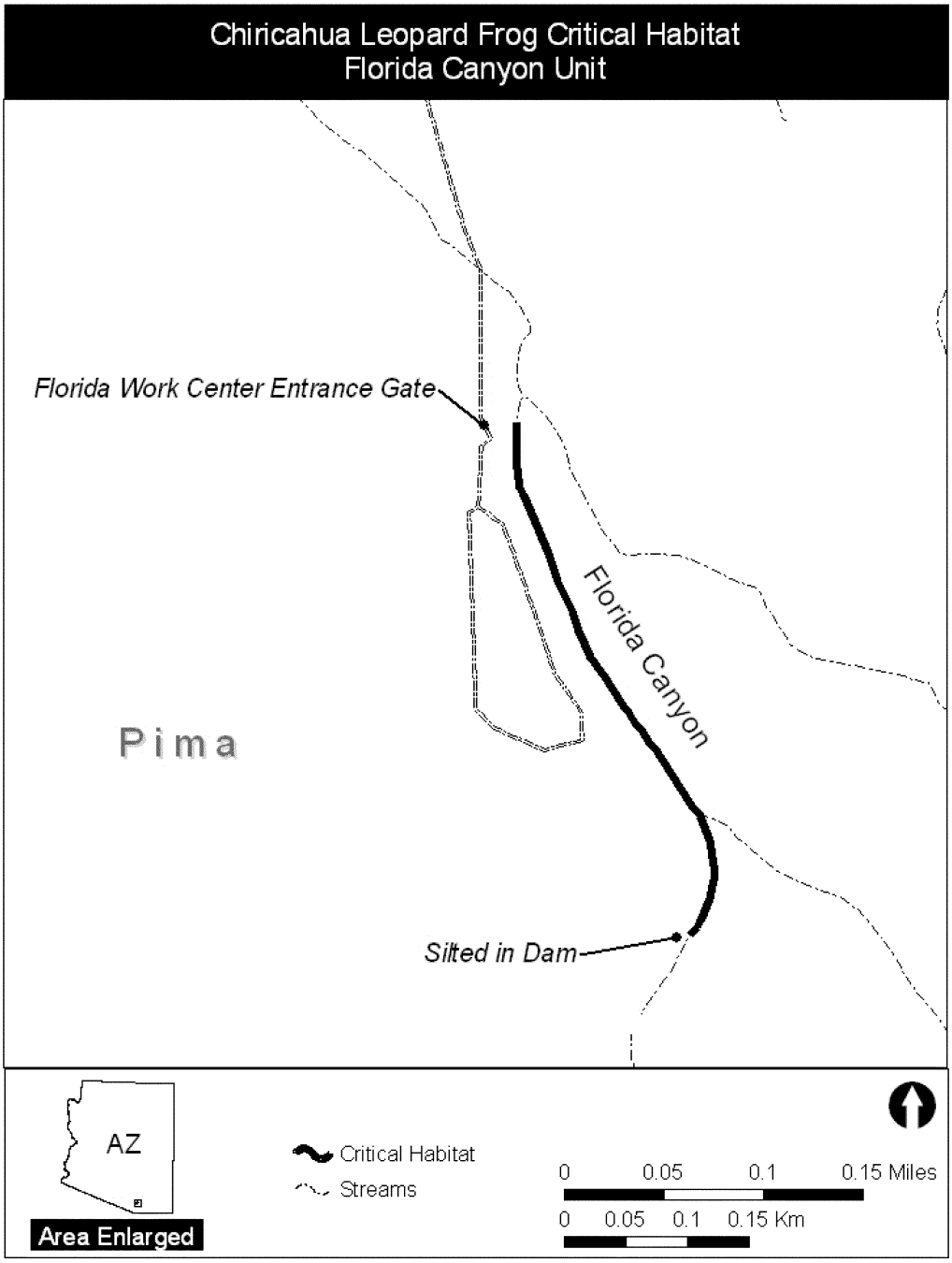
(xi) **NOTE:** Map of Peña Blanca Lake and Spring and Associated Tanks Unit follows:


Chiricahua Leopard Frog Critical Habitat
Peña Blanca Lake and Spring and Associated Tanks
Santa Cruz
Pena Blanca Lake
Summit Reservoir
Ruby Rd
Summit Mtny
Thumb Butte Tank
Peña Blanca Spring
Pena Blanca Canyon
Tinker Tank
Alamo Canyon
Coyote Tank
Alamo Spring
Pajarita Mountains
United States
Mexico
AZ
Area Enlarged
Critical Habitat
Critical Habitat
streams
Referenced Roads
0 0.4 0.8 1.2 Miles
0 0.4 0.8 1.2 Km

(12) Florida Canyon Unit, Pima County, Arizona.

(i) Florida Canyon from a silted-in dam (31.759444 N, 110.844095 W) downstream to just east of the Florida Workstation entrance gate (31.763186 N, 110.845511 W), a distance of approximately 1,521 stream feet (463 meters).

(ii) **NOTE:** Map of Florida Canyon Unit follows:



(13) Eastern Slope of the Santa Rita Mountains Unit, Pima County, Arizona.

(i) Two galvanized metal tanks in Louisiana Gulch (31.74865 N, 110.72839 W).

(ii) Greaterville Tank (31.767186 N, 110.759818 W).

(iii) Los Posos Gulch Tank (31.768587 N, 110.731583 W).

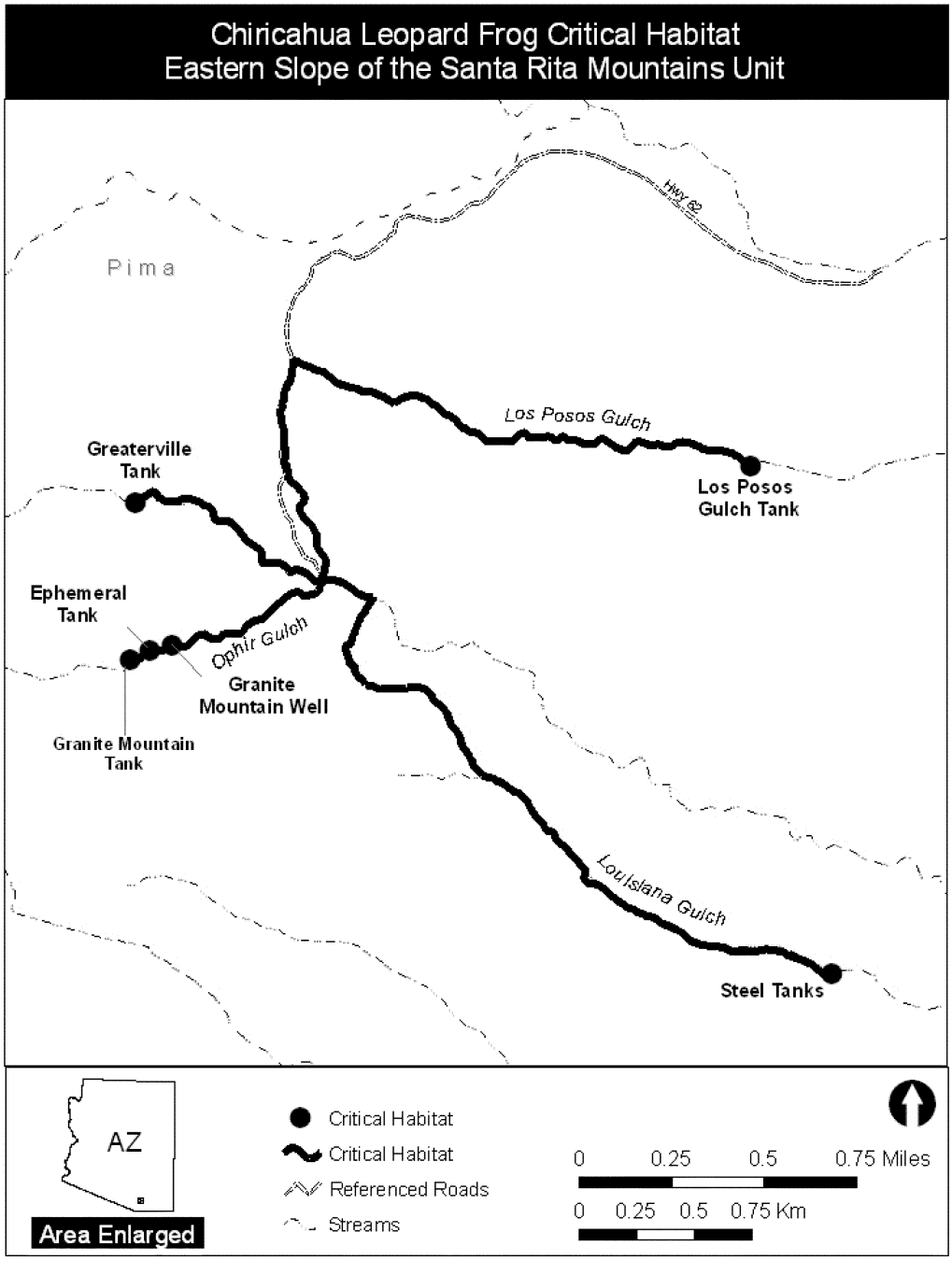
(iv) Upper Granite Mountain Tank (31.760914 N, 110.760186 W).

(v) From Los Posos Gulch Tank (31.768587 N, 110.731583 W) upstream to a saddle (31.771463 N, 110.748676 W); then downslope in an unnamed drainage to the confluence with another unnamed drainage (31.772830 N, 110.752727 W); then upstream and south in that drainage to a saddle (31.768245 N, 110.752891 W); then downslope in an unnamed drainage to its confluence with Ophir Gulch (31.763978 N, 110.751312 W); then upstream in Ophir Gulch to Upper Granite Mountain Tank (31.760914 N, 110.760186 W), to include an ephemeral tank (31.761388 N, 110.759184 W) and a well (31.761584 N, 110.758169 W), a distance of approximately 2.59 drainage miles (4.17 kilometers) and 984 feet (300 meters) overland.

(vi) From Greaterville Tank (31.767186 N, 110.759818 W) downstream in an unnamed drainage to its confluence with Ophir Gulch (31.763978 N, 110.751312 W), a distance of approximately 3,446 drainage feet (1,050 meters).

(vii) Louisiana Gulch from the metal tanks (31.74865 N, 110.72839 W) upstream to the confluence with an unnamed drainage (31.756493 N, 110.744175 W), then upstream in that drainage to its headwaters and across a saddle (31.759879 N, 110.748733 W) and downslope through an unnamed drainage to its confluence with Ophir Gulch (31.762953 N, 110.749329 W), then upstream in Ophir Gulch to the confluence with an unnamed drainage (31.763978 N, 110.751312 W), a distance of approximately 1.98 drainage miles (3.19 kilometers) and 327 feet (100 meters) overland.

(viii) **NOTE:** Map of Eastern Slope of the Santa Rita Mountains Unit follows:

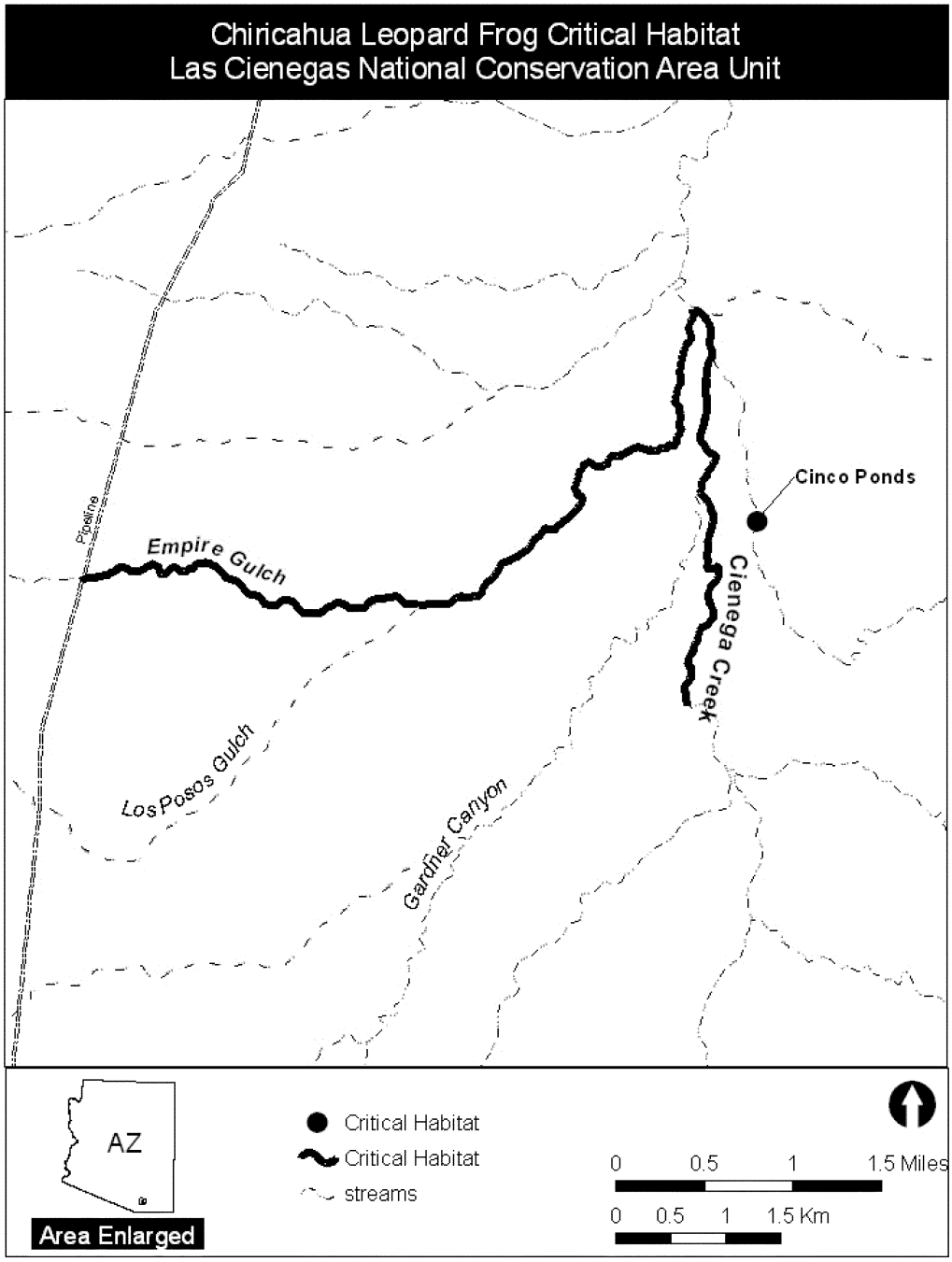

Chiricahua Leopard Frog Critical Habitat
Eastern Slope of the Santa Rita Mountains Unit
Pima
Hwy 82
Los Posos Gulch
Greaterville Tank
Los Posos Gulch Tank
Ephemeral Tank
Ophir Gulch
Granite Mountain Well
Granite Mountain Tank
Louisiana Gulch
Steel Tanks
AZ
Area Enlarged
Critical Habitat
Critical Habitat
Referenced Roads
Streams
0 0.25 0.5 0.75 Miles
0 0.25 0.5 0.75 Km

(14) Las Cienegas National Conservation Area Unit, Pima County, Arizona.

(i) Empire Gulch near Empire Ranch, beginning at a pipeline access road crossing (31.787054 N, 110.648665 W) and continuing downstream to its confluence with Cienega Creek (31.808988 N, 110.589795 W), a distance of approximately 5.08 stream miles (8.18 kilometers).

(ii) Cienega Creek from the Empire Gulch confluence (31.808988 N, 110.589795 W) upstream to the approximate end of the wetted reach and where the creek bends hard to the east (31.776478 N, 110.590382 W), to include Cinco Ponds (31.793066 N, 110.584422 W upstream to 31.788559 N, 110.584114 W), a distance of approximately 1.91 stream miles (3.08 kilometers).

(iii) **NOTE:** Map of Las Cienegas National Conservation Area Unit follows:



(15) Scotia Canyon Unit, Cochise County, Arizona.

(i) Peterson Ranch Pond (31.457016 N, 110.397724 W).

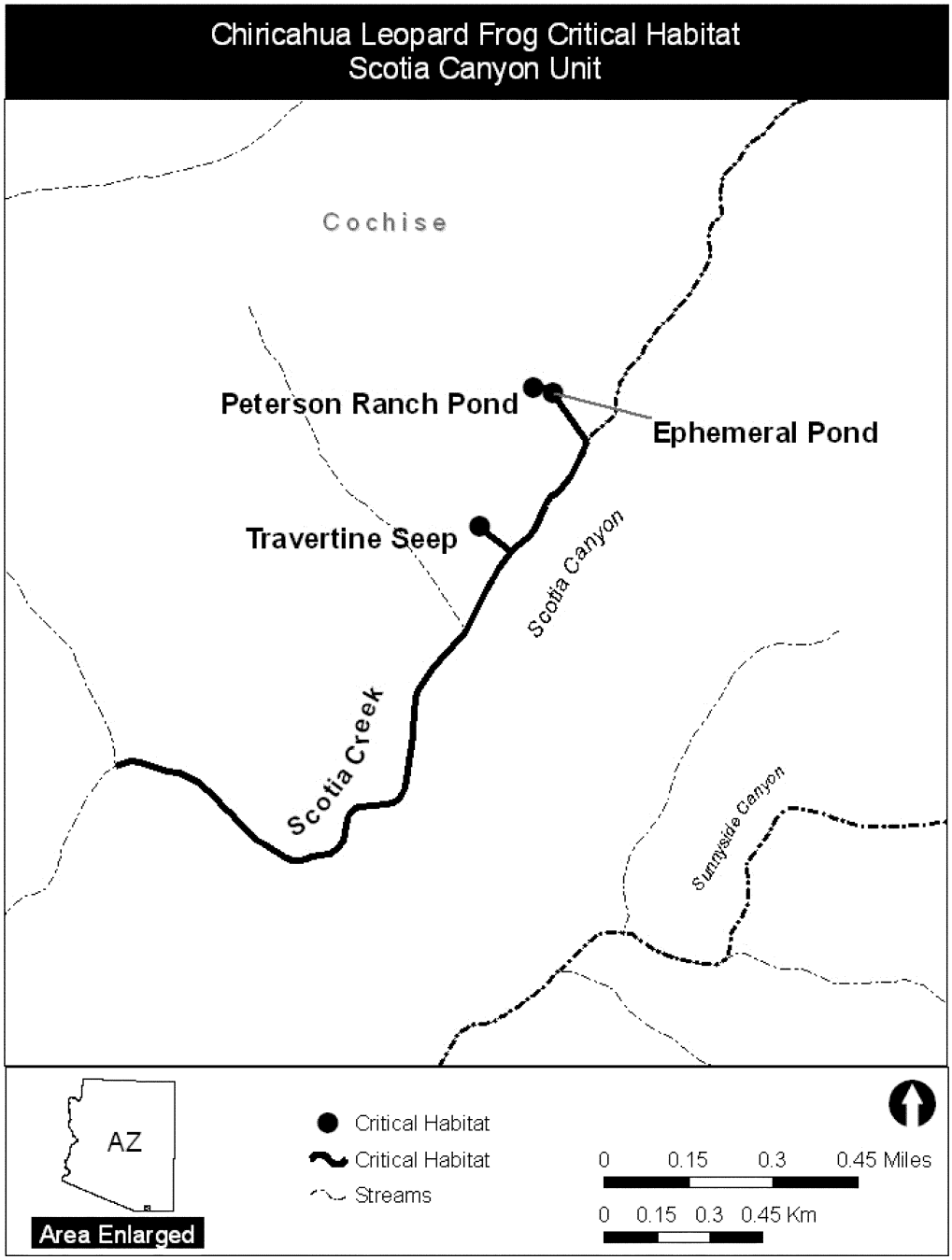
(ii) Travertine Seep (31.453466 N, 110.399386 W).

(iii) Creek in Scotia Canyon from just east of Peterson Ranch Pond (31.455723 N, 110.396124 W) downstream to the confluence of an unnamed drainage and a sharp bend in the canyon to the south (31.447598 N, 110.409884 W), a distance of approximately 1.36 stream miles (2.19 kilometers).

(iv) Overland from Peterson Ranch Pond (31.457016 N, 110.397724 W) to the upper end of the Scotia Creek segment (31.455723 N, 110.396124 W), to include an ephemeral pond (31.456929 N, 110.397120 W), an overland distance of approximately 671 feet (205 meters).

(v) Overland from the Travertine Seep (31.453466 N, 110.399386 W) directly southeast to Scotia Creek (31.452720 N, 110.398117 W), an overland distance of approximately 348 feet (106 meters).

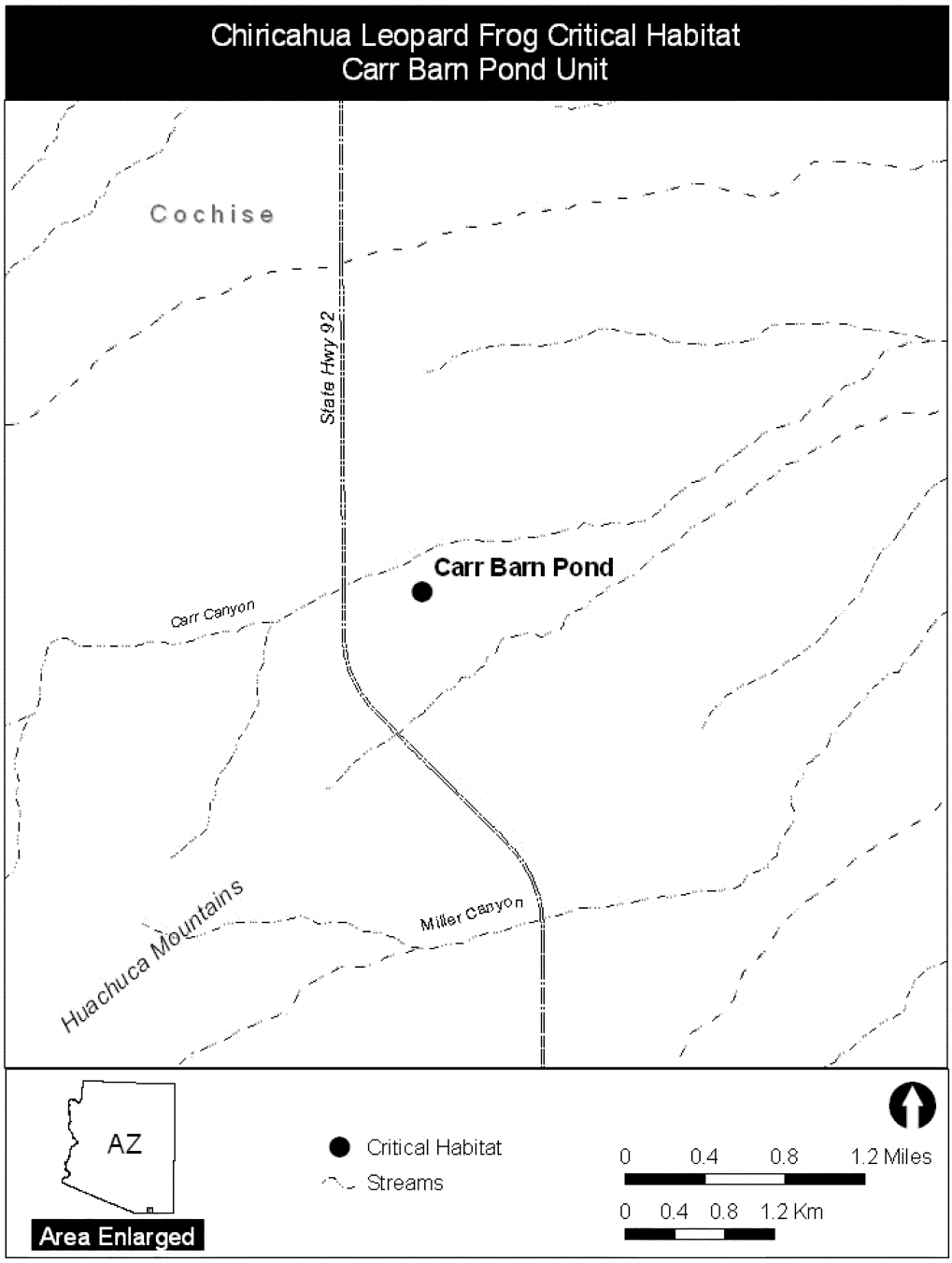
(vi) **NOTE:** Map of Scotia Canyon Unit follows:



(16) Carr Barn Pond Unit, Cochise County, Arizona.

(i) Carr Barn Pond (31.452461 N, 110.250355 W).

(ii) **NOTE:** Map of Carr Barn Pond Unit follows:



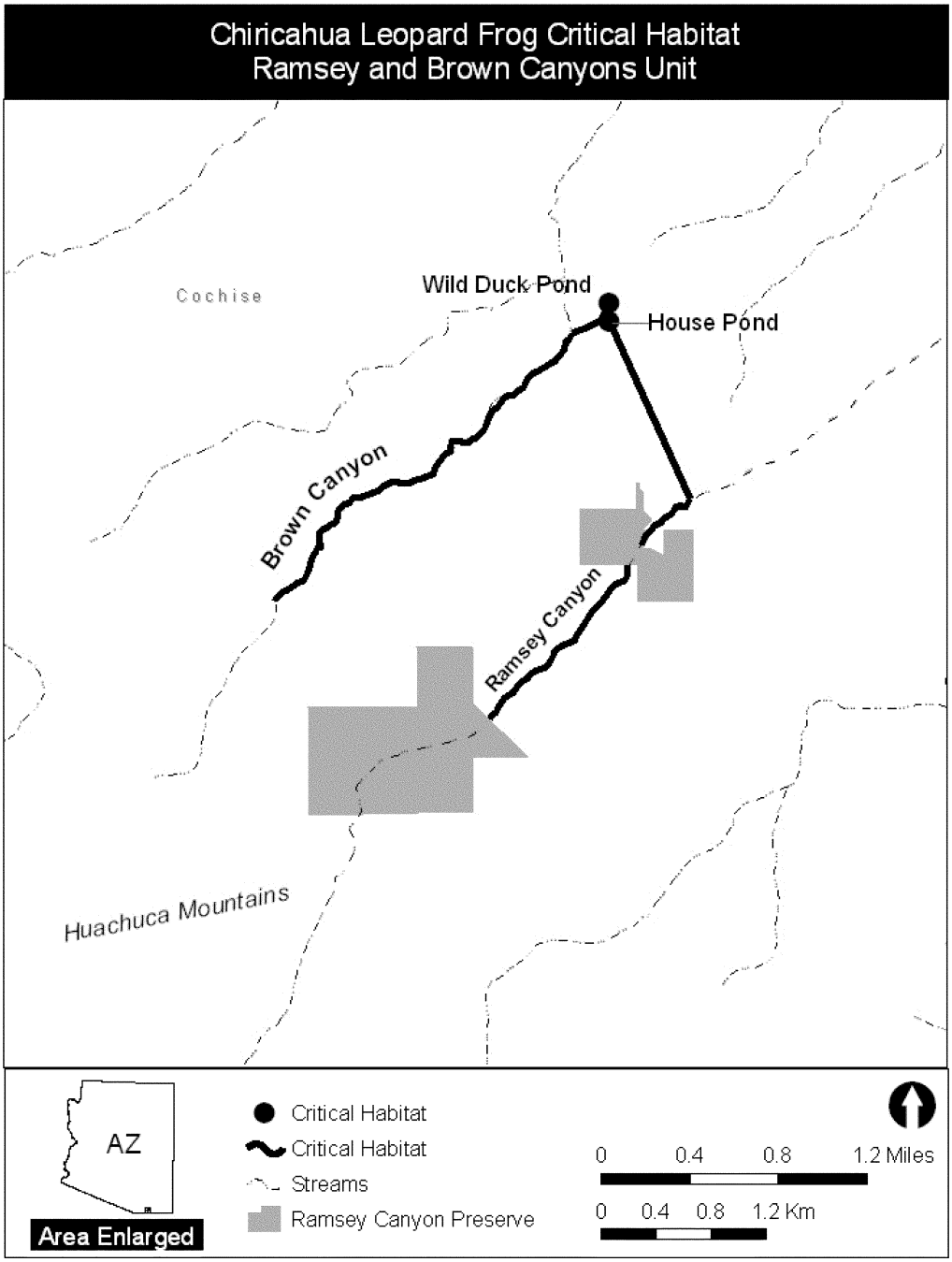
(17) Ramsey and Brown Canyons Unit, Cochise County, Arizona.

(i) Ramsey Canyon from the eastern boundary of The Nature Conservancy's Bledsoe Parcel in the Ramsey Canyon Preserve (31.448160 N, 110.306993 W) downstream to a dirt road crossing at the mouth of Ramsey Canyon (31.462315 N, 110.291248 W), excluding The Nature Conservancy's University of Toronto Parcel in the Ramsey Canyon Preserve, an approximate stream distance of 1.29 miles (2.08 kilometers).

(ii) Brown Canyon from The Box (31.456016 N, 110.323853 W) downstream to the Wild Duck Pond (31.475355 N, 110.297592 W) and House Pond (31.474068 N, 110.297565 W) on the former Barchas Ranch, an approximate drainage distance of 2.26 miles (3.64 kilometers).

(iii) From the dirt road crossing at the mouth of Ramsey Canyon (31.462315 N, 110.291248 W) directly overland to House Pond (31.474068 N, 110.297565 W) on the former Barchas Ranch, a distance of approximately 4,594 feet (1,400 meters).

(iv) **NOTE:** Map of Ramsey and Brown Canyons Unit follows:



(18) Peloncillo Mountains Tanks Unit, Hidalgo County, New Mexico.

(i) Geronimo Tank (31.520685 N, 109.016775 W).

(ii) State Line Tank (31.498451 N, 109.044940 W).

(iii) Javelina Tank (31.484995 N, 109.024970 W).

(iv) Canoncito Ranch Tank (31.449553 N, 109.986836 W).

(v) Maverick Spring (31.469376 N, 109.011142 W).

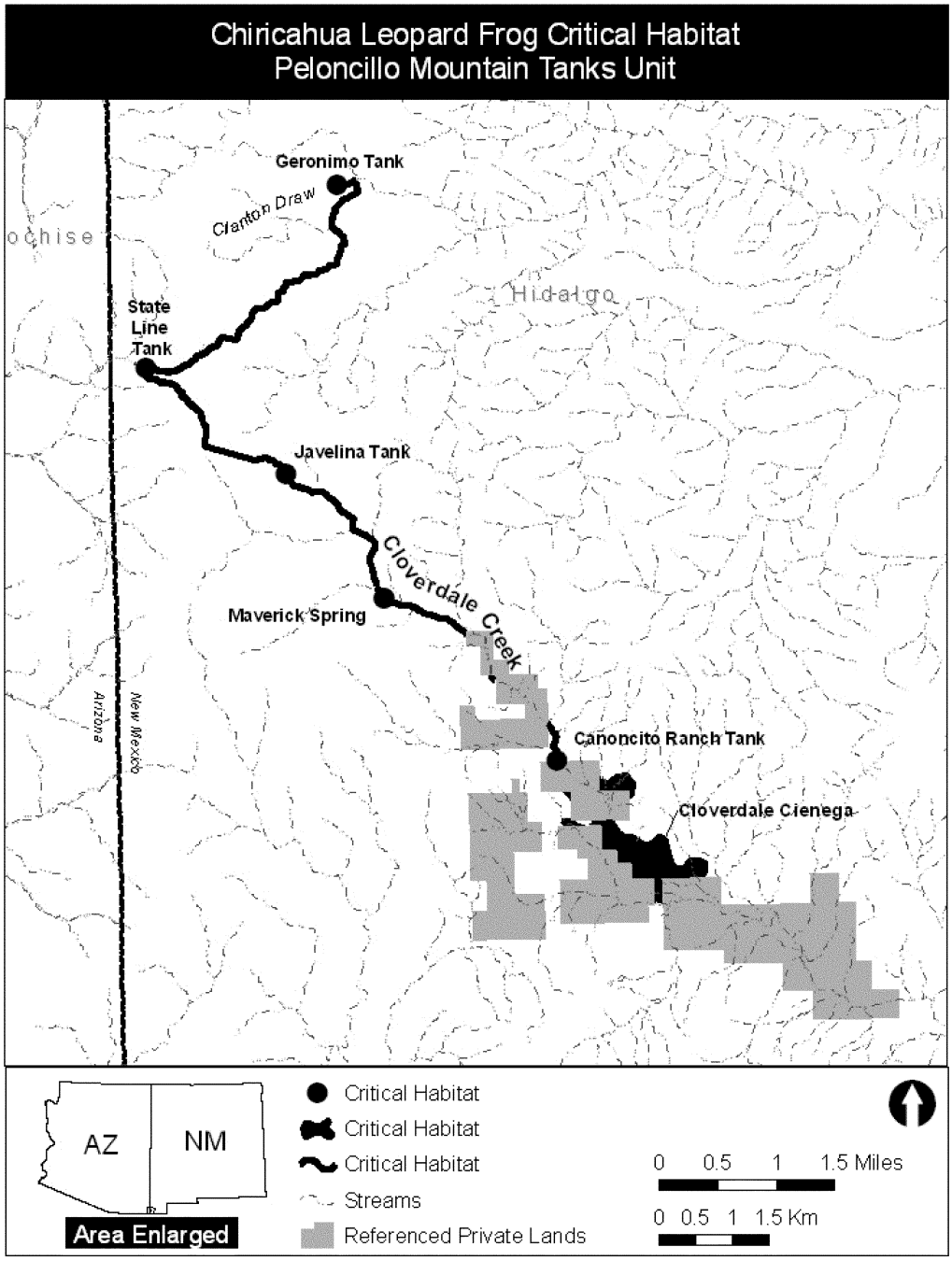
(vi) Cloverdale Creek from the Canoncito Ranch Tank (31.449553 N, 109.986836 W) downstream, including the cienega, to rock pools (31.432972 N, 108.966535 W) about 630 feet downstream of the Cloverdale road crossing of Cloverdale Creek, excluding portions of Cloverdale Creek and the cienega within private lands of Canoncito Ranch, an approximate stream distance of 3,711 feet (1,131 meters).

(vii) From Geronimo Tank (31.520685 N, 109.016775 W) downstream in an unnamed drainage to its confluence with Clanton Draw (31.520590 N, 109.012263 W), then upstream to the confluence with an unnamed drainage (31.515818 N, 109.018117 W), and upstream in that drainage to its headwaters (31.501854 N, 109.031898 W), across a mesa to the headwaters of an unnamed drainage (31.502220 N, 109.033839 W), then downslope through that drainage to State Line Tank (31.498451 N, 109.044940 W), an approximate drainage distance of 3.07 miles (4.94 kilometers) and 775 feet (236 meters) overland.

(viii) From State Line Tank upstream in an unnamed drainage to a mesa (31.488563 N, 109.036527 W), then directly overland to the headwaters of Cloverdale Creek (31.487477 N, 109.028002 W), and then downstream in Cloverdale Creek to Javelina Tank (31.484995 N, 109.024970 W), an approximate drainage distance of 1.40 miles (2.26 kilometers) and 2,245 feet (684 meters) overland.

(ix) From Javelina Tank (31.484995 N, 109.024970 W) downstream in Cloverdale Creek to the Canoncito Ranch Tank (31.449553 N, 109.986836 W), to include Maverick Spring (31.469376 N, 109.011142 W), and excluding portions of Cloverdale Creek within private lands of Canoncito Ranch, an approximate stream distance of 3.12 miles (5.02 kilometers).

(x) **NOTE:** Map of Peloncillo Mountains Unit follows:


Chiricahua Leopard Frog Critical Habitat
Peloncillo Mountain Tanks Unit
Geronimo Tank
Clanton Draw
ochise
Hidalgo
State Line Tank
Javelina Tank
Cloverdale Creek
Maverick Spring
Arizona
New Mexico
Canoncito Ranch Tank
Cloverdale Cienega
AZ
NM
Area Enlarged
Critical Habitat
Critical Habitat
Critical Habitat
Streams
Referenced Private Lands
0 0.5 1 1.5 Miles
0 0.5 1 1.5 Km

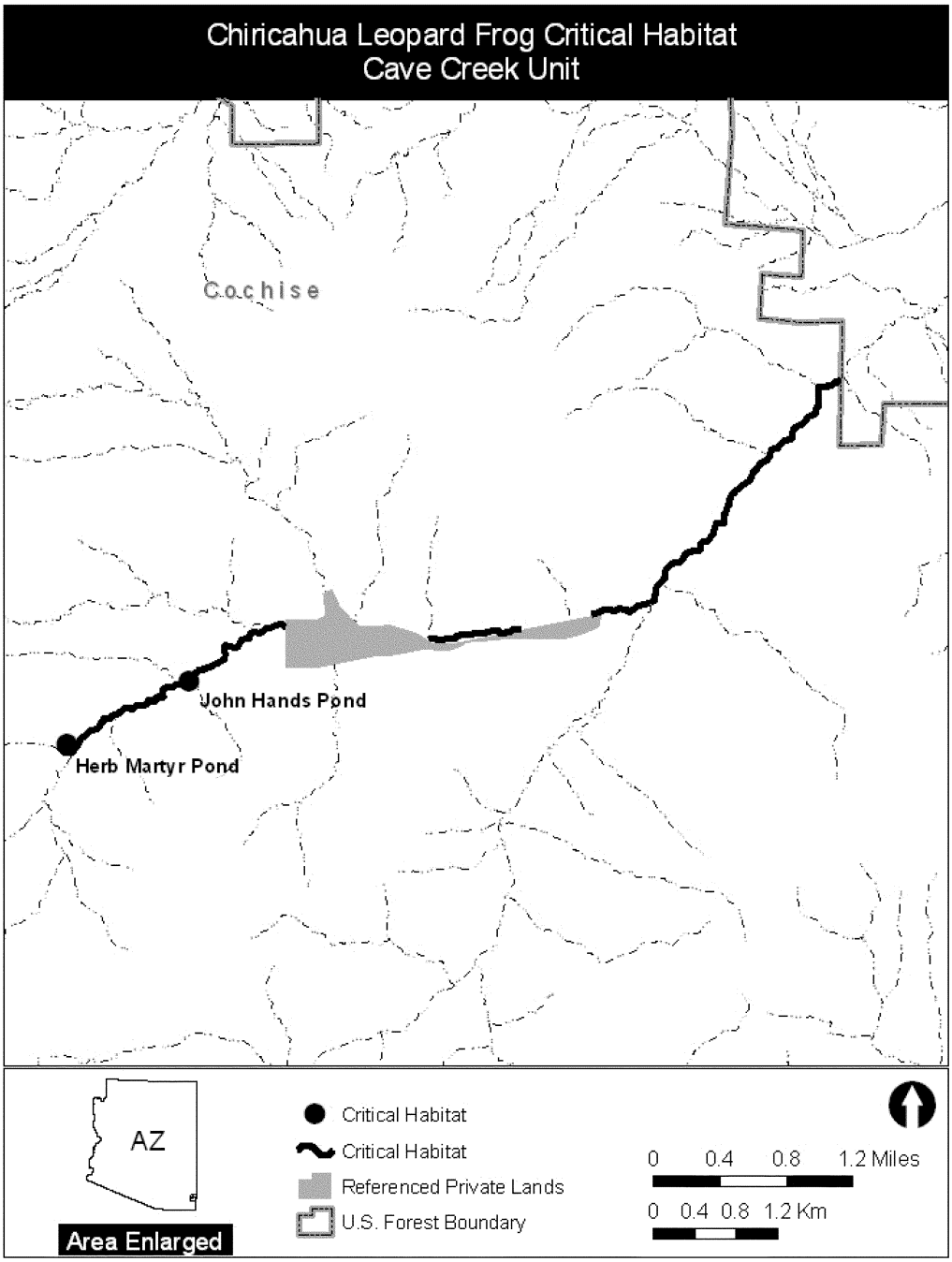
(19) Cave Creek Unit, Cochise County, Arizona.

(i) Herb Martyr Pond (31.87243 N, 109.23418 W).

(ii) John Hands Pond below the dam (31.87868 N, 109.20470 W).

(iii) Cave Creek from Herb Martyr Pond (31.87243 N, 109.23418 W) downstream to the U.S. Forest Service boundary (31.899659 N, 109.159987 W), to include John Hands Pond (31.87868 N, 109.20470 W), an approximate stream distance of 4.76 miles (7.67 kilometers).

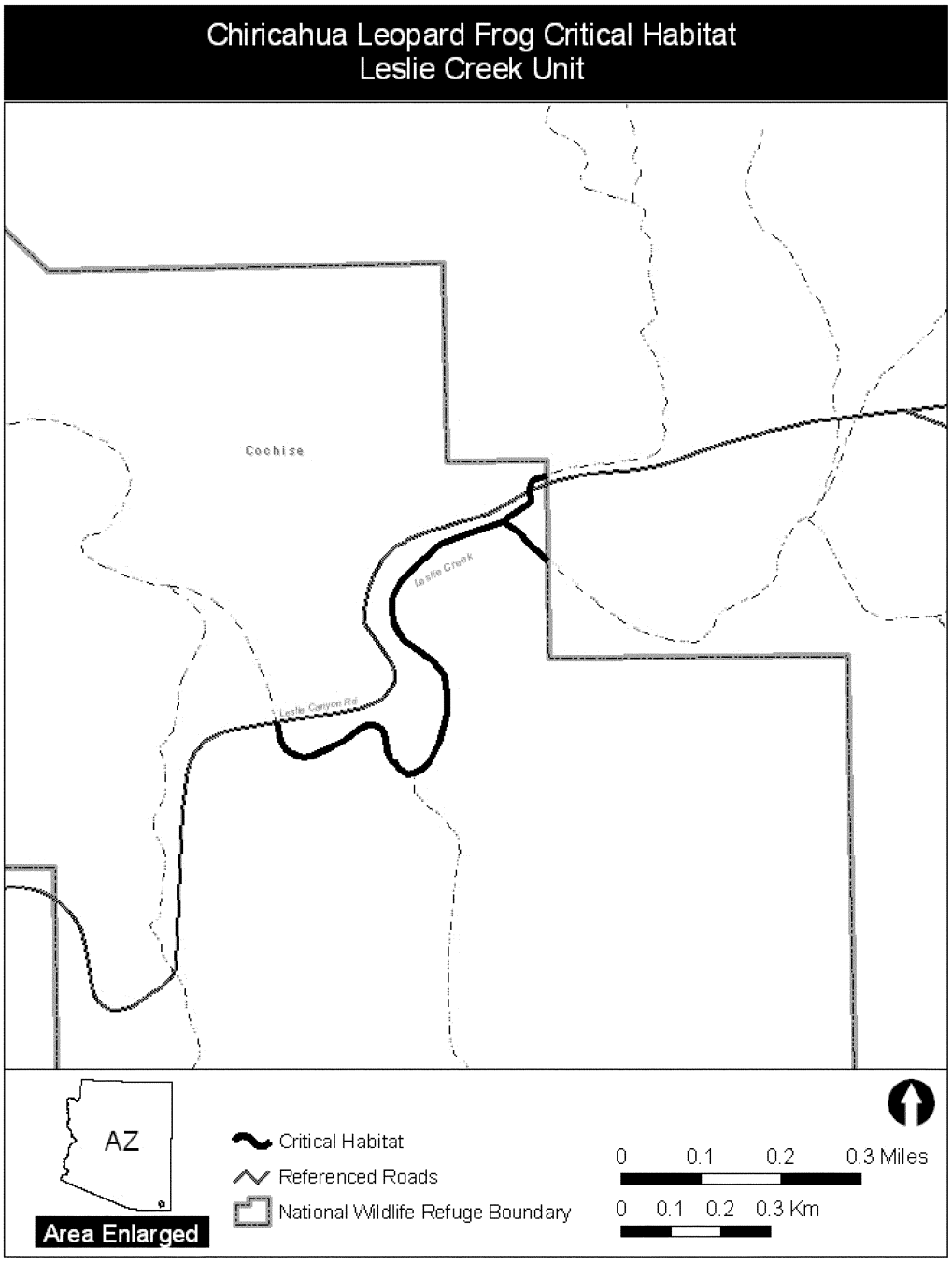
(iv) **NOTE:** Map of Cave Creek Unit follows:



(20) Leslie Creek Unit, Cochise County, Arizona.

(i) Leslie Creek from the upstream National Wildlife Refuge boundary (31.591072 N, 109.505311 W) downstream to the Leslie Canyon Road crossing (31.588510 N, 109.511598 W), an approximate stream distance of 4,094 feet (1,248 meters).

(ii) **NOTE:** Map of Leslie Creek Unit follows:



(21) Deer Creek Unit, Graham County, Arizona.

(i) Home Ranch Tank (32.656879 N, 110.274556 W).

(ii) Penney Mine Tanks, which includes a series of 10 small impoundments in a drainage from approximately 32.668795 N, 110.257763 W downstream to 32.670055 N, 110.257310 W.

(iii) Clifford Tank (32.67130 N, 110.264877 W).

(iv) Vermont Tank (32.676883 N, 110.262404 W).

(v) Middle Tank (32.679691 N, 110.252180 W).

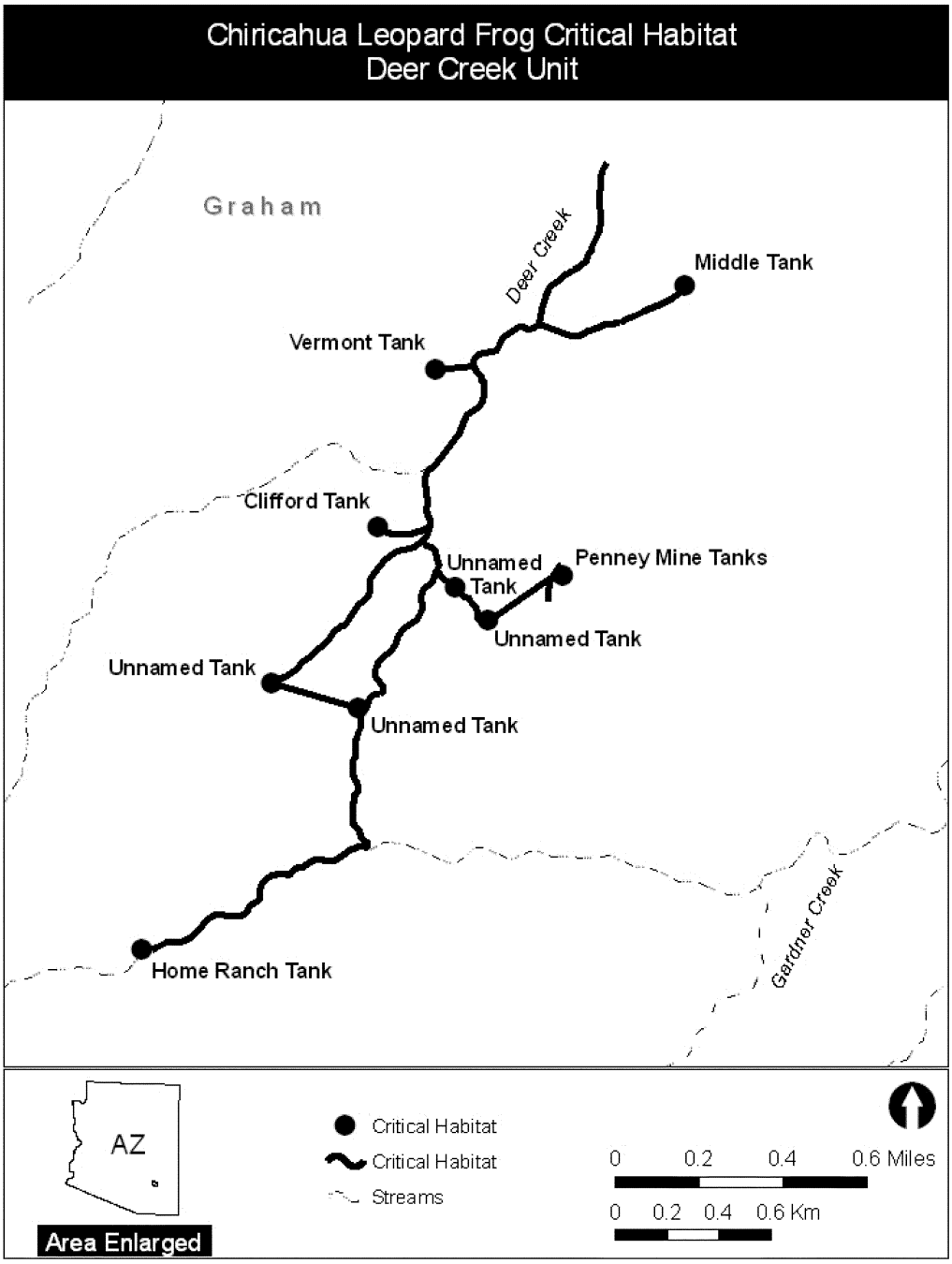
(vi) Deer Creek from a point where it exits a canyon and turns abruptly to the east (32.683937 N, 110.255290 W) upstream to its confluence with an unnamed drainage (32.673318 N, 110.262748 W); then upstream in that drainage to a confluence with four other drainages (32.671318 N, 110.262600 W); then upstream from that confluence in the western drainage to Clifford Tank (32.67130 N, 110.264877 W); then upstream from that confluence in the west-central drainage to an unnamed tank (32.666108 N, 110.269204 W); then directly overland southeast to another unnamed tank (32.665124 N, 110.265580 W); then downstream from that tank in an unnamed drainage to the aforementioned confluence (32.671318 N, 110.262600 W), and upstream in that unnamed drainage to a saddle (32.662529 N, 110.265717 W); then downstream from that saddle in an unnamed drainage to its confluence with an unnamed tributary to Gardner Creek (32.660409 N, 110.265303 W); and upstream in that unnamed tributary to Home Ranch Tank (32.656879 N, 110.274556 W), a distance of approximately 3.28 drainage miles (5.27 kilometers) and 1,216 feet (371 meters) overland.

(vii) From the largest of the Penney Mine Tanks (32.669696 N, 110.257652 W) directly overland to an unnamed tank (32.688150 N, 110.260309 W), and downstream in an unnamed drainage to the aforementioned confluence (32.671318 N, 110.262600 W), including another unnamed tank (32.669324 N, 110.261672 W) situated in that drainage, a distance of approximately 948 drainage feet (289 meters) and 1,051 feet (320 meters) overland.

(viii) From Vermont Tank (32.676883 N, 110.262404 W) directly overland for approximately 468 feet (143 meters) to Deer Creek (32.677037 N, 110.260815 W).

(ix) From Middle Tank (32.679691 N, 110.252180 W) upstream in an unnamed drainage to a saddle (32.677989 N, 110.256915 W), then directly downslope to Deer Creek (32.678307 N, 110.258257 W), an approximate drainage distance of 1,530 feet (466 meters) and 436 feet (133 meters) overland.

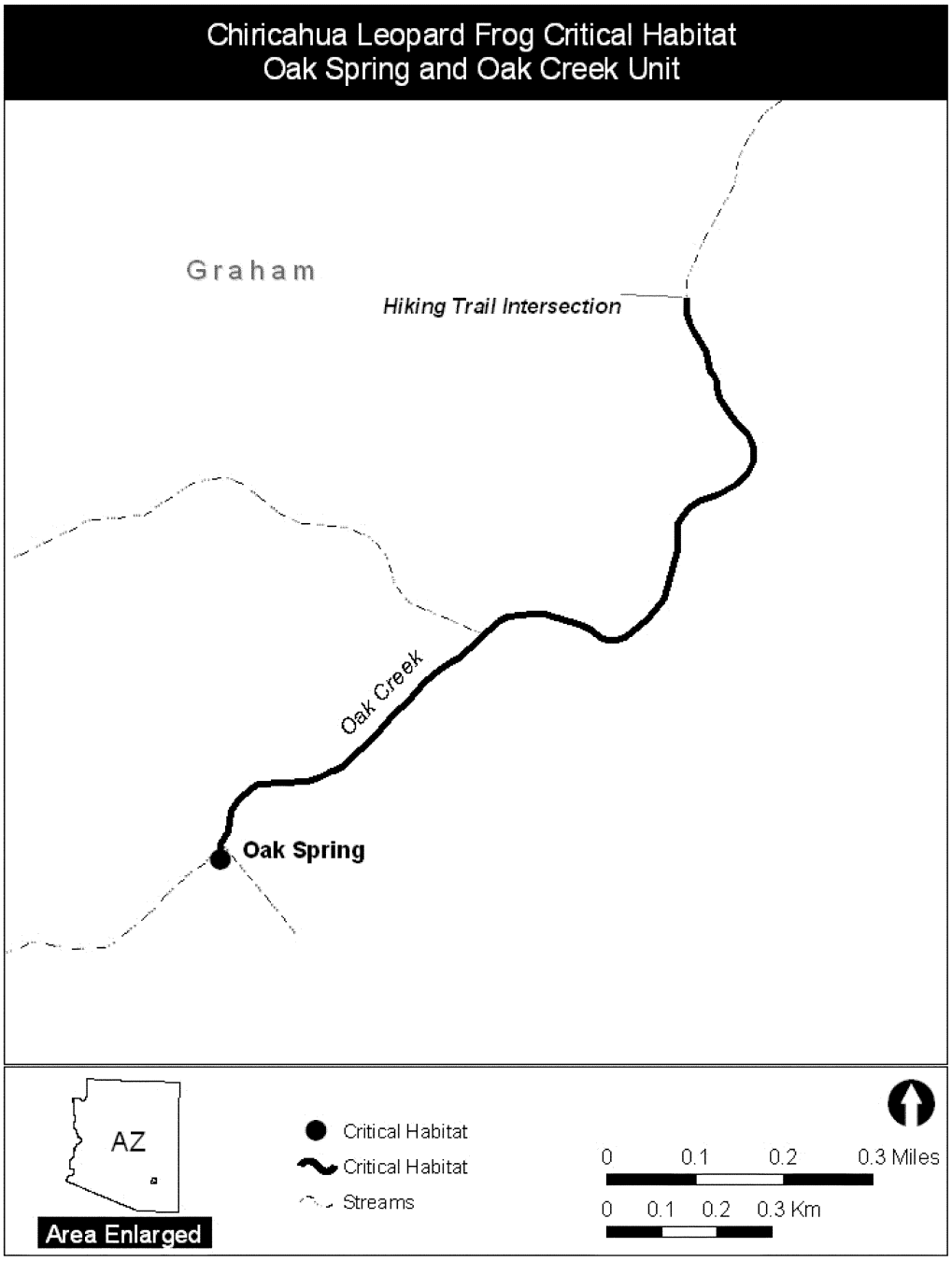
(x) **NOTE:** Map of Deer Creek Unit follows:


Chiricahua Leopard Frog Critical Habitat
Deer Creek Unit
Graham
Deer Creek
Middle Tank
Vermont Tank
Clifford Tank
Unnamed Tank
Penney Mine Tanks
Unnamed Tank
Unnamed Tank
Unnamed Tank
Gardner Creek
Home Ranch Tank
AZ
Area Enlarged
Critical Habitat
Critical Habitat
Streams
0 0.2 0.4 0.6 Miles
0 0.2 0.4 0.6 Km

(22) Oak Spring and Oak Creek Unit, Graham County, Arizona.

(i) Oak Creek from Oak Spring (32.673538 N, 110.293214 W) downstream to where a hiking trail intersects the creek (32.682618 N, 110.283915 W), an approximate stream distance of 1.06 miles (1.71 kilometers).

(ii) **NOTE:** Map of Oak Spring and Oak Creek Unit follows:



(23) Dragoon Mountains Unit, Cochise County, Arizona.

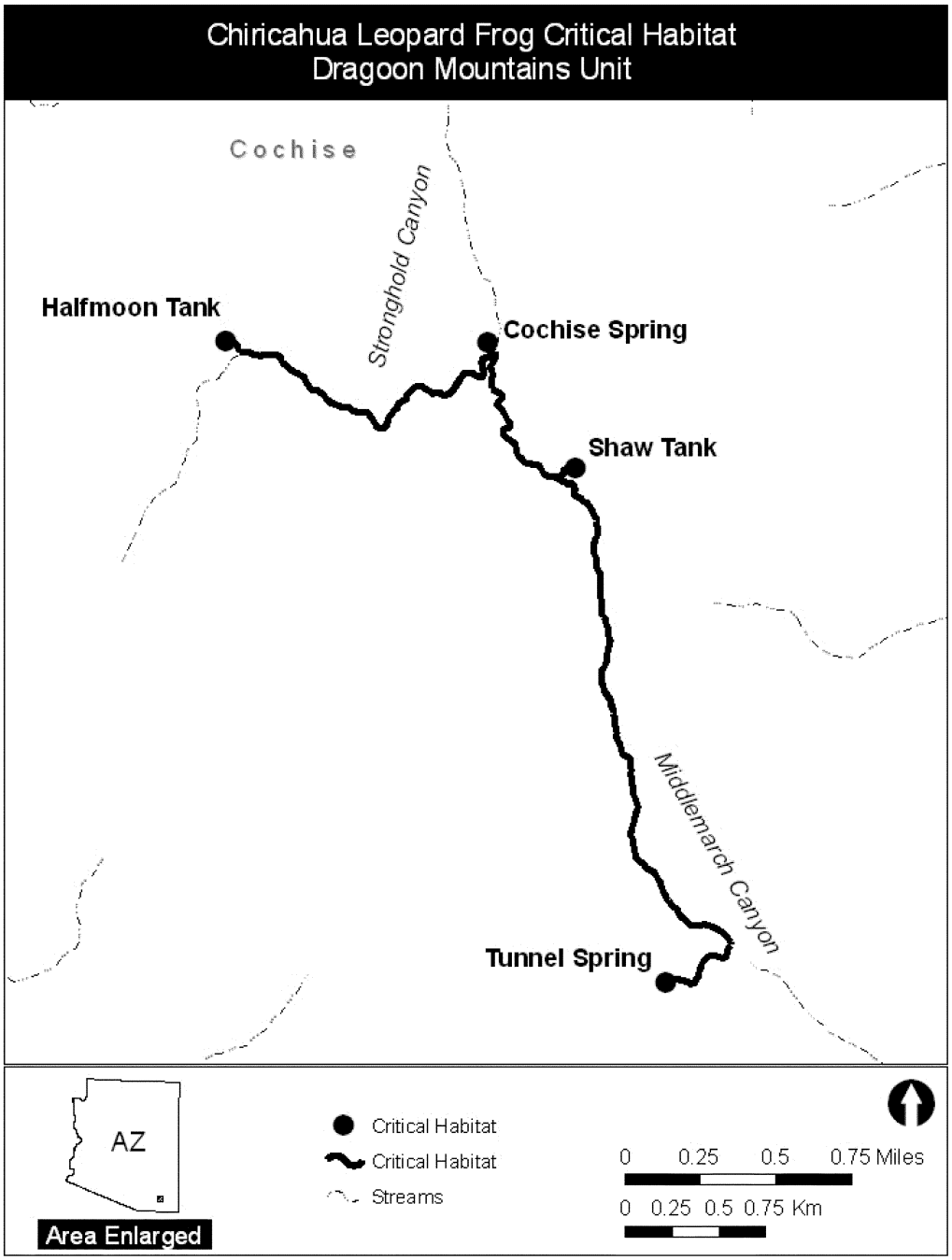
(i) Shaw Tank (31.906230 N, 109.958350 W).

(ii) Tunnel Spring (31.881018 N, 109.948182 W).

(iii) Halfmoon Tank (31.912453 N, 109.977963 W).

(iv) Stronghold Canyon from Halfmoon Tank (31.912453 N, 109.977963 W) downstream to Cochise Spring (31.912026 N, 109.963266 W), then upstream in an unnamed canyon to Shaw Tank (31.906230 N, 109.958350 W), and continuing upstream to the headwaters of that unnamed canyon (31.898491 N, 109.956589 W), then across a saddle and directly downslope to Middlemarch Canyon (31.894591 N, 109.956429 W), downstream in Middlemarch Canyon to its confluence with an unnamed drainage (31.883322 N, 109.949925 W), then upstream in that drainage to Tunnel Spring (31.881018 N, 109.948182 W), an approximate distance of 3.71 drainage miles (5.97 kilometers) and 1,300 feet (396 meters) overland.

(v) **NOTE:** Map of Dragoon Mountains Unit follows:



(24) Buckskin Hills Unit, Yavapai County, Arizona.

(i) Sycamore Basin Tank (34.481619 N, 111.641676 W).

(ii) Middle Tank (34.473076 N, 111.624488 W).

(iii) Walt's Tank (34.455959 N, 111.638497 W).

(iv) Partnership Tank (34.452241 N, 111.646271 W).

(v) Black Tank (34.462968 N, 111.623554 W).

(vi) Buckskin Tank (34.472660 N, 111.652468 W).

(vii) Doren's Defeat Tank (34.446271 N, 111.641269 W).

(viii) Needed Tank (34.461023 N, 111.631271 W).

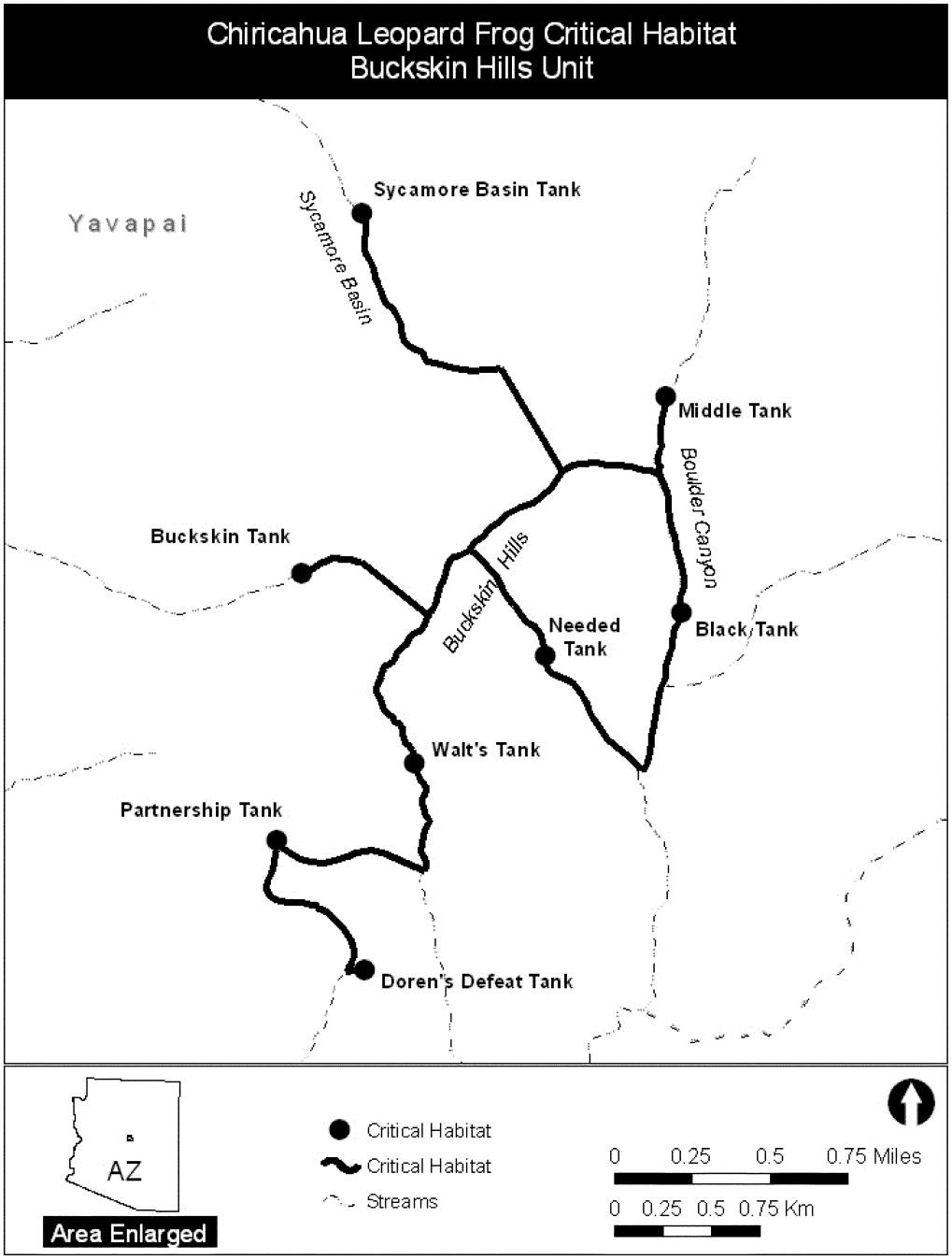
(ix) From Middle Tank (34.473076 N, 111.624488 W) downstream in Boulder Canyon to its confluence with an unnamed drainage that comes in from the northwest (34.455688 N, 111.625895 W), to include Black Tank (34.462968 N, 111.623554 W); then upstream in that unnamed drainage to a saddle (34.464120 N, 111.633633 W), to include Needed Tank (34.461023 N, 111.631271 W); then downstream from the saddle in an unnamed drainage to its confluence with another unnamed drainage (34.466209 N, 111.636096); then downstream in that drainage to the confluence with an unnamed drainage (34.450688 N, 111.638111 W), to include Walt's Tank (34.455959 N, 111.638497 W), and upstream in that unnamed drainage to Partnership Tank (34.452241 N, 111.646271 W); then upstream from the aforementioned confluence (34.466209 N, 111.636096) in the unnamed drainage that includes Walt's Tank to a point where the drainage turns east towards Boulder Canyon (34.469911 N, 111.630080 W), an approximate distance of 3.65 drainage miles (5.87 kilometers) and 425 feet (130 meters) overland.

(x) From Doren's Defeat Tank (34.446271 N, 111.641269 W) upstream in an unnamed drainage to Partnership Tank (34.452241 N, 111.646271 W), an approximate drainage distance of 3,310 feet (1,009 meters).

(xi) From the confluence of an unnamed drainage with Boulder Canyon (34.469515 N, 111.624979 W) west to a point where the drainage turns southwest (34.469911 N, 111.630080 W), then directly overland to the top of Sycamore Basin (34.473970 N, 111.633584 W), and then downstream in Sycamore Basin to Sycamore Basin Tank (34.481619 N, 111.641676 W), an approximate distance of 4,658 drainage feet (1,420 meters) and 1,827 feet (557 meters) overland.

(xii) From Buckskin Tank upstream in an unnamed drainage to the top of that drainage (34.465121 N, 111.641428 W), then directly overland to an unnamed drainage (34.462851 N, 111.637797 W) that contains Walt's Tank, an approximate distance of 1,109 drainage feet (338 meters) and 1,429 feet (435 meters) overland.

(xiii) **NOTE:** Map of Buckskin Hills Unit follows:



(25) Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit, Gila County, Arizona.

(i) Trail Tank (34.176747 N, 110.812383 W).

(ii) HY Tank (34.148580 N, 110.831331 W).

(iii) Carroll Spring (34.133090 N, 110.838673 W).

(iv) West Prong of Gentry Creek from the confluence with an unnamed drainage (34.133243 N, 110.827755 W) downstream to a point (34.123475 N, 110.827872 W) where the creek turns southwest and is directly east of a saddle, then west overland across that saddle to Cunningham Spring (34.121883 N, 110.841424 W), an approximate distance of 3,837 drainage feet (1,169 meters) and 1,883 feet (574 meters) overland.

(v) Pine Spring (34.148580 N, 110.831331 W).

(vi) Bottle Spring (34.145180 N, 110.837515 W).

(vii) Cherry Creek from Rock Spring (34.155505 N, 110.852478 W) upstream to its confluence with an unnamed drainage (34.166956 N, 110.815587 W), then upstream in that drainage and across a saddle (34.176129 N, 110.808920 W), then downstream in an unnamed drainage to Trail Tank (34.176747 N, 110.812383 W), an approximate distance of 3.77 drainage miles (6.07 kilometers) and 975 feet (297 meters) overland.

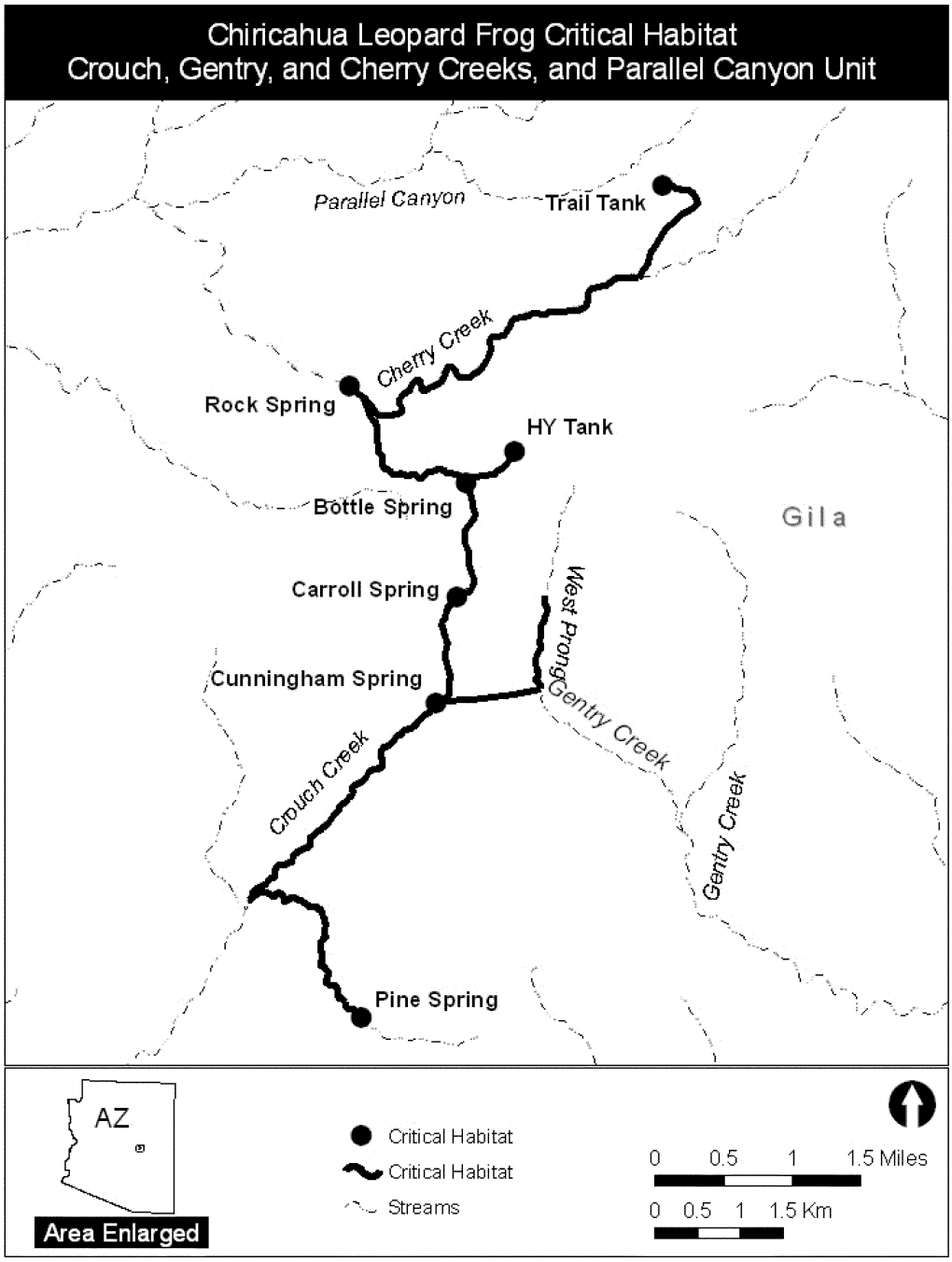
(viii) Crouch Creek from its headwaters just south of Highway 288 (34.143151 N, 110.836876 W) downstream to an unnamed drainage leading to Pine Spring (34.102235 N, 110.864341 W), to include Cunningham Spring and Carroll Spring; then upstream in that unnamed drainage from Crouch Creek to Pine Spring (34.148580 N, 110.831331 W), an

approximate drainage distance of 5.48 miles (8.82 kilometers).

(ix) From HY Tank (34.176747 N, 110.812383 W) downstream in an unnamed drainage to its confluence with Cherry Creek (34.154309 N, 110.85077 W), to include Bottle Spring (34.145180 N, 110.837515 W), an approximate stream distance of 1.66 miles (2.67 kilometers).

(x) From Bottle Spring (34.145180 N, 110.837515 W) south over a low saddle to the headwaters of Crouch Creek (34.143151 N, 110.836876 W), an approximate distance of 762 feet (232 meters) overland.

(xi) **NOTE:** Map of Crouch, Gentry, and Cherry Creeks, and Parallel Canyon Unit follows:



(26) Ellison and Lewis Creeks Unit, Gila County, Arizona.

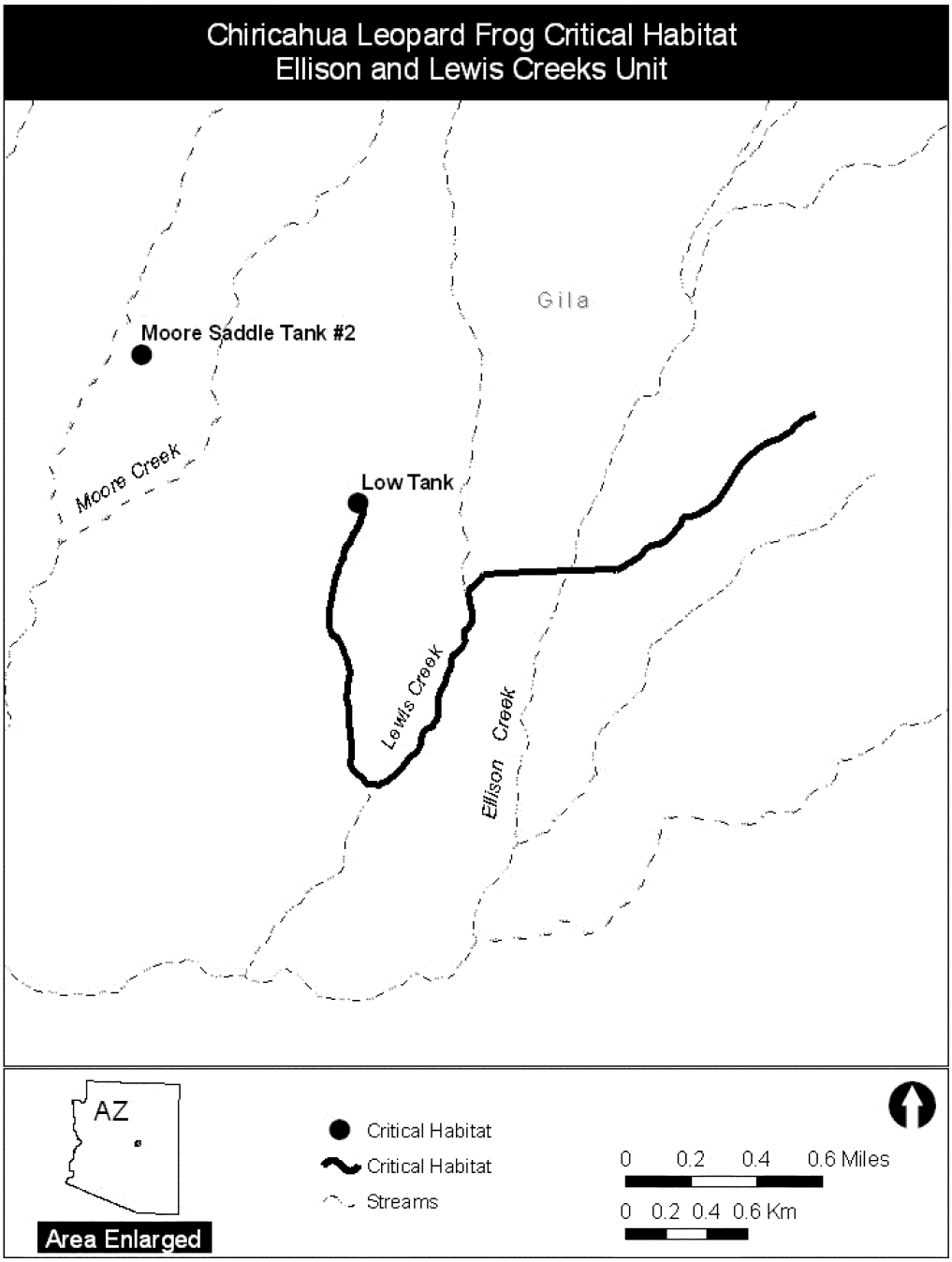
(i) Moore Saddle Tank #2 (34.374063 N, 111.205040 W).

(ii) Low Tank (34.36768 N, 111.19347 W).

(iii) Unnamed tributary to Ellison Creek from its confluence with an unnamed drainage (34.371458 N, 111.169111 W) downstream to Ellison Creek below Pyle Ranch (34.364667 N, 111.179966 W), then directly west across the Ellison Creek floodplain and over a low saddle to Lewis Creek below Pyle Ranch (34.364391 N, 111.186742 W), then downstream in Lewis Creek to its confluence with an unnamed drainage (34.354912 N, 111.192547 W), and then upstream in that unnamed drainage to Low Tank (34.36768 N,

111.19347 W), an approximate distance of 2.52 drainage miles (4.05 kilometers) and 1,070 feet (326 meters) overland.

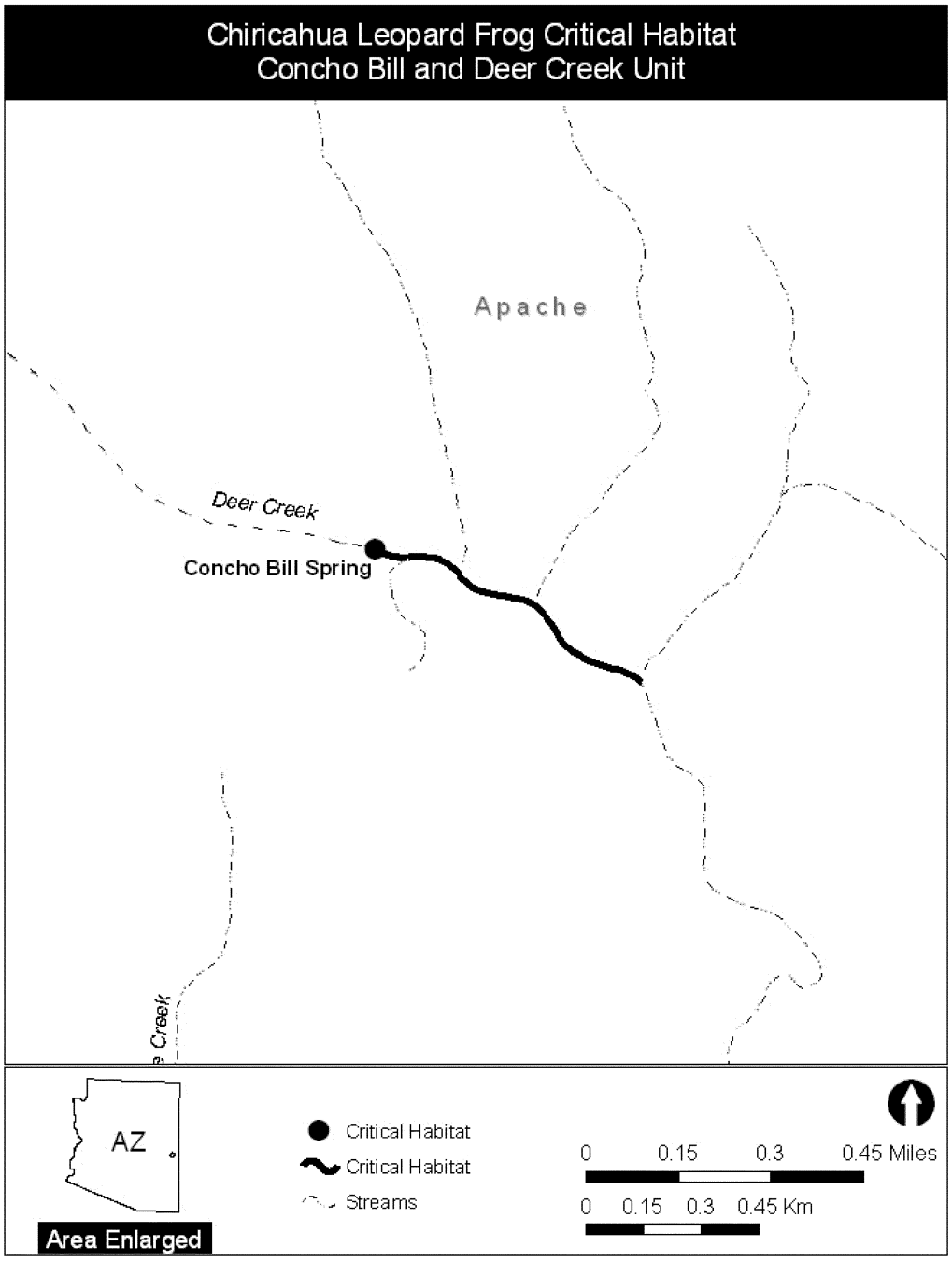
(iv) **NOTE:** Map of Ellison and Lewis Creeks Unit follows:



(27) Concho Bill and Deer Creek Unit, Apache County, Arizona.

(i) From Concho Bill Spring (33.830088 N, 109.366540 W) downstream in Deer Creek to its confluence with an unnamed drainage (33.827115 N, 109.359495 W), an approximate drainage distance of 2,667 feet (813 meters).

(ii) **NOTE:** Map of Concho Bill and Deer Creek Unit follows:

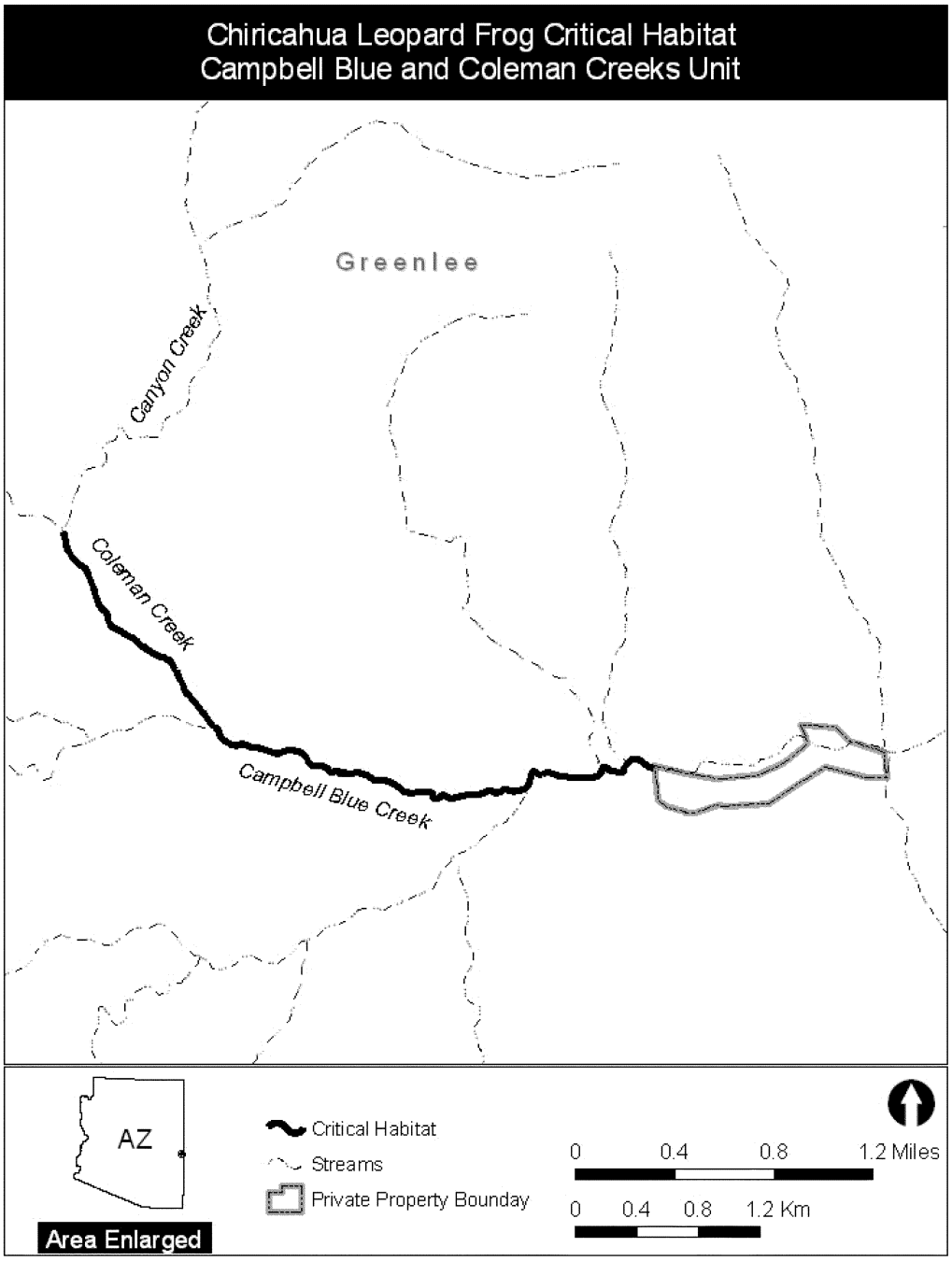


(28) Campbell Blue and Coleman Creeks Unit, Greenlee County, Arizona.

(i) Campbell Blue Creek from the upstream boundary of Luce Ranch (33.735956 N, 109.127746 W) upstream to its confluence with Coalman Creek (33.738560 N, 109158679 W), an approximate stream distance of 2.04 miles (3.28 kilometers).

(ii) Coleman Creek from its confluence with Campbell Blue Creek (33.738560 N, 109158679 W) upstream to its confluence with Canyon Creek (33.750139 N, 109.168850 W), an approximate stream distance of 1.04 miles (1.68 kilometers).

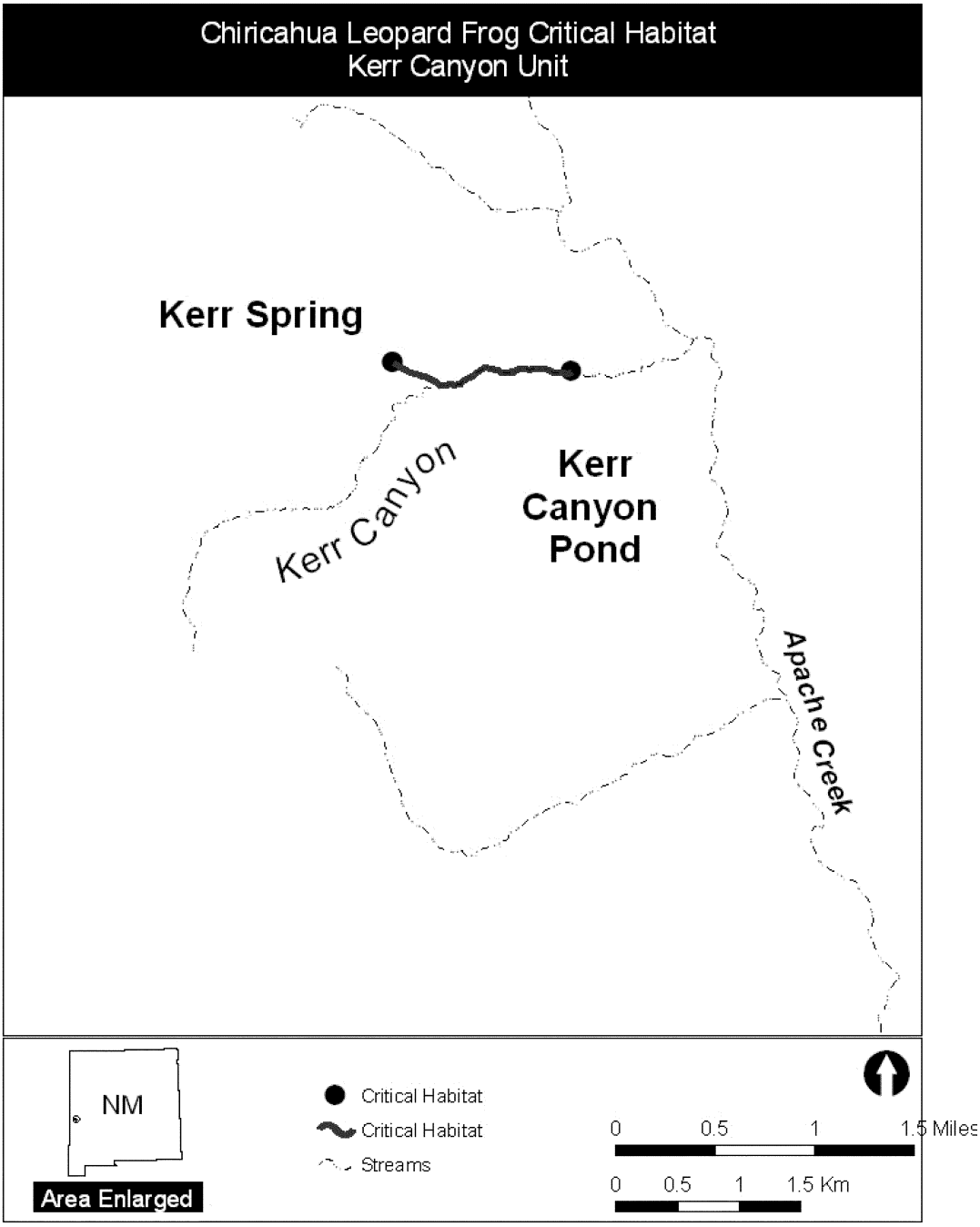
(iii) **NOTE:** Map of Campbell Blue and Coleman Creeks Unit follows:



(29) Kerr Canyon Unit, Catron County, New Mexico.

(i) From Kerr Spring (33.900561 N, 108.664732 W) downstream in unnamed drainage in Kerr Canyon to Kerr Canyon Pond (33.649088 N, 108.517011 W), a distance of approximately 0.98 drainage miles (1.58 km).

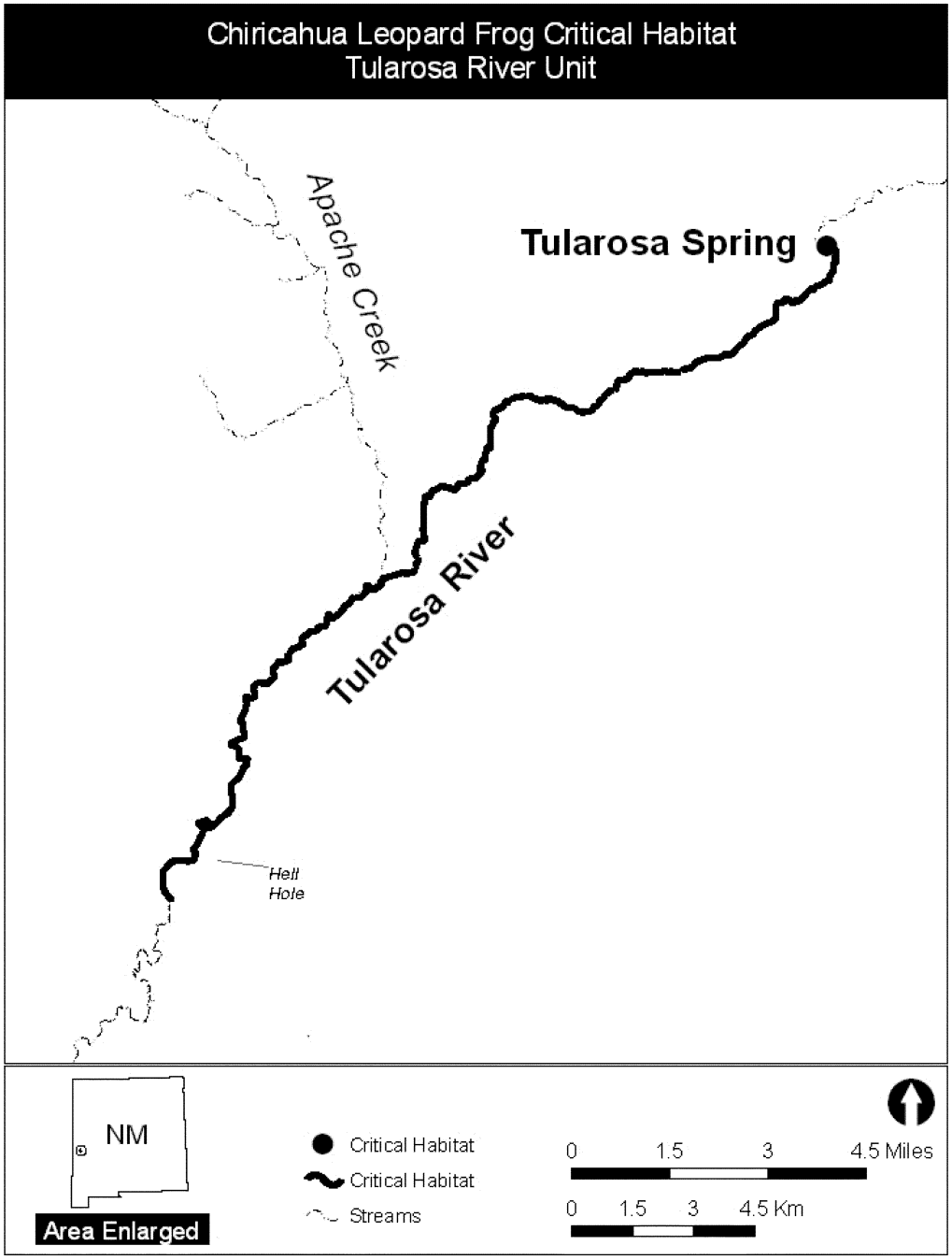
(ii) **NOTE:** Map of Kerr Canyon Unit follows:



(30) Tularosa River Unit, Catron County, New Mexico.

(i) Tularosa River from the upper end of Tularosa Spring (33.903798 N, 108.501926 W) downstream to the entrance to the canyon downstream of Hell Hole (33.762737 N, 108.681551 W), an approximate river distance of 19.31 miles (31.08 kilometers).

(ii) **NOTE:** Map of Tularosa River Unit follows:



(31) Deep Creek Divide Area Unit, Catron County, New Mexico.

(i) Long Mesa Tank (33.551664 N, 108.686841 W).

(ii) Cullum Tank (33.554864 N, 108.676961 W).

(iii) Burro Tank (33.571146 N, 108.638682 W).

(iv) North Fork of Negrito Creek from its confluence with South Fork of Negrito Creek (33.607082 N, 108.631340 W) upstream to its confluence with an unnamed drainage (33.612529 N, 108.614731 W), an approximate stream distance of 1.37 miles (2.20 kilometers).

(v) South Fork of Negrito Creek from its confluence with North Fork of Negrito Creek (33.607082 N, 108.631340 E) upstream to an impoundment (33.599047 N, 108.621300 W), including three other impoundments along the channel (33.601890 N, 108.622227 W; 33.602845 N, 108.622764 W; and 33.603810 N, 108.623971 W), an approximate stream distance of 4,821 feet (1,469 meters).

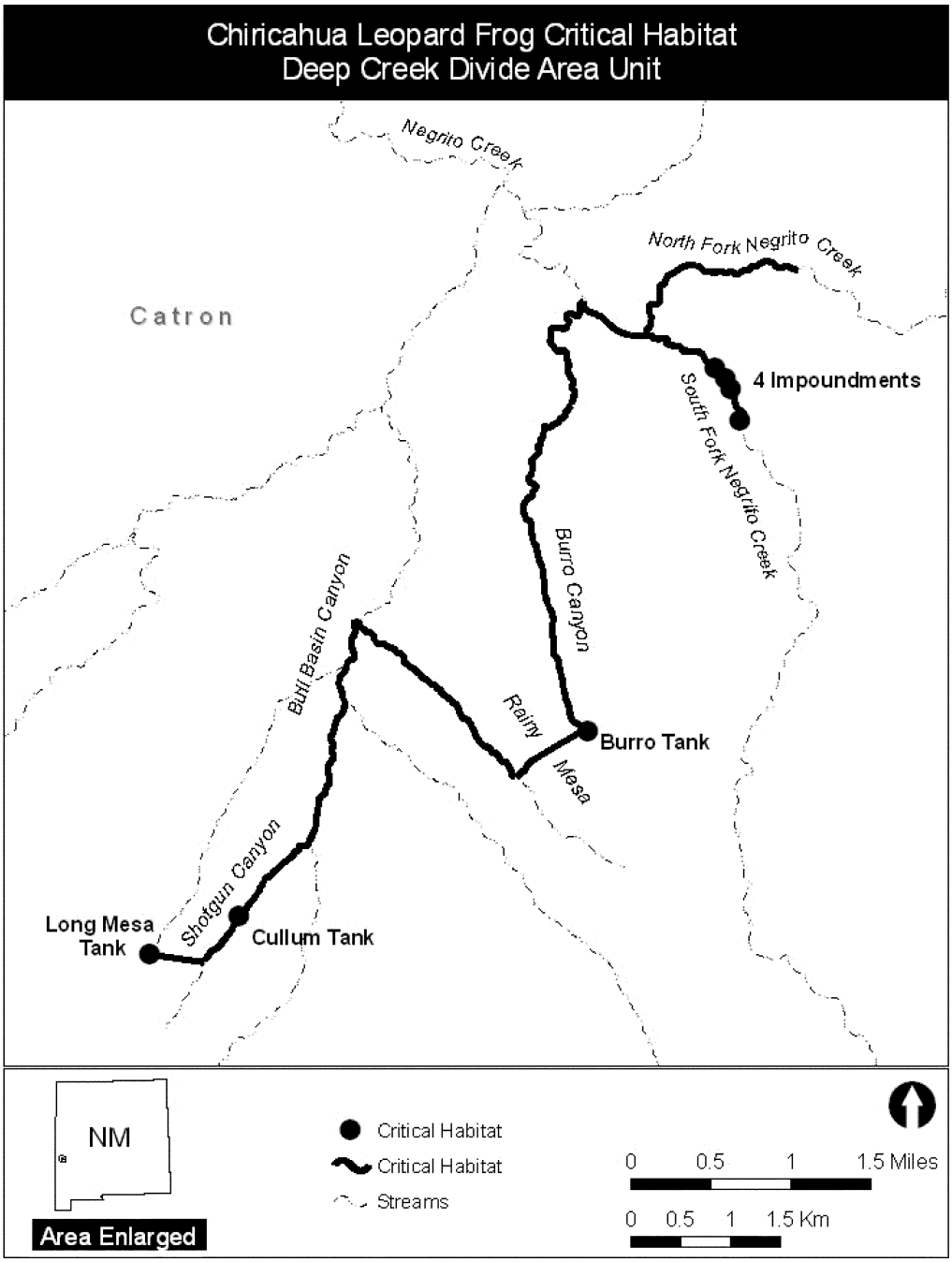
(vi) From Burro Tank (33.571146 N, 108.638682 W) downstream in Burro Canyon to Negrito Creek (22.609589 N, 108.638448 W), then upstream in

Negrito Creek to the confluence of North and South Forks of Negrito Creeks (33.607082 N, 108.631340 W), an approximate stream distance of 3.80 miles (6.12 kilometers).

(vii) From Long Mesa Tank (33.551664 N, 108.686841 W) directly overland and east to Shotgun Canyon (33.550816 N, 108.681110 W), then downstream in that canyon to Cullum Tank (33.554864 N, 108.676961 W), an approximate distance of 2,003 drainage feet (610 meters) and 1,801 feet (549 meters) overland.

(viii) From Cullum Tank (33.554864 N, 108.676961 W) downstream in Shotgun and Bull Basin Canyons to a confluence with an unnamed drainage (33.581626 N, 108.663624 W), then upstream in that drainage to the confluence with a minor drainage leading off Rainy Mesa from the east-northeast (33.567121 N, 108.646776 W), then upstream in that drainage and directly east-northeast across Rainy Mesa to Burro Tank (33.571146 N, 108.638682 W), an approximate distance of 3.88 drainage miles (6.24 kilometers) and 1,863 feet (568 meters) overland.

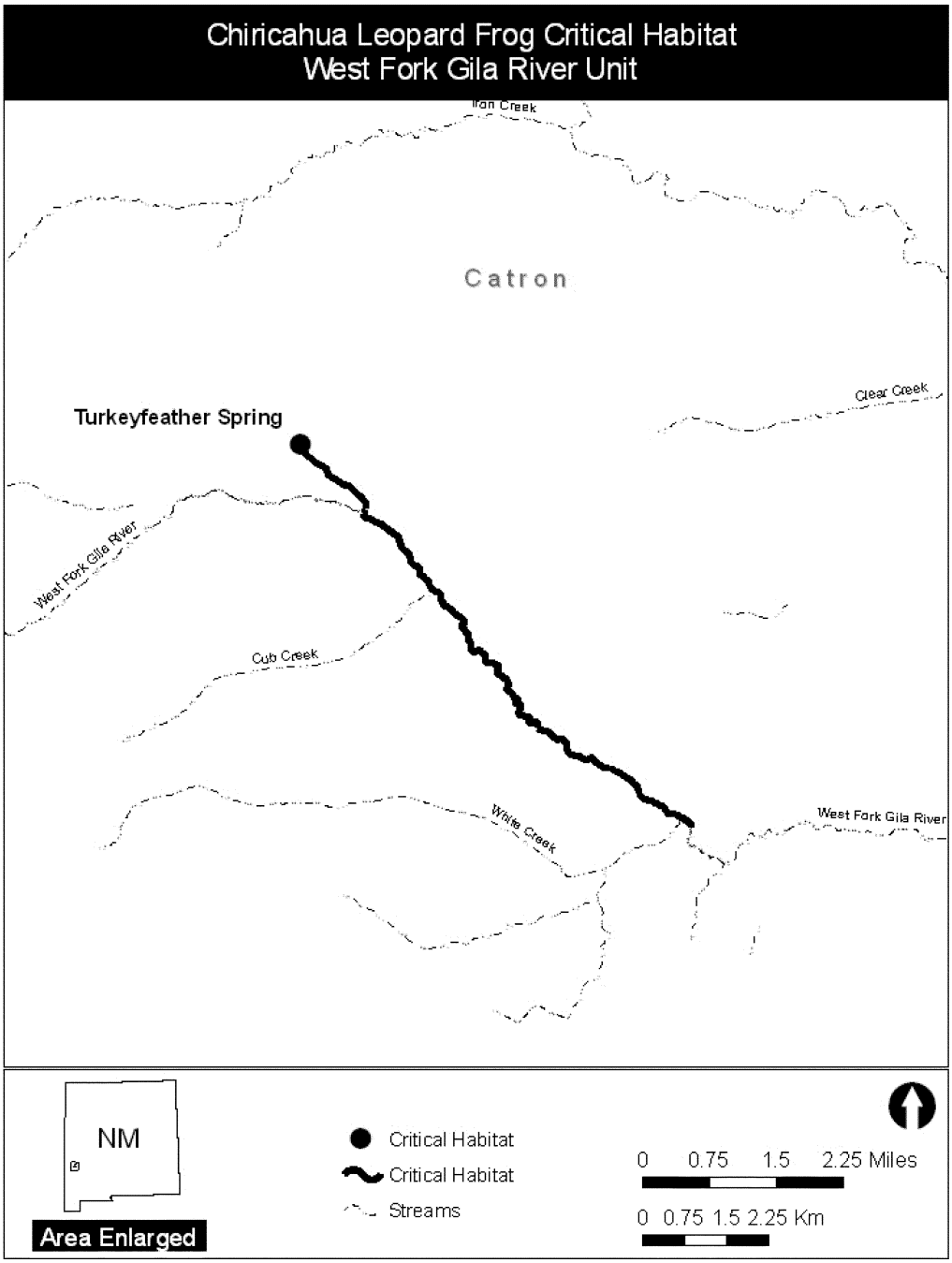
(ix) **NOTE:** Map of Deep Creek Divide Area Unit follows:



(32) West Fork Gila River Unit, Catron County, New Mexico.

(i) From Turkeyfeather Spring (33.337486 N, 108.528607 W) downstream in Turkeyfeather Creek to its confluence with West Fork Gila River (33.32593 N, 108.517011 W), then downstream and southeast in West Fork Gila River to its confluence with White Creek (33.3274675 N, 108.4925 W), a distance of approximately 6.97 drainage miles (11.22 km).

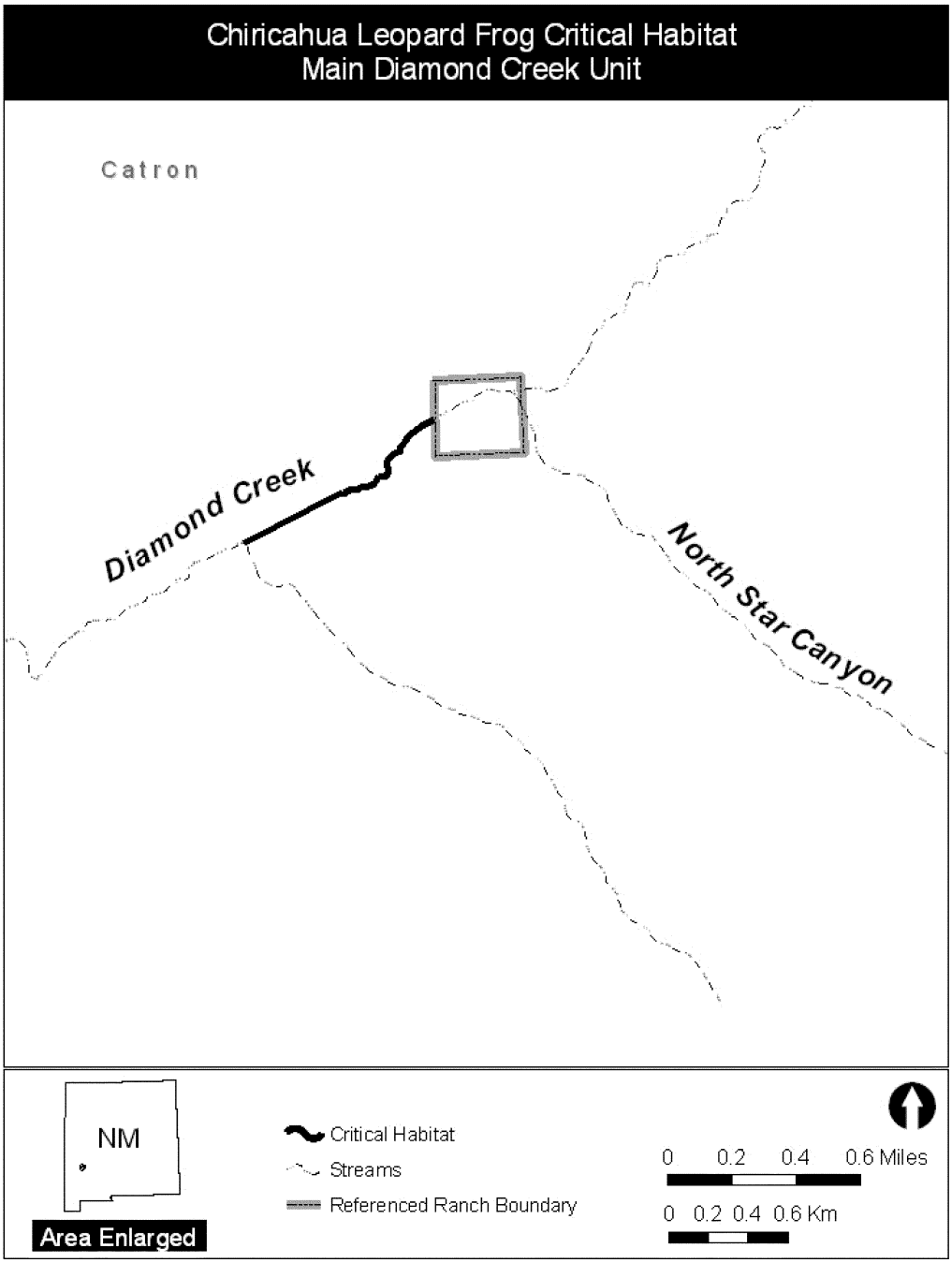
(ii) **NOTE:** Map of West Fork Gila River Unit follows:



(33) Main Diamond Creek Unit, Catron County, New Mexico.

(i) Main Diamond Creek, from the downstream boundary of Links Ranch (33.269512 N, 108.105542 W) downstream to the confluence with an unnamed drainage that comes in from the south, which is also where Main Diamond Creek enters a canyon (33.264514 N, 108.116019 W), an approximate stream distance of 3,980 feet (1,213 meters).

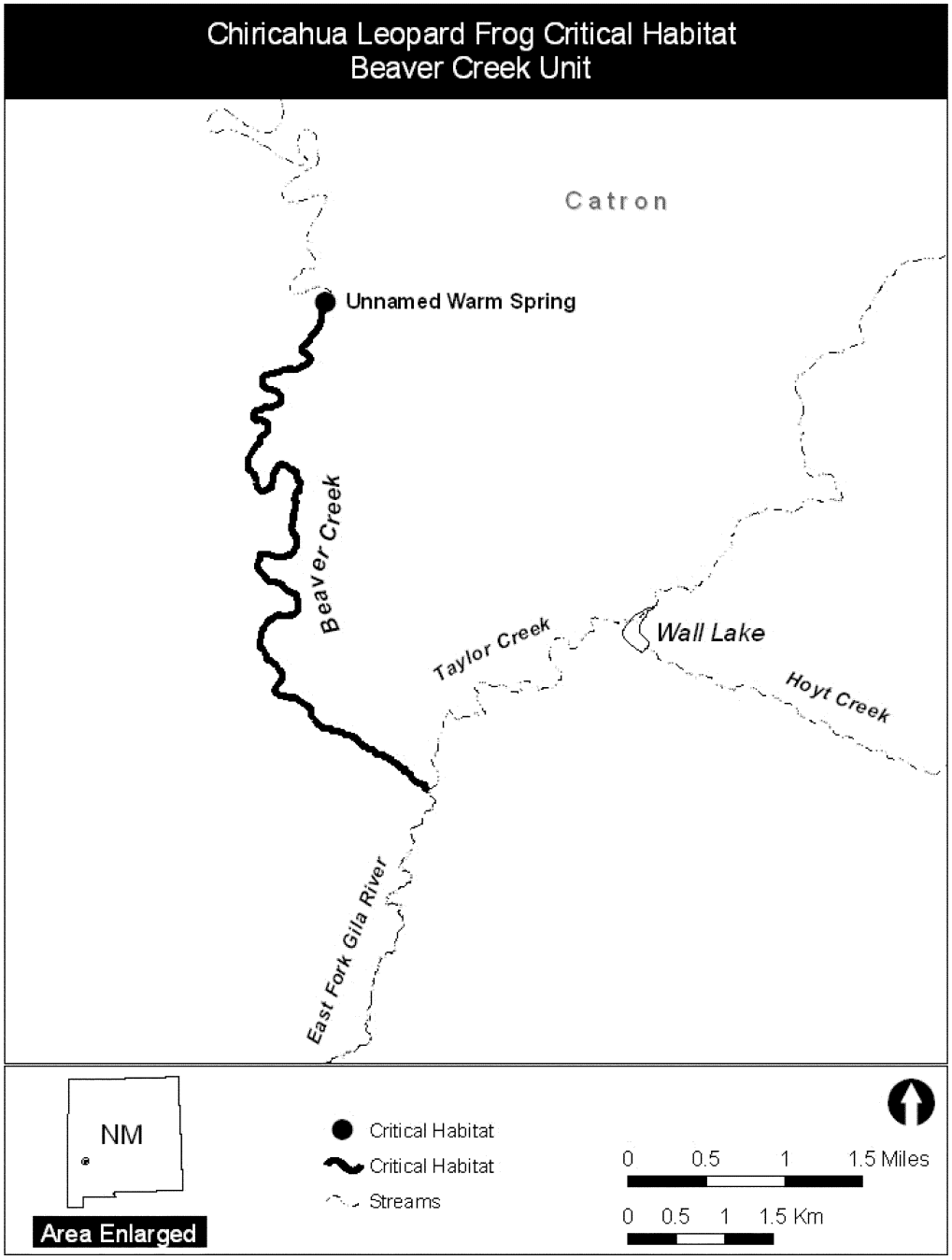
(ii) **NOTE:** Map of Main Diamond Creek Unit follows:



(34) Beaver Creek Unit, Catron County, New Mexico.

(i) Beaver Creek from an unnamed warm spring (33.380952 N, 108.111761 W) downstream to its confluence with Taylor Creek (33.334694 N, 108.101543 W), an approximate stream distance of 5.59 miles (8.89 kilometers).

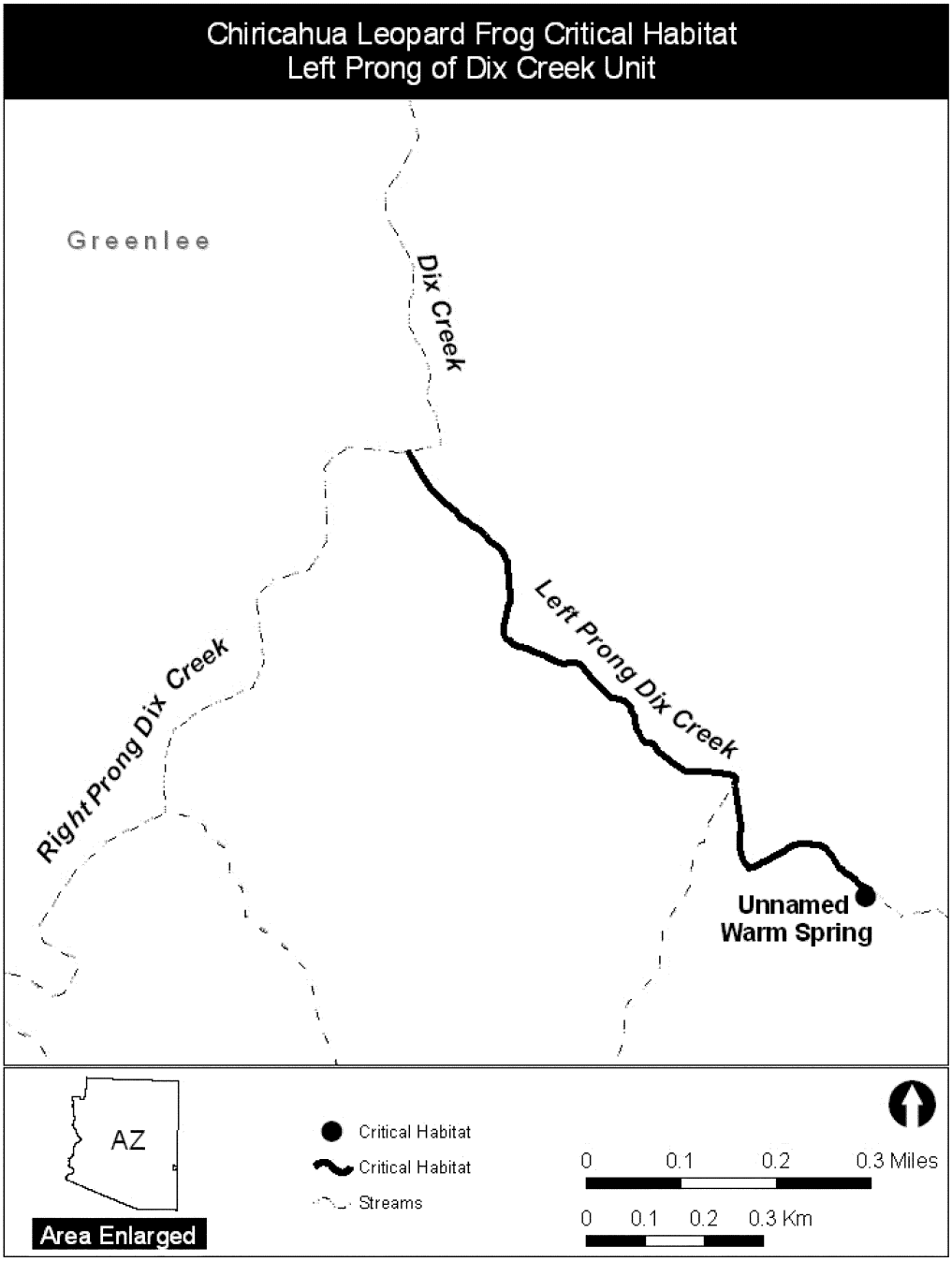
(ii) **NOTE:** Map of Beaver Creek Unit follows:



(35) Left Prong of Dix Creek Unit, Greenlee County, Arizona.

(i) Left prong of Dix Creek from an unnamed warm spring (33.179413 N, 109.149176 W) above ''The Hole'' downstream to its confluence with the right prong of Dix Creek (33.186657 N, 109.157754 W), an approximate stream distance of 4,248 feet (1,295 meters).

(ii) **NOTE:** Map of Left Prong of Dix Creek Unit follows:



(36) Rattlesnake Pasture Tank and Associated Tanks Unit, Greenlee County, Arizona.

(i) Rattlesnake Pasture Tank (33.093987 N, 109.151714 W).

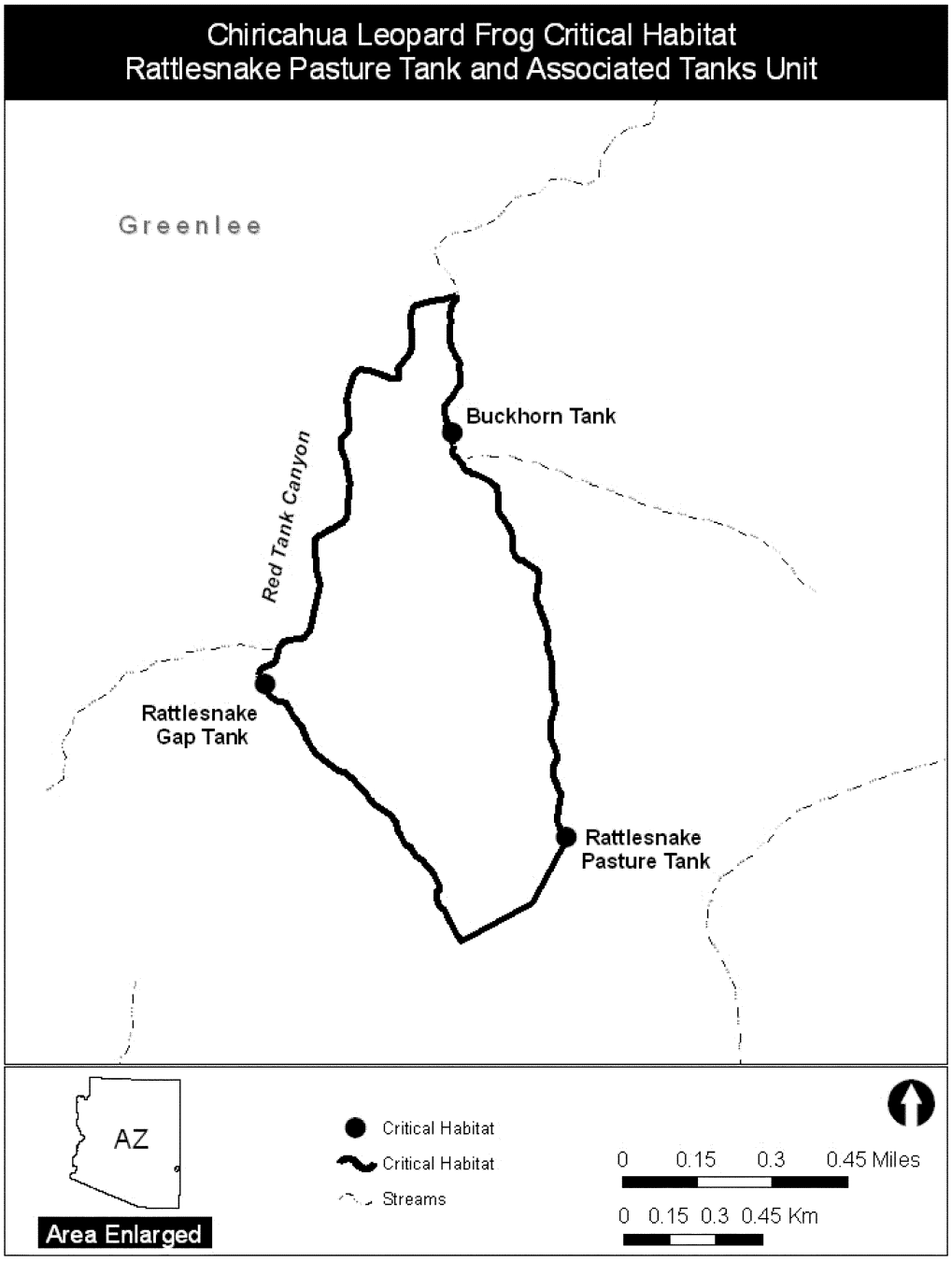
(ii) Rattlesnake Gap Tank (33.098497 N, 109.162152 W).

(iii) Buckhorn Tank (33.105613 N, 109.155506 W).

(iv) From Rattlesnake Pasture Tank (33.093987 N, 109.151714 W) downstream in an unnamed drainage to its confluence with Red Tank Canyon (33.109603 N, 109.155549 W), to include Buckhorn Tank (33.105613 N, 109.155506 W); then upstream in Red Tank Canyon to Rattlesnake Gap Tank (33.098497 N, 109.162152 W), an approximate drainage distance of 2.27 miles (3.65 kilometers).

(v) From Rattlesnake Gap Tank (33.098497 N, 109.162152 W) upstream in an unnamed drainage to its confluence with a minor drainage (33.090898 N, 109.155386 W), then directly upslope to a saddle (33.091771 N, 109.152380), and across that saddle and directly downslope to Rattlesnake Pasture Tank (33.093987 N, 109.151714 W), an approximate distance of 3,722 drainage feet (1,134 meters) and 1,645 feet (501 meters) overland.

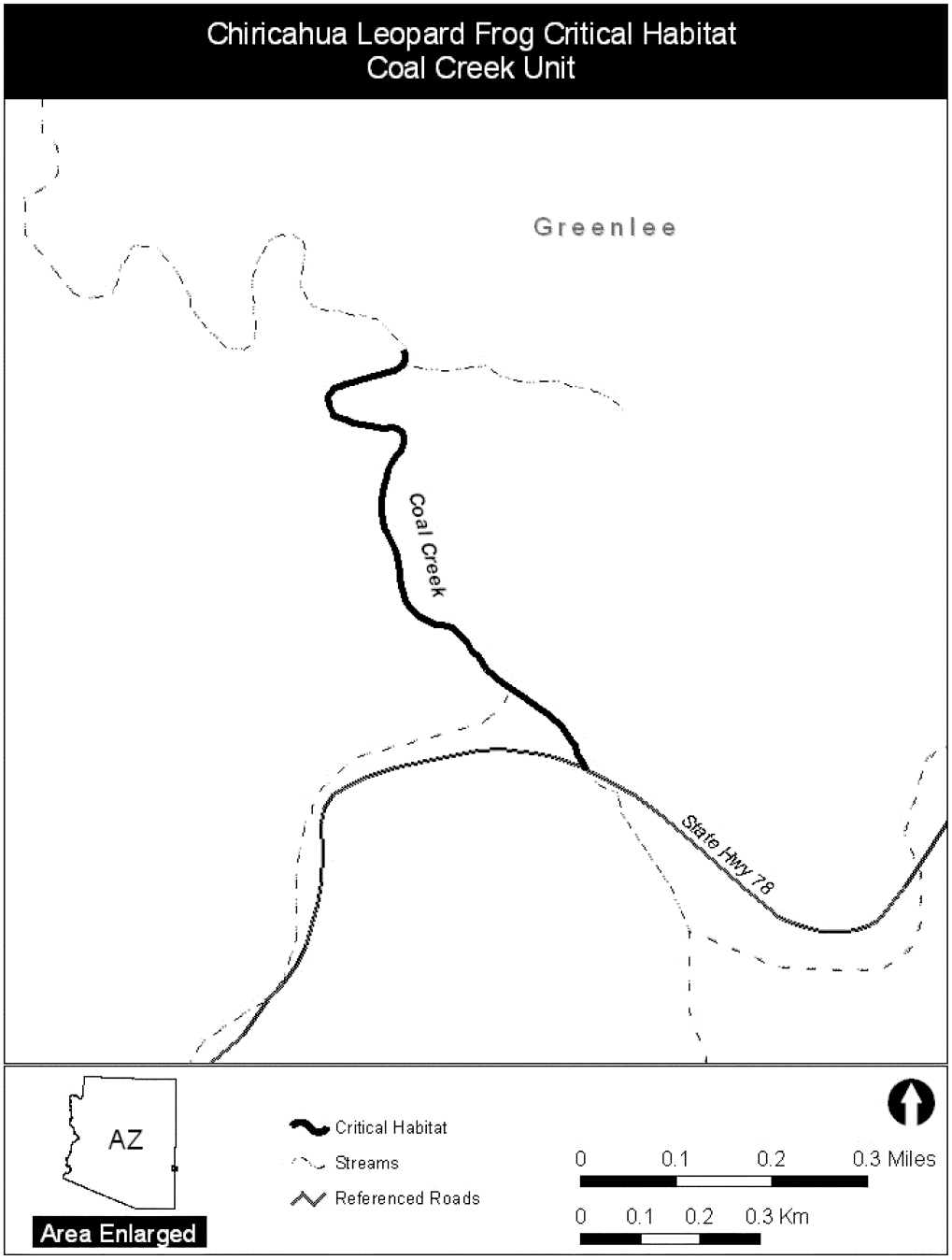
(vi) **NOTE:** Map of Rattlesnake Pasture Tank and Associated Tanks Unit follows:



(37) Coal Creek Unit, Greenlee County, Arizona.

(i) Coal Creek from the Highway 78 crossing (33.103667 N, 109.062458 W) downstream to the confluence with an unnamed drainage (33.110025 N, 109.065847 W), an approximate stream distance of 3,447 feet (1,051 meters).

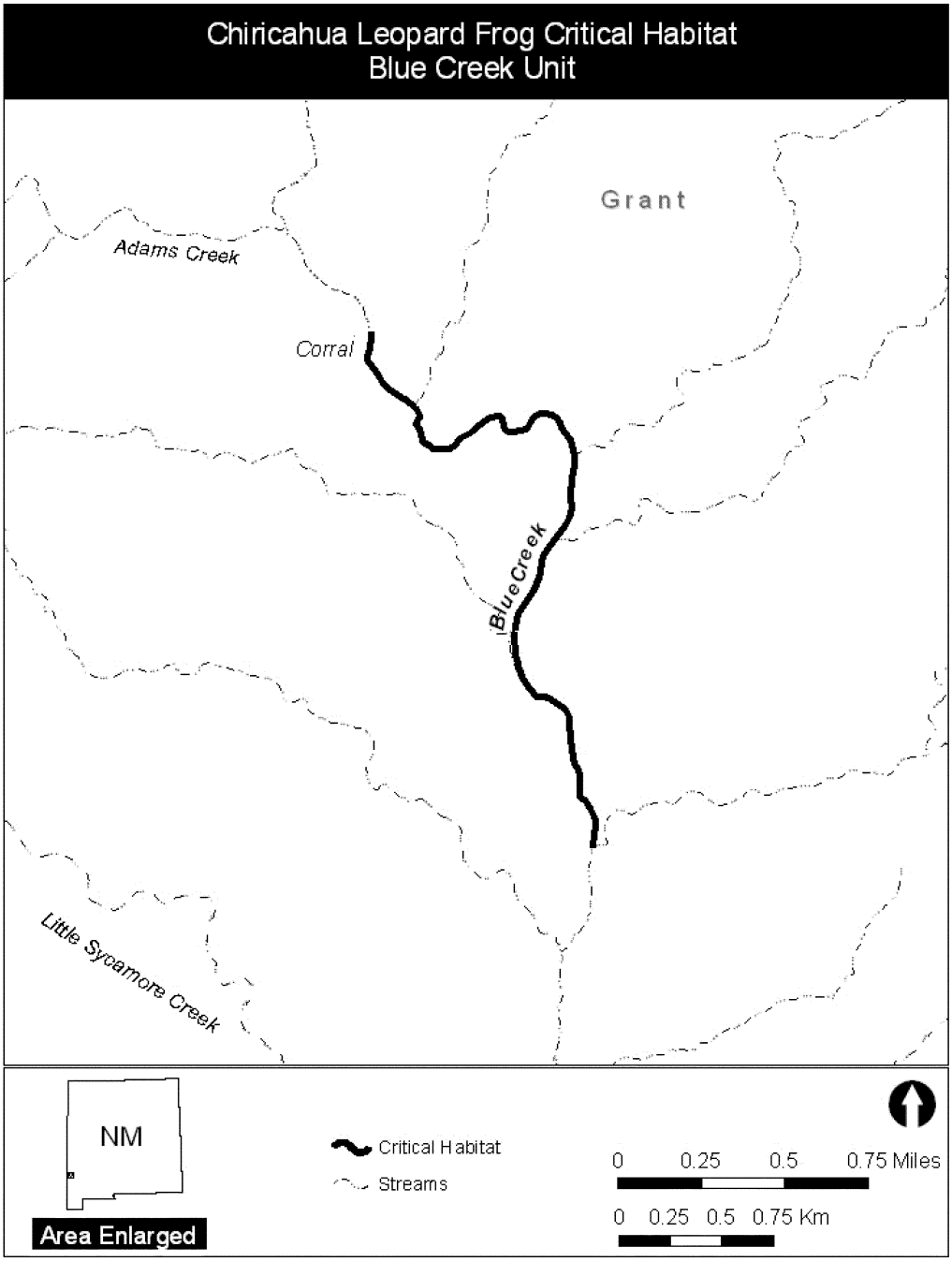
(ii) **NOTE:** Map of Coal Creek Unit follows:



(38) Blue Creek Unit, Grant County, New Mexico.

(i) Blue Creek from just east of a corral on private lands (32.848702 N, 108.835761 W) downstream to its confluence with an unnamed drainage that comes in from the east (32.825785 N, 108.824742 W), an approximate stream distance of 2.37 miles (3.81 kilometers).

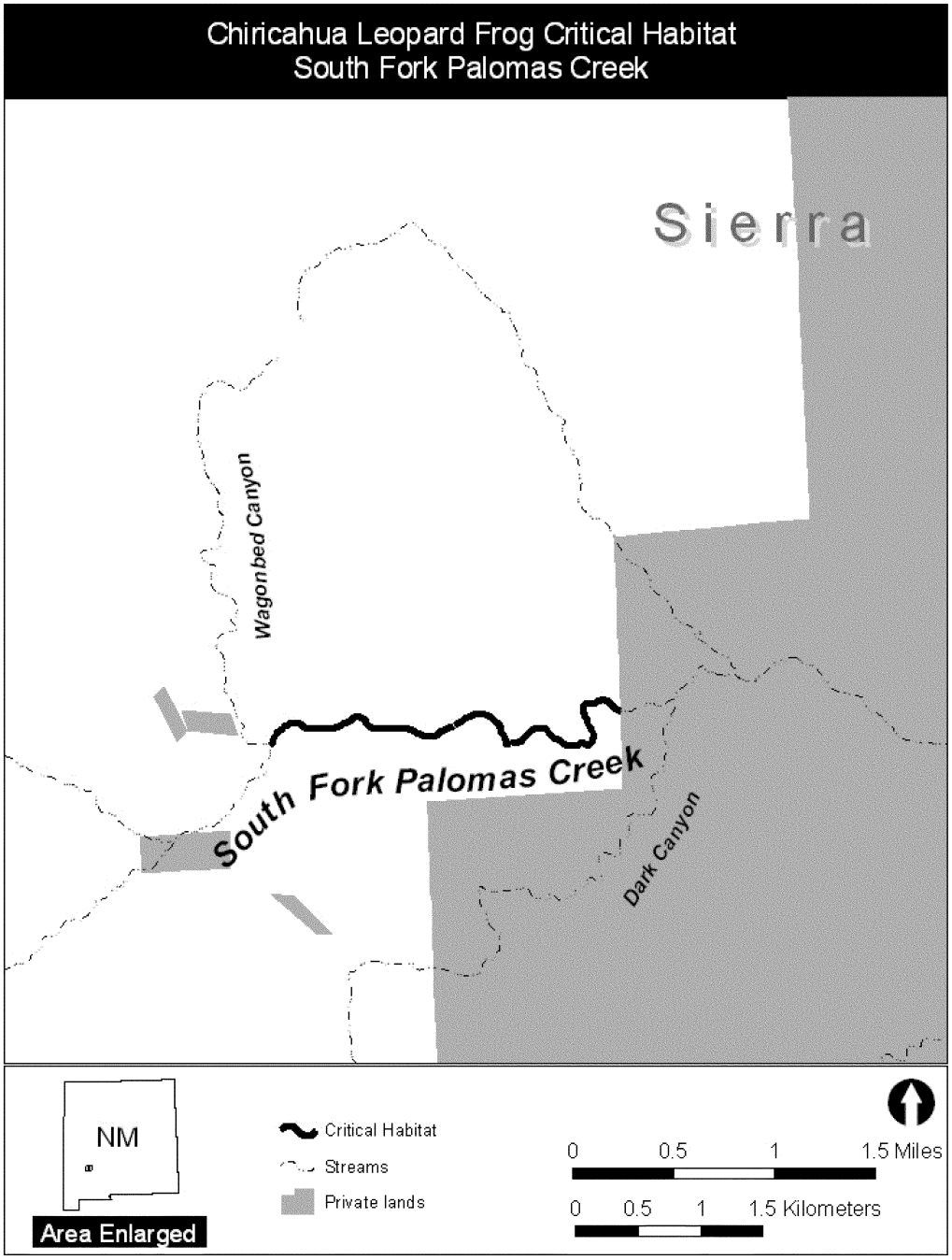
(ii) **NOTE:** Map of Blue Creek Unit follows:



(39) South Fork Palomas Creek Unit, Sierra County, New Mexico.

(i) From the confluence of an unnamed tributary in Wagonbed Canyon and South Fork Palomas Creek (33.164592 N, 107.723155 W), downstream in South Fork Palomas Creek to its confluence with an unnamed tributary in Dark Canyon (33.167074 N, 107.68853 W), excluding the portions of South Fork Palomas Creek on privately owned lands of the Ladder Ranch, a distance of approximately 2.32 drainage miles (3.73 km).

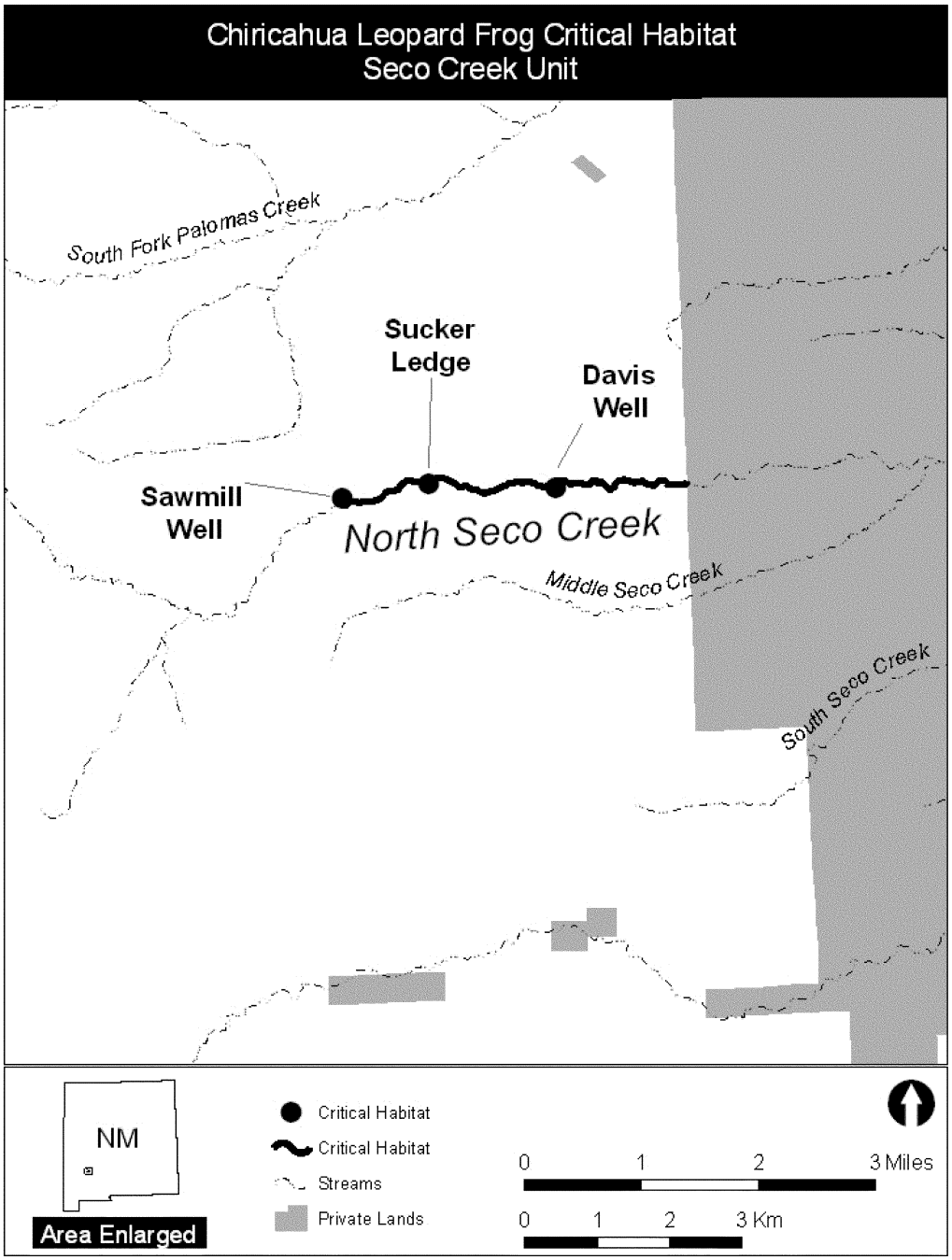
(ii) **NOTE:** Map of South Fork Palomas Creek Unit follows:



(40) Seco Creek Unit, Sierra County, New Mexico.

(i) North Seco Creek from Sawmill Well (33.112052 N, 107.760165 W) downstream to the private land boundary of the Ladder Ranch (33.112689 N, 107.709554 W), to include Sawmill Well (33.112052 N, 107.760165 W), Sucker Ledge (33.113545 N, 107.747370 W), and Davis Well (33.112421 N 107.728650 W), an approximate drainage distance of 3.32 miles (5.35 kilometers).

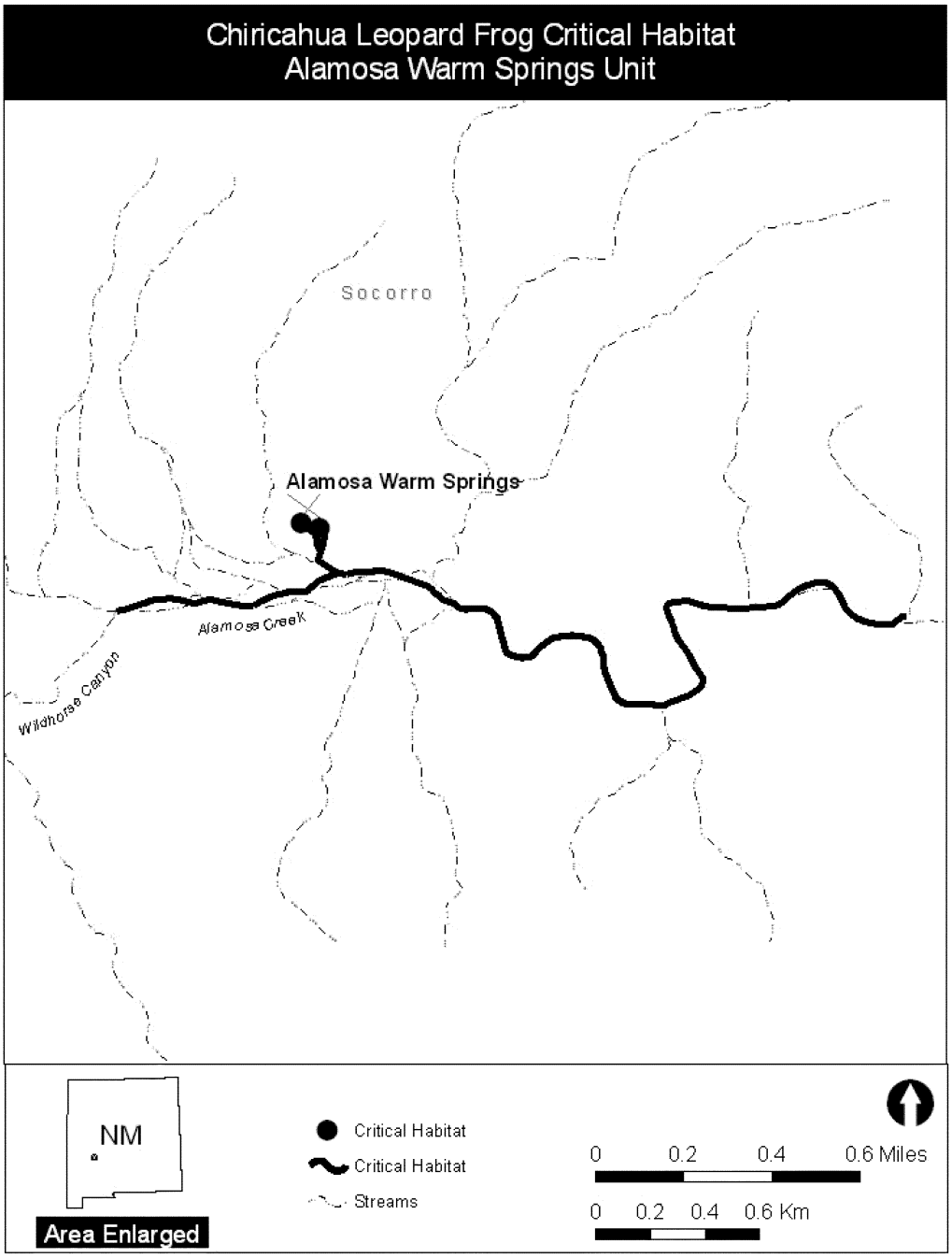
(ii) **NOTE:** Map of Seco Creek Unit follows:



(41) Alamosa Warm Springs Unit, Socorro County, New Mexico.

(i) From the confluence of Wildhorse Canyon and Alamosa Creek (33.570315 N, 107.608474 W) downstream in Alamosa Creek to the confluence with an unnamed drainage that comes in from the north (33.569199 N, 107.577137 W), to include Alamosa Warm Springs (33.572365 N, 107.600153 W), an approximate stream distance of 4,974 feet (1,516 meters).

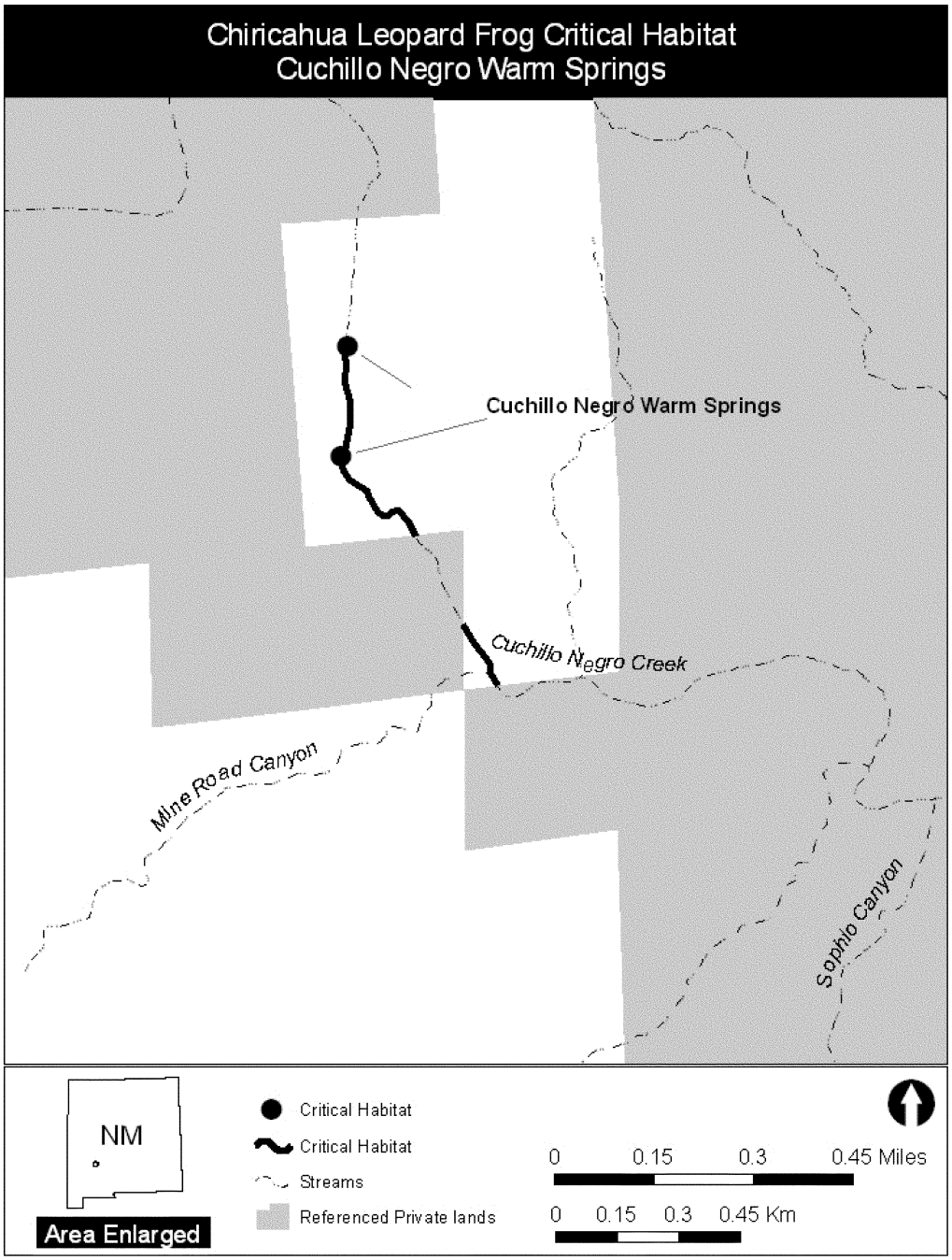
(ii) **NOTE:** Map of Alamosa Warm Springs Unit follows:



(42) Cuchillo Negro Warm Springs and Creek Unit, Sierra County, New Mexico.

(i) From the upper of the two Cuchillo Negro Warm Springs (33.268403 N, 107.563619 W) downstream in Cuchillo Negro Creek to its confluence with an unnamed drainage that comes in from the north (33.271386 N, 107.557843 W), excluding the portions of Cuchillo Negro Creek on privately owned lands, an approximate stream distance of 2,518 feet (768 meters).

(ii) **NOTE:** Map of Cuchillo Negro Warm Springs and Creek Unit follows:



(43) Ash and Bolton Springs Unit, Grant County, New Mexico.

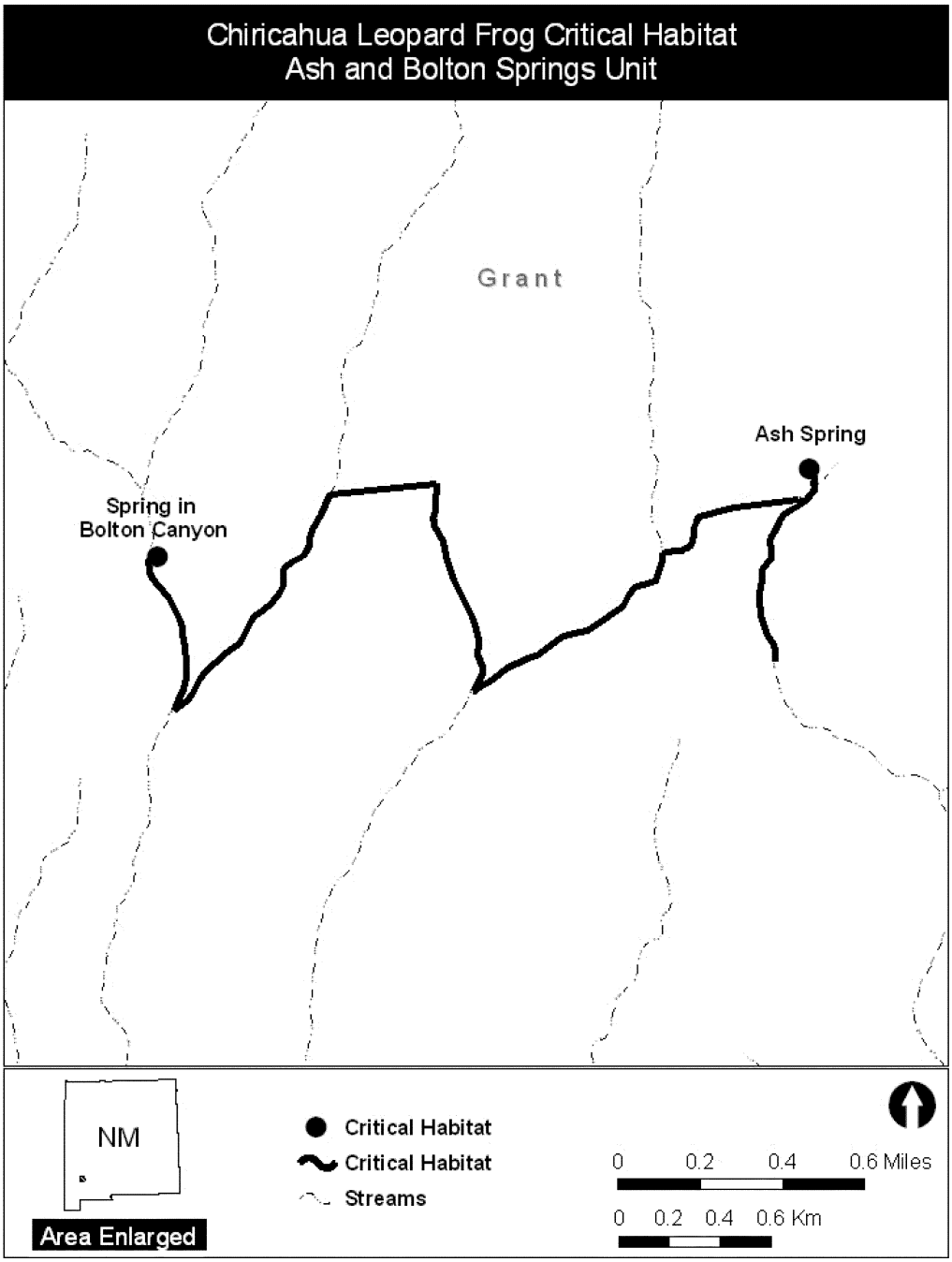
(i) Ash Spring (32.715625 N, 108.071980 W).

(ii) Unnamed spring in Bolton Canyon locally known as Bolton Springs (32.713419 N, 108.099679 W).

(iii) From the spring box at Ash Spring (32.715625 N, 108.071980 W) downstream to a dirt road crossing of the drainage (32.708769 N, 108.073579 W), an approximate stream distance of 2,830 feet (863 meters).

(iv) From the the ruins of a house in the Ash Spring drainage (32.714562 N, 108.072542 W) west to a low saddle (32.714373 N, 108.075263 W) and directly downslope into an unnamed drainage (32.713983 N, 108.076665 W), then downstream in that drainage to its confluence with another unnamed drainage (32.712829 N, 108.078131 W), then downstream in that unnamed drainage to its confluence with another unnamed drainage (32.708210 N, 108.086360 W), then upstream in that unnamed drainage to the top of that drainage (32.715476 N, 108.087719 W) and directly downslope and west to another unnamed drainage (32.715207 N, 108.092094 W), then downstream in that unnamed drainage to its confluence with Bolton Canyon (32.707844 N, 108.099267 W), and then upstream in Bolton Canyon to the locally known Bolton Springs (32.713419 N, 108.099679 W), an approximate distance of 2.41 drainage miles (3.87 kilometers) and 2,650 feet (808 meters) overland.

(v) **NOTE:** Map of Ash and Bolton Springs Unit follows:

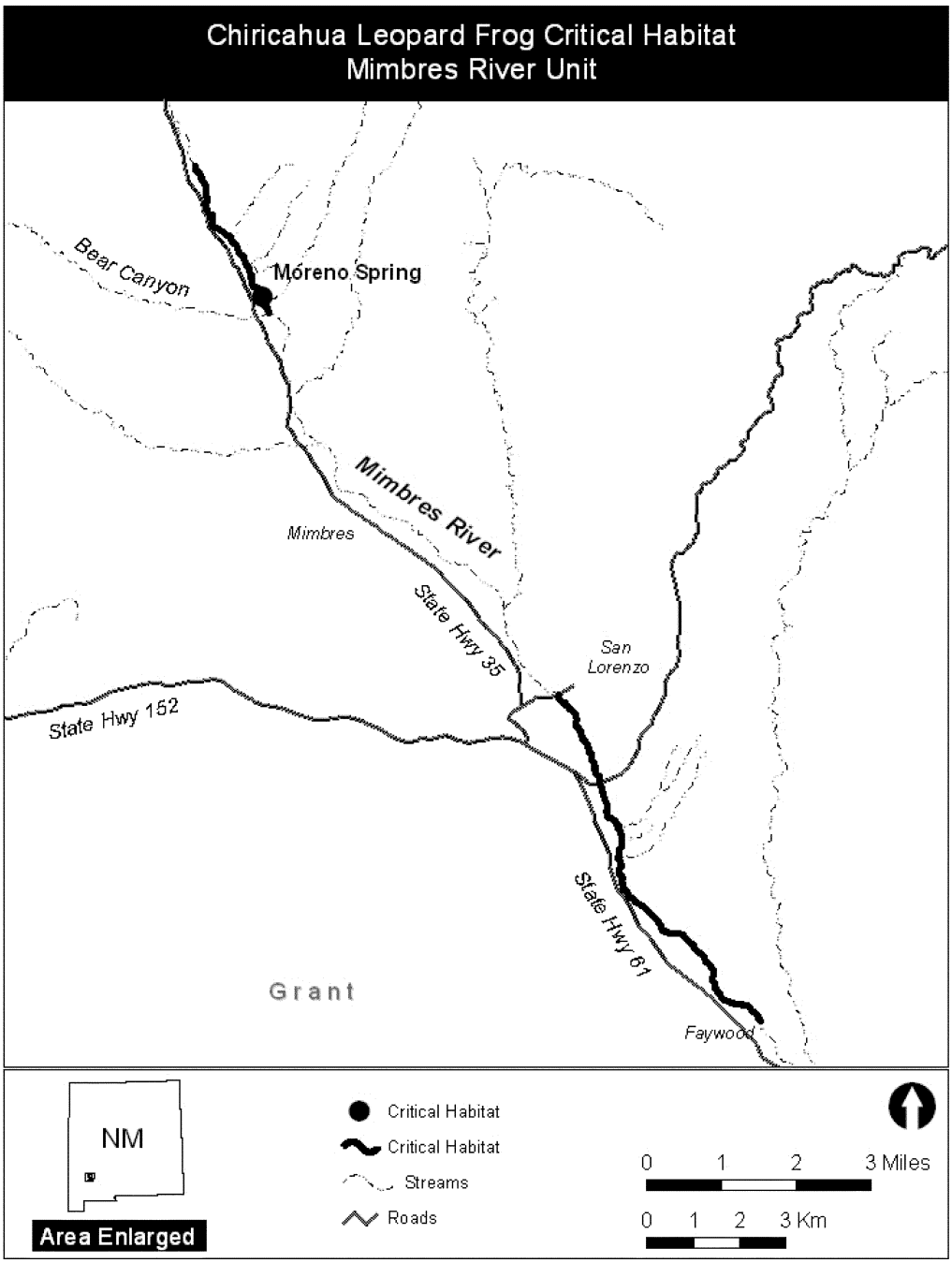


(44) Mimbres River Unit, Grant County, New Mexico.

(i) The Mimbres River from the northern boundary of The Nature Conservancy's Mimbres River Preserve property (32.912474 N, 108.004529 W) downstream to its confluence with Bear Canyon (32.883926 N, 107.988252 W), to include Moreno Spring (32.887107 N, 107.989492 W) and ponds at Milagros Ranch, an approximate river distance of 2.42 miles (3.89 kilometers).

(ii) The Mimbres River from the bridge just west of the town of San Lorenzo (32.808190 N, 107.924589 W) downstream to its intersection with the southern boundary of The Nature Conservancy's Disert property near Faywood (32.743884 N, 107.880297 W), an approximate river distance of 5.82 miles (9.36 kilometers).

(iii) **NOTE:** Map of Mimbres River Unit follows:



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Dated: March 5, 2012.

Rachel Jacobson,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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BILLING CODE 4310–55–C