

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R2-ES-2018-0071;
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RIN 1018-BC34

Endangered and Threatened Wildlife and Plants; Determination of Threatened Status for Wright's Marsh Thistle With a Section 4(d) Rule and Designation of Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine threatened species status under the Endangered Species Act of 1973 (Act), as amended, for the Wright's marsh thistle (*Cirsium wrightii*), a thistle species from New Mexico. We also designate critical habitat. In total, approximately 156.8 acres (63.4 hectares) in Chaves, Eddy, Guadalupe, Otero, and Socorro Counties, New Mexico, fall within the boundaries of the critical habitat designation. This rule adds the species to the List of Endangered and Threatened Wildlife. We also finalize a rule under the authority of section 4(d) of the Act that provides measures that are necessary and advisable to provide for the conservation of this species.

DATES: This rule is effective May 25, 2023.

ADDRESSES: This final rule is available on the internet at <http://www.regulations.gov> in Docket No. FWS-R2-ES-2018-0071 and at the New Mexico Ecological Services website at <https://www.fws.gov/office/new-mexico-ecological-services>. Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection in the docket on <http://www.regulations.gov>. For best results, do not copy and paste either number; instead, type the docket number or RIN into the Search box using hyphens. Then, click on the Search button.

For the critical habitat designation, the coordinates or plot points or both from which the maps are generated are included in the decision file and are available at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2018-0071.

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87113; telephone 505-346-2525; facsimile 505-346-2542. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, if we determine that a species is an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. To the maximum extent prudent and determinable, we must designate critical habitat for any species that we determine to be an endangered or threatened species under the Act. Listing a species as an endangered or threatened species and designation of critical habitat can only be completed by issuing a rule.

What this document does. This rule lists the Wright's marsh thistle (*Cirsium wrightii*) as a threatened species with a 4(d) rule and designates critical habitat for the species under the Endangered Species Act. We are designating critical habitat for the species in 7 units totaling 63.4 hectares (ha) (156.8 acres (ac)) in Chaves, Eddy, Guadalupe, Otero, and Socorro Counties in New Mexico.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that Wright's marsh thistle meets the definition of a threatened species primarily because of the present or threatened destruction, modification, or curtailment of its habitat or range (Factor A), and other natural and manmade factors affecting its continued existence such as changes in water availability, ungulate grazing, and oil and gas development, (Factor E). The existing regulatory mechanisms are inadequate to address the identified threats (Factor D). When listing a species as a threatened species, section

4(d) of the Act allows us to issue regulations that are necessary and advisable for the conservation of the species.

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

Previous Federal Actions

On September 29, 2020, we proposed to list the Wright's marsh thistle as a threatened species under the Act, with a proposed 4(d) rule and proposed designation of critical habitat (85 FR 61460). Please refer to that proposed rule for a detailed description of previous Federal actions concerning this species.

Summary of Changes From the Proposed Rule

Based on information provided during the comment period by the public, Tribes, States, and peer reviewers, we made the following minor changes to this final rule:

- We updated species occurrence information and incorporated new information related to three previously unknown population locations;
- We excluded approximately 0.88 ha (2.18 ac) of Mescalero Apache land from critical habitat as identified in Table 5, Areas excluded from Critical Habitat Designation by Critical Habitat Unit for Wright's Marsh Thistle; and
- We made several small, non-substantive revisions and corrections throughout the document in response to comments, and per editorial review.

Beyond those changes, this final listing rule, 4(d) rule, and critical habitat designation are unchanged from

what we proposed on September 29, 2020 (85 FR 61460).

Supporting Documents

A species status assessment (SSA) team prepared an SSA report for the Wright's marsh thistle. The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought peer review of the SSA report. The Service sent the SSA report to four independent peer reviewers with expertise in Wright's marsh thistle biology, life history, habitat, and range, and in the physical or biological features of its habitat. We received responses from one peer reviewer who provided comments on the SSA report that we integrated into the report, strengthening our analysis. The purpose of peer review is to ensure that our listing determinations, critical habitat designations, and 4(d) rules are based on scientifically sound data, assumptions, and analyses. We also sent the SSA report for review to 2 partners who have knowledge of the species biology and threats. The SSA report and other materials relating to this rule can be found at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2018-0071.

I. Final Listing Determination

Background

We completed a comprehensive assessment of the biological status of the Wright's marsh thistle and prepared a report of the assessment (SSA report (USFWS 2017, entire)), which provides a thorough account of the species' overall viability and risks to that viability. Please refer to the SSA report as well as the September 29, 2020, proposed rule (85 FR 61460) for a full summary of species information. Both are available at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2018-0071. Below, we summarize the key results and conclusions of the SSA report.

Wright's marsh thistle (Gray 1853, p. 101), a member of the Asteraceae (sunflower) family, produces a 0.9 to 2.4-meter (m) (3- to 8-foot (ft)) single

stalk covered with succulent leaves. There are two regional varieties of this species. The more eastern populations in the Pecos River Valley of New Mexico have vivid pink flowers and dark green foliage with taller plant height, while the more western and southern populations in New Mexico (and the previous populations in Arizona and Mexico) have white or pale pink flowers and pale green foliage (Sivinski 2011, pp. 27–28). The differences serve as evidence of ecological adaptability within the species, and we believe these differences represent genetic diversity between the eastern and western populations.

Wright's marsh thistle was historically known to occur in Arizona, New Mexico, and Texas in the United States, and Chihuahua and Sonora in Mexico (Sivinski 2012, p. 2). Wright's marsh thistle has been extirpated from all previously known locations in Arizona, two historical locations in New Mexico, and was thought to be extirpated from all known locations in Texas and Mexico. However, in 2018, a reexamination of Texas herbarium specimens determined that two specimens were collections of Wright's marsh thistle (Nesom 2018, entire), with the most recent collection being from Presidio County, Texas in 2003, and in 2019, a team rediscovered a population of Wright's marsh thistle located on a private property in Chihuahua, Mexico (Sanchez Escalante *et al.* 2019, p. 9–10). In New Mexico, eight confirmed locations of Wright's marsh thistle cover an area of approximately 43 ha (106 ac): Santa Rosa, in Guadalupe County; Bitter Lake National Wildlife Refuge (NWR), in Chaves County; Blue Spring, in Eddy County; La Luz Canyon, Karr/Haynes Canyon, Silver Springs, and Tularosa Creek, in Otero County; and Alamosa Creek, in Socorro County (Bridge 2001, p. 1; Sivinski and Bleakly 2004, p. 2; NMRPTC 2009, p. 1; Sivinski 1994, p. 1; Sivinski 1996, p. 2; Sivinski 2005, p. 1, 3–5; Sivinski 2009; USFWS 1998, p. 1; Worthington 2002, p. 1–3).

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an endangered species or a threatened species. The Act defines an endangered species as a species that is “in danger of extinction throughout all or a significant portion of its range,” and a threatened species as a species that is “likely to become an endangered

species within the foreseeable future throughout all or a significant portion of its range.” The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. The term “threat” includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an “endangered species” or a “threatened species.” In determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an “endangered species” or a “threatened species” only

after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term “foreseeable future,” which appears in the statutory definition of “threatened species.” Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term “foreseeable future” extends only so far into the future as the Service can reasonably determine that both the future threats and the species’ responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. “Reliable” does not mean “certain”; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species’ likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species’ biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether the species should be listed as an endangered or threatened species under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at FWS–R2–ES–2018–0071 on <http://www.regulations.gov>.

To assess Wright’s marsh thistle viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and

demographic stochasticity (for example, wet or dry, warm or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species’ ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species’ viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species’ life-history needs. The next stage involved an assessment of the historical and current condition of the species’ demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species’ responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species’ current and future condition, in order to assess the species’ overall viability and the risks to that viability. To assess Wright’s marsh thistle viability and the risks to that viability, we reviewed the biological condition of the species and its resources, and the threats that influence the species’ current and future condition. Wright’s marsh thistle is a rare wetland species that grows in marshy habitats with year-round, water-saturated soils, at elevations between 3,450 and 7,850 feet (ft.) (1,150 and 2,390 meters (m)) in elevation (Sivinski 1996, p. 1; 2005a, pp. 3–4). It is usually associated with alkaline springs and seeps ranging from low desert up to ponderosa pine forest (Sivinski 2005a, p. 3). Wright’s marsh thistle is an obligate of seeps, springs, and wetlands that have saturated soils with surface or

subsurface water flow (Sivinski 1996a; Service 1998; Worthington 2002a, p. 2; NMRPTC 2009). Common associates include bulrush (*Scirpus* spp.), beaked spikerush (*Eleocharis rostellata*), Pecos sunflower (*Helianthus paradoxus*), rush (*Juncus* spp.), and cattail (*Typha* spp.) (Sivinski 1996a, pp. 2–5; Sivinski and Bleakly 2004, p. 2; Worthington 2002a, pp. 1–2).

Most of the areas occupied by Wright’s marsh thistle are open cienéga or boggy margins of open water or along excavated drains. A few Wright’s marsh thistle occur in cattail stands, and many occur in fairly open stands of common reed (*Phragmites australis*). Surprisingly, several hundred Wright’s marsh thistle rosettes were found well within some very dense, tall stands of common reed in 2012 (Sivinski 2012, p. 33). Almost all of these were juvenile rosettes, and it appears that maturation and flowering is suppressed by the shade in dense patches of common reed (Sivinski 2012, p. 33). Therefore, we infer that rosettes can survive without as much direct sunlight as mature plants.

Sufficient pollinators are needed to complete cross pollination of plants both within patches at each population and between subpopulations in the Santa Rosa population. Many generalist pollinators may visit Wright’s marsh thistle (Sivinski 2017, pers. comm.). The most common pollinators of Wright’s marsh thistle are bees, especially bumble bees (*Bombus* spp.) (Sivinski 2017, pers. comm.). Bumble bees are strong fliers and may travel 1 mi (1.5 km) or more to patches of Wright’s marsh thistle (Osborne *et al.* 2008), and thus could provide cross pollination and gene flow within the Santa Rosa population. Thus, depending on life stage, Wright’s marsh thistle needs to have permanent root saturation; alkaline soils; full, direct, or nearly full sunlight; and abundant pollinators, including bumble bees.

For Wright’s marsh thistle to maintain viability, its populations or some portion thereof must be able to withstand stochastic disturbance. Resource needs that influence the resiliency of populations include constant soil saturation, alkaline soils, abundance of insect pollinators, and availability of direct sunlight. Additionally, secondary resource needs include agents of seed dispersal (wind, water, mammals, and birds) and water availability for seed germination. For more details on these resource needs and their impact on species viability, refer to chapter 2 of the SSA report (USFWS 2017, pp. 3–13). Factors that influence those resource needs will determine whether Wright’s marsh

thistle populations are able to sustain adequate numbers within habitat patches of adequate area and quality to maintain survival and reproduction in spite of disturbance, thereby increasing the resiliency of populations.

Maintaining representation in the form of genetic or environmental diversity is important to maintain Wright's marsh thistle's capacity to adapt to future environmental changes. A healthy community of insect pollinators, particularly bees and butterflies, leads to genetic diversity by the process of cross pollination between patches within a population. The differences in flower color (and perhaps differences in mature plant maximum growth height) represent variation in ecological adaptability between the eastern and western populations of the thistle, and possibly also a form of genetic diversity. There is a need to maintain the genetic and environmental diversity between the eastern and western groups, as their potential genetic and life-history attributes may buffer the thistle's response to environmental changes over time. However, Wright's marsh thistle has likely lost genetic and environmental diversity as populations have been reduced or extirpated, and therefore maintaining the remaining representation in the form of genetic and environmental diversity may be important to the capacity of Wright's marsh thistle to adapt to future environmental change.

Wright's marsh thistle needs to have multiple resilient populations distributed throughout its range to provide for redundancy. The more populations, and the wider the distribution of those populations, the more redundancy the species will exhibit. In addition, populations of the species can exhibit internal redundancy through the presence of multiple patches within the population. For example, the eastern populations of Wright's marsh thistle have multiple patches of occupied habitat within each population location, while the western populations typically have only one patch within each population location. The presence of multiple patches contributes to the ability of the population to maintain resiliency when faced with various risk factors. Redundancy reduces the risk that a large portion of the species' range will be negatively affected by a catastrophic natural or anthropogenic event at a given point in time. Species that are well-distributed across their historical range are considered less susceptible to extinction and have higher viability than species confined to a small portion

of their range (Carroll *et al.* 2010, entire; Redford *et al.* 2011, entire).

Influence Factors for Wright's Marsh Thistle

The largest threats to the future viability of Wright's marsh thistle relate to habitat degradation from various stressors influencing the availability of the thistle's resource needs (*e.g.*, water availability). A brief summary of these primary stressors is presented below, followed by a table identifying the particular stressors, and the magnitude of those stressors, affecting each of the eight populations (see Table 1, below). We also include a discussion of current conservation measures for the thistle and any existing regulatory mechanisms that may ameliorate or reduce the impact of the stressors. For a full description of these stressors, refer to chapter 4 of the SSA report (USFWS 2017, pp. 39–56).

Decreased Water Availability

The drying of Wright's marsh thistle habitat over approximately the last 25 years has led to shrinking population boundaries, a reduction in the numbers of plants, and, in some cases, a loss of all individuals at several localities (Sivinski 1996, pp. 4–5; Sivinski 2005, pp. 3–4; Sivinski 2012, pp. 29–33). Because the thistle occurs only in areas that are water-saturated, populations have a high potential for extirpation when the habitat dries up. Loss of water from Wright's marsh thistle habitat occurs through changing precipitation patterns or drought, or as a result of human impacts from groundwater pumping (withdrawal) or diversion of surface water (which can lead to the degradation and extirpation of the species' habitat) (Sivinski 1996, p. 5; Sivinski 2005, p. 1; USFS 2008, p. 19). Drought, along with ground and surface water depletion, serves to decrease the amount of water available in Wright's marsh thistle habitat, which impacts the species' need for permanent root saturation. Reductions in precipitation and temperature are predicted to continue in the future, increasing these impacts to Wright's marsh thistle (NOAA 2014, unpaginated). In addition to experiencing periods of drought, much of the habitat of Wright's marsh thistle has been, and continues to be, severely altered and degraded due to past and present land and water management practices that deplete ground and surface water. For specific examples for each population, please refer to chapter 4, section 1 of the SSA report (USFWS 2017, pp. 39–56). All of the extant localities may be affected by long-term drought, whereas four of the

largest localities at Blue Spring, Bitter Lake National Wildlife Refuge (NWR), Santa Rosa, and Alamosa Creek have the potential to be further modified by ongoing and future water management practices.

Drought—According to the United States Drought Monitor (U.S. Drought Monitor 2017), large portions (over 30 percent) of New Mexico, including Wright's marsh thistle habitat, experienced drought from approximately April 2011 until mid-2014. Within New Mexico, monsoonal summer precipitation can be very patchy, with some areas receiving considerably less rainfall than others. The three eastern populations of Wright's marsh thistle in the Pecos River valley have not been affected by drought to the same extent as the western populations, because the Pecos River valley's marshy habitats are maintained by large regional aquifers. The western populations often rely on wet periods during summer months to recharge the ground water. In the Sacramento Mountains, these wet periods are extremely rare events (Newton *et al.* 2012, p. 66), and drought has notably impacted the area's groundwater tables (USFS 2008, p. 22). The seasonal distribution of yearly precipitation in this mountain range can result in temporary drought conditions and reduced water availability for some of the area's Wright's marsh thistle localities.

Wright's marsh thistle is vulnerable to reduced water availability because the species occupies relatively small areas of spring or seep habitat in an arid region that is plagued by drought and ongoing aquifer withdrawals (*e.g.*, in the Roswell Basin). If future episodes of drought increase in frequency, duration, or intensity, additional dewatering and decrease of the thistle's habitat are likely to occur. Projected increases in temperature and increased variability in precipitation in locations where Wright's marsh thistle is currently located demonstrate the vulnerability of the habitat to reductions in water availability. The vulnerability of the habitat to increased drought depends, in large part, on the sources of their water supply. Habitats that are sustained mainly by precipitation in the Sacramento Mountains (five populations) are the most likely to be affected by increased drought, a significant stressor to these populations. Alternatively, localities that are supplied primarily by groundwater in the Pecos River Basin (three populations) will likely have the greatest resistance to increased drought due to water stored in aquifers, making

drought a less significant stressor to the populations (e.g., see Poff *et al.* 2002, pp. 18–19).

Ground and Surface Water

Depletion—Wright's marsh thistle is a wetland plant that can be extirpated when its habitat dries out. The effects of ongoing and past maintenance and operation of existing water diversions can also limit the size of thistle populations (USACE 2007, p. 29). Loss and degradation of habitat from water diversion or draining of wetlands that historically supported Wright's marsh thistle has been reported in Chaves, Otero, and Sierra Counties, New Mexico (Sivinski 1994, pp. 1–2; 1996, p. 4; 2005, p. 1; 2006, p. 4). The extent of ongoing and future water diversions is related to the extent of urban and agricultural development within a given area. The significance of the impacts of this stressor to each population can be correlated to the number of water diversions within the area for both urban and agricultural purposes. Specific details on impacts to each population can be found in chapter 4 of the SSA report (USFWS 2017, pp. 39–56). The alteration and loss of Wright's marsh thistle habitat from groundwater and surface water depletion will continue and likely increase in the foreseeable future. This projection is based on current and future development plans in areas surrounding each population; specific details are located in chapter 4 of the SSA report (USFWS 2017, pp. 39–56).

Effects of Climate Change—Because Wright's marsh thistle occupies relatively small areas of spring or seep habitat in an arid region plagued by drought and ongoing aquifer withdrawals (e.g., in the Roswell Basin), it is expected to be vulnerable to changes in climate that decrease the availability of water to suitable habitat. Population sizes have decreased in springs and wet valleys affected by drought in at least three canyons of the Sacramento Mountains, New Mexico. Similar water loss may affect other Wright's marsh thistle localities (USFWS 2017, p. 45). If changes in climate lead to future drought, additional dewatering and reduction of habitat for the thistle may occur.

We obtained downscaled climate projections (as of 2018) for our analysis of Wright's marsh thistle from the Climate Explorer program in the U.S. Climate Resilience Toolkit (NOAA 2014, unpaginated). The Climate Explorer is based on 32 models and produces a mean that can be used to predict changes in air temperature and precipitation for counties, cities, or specific zip codes in the contiguous

United States and portions of Canada and Mexico. Scenario representative concentration pathway (RCP) 4.5 is a moderate emissions scenario for atmospheric concentrations of greenhouse gases. Based on climate change projections for emissions at RCP 4.5, all current locations of Wright's marsh thistle show increases in mean daily maximum temperature over the next 50 years by approximately 1.7 degrees Celsius (°C) (3 degrees Fahrenheit (°F)). For example, in Chaves County, New Mexico, mean daily maximum temperature is expected to rise from approximately 24.7 °C (76.5 °F) in 2010, to approximately 26.9 °C (80.5 °F) in 2060. Climate change scenario RCP 8.5 projects climate conditions based on higher carbon dioxide (CO₂) emissions. This scenario results in a projected change of approximately 3 °C (5.5 °F) over the next 50 years in Chaves County, New Mexico, leading to a mean daily maximum of 28.2 °C (82.7 °F).

While mean daily precipitation is not expected to vary drastically over the next 50 years, the variability in precipitation throughout the year will increase. For example, in Otero County, mean daily average precipitation is projected to decrease during certain times of the year and increase during other times of the year relative to current conditions. In addition, the timing of maximum precipitation events may occur during different months than experienced in the past. This variability in precipitation will contribute to more periods of extreme drought and severe flooding events, potentially impacting the availability of water during times critical to the life-history processes of Wright's marsh thistle (NOAA 2014, unpaginated).

Specific details on the effects of climate change are located in chapter 4 of the SSA report (USFWS 2017, pp. 39–56). Projected increases in temperature and increased variability in precipitation at locations where Wright's marsh thistle is currently located demonstrate the vulnerability of the species' habitat to changes in climate that will exacerbate the impact of existing stressors relating to water availability and withdrawals.

Summary of Decreased Water

Availability—In summary, ground and surface water withdrawal and potential future increases in the frequency, duration, or intensity of drought, individually and in combination, pose a threat to Wright's marsh thistle and its habitat in the future. In addition, as Wright's marsh thistle has small, isolated populations, we expect the stressor of decreased water availability

to further impact the species' overall viability. Thus, we expect that this threat will likely remain a significant stressor to the thistle and will likely intensify in the foreseeable future.

Livestock Grazing

In the semi-arid southwestern United States, wet marshes and other types of Wright's marsh thistle habitat attract ungulates (e.g., livestock, elk, and deer) because of the availability of water and high-quality forage (Hendrickson and Minckley 1984, p. 134). Livestock grazing occurs at Wright's marsh thistle localities in the Sacramento Mountains, Santa Rosa, Blue Springs, and Alamosa Springs. At the Santa Rosa locality, photographs indicate that the growth of Wright's marsh thistle and the integrity of its habitat have been negatively affected by livestock herbivory and trampling (Sivinski 2012, pp. 33–53). Dry periods likely increase the effects of livestock trampling and herbivory on Wright's marsh thistle when other water and forage plants are not available (see 75 FR 67925; November 4, 2010). Grazing may be more concentrated within habitats similar to those occupied by Wright's marsh thistle during drought years, when livestock are prone to congregate in wetland habitats or where forage production is greater than in adjacent dry uplands (USFS 2003, entire).

Livestock may trample individual plants and eat the thistle when other green forage is scarce, and when the seedlings or rosettes are developing and abundant. Further, livestock may eat mature plant inflorescences (the complete flower head), which could reduce seed production. For example, the federally threatened Sacramento Mountains thistle (*Cirsium vinaceum*), which is also found in New Mexico and is associated with habitats similar to those occupied by Wright's marsh thistle (52 FR 22933; June 16, 1987), is eaten by livestock and appears to be the preferred forage at some times of the year. It may provide some of the only green forage during droughts (NMRPTC 2009, p. 2). Also, it is possible that livestock grazing within and adjacent to spring ecosystems could alter or remove habitat or limit the distribution of the thistle (USFWS 2017, pp. 49–50).

The effects of grazing on Wright's marsh thistle depend on timing. Winter grazing (after seed dispersal and before seedling growth in spring) probably has a low effect on survival and reproduction, although there could be some trampling of rosettes, while spring and early summer grazing probably reduces growth, survival, and reproduction. Late summer and early

fall grazing are most severe, as flowering plants typically set seed at this time; grazing during this period would inhibit reproduction. Finally, if a patch of Wright's marsh thistle was heavily grazed during the time of bolting or flowering over 2 or more consecutive years, the seed bank and long-term population trend in the affected patch could be negatively impacted. For example, observations of the impacts of grazing at some of the Wright's marsh thistle localities show that fewer thistles mature into flowering adults when the population experiences grazing pressure (Sivinski 2012, pp. 33–53). Livestock activities are considered a widespread stressor at the current time; localized impacts have been observed, and there is a high potential for negative effects to populations of Wright's marsh thistle. Increased use of wet springs and marshes by livestock during drought conditions constitutes a significant stressor to the thistle in the future.

In summary, we find that livestock grazing poses a current and future threat to Wright's marsh thistle and its habitat through direct mortality and habitat degradation, and we expect that this threat will likely intensify at some localities (Sacramento Mountains, Santa Rosa, Blue Spring, Alamosa Springs) due to projected increases in drought periods that cause livestock to concentrate around Wright's marsh thistle localities. Because the thistle only occurs in small, isolated populations, the impacts of grazing could be a significant stressor to the species.

Native and Nonnative Plants

Some native and nonnative plants pose a threat to Wright's marsh thistle and its habitat through habitat encroachment and competition for resources at most localities. The native plants include cattails (*Typha* spp.); nonnative species include the common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), Russian olive (*Elaeagnus angustifolia*), saltcedar (*Tamarix* spp.), and Russian thistle (*Salsola* spp.) (Sivinski 1996, p. 6).

These particular native and nonnative species all have the same effect on Wright's marsh thistle by functioning as invasive species with respect to the thistle's habitat. Although cattails and Wright's marsh thistle may have evolved in the same area, decreased water availability has altered habitat conditions such that cattails have a competitive advantage in Wright's marsh thistle habitat. These plants present unique challenges and potential threats to the habitat, including shade

effects on Wright's marsh thistle seedlings and rosettes.

The common reed, a nonnative, invasive plant introduced from Europe and Asia, increases the potential for wildfire and is increasing in density at some locations in New Mexico. The increased occurrence of the common reed in Wright's marsh thistle habitat is a current threat to the species due to increased wildfire risk, competition, and changes in hydrology (impacts on degree of soil saturation). The impact that common reed causes as compared to other nonnative plant species, especially when habitat is disturbed through burning or drying is greater than other invasive species. The dense plant growth of the common reed blocks sunlight to other plants growing in the immediate area and occupies all available habitat (PCA 2005, p. 1). The impacts from common reed vary based on location, with the greatest impacts occurring at Santa Rosa, Bitter Lake NWR, Blue Spring, and Tularosa Creek. We expect that the threats caused by native and nonnative plant competition and habitat loss will likely continue and possibly intensify, due to lack of vegetation management at several locations (Santa Rosa, Blue Spring, Tularosa Creek) and the pervasiveness of native and nonnative plants despite ongoing efforts for habitat restoration at other locations (Bitter Lake NWR). Because Wright's marsh thistle populations are relatively small and isolated, the impacts of native and nonnative plants could pose a significant stressor to the thistle despite ongoing efforts for habitat restoration at other locations (Bitter Lake NWR). Because Wright's marsh thistle populations are relatively small and isolated, the impacts of native and nonnative plants could pose a significant stressor to the thistle.

Attempts to manage native and nonnative plants through herbicide use and mowing may also exacerbate negative effects to Wright's marsh thistle, as these techniques are difficult to preferentially apply to only the native and nonnative plant species when habitat is shared. In addition, we expect increases in drought periods to exacerbate the negative effects of this stressor.

Oil and Gas Development and Mining

Oil and gas development occur within and adjacent to (*i.e.*, within 10 miles) some areas occupied by Wright's marsh thistle, including Santa Rosa, Bitter Lake NWR, and Blue Spring (New Mexico State Lands Office 2017, unpaginated; NMDGF 2007, pp. 18–19; NMDGF 2005, p. 35). There are also

mining activities adjacent to (*i.e.*, within 5 miles) other occupied areas such as a potential beryllium mine at Alamosa Springs, and subsurface drilling and exploration of the mineral bertrandite on Sullivan Ranch near Alamosa Springs (New Mexico Mining and Minerals Division 2010, unpaginated; New Mexico State Lands Office 2017, unpaginated; Sivinski 2012, p. 9). As of July 8, 2021, the Service has no information on any new actions towards developing the potential beryllium mine at Alamosa Springs. The main impacts from oil and gas development and mining include the potential for water quality contamination.

Contamination from oil and gas development has been observed within close proximity (*i.e.*, within 16 kilometers (km) (10 miles (mi))) of some Wright's marsh thistle localities (New Mexico State Lands Office 2017, unpaginated). While laws and regulations related to water quality have reduced the risk of contamination in and near occupied locations from oil and gas production, a spill that could impact these habitats is still likely based on the high volume of oil and gas leases near the locations.

Potential contamination from both oil and gas development and mining could have several impacts on plants (such as Wright's marsh thistle), including the following: Increased available nutrients, which may favor competitive or nonnative plant growth; altered soil pH (either higher or lower), which can kill plants; absorption of chemicals, which can poison plants or cause poor growth or dead spots on leaves; and plant mortality. In addition, oil and other contaminants from development and drilling activities throughout these areas could enter the aquifer supplying the springs and seeps inhabited by Wright's marsh thistle when the limestone layers are pierced by drilling activities. An accidental oil spill or groundwater contamination has the potential to pollute water sources that support Wright's marsh thistle, while mining activities could alter or destroy habitat.

The largest habitat area occupied by Wright's marsh thistle is less than 16 (ha) (40 ac), and more than half the known populations are less than 2 ha (5 ac) in size. Even a small, localized spill has the potential to contaminate and destroy a population. The loss of even one of the eight populations would result in loss of representation and redundancy to the species as a whole. Because this species is comprised of small, isolated populations, these stressors could potentially negatively affect the thistle, but it is unclear whether these impacts would be

localized or widespread stressors, as the interaction between contaminant spills and groundwater and surface water hydrology is poorly understood.

Therefore, we have determined that oil and gas development and mining functions as a stressor to the future viability of the species via impacts to

water sources that provide habitat for Wright's marsh thistle.

TABLE 1—STRESSORS IMPACTING EACH OF THE EIGHT POPULATIONS OF WRIGHT'S MARSH THISTLE
[USFWS 2017, pp. 39–56]

| Population | Stressors to population | | | | | |
|--------------------------|------------------------------|---|---------------------------|-------------------|-----------------------------|-------------------------|
| | Decreased water availability | | | Livestock grazing | Native and nonnative plants | Oil and gas development |
| | Drought | Groundwater and surface water depletion | Effects of climate change | | | |
| Eastern Populations | | | | | | |
| Santa Rosa Basin | XX | XX | XX | XXX | XX | X |
| Bitter Lake NWR | XX | XX | XX | ..... | XX | XX |
| Blue Spring | XX | XXX | XX | XX | X | XX |
| Western Populations | | | | | | |
| Alamosa Springs | XXX | XX | XX | X | ..... | X |
| Tularosa Creek | XXX | XX | XX | ..... | X | ..... |
| Silver Springs | XXX | XXX | XX | X | ..... | ..... |
| La Luz Canyon | XXX | XXX | XX | X | ..... | ..... |
| Karr/Haynes Canyon | XXX | XXX | XX | X | X | ..... |

Note: XXX indicates a significant stressor to the population, XX indicates a moderate stressor to the population, and X indicates a mild stressor to the population.

Conservation Measures and Regulatory Mechanisms

Minimal conservation of Wright's marsh thistle is occurring at the Federal level. The Bitter Lake NWR manages invasive reeds in their moist soil/wetland units where the species is located. This management helps increase sunlight availability and decrease competition with nonnative species. Bitter Lake NWR also recently received a grant to complete seed collection efforts for Wright's marsh thistle. The Lincoln National Forest does not have active conservation for the thistle but implements a 61-meter (m) (200-foot (ft)) buffer around occupied sites when projects occur within or near occupied areas.

At the State level, Wright's marsh thistle is listed as endangered, under the authority of the New Mexico Statutes Annotated 1978, at title 19 of the New Mexico Administrative Code at chapter 21, part 2, section 9 (19 NMAC 21.2.9). The provisions in New Mexico State law prohibit the taking of endangered plants on all lands of New Mexico (except Tribal lands), except under valid permit issued by the State, and encourage conservation by State government agencies. In this instance, "taking" means the removal, with the intent to possess, transport, export, sell, or offer for sale. Furthermore, if Wright's marsh thistle is listed under the Act, the State may enter into agreements with Federal

agencies to administer and manage any area required for the conservation, management, enhancement, or protection of listed species. Funds for these activities could be made available under section 6 of the Act (Cooperation with States). Thus, the Federal protection afforded to this plant by listing it as a threatened species will be reinforced and supplemented by protection under State law. In addition to the State endangered listing for Wright's marsh thistle, some protection is offered to the species through title 19 of the New Mexico Administrative Code at chapter 15, part 2 (19 NMAC 15.2), which outlines general environmental provisions for water and wildlife relating to oil and gas operations, including information on methods to reduce risk of contamination to the surrounding habitat. While 19 NMAC 15.2 reduces the risks associated with oil and gas production to nearby occupied locations of the thistle, the high volume of oil and gas leases near these sites means the risk of impacts from a spill still persist.

Current Condition of Wright's Marsh Thistle

To determine the species' current condition, we ranked each population based on six factors relating to population and habitat variables: habitat quantity, number of patches, abundance, reproduction, permanent

root saturation, and full sun. For each of these six factors, we defined criteria for low, moderate, and high conditions, which are outlined in table 3.3 in chapter 3 of the SSA report (USFWS 2017 pp. 35–36). These criteria were used to determine an overall condition for each of the eight extant populations for which we had sufficient information. Three additional populations of Wright's marsh thistle were identified during the public comment period; however, due to insufficient information associated with these three populations, we were unable to determine an overall condition. The overall condition of a population refers to the estimated likelihood of persistence over time.

We define a population in high overall condition to have a greater than 90 percent likelihood of persistence over the next 25 years (in other words, a 10 percent or less likelihood of extirpation). For a population in moderate condition, we estimate that the likelihood of persistence over the next 25 years would be approximately 66 to 90 percent (10 to 33 percent likelihood of extirpation). For a population in low condition, we estimated a likelihood of persistence of approximately 25 to 66 percent over the next 25 years (33 to 75 percent likelihood of extirpation), and a population in very low condition to have a likelihood of persistence of approximately 0 to 25 percent over the

next 25 years (75 to 100 percent likelihood of extirpation).

The best available information indicates that Wright's marsh thistle is currently found at eight localities in New Mexico, as well as three new potential localities (one in New Mexico, one in Texas, and one in Mexico). We have very little information on these new localities, as further explained under Summary of Comments and Recommendations below; as a result, one potential new locality in New Mexico (associated with a Natural Resources Conservation Service conservation easement) and the other two potential localities in Texas and Mexico did not weigh heavily into our analysis of the status of the species because their presence has not been verified in terms of populations size and habitat. We concluded that the plant has been extirpated in Arizona and two locations in New Mexico. According to our current condition rankings outlined in chapter 3 of the SSA report (USFWS 2017, pp. 14–38), three of the eight extant populations in New Mexico were determined to have moderate resiliency, two have low resiliency, and three have very low resiliency and are at risk of extirpation. Across its range, the thistle demonstrates genetic and environmental diversity (representation) resulting in two distinct phenotypes in the eastern and western populations, as described above. Within the two representation areas (east and west), three populations are extant in the east, and five populations are extant in the west. While there is greater redundancy in terms of number of populations in the western phenotype, the five extant populations in the western representation area are much smaller in both the area occupied and population size. Therefore, the western populations are less resilient. This circumstance impacts the overall viability of the species by reducing the overall resiliency of the thistle to stochastic events.

Future Scenarios Considered

As there are a range of possibilities regarding the intensity of stressors acting on the populations (*i.e.*, decreased water availability to habitat, ungulate grazing, native and nonnative plants, oil and gas development, and mining), we forecast Wright's marsh thistle's resiliency, representation, and redundancy under four plausible scenarios in the SSA report. For these scenarios, we considered four different trajectories for all threats acting on the species (*i.e.*, all threats increasing at two different rates, decreasing, or remaining at the current level). We did not look at

interactions between threats (*i.e.*, one threat increasing with another threat decreasing), as data were not sufficient for this type of analysis, but we did combine the various threat ratings to provide an overall population condition rating using professional judgment. These four scenarios incorporate the best available information on projection of threat data up to 50 years in the future. Sources of data include, but are not limited to, development (urban, agricultural, oil and gas and mining) plans for various areas and climate change models. For example, we referenced the City of Alamogordo's 50-year development plan for projections of future water withdrawals. With regard to climate change models, we used a high to low emissions climate change scenarios from the 2017 U.S. Climate Resilience Toolkit, which provides a range of projections for temperature and precipitation through 2100 (NOAA 2014, unpaginated). While the U.S. Climate Resilience Toolkit (which was accessed in 2017) used older data, current IPCC reports project similar trends to the climate models that we used in the SSA report (IPCC 2021, p. 14). We also used the U.S. Geological Survey's Monthly Water Balance Model Futures Portal that provides projections out to the year 2095 for changes in evapotranspiration (USGS 2017, entire).

Some, but not all, of the threats could be projected beyond 50 years into the future. We can project availability of water resources and effects from climate change (temperature and reduced precipitation) beyond 50 years into the future. However, given our knowledge of the species, their response to known threats, and the future trends of these threats, we determined that 50 years was an appropriate timeframe for our analysis. Our future scenarios were based on the aggregation of all the threats considered, rather than individual threats. Therefore, to develop our future scenarios, we only used projection information up to 50 years into the future, the timeframe that includes projections for all future threats and for which we could predict the expected future resiliency and overall condition for each population based on our knowledge of the species' expected response to identified threats.

First, the "Continuing Current Conditions" scenario projects the condition of Wright's marsh thistle populations if the current risks to population viability continue with the same trajectory as experienced currently. Decreased water availability continues to impact the populations via continuing levels of drought, along with ground and surface water depletion.

Grazing continues where it has been occurring, and the impacts will accumulate. Competition from native and nonnative plants continues, along with any current impacts from oil and gas development. For this scenario, we used the mean level of projected values in temperature (an increase in mean daily maximum temperature of approximately 0.83 °C (1.5 °F) over 50 years).

Second, the "Optimistic" scenario projects the condition of Wright's marsh thistle populations if conservation measures are put in place to limit the impacts of current risks to population viability, including conservation efforts to address decreased water availability, livestock grazing, and competition with native and nonnative plants. For this scenario, we used the low level of projected values in temperature (an increase in mean daily maximum temperature of approximately 0.56 °C (1.0 °F) over 50 years and increases in mean monthly potential evapotranspiration of 0 to 10 millimeters (mm) (0 to 0.4 inches (in)) over 50 years), leading to less severe effects of drought on the riparian ecosystems of which Wright's marsh thistle is a part.

Third, the "Major Effects" scenario projects the condition of Wright's marsh thistle if stressors on the populations are increased. We expect a decrease in water availability, along with increased negative impacts from grazing, native and nonnative plants, oil and gas development, and mining. For this scenario, we used the moderate level of projected values in temperature (an increase in mean daily maximum temperature of approximately 1.7 °C (3.0 °F) over 50 years, and increases in mean monthly potential evapotranspiration of 10 to 30 mm (0.4 to 1.2 in) over 50 years), with increased impacts of drought.

Finally, the "Severe Effects" scenario projects the condition of Wright's marsh thistle populations under the assumption that stressors on the populations are highly increased. Compared to the "Major Effects" scenario, we expect a further decrease in water availability, along with further increased negative impacts from ungulate grazing, native and nonnative plants, oil and gas development, and mining. For this scenario, we used the high level of projected values in temperature (an increase in mean daily maximum temperature of approximately 2.8 °C (5.0 °F) over 50 years and increases in mean monthly potential evapotranspiration of 30 to 80 mm (1.2 to 3.1 in) over 50 years) with increased impacts of drought.

Thus, we considered the range of potential likely scenarios that represent different possibilities for how the stressors outlined above may influence the future condition of the species. The

results of this analysis for each scenario are presented below in Table 2. For specific details on how each scenario impacted the six factors (habitat quantity, number of patches,

abundance, reproduction, permanent root saturation, and full sun) contributing to overall condition of each population, refer to chapter 5 of the SSA report (USFWS 2017, pp. 57–100).

TABLE 2—CONDITION RATINGS FOR EACH OF THE EIGHT POPULATIONS OF WRIGHT'S MARSH THISTLE UNDER FOUR POSSIBLE FUTURE SCENARIOS
[USFWS 2017, pp. 57–100]

| Population | Current condition | Scenario 1: continuing current conditions | Scenario 2: optimistic | Scenario 3: major effects | Scenario 4: severe effects |
|----------------------------|-------------------|---|---------------------------|------------------------------|-------------------------------|
| Eastern Populations | | | | | |
| Santa Rosa Basin | Moderate | Moderate | High | Moderate | Low. |
| Bitter Lake NWR | Moderate | Moderate | High | Moderate | Low. |
| Blue Spring | Moderate | Low | Moderate | Low | Low. |
| Western Populations | | | | | |
| Alamosa Springs | Low | Low | Low | Very Low | Extirpated. |
| Tularosa Creek | Very Low | Extirpated | Very Low | Extirpated | Extirpated. |
| Silver Springs | Very Low | Very Low | Very Low | Extirpated | Extirpated. |
| La Luz Canyon | Very Low | Very Low | Very Low | Extirpated | Extirpated. |
| Karr/Haynes Canyon | Low | Low | Low | Low | Extirpated. |

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. Our assessment of the current and future conditions encompasses and incorporates the threats individually and cumulatively. Our current and future condition assessment is iterative because it accumulates and evaluates the effects of all the factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis.

Summary of Comments and Recommendations

As discussed in the Supporting Documents, above, we received comments on the SSA report from one peer reviewer. We reviewed all comments we received from the peer reviewer for substantive issues and new information regarding Wright's marsh thistle and its critical habitat. The peer reviewer suggested we expand our descriptions of how condition scenarios were developed and how threats were assessed against the population (*e.g.*, at

an individual population level or based on the eastern and western portions of the populations). We addressed their comments by providing clarifying information on how each condition scenario was developed and how threats were assessed at the population and range wide scales. The peer reviewer also provided additional information and clarification on the species biology and life history. Peer reviewer comments were incorporated into the final SSA report making our scenario descriptions, analysis, and conclusions stronger.

We requested written comments from the public on the September 29, 2020, proposed rule (85 FR 61460) during a 60-day comment period that closed on November 30, 2020. We contacted appropriate Federal, State, and Tribal agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. We did not receive any requests for a public hearing. Our summary responses to the substantive comments we received on the September 29, 2020, proposed rule, are provided below. Comments simply providing support for, or opposition to, the proposed rule without any supporting information were not considered to be substantive and we do not provide a response. All substantive information provided during the comment period has either been incorporated directly into this final determination or is addressed below.

Comments From States

(1) *Comment:* Two States, New Mexico and Texas, commented that Wright's marsh thistle was collected in Presidio County, Texas, in 2003 and verified in 2018 (Nesom 2018, entire) and historically occurred in Pecos County, Texas. Per the comments, the Presidio County specimen was originally misidentified as a more common species, and upon reexamination the specimen was determined to be Wright's marsh thistle. Similarly, the Pecos County, Texas, specimen was collected in 1849 and misidentified at the time of collection. Reexamination resulted in the specimen being identified as Wright's marsh thistle based on the same diagnostic morphology as the Presidio County specimen. Botanists from New Mexico and Texas agree with these determinations for both specimens.

Our Response: We updated the final rule to reflect the identification of these two specimens from Texas, as they contribute to the historical and current distribution of Wright's marsh thistle.

(2) *Comment:* The State of Texas commented that the population in Presidio County, which we were not aware of at the time of proposed listing and thus was not included in our proposed critical habitat designation, should not be included in the final critical habitat designation, because they claimed the population is rare but protected from threats, and critical habitat designation could impede voluntary conservation efforts.

Our Response: We did not include this site as critical habitat for Wright's marsh thistle because we could not determine that this site meet the definition of critical habitat. While this location is not a new site (an herbarium specimen was collected in 2003), we were unaware that Wright's marsh thistle had been found in Presidio County, Texas, until we received this information about the rediscovery of the herbarium specimen and the diagnostic analysis conducted. Based on our review of the information provided, we incorporated the additional occurrence information for Presidio County, Texas, into this final rule. We were unable to verify the species information provided by the commenter or assess the location against the criteria established for designating critical habitat. Therefore, this location is not included within our final critical habitat designation.

(3) *Comment:* The State of New Mexico commented that a population at Rattlesnake Springs at Carlsbad Caverns National Monument previously identified as a possible hybrid population was surveyed in 2012. No Wright's marsh thistle plants were found at the site; only Texas thistle (*Cirsium texanum*).

Our Response: The SSA report for Wright's marsh thistle noted that the population at Rattlesnake Springs at Carlsbad Caverns was a hybrid between Wright's marsh thistle and Texas thistle (USFWS 2017, p. 14). The commenter did not provide us with any additional information such as an official report, note, photograph, or herbarium documentation that re-identifies this population as Texas thistle.

(4) *Comment:* The State of New Mexico noted that Wright's marsh thistle was rediscovered in Mexico in 2018 in one of five locations surveyed (Sanchez-Escalante *et.al.* 2019, pp. 7–10).

Our Response: The September 29, 2020, proposed rule (85 FR 61460) used the best available data regarding Wright's marsh thistle distribution and abundance, including the known historical and current population locations available to us during the development of the proposed rule. Based on this new information regarding rediscovery of the species in Mexico, we updated this final rule to reflect the identification of this location from Mexico, as it contributes to the historical and current distribution of Wright's marsh thistle.

(5) *Comment:* The State of New Mexico stated that the proposed critical habitat around the old fishponds in Santa Rosa, New Mexico (Subunit 1a, Blue Hole Hatchery), is all but destroyed

and will likely be completely destroyed given current development plans by the City of Santa Rosa. Hence, the commenter did not think the site could be considered essential to the conservation of the species.

Our Response: We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where this species is located at Blue Hole Hatchery (Subunit 1a) and found that the site still remains occupied and retains the necessary physical and biological features essential to the conservation of the species. Additionally, although the area has been disturbed, it is likely that Wright's marsh thistle seeds are persisting in the soils at the site, creating a seed bank. Designation of critical habitat at this location will help ensure that the remaining population and any associated seeds present at this site are protected into the future.

Additionally, in areas that are occupied at the time of listing, critical habitat may be designated in areas that contain the necessary physical and biological features and may require special management or protection. The physical and biological features in this unit may require special management considerations to protect the species from impacts associated with ground and surface water depletion, as well as native and nonnative plant invasion. Special management or protection may include implementing watershed/ wetland restoration efforts. Because this site is currently occupied and contains the physical and biological features essential to the conservation of the species and which may require special management considerations or protection, this location meets the definition of critical habitat (see Criteria Used To Identify Critical Habitat, below) and is included in this final designation.

(6) *Comment:* The State of New Mexico provided information associated with a previously undocumented population on private lands in New Mexico on the Redhawk Conservation Easement which was placed in stewardship through the conservation easement program with the Natural Resources Conservation Service (NRCS). The commenter recommended that the Service designate this population, which contains several thousand plants, as critical habitat.

Our Response: The Service reached out to NRCS and other individuals with knowledge of this population of Wright's marsh thistle to request information about the Redhawk Conservation Easement. To date, we have been unable to verify that the Redhawk Conservation Easement

contains a population of Wright's marsh thistle and have not been able to assess if the physical and biological features exist at this location. Therefore, we made no changes to this final rule as a result of this comment, and this potential location is not designated as critical habitat in this rule. If we receive new information in the future as a result of additional surveys, we will analyze such information in the course of developing a recovery plan for the species or in 5-year reviews of its status. If we determine that the new information indicates that the area meets the Act's definition of critical habitat, we may choose to revise our critical habitat designation for this species following the Service's established processes for revising a critical habitat designation.

(7) *Comment:* The State of New Mexico provided additional information regarding Wright's marsh thistle population trends at two cienegas in Santa Rosa, New Mexico. Specifically, the commenter noted that, based on 3- to 5-year trend data from Blue Hole and Ballpark cienegas, the trend appears to be declining despite extensive habitat restoration efforts. The commenter suggested that we should adjust our population condition ratings for the two cienegas in the Future Scenario 1 from moderate to low.

Our Response: We relied on the best available data to develop the condition ratings referenced by the commenter in Table 2 of the September 29, 2020, proposed rule (85 FR 61460; see p. 61469). The four scenarios incorporated the best available information on projections of threat data up to 50 years into the future. We reviewed the information provided by the commenter, but we did not make any changes to this final rule as a result of the information because a relatively high number of patches of Wright's marsh thistle continue to exist at this location. After considering the information presented by the commenter, we conclude that the underlying information relied on to establish this condition rating is still accurate; however, the information provided by the commenter, as well as any new information that may become available to us, will be considered and analyzed in the course of developing a recovery plan for the species, or in a future 5-year review of its status.

Comments From the Public

(8) *Comment:* A commenter disagreed with our identification of stressors. Specifically, they stated that although the September 29, 2020, proposed rule (85 FR 61460) identified stressors

including decreased water availability to habitat, ungulate grazing, native and nonnative plants, and oil and gas development and mining, the Service did not conduct enough research to make a determination of which stressor or combination of stressors would lead to a reduction in the size of sites.

Our Response: We are required, by the Act, to make our listing determinations solely on the basis of the best commercial and scientific information available at the time the proposed rule is developed. The stressors identified in the September 29, 2020, proposed rule (85 FR 61460) are those that were known to be currently impacting the species when we published that proposal. While there may be other stressors that affect Wright's marsh thistle, we lacked sufficient information about those stressors and their effects to assess their impacts on the species. The SSA report assesses how individual stressors affect the species, as well as how stressors, in combination with each other, may act cumulatively to affect the species. The information upon which we based our rationale for including these stressors as the primary threats to Wright's marsh thistle is cited earlier in this final rule and more thoroughly discussed in chapter 4 of the SSA report (USFWS 2017, pp. 39–56).

(9) *Comment:* A commenter stated their opposition to the 4(d) rule based on the fact that important water sources occur in the same locations where Wright's marsh thistle is growing. Wildlife and livestock use these waters for their survival, and some water sources have official water rights registered in the respective counties. The commenter stated that Federal agencies must be respectful of water rights as private property rights and seek alternative resolutions with all parties involved to sustain Wright's marsh thistle's survival.

Our Response: As stated in the proposed and this final 4(d) rule, the prohibitions identified are limited to removing and reducing to possession the species from areas under Federal jurisdiction; maliciously damaging or destroying any such species on any such area; or removing, cutting, digging up, or damaging or destroying any such species on any other area in knowing violation of any law or regulation of any State law or regulation or in the course of any violation of a State criminal trespass law. Therefore, other than actions to the species committed in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law, water rights will not be affected by the implementation of this 4(d) rule for

Wright's marsh thistle. Also, in addition to the public comment period provided for the September 29, 2020, proposed rule (85 FR 61460), we have engaged with Federal, Tribal, and State governments, as well as nongovernmental organizations and the general public, by soliciting review and comment on the SSA report. We will continue to work with all interested parties, including private property owners, on the conservation of Wright's marsh thistle into the future.

(10) *Comment:* A commenter stated the Service should list the Wright's marsh thistle as endangered rather than threatened because of the contraction in the species' range, reduction in genetic diversity, lack of effective conservation measures, and widespread alterations of waterways in the Southwest.

Our Response: Based on the SSA report (USFWS 2017, entire), which characterizes the viability of the species now and into the future, we found the species did not meet the Act's definition of an endangered species. Currently, three Wright's marsh thistle populations have moderate resiliency, the species exhibits population redundancy, and there are two representative areas (east and west) that support genetic and environmental diversity. Therefore, the species is not currently in danger of extinction. Rather, the species meets the Act's definition of a threatened species because of the stressors that are affecting Wright's marsh thistle's long-term viability. No information we received during the public comment period led us to change that status determination. If we receive new information in the future, we will analyze such information in the course of developing a recovery plan for the species or in 5-year reviews of its status. If we determine that the new information indicates that the species' status should be changed from threatened to endangered, we would begin rulemaking to reclassify the species.

(11) *Comment:* One commenter stated that we incorrectly set our "foreseeable future" at 25 years when we should have used 50 years, as was analyzed in the SSA report.

Our Response: As discussed in the September 29, 2020, proposed rule (85 FR 61460), we looked at a variety of timeframes, including 50 years. We found that as the projections for the various stressors went past 25 years in the scenarios, the uncertainties associated with some of those projections, particularly water use and depletion, increased. Thus, 25 years was the maximum time that the Service could reasonably determine that future threats and the species' response to

those threats are likely. We note, however, that Wright's marsh thistle was determined to be at risk of extinction in the 25-year timeframe and, as the primary projected threats would not likely be reduced or ameliorated past that point in time, the species would also be at risk of extinction in the 50-year timeframe.

(12) *Comment:* One commenter stated that we should designate additional critical habitat for Wright's marsh thistle, including in Texas, in unoccupied portions of the historical range that have other species of flowering plants that serve to attract pollinators and provide patches between occupied habitat, and places that have no confirmed historical occurrences of the Wright's marsh thistle but that are known to have originally functioned as cienegas or other wetlands and that can be restored as such. These sites would then be suitable for reintroduction of the thistle. Another commenter requested that we expand the designation of critical habitat to include historical habitat in eastern Arizona, western parts of Texas, and Blue Springs State Park in Florida.

Our Response: As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we reviewed available information pertaining to the habitat requirements of the species and identified specific areas within the geographical area occupied by the species at the time of listing that contain the physical and biological features essential to the conservation of the species and may need special management or protection. We did not identify any areas outside the geographical area occupied by the species that are essential for Wright's marsh thistle conservation. For our SSA, we analyzed the best available data regarding Wright's marsh thistle distribution and abundance (including the known historical and current population locations) and considered the conservation needs of the species (USFWS 2017, pp. 14–28).

Additionally, for this final rule, we reviewed and considered new information we received during the public comment period for the proposed rule (85 FR 61460) published September 29, 2020, including information on previously unknown Wright's marsh thistle occurrences in eastern Arizona, western parts of Texas, and an alleged occurrence at Blue Springs State Park in Florida. However, we found the information provided on the Texas and Arizona occurrences was not sufficient

to substantiate that these sites meet the Act's definition of critical habitat for this species. For the Texas occurrence, although the specimen was first collected in 2003, we were unable to verify the species presence based on the information provided by the commenter or assess the location against the criteria established for designating critical habitat. The historical locations in Arizona are areas that are no longer occupied by the species and these historical locations lack the physical and biological features for the species. Please see Areas Occupied at the Time of Listing for a more in-depth explanation for both Texas and Arizona populations. To our knowledge, the species has never been documented in Florida and no physical evidence of the species was provided; therefore, we conclude based on the best scientific data available that Florida is not part of the range of the species. Furthermore, in the critical habitat discussion below, we found that the areas currently occupied by the species are sufficient to conserve the species. Thus, we do not plan to designate unoccupied areas as critical habitat as they are not essential for the species conservation. If new information becomes available, we will consider it when developing our recovery plan for the species.

Determination of the Status of Wright's Marsh Thistle

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines "endangered species" as a species in danger of extinction throughout all or a significant portion of its range, and "threatened species" as a species likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether a species meets the definition of "endangered species" or "threatened species" because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

We have carefully assessed the best scientific and commercial information available regarding the past, present,

and future threats and the cumulative effect of the threats under the section 4(a)(1) factors to Wright's marsh thistle.

Wright's marsh thistle is a narrow endemic (restricted to a small range) with a historical, documented decline. The historical range of the species included 10 locations in New Mexico, 2 locations in Arizona, and 2 locations in Mexico. Wright's marsh thistle has been extirpated from all historical locations in Arizona and Mexico, as well as two locations in New Mexico. In addition, the currently extant populations have declined in population numbers over time based on comparisons between 1995 and 2012 surveys (Sivinski 1996, entire; Sivinski 2012, entire). As a result, the current extant area of the remaining eight populations has contracted in recent years and is currently approximately only 43 ha (106 ac). Of the remaining eight extant populations, three have moderate resiliency, two have low resiliency, and three have very low resiliency and are likely at risk of extirpation (USFWS 2017, pp. 36). The species historically had representation in the form of two morphologically distinct and geographically separate forms (eastern and western populations); the species continues to maintain representation currently in these forms, although population sizes have decreased. Population redundancy is maintained across these representation areas, as well.

Wright's marsh thistle is facing threats across its range that have led to reduced resiliency, redundancy, and representation. Wright's marsh thistle faces threats from habitat degradation due to decreased water availability, livestock grazing, native and nonnative plants, and oil and gas development and mining (Factor A). These threats, which are expected to be exacerbated by continued drought and the effects of climate change (Factor E), were important factors in our assessment of the future viability of Wright's marsh thistle. In addition, small, isolated populations and lack of connectivity contribute to the thistle's low resiliency to stochastic events (Factor E). We expect a further decrease in water availability, along with increased negative impacts from grazing, native and nonnative plants, oil and gas development, and mining. Given current and anticipated future decreases in resiliency, populations would become more vulnerable to extirpation from stochastic events, in turn, resulting in concurrent losses in representation and redundancy. The range of plausible future scenarios of the species' habitat conditions and population factors

suggest possible extirpation in as many as five of eight currently extant populations. The most optimistic model projected no change in resiliency for the eight populations.

As assessed in the SSA report and displayed above in Table 2, the current condition rankings for the eight extant populations show that three populations are in moderate condition, two population are in low condition, and three populations are in very low condition. Wright's marsh thistle exhibits representation across two morphologically distinct and geographically separate forms. While threats are currently acting on the thistle throughout its range, the three eastern populations (Santa Rosa, Bitter Lake, and Blue Springs) were found to have moderate resiliency for their current condition. Populations with moderate resiliency have some ability to withstand stochastic events and continue to contribute to overall redundancy for the species. The threats currently acting on the thistle are likely to reduce the size of some populations as water availability becomes restricted, but the populations currently maintain sufficient resiliency. Therefore, we did not find that the thistle is currently in danger of extinction throughout all of its range, based on the current condition of the species; thus, an endangered status is not appropriate.

Wright's marsh thistle is facing threats across its range that have led to reduced resiliency, redundancy, and representation. According to our assessment of plausible future scenarios, the species is likely to become an endangered species within the foreseeable future throughout all of its range. For the purposes of this determination, the foreseeable future is considered approximately 25 years into the future. This timeframe was arrived at by looking at the various future projections associated with data from the Intergovernmental Panel on Climate Change (IPCC), U.S. Climate Resilience Toolkit, future development plans from the City of Alamogordo and Santa Rosa, and grazing management information from the U.S. Forest Service. These data sources covered a variety of timeframes, but all covered a span of at least 50 years. We, therefore, looked at the projections from these sources in each of our future scenarios out to three-time steps: 10 years, 25 years, and 50 years. We found that as the projections for the various stressors went past 25 years in the scenarios, the uncertainties associated with some of those projections, particularly water use and depletion, increased.

Our analysis of the species' current and future conditions shows that resiliency, representation, and redundancy for Wright's marsh thistle are likely to continue to decline to the degree that the thistle is likely to become in danger of extinction within the foreseeable future throughout all of its range. While the "Optimistic" scenario resulted in two of the populations with moderate current condition improving to high condition due to increased conservation measures, the other three scenarios all resulted in decreased resiliency for some if not most populations. The "Continuing Current Conditions" scenario resulted in one of the current eight extant populations becoming extirpated, the "Major Effects" scenario resulted in three of the current eight extant populations becoming extirpated, and the "Severe Effects" scenario resulted in five of the current eight extant populations becoming extirpated. Based on our understanding of the increasing trends in threats as analyzed into the foreseeable future (*i.e.*, 25 years), the "Continuing Current Conditions" scenario becomes less likely. The decreased resiliency of populations projected in three of the four scenarios would lead to subsequent losses in redundancy and representation, and an overall decline in species viability in the foreseeable future. Further details on the likelihood of scenarios can be found in chapter 5 of the SSA report (USFWS 2017, pp. 57–59).

Due to the continuation of threats at increasing levels, we anticipate a severe future reduction in the thistle's overall range and the extirpation of several populations. Furthermore, we anticipate that the variety of factors acting in combination on the remaining habitat and populations are likely to reduce the overall viability of the species to a very low level. In addition, the conservation measures currently in place are not adequate to overcome the negative impacts from increasing threats, and future conservation measures are not considered highly plausible. The risk of extinction will be high because the remaining populations are small and isolated and have limited or no potential for recolonization after local population extirpations. Thus, after assessing the best available information, we determine that Wright's marsh thistle is not currently in danger of extinction but is likely to become in danger of extinction within the foreseeable future, throughout all of its range, and it, therefore, meets the Act's definition of a threatened species.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. The court in *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), vacated the aspect of the Final Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species" (Final Policy; 79 FR 37578; July 1, 2014) that provided that the Service does not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range. Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the "significance" question or the "status" question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Center for Biological Diversity*, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (*i.e.*, endangered). In undertaking this analysis for Wright's marsh thistle, we choose to address the status question first—we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify portions of the range where the species may be endangered. We evaluated the range of the Wright's marsh thistle to determine if the species is in danger of extinction now in any portion of its range. The range of a species can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the species' range that may meet the definition of an endangered species. For Wright's marsh thistle, we considered whether the threats or their effects on the species are greater in any biologically meaningful portion of the species' range than in other portions such that the species is in danger of extinction now in that portion.

We examined the following threats: decreased water availability from drought and water management practices (*e.g.*, groundwater pumping and surface water diversions) (Factor A); native and nonnative plants (Factor A and E); livestock grazing (herbivory; Factor C); oil, gas, and mining development (Factor A and E); and the cumulative effects of these threats. Population condition differences exist between the eastern and the western portions of the range. The populations in the western part of the range of Wright's marsh thistle are all in lower condition—either low or very low—than those in the eastern portion of the species' range, are all in moderate or better condition. Therefore, because the western populations have a lower resiliency and, therefore, higher risk of extirpation, the western populations *may* have a different status.

We then proceeded to the significance question, asking whether there is substantial information indicating that the western portion of the range *may* be significant. As an initial note, the Service's most recent definition of "significant" within agency policy guidance has been invalidated by court order (see *Desert Survivors v. Dep't of the Interior*, No. 16–cv–01165 (N.D. Cal. Aug. 24, 2018)). Therefore, for purposes of this analysis the Service is screening for significant portions of the range by applying any reasonable definition of "significant." Biological importance/significance is often considered in terms of resiliency, redundancy, or representation. We evaluated the available information about the western populations of Wright's marsh thistle in this context, assessing its significance in terms of these conservation concepts, and determined the information did not substantially indicate it may be significant. The five populations in the western area comprise a total of 7.2 acres, out of a total of 108.3 acres that the species currently occupies: 6.7 percent of the species' range. The small area occupied by the western populations relative to the species' overall range led us to conclude that this portion of the Wright's marsh thistle range is not significant in terms of its overall contribution to the species' resiliency, redundancy, and representation. Therefore, because we could not answer the significance question in the affirmative, we conclude that the western population does not warrant further consideration as a significant portion of the range.

Overall, we found no substantial information that would indicate the western populations may be significant. While this area provides some

contribution to the species' overall ability to withstand catastrophic or stochastic events (redundancy and resiliency, respectively), the species has larger populations that occupy larger areas in the east. Therefore, because we could not answer both the status and significance questions in the affirmative, we conclude that the western portion of the range does not warrant further consideration as a significant portion of the range of Wright's marsh thistle. Therefore, no portion of the species range provides a basis for determining that the species is in danger of extinction in a significant portion of its range, and we determine that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range.

Determination of Status

Our review of the best available scientific and commercial information indicates that Wright's marsh thistle meets the Act's definition of a threatened species. Therefore, we are listing Wright's marsh thistle as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies; private organizations; and individuals. The Act encourages cooperation with the states and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-

sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and subsequent preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or for removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (<https://www.fws.gov/program/endangered-species>), or from our New Mexico Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

Funding for recovery actions for this species will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, states within which Wright's marsh thistle occur including New Mexico and Texas will be eligible for Federal funds to implement management actions that promote the protection or recovery of Wright's marsh

thistle. Information on our grant programs that are available to aid species recovery can be found at: <https://www.fws.gov/service/financial-assistance>. Please let us know if you are interested in participating in recovery efforts for Wright's marsh thistle. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service. Federal agency actions within Wright's marsh thistle habitat that may require conference or consultation, or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the U.S. Fish and Wildlife Service and U.S. Forest Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within the range of the species. The discussion below regarding protective regulations under section 4(d) of the Act complies with our policy.

II. Final Rule Issued Under Section 4(d) of the Act

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as [she] deems necessary and advisable to provide for the conservation of species listed as threatened. The U.S. Supreme Court has

noted that statutory language like “necessary and advisable” demonstrates a large degree of deference to the agency (see *Webster v. Doe*, 486 U.S. 592 (1988)). Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Thus, the combination of the two sentences of section 4(d) provides the Secretary with wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of the threatened species. The second sentence grants particularly broad discretion to the Service when adopting the prohibitions under section 9.

The courts have recognized the extent of the Secretary’s discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld rules developed under section 4(d) as a valid exercise of agency authority where they prohibited take of threatened wildlife or include a limited taking prohibition (see *Alsea Valley Alliance v. Lautenbacher*, 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana v. Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, “once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [her] with regard to the permitted activities for those species. The Secretary may, for example, permit taking, but not importation of such species, or [she] may choose to forbid both taking and importation but allow the transportation of such species” (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

Exercising this authority under section 4(d), the Service developed a rule that is designed to address Wright’s marsh thistle’s specific threats and conservation needs. Although the statute does not require the Service to make a “necessary and advisable” finding with respect to the adoption of specific prohibitions under section 9,

we find that this rule, as a whole, satisfies the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the Wright’s marsh thistle. As discussed above under Summary of Biological Status and Threats, the Service has concluded that Wright’s marsh thistle is likely to become in danger of extinction within the foreseeable future primarily due to habitat loss and modification. The provisions of this 4(d) rule will promote conservation of the species by encouraging management of the landscape in ways that meet landowner’s management priorities while providing for the conservation needs of Wright’s marsh thistle. The provisions of this rule are one of many tools that the Service will use to promote the conservation of the Wright’s marsh thistle.

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 that 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.

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

This obligation does not change in any way for a threatened species with a species-specific 4(d) rule. Actions that result in a determination by a Federal

agency of “not likely to adversely affect” continue to require the Service’s written concurrence and actions that are “likely to adversely affect” a species require formal consultation and the formulation of a biological opinion.

Provisions of the 4(d) Rule

This 4(d) rule will provide for the conservation of Wright’s marsh thistle by prohibiting, except as otherwise authorized or permitted, any person subject to the jurisdiction of the United States from the following: Removing and reducing to possession the species from areas under Federal jurisdiction; maliciously damaging or destroying any such species on any such area; or removing, cutting, digging up, or damaging or destroying any such species on any other area in knowing violation of any law or regulation of any State law or regulation or in the course of any violation of a State criminal trespass law. Almost 30 percent of occupied Wright’s marsh thistle habitat is on Federal land. As discussed in the Summary of Biological Status and Threats (above), habitat loss and modification are affecting the viability of Wright’s marsh thistle (Factor A). A range of activities that occur on Federal land have the potential to impact the thistle, including changes in water availability, ungulate grazing, and oil and gas development. The regulation of these activities through this 4(d) rule would help enhance the conservation of Wright’s marsh thistle by preserving the species’ remaining populations on Federal lands and decrease synergistic, negative effects from other stressors. As a whole, this 4(d) rule will help in the efforts to recover the species.

Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise-prohibited activities, including those described above. The regulations that govern permits for threatened plants state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species (50 CFR 17.72). Those regulations also state that the permit shall be governed by the provisions of § 17.72 unless a special rule applicable to the plant is provided in §§ 17.73 to 17.78. Therefore, permits for threatened species are governed by the provisions of § 17.72 unless a species-specific 4(d) rule provides otherwise. However, under our recent revisions to § 17.71, the prohibitions in § 17.71(a) will not apply to any plant listed as a threatened species after September 26, 2019. As a result, for threatened plant species listed after that

date, any protections must be contained in a species-specific 4(d) rule. We did not intend for those revisions to limit or alter the applicability of the permitting provisions in § 17.72, or to require that every species-specific 4(d) rule spell out any permitting provisions that apply to that species and species-specific 4(d) rule. To the contrary, we anticipate that permitting provisions would generally be similar or identical for most species, so applying the provisions of § 17.72 unless a species-specific 4(d) rule provides otherwise would likely avoid substantial duplication. Moreover, this interpretation brings § 17.72 in line with the comparable provision for wildlife at 50 CFR 17.32, in which the second sentence states that the permit shall be governed by the provisions of § 17.32 unless a special rule applicable to the wildlife, appearing in 50 CFR 17.40 to 17.48, provides otherwise. Under 50 CFR 17.72 with regard to threatened plants, a permit may be issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for botanical or horticultural exhibition, for educational purposes, or for other purposes consistent with the purposes and policy of the Act. Additional statutory exemptions from the prohibitions are found in sections 9 and 10 of the Act.

We recognize the special and unique relationship with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and their close working relationships with local governments and landowners, are in a unique position to assist the Services in implementing all aspects of the Act. In this regard, section 6 of the Act provides that the Services shall cooperate to the maximum extent practicable with the States in carrying out programs authorized by the Act. Therefore, any qualified employee or agent of a State conservation agency which is a party to a cooperative agreement with the Service in accordance with section 6(c) of the Act, who is designated by his or her agency for such purposes, will be able to conduct activities designed to conserve Wright's marsh thistle that may result in otherwise prohibited activities without additional authorization.

Nothing in this 4(d) rule will change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section

7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of Wright's marsh thistle. However, interagency cooperation may be further streamlined through planned programmatic consultations for the species between Federal agencies and the Service, where appropriate.

III. Final 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.

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

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

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the

destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement "reasonable and prudent alternatives" to avoid destruction or adverse modification of critical habitat.

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

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied

by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. When designating critical habitat, the Secretary will first evaluate areas occupied by the species.

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

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

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to:

- (1) Conservation actions implemented under section 7(a)(1) of the Act;
- (2) Regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the

continued existence of any endangered or threatened species; and

(3) The prohibitions found in section 9 of the Act. 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, or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Critical Habitat Prudence and Determinability

In our SSA report and the proposed listing determination for Wright's marsh thistle, we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to the species and that those threats in some way can be addressed by section 7(a)(2) consultation measures. Accordingly, such a designation could be beneficial to the species. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) has been met and because there are no other circumstances the Secretary has identified for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for Wright's marsh thistle. We have also reviewed the available information pertaining to the biological needs of the species and habitat characteristics where the species is located. This and other information represent the best scientific data available and led us to conclude that the designation of critical habitat is determinable for Wright's marsh thistle.

Physical or Biological Features

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. The regulations at 50 CFR 424.02 define "physical or biological features essential to the conservation of the species" as the features that occur in specific areas and that are essential to support the life-history needs of the

species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkali soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic needed to support the life history of the species.

In considering whether features are essential to the conservation of the species, the Service may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to:

- (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.

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

Water availability is a requirement for three of the four life stages of Wright's marsh thistle's life cycle: Seedlings, rosettes, and mature plants. Optimal habitat should include seeps, springs, cienegas, and streams spreading water normally both above and below ground, with surface or subsurface water flow. The water present in this habitat should

be sufficient to allow for permanent root saturation of Wright's marsh thistle in order to provide conditions needed for successful reproduction and survival.

Alkaline soils are required by all four life stages of Wright's marsh thistle's life cycle: Seeds, seedlings, rosettes, and mature plants. These soils are typically found associated with alkaline springs and seeps ranging from low desert up to ponderosa pine forest. Often, water may be available on the landscape in a variety of riparian areas; however, without the presence of alkaline soils in conjunction with water availability, Wright's marsh thistle is unlikely to maintain viability.

Full sunlight is necessary for development of rosettes into mature plants, as well as the survival of mature plants. Optimal habitat includes areas which provide access to sufficient sunlight exposure with no obstructions of sunlight during most life stages of Wright's marsh thistle. These areas should not have dense vegetative cover, which creates competition for sunlight and can negatively impact maturation and flowering of the thistle.

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

Diverse native floral communities are necessary to attract pollinators in order to complete cross pollination of Wright's marsh thistle plants. These communities vary depending on location but may include bulrush (*Scirpus* spp.), beaked spikerush (*Eleocharis rostellata*), Pecos sunflower (*Helianthus paradoxus*), rush (*Juncus* spp.), cattail (*Typha* spp.), and other native flowering plants (Sivinski 1996, pp. 2–4). Many generalist pollinators may visit Wright's marsh thistle (Sivinski 2017, entire). The most common pollinators of the thistle are bees, especially bumble bees (*Bombus* spp.) (Sivinski 2017, entire). A diverse native floral community ensures sufficient pollinators to promote cross pollination within and among patches of Wright's marsh thistle.

Summary of Essential Physical or Biological Features

We derive the specific physical or biological features essential to the conservation of Wright's marsh thistle from studies of the species' habitat, ecology, and life history as described below. Additional information can be found in the SSA report (USFWS 2017, p. 39), available on <http://www.regulations.gov> under Docket No. FWS-R2-ES-2018-0071. We have determined that the following physical or biological features are essential to the conservation of Wright's marsh thistle:

- Water-saturated soils with surface or subsurface water flow that allows permanent root saturation and seed germination;
- Alkaline soils;
- Full sunlight; and
- Diverse floral communities to attract pollinators.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection. As mentioned above, in the case of Wright's marsh thistle, these features include water-saturated soils with surface or subsurface water flow that allows permanent root saturation and seed germination, alkaline soils, full sunlight, and diverse floral communities to attract pollinators. The features may require special management considerations or protection to reduce the following threats: Ground and surface water depletion, increasing drought and changes in climate change, livestock grazing, oil and gas development and mining, and native and nonnative plants. Localized stressors may also include herbicide use and mowing. The species occupies small areas of seeps, springs, and wetland habitat in an arid region that is experiencing drought as well as ongoing and future water withdrawals. The species' highly specific requirements of saturated soils with surface or subsurface water flow make it particularly vulnerable to desiccation and loss of suitable habitat. Furthermore, the thistle's need for full sunlight makes it particularly vulnerable to native and nonnative grass planting and habitat encroachment.

Management activities that could ameliorate these threats include, but are not limited to: (1) Conservation efforts to ensure sufficient water availability; (2) managing livestock grazing via the use of exclosures; (3) control of native and nonnative plants via controlled burning or mechanical treatments; (4) spill prevention and groundwater protection during oil and gas development and mining; (5) watershed/wetland restoration efforts; and (6) efforts to restore a diverse floral community sufficient to attract pollinators. These management activities would protect the physical or biological features for Wright's marsh thistle by providing for surface or subsurface water flow for permanent root saturation, soil alkalinity necessary

for all life stages, the availability of direct sunlight for plant development, and habitat for pollinators to complete cross pollination of the thistle. Additionally, management of critical habitat lands would help limit the impacts of current risks to population viability.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. We are not designating any areas outside the geographical area occupied by the species because formerly occupied areas, such as the ones at Lake Valley, New Mexico, and San Bernadino, Arizona, have become unsuitable due to lack of water as a result of various development activities. Therefore, the unoccupied (but historically occupied) locations do not support any of the physical or biological features for the Wright's marsh thistle and will not contribute to future conservation. Thus, we have not identified any unoccupied areas that meet the definition of critical habitat.

We used existing occurrence data for Wright's marsh thistle and information on the habitat and ecosystems upon which the species depends. These sources of information included, but were not limited to:

- (1) Data used to prepare the SSA and this rule to list the species;
- (2) Information from biological surveys;
- (3) Various agency reports and databases;
- (4) Information from the U.S. Forest Service and other cooperators;
- (5) Information from species experts;
- (6) Data and information presented in academic research theses; and
- (7) Regional Geographic Information System (GIS) data (such as species occurrence data, land use, topography, aerial imagery, soil data, wetland data, and land ownership maps) for area calculations and mapping.

Areas Occupied at the Time of Listing

The critical habitat designation includes currently occupied sites within the species' historical range that have

retained the necessary physical and biological features that will allow for the maintenance and expansion of existing populations. Wright's marsh thistle was historically known to occur in an additional site in Arizona (Sivinski 2012, p. 2). The single location in Arizona was collected in 1851 from San Bernardino Cienega, which straddles the international border with Mexico; the location no longer has suitable wetland habitat in Arizona (Baker 2011, p. 7), and we do not consider the site essential for the conservation of the thistle because of the lack of suitable habitat and very low restoration potential. A site in Presidio County, Texas, was identified in 2003, and mentioned during the proposed rule's public comment period as having Wright's marsh thistle. The Texas specimen was collected in 2003 and misidentified as a different thistle species. It was not correctly identified until 2018, but no field surveys have been conducted to determine if the species still exists at this site. We have insufficient information associated with the Texas location to know if this site is occupied at the time of listing and we are unsure if this population has persisted since the original collection was made. We also do not have any information about whether the habitat is intact and if it contains one or more of the necessary physical or biological features for the species for us to consider designating this location as critical habitat under the first prong of the Act's definition of critical habitat. Likewise, the best available scientific data are not sufficient for us to determine if the site is essential for the conservation of the thistle at this time (*i.e.*, qualifies for consideration as critical habitat under the second prong of the Act's definition of critical habitat).

New Mexico had 10 historical occurrences, but in a recent search effort at one of the locations (Lake County), the thistle was not found (Sivinski 2011, p. 40) and the habitat was found to be converted to an impervious surface. Another of the 10 records (Rattlesnake Springs, Eddy County) is likely a hybrid between Wright's marsh thistle and Texas thistle (NMRPTC 2009, p. 2), and the site where it was recorded is now a golf course. A new potential site in New Mexico located on a Natural Resources Conservation Service easement was identified during the September 29, 2020, proposed rule's public comment period; however, we lack sufficient information to determine if one or more physical and biological features exist at this site. Therefore, we do not consider these three sites in New Mexico to be essential to the conservation of the

thistle, because the species is no longer present, the habitat is no longer suitable, the species was misidentified, or we lack sufficient information. However, the remaining eight locations in New Mexico meet the definition of areas occupied by the thistle at the time of listing; they are: Santa Rosa, Guadalupe County; Bitter Lake NWR, Chaves County; Blue Spring, Eddy County; La Luz Canyon, Carr/Haynes Canyon, Silver Springs, and Tularosa Creek, Otero County; and Alamosa Creek, Socorro County.

In summary, for areas within the geographic area occupied by the species at the time of listing, we delineated critical habitat unit boundaries using the following process:

(1) We obtained point observations of all currently occupied areas;

(2) We drew minimum convex polygons around the point observations; and

(3) We expanded the polygons to include all adjacent areas containing the essential physical and biological features (specifically the wetted area/moist soil outside of highly vegetated locations) to support life-history processes essential to the conservation of the species.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for Wright's marsh thistle. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We are designating as critical habitat lands that we determined are occupied at the time of listing and contain one or more of the physical or biological features that are essential to support life-history processes of the species. We are not designating any areas that are not currently occupied by the species because we were unable to identify areas that support the physical and biological features. Additionally, we did not designate additional areas that were recommended for consideration during

the public comment period because we do not have sufficient information to determine if they are occupied at the time of listing or that the physical and biological features exist at any of these locations and, therefore, cannot conclude that any area would be essential for the conservation of the species.

Eight units and 13 subunits meet the definition of critical habitat based on one or more of the physical or biological features being present to support Wright's marsh thistle's life-history processes. All eight units contain all of the identified physical or biological features necessary to support multiple life-history processes. However, at the subunits level, some stressors such as non-native plants may limit the ability of the Wright's marsh thistle to access the available physical and biological features. Unit 4 and a portion of Unit 6 are excluded from the designation for reasons described below in Exclusions. The final critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document under Regulation Promulgation. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this rule. We will make the coordinates or plot points or both on which each map is based available to the public on <http://www.regulations.gov> at Docket No. FWS-R2-ES-2018-0071 and on the New Mexico Ecological Services' website at <https://www.fws.gov/office/new-mexico-ecological-services>.

Critical Habitat Designation

We are designating 63.4 ha (156.8 ac) in 7 units and 13 subunits as critical habitat for Wright's marsh thistle. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the species. Table 3 provides the approximate area of each critical habitat unit. Table 4 breaks down the approximate percentage and size of the total critical habitat designation by ownership type. Approximately 35 hectares (87 acres) of Wright's marsh thistle critical habitat overlaps with the critical habitat of other species, including the Koster's springsnail (*Juturnia kosteri*), Noel's amphipod (*Gammarus desperatus*), Roswell springsnail (*Pyrgulopsis roswellensis*), Pecos sunflower (*Helianthus paradoxus*), and the New Mexico meadow jumping mouse (*Zapus hudsonius luteus*).

TABLE 3—CRITICAL HABITAT UNITS FOR WRIGHT'S MARSH THISTLE

| Unit number and name | Subunit number and name | Ownership | Area |
|----------------------------|-----------------------------------|--------------------------------------|---------------------|
| 1—Santa Rosa | 1a—Blue Hole Hatchery | City of Santa Rosa | 0.93 ha (2.3 ac). |
| | 1b—Blue Hole Road South | State | 0.45 ha (1.1 ac). |
| | 1c—State Highway 91 North | State | 12.2 ha (30.1 ac). |
| | 1d—Santa Rosa Ballpark South | City of Santa Rosa | 0.97 ha (2.4 ac). |
| | 1e—State Highway 91 South | City of Santa Rosa | 5.9 ha (14.6 ac). |
| | | Private | 0.78 ha (1.92 ac). |
| | 1f—Perch Lake | City of Santa Rosa | 1.9 ha (4.6 ac). |
| | 1g—Sheehan Trust | Private | 2.4 ha (6.0 ac). |
| | 1h—Freeman Property | City of Santa Rosa | 0.18 ha (0.44 ac). |
| | | Private | 0.91 ha (2.24 ac). |
| 2—Alamosa Springs | | Private | 1.58 ha (3.9 ac). |
| 3—Bitter Lake | 3a—NWR Unit 5 | U.S. Fish and Wildlife Service | 3.16 ha (7.8 ac). |
| | 3b—NWR Unit 6 | U.S. Fish and Wildlife Service | 15.9 ha (39.2 ac). |
| 4—Tularosa Creek | | Tribal | Excluded. |
| 5—La Luz Canyon | | U.S. Forest Service | 0.01 ha (0.03 ac). |
| 6—Silver Springs | | U.S. Forest Service | 0.38 ha (0.95 ac). |
| | | Tribal | Excluded. |
| 7—Karr/Haynes Canyon | 7a—Haynes Canyon Road | Private | 0.008 ha (0.02 ac). |
| | 7b—Karr Canyon Road | Private | 0.73 ha (1.8 ac). |
| | 7c—Raven Road | Private | 1.05 ha (2.6 ac). |
| 8—Blue Springs | | Private | 14.04 ha (34.7 ac). |
| Total | | | 63.4 ha (156.8 ac). |

Note: Area estimates reflect all land within critical habitat unit boundaries, and estimates may not sum due to rounding.

TABLE 4—APPROXIMATE PERCENTAGE AND SIZE OF TOTAL CRITICAL HABITAT DESIGNATION FOR WRIGHT'S MARSH THISTLE PER OWNERSHIP TYPE

| Ownership type | Percent of total designation | Size of designation |
|----------------|------------------------------|---------------------|
| Private | 33.9 | 21.5 ha (53.18 ac). |
| Federal | 30.6 | 19.45 ha (48 ac). |
| State | 19.9 | 12.65 ha (31.2 ac). |
| City | 15.6 | 9.88 ha (24.4 ac). |
| Tribal | Excluded | Excluded. |

We present brief descriptions of all units and reasons why they meet the definition of critical habitat for Wright's marsh thistle, below.

Unit 1: Santa Rosa

Unit 1 consists of eight subunits comprising 26.6 ha (65.7 ac) in Guadalupe County, New Mexico. This unit consists of land owned by the City of Santa Rosa, the State of New Mexico, and private landowners. This unit partially overlaps with occupied habitat and designated critical habitat for the federally threatened Pecos sunflower. All subunits within the Santa Rosa unit contain all of the physical or biological features necessary to support the species.

Subunit 1a: Blue Hole Hatchery

Subunit 1a consists of 11 small land parcels comprising 0.93 ha (2.3 ac) in

Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1a lies north of Blue Hole Road on City of Santa Rosa property at the abandoned Blue Hole Hatchery. Special management considerations or protection may be required in Subunit 1a to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Subunit 1b: Blue Hole Road South

Subunit 1b consists of a small, 0.45-ha (1.1-ac) land parcel in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1b lies south of Blue Hole Road and east of El Rito Creek on State of New Mexico land, which is an undeveloped portion of a wetland preserve. Special management considerations or protection may be required in Subunit 1b to address ground and surface water depletion, as well as native and nonnative invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary.

Special management or protection may also include watershed/wetland restoration efforts.

Subunit 1c: State Highway 91 North

Subunit 1c consists of 12.2 ha (30.1 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1c lies north of State Highway 91, near Subunit 1b on State of New Mexico land, which is an undeveloped portion of a wetland preserve. Special management considerations or protection may be required in Subunit 1c to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Subunit 1d: Santa Rosa Ballpark South

Subunit 1d consists of two small land parcels comprising 0.97 ha (2.4 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1d lies south of the City of Santa Rosa ballpark, on an undeveloped portion of City of Santa Rosa land. Special management considerations or protection may be required in Subunit 1d to address ground and surface water depletion, as well as native and nonnative invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. Other special management considerations or protection may be required to address localized stressors from herbicide use and mowing in recreational areas.

Subunit 1e: State Highway 91 South

Subunit 1e consists of 6.7 ha (16.5 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1e lies south of State Highway 91 on City of Santa Rosa and private lands. Special management considerations or protection may be required in Subunit

1e to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Subunit 1f: Perch Lake

Subunit 1f consists of 1.9 ha (4.6 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1f includes most of the shores of Perch Lake on City of Santa Rosa property, extending south into an undeveloped area. Special management considerations or protection may be required in Subunit 1f to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. Other special management considerations or protection may be required to address localized stressors from herbicide use and mowing in areas around Perch Lake, which is located inside the subunit.

Subunit 1g: Sheehan Trust

Subunit 1g consists of 2.4 ha (6.0 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1g lies east of River Road and the Pecos River on privately owned lands, which are currently held in a land trust. Special management considerations or protection may be required in Subunit 1g to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. As this property was formerly grazed and may be grazed again in the

future, special management or protection may be required to address impacts of livestock grazing as appropriate.

Subunit 1h: Freeman Property

Subunit 1h consists of five small parcels of land comprising 1.09 ha (2.68 ac) in Guadalupe County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 1h lies west of Subunit 1g on City of Santa Rosa property and privately owned lands. Special management considerations or protection may be required in Subunit 1h to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Unit 2: Alamosa Springs

Unit 2 consists of 1.58 ha (3.9 ac) in Socorro County, New Mexico. This unit is occupied by Wright's marsh thistle and contains all the physical or biological features necessary to support the species. Unit 2 lies mostly north of Forest Road 140 along Alamosa Creek, on privately owned land. This unit entirely overlaps with occupied habitat for the federally endangered Alamosa springsnail and federally threatened Chiricahua leopard frog. Special management considerations or protection may be required in this unit to address ground and surface water depletion, water quality, soil alkalinity, and native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability, protect ground water and soil from contaminants during mining activities, and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Unit 3: Bitter Lake

Unit 3 consists of two subunits comprising 19.0 ha (47 ac) in Chaves County, New Mexico, on Bitter Lake National Wildlife Refuge (NWR). Unit 3 is occupied by Wright's marsh thistle and is entirely managed by the U.S. Fish and Wildlife Service. Both subunits within the Bitter Lake unit contain all

of the physical or biological features necessary to support Wright's marsh thistle. This unit overlaps with occupied habitat for the federally endangered Koster's springsnail, Noel's amphipod, and Roswell springsnail. The unit also overlaps with designated critical habitat for the Koster's springsnail, Noel's amphipod, Roswell springsnail, and Pecos sunflower.

Subunit 3a: NWR Unit 5

Subunit 3a consists of 3.16 ha (7.8 ac) in Chaves County, New Mexico, within Wetland Management Unit 5 on Bitter Lake NWR. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Special management considerations or protection may be required in Subunit 3a to address ground and surface water depletion, water quality, soil alkalinity, and native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability, prevent spills and protect groundwater during oil and gas development, and decrease competition with native and nonnative plants via prescribed burning and mechanical and herbicide treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Subunit 3b: NWR Unit 6

Subunit 3b consists of 15.9 ha (39.2 ac) in Chaves County, New Mexico, within Wetland Management Unit 6 on Bitter Lake NWR. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Special management considerations or protection may be required in Subunit 3b to address ground and surface water depletion, water quality, soil alkalinity, and native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability, prevent spills and protect groundwater during oil and gas development, and decrease competition with native and nonnative plants via prescribed burning and mechanical and herbicide treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Unit 4: Tularosa Creek

Unit 4 consists of 0.65 ha (1.6 ac) in Otero County, New Mexico. This unit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the

species. Unit 4 lies along Indian Service Route 10, north of Tularosa Creek, on land owned by the Mescalero Apache Tribe. We have excluded the entire Unit 4 from this final critical habitat designation (see Exclusions, below).

Unit 5: La Luz Canyon

Unit 5 consists of 0.01 ha (0.03 ac) in Otero County, New Mexico, on the Lincoln National Forest. This unit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Unit 5 lies north of La Luz Canyon Road, along La Luz Creek, on lands managed by the U.S. Forest Service. Special management considerations or protection may be required in this unit to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and to decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. As this property has the potential to be grazed, special management or protection may be required to address impacts of livestock grazing as appropriate.

Unit 6: Silver Springs

Unit 6 consists of 0.62 ha (1.53 ac) in Otero County, New Mexico. This unit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Unit 6 lies east of State Highway 224, along Silver Springs Creek. This unit contains land on the Lincoln National Forest, which is managed by the U.S. Forest Service, and land owned by the Mescalero Apache Tribe. We have excluded 0.23 ha (0.58 ac) of land in Unit 6 owned by the Mescalero Apache Tribe from this final critical habitat designation (see Exclusions, below). This unit overlaps with occupied habitat and critical habitat for the federally endangered New Mexico meadow jumping mouse. Special management considerations or protection may be required in this unit to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration

efforts. As this property has the potential to be grazed, special management or protection may be required to address impacts of livestock grazing as appropriate.

Unit 7: Karr/Haynes Canyon

Unit 7 consists of three subunits that comprise 1.79 ha (4.42 ac) in Otero County, New Mexico. All subunits within the Karr/Haynes Canyon unit are occupied by Wright's marsh thistle and contain all of the physical or biological features necessary to support the species. This unit consists of privately owned lands.

Subunit 7a: Haynes Canyon Road

Subunit 7a consists of 0.008 ha (0.02 ac) in Otero County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 7a lies south of Haynes Canyon Road on privately owned lands. Special management considerations or protection may be required in Subunit 7a to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. As this property has the potential to be grazed, special management or protection may be required to address impacts of livestock grazing as appropriate.

Subunit 7b: Karr Canyon Road

Subunit 7b consists of two small parcels comprising 0.73 ha (1.8 ac) in Otero County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 7b lies along either side of Karr Canyon Road on privately owned lands. Special management considerations or protection may be required in Subunit 7b to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. As this property has the

potential to be grazed, special management or protection may be required to address impacts of livestock grazing as appropriate.

Subunit 7c: Raven Road

Subunit 7c consists of two small parcels comprising 1.05 ha (2.6 ac) in Otero County, New Mexico. This subunit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 7c lies along either side of Raven Road on privately owned lands. Special management considerations or protection may be required in Subunit 7c to address ground and surface water depletion, as well as native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts. As this property has the potential to be grazed, special management or protection may be required to address impacts of livestock grazing as appropriate.

Unit 8: Blue Springs

Unit 8 consists of 14.04 ha (34.7 ac) in Eddy County, New Mexico. This unit lies along a small tributary north of the Black River on privately owned land. This unit is occupied by Wright's marsh thistle and contains all of the physical or biological features necessary to support the species. Subunit 7c overlaps with occupied habitat for the federally endangered Pecos gambusia. Special management considerations or protection may be required in this unit to address ground and surface water depletion, water quality, soil alkalinity, and native and nonnative plant invasion. Such special management or protection may include conservation efforts to ensure water availability, prevent spills and protect groundwater during oil and gas development, and decrease competition with native and nonnative plants via prescribed burning and mechanical treatments, if necessary. Special management or protection may also include watershed/wetland restoration efforts.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to

jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

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

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

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

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

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

402.02) as alternative actions identified during consultation that:

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

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

(3) Are economically and technologically feasible, and

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

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable. Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinstate formal consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law) and if, subsequent to the previous consultation: (1) The amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (3) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or (4) a new species is listed or critical habitat designated that may be affected by the identified action.

In such situations, Federal agencies sometimes may need to request reinitiation of consultation with us, but the regulations also specify some exceptions to the requirement to reinstate consultation on specific land management plans after subsequently listing a new species or designating new critical habitat. See the regulations for a description of those exceptions.

Application of the “Adverse Modification” Standard

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As

discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

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

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

(1) Actions that would diminish permanent root saturation. Such activities could include, but are not limited to, water diversions and water withdrawals for agricultural, mineral mining, or urban purposes. These activities could reduce Wright's marsh thistle's water availability, and increase its competition for water resources, thereby depleting a resource necessary for the plant's normal growth and survival.

(2) Actions that would alter the alkalinity of the soil. Such activities could include, but are not limited to, oil and gas development and mining. These activities could result in significant ground disturbance that could alter the chemical and physical properties of the soil.

(3) Actions that would diminish the availability of full sunlight. Such activities could include, but are not limited to, vegetation management that encourages growth of competing native and nonnative species. These activities could lead to habitat encroachment

resulting in a decreased availability of sunlight.

(4) Actions that would decrease the diversity and abundance of floral resources and pollinators. Such activities could include, but are not limited to, the use of pesticides and herbicides, livestock grazing, and oil and gas development and mining. These activities could lead to direct mortality of pollinators and diminish the floral resources available to pollinators.

Exemptions

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

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

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

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from designated critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. Exclusion decisions are governed by the

regulations at 50 CFR 424.19 and the Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (hereafter, the "2016 Policy"; 81 FR 7226, February 11, 2016), both of which were developed jointly with the National Marine Fisheries Service (NMFS). We also refer to a 2008 Department of the Interior Solicitor's opinion entitled "The Secretary's Authority to Exclude Areas from a Critical Habitat Designation under Section 4(b)(2) of the Endangered Species Act" (M-37016). We explain each decision to exclude areas, as well as decisions not to exclude, to demonstrate that the decision is reasonable.

Under section 4(b)(2) of the Act, we 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 discretion to exclude the area only if such exclusion would not result in the extinction of the species. In the following sections we describe the process we took to consider each category of impacts and our analyses of the relevant impacts if exclusions to critical habitat designation are appropriate. Table 5 below provides approximate areas (ha, ac) of lands that meet the definition of critical habitat but that we are excluding from this final critical habitat rule under section 4(b)(2) of the Act.

TABLE 5—AREAS EXCLUDED FROM CRITICAL HABITAT DESIGNATION BY CRITICAL HABITAT UNIT FOR WRIGHT'S MARSH THISTLE

| Unit/subunit | Landowner | Hectares (acres) excluded |
|----------------------|------------------------------|---------------------------|
| Unit 4 | Mescalero Apache Tribe | 0.65 ha (1.6 ac). |
| Unit 6 | Mescalero Apache Tribe | 0.23 ha (0.58 ac). |
| Total excluded ..... | ..... | 0.88 ha (2.18 ac). |

Consideration of Economic Impacts

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or

activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the critical habitat units. We then identify

which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a critical habitat designation is analyzed by comparing

scenarios both “with critical habitat” and “without critical habitat.”

The “without critical habitat” scenario represents the baseline for the analysis, which includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (*e.g.*, under the Federal listing as well as other Federal, State, and local regulations). The baseline, therefore, represents the costs of all efforts attributable to the listing of the species under the Act (*i.e.*, conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary section 4(b)(2) exclusion analysis.

For this particular designation, we developed an incremental effect memorandum (IEM) considering the probable incremental economic impacts that may result from the designation of critical habitat. The information contained in our IEM, along with the SSA, was then used to develop a screening analysis of the probable effects of the designation of critical habitat for Wright’s marsh thistle (Industrial Economics, Inc. 2018). We began by conducting a screening analysis of the designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out the geographic areas in which the critical habitat designation is unlikely to result in probable incremental economic impacts. In particular, the screening analysis considers baseline costs (*i.e.*, absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that would protect the habitat area as a result of the Federal listing status of the species. The screening analysis filters out particular areas of critical habitat that are already

subject to such protections and are, therefore, unlikely to incur incremental economic impacts. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. If the critical habitat designation contains any unoccupied units, the screening analysis assesses whether those units are unoccupied because they require additional management or conservation efforts that may incur incremental economic impacts. This screening analysis, combined with the information contained in our IEM, is what we consider our economic analysis of the critical habitat designation for Wright’s marsh thistle and is summarized in the narrative below.

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

In our evaluation of the probable incremental economic impacts that may result from the designation of critical habitat for Wright’s marsh thistle, first we identified, in the IEM dated March 2, 2018, probable incremental economic impacts associated with the following categories of activities: (1) Water quantity/supply, (2) oil and gas development and mining, and (3) livestock grazing. We considered each industry or category individually. Additionally, we considered whether their activities have any Federal involvement. Critical habitat designation will not affect activities that do not have any Federal involvement; under the Act, designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. With the listing of Wright’s marsh thistle, in areas where the species is present, Federal agencies are required to consult with the Service under section 7 of the Act on activities they fund, permit, or implement that may affect the thistle. With the species’ critical habitat designation,

consultations to avoid the destruction or adverse modification of critical habitat will be incorporated into the existing consultation process.

In our IEM, we attempted to clarify the distinction between the effects that will result from the species being listed and those attributable to the critical habitat designation (*i.e.*, difference between the jeopardy and adverse modification standards) for Wright’s marsh thistle’s critical habitat. Because critical habitat for Wright’s marsh thistle is being designated concurrently with the species’ listing, it has been our experience that it is more difficult to discern which conservation efforts are attributable to the species being listed and those which will result solely from the designation of critical habitat. However, the following specific circumstances in this case help to inform our evaluation: (1) The essential physical or biological features identified for critical habitat are the same features essential for the life requisites of the species and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to Wright’s marsh thistle would also likely adversely affect the essential physical or biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of associated with the designation of critical habitat.

The Service is designating 63.4 ha (156.8 ac) across five New Mexico counties as critical habitat for Wright’s marsh thistle. The Service has divided the critical habitat into seven units, with some further divided into subunits. All seven units are occupied by reproducing populations of the thistle. We are not designating any unoccupied habitat. Approximately 30.6 percent of the designation is located on Federal lands and 19.9 percent is on State-owned lands. Approximately 15.6 percent of the lands are owned by the City of Santa Rosa, and approximately 33.9 percent are privately owned. In these areas, any actions that may affect the species or its habitat would also affect designated critical habitat, and it is unlikely that any additional conservation efforts would be recommended to address the adverse modification standard over and above those recommended as necessary to avoid jeopardizing the continued existence of Wright’s marsh thistle. Therefore, the potential incremental economic effects of the critical habitat

designation are expected to be limited to administrative costs.

The entities most likely to incur incremental costs are parties to section 7 consultations, including Federal action agencies and, in some cases, third parties, which are most frequently State agencies or municipalities. Our analysis of economic impacts makes the following assumptions about consultation activity over the next 10 years, most of which are more likely to overstate than understate potential impacts due to the history of biological assessments and implementation of project conservation measures by the action agencies. The analysis assumes that approximately five section 7 consultations will occur annually in the designated critical habitat, across all eight units, based on the previous consultation history in the area. Most of these are anticipated to occur in areas with Federal lands, including Units 3, 5, and 6, as well as the large Unit 1.

This estimate may overstate the number of consultations that will occur given available information on forecast activity. As stated above, we anticipate that conservation efforts needed to avoid adverse modification are likely to be the same as those needed to avoid impacts to the species itself. As such, costs of critical habitat designation for Wright's marsh thistle are anticipated to be limited to administrative costs. We anticipate that the incremental administrative costs of addressing adverse modification of critical habitat for the species in a section 7 consultation will be minor.

The incremental administrative burden resulting from the designation of critical habitat for Wright's marsh thistle, based on the anticipated annual number of consultations and associated consultation costs, is not expected to exceed \$25,000 in most years. The designation is unlikely to trigger additional requirements under State or local regulations. Furthermore, the designation is quite small, limited to 63.4 ha (156.8 ac) in total, with the local government, municipal, and private lands limited to 31.33 ha (77.4 ac); therefore, the designation is not expected to have significant perceptual effects. Because the designation is not expected to result in incremental conservation efforts for the species, the designation is also unlikely to measurably increase the probability that the species will be conserved, and benefits are also unlikely to exceed \$25,000 in a given year. In our economic analysis, we did not identify any ongoing or future actions that would warrant additional recommendations or project modifications to avoid adversely

modifying critical habitat above those we would recommend for avoiding jeopardy to the species, and we anticipate minimal change in management at Bitter Lake NWR and Lincoln National Forest due to the designation of critical habitat for Wright's marsh thistle.

Consideration of National Security Impacts

Section 4(a)(3)(B)(i) of the Act may not cover all DoD lands or areas that pose potential national-security concerns (e.g., a DoD installation that is in the process of revising its INRMP for a newly listed species or a species previously not covered). If a particular area is not covered under section 4(a)(3)(B)(i), then national-security or homeland-security concerns are not a factor in the process of determining what areas meet the definition of "critical habitat." However, the Service must still consider impacts on national security, including homeland security, on those lands or areas not covered by section 4(a)(3)(B)(i), because section 4(b)(2) requires the Service to consider those impacts whenever it designates critical habitat. Accordingly, if DoD, Department of Homeland Security (DHS), or another Federal agency has requested exclusion based on an assertion of national-security or homeland-security concerns, or we have otherwise identified national-security or homeland-security impacts from designating particular areas as critical habitat, we generally have reason to consider excluding those areas.

However, we cannot automatically exclude requested areas. When DoD, DHS, or another Federal agency requests exclusion from critical habitat on the basis of national-security or homeland-security impacts, we must conduct an exclusion analysis if the Federal requester provides credible information, including a reasonably specific justification of an incremental impact on national security that would result from the designation of that specific area as critical habitat. That justification could include demonstration of probable impacts, such as impacts to ongoing border-security patrols and surveillance activities, or a delay in training or facility construction, as a result of compliance with section 7(a)(2) of the Act. If the agency requesting the exclusion does not provide us with a reasonably specific justification, we will contact the agency to recommend that it provide a specific justification or clarification of its concerns relative to the probable incremental impact that could result from the designation. If we conduct an exclusion analysis because

the agency provides a reasonably specific justification or because we decide to exercise the discretion to conduct an exclusion analysis, we will defer to the expert judgment of DoD, DHS, or another Federal agency as to: (1) Whether activities on its lands or waters, or its activities on other lands or waters, have national-security or homeland-security implications; (2) the importance of those implications; and (3) the degree to which the cited implications would be adversely affected in the absence of an exclusion. In that circumstance, in conducting a discretionary section 4(b)(2) exclusion analysis, we will give great weight to national-security and homeland-security concerns in analyzing the benefits of exclusion.

In preparing this final designation, neither DoD nor Department of Homeland Security identified any potential impacts on national security or homeland security; as such, we anticipate no impact on national security or homeland security. During the September 29, 2020, proposed rule's public comment period, we did not receive any additional information on the impacts of the proposed designation on national security or homeland security to determine whether any specific areas should be excluded from this final critical habitat designation under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19; therefore, we made no changes to the critical habitat designation as a result of this consideration.

Consideration of 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. Other relevant impacts may include, but are not limited to, impacts to Tribes, States, local governments, public health and safety, community interests, the environment (such as increased risk of wildfire or pest and invasive species management), Federal lands, and conservation plans, agreements, or partnerships. To identify other relevant impacts that may affect the exclusion analysis, we consider a number of factors including whether there are permitted conservation plans covering the species in the area such as habitat conservation plans, safe harbor agreements, or candidate conservation agreements with assurances, or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of

Tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with Tribal entities. We also consider any State, local, public-health, community-interest, environmental, or social impacts that might occur because of the designation.

Tribal Lands

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

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

However, S.O. 3206 does not preclude us from designating tribal lands or waters as critical habitat, nor does it state that tribal lands or waters cannot meet the Act’s definition of “critical habitat.” We are directed by the Act to identify areas that meet the definition of “critical habitat” (*i.e.*, areas occupied at the time of listing that contain the essential physical or biological features that may require special management or

protection and unoccupied areas that are essential to the conservation of a species), without regard to landownership. While S.O. 3206 provides important direction, it expressly states that it does not modify the Secretaries’ statutory authority.

Unit 4 (Tularosa Creek) and Unit 6 (Silver Springs)—Mescalero Apache, NM

On Mescalero Apache tribal lands, we proposed 0.65 ha (1.6 ac) of critical habitat in Unit 4, as well as 0.23 ha (0.58 ac) of critical habitat in Unit 6, all in Otero County, NM. The sites are considered occupied at the time of listing and meet the definition of critical habitat. However, the Mescalero Apache Tribe is recognized as a sovereign nation and as such is the appropriate entity to manage natural resources on Mescalero Apache tribal land. We have a productive working relationship with the Mescalero Apache Tribe and coordinated with them during the critical habitat designation process.

Benefits of Inclusion—Mescalero Apache Tribe

As discussed above under Effects of Critical Habitat Designation Section 7 Consultation, Federal agencies, in consultation with the Service, must ensure that their actions are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of any designated critical habitat of such species. The difference in the outcomes of the jeopardy analysis and the adverse modification analysis represents the regulatory benefit and costs of critical habitat. A critical habitat designation requires Federal agencies to consult on whether their activity would destroy or adversely modify critical habitat to the point where recovery could not be achieved. Designation of critical habitat on the Mescalero Apache Tribe land of proposed Unit 4 could potentially benefit Wright’s marsh thistle because that area provides habitat for the species, encompasses features essential to conservation of the species, and is occupied by the species. However, formal section 7 consultation within the proposed critical habitat area remains a rare occurrence, due to a general lack of Federal actions requiring consultations, and we do not expect this trend to change in the future. The lack of section 7 consultations results in very limited regulatory benefits for the designation of critical habitat for the Wright’s marsh thistle in this portion of proposed Unit 4. Therefore, we would not expect any additional conservation benefits through the section 7 process from the inclusion

of Mescalero Apache tribal land in the final critical habitat designation.

A possible benefit is that the designation of critical habitat can serve to educate the landowner and public regarding the potential conservation value of an area, and this may focus and contribute to conservation efforts by other parties by clearly delineating areas of high conservation value for certain species. Any information about Wright’s marsh thistle and its habitat that reaches a wide audience, including other parties engaged in conservation activities, would be considered valuable.

The designation of critical habitat may also be beneficial by affecting the implementation of Federal laws, such as the Clean Water Act. These laws require analysis of the potential for proposed projects to significantly affect the environment. Critical habitat may signal the presence of sensitive habitat that could otherwise be missed in the review process for these other environmental laws.

Finally, there is the possible benefit that additional funding could be generated for habitat improvement by an area being designated as critical habitat. Some funding sources may rank a project higher if the area is designated as critical habitat. Tribes often seek additional sources of funding in order to conduct wildlife-related conservation activities. Therefore, having an area designated as critical habitat could improve the chances of receiving funding for Wright’s marsh thistle habitat-related projects.

Benefits of Exclusion—Mescalero Apache Tribe

The benefits of excluding these tribal lands from designated critical habitat are significant. We have determined that the primary benefits that would be realized by foregoing the designation of critical habitat on this area include: (1) Our deference to the Tribe as a sovereign nation to develop and implement conservation and natural resource management plans for their lands and resources, which may include benefits to Wright’s marsh thistle and its habitat that might not otherwise occur; (2) the continuance and strengthening of our effective working relationships with the Tribe to promote conservation of Wright’s marsh and its habitat, as well as other federally listed species; and (3) promoting continued meaningful collaboration and cooperation with the Tribe in working toward recovering native plant communities, including Wright’s marsh thistle habitat. We have found that fish, wildlife, and other natural resources on Tribal lands are better managed under Tribal authorities,

policies, and programs than through Federal regulations wherever possible and practicable. Additionally, this critical habitat designation may compromise our working relationship with the Tribe, which is essential to achieving our mutual goals of managing for healthy ecosystems upon which the viability of endangered and threatened species populations depend.

We have determined that the Mescalero Apache Tribe should be the governmental entity to manage and promote the conservation of the Wright's marsh thistle on their land as indicated in Secretarial Order 3206; Executive Order 13175; and the relevant provision of the Departmental Manual of the Department of the Interior (512 DM 2). We have determined that our working relationship with the Mescalero Apache Tribe would be better maintained if they are excluded from the designation of critical habitat for Wright's marsh thistle. We view this as a substantial benefit.

Benefits of Exclusion Outweigh the Benefits of Inclusion—Mescalero Apache Tribe

The benefits of excluding this area from critical habitat include deference to the Tribe as a sovereign nation to manage its own lands, continuing and strengthening our effective working relationships with the Tribe to promote conservation of Wright's marsh and its habitat, and continuing meaningful collaboration and cooperation in working toward recovering native plant communities, including Wright's marsh thistle habitat.

The benefits of including Mescalero Apache Tribe in the critical habitat designation are limited to the incremental benefits gained through the regulatory requirement to consult under section 7 and consideration of the need to avoid adverse modification of critical habitat, agency and educational awareness, potential additional grant funding, and the implementation of other law and regulations. However, due to the rarity of Federal actions resulting in formal section 7 consultations within the proposed critical habitat area, the benefits of a critical habitat designation are minimal. The Service's working relationship with the Tribe will be better maintained if these sites in Unit 4 and Unit 6 located on Mescalero Apache tribal lands are excluded from the designation. We view this as a substantial benefit since we are committed to cooperative relationships with Tribes for the mutual benefit of endangered and threatened species, including Wright's marsh thistle. For these reasons, we have determined that

designation of critical habitat at these sites would have few, if any, additional benefits beyond those that will result from the presence of the species.

In summary, the benefits of including Mescalero Apache tribal lands in critical habitat are low and are limited to insignificant educational benefits. Educational opportunities would predominately benefit members of the Tribe rather than the general public. Also, for at least two subunits, the areas in question are located on Tribal lands which may not be accessible by the general public. They may also be inaccessible to Tribal members if the species is located on the private property of Tribal members. However, the ability of the Tribe to manage natural resources on their land without the perception of Federal Government intrusion, is a significant benefit. This philosophy is also consistent with our published policies on Native American natural resource management. The exclusion of this area will likely also provide additional benefits to the species that would not otherwise be available such as ensuring continued cooperative working relationships with the Mescalero Apache Tribe. We find that the benefits of excluding this area from critical habitat designation outweigh the benefits of including this area.

Exclusion Will Not Result in Extinction of the Species—Mescalero Apache Tribe

We have determined that exclusion of Mescalero Apache tribal lands will not result in extinction of the species. As discussed above under Effects of Critical Habitat Designation Section 7 Consultation, if a Federal action or permitting occurs, the known presence of Wright's marsh thistle would require evaluation under the jeopardy standard of section 7 of the Act, even absent the designation of critical habitat, and thus will protect the species against extinction. Furthermore, the Mescalero Apache Tribe is committed to protecting and managing Mescalero Apache tribal lands and species found on those lands according to their tribal and cultural management plans and natural resource management objectives. In short, the Mescalero Apache Tribe is committed to greater conservation measures on their land than would be available through the designation of critical habitat. Additionally, the areas we are excluding, 0.88 ha (2.18 ac), accounted for less than 1 percent of areas we are designating as critical habitat. Accordingly, we have determined that all 0.65 ha (1.6 ac) of critical habitat in Unit 4, as well as 0.23 ha (0.58 ac) of critical habitat in Unit 6, of Mescalero

Apache tribal lands are excluded under subsection 4(b)(2) of the Act because the benefits of exclusion outweigh the benefits of inclusion and will not cause the extinction of the species.

Exclusions

After analyzing these potential impacts, we have determined that all 0.65 ha (1.6 ac) of critical habitat in Unit 4, as well as 0.23 ha (0.58 ac) of critical habitat in Unit 6, of Mescalero Apache tribal lands are excluded under subsection 4(b)(2) of the Act in deference to the Tribe, as a sovereign nation, to manage its own lands. During the September 29, 2020, proposed rule's public comment period, we did not receive any additional information regarding other relevant impacts to determine whether any other specific areas should be excluded from the final critical habitat designation under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19. Therefore, we are excluding a total of 0.88 ha (2.18 ac) of Mescalero Apache tribal land from the designation, including all of Unit 4 (0.65 ha (1.6 ac)), as well as 0.23 ha (0.58 ac) of critical habitat in Unit 6.

Required Determinations

Regulatory Planning and Review—Executive Orders 12866 and 13563

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

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act—5 U.S.C. 601 et seq.

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq.), as amended

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

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

Under the RFA, as amended, and as understood in light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the

agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this critical habitat designation. The RFA does not require evaluation of the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities will be directly regulated by this rulemaking, the Service certifies that this critical habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether designation will result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that the final critical habitat designation will not have a significant economic impact on a substantial number of small business entities. Therefore, 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. In our economic analysis, we did not find that the designation of critical habitat will have an annual effect on the economy of \$100 million or more or significantly affect energy supplies, distribution, or use due to the lack of any energy supply or distribution lines within the critical habitat designation. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

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

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

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C.

658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon state, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to state, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or Tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

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

(2) We have determined that this rule will not significantly or uniquely affect small governments because it would not produce a Federal mandate of \$100 million or greater in any year; that is, it

is not a “significant regulatory action” under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Consequently, we have determined that the critical habitat designation would not significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required. We did notify the City of Santa Rosa when we proposed to designate critical habitat for the Wright’s marsh thistle, and we invited their comments on the proposed critical habitat designation with regard to any potential effects. We did not receive any comments from the City of Santa Rosa; therefore, we made no changes to this rule.

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 Wright’s marsh thistle in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed, and it concludes that this designation of critical habitat for Wright’s marsh thistle will 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 summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we

requested information from, and coordinated development of this final critical habitat designation with, appropriate State resource agencies in New Mexico. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule will not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical or biological features of the habitat necessary 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 State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

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

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that this rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of the species. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

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

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

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

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). However, when the range of the species includes States within the Tenth Circuit, such as that of the Wright’s marsh thistle, 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. During the public comment period we provided a draft Environmental Assessment and invited the public to comment on the extent to which this rule may have a significant impact on the human environment or fall within one of the categorical exclusions for actions that have no individual or cumulative effect on the quality of the human environment. We then finalized the Environmental Assessment and determined that the designation of critical habitat for Wright’s marsh thistle does not constitute a major Federal action significantly affecting the quality of the human environment under the meaning of Section 102(2)(c) of the NEPA (1969, as amended). Therefore, the Service made a Finding of No Significant Impact as allowed by NEPA regulation and supported by Council on Environmental Quality guidance.

Government-to-Government Relationship With Tribes

In accordance with the President’s memorandum of April 29, 1994 (Government-to-Government Relations

with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes.

The Mescalero Apache Tribe is the main Tribe whose lands and trust resources may be affected by this rule. We sent a notification letter to the Mescalero Apache Tribe on April 6, 2014, describing the exclusion process under section 4(b)(2) of the Act, we engaged in conversations with the Tribe about the final designation to the extent

possible without disclosing pre-decisional information via requests for additional information in September 2016 and January 2018, and provided notice of the publication of the 2020 proposed rule. There may be some other Tribes with trust resources in the area, but we have no specific documentation of this. Using the criteria described above under Criteria Used To Identify Critical Habitat, we determined that 0.88 ha (2.18 ac) of Mescalero Apache lands met the definition of critical habitat. After considering impacts of the critical habitat designation under section 4(b)(2) of the Act, we are excluding the 0.88 ha (2.18 ac) of Mescalero Apache lands from the final critical habitat designation.

References Cited

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

Authors

The primary authors of this final rule 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; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. Amend § 17.12 in paragraph (h) by adding an entry for “*Cirsium wrightii*” to the List of Endangered and Threatened Plants in alphabetical order under FLOWERING PLANTS to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

| Scientific name | Common name | Where listed | Status | Listing citations and applicable rules |
|-------------------------------|------------------------------|----------------------|-----------|---|
| FLOWERING PLANTS | | | | |
| * * * * * | * * * * * | * * * * * | * * * * * | * * * * * |
| <i>Cirsium wrightii</i> | Wright's marsh thistle | Wherever found | T | 88 FR [INSERT FEDERAL REGISTER PAGE WHERE THE DOCUMENT BEGINS], 4/25/2023; 50 CFR 17.73(c); ^{4d} 50 CFR 17.96(a). ^{CH} |
| * * * * * | * * * * * | * * * * * | * * * * * | * * * * * |

■ 3. Amend § 17.73 by adding paragraph (c) to read as follows:

§ 17.73 Special rules—flowering plants.

* * * * *

(c) *Cirsium wrightii* (Wright's marsh thistle).

(1) *Prohibitions.* The following prohibitions that apply to endangered plants also apply to the Wright's marsh thistle. Except as provided under paragraph (c)(2) of this section, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

(i) Remove and reduce to possession the species from areas under Federal jurisdiction, as set forth at § 17.61(c)(1) for endangered plants.

(ii) Maliciously damage or destroy the species on any areas under Federal

jurisdiction, or remove, cut, dig up, or damage or destroy the species on any other area in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law, as set forth at section 9(a)(2)(B) of the Act.

(2) *Exceptions from prohibitions.* The following exceptions from prohibitions apply to the Wright's marsh thistle:

(i) The prohibitions described in paragraph (c)(1) of this section do not apply to activities conducted as authorized by a permit issued in accordance with the provisions set forth at § 17.72.

(ii) Any employee or agent of the Service or of a State conservation agency that is operating a conservation program pursuant to the terms of a cooperative agreement with the Service in accordance with section 6(c) of the Act, who is designated by that agency for such purposes, may, when acting in

the course of official duties, remove and reduce to possession from areas under Federal jurisdiction members of the Wright's marsh thistle that are covered by an approved cooperative agreement to carry out conservation programs.

* * * * *

■ 4. Amend § 17.96 in paragraph (a) by adding an entry for “Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle)” in alphabetical order to read as follows:

§ 17.96 Critical habitat—plants.

(a) *Flowering plants.*

* * * * *

Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle)

(1) Critical habitat units are depicted for Chavez, Eddy, Guadalupe, Otero, and Socorro Counties, New Mexico, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of Wright's marsh thistle consist of the following components:

(i) Water-saturated soils with surface or subsurface water flow that allows permanent root saturation and seed germination;

(ii) Alkaline soils;

(iii) Full sunlight; and

(iv) Diverse floral communities to attract pollinators.

(3) Critical habitat does not include humanmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on

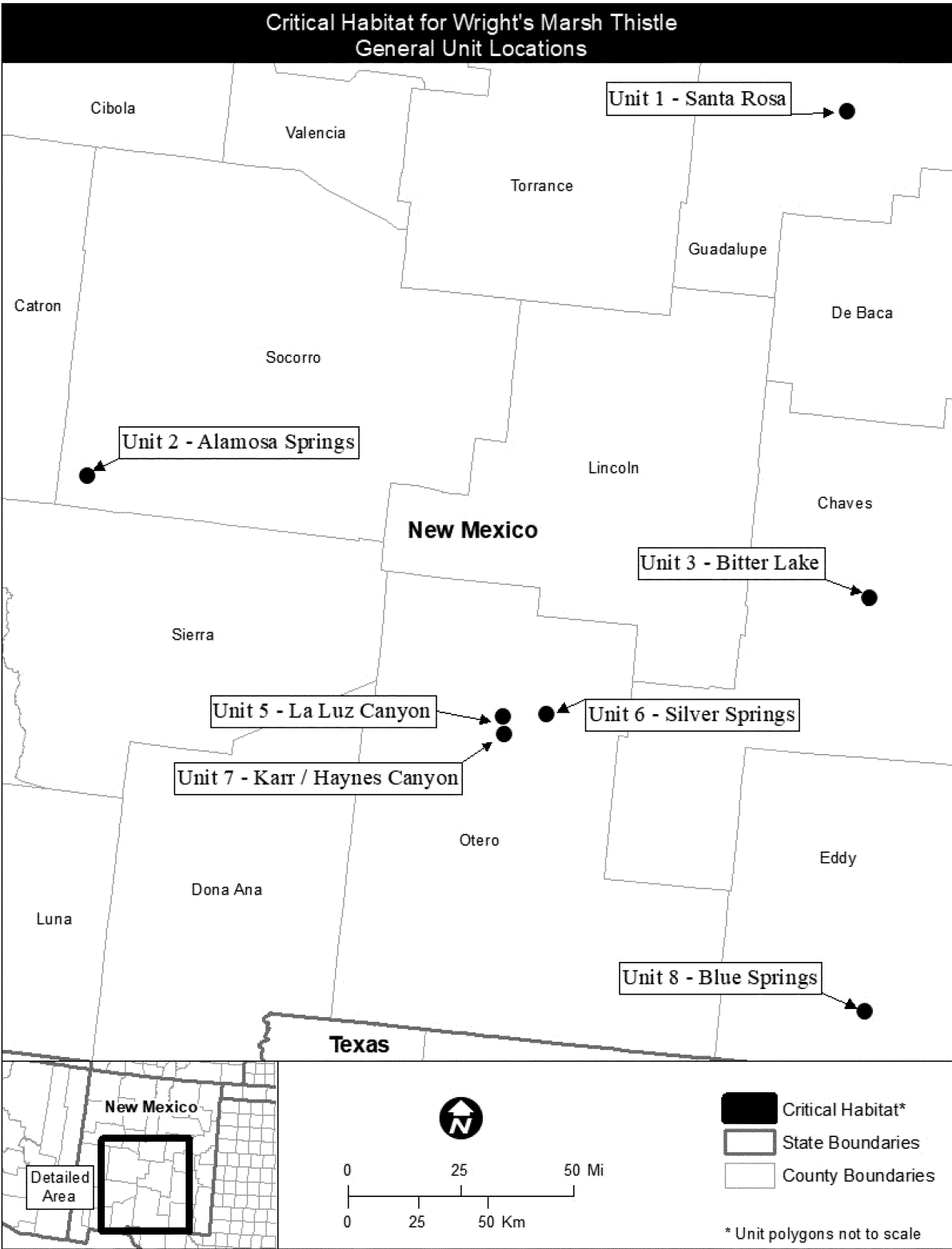
which they are located existing within the legal boundaries on May 25, 2023.

(4) Data layers defining map units were created using the latest imagery available through Esri (<https://www.esri.com/en-us/home>). The source is DigitalGlobe, and the year of the imagery was 2016. Critical habitat units were then mapped using ArcGIS ArcMap 10.4. All data are in North America Albers Equal Area Conic projection, Datum North American 1983. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on

which each map is based are available to the public at the Service's internet site at <https://www.fws.gov/office/new-mexico-ecological-services>, at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2018-0071, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Index map follows:
Figure 1 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle)
paragraph (5)

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(6) Unit 1: Santa Rosa, Guadalupe County, New Mexico.
(i) Unit 1 consists of 26.6 hectares (ha) (65.7 acres (ac)) in Guadalupe County,

New Mexico, and is composed of lands in State (12.65 ha (31.2 ac)), City of Santa Rosa (9.88 ha (24.4 ac)), and private (4.09 ha (10.16 ac)) ownership.

(ii) Maps of Unit 1 follow: Figure 2 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (6)(ii)

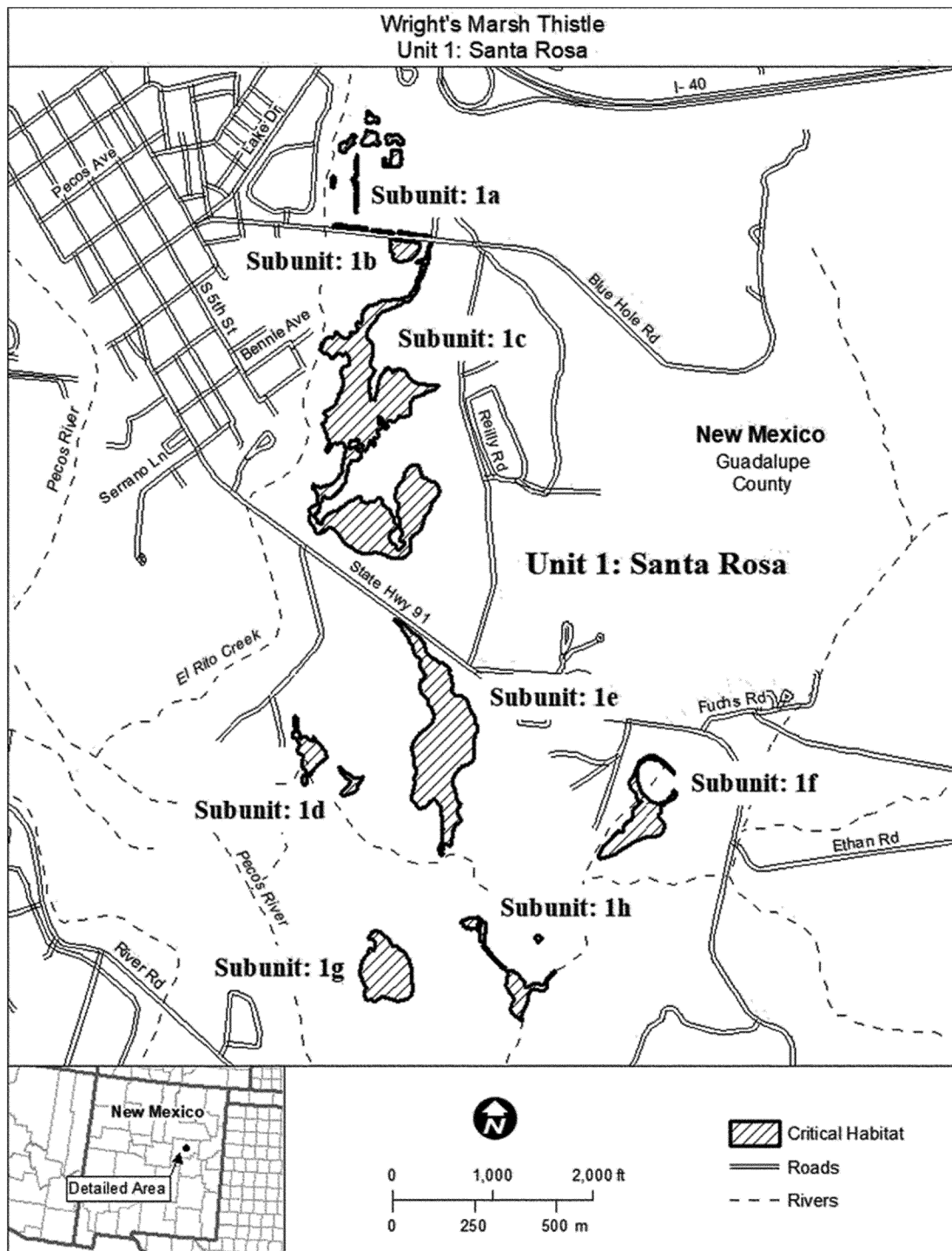


Figure 3 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle)
paragraph (6)(ii)

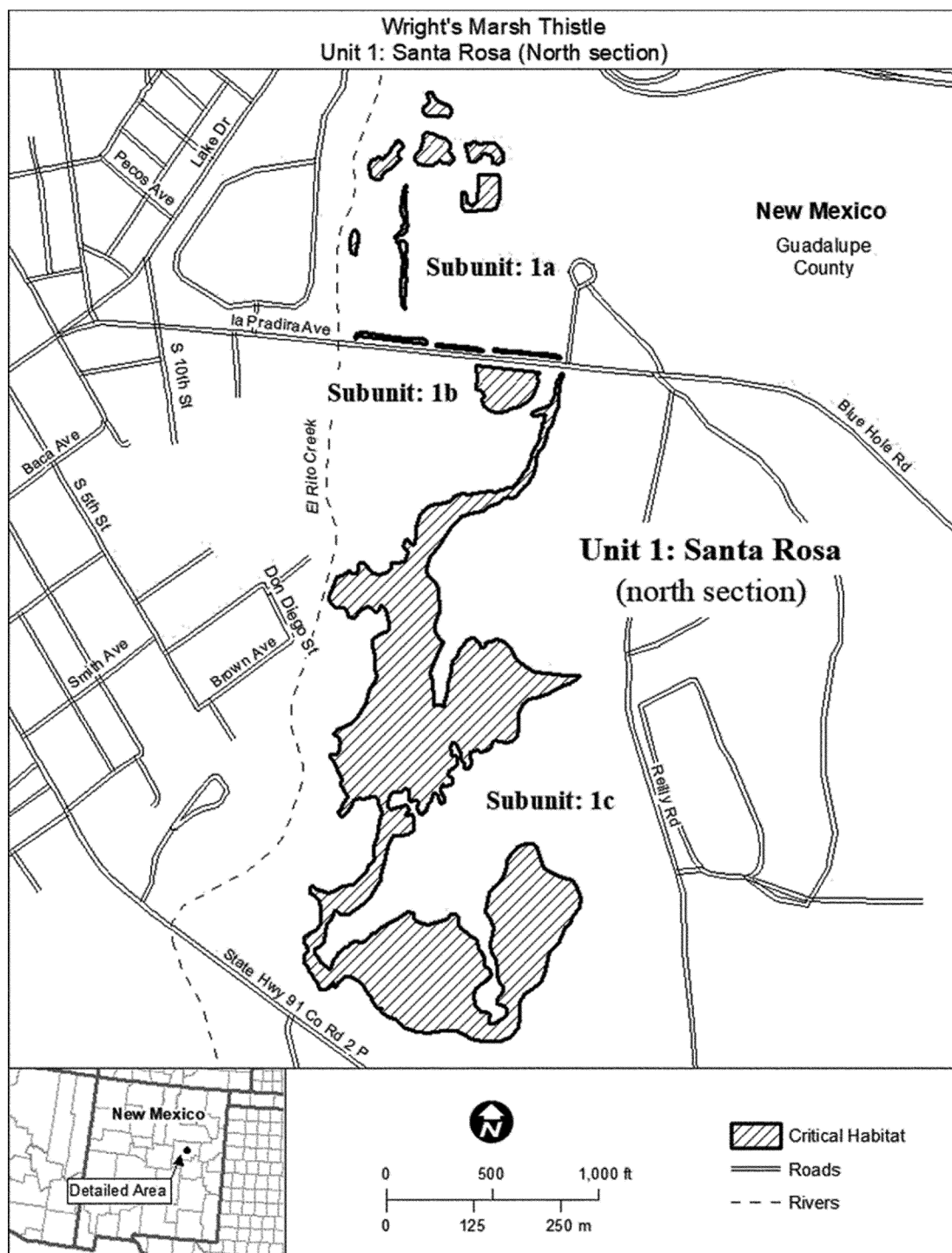
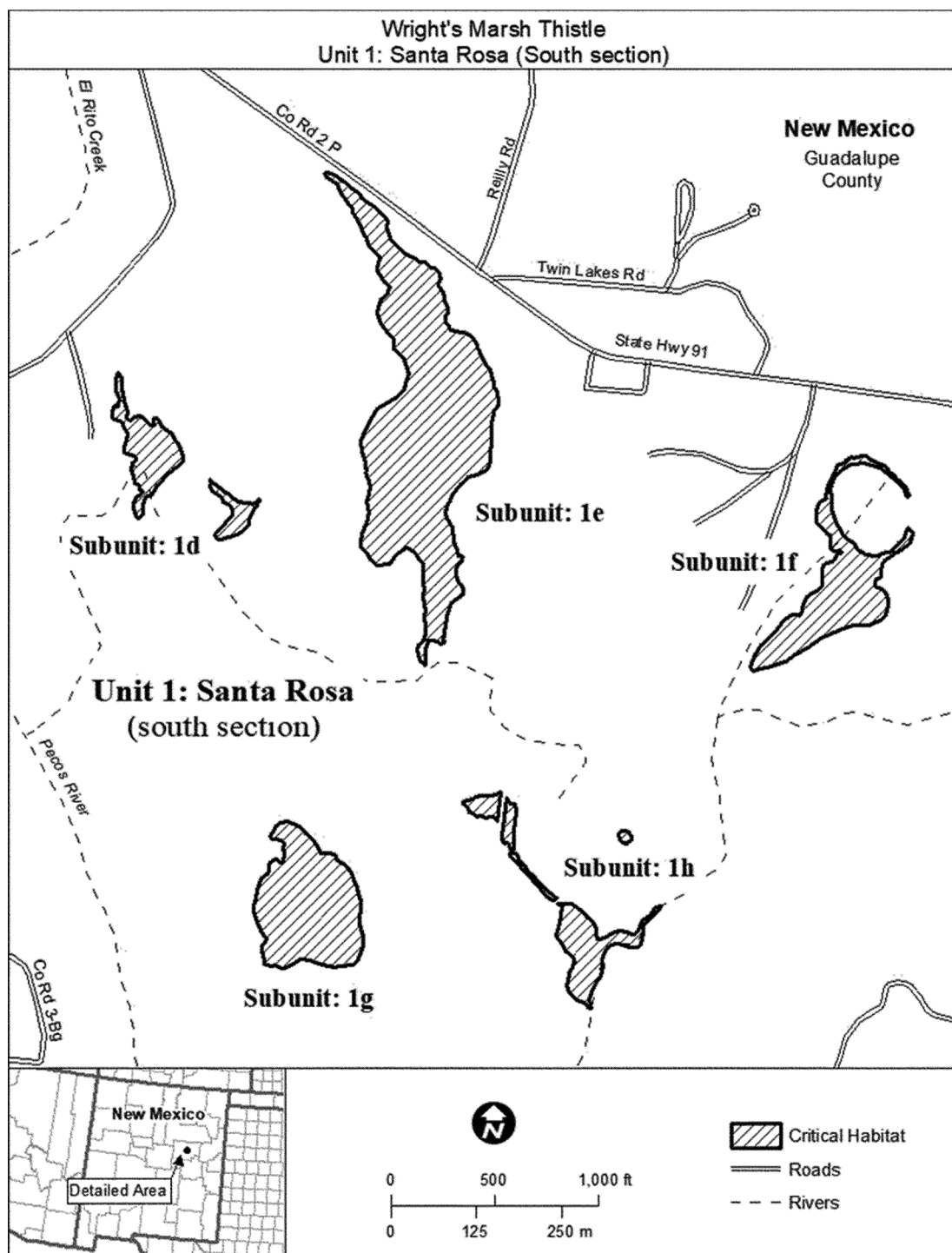


Figure 4 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (6)(ii)



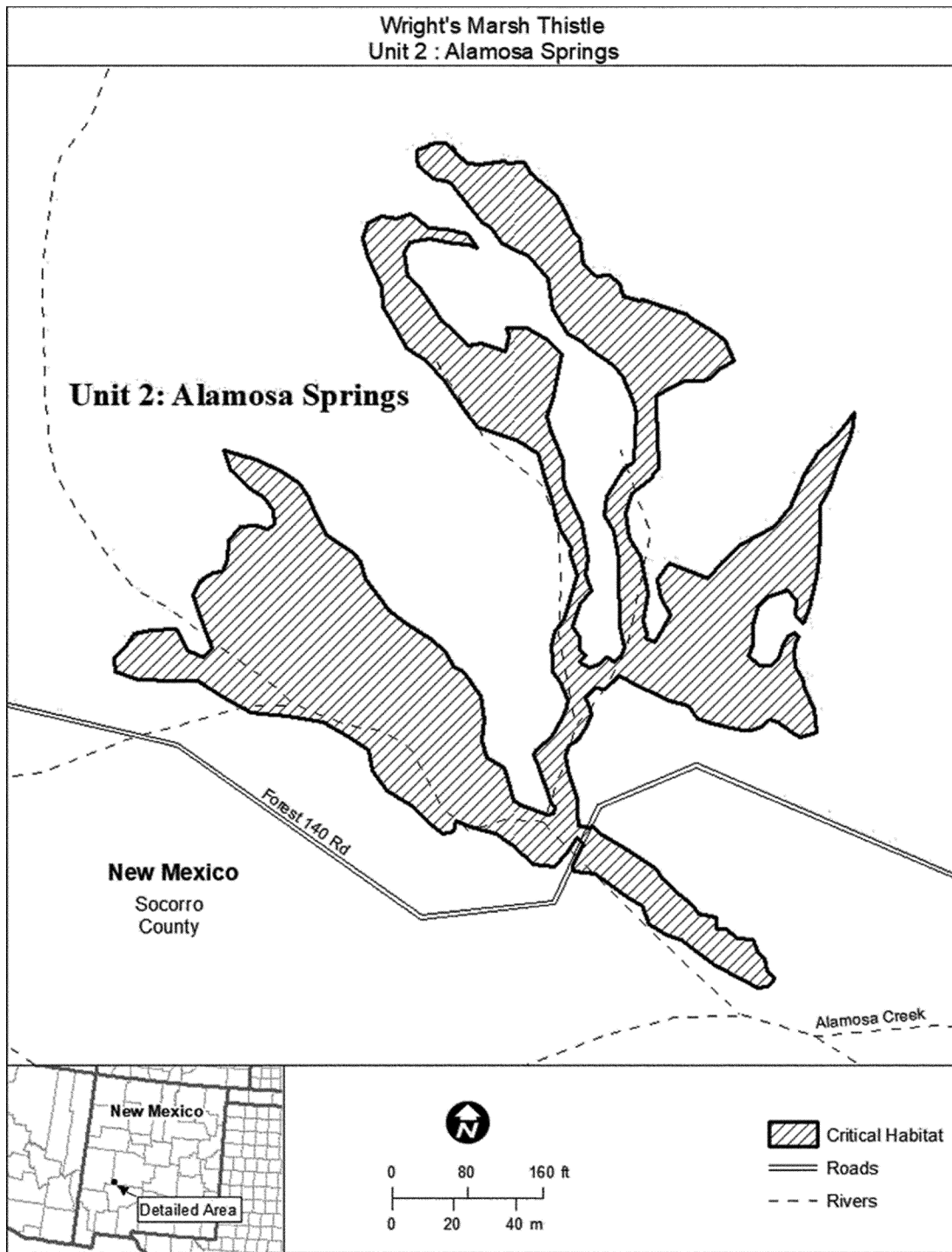
(7) Unit 2: Alamosa Springs, Socorro County, New Mexico.

(i) Unit 2 consists of 1.58 ha (3.9 ac) in Socorro County, New Mexico, and is

composed of lands in private ownership.

(ii) Map of Unit 2 follows:

Figure 5 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (7)(ii)

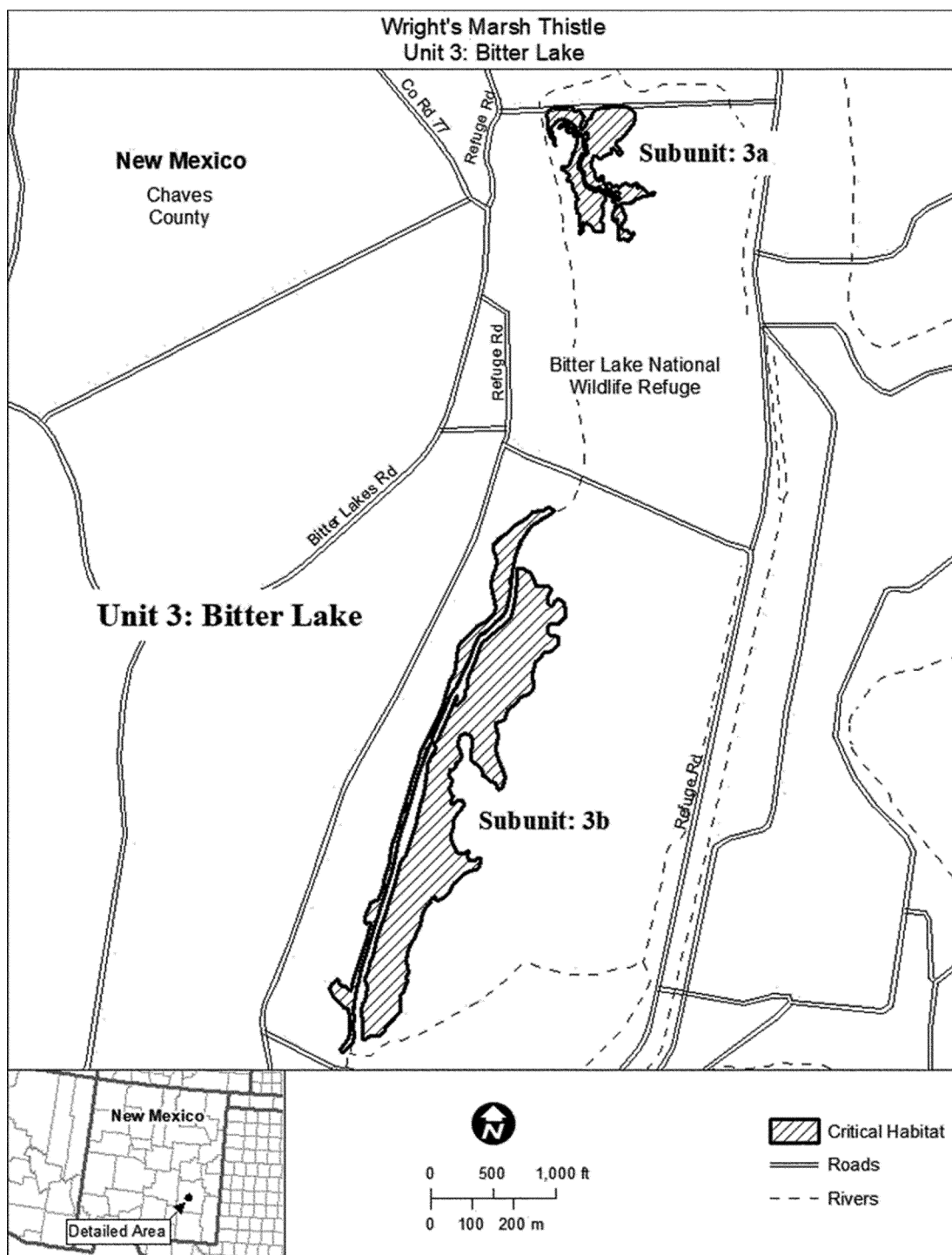


(8) Unit 3: Bitter Lake, Chaves County, New Mexico.

(i) Unit 3 consists of 19.0 ha (47.0 ac) in Chaves County, New Mexico, and is

composed of lands under Federal management, specifically the U.S. Fish and Wildlife Service's Bitter Lake National Wildlife Refuge.

(ii) Map of Unit 3 follows:
 Figure 6 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (8)(ii)

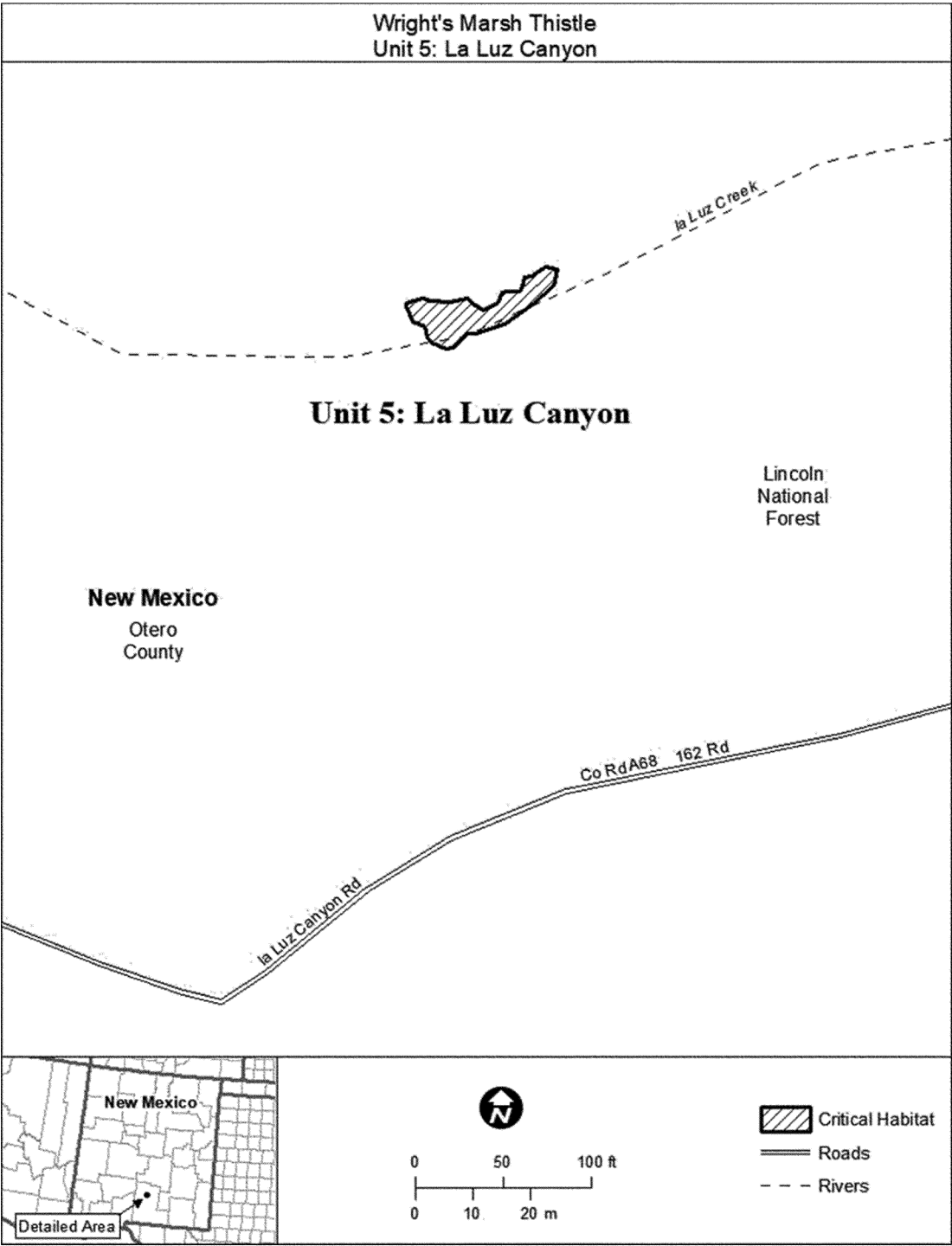


(9) Unit 4 has been excluded from this critical habitat designation.

(10) Unit 5: La Luz Canyon, Otero County, New Mexico.

(i) Unit 5 consists of 0.01 ha (0.03 ac) in Otero County, New Mexico, and is composed of lands under Federal management, specifically the U.S. Forest Service's Lincoln National Forest.

(ii) Map of Unit 5 follows:
Figure 7 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (10)(ii)

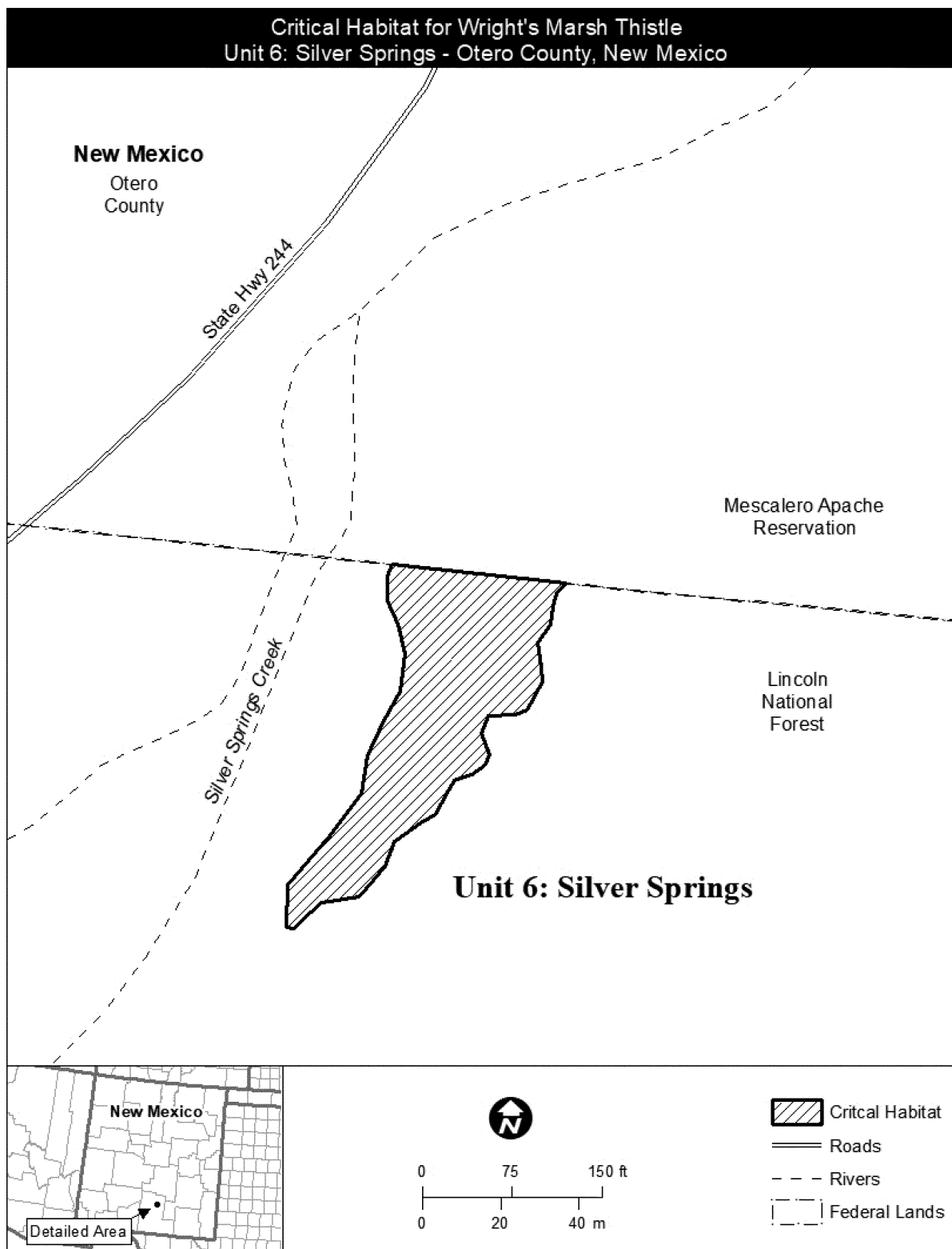


(11) Unit 6: Silver Springs, Otero County, New Mexico.

(i) Unit 6 consists of 0.38 ha (0.95 ac) in Otero County, New Mexico, and is composed of lands under Federal management, specifically the U.S. Forest Service's Lincoln National Forest.

(ii) Map of Unit 6 follows:

Figure 8 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (11)(ii)



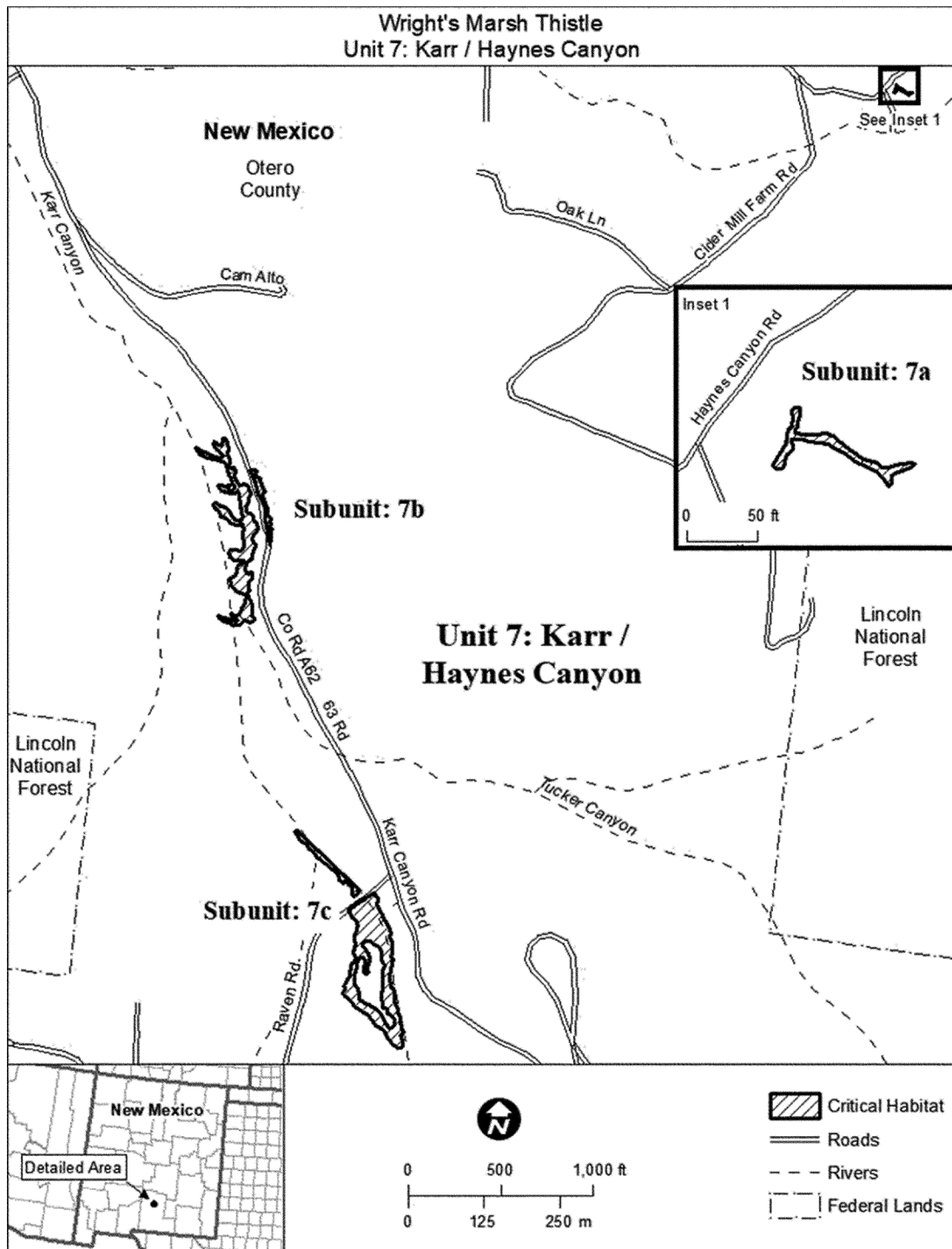
(12) Unit 7: Karr/Haynes Canyon, Otero County, New Mexico.

(i) Unit 7 consists of 1.79 ha (4.42 ac) in Otero County, New Mexico, and is

composed of lands in private ownership.

(ii) Map of Unit 7 follows:

Figure 9 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (12)(ii)



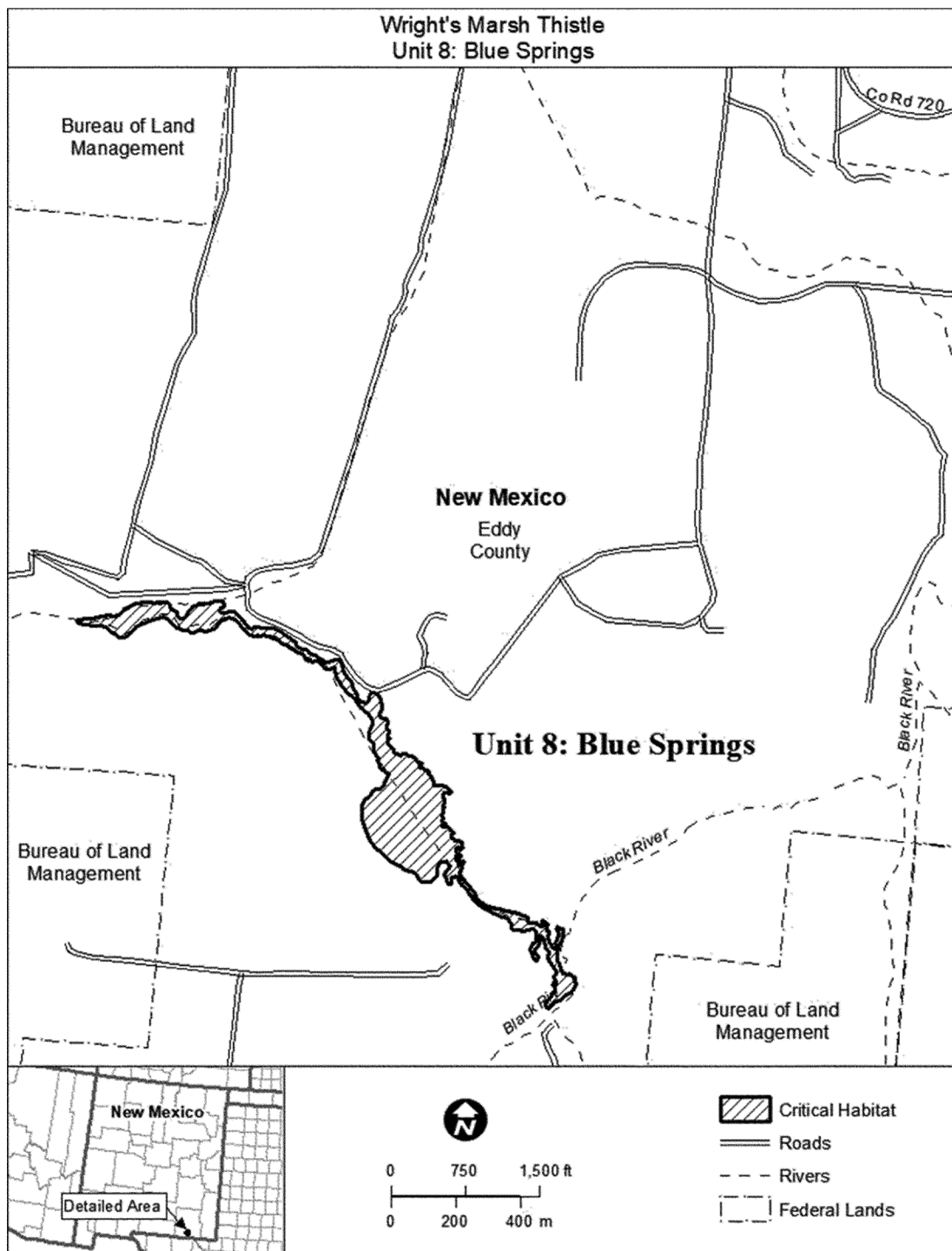
(13) Unit 8: Blue Springs, Eddy County, New Mexico.

(i) Unit 8 consists of 14.04 ha (34.7 ac) in Eddy County, New Mexico, and is

composed of lands in private ownership.

(ii) Map of Unit 8 follows:

Figure 10 to Family Asteraceae: *Cirsium wrightii* (Wright's marsh thistle) paragraph (13)(ii)



* * * * *

Stephen Guertin,
*Acting Director, U.S. Fish and Wildlife
Service.*

[FR Doc. 2023-08565 Filed 4-24-23; 8:45 am]

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