

DEPARTMENT OF THE INTERIOR**Fish and Wildlife Service****50 CFR Part 17**

[Docket No. FWS-R2-ES-2009-0014;
92210-1117-0000-B4]

RIN 1018-AW50

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Roswell Springsnail, Koster's Springsnail, Noel's Amphipod, and Pecos Assiminea

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service, designate critical habitat for the Pecos assiminea (*Assiminea pecos*), Roswell springsnail (*Pyrgulopsis roswellensis*), Koster's springsnail (*Juturnia kosteri*), and Noel's amphipod (*Gammarus desperatus*), under the Endangered Species Act of 1973, as amended. In total, we are designating as critical habitat approximately 521.3 acres (211.0 hectares) for the four species of aquatic invertebrates. The critical habitat is located in Chaves County, New Mexico, and Pecos and Reeves Counties, Texas.

DATES: This rule becomes effective on July 7, 2011.

ADDRESSES: This final rule and the associated final economic analysis and final environmental assessment are available on the Internet at <http://www.regulations.gov> or <http://www.fws.gov/southwest/es/NewMexico/>. 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, New Mexico Ecological Services Field Office, 2105 Osuna Rd, NE, Albuquerque, NM 87113; telephone 505-346-2525; facsimile 505-346-2542.

FOR FURTHER INFORMATION CONTACT: Wally "J" Murphy, Field Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, 2105 Osuna Rd, NE, Albuquerque, NM 87113; telephone 505-761-4781; facsimile 505-246-2542. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION: It is our intent to discuss in this final rule only those topics directly relevant to the development and designation of critical habitat for the Roswell springsnail (*Pyrgulopsis roswellensis*), Koster's

springsnail (*Juturnia kosteri*), Noel's amphipod (*Gammarus desperatus*), and Pecos assiminea (*Assiminea pecos*) (four invertebrates). For more information on the biology and ecology of the four invertebrates, refer to the final listing rule published in the **Federal Register** on August 9, 2005 (70 FR 46304). For information on the four invertebrates' critical habitat, refer to the proposed rule to designate critical habitat for the four invertebrates, published in the **Federal Register** on June 22, 2010 (75 FR 35375), and February 17, 2011 (76 FR 9297).

Previous Federal Actions

On February 12, 2002, we proposed listing the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assiminea as endangered with critical habitat (67 FR 6459) under the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). Proposed critical habitat for the four species included portions of Bitter Lake National Wildlife Refuge (Refuge) in New Mexico, as well as two sites in Texas for the Pecos assiminea. On May 31, 2002, and again on May 4, 2005, we reopened the comment period on our February 12, 2002, proposed listing of the four invertebrates with critical habitat (67 FR 38059 and 70 FR 23083, respectively).

On August 9, 2005, we listed Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assiminea as endangered under the Act (70 FR 46304). In that rule, we also designated critical habitat for Pecos assiminea at Diamond Y Springs Complex in Pecos County, Texas, and at East Sandia Springs in Reeves County, Texas. We excluded proposed areas on the Refuge from the final critical habitat designation because special management for the four invertebrates was already occurring there. As a result, only the Pecos assiminea had critical habitat designated for two areas in Texas, and no critical habitat was designated for the other three species.

On March 12, 2009, in response to a complaint filed by Forest Guardians (now WildEarth Guardians) challenging the exclusion of the Refuge from the final critical habitat designation for the four invertebrate species, we published an announcement reopening a 60-day comment period on the proposed designation of lands of the Bitter Lake National Wildlife Refuge as critical habitat for the four invertebrates (74 FR 10701).

On June 22, 2010, we published a proposed rule to revise critical habitat for the Pecos assiminea and propose new critical habitat for Roswell

springsnail, Koster's springsnail, and Noel's amphipod (75 FR 35375). The comment period was open for 60 days and closed on August 23, 2010. Information we received during that comment period led to our consideration of a new area for critical habitat for the Noel's amphipod along the Rio Hondo on the South Tract of the Refuge and, therefore, led to our publication of an additional document on February 17, 2011 (76 FR 9297), to accept public comment on the proposed designation of this additional area.

Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for the four invertebrates during the comment periods held from March 12 to May 11, 2009; June 22 to August 23, 2010; and February 17 to March 21, 2011. We did not receive any requests for a public hearing, and none was held. We also contacted appropriate Federal, 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 the last two comment periods.

During the comment periods, we received six comment letters directly addressing the proposed critical habitat designation. All substantive information provided during comment periods has either been incorporated directly into this final determination as appropriate or addressed below.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from three knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occur, and conservation biology principles. We received responses from two of the peer reviewers.

We reviewed all comments received from the peer reviewers for substantive issues and new information regarding critical habitat for the four invertebrates. The peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and 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

(1) *Comment:* Both peer reviewers and the State of New Mexico recommended the habitat supporting the Rio Hondo population of Noel's amphipod on the South Tract of the Refuge be included in this critical habitat designation.

Our response: We agree that the Rio Hondo population of Noel's amphipod should be included in this designation of critical habitat, and we published an additional document to request public comments on the proposed designation of the additional area on February 17, 2011 (76 FR 9297). We have included this area in this final critical habitat designation.

(2) *Comment:* One peer reviewer and the State of New Mexico requested we clarify the language discussing the number of locations of Pecos assimineia that occur on the Refuge, which stated disparate numbers of populations.

Our response: We have revised the language accordingly in this final critical habitat designation.

(3) *Comment:* One peer reviewer suggested we designate additional areas of Hunter Marsh on the Refuge that may likely contain additional habitat occupied by the four invertebrates.

Our response: We considered all areas of Hunter Marsh for possible inclusion as critical habitat. In doing so, we relied on species experts and Refuge staff to identify those areas occupied by any of the four invertebrates at the time of listing that contain the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. Using mapping techniques and field visits, we designated all areas within this tract on the Refuge that meet the criteria for critical habitat. For areas not occupied by any of the four invertebrates at the time they were listed, we found none that would meet the criteria to be essential for the four invertebrates' conservation, and none of the four invertebrates is likely to become established in other areas.

(4) *Comment:* One peer reviewer and the State of New Mexico noted that the Pecos assimineia proposed critical habitat map does not show any of the property owned by the City of Roswell (City) as being proposed for critical habitat.

Our response: In the proposal, we incorrectly identified the Refuge boundary. The revised map shows the correct boundary, accurately displaying portions of Units 2a and 2b as City property.

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." We received two comment letters from the State of New Mexico. The comments in the first letter are addressed above (see (1), (2), and (4) under *Peer Reviewer Comments*). The second letter specifically addressed our February 17, 2011 (76 FR 9297), proposed rule, stating that the New Mexico Department of Game and Fish (NMDGF) supports the critical habitat designation.

Public Comments

(5) *Comment:* One commenter suggested we include additional areas surrounding depleted springs and ponds as critical habitat.

Our response: Much of the historic habitat for these four invertebrates has been degraded to such a degree that it no longer contains the physical and biological features necessary for conservation of these species. Only areas meeting the criteria for critical habitat for the four invertebrates are designated as critical habitat in this rule, as well as surrounding areas contiguous with occupied habitat that may be inhabited in the future. Because the depleted springs and ponds mentioned by the commenter are dewatered due to groundwater loss in the area, it is not likely they could be rehabilitated in the future to restore the necessary habitat features for the four invertebrates. Therefore, these areas are unlikely to contribute to the recovery of the species, are not considered essential to their conservation, and are not included in this critical habitat designation.

(6) *Comment:* One commenter recommended limiting designation of critical habitat to areas of the Refuge where the four invertebrates can occur.

Our response: Updated geographic information system (GIS) techniques have allowed us to more closely map the wetlands, springs, and seeps on the Refuge in which the four invertebrates can occur; therefore, our designation is refined from the 2002 proposal to designate critical habitat for the four invertebrates (February 12, 2002; 67 FR 6459) and no longer includes uplands or other Refuge lands that do not contain the essential physical and biological features of critical habitat for these four invertebrates.

Summary of Changes From the Proposed Rule

Since the publication of the June 22, 2010, proposed rule to revise critical habitat for the Pecos assimineia and propose new critical habitat for Roswell springsnail, Koster's springsnail, and Noel's amphipod (75 FR 35375), we have made the following changes:

(1) Because the Pecos assimineia occupies different habitats than the Roswell springsnail, Koster's springsnail, and Noel's amphipod, we created separate critical habitat units for the Pecos assimineia on the Refuge.

(2) Due to the discovery of a population of Noel's amphipod along the Rio Hondo on the South Tract of the Refuge, we proposed an additional critical habitat area on February 17, 2011 (76 FR 9297). This area is included as critical habitat in this final rule.

(3) Because of the addition of new units for the Pecos assimineia and Noel's amphipod, the unit numbers have changed from those in the proposed rule.

(4) Due to a mapping error, the total amount of critical habitat is 0.5 acres (ac) (0.2 hectares (ha)) more than was proposed. No additional critical habitat has been designated in this rule, as the error was purely mathematical.

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 pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance,

propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the U.S. Fish and Wildlife Service (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 seeks or 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.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time it was listed must contain physical and biological features which are essential to the conservation of the species and which may require special management considerations or protection. Critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical and biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat), focusing on the principal biological or physical constituent elements (primary constituent elements) within an area that are essential to the conservation of the species (such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type). Primary constituent elements are the elements of physical and biological features that provide for a species' life history processes and are essential to the conservation of the species.

Under the Act, 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. 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. When the best available scientific data do not demonstrate that the conservation needs of the species require such additional areas, we will not designate critical habitat in areas outside the geographical area occupied by the species. An area currently occupied by the species but that was not occupied at the time of listing may, however, be essential to the conservation of the species and may be included in the critical habitat designation.

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, or other unpublished materials and expert opinion or personal knowledge.

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 required 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 and Biological Features

In accordance with sections 3(5)(A)(i) and 4(b)(1)(A) of the Act and the regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied at the time of listing to designate as critical habitat, we consider the physical and biological features essential to the conservation of the species that 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 historic, geographical, and ecological distributions of a species.

We derive the specific physical and biological features required for the four invertebrates from studies of these species' habitat, ecology, and life history as described in the Critical Habitat section of the proposed rule to designate critical habitat published in the **Federal Register** on June 22, 2010 (75 FR 35375) and in the information presented below. Additional information can be found in the final listing rule published in the

Federal Register on August 9, 2005 (70 FR 46304). We have determined that the following physical and biological features are required by the four invertebrates.

Space for Individual and Population Growth and for Normal Behavior

Roswell Springsnail, Koster's Springsnail, Noel's Amphipod

The aquatic environment provides foraging and sheltering habitat for Roswell springsnail, Koster's springsnail, and Noel's amphipod, as well as habitat structure necessary for reproduction and survival of offspring. These invertebrates are completely aquatic and require perennial, flowing water for all of their life stages. The springsnails can survive in seepage areas, as long as flows are perennial and within the species' physiological tolerance limit; pool-like habitat is less suitable for these species, which prefer flowing water. They inhabit springs and spring-fed wetland systems with variable water temperatures (50–68 degrees Fahrenheit (°F)) (10–20 degrees Celsius (°C)). In general, the springsnails inhabit slow to moderate water velocities over compact substrate (material on the bottom of the stream) ranging from deep organic silts to gypsum sands and gravel (NMDGF 2005, pp. 13, 16). Habitat of Koster's springsnail consists of soft substrates of springs and seeps (Taylor 1987, p. 43). Roswell springsnail, on the other hand, was found to be most abundant on hard, gypsum substrate (NMDGF 2005, p. 16), which may make the species more susceptible to sedimentation. Noel's amphipod is found beneath stones and in aquatic vegetation (Cole 1988, p. 5; Smith 2001, pp. 572–574). The addition of stones, which increased current velocity, appeared to improve habitat for Noel's amphipod along the Unit 6 spring-ditch on the Refuge (Lang 2002, p. 2).

The two springsnails and Noel's amphipod are sensitive to water contamination. Amphipods generally do not tolerate habitat desiccation (drying), standing water, sedimentation, or other adverse environmental conditions; they are very sensitive to habitat degradation (NMDGF 1999, p. B3; Smith 2001, p. 575; NMDGF 2005, p. 15). Further, Taylor (1985, p. 15) concluded that an unidentified groundwater pollutant was responsible for reduction in abundance of springsnail species in the headspring and outflow of Diamond Y Spring, in Pecos County, Texas.

Pecos Assiminea

The Pecos assiminea requires saturated, moist soil at stream or spring-run margins and is found in wet mud or beneath mats of vegetation, usually within 1 inch (in) (2 to 3 centimeters (cm)) of flowing water. Spring complexes that contain flowing water create saturated soils that provide the specific habitat needed for population growth, sheltering, and normal behavior of the species. Although this snail seldom occurs immersed in water, the species cannot withstand permanent drying of springs or spring complexes. Consequently, wetland plant species are required to provide leaf litter (dead leaf material), shade, and appropriate microhabitat. Plant species such as *Scirpus americanus* (American three-square), *Eleocharis* spp. (spike rush), *Distichlis spicata* (inland saltgrass), and *Juncus* spp. (rushes) provide the appropriate cover and shelter required by Pecos assiminea (NMDGF 2005, p. 13).

Food

Invertebrates in small spring ecosystems depend on food from two sources: that which grows in or on the substrate (aquatic and attached plants and algae) and that which falls or is blown into the system (primarily leaves). Leaves from nonnative plants that fall into the water are often less suitable food sources for invertebrates because of either their resins or their physical structure (Bailey *et al.* 2001, p. 445). Water is also the medium necessary to provide the algae, detritus (dead or partially decayed plant materials or animals), bacteria, and submergent vegetation (vegetation submerged in water) on which the four species depend as a food resource, although submergent vegetation is less important for the Pecos assiminea because it inhabits the wet soils just above the water's edge.

Roswell Springsnail and Koster's Springsnail

The springsnails feed on algae, bacteria, and decaying organic material (NMDGF 2005, p. 14). They will also incidentally ingest small invertebrates while grazing on algae and detritus. Submergent vegetation contributes the necessary nutrients, detritus, and bacteria on which these species forage. Resource abundance and productivity appears to be an important factor in regulating population size (NMDGF 2005, p. 16).

Noel's Amphipod

Amphipods are omnivorous, feeding on algae, submergent vegetation, and

decaying organic matter (Holsinger 1976, p. 28; Pennak 1989, p. 476). Noel's amphipod is often found in beds of submergent aquatic plants, indicating that they probably feed on a surface film of algae, diatoms (single-celled algae with high silica content), bacteria, and fungi (Smith 2001, p. 575; NMDGF 2005, p. 14). Young amphipods depend on microbial foods, such as algae and bacteria, associated with aquatic plants (Covich and Thorp 1991, p. 677). Cannibalism may occur at high densities when food becomes limiting (Smith 2001, p. 575; NMDGF 2005, p. 15).

Pecos Assiminea

The Pecos assiminea has a file-like radula (a ribbon of teeth) situated behind the mouth that it uses to graze or scrape food from the foraging surface. Saturated soils and wetland vegetation adjacent to spring complexes contribute to the necessary components to support the algae, detritus, and bacteria on which this species forages.

Primary Constituent Elements

Under the Act and its implementing regulations, we are required to identify the physical and biological features essential to the conservation of the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assiminea in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be the elements of physical and biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Primary Constituent Elements for Roswell Springsnail and Koster's Springsnail

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species and the habitat requirements for sustaining the essential life history functions of the species, we have determined that the primary constituent element essential to the conservation of Roswell springsnail and Koster's springsnail is springs and spring-fed wetland systems that:

- (1) Have permanent, flowing water with no or no more than low levels of pollutants;
- (2) Have slow to moderate water velocities;
- (3) Have substrates ranging from deep organic silts to limestone cobble and gypsum;
- (4) Have stable water levels with natural diurnal (daily) and seasonal variations;

(5) Consist of fresh to moderately saline water;

(6) Vary in temperature between 50–68 °F (10–20 °C) with natural seasonal and diurnal variations slightly above and below that range; and

(7) Provide abundant food, consisting of:

(a) Algae, bacteria, and decaying organic material; and

(b) Submergent vegetation that contributes the necessary nutrients, detritus, and bacteria on which these species forage.

Primary Constituent Elements for Noel's Amphipod

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species and the habitat requirements for sustaining the essential life history functions of the species, we have determined that the primary constituent element essential to the conservation of Noel's amphipod is springs and spring-fed wetland systems that:

(1) Have permanent, flowing water with no or no more than low levels of pollutants;

(2) Have slow to moderate water velocities;

(3) Have substrates including limestone cobble and aquatic vegetation;

(4) Have stable water levels with natural diurnal (daily) and seasonal variations;

(5) Consist of fresh to moderately saline water;

(6) Have minimal sedimentation;

(7) Vary in temperature between 50–68 °F (10–20 °C) with natural seasonal and diurnal variations slightly above and below that range; and

(8) Provide abundant food, consisting of:

(a) Submergent vegetation and decaying organic matter;

(b) A surface film of algae, diatoms, bacteria, and fungi; and

(c) Microbial foods, such as algae and bacteria, associated with aquatic plants, algae, bacteria, and decaying organic material.

Primary Constituent Elements for Pecos Assiminea

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species and the habitat requirements for sustaining the essential life history functions of the species, we have determined that the primary constituent element essential to the conservation of Pecos *assiminea* is moist or saturated soil at stream or spring run margins:

(1) That consists of wet mud or occurs beneath mats of vegetation;

(2) That is within 1 in (2 to 3 cm) of flowing water;

(3) That has native wetland plant species, such as salt grass or sedges, that provide leaf litter, shade, cover, and appropriate microhabitat;

(4) That contains wetland vegetation adjacent to spring complexes that supports the algae, detritus, and bacteria needed for foraging; and

(5) That has adjacent spring complexes with:

(a) Permanent, flowing, fresh to moderately saline water with no or no more than low levels of pollutants; and

(b) Stable water levels with natural diurnal and seasonal variations.

With this designation of critical habitat, we intend to identify the physical and biological features essential to the conservation of the species, through the identification of the primary constituent elements sufficient to support the life-history processes of the species. All units designated as critical habitat are currently occupied by at least one of the four invertebrates and contain the primary constituent elements sufficient to support the life history needs of the species.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and that may require special management considerations or protection. As stated in the final listing rule (70 FR 46304; August 9, 2005), threats to the four invertebrates include reducing or eliminating water in suitable or occupied habitat through drought or pumping; introducing pollutants to levels unsuitable for the species from urban areas, agriculture, release of chemicals, and oil and gas operations; fires that reduce or eliminate available habitat; and introducing nonnative species into the invertebrates' inhabited spring systems such that suitable habitat is reduced or eliminated. Each of these threats is discussed below.

Water Quantity

These four invertebrate species depend on water for survival. Therefore, the loss or alteration of spring habitat continues to be the main threat to the four invertebrates. The scattered distribution of springs makes them aquatic islands of unique habitat in an arid-land matrix (Myers and Resh 1999, p. 815).

Members of the snail family Hydrobiidae (including Roswell and

Koster's springsnails) are susceptible to extirpation or extinction because they often occur in isolated desert springs (Hershler 1989, p. 294; Hershler and Pratt 1990, p. 291; Hershler 1994, p. 1; Lydeard *et al.* 2004, p. 326). There is evidence these habitats have been historically reduced or eliminated by aquifer depletion (Jones and Balleau 1996, p. 4). The lowering of water tables through aquifer withdrawals for irrigation and municipal use has degraded desert spring habitats. At least two historical sites for the invertebrates (South Spring, Lander Spring) are currently dry due to aquifer depletion (Cole 1981, p. 27; Jones and Balleau 1996, p. 5), and Berrendo Spring, historical habitat for the Roswell springsnail, is currently at 12 percent of the original 1880s flow (Jones and Balleau 1996, p. 13). However, during the mid-1970s, when groundwater pumping was at its highest rate and the area was experiencing extreme drought (McCord *et al.* 2005, p. 6), the springs currently inhabited by the species continued to flow. This suggests these springs and seeps may be somewhat resilient to reduced water levels, although climate change may test that resiliency.

Models suggest climate change may cause the southwestern United States to experience the greatest temperature increase of any area in the lower 48 States (IPCC 2007, p. 15). 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 (IPCC 2007, p. 16), as a result of less annual mean precipitation and reduced length of snow season and snow depth (Christensen *et al.* 2007, p. 850). These predictions underscore the importance of special management to maintain aquifer levels to ensure survival of the four invertebrates.

The primary threat to Pecos *assiminea* in Texas is the potential failure of spring flow due to excessive groundwater pumping or drought or both, which would result in total habitat loss for the species. Diamond Y Spring is the last major spring still flowing in Pecos County, Texas (Veni 1991, p. 2). Pumping of the regional aquifer system for agricultural production of crops has resulted in the drying of most other springs in this region (Brune 1981, p. 356). Other springs that have already failed include Comanche Springs, which was once a large spring in Fort Stockton, Texas, about 8 miles (mi) (12.9 kilometers (km)) from Diamond Y Spring. Comanche Springs flowed at more than 142 cubic feet per second (cfs) (4.0 cubic meters per second (cms))

(Scudday 1977, p. 515; Brune 1981, p. 358) and undoubtedly provided habitat for rare species of fish and invertebrates, including springsnails. The spring ceased flowing by 1962 (Brune 1981, p. 358), except for brief periods (Small and Ozuna 1993, p. 26). Leon Springs, located upstream of Diamond Y Spring in the Leon Creek watershed, was measured at 18 cfs (0.5 cms) in the 1930s and was also known to contain rare fish, but ceased flowing in the 1950s following significant irrigation pumping (Brune 1981, p. 359). There have been no continuous records of spring flow discharge at Diamond Y Spring by which to determine trends in spring flow.

East Sandia Spring discharges at an elevation of 3,205 feet (ft) (977 meters (m)) from alluvial sand and gravel (Schuster 1997, pp. 92–93). Brune (1981, pp. 385–386) noted that flows from East Sandia Spring were declining. East Sandia Spring may be very susceptible to over-pumping in the area of the local aquifer that supports the spring. Measured discharges in 1995 and 1996 ranged from 0.45 to 4.07 cfs (0.013 to 0.11 cms) (Schuster 1997, p. 94). The small outflow channel from East Sandia Spring has not been significantly modified, and water flows into an irrigation system approximately 328 to 656 ft (100 to 200 m) after surfacing.

In summary, special management considerations are needed to protect the habitats of the four invertebrates from the loss or alteration of spring habitat as a result of drought or pumping.

Water Contamination

Water contamination, particularly from oil and gas operations, is a significant threat for these four invertebrates. In order to assess the potential for contamination, a study was completed in September 1999 to delineate the area that serves as sources of water for the springs on the Refuge (Balleau *et al.* 1999, pp. 1–42). This study reported that the sources of water that will reach the Refuge's springs include a broad area beginning west of Roswell near Eightmile Draw, extending to the northeast to Salt Creek, and southeast to the Refuge. This area represents possible pathways that contaminants may enter the groundwater that feeds the springs on the Refuge. This broad area sits within a portion of the Roswell Basin and contains a mosaic of Federal, State, and private lands with multiple land uses, including expanding urban development.

There are 378 natural gas and oil wells that are potential sources of

groundwater contamination in the 12-township area encompassing the source-water capture zone for the springs where the four invertebrates occur on the Refuge (Go-Tech 2010). Of these, 17 oil and gas leases are currently within the habitat protection zone designated by the Department of the Interior's Bureau of Land Management (BLM) to reduce risk to the endangered Pecos gambusia (*Gambusia nobilis*) from drilling operations. The BLM habitat protection zone will also reduce risk to the four invertebrates from drilling operations because it protects the same source-water capture zone for the four invertebrates. This habitat protection zone encompasses 12,585 ac (5,093 ha) of the Federal mineral estate within the water resource area for the Refuge (U.S. Fish and Wildlife Service (Service) 2005a, pp. 3–8). Twenty natural gas wells currently exist on these leases. The BLM has estimated, according to well spacing requirements established by the New Mexico Oil Conservation Division (Service 2005a, pp. 4–6), a maximum potential development of 66 additional wells within the habitat protection zone. From 2002 to 2004, there were 200 notices of "intentions to drill" (59 on State, 33 on private, and 108 on Federal lands) filed for oil or natural gas in Chaves County (Go-Tech 2010).

There are additional risks of groundwater contamination from accidental release of pollutants on State and private lands. Existing State regulations apply to all State and private lands where oil and gas operations occur and are designed to minimize the risk of spills and leaks. However, there are numerous examples in which oil and gas operations have met these regulatory standards within karst lands in New Mexico and other States, but where these measures failed to protect groundwater resources and prevent aquifer drawdown (Quarles 1983, p. 155; Richard and Boehm 1989, p. 1). Groundwater contamination can be a serious threat because to clean the aquifer would be extremely difficult should it become contaminated by oil, chemicals, or organics, such as nitrates. In most cases, contamination of an underground aquifer by agricultural, industrial, or domestic sources is treated only at the source. When a contamination site is discovered, the source of the contamination is treated, and rarely do remediation efforts pump water from the aquifer and treat it before sending it back. This is largely because these techniques are very costly and difficult to apply (S. McGrath, pers. comm. 2001). Because these invertebrate

species are sensitive to contaminants, efforts to clean up pollution after the aquifer has been contaminated may not be sufficient to protect these species and the aquatic habitat on which they depend.

Currently there are two active gas wells on the Middle Tract of the Refuge that are upstream (within the underground watershed) of occupied habitat for the four invertebrates. In 2006, Yates Petroleum applied for two additional gas wells, one of which would have been just upstream of occupied habitat for the four invertebrates. The applications have since been withdrawn due to ecological concerns of the proposal (including possible effects on the four invertebrates and the endangered fish, Pecos gambusia) and other issues, although the potential for oil and gas development remains.

The Diamond Y Springs Complex is within an active oil and gas extraction field. At this time there are still many active wells and pipelines located within 100 meters of the surface waters at the springs. In addition, a natural gas refinery is located within 0.5 mi (0.8 km) upstream of Diamond Y Spring. There are also old brine pits, which can contribute salt and other mineral pollutants to the groundwater, associated with previous drilling within feet of surface waters. In addition, oil and gas pipelines cross the spring outflow channels and marshes where the Pecos assimineia occurs, creating a constant potential for contamination from pollutants from leaks or spills. These activities pose a threat to the habitat of the Pecos assimineia by creating the potential for pollutants to enter underground aquifers that contribute to spring flow or for pollutants to contaminate the surface through spills and leaks of petroleum products.

As an example of the likelihood of a spill occurring, in 1992, approximately 10,600 barrels of crude oil were released from a 6-in (15.2-cm) pipeline that traverses Leon Creek above its confluence with Diamond Y Draw. The oil was from a ruptured pipeline at a point several hundred feet away from the Leon Creek channel. The site itself is about 1 mi (1.6 km) overland from Diamond Y Spring. The distance that surface runoff of oil residues must travel is about 2 mi (3.2 km) down Leon Creek to reach Diamond Y Draw. The pipeline was operated at the time of the spill by the Texas-New Mexico Pipeline Company, but ownership has since been transferred to several other companies. The Texas Railroad Commission has been responsible for overseeing cleanup

of the spill site. Remediation of the site initially involved aboveground land farming of contaminated soil and rock strata to allow microbial degradation. In recent years, remediation efforts have focused on vacuuming oil residues from the surface of groundwater exposed by trenches dug at the spill site. No impacts on the rare fauna of Diamond Y Springs Complex have been observed, but no specific monitoring of the effects of the spill was undertaken (Service 2005a, pp. 4–12).

Water contamination is a significant threat for Noel's amphipod in the small spring vents (where the spring opens to the surface) along the Rio Hondo on the South Tract of the Refuge. One possible source of water contamination is runoff of agricultural fertilizers and pesticides that are applied to the croplands on the South Tract of the Refuge. This tract encompasses approximately 1,400 ac (570 ha) that are closed to public access. About 330 ac (130 ha) are used as agricultural cropland to provide food, habitat, and feeding areas for wintering migratory bird populations (Service 1998, p. 7). Alfalfa, corn, hegari, barley, winter wheat, sorghum, and other small grains are cultivated on this tract (Service 2010, p. 14). Although crop rotation minimizes the need for chemical fertilizers, both fertilizers and pesticides are used on this tract, and these chemicals have the potential to enter the springs inhabited by Noel's amphipod. Chemicals used on the South Tract in the past 10 years include Accent (Nicosulfuron), Banvel (Dicamba), Pounce (Permethrin), Roundup and equivalents (Glyphosate), Pursuit DG (Imazathapyr), Rhonox (2-ethylhexyl ester of 2-methyl-4-chlorophenoxyacetic acid), Steadfast (Nicosulfuron/Rimsulfuron), Malathion 57 (Malathion), and Impact (Topramezone) (Service 2010, pp. 43–44). To protect aquatic life in the Rio Hondo, the Refuge implements chemical-specific buffers within which the chemicals cannot be used. Additionally, restrictions are in place on Refuges prohibiting use of chemicals that dissolve and travel in groundwater. These restrictions and buffers serve to minimize exposure of Noel's amphipod to these chemicals. Nevertheless, there remains a potential for contamination and negative effects to Noel's amphipod and its habitat.

The Refuge is in the process of reviewing the farming program on the South Tract. A draft environmental analysis (Service 2010, pp. 1–55) evaluates the effects of several levels of farming on this tract. The current preferred alternative is to eliminate farming on the South Tract; if the draft

environmental analysis is adopted, no future chemical application of fertilizers or pesticides would occur in the vicinity of Noel's amphipod populations, and this source of potential water contamination would be eliminated.

Another potential source of water contamination in Noel's amphipod habitats on the South Tract is from periodic inundation by water from the Rio Hondo. The Rio Hondo is a perennial stream from Roswell to its confluence with the Pecos River, and its watershed extends eastward to the Sacramento Mountains. The majority of the lower Rio Hondo valley is used for extensive agricultural purposes, including ranching, commercial livestock feeding, and crop production, as well as residential land use (USACE 1974, p. 8). Stormwater runoff from areas with these land uses is one way contaminants can be transported into the Rio Hondo and into Noel's amphipod habitats. While we have no specific information on the water quality of the stormwater entering the Rio Hondo, stormwater runoff from other urban areas has been identified as potentially containing materials such as solids, plastics, sediment, nutrients, metals, pathogens, salts, oils, fuels, and various chemicals, including antifreeze, detergents, pesticides, and other pollutants that can be toxic to aquatic life (Burton and Pitt 2002, pp. 6–7; Selbig 2009, p. 1).

Another way the Rio Hondo receives contaminants is by wastewater effluent discharge (USACE 1974, p. 9; Smith 2000, p. 65). At the present time, the average return flow from City of Roswell Wastewater Treatment Facility is approximately 6.2 cfs (0.18 cms). Effluent from the Roswell Wastewater Treatment Facility is largely used for crop irrigation from February through November or is discharged to the North Spring River, which flows 5 mi (8 km) before entering the Rio Hondo (Smith 2000, p. 65; USEPA 2006, p. 2), upstream of the Noel's amphipod population. In 2010, the Roswell Wastewater Treatment Facility was modified to provide a higher level of water purification that should improve the quality of the effluent discharge (USEPA 2007, p. 5; J. Anderson, City of Roswell, pers. comm. December 9, 2010). However, some nutrients, bacteria, metals, pesticides, oxygen-demanding substances, organic chemicals, surfactants (materials that remove surface tension of water, such as soaps and detergents), flame retardants, personal care products, steroids, hormones, and pharmaceuticals are expected to remain in the Rio Hondo (USEPA 2009, pp. 26–39).

Past analysis of water quality in the Rio Hondo has indicated some concerns. For example, sampling in the past yielded that total dissolved solids in Rio Hondo water averaged 935 milligrams per liter (mg/L), sulfates averaged 722 mg/L, and chlorides averaged 40 mg/L (USACE 1974, p. V–4) (both sulfates and chlorides are components of salt). However, more recent sampling by the New Mexico Environment Department (NMED) (2006a, p. 13) found higher total dissolved solids (average 7,321 mg/L), including more chloride (average 2,640 mg/L) and slightly more sulfate (average 776 mg/L) than reported by the U.S. Army Corps of Engineers (USACE 1974, p. V–4). In addition, the NMED (2006b, p. 32) identified water quality parameters of nutrients, bacteria, salinity, and temperature as a concern in the upper Rio Hondo watershed. Potential sources of nutrients or bacteria are municipal wastewater treatment facility effluents, onsite waste treatment systems (septic tanks), residential areas, landscape maintenance, livestock feeding operations, rangeland grazing, atmospheric deposition, stream modification or destabilization, and urban areas and construction sites (NMED 2006b, p. 32).

Riverine conditions in the Rio Hondo are not suitable for Noel's amphipod; the amphipod is found only in the nearby springs. However, Noel's amphipod could be affected by river water entering the spring runs during periods of high flow by either flushing the amphipods downstream or by river water mixing with spring water and introducing contaminants or altered water chemistry to the spring habitats. The Rio Hondo has a base flow between 2 and 6 cfs (0.06 to 0.17 cms) but exceeds 10 cfs (0.03 cms; a flow high enough to inundate the springs) approximately 5 to 10 times per year for short durations (USGS 2010, p. 1). Under base flow conditions, the spring runs that harbor Noel's amphipod are found along the riverbank at elevations higher than the stream, and, therefore, the water from the river does not mix with the spring outflow water. However, when Rio Hondo flows are elevated, these springs become inundated with water from the river, and the amphipods may be exposed to contaminants from the Rio Hondo. The impacts of any such contaminants would be lessened due to the high dilution rate of any treated wastewater discharge during a flood event.

Groundwater that supplies the outflow to the springs where the amphipod occurs is an additional potential source of spring water

contamination. This water is clearly distinct from the water of the nearby Rio Hondo based on very different temperatures and low dissolved oxygen measurements (Lusk 2010, p. 1). Low dissolved oxygen is typical of spring water conditions, as oxygen enters the water mainly through the atmosphere (White *et al.* 1990, p. 584), and spring water temperatures remain much more constant throughout the year due to the insulating effect of soil and rock on groundwater (Constantz 1998, p. 1610). The South Tract of the Refuge lies within the same groundwater source area as the Middle Tract, where the other Noel's amphipod populations are found and is, therefore, subject to the same threat of contamination from oil and gas activities as discussed above.

There has been no research on the specific effects on Noel's amphipod of contaminants such as metals, pesticides, fertilizers, nutrients, or bacteria. However, there is some evidence that freshwater amphipods in the family Gammaridae (in particular, *Gammarus*) may require higher oxygen levels and less polluted water than some other amphipods such as *Crangonyx* (*e.g.*, MacNeil *et al.* 1997, pp. 350, 356; MacNeil *et al.* 2000, p. 2). Gammarid amphipods (such as Noel's amphipod) may be considered an indicator of relatively unpolluted waters (MacNeil *et al.* 1997, p. 356; MacNeil *et al.* 2000, p. 6). Additionally, bacteria in high levels can affect amphipods directly through infections, or indirectly by depleting the dissolved oxygen in the water column through respiration or decomposition (Boylan and Brock 1973, p. 631).

In summary, special management efforts are needed to protect habitats of the four invertebrates from the potential effects of water contamination from oil and gas operations, agricultural activities, wastewater effluent, and stormwater runoff.

Wildfire

Fire suppression efforts on the Refuge are largely restricted to established roads due to the safety hazards of transporting equipment over karst terrain. This severely limits the ability to quickly suppress fires that threaten fragile aquatic habitats on the Refuge. On March 5, 2000, the Sandhill wildfire burned 1,000 ac (405 ha) of the western portion of the Refuge, including portions of Bitter Creek. The fire burned through Dragonfly Spring, a spring in the headwaters of Bitter Creek, which is occupied habitat for Noel's amphipod and Koster's springsnail. The fire eliminated vegetation shading the spring, and generated a substantial amount of ash in the spring system

(Lang 2002, p. 3; NMDGF 2005, p. 15). This resulted in the formation of dense algal mats, increased water temperature fluctuations, increased maximum water temperatures, and decreased dissolved oxygen levels (Lang 2002, pp. 5–6). The pre-fire dominant vegetation of submergent aquatic plants and mixed native grasses within the burned area has also been replaced by the invasive common reed (*Phragmites australis*) (NMDGF 2005, p. 15; 2008, p. 8). Following the fire at Dragonfly Spring, a dramatic reduction in Noel's amphipod was observed, and Koster's springsnail presently occurs at lower densities than were observed prior to the fire (Lang 2002, p. 7; NMDGF 2006a, p. 9). Strategically timed prescribed burns throughout the range of the species would significantly reduce fuel loads, limiting the risk of detrimental wildfires.

Removal of vegetative cover by burning in habitats occupied by Pecos assimineia may be an important factor in decline or loss of populations (Taylor 1987, p. 5, NMDGF 2005, p. 16). It is likely that Pecos assimineia may survive fire or other vegetation reduction if sufficient litter and ground cover remain to sustain appropriate soil moisture and humidity at a microhabitat scale (Service 2004, pp. 4–5; NMDGF 2005, p. 16). Complete combustion of vegetation and litter, high soil temperatures during fire, or extensive vegetation removal resulting in soil and litter drying may create unsuitable habitat conditions and loss of populations (NMDGF 2005, p. 16). Pecos assimineia was discovered at Dragonfly Spring following the burning of habitat there during the Sandhill fire (NMDGF 2005, p. 16). Season of burning, intensity of the fire, and frequency of fire likely determine the magnitude of the fire's effects on Pecos assimineia population persistence and abundance (NMDGF 2005, p. 16), as the species has been found to persist in areas following fires (Lang 2002, p. B8). Pecos assimineia is relatively vulnerable to fires because the assimineia resides at or near the surface of the water.

In summary, special management efforts are needed to correctly plan prescribed fires in order to protect habitats of the four invertebrates from the potential effects of wildfire.

Introduced Species

Introduced species are one of the most serious threats to native aquatic species (Williams *et al.* 1989, p. 18; Lodge *et al.* 2000, p. 7). Because the distribution of the four invertebrates is so limited, and their habitat so restricted, introduction of certain nonnative species into their habitat could be devastating. Several

invasive terrestrial plant species that may affect the invertebrates are present on the Refuge, including *Tamarix* spp. (saltcedar), common reed, and *Salsola* spp. (Russian thistle). Saltcedar, found on the Refuge and at Diamond Y Spring Complex and East Sandia Spring, threatens spring habitats primarily through the amount of water it consumes and from the chemical composition of the leaves that drop to the ground and into the springs. Saltcedar leaves that fall to the ground and into the water add salt to the system, as their leaves contain salt glands (DiTomaso 1998, p. 333). Additionally, dense stands of common reed choke the stream channel, slowing water velocity and creating more pool-like habitat; this habitat is less suitable for Roswell and Koster's springsnails, which prefer flowing water. Finally, Russian thistle (tumbleweed) can create problems in spring systems by being blown into the channel, slowing flow and overloading the system with organic material (Service 2005b, p. 2). In one case, even efforts to control nonnative vegetation by physical removal of the plants inadvertently caused local extirpations of populations of Pecos assimineia in New Mexico due to vegetation removal that resulted in soil and litter drying, thereby making the habitat unsuitable (Taylor 1987, p. 9; NMDGF 2005, p. 16).

Nonnative mollusks have affected the distribution and abundance of native mollusks in the United States. Of particular concern for three of the invertebrates (Noel's amphipod, Roswell springsnail, and Koster's springsnail) is the red-rim melania (*Melanoidea tuberculata*), a snail that can reach tremendous population sizes and has been found in isolated springs in the west. The red-rim melania has caused the decline and local extirpation of native snail species, and it is considered a threat to endemic aquatic snails that occupy springs and streams in the Bonneville Basin of Utah (Rader *et al.* 2003, p. 655). It is easily transported on fishing boats and gear or aquatic plants, and because it reproduces asexually (individuals can develop from unfertilized eggs), a single individual is capable of founding a new population. It has become established in isolated desert spring ecosystems such as Ash Meadows, Nevada, and Cuatro Ciénegas, Mexico, and in the 1990s, the red-rim melania became established in Diamond Y Springs Complex (Echelle 2001, p. 18). It has become the most abundant snail in the upper watercourse of the Diamond Y Springs Complex (Echelle 2001, p. 14). In many locations, this

exotic snail is so numerous that it essentially is the substrate in the small stream channel. The effect the species is having on native snails is not known; however, it probably has less effect on Pecos assiminea than on the other endemic aquatic snails present in the spring because it is aquatic.

In summary, special management efforts are needed to protect the four invertebrates from the potential effects of invasive, nonnative terrestrial plants and invasive, nonnative snails.

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 which areas should be designated as critical habitat for the four invertebrates. We relied on information from knowledgeable biologists and recommendations contained in State wildlife resource reports (Cole 1985, p. 102; Jones and Balleau 1996, pp. 1–16; Boghici 1997, pp. 1–120; Balleau *et al.* 1999, pp. 1–42; NMDGF 1999, pp. A1–B46; NMDGF 2006b, pp. 1–16; NMDGF 2007, pp. 1–20; NMDGF 2008, pp. 1–28) and the State recovery plan (NMDGF 2005, pp. 1–80) in making this determination. We also reviewed the available literature pertaining to habitat requirements, historical localities, and current localities for these species. This includes data submitted during section 7 consultations and regional geographic information system (GIS) coverages.

In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we considered whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—is necessary to ensure the conservation of the species. In revising critical habitat for the Pecos assiminea, and designating critical habitat for Roswell springsnail, Koster's springsnail, and Noel's amphipod, we selected areas within the geographical area occupied at the time of listing that contain the features essential to their conservation that may require special management considerations or protection. We also considered areas outside of the geographical area occupied at the time of listing to designate critical habitat for the four invertebrates, if the areas were considered essential to the conservation of the species.

Occupancy

We consider an area to be occupied at the time of listing if Roswell springsnail, Koster's springsnail, Pecos assiminea, or Noel's amphipod were found to be present by species experts within 5

years of the listing in 2005, and no major habitat modification has occurred that would preclude their presence. Five years is an appropriate time period because surveys may not occur in all areas in all years. The species would be likely to persist in an area over multiple years unless major habitat modification occurred. We are designating as critical habitat all sites occupied by at least one of the four invertebrates at the time of listing because all of these areas contain the physical and biological features essential for the conservation of the species and require special management.

Since the June 22, 2010, critical habitat proposal (75 FR 35375), we identified an additional site along the Rio Hondo on the South Tract of the Refuge that is occupied only by Noel's amphipod. We believe this site was occupied by Noel's amphipod at the time of listing because amphipods were first found at this site in 2006, one year after listing (Warrick 2006, p. 1). However, they were not taxonomically confirmed to be Noel's amphipod until 2010 (Berg 2010, p. 1; Lang 2010, p. 1). Because this spring area is isolated from other occupied areas and no reintroduction efforts have taken place, it has likely been occupied for a very long time, but appropriate surveys had not been previously conducted to verify it. We reasonably assume, therefore, that the site was occupied at the time of listing in 2005.

Essential Areas

For areas not occupied by the species at the time of listing, the Service must demonstrate that these areas are essential to the conservation of the species in order to include them in a critical habitat designation.

There are several locations within the historical range of the four invertebrates where the species no longer occur and that were not occupied at the time of listing. These areas include the South Spring River, Lander Springbrook, Berrendo Spring, and North Spring in New Mexico. These areas no longer contain the physical and biological features to support any of the four invertebrates. South Spring and Lander Spring are both dry due to aquifer depletion (Cole 1981, p. 27; Jones and Balleau 1996, p. 5), and reaches of Berrendo Creek (the springbrook from Berrendo Spring) remain dry and unable to support the invertebrates (NMDGF 2005, p. 18). North Spring, located on the grounds of the Roswell Country Club, was enclosed by a brick wall, native vegetation was removed from the margins of the springhead and springbrook, and the banks were sodded

(Cole 1988, p. 2; NMDGF 2005, p. 18). The brick wall at North Spring has since been removed and the spring outflow has been widened, allowing a nearby pond to back into the spring, introducing carp to the system (B. Lang, NMDGF, pers. comm., 2010). Springsnails have not been found at North Spring since 1995, and suitable habitat is not present there.

Because these formerly occupied sites have been so severely impacted in the past (particularly due to the decline of groundwater and subsequent loss of spring flows), it is not likely that they could be rehabilitated in the future or be restored to contain the physical and biological features necessary to support habitat for the four invertebrates. This is because there are currently no mechanisms to restore the spring flow to these historic sites. As a result, these areas are unlikely to contribute to the recovery of the species and are not considered essential to the conservation of the species. Therefore, they are not included in the designation of critical habitat. In addition, the four invertebrates currently exist throughout their ranges in a spatial arrangement that provides sufficient areas for their long-term conservation. Therefore, we are not currently designating any areas outside the geographical area presently occupied by the species, because the unoccupied areas within the historic range are not restorable and the occupied areas are sufficient for the conservation of the species.

Summary

When determining revised critical habitat boundaries within this rule, we made every effort to avoid including structures such as culverts and roads, because areas with such structures lack PCEs for Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assiminea. 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 areas. Any such structures inadvertently left inside critical habitat boundaries shown on the maps of this final rule are excluded from this rule by text and are not designated as critical habitat. Therefore, Federal actions involving these areas would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the PCEs in the adjacent critical habitat.

We are designating as critical habitat lands that we have determined are occupied at the time of listing and contain sufficient physical and biological features to support life-

history processes essential for the conservation of the species and may require special management. All of the critical habitat units are designated based on the finding that they contain all of the essential physical and biological features necessary to support the life processes of one or more of the four invertebrates.

The Act's definition of critical habitat includes a provision that except under circumstances determined by the Secretary, critical habitat shall not include the entire geographic area which can be occupied by the species (section 3(5)(C)). We have designated as critical habitat all of the areas that are currently occupied by one or more of the four invertebrates. All of these areas are needed for the conservation of these species because of their small geographic ranges and to maintain genetic diversity. Conserving multiple

populations of rare species, such as the four invertebrates, lowers the risk of extinction due to an event that negatively affects one population. In addition, the four invertebrates are not migratory, nor is there regular gene exchange between populations or critical habitat units. As a result, all of the currently occupied areas are important to the conservation of the species because they allow for the maintenance of the existing genetic diversity of the four invertebrates. The areas we have designated meet the definition of critical habitat for the four invertebrates and include all populations necessary for conserving the species and maintaining all of the known remaining genetic diversity within each species. Therefore, these circumstances support designating all of the currently occupied habitat.

Final Critical Habitat Designation

We are designating approximately 70.2 ac (28.4 ha) in two units in New Mexico as critical habitat for the Roswell springsnail and Koster's springsnail (Table 1). We are designating approximately 75.9 ac (30.7 ha) in three units in New Mexico as critical habitat for Noel's amphipod (Table 2). We are designating approximately 494.7 ac (200.2 ha) in four units in New Mexico and Texas as critical habitat for the Pecos assiminea (Table 3). The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for each of the four invertebrates. All areas being designated as critical habitat were occupied at the time of listing and are currently occupied by at least one of the four invertebrates.

TABLE 1—DESIGNATED CRITICAL HABITAT FOR ROSWELL SPRINGSNAIL AND KOSTER'S SPRINGSNAIL

[Area estimates reflect all land within critical habitat unit boundaries]

Critical habitat unit	Land ownership	Size of unit in acres (hectares)
1. Sago/Bitter Creek Complex	Service	31.9 (12.9)
2a. Springsnail/Amphipod Impoundment Complex	Service	35.5 (14.3)
	City of Roswell	2.8 (1.1)
Total		70.2 (28.4)

Note: Area sizes may not sum due to rounding.

TABLE 2—DESIGNATED CRITICAL HABITAT FOR NOEL'S AMPHIPOD

[Area estimates reflect all land within critical habitat unit boundaries]

Critical habitat unit	Land ownership	Size of unit in acres (hectares)
1. Sago/Bitter Creek Complex	Service	31.9 (12.9)
2a. Springsnail/Amphipod Impoundment Complex	Service	35.5 (14.3)
	City of Roswell	2.8 (1.1)
3. Rio Hondo	Service	5.8 (2.3)
Total		75.9 (30.7)

Note: Area sizes may not sum due to rounding.

TABLE 3—REVISED CRITICAL HABITAT UNITS FOR PECOS ASSIMINEA

[Area estimates reflect all land within critical habitat unit boundaries]

Critical habitat unit	Land ownership	Size of unit in acres (hectares)
1. Sago/Bitter Creek Complex	Service	31.9 (12.9)
2b. Assiminea Impoundment Complex	Service	15.5 (6.3)
	City of Roswell	2.8 (1.1)
4. Diamond Y Springs Complex	The Nature Conservancy	441.4 (178.6)
5. East Sandia Spring	The Nature Conservancy	3.0 (1.2)
Total		494.7 (200.2)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of the units and reasons why the critical habitat units meet the definition of critical habitat for the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assiminea below.

Unit 1: Sago/Bitter Creek Complex

Unit 1 consists of 31.9 ac (12.9 ha) of habitat that was occupied by all four invertebrates at the time of listing and that remains occupied at the present time. We designate this unit as critical habitat for all four species; it contains all of the physical and biological features essential to the conservation of these species. Unit 1 is located on the northern portion of the Middle Tract of Bitter Lake National Wildlife Refuge, Chaves County, New Mexico. The designation includes all springs, seeps, sinkholes, and outflows surrounding Bitter Creek and the Sago Springs complex. Habitat in this unit is in need of special management because of threats by subsurface oil and gas drilling or similar activities that contaminate surface drainage or aquifer water; wildfire; and nonnative fish, crayfish, snails, and vegetation. Therefore, the essential physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these threats. The entire unit is owned by the Service.

Unit 2a: Springsnail/Amphipod Impoundment Complex

Unit 2a consists of 38.3 ac (15.5 ha) of habitat that was occupied by three of the four invertebrates at the time of listing and that remains occupied at the present time. We designate this unit as critical habitat for Roswell springsnail, Koster's springsnail, and Noel's amphipod; it contains all of the physical and biological features essential to the conservation of these species. Unit 2a is located on the southern portion of the Middle Tract of Bitter Lake National Wildlife Refuge and on property owned by the City of Roswell, Chaves County, New Mexico. This unit includes portions of impoundments 3, 6, 7, and 15, and Hunter Marsh. The designation includes all springs, seeps, sinkholes, and outflows surrounding the Refuge impoundments. Habitat in this unit is threatened by subsurface drilling for oil and gas or similar activities that contaminate surface drainage or aquifer water; wildfire; and nonnative fish, crayfish, snails, and vegetation. Therefore, the essential physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these

threats. Land ownership in this unit includes the Service and the City of Roswell, New Mexico.

Unit 2b: Assiminea Impoundment Complex

Unit 2b consists of 18.4 ac (7.4 ha) of habitat that was occupied by the Pecos assiminea at the time of listing and that remains occupied at the present time. We designate this unit as critical habitat for Pecos assiminea; it contains all of the features essential to the conservation of this species. Unit 2b is located on the southern portion of the Middle Tract of Bitter Lake National Wildlife Refuge and on property owned by the city of Roswell, Chaves County, New Mexico. This unit includes portions of impoundments 7 and 15, and Hunter Marsh. The designation includes all springs, seeps, sinkholes, and outflows surrounding the Refuge impoundments. Habitat in this unit is threatened by subsurface drilling for oil and gas or similar activities that contaminate surface drainage or aquifer water; wildfire; and nonnative fish, crayfish, snails, and vegetation. Therefore, the essential physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these threats. Land ownership in this unit includes the Service and the City of Roswell, New Mexico.

Unit 3: Rio Hondo

Unit 3 consists of 5.8 ac (2.3 ha) of habitat that is currently occupied by Noel's amphipod. We designate this unit as critical habitat for Noel's amphipod only. It contains all of the features essential to the conservation of this species. We consider this site to be occupied by Noel's amphipod at the time of listing. Although the amphipods were first found at this site in 2006, one year after listing (Warrick 2006, p. 1), they were taxonomically confirmed to be Noel's amphipod in 2010 (Berg 2010, p. 1; Lang 2010, p. 1). Unit 3 is located on the South Tract of Bitter Lake National Wildlife Refuge, Chaves County, New Mexico. The designation includes all springs and seeps along approximately 0.4 mi (0.64 km) of the Rio Hondo, including the river channel and both banks. Habitat in this unit is threatened by subsurface drilling for oil and gas or similar activities that contaminate surface drainage or aquifer water; nonnative fish, crayfish, snails, and vegetation; chemical fertilizers and pesticides applied to adjacent farmland; contaminants in the Rio Hondo from upstream of the amphipod populations; and fire. Therefore, the essential

physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these threats. The entire unit is owned by the Service.

Unit 4: Diamond Y Springs Complex

Unit 4 consists of 441.4 ac (178.6 ha) of habitat that is currently occupied by Pecos assiminea. We designate this unit for Pecos assiminea only. This unit contains all of the features essential to the conservation of the Pecos assiminea and was occupied by this species at the time of listing. The designation includes the Diamond Y Spring and approximately 4.2 mi (6.8 km) of its outflow, ending at approximately 0.5 mi (0.8 km) downstream of the State Highway 18 bridge crossing. Also included in this unit is approximately 0.5 mi (0.8 km) of Leon Creek upstream of the confluence with Diamond Y Draw. All surrounding riparian vegetation and mesic (wet) soil environments within the spring, outflow, and portion of Leon Creek are also designated, as these areas are considered habitat for the Pecos assiminea. This designation is approximately 441.4 ac (178.6 ha) of aquatic and neighboring mesic habitat. Habitat in this unit is threatened by increased groundwater pumping; subsurface drilling for oil and gas or similar activities that contaminate surface drainage or aquifer water; wildfire; and nonnative fish, crayfish, snails, and vegetation. Therefore, the essential physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these threats. This unit occurs entirely on private lands managed as a nature preserve by The Nature Conservancy.

Unit 5: East Sandia Spring

Unit 5 consists of 3.0 ac (1.2 ha) of aquatic and mesic habitat that is currently occupied by Pecos assiminea. We designate this unit for Pecos assiminea only. This unit contains all of the features essential to the conservation of the Pecos assiminea and was occupied by this species at the time of listing. East Sandia Spring is at the base of the Davis Mountains just east of Balmorhea, Texas, and is part of the San Solomon-Balmorhea Spring Complex, the largest remaining desert spring system in Texas where the Pecos assiminea is found. The designation includes the springhead itself, surrounding seeps, and all submergent vegetation and moist soil habitat found at the margins of these areas, comprising

the physical and biological features for the Pecos assimineae. Habitat in this unit is threatened by increased groundwater pumping; wildfire; and nonnative fish, crayfish, snails, and vegetation. Therefore, the essential physical and biological features in this unit may require special management considerations or protection to minimize impacts resulting from these threats. This unit occurs entirely on private lands managed as a nature preserve by The Nature Conservancy. Our previous designation of critical habitat for the Pecos assimineae (70 FR 46304, August 9, 2005) included 16.5 ac (6.7 ha) of critical habitat in this unit. Updated GIS techniques have allowed us to more closely map the wetlands, springs, and seeps in this area, resulting in fewer acres proposed for critical habitat, and 3.0 ac (1.2 ha) are being designated in this rule.

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, or retain those physical and biological features that relate to the ability of the area to periodically support the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineae. As discussed above, the role of critical habitat is to support the 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.

Examples of activities that, when authorized, funded, or carried out by a Federal agency, may affect critical habitat and therefore should result in section 7 consultation for the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineae include, but are not limited to:

- (1) Actions that would contaminate or cause significant degradation of habitat occupied by these species, including surface drainage water or aquifer water quality. Such activities could include, but are not limited to, the use of chemical insecticides or herbicides that results in killing or injuring these species; subsurface drilling or similar activities within the 12,585-ac (5,093-ha) Federal mineral estate and 9,945-ac (4,025-ha) habitat protection zone in New Mexico (Balleau *et al.* 1999, p. 3;

BLM 2002, p. 1) that contaminate or cause significant degradation of water quality in surface or aquifer waters supporting the habitat occupied by these species; septic tank placement and use where the groundwater is connected to sinkhole or other aquatic habitats occupied by these species; and unauthorized discharges or dumping of toxic chemicals or other pollutants into the areas supporting the four invertebrates. These activities could alter water conditions to levels that are beyond the tolerances of the invertebrates and result in degradation of their occupied habitat to an extent that individuals are killed or injured or essential behaviors such as breeding, feeding, and sheltering are impaired.

(2) Actions that would destroy or alter habitat for the four invertebrates. Such activities could include, but are not limited to, discharging fill material into occupied sites, draining, ditching, tilling, channelizing, drilling, pumping, or other activities that interrupt surface or groundwater flow into or out of the spring complexes and occupied habitats of these species. These activities could result in significant impairment of essential life-sustaining requirements such as breeding, feeding, and sheltering.

(3) Actions that would introduce nonnative species into occupied habitats for the four invertebrates. Potential nonnative species include, but are not limited to, mosquitofish, crayfish, nonnative snails, or vegetation. These nonnative species compete for scarce resources and some may predate upon the four invertebrates.

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:

- An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- A statement of goals and priorities;
- A detailed description of management actions to be implemented to provide for these ecological needs; and

- 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 within the areas we are designating as critical habitat for the four invertebrates; therefore, we are not exempting lands from this final designation of critical habitat for the four invertebrates pursuant to 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 shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

Under section 4(b)(2) of the Act, the Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts.

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate 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.

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, which we made available for public review on June 22, 2010 (75 FR 35375), based on the proposed rule published concurrently. We accepted comments on the draft analysis until August 23, 2010. We again accepted comments on the updated draft economic analysis from February 17, 2011, to March 21, 2011 (76 FR 9297). Following the close of the comment periods, a final analysis of the potential economic effects of the designation was completed in April 2011 taking into consideration the public comments and any new information.

The intent of the final economic analysis (FEA) is to quantify the economic impacts of all potential conservation efforts for the four invertebrates; some of these costs will likely be incurred regardless of whether 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 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 looks retrospectively at costs that have been incurred since 2005 when the four invertebrates were listed (70 FR 46304), and considers those costs that may occur in the 20 years following the designation of critical habitat, which was determined to be the appropriate period for analysis because limited planning information was available for most activities to forecast activity levels for projects beyond a 20-year timeframe.

The FEA quantifies economic impacts of conservation efforts for the four invertebrates associated with the following categories of activity:

(1) Project modifications made by oil and gas developers, consistent with requirements under the BLM Habitat Protection Zone;

(2) Habitat management costs incurred by the Service, the New Mexico Department of Game and Fish, and The Nature Conservancy; and

(3) Potential lost farm income due to prohibition of chemical spraying within critical habitat and a buffer.

Because all of the critical habitat we are designating is currently occupied by the species, ongoing project modifications and conservation measures are already required to satisfy the jeopardy standard. In addition, most of the critical habitat we are designating is already held in conservation status, and the small portion of critical habitat owned by the City of Roswell has already been designated as critical habitat for the Pecos sunflower (*Helianthus paradoxus*) and is unsuitable for development due to presence of wetlands. Habitat management costs are attributable to existing conservation agreements and

are therefore also classified as baseline costs (i.e., these costs will be incurred even if critical habitat designation does not occur). Finally, most section 7 consultations would be pursued in the absence of critical habitat. To the extent that incremental costs are incurred in the context of a section 7 consultation regarding the species, they will be borne by public agencies rather than private entities. Because of these factors, there were few actual incremental costs of this rulemaking. Incremental costs are those costs expected to be incurred as a result of critical habitat designation for the four invertebrates. The FEA found the overall annualized incremental costs associated with the designation of critical habitat for the four invertebrates are estimated to be approximately \$6,420. These costs derive from the added effort associated with considering adverse modification in the context of section 7 consultation.

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation. Consequently, the Secretary is not exerting his discretion to exclude any areas from this designation of critical habitat for the four invertebrates based on economic impacts. A copy of the final economic analysis with supporting documents may be obtained by contacting the New Mexico Ecological Services Field Office (see **ADDRESSES**) or for 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 final rule, we have determined that the lands within the designation of critical habitat for Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia are not owned or managed by the DOD, and therefore, we anticipate no impact to national security. We are aware that there are DOD lands (managed by New Mexico Air National Guard) in the vicinity of the Refuge, east of the Pecos River, but our designation does not include these lands, and the designation will have no affect on the operations or land management of these lands. Therefore, we anticipate no impact to national security, and the Secretary is not exerting his discretion to exclude any areas from this final designation based on impacts on 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 on national security. We consider a number of factors including whether the landowners have developed any habitat conservation plans (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.

In preparing this final rule, we have determined that there are currently no HCPs for the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia, and the final designation does not include any tribal lands or trust resources. We anticipate no impact to tribal lands, partnerships, or HCPs from this critical habitat designation. In addition, we considered other relevant impacts during preparation of the environmental assessment pursuant to the National Environmental Policy Act (see Required Determinations, *National Environmental Policy Act* below) and found no other significant impacts that would warrant our consideration for excluding any areas from critical habitat designation. Accordingly, the Secretary is not exercising his discretion to exclude any areas from this final designation based on other relevant impacts.

Editorial Changes

When we listed Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia as endangered species on August 9, 2005 (70 FR 46304), we neglected to insert the appropriate date code in the "When listed" column of the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h). Further, information we had intended to display in the "Critical habitat" column was misplaced under the "When listed" column, and information intended for the "Special rules" column was misplaced under the "Critical habitat" column. This final rule corrects these errors. This change is purely editorial; it does not affect the substance of the listing rule.

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. 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

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 the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended 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 Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia 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, 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 to 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 businesses affected within particular types of economic activities. We considered potential effects to 936 small businesses in the FEA. 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 Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia. 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 four invertebrates and the designation of critical habitat. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 3 through 5 and Appendix A of the analysis and evaluates the potential for economic impacts. Activities anticipated occurring within the next 20 years within or adjacent to the critical habitat we are designating for the four invertebrates that potentially affect small businesses include: oil and gas production; irrigated agricultural production; and livestock operations.

We determined from our analysis (Appendix A in FEA) that there will be minimal additional economic impacts to small entities resulting from the designation of critical habitat, because almost all of the potential costs of modification of activities and conservation identified in the economic analysis represent baseline costs that would be realized in the absence of critical habitat. The economic analysis estimates the overall annual incremental costs associated with the designation of critical habitat for the four invertebrates to be very modest, at approximately \$6,420. All of these costs would derive from the added effort associated with considering adverse modification in the context of section 7 consultations.

In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on our analysis 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 Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia 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. 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. The final economic analysis (Appendix A.2) finds that none of these criteria are relevant to this analysis because any potential effects on oil and natural gas operations will be very small and not approach the threshold for a significant adverse effect. Thus, based on information in the economic analysis, energy-related impacts associated with Roswell springsnail, Koster’s springsnail, Noel’s amphipod, and Pecos assiminea 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

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) This rule will not significantly or uniquely affect small governments. The public lands we are designating as critical habitat are owned by the City of Roswell and the Service. Small governments, such as the City of Roswell, will be affected only to the extent that any programs having Federal funds, permits, or other authorized activities must ensure that their actions will not adversely affect the critical habitat. As discussed above and in our environmental assessment, the areas owned by the City of Roswell that are being designated as critical habitat for the four invertebrates have already been designated as critical habitat for the Pecos sunflower and are unsuitable for development because of the presence of wetlands. In addition, we do not anticipate significant effects to the City of Roswell’s wastewater treatment plant from designation of the Rio Hondo unit. Therefore, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the

Roswell springsnail, Koster’s springsnail, Noel’s amphipod, and Pecos assiminea in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for the four invertebrates does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A Federalism assessment 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 New Mexico and Texas. We received comments from NMDGF 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 Roswell springsnail, Koster’s springsnail, Noel’s amphipod, and Pecos assiminea imposes no additional restrictions to those currently in place and, therefore, has 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 and biological features essential to the conservation of the species are more clearly defined, and 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) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the

legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the regulation 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 and biological features essential to the conservation of the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia 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 (NEPA) (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 as defined by 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 the Roswell springsnail, Koster's springsnail, Noel's amphipod, and Pecos assimineia, under the Tenth Circuit ruling in *Catron County Board of Commissioners v. U.S. Fish and Wildlife Service*, 75 F.3d 1429 (10th Cir. 1996), we undertake a NEPA analysis for critical habitat designation and notify the public of the availability

of the draft environmental assessment for the proposal when it is finished.

We performed the NEPA analysis and drafts of the environmental assessment were available for public comment on June 22, 2010 (75 FR 35375), and February 17, 2011 (76 FR 9297). The final environmental assessment has been completed and is available for review with the publication of this final rule. You may obtain a copy of the final environmental assessment online at <http://www.regulations.gov>, by mail from the New Mexico Ecological Services Field Office (see **ADDRESSES**), or by visiting our Web site at <http://www.fws.gov/southwest/es/NewMexico/>.

The final environmental assessment included a detailed analysis of the potential effects of the critical habitat designation on resource categories, including: Water resources; oil and gas; land management; livestock grazing and dairy operation; Roswell wastewater treatment facility; recreation; socioeconomic conditions and environmental justice; and the cumulative effects. The scope of the effects were primarily limited to those activities involving Federal actions, because critical habitat designation does not have any impact on the environment other than through the ESA section 7 consultation process conducted for Federal actions. Private actions that have no Federal involvement are not affected by critical habitat designation.

Based on the review and evaluation of the information contained in the environmental assessment, we determined that the designation of critical habitat for the four invertebrates does not constitute a major Federal action having a significant impact on the human environment under the meaning of section 102(2)(c) of NEPA.

Pursuant to the Council on Environmental Quality regulations for implementing NEPA, preparation of an environmental impact statement is required if an action is determined to significantly affect the quality of the human environment (40 CFR § 1502.3). Significance is determined by analyzing the context and intensity of a proposed action (40 CFR 1508.27). Context refers to the setting of the proposed action and includes consideration of the affected region, affected interests, and locality (40 CFR 1508.27[a]). The context of both short- and long-term effects of proposed designation of critical habitat are the proposed critical habitat units in Chaves County, New Mexico, and Pecos and Reeves Counties, Texas, totaling about 521 acres (211 ha), and the surrounding areas. The effects of proposed critical habitat designation at this scale, although long-term, would be small.

Intensity refers to the severity of an impact and is evaluated by considering ten factors (40 CFR 1508.27[b]).

The intensity of potential impacts that may result from designation of critical habitat for the four invertebrates under the proposed action is considered low. This conclusion is reached based on the following findings in the environmental assessment:

(1) The potential impacts may be both beneficial and adverse, but minor.

(2) There would be no effects to public health or safety from proposed designation of critical habitat.

(3) The proposed action may provide a small benefit to wetlands and ecologically critical areas, and would not affect other unique characteristics of the geographic area.

(4) Potential impacts from critical habitat designation on the quality of the environment are unlikely to be highly controversial.

(5) Potential impacts from critical habitat do not involve a high degree of uncertainty or unique or unknown risks.

(6) Proposed designation of critical habitat for the four invertebrate species does not set a precedent for future actions with significant effects.

(7) Proposed designation of critical habitat would not result in significant cumulative impacts.

(8) Significant cultural, historical, or scientific resources are not likely to be affected by proposed designation of critical habitat.

(9) Critical habitat designation may have a beneficial effect on the four invertebrates.

(10) Critical habitat designation would not violate any Federal, state, or local laws or requirements imposed for the protection of the environment.

The effects of proposed critical habitat designation at this scale, although long-term, would be small. Therefore, we found that the proposed designation will not significantly affect the quality of the human environment and an environmental impact statement is not required.

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), E.O. 13175, 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 at the time of listing that contain the features essential for the conservation, and no unoccupied Tribal lands that are essential for the conservation of the Roswell springsnail, Koster’s springsnail, Noel’s amphipod, and Pecos assiminea. Therefore, we are not designating critical habitat for the four invertebrates on Tribal lands.

References Cited

A complete list of references cited is available on the Internet at <http://www.regulations.gov> and upon request from the New Mexico Ecological Services Field Office (see ADDRESSES).

Authors

The primary authors of this package are the staff members of the New Mexico 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—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

Authority: 16 U.S.C. 1361–1407; 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 entries for:

■ a. “Pecos assiminea”, “Springsnail, Koster’s”, and “Springsnail, Roswell” under SNAILS; and

■ b. “Amphipod, Noel’s” under CRUSTACEANS, 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						
*	*	*	*	*	*	*	
SNAILS							
*	*	*	*	*	*	*	
Pecos assiminea	<i>Assiminea pecos</i>	U.S.A. (NM, TX)	NA	E	770	17.95(f)	NA
*	*	*	*	*	*	*	
<i>Springsnail, Koster’s</i>	<i>Juturnia kosteri</i>	U.S.A. (NM)	NA	E	770	17.95(f)	NA
<i>Springsnail, Roswell</i>	<i>Pyrgulopsis roswellensis</i> .	U.S.A. (NM)	NA	E	770	17.95(f)	NA
*	*	*	*	*	*	*	
CRUSTACEANS							
*	*	*	*	*	*	*	
Amphipod, Noel’s	<i>Gammarus desperatus</i> .	U.S.A. (NM)	NA	E	770	17.95(h)	NA
*	*	*	*	*	*	*	

■ 2. Amend § 17.95 by:

■ a. In paragraph (f), revising the entry for “Pecos Assiminea (*Assiminea pecos*)” and adding an entry for “Koster’s springsnail (*Juturnia kosteri*) and Roswell springsnail (*Pyrgulopsis roswellensis*)” in the same alphabetical order that those species appear in the table at 50 CFR 17.11(h), to read as follows; and

■ b. In paragraph (h), adding an entry for “Noel’s amphipod (*Gammarus desperatus*)” in the same alphabetical order that the species appears in the

table at 50 CFR 17.11(h), to read as follows.

§ 17.95 Critical habitat—fish and wildlife.

* * * * *
(f) *Clams and Snails*.
* * * * *

Pecos Assiminea (*Assiminea Pecos*)

(1) Critical habitat units are depicted for Chaves County, New Mexico, and Pecos and Reeves Counties, Texas, on the maps below.

(2) The primary constituent element of critical habitat for the Pecos

assiminea is moist or saturated soil at stream or spring run margins:

- (i) That consists of wet mud or occurs beneath mats of vegetation;
- (ii) That is within 1 inch (2 to 3 centimeters) of flowing water;
- (iii) That has native wetland plant species, such as salt grass or sedges, that provide leaf litter, shade, cover, and appropriate microhabitat;
- (iv) That contains wetland vegetation adjacent to spring complexes that supports the algae, detritus, and bacteria needed for foraging; and
- (v) That has adjacent spring complexes with:

(A) Permanent, flowing, fresh to moderately saline water with no or no more than low levels of pollutants; and

(B) Stable water levels with natural diurnal and seasonal variations.

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

(4) *Critical habitat map units.* Data layers defining map units were created on a base of USGS 1:24,000 maps, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) coordinates.

(5) Unit 1: Sago/Bitter Creek Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

(A) 553337, 3705095; 553357, 3705102; 553360, 3705067; 553371, 3705041; 553420, 3705010; 553433, 3704982; 553482, 3704987; 553499, 3704955; 553437, 3704946; 553424, 3704909; 553401, 3704883; 553340, 3704906; 553319, 3704879; 553266, 3704869; 553274, 3704816; 553240, 3704797; 553240, 3704623; 553306, 3704532; 553300, 3704419; 553280, 3704354; 553287, 3704287; 553338, 3704221; 553438, 3704145; 553459,

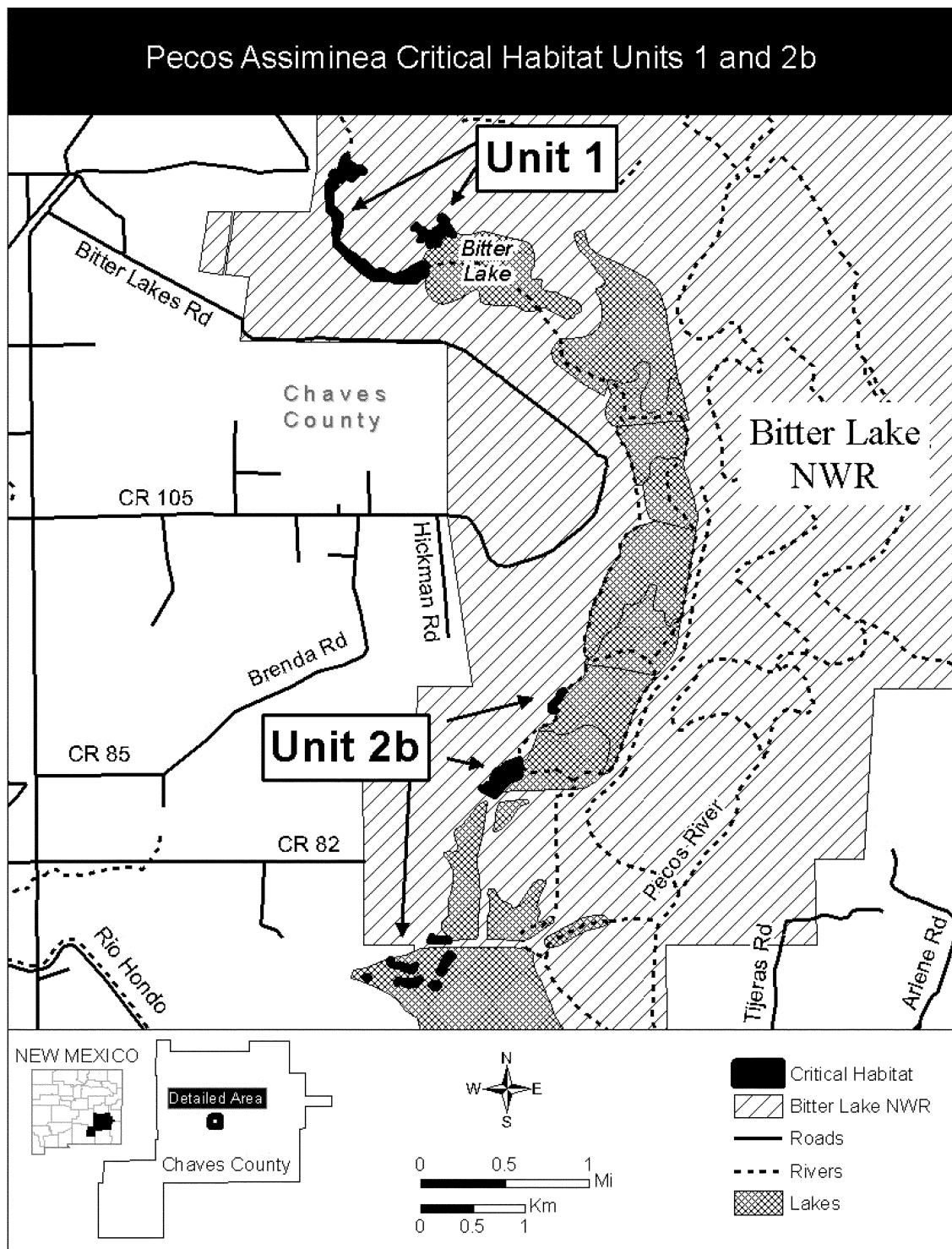
3704108; 553499, 3704091; 553533, 3704059; 553559, 3704024; 553588, 3704004; 553650, 3704024; 553655, 3704014; 553654, 3703981; 553699, 3703983; 553745, 3703960; 553775, 3703978; 553799, 3703979; 553828, 3704003; 553859, 3704016; 553871, 3704037; 553907, 3704053; 553938, 3704074; 553964, 3704078; 553983, 3704080; 553993, 3703978; 553939, 3703960; 553917, 3703914; 553903, 3703927; 553758, 3703909; 553710, 3703936; 553656, 3703932; 553567, 3703940; 553484, 3704010; 553426, 3704085; 553396, 3704109; 553357, 3704150; 553270, 3704273; 553271, 3704299; 553270, 3704344; 553255, 3704398; 553274, 3704444; 553254, 3704540; 553218, 3704577; 553197, 3704824; 553205, 3704843; 553246, 3704885; 553233, 3704911; 553238, 3704941; 553265, 3704950; 553294, 3704941; 553312, 3705045; 553337, 3705095.

(B) 553906, 3704450; 553915, 3704455; 553920, 3704452; 553917, 3704438; 553926, 3704432; 553935, 3704420; 553957, 3704404; 553965, 3704405; 553974, 3704406; 553985, 3704388; 553993, 3704387; 554019, 3704376; 554037, 3704362; 554045, 3704389; 554060, 3704406; 554083, 3704416; 554085, 3704429; 554110, 3704452; 554132, 3704457; 554121, 3704474; 554106, 3704494; 554102,

3704531; 554119, 3704531; 554135, 3704523; 554144, 3704510; 554157, 3704481; 554154, 3704460; 554174, 3704431; 554192, 3704393; 554210, 3704366; 554216, 3704346; 554190, 3704357; 554174, 3704365; 554166, 3704375; 554159, 3704395; 554146, 3704394; 554126, 3704391; 554117, 3704384; 554123, 3704364; 554119, 3704346; 554105, 3704337; 554091, 3704312; 554097, 3704289; 554094, 3704269; 554084, 3704261; 554059, 3704273; 554052, 3704260; 554034, 3704259; 554022, 3704248; 554005, 3704272; 554024, 3704293; 554040, 3704300; 554041, 3704321; 554016, 3704332; 554006, 3704317; 553974, 3704323; 553963, 3704324; 553963, 3704316; 553966, 3704314; 553961, 3704302; 553949, 3704302; 553936, 3704302; 553934, 3704311; 553946, 3704321; 553952, 3704323; 553946, 3704332; 553946, 3704353; 553958, 3704373; 553964, 3704381; 553958, 3704392; 553946, 3704391; 553938, 3704396; 553934, 3704394; 553930, 3704397; 553930, 3704409; 553924, 3704409; 553906, 3704413; 553902, 3704424; 553894, 3704419; 553885, 3704419; 553898, 3704448; 553906, 3704450.

(ii) *Note:* Map of Pecos Assiminea Critical Habitat Units 1 and 2b follows:

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(6) Unit 2b: Assiminea Impoundment Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

(A) 554768, 3699378; 554765, 3699345; 554761, 3699217; 554681, 3699179; 554608, 3699086; 554569, 3699029; 554501, 3699079; 554455, 3699103; 554488, 3699119; 554497, 3699142; 554543, 3699151; 554539, 3699185; 554571, 3699264; 554587, 3699280; 554622, 3699291; 554639, 3699320; 554667, 3699343; 554699, 3699341; 554719, 3699367; 554748, 3699380; 554768, 3699378.

(B) 554053, 3697672; 554064, 3697692; 554077, 3697704; 554085, 3697691; 554078, 3697672; 554215, 3697667; 554216, 3697653; 554045, 3697649; 554053, 3697672.

(C) 554223, 3697539; 554247, 3697505; 554195, 3697448; 554171, 3697394; 554179, 3697365; 554152, 3697343; 554132, 3697360; 554123, 3697373; 554155, 3697405; 554167, 3697472; 554223, 3697539.

(D) 554070, 3697244; 554099, 3697254; 554134, 3697240; 554127, 3697220; 554096, 3697208; 554071, 3697229; 554070, 3697244.

553784, 3697256; 553807, 3697291; 553829, 3697279; 553849, 3697268; 553881, 3697270; 553911, 3697274; 553931, 3697267; 553979, 3697295; 553989, 3697296; 553980, 3697274; 553965, 3697264; 553963, 3697246; 553939, 3697239; 553914, 3697242; 553901, 3697230; 553881, 3697235; 553872, 3697251; 553848, 3697246; 553833, 3697254; 553829, 3697262;

553821, 3697262; 553799, 3697250; 553784, 3697256.

(E) 553928, 3697415; 553935, 3697425; 553952, 3697426; 553941, 3697416; 553940, 3697405; 553942, 3697385; 553927, 3697367; 553852, 3697391; 553833, 3697408; 553822, 3697403; 553766, 3697414; 553739, 3697424; 553735, 3697478; 553747, 3697483; 553764, 3697425; 553795, 3697420; 553820, 3697429; 553849, 3697415; 553880, 3697408; 553905, 3697395; 553921, 3697407; 553928, 3697415.

(F) 553538, 3697315; 553550, 3697308; 553572, 3697322; 553580, 3697314; 553556, 3697287; 553538, 3697302; 553538, 3697315.

(G) 555054, 3699844; 555015, 3699840; 555015, 3699840; 555006, 3699890; 555065, 3699975; 555086, 3700030; 555115, 3700032; 555114, 3700030; 555076, 3699953; 555038, 3699915; 555039, 3699861; 555054, 3699844.

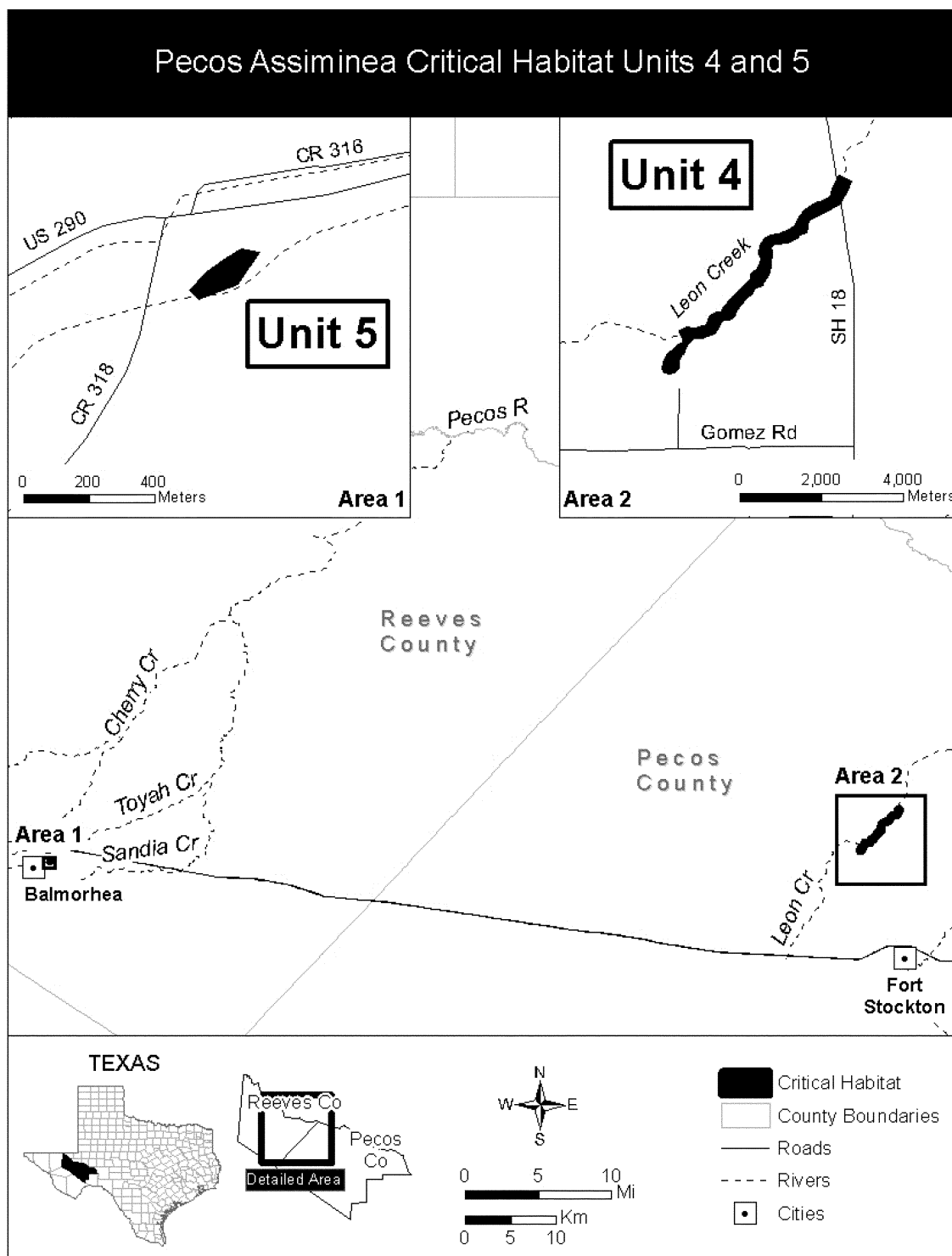
(ii) *Note:* Map of Unit 2b for Pecos assiminea is provided at paragraph (5)(ii) of this entry.

(7) Unit 4: Diamond Y Springs Complex, Pecos County, Texas.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N): 700260, 3434916; 700413, 3434953; 700640, 3435053; 700734, 3435148; 700861, 3435401; 700950, 3435543; 701171, 3435706; 701340, 3435785; 701466, 3435869; 701519, 3436053; 701645, 3436390; 701919, 3436264; 701835, 3435969; 701714, 3435753; 701698, 3435711; 701356, 3435479; 701145, 3435353; 701045, 3435258;

701024, 3435174; 701029, 3435095; 700998, 3434990; 700861, 3434921; 700813, 3434832; 700629, 3434721; 700555, 3434727; 700445, 3434700; 700371, 3434700; 700303, 3434658; 700255, 3434600; 700281, 3434521; 700281, 3434390; 700281, 3434300; 700276, 3434147; 700250, 3433984; 700203, 3433889; 700113, 3433726; 700124, 3433684; 700055, 3433652; 699981, 3433626; 699923, 3433563; 699902, 3433489; 699755, 3433326; 699665, 3433189; 699581, 3433047; 699550, 3432931; 699486, 3432852; 699407, 3432826; 699318, 3432820; 699249, 3432747; 699202, 3432594; 699128, 3432494; 698991, 3432415; 698849, 3432378; 698681, 3432352; 698607, 3432262; 698533, 3432136; 698491, 3431973; 698428, 3431931; 698396, 3431794; 698386, 3431620; 698296, 3431515; 698175, 3431473; 698070, 3431509; 698038, 3431594; 698054, 3431794; 698149, 3431983; 698260, 3432110; 698323, 3432189; 698449, 3432283; 698449, 3432362; 698391, 3432436; 698370, 3432552; 698539, 3432647; 698665, 3432605; 698727, 3432620; 698791, 3432636; 698955, 3432705; 698981, 3432826; 699018, 3432931; 699134, 3433015; 699234, 3433021; 699286, 3433094; 699302, 3433157; 699313, 3433168; 699460, 3433384; 699650, 3433610; 699792, 3433784; 699834, 3433837; 699850, 3433947; 699893, 3434001; 699929, 3434047; 699974, 3434107; 700013, 3434158; 700055, 3434326; 700013, 3434463; 700013, 3434648; 700108, 3434827; 700260, 3434916.

(ii) *Note:* Map of Pecos Assiminea Critical Habitat Units 4 and 5 follows:



(8) Unit 5: East Sandia Spring, Reeves County, Texas.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N): 621217, 3429265; 621262, 3429320; 621304, 3429356; 621352, 3429393; 621397, 3429383; 621397, 3429384; 621398, 3429384; 621342, 3429283; 621240, 3429237; 621217, 3429265.

(ii) Map of Unit 5 for Pecos assiminea is provided at paragraph (7)(ii) of this entry.

* * * * *

Koster's Springsnail (*Juturnia Kosteri*) and Roswell Springsnail (*Pyrgulopsis Roswellensis*)

(1) Critical habitat units are depicted for Chaves County, New Mexico, on the map below.

(2) The primary constituent element of critical habitat for the Koster's springsnail and Roswell springsnail is springs and spring-fed wetland systems that:

(i) Have permanent, flowing water with no or no more than low levels of pollutants;

(ii) Have slow to moderate water velocities;

(iii) Have substrates ranging from deep organic silts to limestone cobble and gypsum;

(iv) Have stable water levels with natural diurnal (daily) and seasonal variations;

(v) Consist of fresh to moderately saline water;

(vi) Vary in temperature between 50–68 °F (10–20 °C) with natural seasonal and diurnal variations slightly above and below that range; and

(vii) Provide abundant food, consisting of:

(A) Algae, bacteria, and decaying organic material; and

(B) Submergent vegetation that contributes the necessary nutrients, detritus, and bacteria on which these species forage.

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

(4) *Critical habitat map units.* Data layers defining map units were created on a base of USGS 1:24,000 maps, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) coordinates.

(5) Unit 1: Sago/Bitter Creek Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

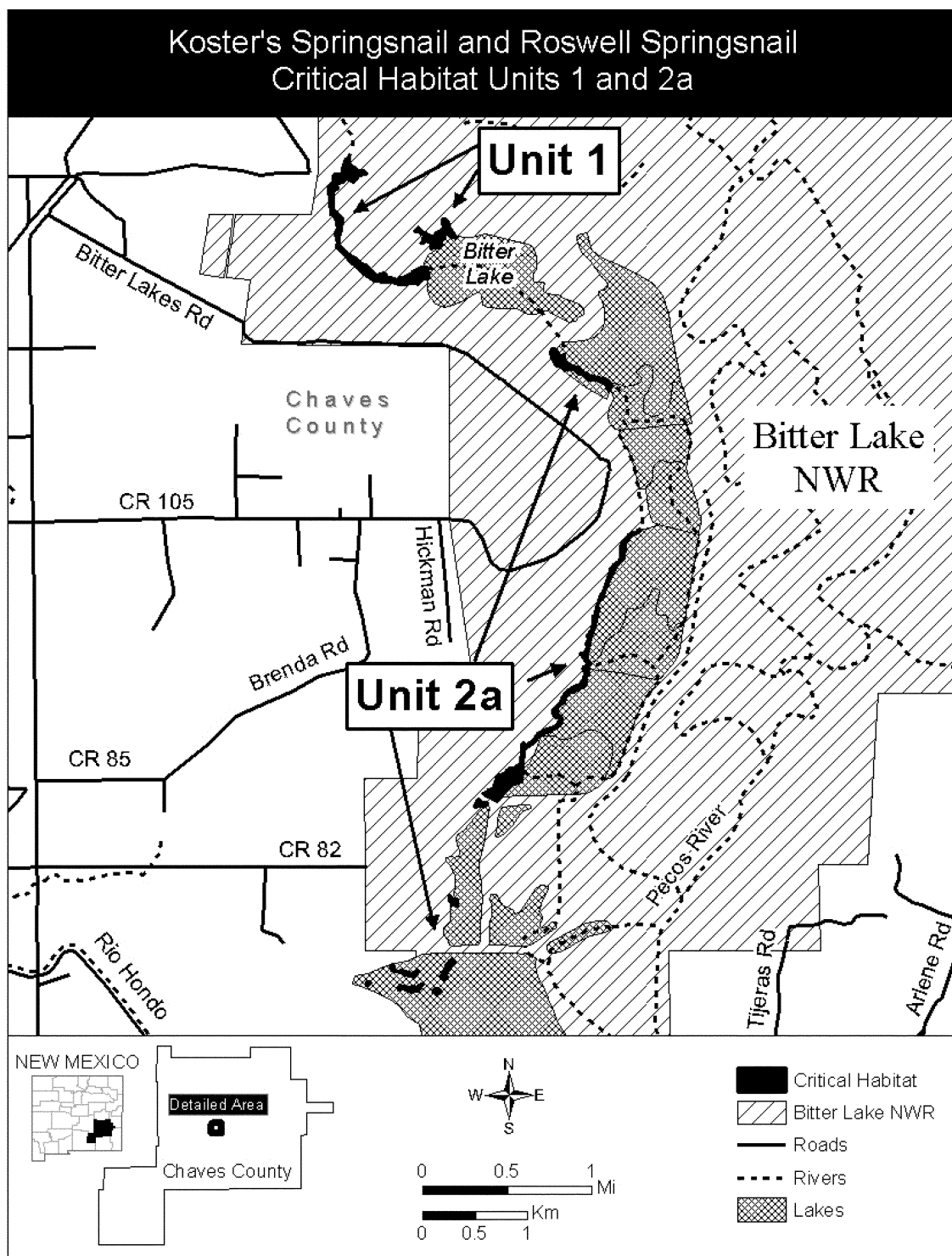
(A) 553337, 3705095; 553357, 3705102; 553360, 3705067; 553371, 3705041; 553420, 3705010; 553433, 3704982; 553482, 3704987; 553499, 3704955; 553437, 3704946; 553424, 3704909; 553401, 3704883; 553340, 3704906; 553319, 3704879; 553266, 3704869; 553274, 3704816; 553240, 3704797; 553240, 3704623; 553306, 3704532; 553300, 3704419; 553280, 3704354; 553287, 3704287; 553338, 3704221; 553438, 3704145; 553459, 3704108; 553499, 3704091; 553533, 3704059; 553559, 3704024; 553588, 3704004; 553650, 3704024; 553655, 3704014; 553654, 3703981; 553699, 3703983; 553745, 3703960; 553775, 3703978; 553799, 3703979; 553828, 3704003; 553859, 3704016; 553871, 3704037; 553907, 3704053; 553938, 3704074; 553964, 3704078; 553983, 3704080; 553993, 3703978; 553939, 3703960; 553917, 3703914; 553903, 3703927; 553758, 3703909; 553710, 3703936; 553656, 3703932; 553567, 3703940; 553484, 3704010; 553426, 3704085; 553396, 3704109; 553357, 3704150; 553270, 3704273; 553271, 3704299; 553270, 3704344; 553255, 3704398; 553274, 3704444; 553254, 3704540; 553218, 3704577; 553197, 3704824; 553205, 3704843; 553246, 3704885; 553233, 3704911; 553238,

3704941; 553265, 3704950; 553294, 3704941; 553312, 3705045; 553337, 3705095.

(B) 553906, 3704450; 553915, 3704455; 553920, 3704452; 553917, 3704438; 553926, 3704432; 553935, 3704420; 553957, 3704404; 553965, 3704405; 553974, 3704406; 553985, 3704388; 553993, 3704387; 554019, 3704376; 554037, 3704362; 554045, 3704389; 554060, 3704406; 554083, 3704416; 554085, 3704429; 554110, 3704452; 554132, 3704457; 554121, 3704474; 554106, 3704494; 554102, 3704531; 554119, 3704531; 554135, 3704523; 554144, 3704510; 554157, 3704481; 554154, 3704460; 554174, 3704431; 554192, 3704393; 554210, 3704366; 554216, 3704346; 554190, 3704357; 554174, 3704365; 554166, 3704375; 554159, 3704395; 554146, 3704394; 554126, 3704391; 554117, 3704384; 554123, 3704364; 554119, 3704346; 554105, 3704337; 554091, 3704312; 554097, 3704289; 554094, 3704269; 554084, 3704261; 554059, 3704273; 554052, 3704260; 554034, 3704259; 554022, 3704248; 554005, 3704272; 554024, 3704293; 554040, 3704300; 554041, 3704321; 554016, 3704332; 554006, 3704317; 553974, 3704323; 553963, 3704324; 553963, 3704316; 553966, 3704314; 553961, 3704302; 553949, 3704302; 553936, 3704302; 553934, 3704311; 553946, 3704321; 553952, 3704323; 553946, 3704332; 553946, 3704353; 553958, 3704373; 553964, 3704381; 553958, 3704392; 553946, 3704391; 553938, 3704396; 553934, 3704394; 553930, 3704397; 553930, 3704409; 553924, 3704409; 553906, 3704413; 553902, 3704424; 553894, 3704419; 553885, 3704419; 553898, 3704448; 553906, 3704450.

(ii) *Note:* Map of Koster's Springsnail and Roswell Springsnail Critical Habitat Units 1 and 2a follows:

BILLING CODE 4310–55–P



(6) Unit 2a: Springsnail/Amphipod Impoundment Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

(A) 554982, 3703317; 555004, 3703315; 555011, 3703299; 555053, 3703215; 555079, 3703205; 555094, 3703168; 555171, 3703138; 555222, 3703093; 555259, 3703078; 555289, 3703055; 555338, 3703047; 555420, 3703024; 555458, 3702955; 555442, 3702940; 555422, 3702925; 555406, 3702974; 555330, 3703017; 555277, 3703025; 555229, 3703068; 555188, 3703090; 555151, 3703125; 555131, 3703116; 555075, 3703115; 555042, 3703144; 555014, 3703147; 554978, 3703231; 554964, 3703290; 554982, 3703317.

(B) 555695, 3701598; 555603, 3701536; 555568, 3701479; 555565, 3701460; 555559, 3701324; 555532, 3701296; 555502, 3701277; 555355, 3700892; 555356, 3700852; 555342, 3700778; 555333, 3700694; 555294, 3700533; 555271, 3700409; 555281, 3700322; 555273, 3700266; 555257, 3700265; 555238, 3700281; 555247, 3700304; 555268, 3700316; 555269, 3700343; 555221, 3700433; 555257, 3700433; 555263, 3700446; 555269, 3700498; 555260, 3700534; 555284, 3700550; 555285, 3700567; 555274, 3700604; 555288, 3700636; 555312, 3700666; 555322, 3700725; 555325, 3700767; 555345, 3700858; 555350, 3700891; 555355, 3700901; 555365, 3700958; 555379, 3700992; 555392, 3701014; 555436, 3701152; 555450, 3701200; 555450, 3701241; 555472, 3701247; 555480, 3701271; 555504, 3701300; 555520, 3701303; 555534, 3701340; 555529, 3701451; 555549, 3701492; 555589, 3701560; 555621, 3701579; 555656, 3701579; 555669, 3701602; 555686, 3701610; 555695, 3701598.

(C) 554768, 3699378; 554765, 3699345; 554761, 3699217; 554681, 3699179; 554608, 3699086; 554569, 3699029; 554501, 3699079; 554455, 3699103; 554488, 3699119; 554497, 3699142; 554543, 3699151; 554539, 3699185; 554571, 3699264; 554587, 3699280; 554622, 3699291; 554639, 3699320; 554667, 3699343; 554699, 3699341; 554719, 3699367; 554748, 3699380; 554768, 3699378.

(D) 554487, 3699017; 554487, 3698993; 554435, 3698991; 554392, 3698980; 554398, 3699012; 554405, 3699026; 554410, 3699056; 554427, 3699057; 554423, 3699035; 554458, 3699018; 554487, 3699017.

(E) 554195, 3698145; 554220, 3698101; 554258, 3698101; 554256, 3698043; 554224, 3698055; 554210,

3698079; 554193, 3698085; 554191, 3698097; 554195, 3698145.

(F) 554223, 3697539; 554247, 3697505; 554195, 3697448; 554171, 3697394; 554179, 3697365; 554152, 3697343; 554132, 3697360; 554123, 3697373; 554155, 3697405; 554167, 3697472; 554223, 3697539.

(G) 554070, 3697244; 554099, 3697254; 554134, 3697240; 554127, 3697220; 554096, 3697208; 554071, 3697229; 554070, 3697244.

(H) 553784, 3697256; 553807, 3697291; 553829, 3697279; 553849, 3697268; 553881, 3697270; 553911, 3697274; 553931, 3697267; 553979, 3697295; 553989, 3697296; 553980, 3697274; 553965, 3697264; 553963, 3697246; 553939, 3697239; 553914, 3697242; 553901, 3697230; 553881, 3697235; 553872, 3697251; 553848, 3697246; 553833, 3697254; 553829, 3697262; 553821, 3697262; 553799, 3697250; 553784, 3697256.

(I) 553928, 3697415; 553935, 3697425; 553952, 3697426; 553941, 3697416; 553940, 3697405; 553942, 3697385; 553927, 3697367; 553852, 3697391; 553833, 3697408; 553822, 3697403; 553766, 3697414; 553739, 3697424; 553735, 3697478; 553747, 3697483; 553764, 3697425; 553795, 3697420; 553820, 3697429; 553849, 3697415; 553880, 3697408; 553905, 3697395; 553921, 3697407; 553928, 3697415.

(J) 553538, 3697315; 553550, 3697308; 553572, 3697322; 553580, 3697314; 553556, 3697287; 553538, 3697302; 553538, 3697315.

(K) 555054, 3699844; 555015, 3699840; 555015, 3699840; 555006, 3699890; 555065, 3699975; 555086, 3700030; 555115, 3700032; 555114, 3700030; 555076, 3699953; 555038, 3699915; 555039, 3699861; 555054, 3699844.

(ii) Map of Unit 2a for Koster's springsnail and Roswell springsnail is provided at paragraph (5)(ii) of this entry.

* * * * *

(h) *Crustaceans*.

* * * * *

Noel's amphipod (*Gammarus desperatus*)

(1) Critical habitat units are depicted for Chaves County, New Mexico, on the maps below.

(2) The primary constituent element of critical habitat for Noel's amphipod is springs and spring-fed wetland systems that:

(i) Have permanent, flowing water with no or no more than low levels of pollutants;

(ii) Have slow to moderate water velocities;

(iii) Have substrates including limestone cobble and aquatic vegetation;

(iv) Have stable water levels with natural diurnal (daily) and seasonal variations;

(v) Consist of fresh to moderately saline water;

(vi) Have minimal sedimentation;

(vii) Vary in temperature between 50–68 °F (10–20 °C) with natural seasonal and diurnal variations slightly above and below that range; and

(viii) Provide abundant food, consisting of:

(A) Submergent vegetation and decaying organic matter;

(B) A surface film of algae, diatoms, bacteria, and fungi; and

(C) Microbial foods, such as algae and bacteria, associated with aquatic plants, algae, bacteria, and decaying organic material.

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

(4) *Critical habitat map units*. Data layers defining map units were created on a base of USGS 1:24,000 maps, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) coordinates.

(5) Unit 1: Sago/Bitter Creek Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

(A) 553337, 3705095; 553357,

3705102; 553360, 3705067; 553371,

3705041; 553420, 3705010; 553433,

3704982; 553482, 3704987; 553499,

3704955; 553437, 3704946; 553424,

3704909; 553401, 3704883; 553340,

3704906; 553319, 3704879; 553266,

3704869; 553274, 3704816; 553240,

3704797; 553240, 3704623; 553306,

3704532; 553300, 3704419; 553280,

3704354; 553287, 3704287; 553338,

3704221; 553438, 3704145; 553459,

3704108; 553499, 3704091; 553533,

3704059; 553559, 3704024; 553588,

3704004; 553650, 3704024; 553655,

3704014; 553654, 3703981; 553699,

3703983; 553745, 3703960; 553775,

3703978; 553799, 3703979; 553828,

3704003; 553859, 3704016; 553871,

3704037; 553907, 3704053; 553938,

3704074; 553964, 3704078; 553983,

3704080; 553993, 3703978; 553939,

3703960; 553917, 3703914; 553903,

3703927; 553758, 3703909; 553710,

3703936; 553656, 3703932; 553567,

3703940; 553484, 3704010; 553426,

3704085; 553396, 3704109; 553357,

3704150; 553270, 3704273; 553271,

3704299; 553270, 3704344; 553255,

3704398; 553274, 3704444; 553254,

3704540; 553218, 3704577; 553197,

3704824; 553205, 3704843; 553246,
3704885; 553233, 3704911; 553238,
3704941; 553265, 3704950; 553294,
3704941; 553312, 3705045; 553337,
3705095.

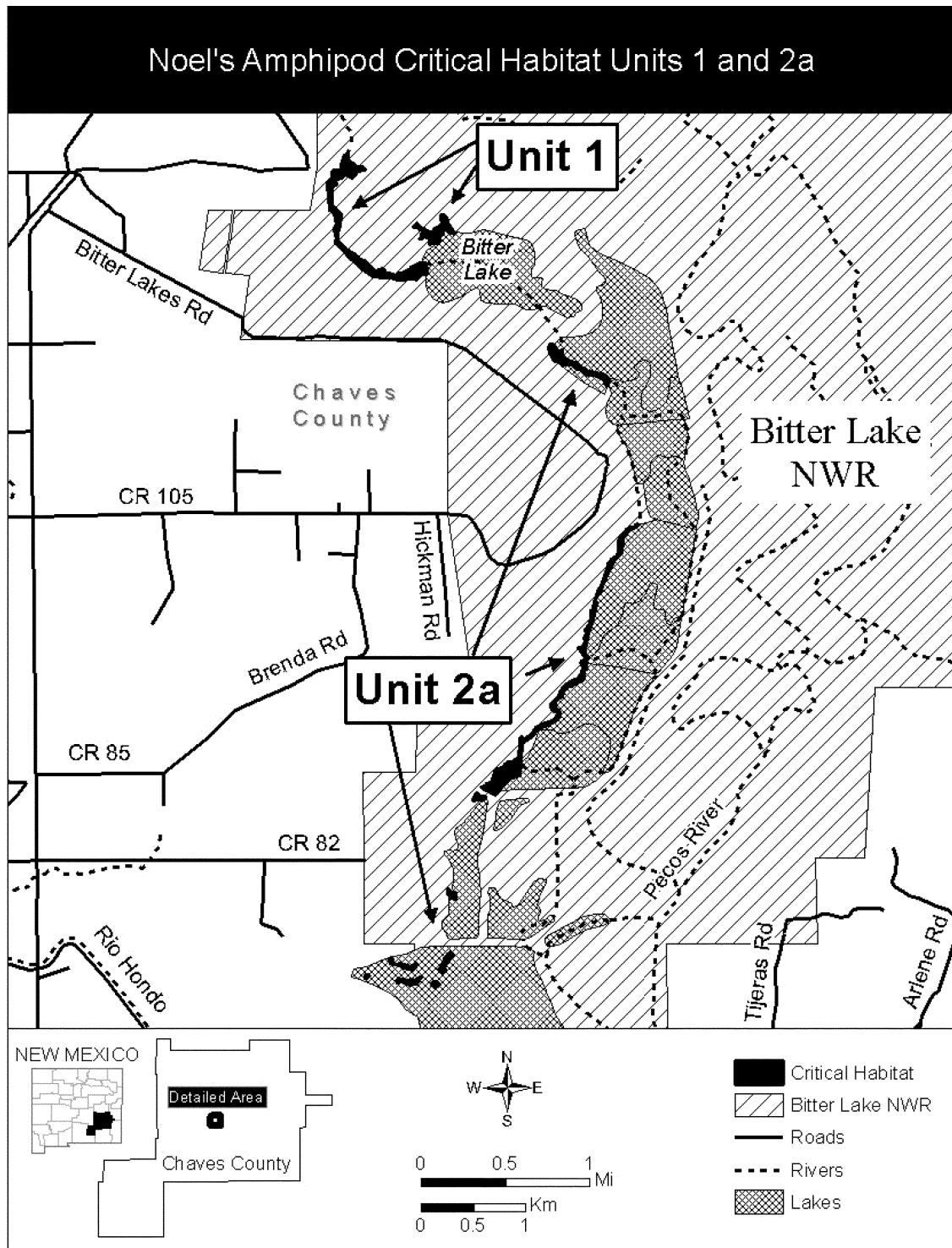
(B) 553906, 3704450; 553915,
3704455; 553920, 3704452; 553917,
3704438; 553926, 3704432; 553935,
3704420; 553957, 3704404; 553965,
3704405; 553974, 3704406; 553985,
3704388; 553993, 3704387; 554019,
3704376; 554037, 3704362; 554045,
3704389; 554060, 3704406; 554083,
3704416; 554085, 3704429; 554110,
3704452; 554132, 3704457; 554121,
3704474; 554106, 3704494; 554102,
3704531; 554119, 3704531; 554135,

3704523; 554144, 3704510; 554157,
3704481; 554154, 3704460; 554174,
3704431; 554192, 3704393; 554210,
3704366; 554216, 3704346; 554190,
3704357; 554174, 3704365; 554166,
3704375; 554159, 3704395; 554146,
3704394; 554126, 3704391; 554117,
3704384; 554123, 3704364; 554119,
3704346; 554105, 3704337; 554091,
3704312; 554097, 3704289; 554094,
3704269; 554084, 3704261; 554059,
3704273; 554052, 3704260; 554034,
3704259; 554022, 3704248; 554005,
3704272; 554024, 3704293; 554040,
3704300; 554041, 3704321; 554016,
3704332; 554006, 3704317; 553974,
3704323; 553963, 3704324; 553963,

3704316; 553966, 3704314; 553961,
3704302; 553949, 3704302; 553936,
3704302; 553934, 3704311; 553946,
3704321; 553952, 3704323; 553946,
3704332; 553946, 3704353; 553958,
3704373; 553964, 3704381; 553958,
3704392; 553946, 3704391; 553938,
3704396; 553934, 3704394; 553930,
3704397; 553930, 3704409; 553924,
3704409; 553906, 3704413; 553902,
3704424; 553894, 3704419; 553885,
3704419; 553898, 3704448; 553906,
3704450.

(ii) *Note:* Map of Noel's Amphipod
Critical Habitat Units 1 and 2a follows:

BILLING CODE 4310-55-P



(6) Unit 2a: Springsnail/Amphipod Impoundment Complex, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N):

(A) 554982, 3703317; 555004, 3703315; 555011, 3703299; 555053, 3703215; 555079, 3703205; 555094, 3703168; 555171, 3703138; 555222, 3703093; 555259, 3703078; 555289,

3703055; 555338, 3703047; 555420, 3703024; 555458, 3702955; 555442, 3702940; 555422, 3702925; 555406, 3702974; 555330, 3703017; 555277, 3703025; 555229, 3703068; 555188, 3703090; 555151, 3703125; 555131, 3703116; 555075, 3703115; 555042, 3703144; 555014, 3703147; 554978, 3703231; 554964, 3703290; 554982, 3703317.

(B) 555695, 3701598; 555603, 3701536; 555568, 3701479; 555565, 3701460; 555559, 3701324; 555532, 3701296; 555502, 3701277; 555355, 3700892; 555356, 3700852; 555342, 3700778; 555333, 3700694; 555294, 3700533; 555271, 3700409; 555281, 3700322; 555273, 3700266; 555257, 3700265; 555238, 3700281; 555247, 3700304; 555268, 3700316; 555269, 3700343; 555221, 3700433; 555257,

3700433; 555263, 3700446; 555269, 3700498; 555260, 3700534; 555284, 3700550; 555285, 3700567; 555274, 3700604; 555288, 3700636; 555312, 3700666; 555322, 3700725; 555325, 3700767; 555345, 3700858; 555350, 3700891; 555355, 3700901; 555365, 3700958; 555379, 3700992; 555392, 3701014; 555436, 3701152; 555450, 3701200; 555450, 3701241; 555472, 3701247; 555480, 3701271; 555504, 3701300; 555520, 3701303; 555534, 3701340; 555529, 3701451; 555549, 3701492; 555589, 3701560; 555621, 3701579; 555656, 3701579; 555669, 3701602; 555686, 3701610; 555695, 3701598.

(C) 554768, 3699378; 554765, 3699345; 554761, 3699217; 554681, 3699179; 554608, 3699086; 554569, 3699029; 554501, 3699079; 554455, 3699103; 554488, 3699119; 554497, 3699142; 554543, 3699151; 554539, 3699185; 554571, 3699264; 554587, 3699280; 554622, 3699291; 554639, 3699320; 554667, 3699343; 554699, 3699341; 554719, 3699367; 554748, 3699380; 554768, 3699378.

(D) 554487, 3699017; 554487, 3698993; 554435, 3698991; 554392, 3698980; 554398, 3699012; 554405, 3699026; 554410, 3699056; 554427,

3699057; 554423, 3699035; 554458, 3699018; 554487, 3699017.

(E) 554195, 3698145; 554220, 3698101; 554258, 3698101; 554256, 3698043; 554224, 3698055; 554210, 3698079; 554193, 3698085; 554191, 3698097; 554195, 3698145.

(F) 554223, 3697539; 554247, 3697505; 554195, 3697448; 554171, 3697394; 554179, 3697365; 554152, 3697343; 554132, 3697360; 554123, 3697373; 554155, 3697405; 554167, 3697472; 554223, 3697539.

(G) 554070, 3697244; 554099, 3697254; 554134, 3697240; 554127, 3697220; 554096, 3697208; 554071, 3697229; 554070, 3697244.

(H) 553784, 3697256; 553807, 3697291; 553829, 3697279; 553849, 3697268; 553881, 3697270; 553911, 3697274; 553931, 3697267; 553979, 3697295; 553989, 3697296; 553980, 3697274; 553965, 3697264; 553963, 3697246; 553939, 3697239; 553914, 3697242; 553901, 3697230; 553881, 3697235; 553872, 3697251; 553848, 3697246; 553833, 3697254; 553829, 3697262; 553821, 3697262; 553799, 3697250; 553784, 3697256.

(I) 553928, 3697415; 553935, 3697425; 553952, 3697426; 553941, 3697416; 553940, 3697405; 553942, 3697385; 553927, 3697367; 553852, 3697391; 553833, 3697408; 553822, 3697403;

553766, 3697414; 553739, 3697424; 553735, 3697478; 553747, 3697483; 553764, 3697425; 553795, 3697420; 553820, 3697429; 553849, 3697415; 553880, 3697408; 553905, 3697395; 553921, 3697407; 553928, 3697415.

(J) 553538, 3697315; 553550, 3697308; 553572, 3697322; 553580, 3697314; 553556, 3697287; 553538, 3697302; 553538, 3697315.

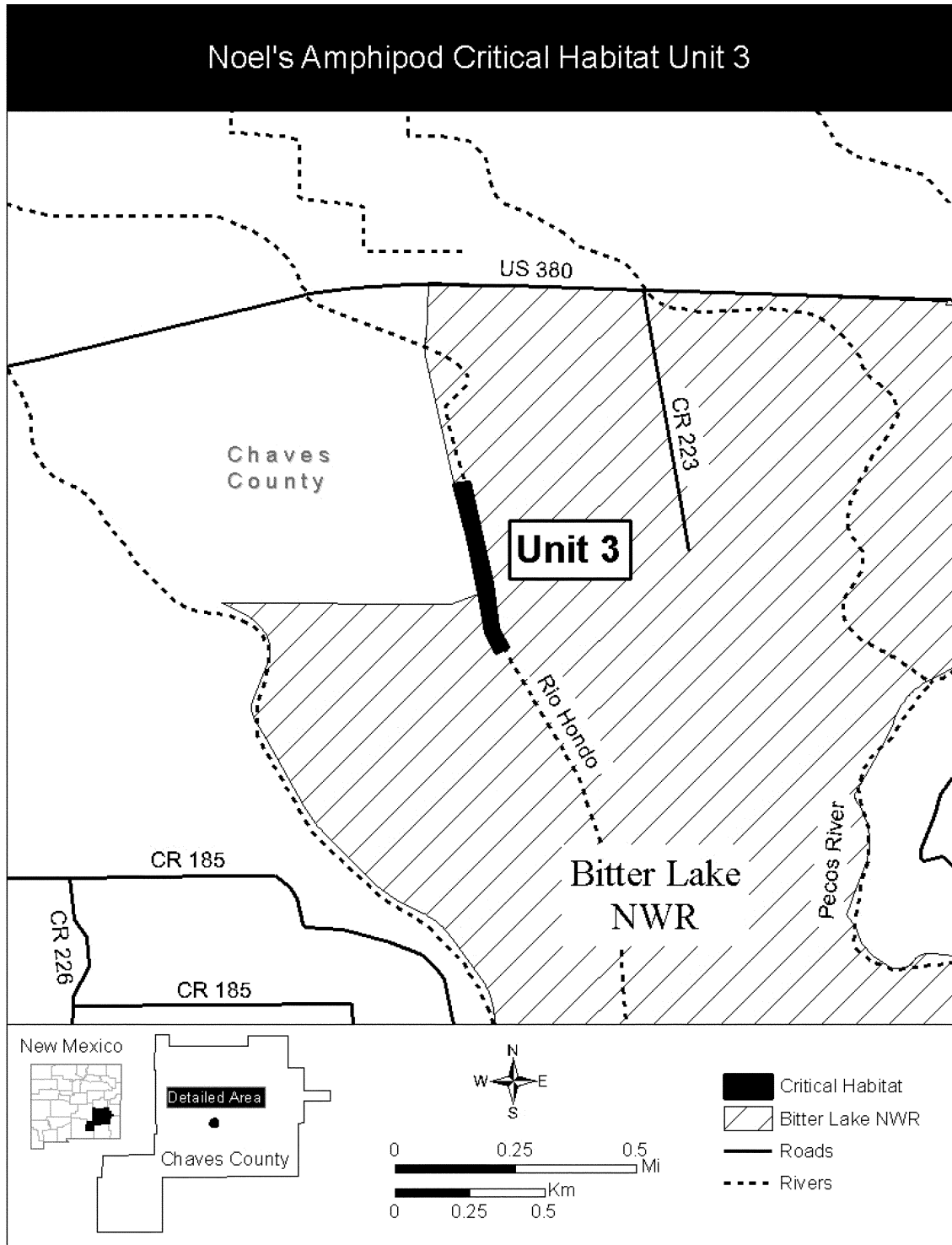
(K) 555054, 3699844; 555015, 3699840; 555015, 3699840; 555006, 3699890; 555065, 3699975; 555086, 3700030; 555115, 3700032; 555114, 3700030; 555076, 3699953; 555038, 3699915; 555039, 3699861; 555054, 3699844.

(ii) Map of Unit 2a for Noel's amphipod is provided at paragraph (5)(ii) of this entry.

(7) Unit 3: Rio Hondo, Chaves County, New Mexico.

(i) Land bounded by the following UTM Zone 13N, North American Datum of 1983 (NAD83) coordinates (E, N): 554121, 3694838; 554166, 3694847; 554200, 3694673; 554230, 3694507; 554247, 3694358; 554277, 3694294; 554243, 3694274; 554212, 3694343; 554196, 3694458; 554164, 3694649; 554121, 3694838.

(ii) *Note:* Map of Noel's Amphipod Critical Habitat Unit 3 follows:



* * * * *

Dated: May 19, 2011.

Eileen Sobeck,
*Acting Assistant Secretary for Fish and
 Wildlife and Parks.*

[FR Doc. 2011-13227 Filed 6-6-11; 8:45 am]

BILLING CODE 4310-55-C