



## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 17**

**[Docket No. FWS–R2–ES–2017–0014; 4500090023]**

**RIN 1018-BD53**

### **Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Sonoyta Mud Turtle**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to designate critical habitat for the Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 12.28 acres (4.97 hectares) in Pima County, Arizona, located entirely within Organ Pipe Cactus National Monument, fall within the boundaries of the proposed critical habitat designation. If we finalize this rule as proposed, it would extend the Act's protections to this subspecies' critical habitat. We also announce the availability of a draft economic analysis of the proposed designation of critical habitat for the Sonoyta mud turtle.

**DATES:** We will accept comments on the proposed rule or draft economic analysis that are received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION**

**CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** *Written comments:* You may submit comments on the proposed rule or draft economic analysis by one of the following methods:

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

<http://www.regulations.gov>. In the Search box, enter FWS–R2–ES–2017–0014, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on “Comment Now!”

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R2–ES–2017–0014, U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

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

*Document availability:* The draft economic analysis and the species status assessment report (SSA Report) are available online at <http://www.fws.gov/southwest/es/arizona/> and at <http://www.regulations.gov> under Docket No. FWS–R2–ES–2017–0014, and at the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

The coordinates or plot points or both from which the map was generated are included in the administrative record for this critical habitat designation and are available online at <http://www.fws.gov/southwest/es/arizona/> and at <http://www.regulations.gov> under Docket No. FWS–R2–ES–2017–0014, and in person at the Arizona Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this critical habitat designation will also be available at the Fish and Wildlife Service website and Field Office set out above, and may also be available on <http://www.regulations.gov>.

**FOR FURTHER INFORMATION CONTACT:** Field Supervisor, U.S. Fish and Wildlife Service, Arizona Ecological Services Field Office, Fish and Wildlife Office, 9828 North 31st Ave #C3, Phoenix, AZ 85051–2517; telephone 602–242–0210; facsimile 602–242–2513. If you use a telecommunications device for the deaf (TDD), call the Federal Relay Service at 800-877-8339.

**SUPPLEMENTARY INFORMATION:**

**Executive Summary**

*The basis for our action.* Section 4(b)(2) of the Act states that the Secretary of the Interior shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, the impact on national security, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the

species.

*Why we need to publish a rule.* Under the Act, any species that is determined to be endangered or threatened requires critical habitat to be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule. This is a proposed rule to designate critical habitat for the Sonoyta mud turtle under the Act. Supplemental documentation includes a draft economic analysis and species status assessment.

### **Information Requested**

We intend that any final action resulting from this proposed rule will be based on the best scientific data available and be as accurate and as effective as possible.

Therefore, we request comments or information from other concerned government agencies, the scientific community, industry, or any other interested party concerning this proposed rule. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as “critical habitat” under section 4 of the Act (16 U.S.C. 1531 *et seq.*) including whether there are threats to the subspecies from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threat outweighs the benefit of designation such that the designation of critical habitat may not be prudent.

(2) Specific information on:

(a) The amount and distribution of Sonoyta mud turtle habitat;

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

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

(d) What areas not occupied at the time of listing are essential for the conservation of the subspecies and why; and

(e) Current habitat information within the Rio Sonoyta watershed and whether any potential habitat areas there may be essential to the conservation of the Sonoyta mud turtle.

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

(4) Information on the projected and reasonably likely impacts of climate change on the Sonoyta mud turtle and proposed critical habitat.

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

(6) Information on the extent to which the description of probable economic impacts in the draft economic analysis is a reasonable estimate of the likely economic impacts of the designation.

(7) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act.

(8) The likelihood of adverse social reactions to the designation of critical

habitat, as discussed in the draft economic analysis, and how the consequences of such reactions, if likely to occur, would relate to the conservation and regulatory benefits of the proposed critical habitat designation.

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

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

All comments submitted electronically via <http://www.regulations.gov> will be presented on the website in their entirety as submitted. For comments submitted via hard copy, we will post your entire comment—including your personal identifying information—on <http://www.regulations.gov>. You may request at the top of your document that we withhold personal information such as your street address, phone number, or e-mail address from public review; however, we cannot guarantee that we will be able to do so.

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

## **Previous Federal Actions**

The final rule listing the Sonoyta mud turtle as endangered was published in the *Federal Register* on September 20, 2017 (82 FR 43897). All other previous Federal actions are described in the proposed rule to list Sonoyta mud turtle as an endangered species under the Act, published in the *Federal Register* on September 21, 2016 (81 FR 64829).

## **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 of the Interior (*i.e.*, range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.*, migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

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

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the



geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the specific features that 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. We will determine whether unoccupied areas are essential for the conservation of the species by considering the life-history, status, and conservation needs of the species. This will be further informed by any generalized conservation strategy, criteria, or outline that may have been developed for the species to provide a substantive foundation for identifying which features and specific areas are essential to the

conservation of the species and, as a result, the development of the critical habitat designation. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation.

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 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 species status assessment document 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) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of the species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

### **Prudency Determination**

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered

or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist:

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

(2) Such designation of critical habitat would not be beneficial to the species. In determining whether a designation would not be beneficial, the factors the Service may consider include but are not limited to: Whether the present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or whether any areas meet the definition of "critical habitat."

As discussed in the final rule listing the Sonoyta mud turtle as an endangered species (82 FR 43897; September 20, 2017), there is currently no imminent threat of take attributed to collection or vandalism identified under Factor B (overutilization for commercial, recreational, scientific, or educational purposes) for this subspecies, and identification and mapping of critical habitat is not expected to initiate any such threat. In the absence of finding that the designation of critical habitat would increase threats to a species, we next determine whether such designation of critical habitat would not be beneficial to the species. As discussed in our final listing rule, we determined that the present destruction, modification, or curtailment of a species' habitat or range is a threat to the Sonoyta mud turtle. Therefore, because we have determined that the designation of critical habitat will not likely increase the degree of threat to the subspecies and would be beneficial, we find that designation of critical habitat is prudent for the Sonoyta mud turtle.

## **Critical Habitat Determinability**

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

- (1) Data sufficient to perform required analyses are lacking, or
- (2) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of “critical habitat.”

On September 20, 2017, our final listing rule (82 FR 43897) concluded that critical habitat was not determinable at that time. When critical habitat is not determinable at the time of listing, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)). Therefore, the Act requires that we publish a rule for critical habitat by September 20, 2018. As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. We have reviewed the available information pertaining to the biological needs of the subspecies and habitat characteristics where this subspecies is located. This and other information represent the best scientific data available for the proposed designation of critical habitat for the Sonoyta mud turtle.

## **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. For example, physical features 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, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

We conducted a species status assessment for Sonoyta mud turtle, which is an evaluation of the best available scientific and commercial data on the status of the subspecies. The species status assessment report (SSA Report; Service 2017, which is available at <https://www.fws.gov/southwest/es/arizona/Sonoyta.html> and at

<http://www.regulations.gov> under Docket No. FWS–R2–ES–2017–0014) is based on a thorough review of the natural history, habitats, ecology, populations, and range of the Sonoyta mud turtle, and risks to the subspecies. The SSA Report provides the scientific information upon which this proposed critical habitat designation is based.

The Sonoyta mud turtle is a freshwater turtle encountered in or near water in an otherwise arid environment that commonly experiences drought and extreme heat (ambient temperatures can exceed 45 degrees Celsius (°C) (113 degrees Fahrenheit (°F)). Sonoyta mud turtles depend on aquatic habitat with adjacent terrestrial habitat for life-history functions. Aquatic habitat consists of streams and natural and manmade ponds with perennial or near-perennial (water present more than 11 months of the year for multiple years) sources of water. Terrestrial habitat consists of riparian areas along water sources that maintain moist soil and a cooler environment than adjacent uplands. Much of the information on resource needs of the Sonoyta mud turtle subspecies is inferred from work on the nominate subspecies, Sonora mud turtle (*Kinosternon sonoriense sonoriense*), and noted accordingly in the text that follows.

Aquatic habitat in ponds and streams is usually shallow water to 2 meters (m) (7 feet (ft)) deep, with a rocky, muddy, or sandy substrate, and emergent or submergent vegetation, or both (NPS 2015, p. 2; Paredes-Aguilar and Rosen 2003, pp. 5–7; Rosen 2003, p. 5; Rosen *et al.* 2010, p. 14). Sonoyta mud turtles need perennial or near-perennial surface water for feeding, for protection from predators, to prevent desiccation, and for mating. Hatchling, juvenile, and sub-adult turtles prefer aquatic habitat with shallow water and dense emergent vegetation that provides foraging opportunities as well as protection from predators (Rosen 1986, pp. 14, 36; Rosen and Lowe 1996, p. 11).

Emergent aquatic vegetation includes plants such as cattail (*Typha domingensis*), spikerush (*Eleocharis geniculata*), and travelling spikerush (*Eleocharis rostellata*) (Felger *et al.* 1992, pp. 33, 36). Adults will also use shallow water habitat, but prefer aquatic habitat with deeper (up to 2 m (7 ft)) open water (with no or little vegetation growing in the water column), and submerged vegetation for feeding on benthic and plant-crawling invertebrates along the substrate (Rosen 1986, pp. 14, 16; Rosen and Lowe 1996, p. 11). American bulrush (*Schoenoplectus americanus*), an introduced nonnative plant species, and the native cattails can encroach into open water used by Sonoyta mud turtles. Historically, Sonoyta mud turtles occurred in rivers or cienegas with a natural ecosystem that maintained aquatic vegetation suitable to the Sonoyta mud turtle's needs. However, habitat at some Sonoyta mud turtle locations has been altered from this natural ecosystem to ponded water maintained by water control structures. American bulrush and cattails encroach these ponded sites such that open water is eliminated. Consequently, mechanical removal of American bulrush and cattails may be needed periodically to maintain patches of open water. The submerged aquatic vegetation required for prey includes plants such as holly-leaved water nymph (*Najas marina*), slender pondweed (*Potamogeton pectinatus*), ditch-grass (*Ruppia maritima*), and horned pondweed (*Zannichellia palustris*) (Felger *et al.* 1992, p. 36).

Reduced water levels would reduce overall habitat amount (water and vegetation) and quality, causing crowding and increased competition for remaining, limited resources such as cover and prey (Stanila 2009, p. 45). A reduction in water and emergent vegetation would likely reduce the amount of space and invertebrate prey for Sonoyta mud turtles. Large adult Sonora mud turtles have exhibited site fidelity to specific pools



in a stream channel (Hall and Steidl, 2007, p. 410), and although not studied, this could also be true for the Sonoyta mud turtle. As a result, lower water levels could reduce carrying capacity and increase overlap of adult Sonoyta mud turtle territory. Adequate prey allows juvenile turtles to grow rapidly and allows adults to have sufficient lipid content to support reproduction. Poor body condition (*i.e.*, low lipids) may be associated with lower clutch size (total number of eggs produced) and, therefore, lower population growth (Rosen and Lowe 1996, pp. 40–43). Sonoyta mud turtles in dry or low surface water reaches would burrow in channels to escape desiccation for a short period of time. Over time, however, burrows themselves may become too dry; turtles will lose fat reserves due to lack of foraging opportunity. If adult Sonoyta mud turtles mate during or after losing fat reserves, females may not have viable eggs due to lack of nutrition and fat reserves, and eventually turtles will die from either starvation or desiccation. Potential population-level impacts include lower reproductive rates, reduced recruitment, reduced population growth rate, and changes in distribution.

Sonoyta mud turtles are opportunistic carnivores, feeding primarily on aquatic invertebrates that live on emergent and submergent vegetation or the substrate of ponds and streams (Rosen 1986, pp. 14, 31; Rosen and Lowe 1996, pp. 32–35). Sonoyta mud turtle hatchlings and juveniles feed on littoral invertebrate fauna, while subadults and adults prefer benthic and plant-crawling invertebrates (Hulse 1974, pp. 197–198; Lovich *et al.* 2010, pp. 135–136; Rosen 1986, pp. 14, 31; Rosen and Lowe 1996, pp. 32–35; Stanila *et al.* 2008, p. 42). In habitats with poor aquatic invertebrate faunas, Sonoyta mud turtles will shift to omnivorous feeding, including plants and vertebrates such as fish (Rosen and Lowe 1996, pp. 32–35). However, where fish are abundant, Sonoyta mud

turtles catch few of them (Rosen and Lowe 1996, p. 32). Sonora mud turtles are also known to consume other vertebrates including toads, and even reptiles and birds when available for capture (Ligon and Stone 2003, entire; Stone *et al.* 2005, entire). Analysis of stomach contents of the Sonora mud turtle revealed animal material represented 69.0–93.6 percent total volume, with plant material making up the remaining volume (Hulse 1974, p. 197). Aquatic invertebrates found in the stomach contents of Sonora mud turtles included members of 11 invertebrate orders such as dragonflies (Anisoptera), caddisflies (Trichoptera), flies (Diptera), beetles (Coleoptera), and aquatic snail species (Basommatophora). Aquatic invertebrates require submergent or emergent vegetation and a variety of prey, such as algae, diatoms, and other microorganisms.

Sonoyta mud turtles need aquatic habitat free of nonnative predators and competitors. Aquatic habitat with nonnative predators, including crayfish (*Orconectes* spp. and *Cherax* spp.), American bullfrogs (*Lithobates catesbeianus*), and sunfish (centrarchids), could decrease population stability or potentially decimate populations of the Sonoyta mud turtle (Drost *et al.* 2010, pp. 33–34; Hensley *et al.* 2010, pp. 186–187; Fernandez and Rosen 1996, pp. 39–41). These species, along with black bullheads (*Ameiurus melas*), African cichlid fishes (tilapia), western mosquitofish (*Gambusia affinis*), and exotic turtles, compete with mud turtles for food or disrupt the food chain, which could alter the invertebrate community (Taylor *et al.* 1984, pp. 330–331; Fernandez and Rosen 1996, pp. 39–40; Duncan 2013, p. 1). Such competition, in turn, could decrease type and amount of aquatic invertebrate prey available to Sonoyta mud turtles (Fernandez and Rosen 1996, pp. 39–40).

Because high average annual juvenile survivorship is required for populations of

long-lived organisms to maintain population stability (Congdon *et al.* 1993, pp. 831-832; Congdon *et al.* 1994, pp. 405–406), nonnative predators that reduce recruitment into Sonoyta mud turtle populations could cause population declines. Bullfrogs and crayfish are known predators of hatchling and juvenile turtles of the Sonora mud turtle (Fernandez and Rosen 1996, pp. 33–43; Akins and Jones 2010, p. 343; Hensley *et al.* 2010, pp. 186–187; Schwendiman 2001, p. 39), and would likely eat hatchling Sonoyta mud turtles if introduced. Populations of the Sonora mud turtle have coexisted with moderate and high densities of bullfrogs (Rosen and Schwalbe 2002, p. 230). However, a high density of bullfrogs may reduce population density of mud turtles (van Lobel Sells 1997, p. 343). Crayfish are detrimental to populations of the Sonora mud turtle and not only prey on small mud turtles, but likely compete with them for native aquatic invertebrate food sources (Fernandez and Rosen 1996, pp. 39–40). One study documented cessation of Sonora mud turtle recruitment 2 years after crayfish introduction to an area that had supported a population of approximately 1,000 Sonora mud turtles (Fernandez and Rosen 1996, pp. 40–41). Large sunfish, such as largemouth bass (*Micropterus salmoides*), also have the potential to reduce recruitment in populations of Sonoyta mud turtles because their large gape (external mouth width) makes it possible for them to prey on hatchling and juvenile Sonoyta mud turtles (Stanila 2009, p. 50). Largemouth bass are known to eat other aquatic turtle species, and Rosen (1987, p. 6) reported the lowest population densities of Sonora mud turtles in habitats with largemouth bass.

Adult and juvenile Sonoyta mud turtles use aquatic habitat with complex structure that provides protection from predators such as root masses, rock features, and undercut banks (Rosen 1986, pp. 14, 16; Rosen and Lowe 1996, p. 11). Shallow water areas with

dense emergent vegetation also provides protection from predators for hatchlings, juveniles, and adults. Overhanging riparian vegetation along the stream channel or pond margin and soil burrows under overhanging banks provide some protection from predators for turtles in the water near the shoreline. Riparian vegetation may also provide some level of protection from terrestrial predators while turtles are out of the water.

Terrestrial habitat that maintains soil moisture for Sonoyta mud turtles occurs in riparian areas along the banks of ponds and streams, and in intermittently dry sections of stream channels. Riparian habitat provides shadier, cooler, and moister conditions than the adjacent upland areas. Sonoyta mud turtles require moist soil for nesting to prevent desiccation of eggs and for estivation (a state of dormancy) sites to prevent desiccation of hatchlings, juveniles, and adults. Riparian vegetation includes plants such as Fremont cottonwood (*Populus fremontii*), Goodding willow (*Salix gooddingii*), honey mesquite (*Prosopis glandulosa*), screwbean mesquite (*P. pubescens*), seepwillow (*Baccharis salicifolia*), greythorn (*Ziziphus obtusifolia*), wolfberry (*Lycium* spp.), salt grass (*Distichlis spicata*), and arrowweed (*Pluchea sericea*) (Felger *et al.* 1992, p. 4).

Sonoyta mud turtles need accessible shoreline without insurmountable rock or artificial vertical barriers to allow for movement between wetted sites, between aquatic habitat and terrestrial nest sites, and between water and estivation (dormancy during drought) sites. Sonora mud turtles in dry or low surface water conditions may either travel along dry intermittent sections of a stream to find water or they will estivate (Hall and Steidl 2007, p. 406; Hensley *et al.* 2010, pp. 181–182; Ligon and Stone 2003, pp. 752–753; Stone 2001, pp. 46–49). Sonora mud turtles that live in permanent bodies of water have shown highly aquatic behavior with little terrestrial behavior or movement

between water sources, while Sonora mud turtles in more ephemeral habits have been documented moving through or out of dry stream beds to reach wetted pools, for winter hibernation, or for estivation during drought as a drought-survival strategy (Hall and Steidl 2007, pp. 406–408; Hensley *et al.* 2010, pp. 181–182; Ligon and Stone 2003, pp. 752–753; Stone 2001, pp. 46–51).

Sonora mud turtles can endure lack of surface water for a short time and have been documented estivating in the wild for 11 to 34 days (Ligon and Stone 2003, p. 752), and once for up to 68 days (Ligon and Stone 2002, entire; Ligon and Stone 2003, p. 753). However, prolonged and recurrent estivation is expected to reduce fitness and increase mortality (Peterson and Stone 2000, pp. 692–698). Terrestrial estivation sites consisted of depressions under vegetation, soil, or organic matter; in rock crevices; or in soil burrows under overhanging banks of streams or ponds. One study found Sonora mud turtles estivating up to 79 m (259 ft) from a streambed during summer even when water was available, with mud turtles using clumps of vegetation or spaces under large rocks in the terrestrial environment (Ligon and Stone 2003, pp. 752–753).

Estivation has not been verified in the Sonoyta mud turtle, and physiological tolerances for estivation are unknown. However, Sonoyta mud turtles have been found in burrows up to 1 m (3.3 ft) deep in stream banks, presumably using these burrows to escape from predators (Paredes-Aguilar and Rosen 2003, p. 8) or for drought refuge. Further, based on the physiological requirements of the Sonora mud turtle and the arid environment in which the Sonoyta mud turtle lives, we believe that they estivate during times of little or no surface water.

Long-distance movements of Sonora mud turtles exceeding 7 kilometers (5 miles)

in straight-line distance occurred between aquatic habitats. Such movements may reduce reproductive isolation and lower the probability of extirpation of populations (Hall and Steilde 2007, p. 408; Hensley *et al.* 2010, pp. 181–182; Stone *et al.* 2015, p. 736).

Although not well-studied, no movement of Sonoyta mud turtles of these magnitudes has been documented, and restrictions associated with their extreme arid environment may reduce such movements (P. Rosen 2016, pers. comm.). Dispersal habitat along drainages is likely needed to maintain connectivity between populations of the Sonoyta mud turtle on a rangewide scale.

The Sonora mud turtle is known to mate from April to October, and female Sonora and Sonoyta mud turtles lay eggs from mid to late July through September in vegetation litter, soil burrows, and rock crevices up to 52 m (171 ft) away from water (Rosen and Lowe 1996, pp. 21, 23; Stone *et al.* 2015, p. 735; D. Hall 2016, pers. comm.; Rosen 1986, p. 7; A. Owens 2007, pers. comm.; P. Holm 2016, pers. comm.). Eggs may undergo embryonic diapause in the nest for 11 months after being laid, with hatchlings emerging the following year (van Loben Sels *et al.* 1997, p. 343; Ernst and Lovich 2009, p. 497; Stone *et al.* 2015, p. 735). In mid to late July through September, females leave the water briefly to lay eggs in terrestrial nests that maintain some level of moisture. Three presumed nest sites have been observed for the Sonoyta mud turtle that indicate this subspecies uses nest sites similar to the Sonora mud turtle. The only potential nesting behavior of the Sonoyta mud turtle observed was a gravid female, “apparently preparing to lay eggs,” digging 15 centimeters (cm) (6 inches (in)) into the soil in a mesquite bosque (cluster of trees along a stream) 9 m (30 ft) from the edge of the pond at Quitobaquito Springs (Rosen and Lowe 1996, p. 23). A second turtle nest site was found

in a small cavity (5 by 5 cm (2 by 2 in)) within a 3 m (10 ft) high soil bank that runs next to the spring-fed channel leading to the pond at Quitobaquito Springs (A. Owens 2007, pers. comm.). The third nest site was found in a small depression in soil beneath a piece of tree bark on top of an undercut bank at the edge the pond at Quitobaquito Springs (P. Holm 2016, pers. comm.).

#### *Summary of Essential Physical or Biological Features*

We derive the specific physical or biological features essential for Sonoyta mud turtle from studies of the Sonora mud turtle, used as a proxy, of this subspecies' habitat, ecology, and life history, as described above. Additional information can be found in the proposed listing rule (81 FR 64829; September 21, 2016). We have determined that the following physical or biological features are essential to the conservation of Sonoyta mud turtle:

- (1) Aquatic habitat, such as streams and natural or manmade ponds, with perennial or near-perennial sources of water, containing or including:
  - (a) Surface water to 2 m (7 ft) deep, with a rocky, muddy, or sandy substrate, and emergent or submergent vegetation, or both;
  - (b) Surface water free of nonnative predators and competitors, including crayfish, American bullfrogs, and large sunfish;
  - (c) Shallow water areas with dense emergent vegetation (*e.g.*, cattail, spikerush, and travelling spikerush);
  - (d) Access to deeper open water in ponds, and submerged vegetation (*e.g.*, holly-leaved water nymph, slender pondweed, ditch-grass, and horned pondweed); and
  - (e) Areas with complex structure, including protective shelter sites such as root

masses, rock features, and undercut banks.

(2) Aquatic invertebrate prey base (*e.g.*, Anisoptera, Trichoptera, Diptera, Coleoptera, aquatic snail species) and their corresponding habitat, including submergent or emergent vegetation and a variety of forage, and prey such as algae, diatoms, other microorganisms.

(3) Terrestrial, riparian habitat, adjacent to suitable aquatic habitat, containing or including:

(a) Accessible shoreline for Sonoyta mud turtles without insurmountable rock or artificial vertical barriers to allow movement between wetted sites, between aquatic habitat and terrestrial nest sites, and between aquatic habitat and estivation sites;

(b) Riparian areas that maintain soil moisture to prevent desiccation of eggs and provide estivation sites, located along the banks of ponds and streams with riparian vegetation (*e.g.*, cottonwood, willow, seepwillow, mesquite, greythorn, wolfberry, salt grass, arrowweed); and

(c) Estivation and nesting sites, including depressions under vegetation, soil, or organic matter; rock crevices; and soil burrows under overhanging banks of streams or ponds, that are available year-round.

### **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. The features essential to the conservation of the Sonoyta mud turtle may require special management considerations or protection to reduce the



following threats: (1) Water loss; (2) loss of riparian habitat; (3) reduction of invertebrate prey; (4) presence of nonnative species; and (5) land management activities incompatible with maintaining needed habitat (such as dredging).

Management activities that could ameliorate these threats and protect the quantity and quality of the aquatic and riparian habitat include, but are not limited to: (1) Maximizing surface water and aquatic habitat available through structure maintenance, such as berms, lining ponds and spring runs, and removing sediment; (2) decreasing groundwater pumping to maintain surface water that supports aquatic and riparian habitat, as well as the invertebrate prey base; (3) controlling and removing introduced nonnative plant species, such as American bulrush, to maintain aquatic habitat; and (4) controlling and removing introduced nonnative predators and competitors, such as crayfish, American bullfrogs, and large sunfish.

### **Criteria Used To Identify Critical Habitat**

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species that are essential for the species' conservation to be considered for designation as critical habitat. We are proposing to designate critical habitat in areas within the United States that are occupied by Sonoyta mud turtle at the time we published the final rule to list the subspecies as endangered (September 20, 2017). For purposes of this proposed rule, we define "occupied habitat" for Sonoyta mud

turtle as areas with a positive survey records since 2000. This definition of occupied is based on the average life span of the subspecies (ranging from 12 to 17 years). Since Sonoyta mud turtles live approximately 12 to 17 years, we used records from this time period and concluded that a portion of the turtles found during this time would still be alive, and, therefore, we consider the site occupied. We are not currently proposing to designate any areas outside the geographical area occupied by the subspecies because we did not find any such areas that were essential for the conservation of the subspecies, as we are not aware of any other areas within the historic range of the subspecies that maintain perennial or nearly perennial surface water.

Sources of occupancy data on the Sonoyta mud turtle are monitoring data from Organ Pipe Cactus National Monument (NPS 2002–2016, p. 1). We obtained information on ecology and habitat requirements of the Sonoyta mud turtle from multiple sources, as identified in the SSA Report. For mapping of proposed critical habitat, we used Organ Pipe Cactus National Monument geo-referenced data of the water features used by Sonoyta mud turtles at Quitobaquito. In addition, we used satellite imagery available in ArcGIS to delineate riparian areas surrounding the surface water habitat.

### **Areas Occupied at the Time of Listing**

We are proposing for designation as critical habitat lands that we have determined are occupied at the time of listing (in this case, the date we published the final listing rule: September 20, 2017) and contain one or more of the physical or biological features to support life-history processes essential to the conservation of the subspecies. The proposed critical habitat designation includes the only known extant population of Sonoyta mud turtles in the United States, within the Organ Pipe Cactus National

Monument. This is also the only known population in the United States.

We propose to designate one critical habitat unit based on one or more of the physical or biological features being present to support the life-history processes of the Sonoyta mud turtle.

The proposed critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document in the **Proposed Regulation Promulgation** section. We include more detailed information on the boundaries of the critical habitat designation in the **Proposed Critical Habitat Designation** section, below. We will make the coordinates or plot points or both on which the map is based available to the public on <http://www.regulations.gov> at Docket No. FWS-R2-ES-2017-0014, on our Internet site at <http://www.fws.gov/southwest/es/arizona>, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT**, above).

When determining proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for the Sonoyta mud turtle. However, manmade water conveyance structures within the proposed designated critical habitat are part of the designation and are needed to manage the existing habitat. The current occupied unit includes a manmade spring enclosure and spring channel that convey water to a manmade pond surrounded by a manmade berm. The spring channel not only conveys water to the pond but also serves as habitat for the subspecies. Therefore, all of these manmade features are considered critical habitat. The scale of the map we prepared under the parameters for publication within the Code of

Federal Regulations may not reflect the exclusion of developed lands otherwise excluded from critical habitat. Any such lands inadvertently left inside critical habitat boundaries shown on the map of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

**Proposed Critical Habitat Designation**

We are proposing to designate approximately 12.28 acres (ac) (4.97 hectares (ha)) in one unit as critical habitat for the Sonoyta mud turtle. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for Sonoyta mud turtle.

TABLE 1.—Occupancy, Land Ownership, and Size of Sonoyta Mud Turtle Proposed Critical Habitat. [Area estimates reflect all land within critical habitat unit boundaries.]

<b>Unit Name</b>	<b>Occupied at Time of Listing?</b>	<b>Currently Occupied?</b>	<b>Ownership</b>	<b>Size (ha)</b>	<b>Size (ac)</b>
Quitobaquito	Yes	Yes	National Park Service	4.97	12.28

Below, we present a brief description of the Quitobaquito Unit, and reasons why it meets the definition of critical habitat for the Sonoyta mud turtle.

### *Quitobaquito Unit*

This unit consists of 12.28 ac (4.97 ha) in the Rio Sonoyta watershed of Organ Pipe Cactus National Monument. This unit is within the geographic area occupied by the subspecies at the time of listing and contains at least one of the physical or biological features essential to the conservation of the Sonoyta mud turtle.

Aquatic habitat within this unit consists of the two Quitobaquito springs, the piped water that connects the two springs, a manmade spring channel that connects the springs to Quitobaquito pond, and a manmade pond with a perennial source of water. The spring channel and pond both have shallow water habitat, an aquatic invertebrate prey base, and no nonnative predators. The pond includes surface water up to 107 cm (42 in) deep with a muddy substrate; dense emergent and submergent vegetation; access to deeper open water in a pond for feeding along the substrate; and areas with complex structure and protective shelter sites, including root masses and undercut banks.

Terrestrial habitat within this unit consists of adjacent, accessible shoreline along the stream channel and around Quitobaquito pond without insurmountable rock or artificial vertical barriers to movement of the Sonoyta mud turtle, as well as riparian areas, located along the banks of the pond, stream channel, and berm around the pond. These terrestrial habitat components maintain soil moisture to prevent desiccation of eggs and estivating turtles, and include estivation and nesting sites, including depressions under vegetation, soil, organic matter, and soil burrows under overhanging banks of the pond, that are available year-round.

The physical or biological features in this unit may require special management considerations or protection to address threats from loss of surface water due to

groundwater pumping, berm leaking, aquatic vegetation control, and sedimentation removal in the pond. This unit is entirely within the Organ Pipe Cactus National Monument, and the National Park Service (NPS) manages the habitat to support the Sonoyta mud turtle population. This unit is not being considered for exclusion or exemption.

## **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 adopting a new definition of “destruction or adverse modification” on February 11, 2016 (81 FR 7214). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of a listed species. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of a species or that preclude or significantly delay development of such features.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions

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

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

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

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

#### *Application of the "Adverse Modification" Standard*

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that result in a direct or indirect alteration that appreciably diminishes the value of critical habitat for the conservation of



the Sonoyta mud turtle. Such alterations may include, but are not limited to, those that alter the physical or biological features essential to the conservation of this subspecies or that preclude or significantly delay development of such features. 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 destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the Sonoyta mud turtle. These activities include, but are not limited to:

(1) Actions that would decrease the amount of water available to ponds and streams used by Sonoyta mud turtles. Such actions could include, but are not limited to, groundwater pumping. Groundwater pumping could decrease the amount of groundwater that infiltrates streamflow so that streams become smaller, intermittent, or dry, and thereby could reduce the amount of space, prey, nest sites, and cover available for Sonoyta mud turtles.

(2) Actions that would maintain habitat for the Sonoyta mud turtles. Such actions could include the maintenance of springheads, stream or channel courses, and ponds. Maintaining springheads and manmade or natural spring channels will maximize the amount of surface water available to Sonoyta mud turtles. All ponds that support Sonoyta mud turtles are manmade and require constant management to remove sediment

that builds up and to stop encroaching vegetation from completely filling in the ponds.

## **Exemptions**

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

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

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

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

We have not considered any areas for exclusion from critical habitat. However,

the final decision on whether to exclude any areas will be based on the best scientific data available at the time of the final designation, including information obtained during the comment period and information about the economic impact of designation.

Accordingly, we have prepared a draft economic analysis (DEA) concerning the proposed critical habitat designation, which is available for review and comment (see **ADDRESSES**, above).

### **Consideration of Economic Impacts**

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas proposed. We then identify which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.” The “without critical habitat” scenario represents the baseline for the analysis, which includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (*e.g.*, under the Federal listing as well as other Federal, State, and local regulations). The baseline, therefore, represents the costs of all efforts attributable to the listing of the species under the Act (*i.e.*, conservation of

the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary section 4(b)(2) exclusion analysis.

For this particular designation, we developed an incremental effects memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed designation of critical habitat. The information contained in our IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the Sonoyta mud turtle (IEc 2017, entire). We began by conducting a screening analysis of the proposed designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out the geographic areas in which the critical habitat designation is unlikely to result in probable incremental economic impacts. In particular, the screening analysis considers baseline costs (*i.e.*, absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the subspecies. The screening analysis filters out particular areas of critical habitat that are

already subject to such protections and are, therefore, unlikely to incur incremental economic impacts. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. The screening analysis also assesses whether units are unoccupied by the subspecies and may require additional management or conservation efforts as a result of the critical habitat designation for the subspecies, which may incur incremental economic impacts. This screening analysis, combined with the information contained in our IEM, is what we consider our DEA of the proposed critical habitat designation for the Sonoyta mud turtle 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 proposed designation of critical habitat for the Sonoyta mud turtle, first we identified, in the IEM (Service 2017), probable incremental economic impacts associated with the following categories of activities: (1) Federal lands management (National Park Service, Organ Pipe Cactus National Monument); (2) groundwater pumping; and (3) Customs and Border Protection. We considered each

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

In our IEM, we attempted to clarify the distinction between the effects that result from the subspecies being listed and those that would be attributable to the critical habitat designation (*i.e.*, difference between the jeopardy and adverse modification standards) for the Sonoyta mud turtle's critical habitat. Because the designation of critical habitat for the Sonoyta mud turtle is being proposed soon after the listing, it has been our experience that it is more difficult to discern which conservation efforts are attributable to the subspecies being listed and those which would 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 subspecies; and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to the Sonoyta mud turtle 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 subspecies. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of this proposed designation of critical habitat.

The proposed critical habitat designation for the Sonoyta mud turtle consists of a single unit currently occupied by the subspecies. We are not proposing to designate any units of unoccupied habitat. The proposed Quitobaquito critical habitat unit totals 12.28 ac (4.97 ha) and is entirely contained within federally owned land at Organ Pipe Cactus National Monument. In this area, any actions that may affect the subspecies or its habitat would also affect designated critical habitat, and it is unlikely that any additional recommendations or project modifications to avoid adversely modifying critical habitat above those we would recommend for avoiding jeopardy. Therefore, only administrative costs of conducting any section 7 consultation are expected in all of the proposed critical habitat designation. While this additional analysis will require time and resources by both the Federal action agency and the Service, it is believed that, in most circumstances, these costs would predominantly be administrative in nature and would not be significant.

We anticipate minimal change in behavior at Organ Pipe Cactus National Monument if we designate critical habitat for the Sonoyta mud turtle. Based on Organ Pipe Cactus National Monument's history of consultation under section 7 of the Act and on the consultation history of the most comparable species, desert pupfish (*Cyprinodon macularius*), we anticipate that this critical habitat designation may result in a maximum of two additional consultations per decade.

As we stated earlier, we are soliciting data and comments from the public on the

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

## **Exclusion**

### *Exclusions Based on Economic Impacts*

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared an analysis of the probable economic impacts of the proposed critical habitat designation and related factors. In our DEA, 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 subspecies, and we anticipate minimal change in behavior at Organ Pipe Cactus National Monument due to the designation of critical habitat for Sonoyta mud turtle (IEc 2017).

At this time, we are not considering any exclusion based on economic impacts from the proposed designation of critical habitat for Sonoyta mud turtle. During the development of a final designation, we will consider any additional economic impact information we receive during the public comment period; as such, areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.



### *Exclusions Based on National Security Impacts or Homeland Security Impacts*

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for the Sonoyta mud turtle are not owned or managed by the Department of Defense or Department of Homeland Security, and, therefore, we anticipate no impact on national security. Consequently, the Secretary does not intend to exercise his discretion to exclude any areas from the final designation based on impacts on national security.

### *Exclusions Based on Other Relevant Impacts*

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether there are permitted conservation plans covering the subspecies in the area such as HCPs, safe harbor agreements, or candidate conservation agreements with assurances, or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this proposal, we have determined that there are currently no HCPs or other management plans on non-federal lands for the Sonoyta mud turtle, and the proposed designation does not include any tribal lands or trust resources. We anticipate

no impact on tribal lands, partnerships, or HCPs from this proposed critical habitat designation. Accordingly, the Secretary does not intend to exercise his discretion to exclude any areas from the final designation based on other relevant impacts.

### **Peer Review**

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270) and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought the expert opinions of at least three appropriate and independent specialists regarding the SSA Report, which informed this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. The peer reviewers have expertise in Sonoyta or Sonora mud turtle life history, needs, habitat, and stressors (factors negatively affecting the species). We will consider all comments and information we receive during the comment period on this proposed rule during our preparation of a final designation. Accordingly, the final decision may differ from this proposal.

### **Public Hearings**

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received by the date specified above in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the *Federal Register* and local newspapers at least 15 days before the hearing.

## **Required Determinations**

### *Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs 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.

### *Executive Order 13771—Reducing Regulation and Controlling Regulatory Costs*

This proposed rule is not an Executive Order (E.O.) 13771 (82 FR 9339, February 3, 2017) regulatory action because this proposed rule is not significant under E.O. 12866. *Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a

regulatory flexibility analysis that describes the effects of the rule on small entities (*i.e.*, small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

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

The Service’s current understanding of the requirements under the RFA, as amended, and following recent court decisions, is that Federal agencies are only required

to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and, therefore, are not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies would be directly regulated by this designation. There is no requirement under RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities would be directly regulated by this rulemaking, the Service certifies that, if adopted, this proposed critical habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether the proposed designation would result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that, if adopted, the proposed critical habitat designation would not have a significant economic impact on a substantial number of small business entities. Therefore, an initial 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 this proposed critical habitat would significantly affect energy supplies, distribution, or use because the proposed critical habitat unit is entirely contained within Organ Pipe Cactus National Monument. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our economic analysis, and review and revise this assessment as warranted.

*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 would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s

responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

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

(2) We do not believe that this rule would significantly or uniquely affect small governments because we are proposing to designate only a single critical habitat unit that

is entirely owned by the National Park Service. Therefore, a Small Government Agency Plan is not required.

*Takings—Executive Order 12630*

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Sonoyta mud turtle 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 concludes that this proposed designation of critical habitat for Sonoyta mud turtle does not pose significant takings implications for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with E.O. 13132 (Federalism), this proposed rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this proposed critical



habitat designation with, appropriate State resource agencies in Arizona. 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, this proposed rule would 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 subspecies are more clearly defined, and the physical or biological features of the habitat necessary to the conservation of the subspecies are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these local governments in long-range planning (because these local governments 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) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

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

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

This rule does not contain any new collections of information that require approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

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

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons

for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). Because this proposed critical habitat does not occur on lands within the U.S. Court of Appeals for the Tenth Circuit, we are not conducting an environmental analysis.

#### *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 Quitobaquito Pond is a culturally significant site for the Tohono O'odham. We will request a meeting with the Tohono O'odham Nation to inform them of this proposed rule to designate critical habitat.

We determined that there are no tribal lands that were occupied by the Sonoyta mud turtle at the time of listing that contain the features essential for conservation of the subspecies, and no tribal lands unoccupied by the Sonoyta mud turtle that are essential

for the conservation of the subspecies. Therefore, we are not proposing to designate critical habitat for the Sonoyta mud turtle on tribal lands.

### *Clarity of the Rule*

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

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

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

### **References Cited**

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

### **Authors**

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

**List of Subjects in 50 CFR Part 17**

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

**Proposed Regulation Promulgation**

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

**PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS**

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

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

2. Amend § 17.11(h) by revising the entry for “Turtle, Sonoyta mud” under “REPTILES” in the List of Endangered and Threatened Wildlife to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*

(h) \* \* \*

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * *				
REPTILES				
* * * * *				
Turtle, Sonoyta mud	<i>Kinosternon sonoriense longifemorale</i>	Wherever found	E	82 FR 43897, 9/20/2017; 50 CFR 17.95(c). <sup>CH</sup>
* * * * *				

3. Amend § 17.95(c) by adding an entry for “Sonoyta Mud Turtle (*Kinosternon sonoriense longifemorale*),” immediately following the entry for “Plymouth Red-bellied

Turtle (*Chrysemys rubriventris bangsi*)”, to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

\* \* \* \* \*

(c) *Reptiles.*

\* \* \* \* \*

Sonoyta Mud Turtle (*Kinosternon sonoriense longifemorale*)

(1) Critical habitat unit is depicted for Pima County, Arizona, on the map below.

(2) Within this area, the physical or biological features essential to the conservation of the Sonoyta mud turtle consist of the following components:

(i) Aquatic habitat, such as streams and natural or manmade ponds, with perennial or near-perennial sources of water, containing or including:

(A) Surface water to 2 meters (7 feet) deep, with a rocky, muddy, or sandy substrate, and emergent or submergent vegetation, or both;

(B) Surface water free of nonnative predators and competitors, including crayfish, American bullfrogs, and large sunfish;

(C) Shallow water areas with dense emergent vegetation (*e.g.*, cattail, spikerush, and travelling spikerush);

(D) Access to deeper open water in ponds, and submerged vegetation (*e.g.*, holly-leaved water nymph, slender pondweed, ditch-grass, and horned pondweed); and

(E) Areas with complex structure, including protective shelter sites such as root masses, rock features, and undercut banks.

(ii) Aquatic invertebrate prey base (*e.g.*, Anisoptera, Trichoptera, Diptera,

Coleoptera, aquatic snail species) and their corresponding habitat, including submergent or emergent vegetation and a variety of forage, and prey such as algae, diatoms, other microorganisms.

(iii) Terrestrial, riparian habitat, adjacent to suitable aquatic habitat, containing or including:

(A) Accessible shoreline for Sonoyta mud turtles without insurmountable rock or artificial vertical barriers to allow movement between wetted sites, between aquatic habitat and terrestrial nest sites, and between aquatic habitat and estivation sites;

(B) Riparian areas that maintain soil moisture to prevent desiccation of eggs and provide estivation sites, located along the banks of ponds and streams with riparian vegetation (*e.g.*, cottonwood, willow, seepwillow, mesquite, greythorn, wolfberry, salt grass, arrowweed); and

(C) Estivation and nesting sites, including depressions under vegetation, soil, or organic matter; rock crevices; and soil burrows under overhanging banks of streams or ponds, that are available year-round.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on [Insert effective date of final rule]. However, the spring enclosure, the manmade pond, the manmade channel that connects the springs to the pond, and the piped water that connects the two springs within the designated critical habitat are part of the designation.

(4) *Critical habitat map units.* Data layers defining map unit were developed using ESRI ArcGIS mapping software along with various spatial layers. We used

ground-truthed data provided by Organ Pipe Cactus National Monument staff that depicts all aquatic habitat used by the Sonoyta mud turtle, including Quitobaquito Pond and moat, the two Quitobaquito springs, the manmade channel that connects the springs to the pond, and the piped water that connects the two springs. For terrestrial, we used satellite imagery available in ArcGIS to delineate the riparian areas surrounding the surface water habitat. World Imagery used from ArcGIS provides 1 meter or better satellite and aerial imagery in many parts of the world and lower resolution satellite imagery worldwide. The map includes 15m TerraColor 0.3m resolution imagery at this map scale of 1:6,000. Additionally, imagery at different resolutions has been contributed by the GIS User Community. ArcGIS was also used to calculate area hectares and acres, and was used to determine longitude and latitude coordinates in decimal degrees. The coordinate system used in mapping and calculating area and locations within the unit was Universal Transverse Mercator (UTM) conformal projection with 1983 North American Datum in Zone 12. The map in this entry, as modified by any accompanying regulatory text, establishes the boundaries of the critical habitat designation. The coordinates or plot points or both on which the map is based are available to the public at <http://www.fws.gov/southwest/es/arizona/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2017-0014, 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) Quitobaquito Unit, Pima County, Arizona.

(i) *General description:* This unit consists of approximately 12.28 acres (4.97 hectares) in the Rio Sonoyta watershed in Pima County, and is composed entirely of



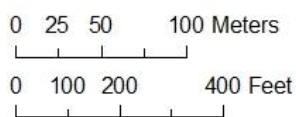
Federal land owned by the National Park Service on Organ Pipe Cactus National Monument. The unit includes Quitobaquito Pond, the two Quitobaquito springs, the manmade channel that connects the springs to the pond, and the piped water that connects the two springs and surrounding riparian habitat.

(ii) Unit map follows:

Critical Habitat for Sonoyta Mud Turtle  
*Kinosternon sonoriense longifemorale* - Quitobaquito Unit



- Critical Habitat Boundary
- Quitobaquito Springs
- Quitobaquito Channel
- Quitobaquito Pond
- International Boundary



\* \* \* \* \*

Dated: 11 October 2018

James W. Kurth

James W. Kurth  
Deputy Director  
Exercising the Authority of the Director  
U.S. Fish and Wildlife Service

**Billing Code 4333-15**

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