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Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Devils River Minnow; Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

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[FWS–R2–ES–2008–0018; 92210–1117–0000–B4]

RIN 1018–AV25

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Devils River Minnow

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the Devils River minnow (*Dionda diaboli*) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 26.5 stream kilometers (km) (16.5 stream miles (mi)) are within the boundaries of the critical habitat designation. The critical habitat is located in streams in Val Verde and Kinney Counties, Texas.

DATES: This final rule becomes effective on September 11, 2008.

ADDRESSES: This final rule and the final economic analysis are available on the Internet at *http://www.regulations.gov* and *http://www.fws.gov/southwest/es/AustinTexas/*. Supporting documentation we used in preparing this final rule will be available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Austin Ecological Services Field Office, 10711 Burnet Road, Suite 200, Austin, TX 78758; telephone 512–490–0057; facsimile 512–490–0974.

FOR FURTHER INFORMATION CONTACT: Adam Zerrenner, Field Supervisor, Austin Ecological Services Field Office (see **ADDRESSES** section). Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339, 7 days a week and 24 hours a day.

SUPPLEMENTARY INFORMATION:

Background

It is our intent to discuss only those topics directly relevant to the designation of critical habitat in this final rule. For more information on the Devils River minnow, refer to the proposed critical habitat rule published in the **Federal Register** on July 31, 2007 (72 FR 41679), the final listing rule published in the **Federal Register** on October 20, 1999 (64 FR 56596), or the 2005 Devils River Minnow Recovery Plan available online at *www.fws.gov/endangered/*. More detailed information on Devils River minnow biology and ecology that is directly relevant to the designation of critical habitat is discussed under the Primary Constituent Elements section below.

Previous Federal Actions

The Devils River minnow was listed as threatened on October 20, 1999 (64 FR 56596). Critical habitat was not designated for this species at the time of listing (64 FR 56606). On October 5, 2005, the Forest Guardians, Center for Biological Diversity, and Save Our Springs Alliance filed suit against the Service for failure to designate critical habitat for this species (*Forest Guardians et al.* v. *Hall* 2005). On June 28, 2006, a settlement was reached that requires the Service to re-evaluate our original prudency determination. The settlement stipulated that, if prudent, a proposed rule would be submitted to the **Federal Register** for publication on or before July 31, 2007, and a final rule by July 31, 2008. On July 31, 2007, we published a proposed rule to designate critical habitat for the Devils River minnow (72 FR 41679). We solicited data and comments from the public on the proposed rule. The comment period opened on July 31, 2007, and closed on October 1, 2007. On February 7, 2008, we published a notice announcing the availability of the draft economic analysis, a public hearing, and the reopening of the public comment period (73 FR 7237). A public hearing was held in Del Rio on February 27, 2008. This comment period closed on March 10, 2008. For more information on previous Federal actions concerning the Devils River minnow, refer to the final listing rule published in the **Federal Register** on October 20, 1999 (64 FR 56596).

Summary of Comments and Recommendations

We requested comments from the public on the proposed designation of critical habitat for the Devils River minnow during two comment periods. The first comment period associated with the publication of the proposed rule (72 FR 41679) opened on July 31, 2007, and closed on October 1, 2007. We also requested comments on the proposed critical habitat designation and associated draft economic analysis during a comment period that opened February 7, 2008, and closed on March 10, 2008 (73 FR 7237). We held a public hearing in Del Rio on February 27, 2008; about 65 individuals were present. We contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and/or draft economic analysis during these two comment periods.

During the first comment period, we received five comments directly addressing the proposed critical habitat designation. During the second comment period, we received 19 written comments (one was received between the first and second comment periods) and 10 verbal comments made at the public hearing addressing the proposed critical habitat designation or the draft economic analysis. We received no comments from the State of Texas or other Federal agencies beyond those provided by individuals as part of the peer review process. All substantive information provided during both public comment periods has been either incorporated directly into this final determination or addressed below.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from seven knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. During the first comment period, we received a response from all seven peer reviewers from which we requested comments.

We reviewed all comments received from the public and the peer reviewers for substantive issues and new information regarding the designation of critical habitat for Devils River minnow, and we address them in the following summary.

Peer Reviewer Comments

(1) *Comment:* The rule should summarize the efforts to locate additional Devils River minnow habitats in other nearby streams and discuss the potential that additional habitats exist.

Our Response: This information is available in the Range discussion in the ''Criteria Used To Identify Critical Habitat'' section below. There have been efforts to locate the Devils River minnow outside of its known range, although those efforts have been limited by opportunity and access to some private lands. The rule states that while there could be additional stream segments within the known range that may be found to be occupied during future surveys, the best available information at this time supports only five stream segments (Devils River, San Felipe Creek, Sycamore Creek, Pinto Creek, and Las Moras Creek) known to be or to have been occupied by Devils River minnow in the United States.

(2) *Comment:* The primary constituent elements (PCEs) should more explicitly and strongly address the need for spring-fed baseflow, perhaps under PCE 5 or as its own PCE. It may be appropriate to include the language noting a percentage of normal (*i.e.*, average) monthly baseflow that should be sustained as a Devils River minnow PCE.

Our Response: Our approach in describing the PCEs is to identify the physical and biological features that are essential to the conservation of the species and which may require special management considerations or protections. In this case the PCEs are the range of water depths and velocities needed by the species. Maintenance of spring flows is described in this final rule as the special management needed to provide the PCEs described, rather than a PCE itself. The Service does not have sufficient information to identify an estimate of specific spring flow, or percentages of flow, as required habitat conditions for the Devils River minnow.

(3) *Comment:* The proposed rule notes that if groundwater aquifers are pumped beyond their ability to sustain levels supporting spring flows these streams will no longer provide habitat for the Devils River minnow. This is true unless water was pumped into the streams from wells.

Our Response: PCE 2 is intentionally worded to include ''permanent, natural flows from groundwater spring and seeps.'' We believe the maintenance of natural stream flows is the best opportunity to ensure adequate habitat for the conservation of the Devils River minnow. Water provided to streams through artificial means, such as groundwater pumping, could eventually fail due to mechanical or human error and, therefore, is not a good substitute for natural stream flows. In addition, pumping water to supply streams is likely counterintuitive to the need to maintain groundwater levels high enough to sustain natural spring flows from groundwater aquifers. Stream flows are essential for the conservation of the species, and assuring a high probability of survival depends on natural flow conditions.

(4) *Comment:* The range of stream velocities described in the PCE (1a) for Devils River minnow (0.3 to 1.3 feet/second (9 to 40 cm/second)) may not be high enough to reflect conditions that are typically measured in Las Moras Creek (greater than 3 feet/second), although baseflow velocities can be in the 1 foot/second range.

Our Response: The water velocities identified as a part of the PCEs were determined based on observational studies where Devils River minnows have been collected. There are often much higher velocities in the streams; however, the best available information indicates that the velocity range identified in the PCEs reflects the understanding that the species is most often found in slow to moderate water velocities.

(5) *Comment:* The PCE (2) for water quality can be challenged in that not enough data have been measured regarding temperature, dissolved oxygen, conductivity, and salinity to set those levels. It is possible that areas with physical and chemical conditions other than those listed could support the Devils River minnow.

Our Response: We recognize that the PCE for water quality parameters is based on limited observational data. However, we used the best available information to determine appropriate water quality elements. To the extent practicable, PCEs are intended to be quantifiable and measurable. We purposefully include a broad range of conditions to recognize that data are not sufficient to identify a more narrow range of parameters. The ranges provided represent the best available information.

(6) *Comment:* There are potential consequences to the species from increased sedimentation and turbidity, via urban development in the watershed and the presence of abundant armored catfish (*Hypostomus* sp.) (disturbing substrate during feeding and excavation of shelter). These concerns should be extracted from a list of pollutants, which included suspended sediments, and identified individually. You should include a discussion of water clarity under the PCE for water depth and velocity.

Our Response: We agree that turbidity from increased suspended solids and sedimentation of stream bottoms are important habitat concerns for Devils River minnow. We have revised the final rule (see ''Water Quality'' section below) to specifically mention this concern. We did not see a need to modify the language in the PCEs as we believe that listing suspended sediments as a pollutant is sufficient to capture these concerns.

(7) *Comment:* While the aquifers that support the critical habitat streams are of high quality and free of pollution, the same can't be said for the water quality of the creeks. Livestock and ranching activities occur throughout this area except along San Felipe Creek. Harrel (1978) notes that in the Devils River, larger deep ponds often contain silt composed of detritus and sheep and goat manure washed in by rains.

Our Response: There have been water quality concerns expressed for San Felipe Creek due to the urbanization of the watershed. There also may have been previous effects from ranching activities on water quality in the creeks, particularly in the past when sheep and goat grazing was a more common land use. However, we found no data to support that water quality is significantly impacted by current ranching activities (Service 2005, p. 1.7–4).

(8) *Comment:* The final rule should state that maintaining water temperatures within acceptable ranges necessitates maintaining adequate aquifer protection and spring flows to streams.

Our Response: We concur. The final rule was revised to reflect this comment in the ''Water Quality'' section below. We believe that management of groundwater aquifers is important to maintaining spring flows and is interrelated to maintaining water quality conditions, particularly water temperature in streams.

(9) *Comment:* The data presented do not support an unequivocal statement that vegetation must be present for Devils River minnow to be successful. The Devils River minnow appears to survive in other areas without vegetation.

Our Response: We recognize that Devils River minnow have been collected in areas of streams without significant vegetation. However, the majority of published information on the habitat use of the species (summarized in the ''Space for Individual and Population Growth, Normal Behavior, and Cover'' section below) leads us to believe that the best scientific data available are sufficient to warrant inclusion of aquatic vegetation as a PCE to provide important cover for the species. We have clarified our discussion in that section to reflect the fact that Devils River minnow have also been collected in areas without aquatic vegetation.

(10) *Comment:* How can the special management needs identified in the proposed rule and the recovery plan be implemented without access through private property to all stream segments and their supporting watershed?

Our Response: Most of the streams where the Devils River minnow occurs flow through private lands. The designation of critical habitat (or the species' status as federally threatened) does not provide a right for anyone to access private property without landowner permission. However, through cooperative relationships, the Service and Texas Parks and Wildlife

Department (TPWD) have had consistent support from private landowners to provide access to various streams to further conservation of the Devils River minnow. We intend to continue to work with private landowners to seek their voluntary cooperation using incentive-based programs, such as Partners for Fish and Wildlife, for conserving this species and other listed species in Texas.

(11) *Comment:* Discussions regarding nonnative species should include nonnative plants, such as hydrilla (*Hydrilla verticillata*), water hyacinth (*Eichhornia* spp.), giant river cane (*Arundinaria gigantea*), and salt cedar (*Tamarix* spp.), because they can impact hydrology and food sources for Devils River minnow.

Our Response: The extent of potential impacts of nonnative plants to fish such as the Devils River minnow is not well documented. However, we recognize the concern that nonnative plants could affect Devils River minnow populations, and we have revised the final rule to reflect these concerns. We did not include salt cedar as a concern because we are not aware that it is present, or likely to become established, in the range of Devils River minnow. It is well established in nearby drainages on the Pecos River and Rio Grande and has had ample opportunity to become established in the Devils River and drainages farther east. We assume that conditions (soil differences and limited floodplains) are not conducive to salt cedar establishment.

(12) *Comment:* Another concern related to nonnative species is the possible predation on Devils River minnow by armored catfish. Information was provided indicating the armored catfish in aquarium environments will prey on other fish.

Our Response: We have included this information in the final rule in the ''Habitat Protected From Disturbance or Representative of the Historic Geographical and Ecological Distribution of a Species'' section.

(13) *Comment:* Petroleum exploration and development should be either added as one additional management consideration for the Devils River population or be specifically recognized in the discussion of pollution. While there have fortunately been no known impacts to date, inappropriate site development and drilling practices associated with current exploration activities have the potential to seriously impact water quality of the Devils River and, hence, to degrade this critical habitat.

Our Response: We agree and the final rule has been updated to include this information in the ''Special Management'' section.

(14) *Comment:* Six of the seven peer reviewers commented on our specific question of whether or not Las Moras Creek and Sycamore Creek are essential to the conservation of the species and should be included in the critical habitat designation. Three reviewers expressed specific support for including Las Moras and Sycamore creeks in the critical habitat designation for the following reasons: (1) To maintain suitable habitat within its range because if left undesignated, the PCEs currently present will fall out of range and potential use for the recovery of the species will be lost; (2) to protect genetic diversity within the range of the species; (3) including them may be important for future recovery efforts, based on metapopulation theory that unoccupied patches are not less important than occupied ones; (4) not including them as ecologically significant stream segments would be possibly detrimental to the species over time; and (5) if the creeks are determined not to provide essential habitat elements, they could be removed from the designation later or the habitat could be improved by future management.

The other three reviewers did not call for the inclusion of Las Moras and Sycamore creeks in the designation. However, two reviewers stressed that recovery of the Devils River minnow would include restoring the species to these streams to maintain genetic diversity and population redundancy and encouraged us to continue to work on these efforts. One reviewer stated that Sycamore and Las Moras creeks do not have the necessary continuous flows required to maintain a population of the Devils River minnow and would support their inclusion if there were management options in place to maintain sufficient residual habitat during droughts.

Our Response: In reviewing the comments received on this issue and the Recovery Plan for the Devils River minnow, we determined that Sycamore and Las Moras creeks are essential to the conservation of the Devils River minnow. Restoring populations in Sycamore and Las Moras creeks are important recovery goals for the species. For additional discussion of this topic, including relevant information from the Recovery Plan, see the ''Criteria Used To Identify Critical Habitat'' section below.

However, upon further review, we determined that the benefits of excluding these two creeks outweigh the benefits of including them as critical habitat. Therefore, we have excluded Sycamore Creek and Las Moras Creek under section 4(b)(2) of the Act. For the full analysis, see the ''Exclusions Under Section 4(b)(2) of the Act'' section below.

(15) *Comment:* The rule should recognize that, while not included in the lateral extent of the critical habitat, the condition of the riparian buffer beyond the normal wetted channel is important to the maintenance of water quality and low levels of fine sedimentation.

Our Response: We agree that healthy riparian areas of native vegetation are important to maintaining the PCEs. For example, impacts to riparian areas that reduce native vegetation may lead to increased runoff of pollutants into the stream, thus degrading water quality and indirectly affecting the designated critical habitat. This is further discussed in the ''Application of the Adverse Modification Standard'' section. Unlike some other stream fishes, the Devils River minnow is not known to be dependent on high flow events or use flooded habitats in overbank areas for reproduction or rearing of young. Therefore, the floodplain is not known to contain the features essential for the conservation of the Devils River minnow and is not included in this final critical habitat designation. See the discussion in ''Criteria Used To Identify Critical Habitat, f. Lateral Extent'' section.

(16) *Comment:* No studies cited in the proposed rule have shown that the Devils River minnow is tied to spring-mouth habitat. In fact, several studies point out that the species does not use such habitat but prefers more downstream areas of the streams away from the immediate outfall areas. This appears to be true in all three stream sections chosen for critical habitat. The data do not support the inclusion of the spring heads in critical habitat.

Our Response: We disagree. While Devils River minnow can be common in areas just a few meters downstream of spring heads, the best available information suggests the PCEs and the fish are also found at the beginning of the streams in spring heads. Numerous collections have listed the springs themselves as locations for collecting Devils River minnow (see literature reviewed in Service 2005, p 1.4.1–1.4.5).

Comments From the Public

(17) *Comment:* The statement that the Devils River minnow does not occupy Sycamore Creek is unsubstantiated. Opportunities to sample for the species are very limited.

Our Response: We did not intend to make a conclusive determination that

the Devils River minnow does not occur in Sycamore Creek. For the purpose of critical habitat designation, we considered a stream segment to be occupied at the time of listing if Devils River minnow has been found to be present by species experts within the last 10 years, or where the stream segment is directly connected to a segment with documented occupancy within the last 10 years (see section ''Criteria Used to Identify Critical Habitat'' section below). The fish has not been collected in Sycamore Creek since 1989. We agree that collections are limited and more extensive sampling in the future may produce additional occurrence information in this watershed.

(18) *Comment:* Stream flow records from the U.S. Geological Survey and International Boundary and Water Commission gauging station show that Pinto Creek has had ''no flow'' 59 percent of the time as measured monthly between 1965 and 1996. Pinto Creek is an intermittent stream and does not supply the permanent, natural flows that are a pillar of the critical habitat definition.

Our Response: We recognize that portions of Pinto Creek can be intermittent. The location of the stream gauge was moved to a far upstream location in 1981 (Ashworth and Stein 2005, p. 18). Although portions of the stream will exhibit no flow during some times of the year, spring flows will continue providing aquatic habitat for the Devils River minnow at various locations downstream. Ashworth and Stein (2005, p. 19) found that the Pinto Creek is a gaining stream through much of the upper reaches, that is, it increases in volume downstream. A stream gauge at a stationary location does not reflect the longitudinal variation in stream flow. We observed this in the summer of 2006 when Service biologists visited Pinto Creek and found some reaches of the creek dry and other locations supported by spring flows. Fish were concentrated in these spring-fed stretches.

To account for this variation, PCE 5 of this critical habitat designation includes areas within stream courses that may be periodically dewatered for short time periods, during seasonal droughts. These areas were found to be important as connective corridors. The Devils River minnow occurs in relatively short stream segments and, therefore, needs to be able to move unimpeded to access different areas within the stream to complete life history functions and find resources, such as food and cover.

(19) *Comment:* The presence of the nonnative smallmouth bass (*Micropterus dolomieu*) is the only significant change in the Devils River and has caused many changes in the structure of the fish community. The Devils River should not be designated as critical habitat because the only factor affecting fish populations is being propagated and enhanced by Texas Parks and Wildlife Department (TPWD).

Our Response: We do not know the full extent of specific impacts of the smallmouth bass on the Devils River minnow, but initial research results since the listing have not revealed that smallmouth bass are an obvious source of predation on Devils River minnow. TPWD manages the smallmouth bass fishery in the Devils River but no longer stocks the fish in the Devils River or Amistad Reservoir. It is unknown if a change in the management of this fishery would benefit the Devils River minnow.

(20) *Comment:* Nonnative species, such as the smallmouth bass and armored catfish, deserve to be protected even though they are not native. They should be allowed to thrive for the benefit of the American people, consistent with the Service's mission statement.

Our Response: In the preamble to the Act, Congress recognized that endangered and threatened species of wildlife and plants ''are of esthetic, ecological, educational, historical, recreational, and scientific value to the Nation and its people.'' When humans introduce species outside of their natural range, they often have unintended and deleterious effects on native species. Nonnative species are one of the primary threats to many native species, sometimes contributing to their status as threatened or endangered. In these instances, we place a higher value on the conservation of the native species and often try to control the nonnative species to further the recovery of the listed species. We believe this is consistent with the intent of the Act.

(21) *Comment:* Groundwater conservation districts override the ''Rule of Capture'' in groundwater law in Texas. Designating critical habitat is a way for the Federal government to gain control over water managed by State or local authorities.

Our Response: We recognize that groundwater districts are intended to allow local management of groundwater in place of the rule of capture. Designating critical habitat is not intended to supersede surface or groundwater management by private, local, or State parties. If a Federal agency proposes an action that they determine may affect the Devils River minnow or its habitat (such as a change in stream flow rates), they are required under section 7 of the Act to consult with the Service. Since we are designating final critical habitat in areas presently occupied by the fish, this requirement to consult would exist even if we were not designating critical habitat.

(22) *Comment:* The proposed rule's concern for future groundwater withdrawals is not based on well-researched and documented science on the connection, if any, between groundwater withdrawals in Pinto Valley and high quality water for the species in Pinto Creek. WaterTexas intends to convert groundwater in Kinney County historically used for agriculture to municipal use without increasing the overall amount of water pumped. Therefore, the statement in the proposed critical habitat rule that there are plans to significantly increase the amount of groundwater pumped is inaccurate in regard to plans by WaterTexas.

Our Response: We did not attempt to connect any particular groundwater pumping areas, such as Pinto Valley, to the potential for impact of spring flows in Pinto Creek. Our concerns are consistent with experts in the field, such as the statements from studies by Ashworth and Stein (2005, p. 34): ''Base flows of the rivers and streams that flow through Kinney and Val Verde Counties is [sic] principally generated from the numerous springs that occur in the headwaters of these surface drainages. Sustaining flow in these important rivers and streams is highly dependent on maintaining an appropriate water level in the aquifer systems that feed the supporting springs. Spring discharge rates can be negatively impacted by nearby wells if the pumping withdrawals lower the water table in the aquifer that contributes to the spring. If the water-level elevation drops below the elevation of the land surface at the point of spring discharge the spring will cease to flow.''

The statement in this final critical habitat designation characterizes the expected overall trends for groundwater pumping in Kinney County (PWPG 2006, pp. 3–13, 4–54) and is not intended to be specific to any particular groundwater development project.

(23) *Comment:* The purpose of the Kinney County Groundwater Conservation District (KCGCD) Management Plan is to provide guidance to the KCGCD on how to manage the groundwater on a sustainable basis and yet beneficially use the groundwater without exploiting

or adversely affecting the natural flow of the intermittent streams.

Our Response: The KCGCD has recently drafted a revised management plan including an estimate of future groundwater permits. Although the plan was not approved until after the close of the public comment period and therefore not considered in its entirety in this final rule, we recognize that the KCGCD intends to manage groundwater on a sustainable basis without adversely affecting natural stream flows. We understand that KCGCD is still collecting scientific information on the possible effects to stream flows of various permitting levels for the aquifers in Kinney County. We look forward to the results of the KCGCD's implementation of their management plan and we intend to work cooperatively with the District to also collect information on the relationship of stream flows and aquatic habitat for the Devils River minnow, as called for in the recovery plan (Service 2005, p. 2.4–4).

(24) *Comment:* Current land-use activities authorized by the KCGCD in the form of groundwater permitting will allow such an unwarranted and unprecedented depletion of the groundwater resource that Pinto Creek, the sole remaining critical habitat for the Devils River minnow in Kinney County, will dry up—if not completely, then certainly to the point of no longer being suitable for the minnow. Any activity that would further threaten spring flows in Pinto Creek must not be allowed if the loss of the minnow in that creek is to be avoided.

Our Response: We recognize this concern and we encourage the KCGCD to carefully consider the impacts on Pinto Creek of future groundwater use permitting. However, it is important to recognize that designation of Pinto Creek, or the other areas, as critical habitat for the Devils River minnow has no regulatory effect on non-Federal actions, such as permitting by a local groundwater district.

(25) *Comment:* The KCGCD plans to permit total groundwater withdrawals that exceed the amount of groundwater available according to estimates by the Texas Water Development Board. The KCGCD does not consider impacts to the Devils River minnow, and the KCGCD may have already sanctioned withdrawals of sufficient amounts of groundwater to result in direct harm to the proposed critical habitat in Pinto Creek.

Our Response: We understand there are important scientific uncertainties about the amount of groundwater available for sustained uses in Kinney County. We recognize that future increases in groundwater pumping could impact habitats of the Devils River minnow, and we encourage the KCGCD to consider habitat of the Devils River minnow and to provide stream flow monitoring efforts to ensure permitted pumping does not result in loss of stream habitat for Devils River minnow. However, unless there is a Federal nexus with groundwater pumping activities and a determination that a specific Federal action may affect the Devils River minnow, the critical habitat designation will not affect groundwater pumping.

(26) *Comment:* A limit on impervious cover within the watersheds of the designated streams should be included in the section on Special Management Considerations and Protections. Impervious cover amounts in excess of 10 to 15 percent within a watershed are known to increase storm runoff, which in turn causes the erosion of stream beds and the degradation of water quality as surface pollutants contaminate and warm the water in a stream.

Our Response: We concur that limiting impervious cover in urban areas is one method to reduce future pollutant inputs to streams from contributing watersheds. The final critical habitat designation does not intend to provide this level of specificity for needed special management actions. There may be other management that could result in providing adequate water quality for the Devils River minnow in San Felipe Creek. This level of land planning is best done by a local governmental authority, such as a city or county.

(27) *Comment:* The proposed rule includes brush-clearing in a list of activities that would significantly increase sediment deposition within the stream channel. This statement, taken out of context, is erroneous. Research has shown that brush control can lead to positive environmental benefits, including increased groundwater recharge.

Our Response: The proposed rule indicated brush control and other land-use activities could affect Devils River minnow habitat. We have updated the final rule to more accurately reflect our understanding that the actual effects of specific activities, such as brush clearing, must be evaluated on a project-specific basis. The impacts of any specific activity will depend on the location of the activity, and the extent to, and manner in, which the activity is carried out.

We have also updated the final economic analysis to include a Statewide section 7 consultation in 2004 that was completed with the Natural Resources Conservation Service (NRCS) for brush control actions funded under the 2002 Farm Bill. In that consultation, we found that, under most circumstances, brush control within the range of the Devils River minnow results in beneficial effects by increasing groundwater recharge and spring flows, as emphasized by this comment.

(28) *Comment:* Land-use practices in the Devils River Unit have changed little over the past 50 years and are predominantly agrarian (agricultural) for livestock ranching and wildlife hunting. Stream flow and quality are not currently influenced by other outside factors, such as those from municipal, commercial, or industrial entities, but are only subject to natural variations. The Nature Conservancy and the State of Texas own large parcels of land along the river. Barring any unforeseen events, it does not appear that land use in the region will change significantly.

Our Response: We agree that land use has changed little in the Devils River watershed in recent years, and current ranching and wildlife hunting are not considered a threat to the Devils River minnow or a concern for its habitat. However, we are concerned that the stream habitat will be affected in the future by other outside factors. The primary long-term potential threat of groundwater withdrawal is not necessarily related to land use. Other land-use considerations include the potential impacts to water quality from petroleum exploration and development.

(29) *Comment:* One commenter stated that the Devils River minnow is thriving, particularly in the Devils River, under the current voluntary cooperation of private landowners, TPWD, and the Service. The species does not now satisfy the definition for an endangered or even threatened species under the Endangered Species Act (16 U.S.C. 1531 *et seq.*). Another commenter thought our action to designate critical habitat would lead to further action to declare it an endangered species.

Our Response: We recognize the positive relationships that exist between our agency, TPWD, and private landowners in working together for the conservation of the Devils River minnow. We concur that various monitoring efforts in the Devils River have continued to find the population persisting, apparently in strong numbers. However, there is no available information that suggests the species is ''thriving'' across its range. The Act requires designation of critical habitat

for species listed as either threatened or endangered, if we determine critical habitat to be prudent and determinable.

As part of a process separate from designating critical habitat, the Service is now conducting a 5-year review on the status of the Devils River minnow rangewide to assess whether it is classified correctly as a threatened species. We requested information to assist with this review in a **Federal Register** notice on April 23, 2007 (72 FR 20134). We have not yet completed this review, and we are always open to receiving new information on the status of this and all listed species.

(30) *Comment:* The voluntary conservation agreement signed by the Service and TPWD in 1998 is working, and the Devils River Association renews our commitment to help with this agreement. Voluntary efforts on the Devils River have increased Devils River minnow habitat. The Service should continue this healthy voluntary cooperation. Designating critical habitat would terribly and irreparably damage the trust that we have gained over the last few years.

Our Response: We appreciate and strongly support the voluntary cooperation that has been provided in the past by landowners along the Devils River. The conservation of this species depends on the cooperative efforts of private landowners and others. Although the 1998 conservation agreement has not been renewed or maintained as a formal conservation effort following the initial 5-year commitment, it has served as a foundation for cooperative efforts that, in part, resulted in the designation of the Devils River minnow as threatened rather than endangered. After conducting an analysis under section 4(b)(2) of the Act, we concluded that the benefits of excluding the Devils River Unit from the final designation (including maintaining non-Federal partnerships) outweigh the benefits of inclusion (see ''Exclusions under Section 4(b)(2)'' section).

(31) *Comment:* Private landowners and ranchers along the Devils River serve to maintain wide open spaces and ecosystem processes. Restrictions on private landowners from critical habitat designation could affect landowners' livelihoods and result in land fragmentation and a cascading effect along the Devils River. This could result in the selling of smaller land parcels and cause the end of one of the most pristine ecosystems in the State.

Our Response: We agree that maintaining large ranches intact is likely a beneficial situation for the Devils River minnow habitat. However, we do not foresee private landowner restrictions resulting from the final designation of critical habitat and do not believe that these concerns are likely to be realized. These widely held perceptions by landowners in the Devils River Unit, however, could result in anti-conservation incentives because furthering Devils River minnow conservation is seen as a risk to future economic opportunities or loss of private property rights. See our response to Comment 30 above.

(32) *Comment:* The restrictions on landowners in the Devils River area will unduly burden landowners. Critical habitat will also impact whether or not you can use machinery for pushing cedar, constructing roads, clearing brush, grazing livestock excessively, and using off-road vehicles.

Our Response: These activities are identified in the proposed and final rules as actions that could affect critical habitat, if they were carried out, funded, or permitted by a Federal agency and if they resulted in specific effects to the critical habitat area. The final critical habitat designation itself does not restrict landowners along the Devils River or elsewhere from carrying out these activities. See our response to Comment 27 for additional discussion of brush clearing.

(33) *Comment:* Will critical habitat designation affect: (1) The right of the City of Del Rio to take water from San Felipe Springs or other groundwater sources; (2) the right of private landowners to take and use groundwater on their lands; (3) City, County, or State construction projects involving building or maintaining streets, highways, and other public facilities; (4) repair and maintenance activities on State Highway 163 in Val Verde County or the county road from State Highway 163 to F.M. 1024; (5) the rights of landowners to use and operate their lands for otherwise lawful purposes? What activities on non-Federal, public, or private lands will be affected by critical habitat designation? What impact will critical habitat designation have on Laughlin Air Force Base?

Response: Critical habitat only affects activities where Federal agencies are involved and consultation under section 7 of the Act is necessary. Critical habitat designation has no impact on private actions on private lands. Critical habitat does not create a requirement for specific land protection by non-Federal parties. The Devils River minnow occurs in streams primarily on non-Federal lands with little to no Federal agency involvement. Therefore, final critical habitat designation is not expected to change most ongoing or planned activities.

The legal protections of critical habitat only apply during interagency consultation by Federal agencies under section 7 of the Act. Activities that are funded, permitted, or carried out by a Federal agency (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act) on private or public lands that may affect a listed species or critical habitat undergo additional review for consideration of the listed species. Through an interagency consultation process, the Service advises Federal agencies whether the proposed actions would likely jeopardize the continued existence of the species or adversely modify its critical habitat. Results of these additional reviews rarely interfere with the ability of private or public entities to carry out otherwise lawful activities such as those described in this comment.

We have only designated critical habitat in areas where the species occurs. In these areas, Federal agencies already have a responsibility for interagency consultation for actions that may affect the species. A review of the consultation history as part of the economic analysis (documented in Appendix A of the economic analysis) concluded that there have been very few consultations since the species was listed in 1999. To date, there has been no interagency consultation with Laughlin Air Force Base regarding the Devils River minnow.

(34) *Comment:* I am concerned that by designating the San Felipe Creek as critical habitat, the people will suffer and not be able to use the creek as the City of Del Rio would like. The Devils River minnow should not dictate how the City of Del Rio uses San Felipe Creek, but you should work to eradicate river cane and the armored catfish to help the population of the fish grow.

Our Response: People in Del Rio will continue to be able to use San Felipe Creek even though it has been designated as critical habitat. The conservation of the Devils River minnow has not limited the use of San Felipe Creek, and use is not likely to change with critical habitat. We will continue our ongoing cooperative efforts with the City of Del Rio to work on controlling exotic river cane and armored catfish, and on other conservation efforts.

(35) *Comment:* There is suspicion that the Devils River minnow population in Pinto Creek was artificially introduced by private landowners and others at the headwaters of Pinto Creek.

Our Response: We have no information to indicate that the Devils River minnow in Pinto Creek is not a natural population. The reason for the recent discovery of Devils River minnow in Pinto Creek is because there was no prior sampling in upstream areas where the species occurs (Garrett *et al.* 2004, p. 439). In addition, recent genetic studies of the Devils River minnow have found that the population in Pinto Creek is significantly different from the population in the Devils River (Conway *et al.* 2007, p. 9), suggesting that it is a natural population.

(36) *Comment:* Many listed species in Texas and nationally do not have critical habitat designated. The Service has already had a final ruling that stated it would not be prudent to designate critical habitat for the Devils River minnow because it would not benefit the species (final listing rule in 1999, 64 FR 56606). As stated in the Service's July 26, 2005, letter to the Forest Guardians, critical habitat is not needed for the Devils River minnow.

Our Response: We agree that designation of critical habitat is not likely to provide many benefits for the Devils River minnow since the designated area is likely to have few Federal actions that affect the species. However, the Act requires that we designate critical habitat following a specific methodology. The lawsuit brought by Forest Guardians (now WildEarth Guardians) and others necessitated that we reconsider the designation of critical habitat, resulting in this final rule. The reasoning that we used in 1999 to determine that the designation of critical habitat was not prudent was subsequently determined in other court cases not to be a valid justification.

(37) *Comment:* All areas included in the proposed rule should be designated as critical habitat. The adequacy of existing or future conservation plans is not sufficient to warrant any exclusions of critical habitat.

Our Response: We are excluding the Devils River Unit and Sycamore and Las Moras creeks from the critical habitat designation for Devils River minnow. After conducting analyses under section 4(b)(2) of the Act, we concluded that the benefits of excluding the Devils River Unit and Sycamore and Las Moras creeks from the final designation (including maintaining non-Federal partnerships) outweigh the benefits of inclusion (see ''Exclusions under Section 4(b)(2)'' section).

(38) *Comment:* Las Moras Creek is not the place to reintroduce Devils River minnow. Flooding in the city of Brackettville often causes pollution in the creek. The KCGCD does not have the scientific evidence to assure that Las Moras Creek will not go dry if groundwater is transported to San Antonio.

Our Response: We are not proposing to reintroduce Devils River minnow to Las Moras Creek with this final critical habitat rule. Instead we are designating critical habitat for the species in portions of Pinto Creek and San Felipe Creek. We have determined not to designate Las Moras Creek as critical habitat. The concerns raised in this comment will need to be addressed in future cooperative plans to restore the Devils River minnow to Las Moras Creek.

Comments Related to the Economic Analysis

(39) *Comment:* The draft economic analysis (DEA) maintains that section 7 consultations under the jeopardy standard and the adverse modification standard are not likely to have significantly different outcomes. This is not accurate, as the jeopardy standard does not protect unoccupied habitat. Moreover, destruction of occupied habitat may not meet the jeopardy standard if the Service determines that the destruction of a single population will not cause the species to go extinct or thwart its recovery. Alternatively, within critical habitat, the destruction of a single population or a portion thereof would certainly violate the Act's prohibition of adverse modification.

Our Response: It is true that it would be inappropriate to conclude that consultations under the jeopardy and adverse modification standards would not differ for unoccupied critical habitat; however, we have not included unoccupied areas in this final critical habitat designation (see ''Criteria Used to Identify Critical Habitat'' section below). Additionally, we recognize that the jeopardy and adverse modification standards are not equivalent and that it is possible in a general sense that a project may be determined to adversely modify critical habitat while also not resulting in jeopardy. However, the specific situation for the Devils River minnow does not present this case. For two of the units, no projects with a Federal nexus are anticipated, and for the third unit, the projects expected would generally be minor and not expected to affect an entire unit. Therefore, projects in the third unit would not likely result in adverse modification or jeopardy. Based on discussions among stakeholders, affected Federal agencies, and the Service, no new conservation measures are expected to occur as a result of consultations in areas designated as critical habitat for the Devils River minnow. Rather, current and forecast conservation measures for the species are a result of the listing of the Devils River minnow as a threatened species. The additional cost of consulting for adverse modification above the cost of consulting for jeopardy, in the amount of $64,000 (undiscounted) over 20 years, are quantified as incremental post-designation impacts in the administrative costs appendix of the economic analysis.

(40) *Comment:* The critical habitat proposal and the DEA fail to fully address the threat of climate change to the Devils River minnow, despite the fact that its southwestern aquatic habitat is in extreme peril from the climate crisis.

Our Response: At this time, climate change has not been identified as an impact needing special management in the Devils River minnow critical habitat, as projections of specific impacts of climate change in this area are not currently available. As such, no conservation measures are expected in the reasonably foreseeable future that would directly address the threat of climate change to the Devils River minnow. Thus, the economic analysis does not quantify impacts associated with conservation measures for the Devils River minnow related to global climate change.

(41) *Comment:* The potential impacts of future groundwater development for municipal use should not be ignored in the economic analysis. With the potential groundwater yields that could be produced for municipal use, it is recommended that the parameters used in performing the economic analysis be reexamined and revised to reflect the potential future impacts of pumping for municipal use. If these factors are ignored, it is conceivable that future limitations could impose unreasonable restrictions on groundwater development in the region, in turn resulting in significant economic impacts.

Our Response: Section 3.2 of the final economic analysis (FEA) recognizes that any limitations on available future groundwater resource options for San Antonio or other municipalities wishing to export water from the critical habitat area would result in potentially substantial economic impacts on municipal users, presumably in terms of increased water prices occurring if supply is constrained, or as more costly options for water development are undertaken. However, due to the uncertainties with regard to linking specific groundwater withdrawals to

impacts on Devils River minnow habitat, future Federal involvement in potential water extraction projects, and any potential changes to those projects that could be requested by the Service as part of a consultation, the FEA is unable to quantify potential economic impacts of Devils River minnow conservation measures related to such groundwater extraction activities. The analysis does recognize that potential negative impacts on both the water suppliers and the end water users could occur should restrictions on water use be undertaken on behalf of the Devils River minnow. The analysis also points out that there have not been any consultations related to groundwater extraction and its effects on the Devils River minnow to date.

(42) *Comment:* In Section 3.1 of the DEA, the quotation attributed to the document, ''Texas Water Law,'' Texas Water Resource Education, Texas A&M University, is not completely accurate with respect to Texas Law. While the so-called ''Rule of Capture'' continues to be the underlying basis of groundwater law in Texas, groundwater districts, and now, more importantly, Groundwater Management Areas (GMAs) play a major and superseding role in groundwater planning and management. In particular, House Bill 1763 from the 79th Regular Session of the Texas Legislature created GMAs that now cover all of Texas, and together with groundwater districts, GMAs override in many respects the effects of the ''Rule of Capture'' as known and practiced in the past.

Our Response: Section 3.1 of the FEA has been revised following receipt of this comment. This section now states the following: ''Generally, groundwater in Texas is governed by the 'rule of capture,' that is, groundwater is the private property of the owner of the overlying land. However, a number of state-mandated groundwater conservation districts (GCDs) have the ability to regulate the spacing and production of groundwater wells. Each GCD falls within a larger Groundwater Management Area (GMA). Currently, 16 GMAs exist in Texas spanning the state's major and minor aquifers. In 2005, the Texas State Legislature required that all GCDs in a given GMA meet annually to determine a future desired groundwater condition for their respective GMA. Based on the desired future condition specified by a given GMA, the Texas Water Development Board (TWDB) determines a managed available groundwater level for the GMA. Lands outside of GCDs are not subject to groundwater pumping regulations unless a landowner seeks state funding for a groundwater project. In this case, the specific project must be included in the GMA's regional water plan. The total groundwater allotments permitted by the GMA must not exceed its managed available groundwater level.''

(43) *Comment:* WaterTexas' ongoing water exportation project is too preliminary to know for certain whether consultation with the Federal government above and beyond the U.S. Army Corps of Engineers (for Section 404 permits under the Clean Water Act) will be necessary. With respect to WaterTexas' planned water exportation project, WaterTexas does not see the KCGCD's management plan revision currently underway as any sort of barrier to the commencement or further development of their current project.

Our Response: Section 3.2 of the FEA has now been clarified to state that the WaterTexas project is too preliminary to know for certain whether or not consultation with the Federal government, other than the U.S. Army Corps of Engineers for a section 404 permit, will be necessary. A statement has also been added to the FEA clarifying that ''currently, WaterTexas does not expect the forthcoming KCGCD management plan to affect their ongoing groundwater exportation project.''

(44) *Comment:* In section 3.2 paragraph 86, the DEA states that ''supplementing San Antonio's water supply would, among other things, ease water-related threats to other listed species within the Edwards Aquifer.'' WaterTexas wishes to correct any perception that they believe their planned water exportation project will assist in directly reviving or rescuing any endangered species in any other area of Texas.

Our Response: Section 3.2 of the FEA has been revised to clarify that one water company believes that its project may help to ease water-related threats to other species in the Edwards Aquifer. The section now states: ''Grass Valley Water LP is proposing to export 22,000 acre-feet annually to San Antonio from a 22,000-acre ranch in eastern Kinney County. The project would draw water from the Edwards Balcones Fault Zone, which according to the company, does not affect Las Moras Springs. Grass Valley Water LP has already invested a significant amount of resources into the project and believes that supplementing San Antonio's water supply could, among other positive effects, ease water-related threats to other listed species within the Edwards Aquifer.''

(45) *Comment:* Voluntary conservation plans, such as the City of Del Rio's Management Plan for San Felipe Creek and the San Felipe Country Club Management Plan, should not be included in the economic baseline calculation in the EA. Due to the voluntary nature of these plans, the water quality protection measures described are not guaranteed to occur. As such, these voluntary measures might lower the perceived benefit to designating critical habitat by guaranteeing conservation, which, in reality, may or may not occur.

Our Response: The FEA examines the impacts of restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas considered for critical habitat designation. The analysis employs ''without critical habitat'' and ''with critical habitat'' scenarios. The ''without critical habitat'' scenario represents the baseline for the analysis, considering protections already accorded the Devils River minnow, voluntary or otherwise. The City of Del Rio's Management Plan for San Felipe Creek and the San Felipe Country Club Management Plan were both developed in 2003 following a Conservation Agreement for the Devils River minnow between the Service, TPWD, and the City of Del Rio in 1998, prior to the species' listing. Thus, the costs of developing these plans, and those conservation measures listed in the management plans that have already occurred or are planned to occur in the near future are included in the baseline. Impacts related to conservation measures discussed in the management plans that are not anticipated to occur in the foreseeable future are not quantified in the analysis.

(46) *Comment:* The DEA failed to consider the entirety of potential effects of all Federal nexuses and ensuing regulatory actions on small businesses, in particular, private landowners and ranchers along the Devils River Unit. Pursuant to the 2002 Farm Bill, there are at least two NRCS programs that provide assistance to landowners to control brush. The proposed rule lists brush-clearing as an ''action that would significantly increase sediment deposition within the stream channel.'' Potential brush-clearing consultations may delay actual brush-clearing to a point where landowners may miss the opportunity to carry out planned brush control activities for an entire year.

Our Response: Section 2 of the FEA now clarifies that threats to water quality in Devils River minnow critical habitat may include sedimentation due to grazing, brush-clearing, road construction, channel alteration, off-road vehicle use, and other watershed activities in the rural Devils River,

Sycamore Creek, and Pinto Creek units. Section 2 of the FEA also includes a discussion of the concern that private brush-clearing activities conducted using funds from NRCS could be delayed to a point where landowners may miss the opportunity to carry out those activities for an entire year. The analysis examines a 2004 formal consultation between the Service and the NRCS regarding activities associated with implementation of the 2002 Farm Bill conservation programs and their effects on listed species in western Texas. This consultation, which focused on brush management treatment practices targeting control of honey mesquite (*Prosopis glandulosa*), salt cedar, Ashe juniper (*Juniperus ashei*), and redberry juniper (*J. coahuilensis*) concluded that the proposed brush-clearing activities would benefit the Devils River minnow by increasing the base flow of the Devils River if the brush-control activities were part of brush management practices intended to improve the quality and quantity of water, improve range conditions, and improve the value of wildlife habitat. Thus, all brush removal activities receiving funding from the NRCS under the 2002 Farm Bill remained unaltered as a result of that consultation. The analysis concludes that few, if any, impacts on brush-clearing activities, even when supported by NRCS funds, appear likely to result from Devils River minnow conservation activities.

(47) *Comment:* Several commenters requested that stigma effects be addressed in the economic analysis. One commenter stated that he believes this effect could significantly decrease and lower the land value of the land along the Devils River. The number could be anywhere from 2 to 10 million dollars of land devaluation impacts.

Our Response: Section 1.3.2 of the FEA has been revised and expanded to respond to concerns over stigma effects related to the designation. The analysis recognizes that, in some cases, public perception of critical habitat designation may result in limitations of private property uses above and beyond those associated with anticipated project modifications and uncertainty related to regulatory actions. Public attitudes regarding the limits or restrictions of critical habitat can cause real economic effects to property owners, regardless of whether such limits are actually imposed. To the extent that potential stigma effects on real estate markets are probable and identifiable, these impacts are considered indirect, incremental impacts of the designation.

The FEA finds that, in the case of the Devils River minnow critical habitat areas, it appears unlikely that critical habitat designation for the Devils River minnow will result in long-term stigma effects for property owners abutting designated stream segments. Unless a landowner receives Federal assistance or needs a Federal permit to carry out property management actions, no nexus exists that would compel a Federal action agency to consider requiring conservation measures for the species. For ongoing private land-use activities, such a nexus is expected to be rare. Further, recent land-use trends in critical habitat areas are a transition from ranching and agricultural uses to recreation and conservation-based land uses. In these cases, any perceptions that development activities may be limited in those areas could in fact increase the attractiveness of property in those areas. In either case, as the public becomes aware of the true regulatory burden imposed by critical habitat, any impact of the designation on property values would be expected to decrease.

(48) *Comment:* The economic analysis states that it measures net economic costs, but it does not quantify benefits. Therefore, the Service cannot estimate the ''net'' impacts of critical habitat. Consequently, they cannot appropriately invoke section 4(b)(2) of the Act to exclude areas from its final critical habitat designation for the Devils River minnow. The commenter also states that benefits derived from conservation measures such as improving water quality, eliminating non-native species, and preserving/maintaining ecosystem services also benefit human communities and have been captured in economic literature and should be considered in the DEA. The commenter notes that the costs of these conservation measures are attributed to baseline protections.

Our Response: Where sufficient information is available, the FEA attempts to recognize and measure the net economic costs of species conservation efforts imposed on regulated entities and the regional economy as a result of critical habitat designation. That is, it attempts to measure costs imposed on landowners or other users of the resource net of any offsetting gains experienced by these individuals associated with these conservation efforts.

The analysis does not attempt to assign a monetary value to broader social benefits that may result from species conservation. The primary purpose of the rulemaking is the potential to enhance conservation of the species. As stated in the FEA, and as quoted in the comment, ''rather than rely on economic measures, the Service believes that the direct benefits of the Proposed Rule are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking.'' Thus, the Service utilizes cost estimates from the economic analysis as one factor against which biological benefits are compared during the 4(b)(2) weighing process. The Service agrees that, to the extent that additional social benefits such as improving water quality, eliminating non-native species, and preserving/maintaining ecosystem services result from conservation measures for the Devils River minnow, these improvements could also benefit human communities. In this case, the DEA predicts that the incremental costs resulting from the proposed rule are solely administrative in nature. As the commenter points out, no new conservation measures are anticipated to result from the designation.

Summary of Changes From the Proposed Rule

In preparing the final critical habitat designation for the Devils River minnow, we reviewed and considered comments from the public and peer reviewers on the July 31, 2007, proposed designation of critical habitat (72 FR 41679) and on the draft economic analysis, made available on February 7, 2008 (73 FR 7237). As a result of comments received, we made the following changes to our proposed designation:

(1) We updated the Required Determinations sections to incorporate updated analyses from the FEA.

(2) We have excluded 47.0 stream km (29.2 stream mi) of stream within the Devils River Unit (Unit 1) proposed as critical habitat for Devils River minnow from the final designation (see the ''Exclusions under Section 4(b)(2) of the Act'' section of this final rule for further details).

(3) We determined, based upon the comments received and consistent with the recovery plan, that Sycamore and Las Moras creeks are essential to the conservation of the Devils River minnow. We are excluding these areas from critical habitat (see the ''Exclusions under Section 4(b)(2) of the Act'' section of this final rule for further details).

Critical Habitat

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

(1) The specific areas within the geographical area occupied by a 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 consideration or protections; and

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

Conservation, as defined under section 3 of the Act, means the use of all methods and procedures that are necessary to bring any endangered or threatened species to the point at which the measures provided under the Act are no longer necessary.

Critical habitat receives protection under section 7 of the Act through the prohibition against Federal agencies carrying out, funding, or authorizing the destruction or adverse modification of critical habitat. Section 7(a)(2) of the Act requires consultation on Federal actions that may affect 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 private 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) would apply, but even in the event of a destruction or adverse modification finding, the landowner's obligation is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

For inclusion in a critical habitat designation, the habitat within the geographical area occupied by the species at the time of listing must contain the physical and biological features essential to the conservation of the species. Critical habitat designations identify, to the extent known using the best scientific data available, habitat areas that provide essential life cycle needs of the species (*i.e.*, areas on which are found the primary constituent elements (PCEs) laid out in the appropriate quantity and spatial arrangement for the conservation of the species).

Occupied habitat that contains the features essential to the conservation of the species meets the definition of critical habitat only if those features may require special management considerations or protection.

Under the Act, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed only when we determine that the best available scientific data demonstrate that the designation of that area is essential to the conservation needs of the species.

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

When determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, or other unpublished materials and expert opinion or personal knowledge.

Habitat is often dynamic, and species may move from one area to another over time. Furthermore, we recognize that designation of critical habitat may not include all of the habitat areas that we may eventually determine, based on scientific data not now available to the Service, 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 promote the recovery of the species.

Areas that support populations, but are outside the critical habitat designation, will continue to be subject to conservation actions we implement under section 7(a)(1) of the Act. They are also subject to the regulatory protections afforded by the section 7(a)(2) jeopardy standard, as determined on the basis of the best available scientific information at the time of the agency action. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may require consultation under section 7 of the Act and may still result in jeopardy findings in some cases. 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 information available at the time of these planning efforts calls for a different outcome.

Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas occupied by the species at the time of listing to designate as critical habitat, we consider those physical and biological features essential to the conservation of the species that may require special management considerations or protection. We consider the physical or biological features to be the PCEs laid out in the appropriate quantity and spatial arrangement for the conservation of the species. The PCEs include, but are not limited to:

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

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

(3) Cover or shelter;

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

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

We derive the specific primary constituent elements required by the Devils River minnow from the biological needs of the species as understood from studies of its biology and ecology, including but not limited to, Edwards *et al.* (2004), Garrett *et al.* (1992), Garrett *et al.* (2004), Gibson *et al.* (2004), Harrell (1978), Hubbs (2001), Hubbs and Garrett (1990), Lopez-Fernandez and Winemiller (2005), Valdes Cantu and Winemiller (1997), and Winemiller (2003).

Space for Individual and Population Growth, Normal Behavior, and Cover

The Devils River minnow is a fish that occurs only in aquatic environments of small to mid-sized streams that are

tributaries of the Rio Grande in south Texas and northern Mexico. The species spends its full life cycle within streams. The stream environment provides all of the space necessary to allow for individual and population growth, food, cover, and normal behaviors of the species. Studies of the specific micro-habitats used by any life stages of Devils River minnow in the wild have not been conducted. Studies of fish habitat within its range have found too few individuals of Devils River minnow to analyze specific habitat associations (Garrett *et al.* 1992, p. 266; Valdes Cantu and Winemiller 1997, p. 268; Robertson and Winemiller 2003, p. 119). However, observational studies have been conducted throughout its limited range that generally defined stream conditions where Devils River minnows have been collected.

General habitat descriptions of areas where Devils River minnow have been found include the following: ''the area where spring runs enter the river'' (Hubbs and Garrett 1990, p. 448); ''channels of fast-flowing water over gravel bottoms'' (Garrett *et al.* 1992, p. 259); ''associated with water willow (*Justicia americana*) and other aquatic macrophytes over a gravel-cobble substrate'' (Garrett *et al.* 2004, p. 437) (macrophytes are plants large enough to be seen without a microscope); and ''stream seeps'' at sites that ''had abundant riparian vegetation overhanging the banks'' (Lopez-Fernandez and Winemiller 2005, p. 249). Stream seeps are specific sites along the stream where small amounts of water enter the stream from the ground. They are small springs, but may be less defined and more temporal. We based our determinations of the PCEs on the physical and biological features that have been measured in streams where Devils River minnow occur.

a. Water Depth and Velocity. Flowing water within streams is critical to provide living space for the Devils River minnow. All of the streams where the Devils River minnow is found are supported by springs that derive their discharge from underground aquifers, either the Edwards Aquifer or the Edwards-Trinity Aquifer (Brune 1981, pp. 274–277, 449–456; Edwards *et al.* 2004, p. 256; Garrett *et al.* 1992, p. 261; Garrett *et al.* 2004, p. 439; Hubbs and Garrett 1990, p. 448; Lopez-Fernandez and Winemiller 2005, p. 249). The Devils River minnow has been associated within the stream channel with areas with slow to moderate velocities between 10 and 40 centimeters (cm)/second (4 and 16 inches (in)/second) (Winemiller 2003, p. 13). The Devils River minnow is usually found in areas with shallow to moderate water depths between about 10 cm (4 in) and 1.5 meters (m) (4.9 feet (ft)) (Garrett *et al.* 2004, p. 436). Appropriate water depths and velocities are required physical features for Devils River minnows to complete all life history functions.

b. Cover. The presence of vegetative structure appears to be particularly important for the Devils River minnow. Garrett *et al.* (2004, p. 437) states that the species is most often found associated with emergent or submerged vegetation. Although some sites where Lopez-Fernandez and Winemiller (2005, p. 249) found Devils River minnow had little or no aquatic vegetation, they often found the Devils River minnow associated with stream banks having riparian vegetation that overhangs into the water column, presumably providing similar structure for the fish to use as cover. The structure provided by vegetation likely serves as cover for predator avoidance by the Devils River minnow and as a source of food where algae and other microorganisms may be attached. In controlled experiments in an artificial stream setting, minnows in the *Dionda* genus (the experiment did not distinguish between the Devils River minnow and the closely related manantial roundnose minnow) were found consistently associated with plants, and, in the presence of a predator, sought shelter in plant substrate habitat (Thomas 2001, p. 8). Also, laboratory observations by Gibson *et al.* (2004, p. 42) suggested that spawning only occurred when structure was provided in aquaria. Instream vegetative structure is an important biological feature for the Devils River minnow to avoid predation and complete other normal behaviors, such as feeding and spawning.

c. Substrates. The Devils River minnow is most often associated with substrates (stream bottom) described as gravel and cobble (Garrett *et al.* 2004, p. 436). Lopez-Fernandez and Winemiller (2005, p. 248) found the Devils River minnow associated with areas where the amounts of fine sediment on stream bottoms were low (less than 65 percent stream bottom coverage) (Winemiller 2003, p. 13) and where there was low or moderate amounts of substrate embeddedness. The term embeddedness is defined by Sylte and Fischenich (2003, p. 1) as the degree to which fine sediments surround coarse substrates on the surface of a streambed. Low levels of substrate embeddedness and low amounts of fine sediment are physical stream features that provide interstitial spaces within cobble and gravel substrates where microorganisms grow. These microorganisms are a component of the diet of the Devils River minnow (Lopez-Fernandez and Winemiller 2005, p. 250). We estimate substrate sizes for gravel-cobble between 2 and 10 cm (0.8 and 4 in) in diameter (Cummins 1962, p. 495) are important for supporting food sources for the Devils River minnow.

d. Stream Channel. The Devils River minnow occurs in the waters of stream channels that flow out of the Edwards Plateau of Texas. The streams contain a variety of mesohabitats for fish that are temporally and spatially dynamic (Harrell 1978, p. 60–61; Robertson and Winemiller 2003, p. 115). Mesohabitat types are stream conditions with different combinations of depth, velocity, and substrate, such as pools (stream reaches with low velocity and deep water), riffles (stream reaches with moderate velocity and shallow depths and some turbulence due to high gradient), runs (stream reaches with moderate depths, moderate velocities, and a uniformly flat stream bottom), and backwaters (areas in streams with little or no velocities along stream margins) (Parasiewicz 2001, p. 7). These physical conditions in stream channels are mainly formed by large flood events that shape the banks and alter stream beds. Healthy stream ecosystems require intact natural stream banks (including rocks and native vegetation) and stream beds (dynamically fluctuating from silt, sand, gravel, cobble, and bedrock). These physical features allow natural ecological processes in stream ecosystems, such as nutrient cycling, aquatic species reproduction and rearing of young, predator-prey interactions, and maintenance of habitat for Devils River minnow behaviors of feeding, breeding, and seeking shelter.

Devils River minnow may move up and downstream to use diverse mesohabitats during different seasons and life stages, which could partially explain the highly variable sampling results assessing abundance of the fish (Garrett *et al.* 2002, p. 478). However, it is unknown to what extent Devils River minnow may move within occupied stream segments because no research on movement has been conducted. Linear movement (upstream or downstream) within streams may be important to allow fishes to complete life history functions and adjust to resource abundance, but this linear movement may often be underestimated due to limited biological studies (Fausch *et al.* 2002, p. 490). The Devils River minnow occurs in relatively short stream segments and, therefore, needs to be able to move within the stream unimpeded to access different areas

within the stream to complete life history functions and find resources, such as food and cover.

Food

The Devils River minnow, like other minnows in the *Dionda* genus, has a long coiled gut for digesting algae and other plant material. Lopez-Fernandez and Winemiller (2005, p. 250) noted that Devils River minnows graze on algae attached to stream substrates (such as gravel, rocks, submerged plants, and woody debris) and associated microorganisms. Thomas (2001, p. 13) observed minnows in the *Dionda* genus (the experiment did not distinguish between Devils River minnow and the closely related manantial roundnose minnow) feeding extensively on filamentous algae growing on plants and rocks in an artificial stream experiment. The specific components of the Devils River minnow diet have not been investigated, but a study is underway to identify stomach contents of the Devils River minnow in San Felipe Creek (TPWD 2006, p. 1). An abundant aquatic food base of algae and other aquatic microorganisms attached to stream substrates is an essential biological feature for conservation of Devils River minnow.

Water Quality

The Devils River minnow occurs in spring-fed streams originating from groundwater. The aquifers that support these streams are of high quality and are free of pollution and most human-caused impacts (Plateau Water Planning Group (PWPG) 2006, pp. 5–9). This region of Texas has limited human development that would compromise water quality of the streams where Devils River minnows occur. San Felipe Creek may be an exception; see ''Special Management Considerations or Protection'' below. The watersheds are largely rural and were altered in the past to some extent by livestock grazing (cattle, sheep, and goats) for many decades (Brune 1981, p. 449), which may have caused some degradation in water quality. In recent years, land management has shifted away from sheep and goat grazing toward cattle grazing and recreational uses, such as hunting, that can promote maintenance of healthier grasslands (McCormick 2008, p. 33).

No specific studies have been conducted to determine water quality preferences or tolerances for Devils River minnow. However, because the species now occurs in only three streams, observations of water quality conditions in these streams are used to evaluate the needed water quality parameters for critical habitat. In addition, laboratory studies by Gibson *et al.* (2004, pp. 44–46) and Gibson and Fries (2005, pp. 299–203) have also provided useful information for the water quality conditions in captivity for Devils River minnow, as described in the following discussion.

a. Water temperature. Water temperatures from groundwater discharge at these springs are considered constant (Hubbs 2001, p. 324). However, water temperatures downstream from springs vary daily and seasonally (Hubbs 2001, p. 324). Water temperatures have been measured in these stream segments where Devils River minnow are found to range from about 17 °C (degrees Celsius) to 29 °C (63 °F (degrees Fahrenheit) to 84 °F). Temperatures in the Devils River ranged from 17 °C to 27 °C (63 °F to 81 °F) (Lopez-Fernandez and Winemiller 2005, p. 248; Hubbs 2001, p. 312). Measurements in San Felipe Creek have ranged from 19 °C to 24 °C (66 °F to 75 °F) (Hubbs 2001, p. 311; Winemiller 2003, p. 13). Gibson and Fries (2005, p. 296) had successful spawning by Devils River minnow in laboratory settings at temperatures from about 18 °C to 24 °C (64 °F to 75 °F). Higher water temperatures are rare in Devils River minnow habitat, but temperatures up to 29 °C (84 °F) were recorded in Pinto Creek (Garrett *et al.* 2004, p. 437). Pinto Creek generally has the lowest seasonal discharge rates (in other words, lower flows) of the streams known to contain the Devils River minnow, resulting in higher seasonal temperatures. Lower discharges during the summer can result in areas of shallow water with high levels of solar heat input leading to high water temperatures. Maintaining water temperatures within an acceptable range in small streams is an essential physical feature for the Devils River minnow to allow for survival and reproduction. Maintaining water temperatures within these ranges is interdependent on maintaining adequate spring flows to streams from groundwater aquifers, which generally discharge stable cooler water (Mathews 2007, p. 2).

b. Water chemistry. Researchers have noted the need for high-quality water in habitats supporting the Devils River minnow (Garrett 2003, p. 155). Field studies at sites where Devils River minnow have been collected in conjunction with water quality measurements have documented that habitats contain the following water chemistry: dissolved oxygen levels are greater than 5.0 mg/l (milligrams per liter) (Hubbs 2001, p. 312; Winemiller 2003, p. 13; Gibson *et al.* 2004, p. 44); pH ranges between 7.0 and 8.2 (Garrett *et al.* 2004, p. 440; Hubbs 2001, p. 312; Winemiller 2003, p. 13); conductivity is less than 0.7 mS/cm (microseimens per centimeter) and salinity is less than 1 ppt (part per thousand) (Hubbs 2001, p. 312; Winemiller 2003, p. 13; Garrett *et al.* 2004, p. 440; Gibson *et al.* 2004, p. 45); and ammonia levels are less than 0.4 mg/l (Hubbs 2001, p. 312; Garrett *et al.* 2004, p. 440). Streams with water chemistry within the observed ranges are essential physical features to provide habitat for normal behaviors of Devils River minnow.

Garrett *et al.* (2004, pp. 439–440) highlighted the conservation implications of water quality when describing the distribution of Devils River minnow in Pinto Creek. The species is abundant in upstream portions of the creek and is abruptly absent at and downstream from the Highway 90 Bridge crossing. A different aquifer (Austin Chalk) feeds the lower portion of the creek (Ashworth and Stein 2005, p. 19), which results in changes in water quality (different measurements of water temperature, pH, ammonia, and salinity). Garrett *et al.* (2004, p. 439) found that the change in water quality also coincided with the occurrence of different fish species that were more tolerant of these changes in water quality parameters.

c. Pollution. The Devils River minnow occurs only in habitats that are generally free of human-caused pollution. Garrett *et al.* (1992, pp. 266–267) suspected that the addition of chlorine to Las Moras Creek for the maintenance of a recreational swimming pool may have played a role in the extirpation of Devils River minnow from that system. Unnatural addition of pollutants such as chlorine, copper, arsenic, mercury, and cadmium; human and animal waste products; pesticides; suspended sediments; and petroleum compounds and gasoline or diesel fuels will alter habitat functions and threaten the continued existence of Devils River minnow. Fish, particularly herbivores and bottom-feeders, such as the Devils River minnow, are most likely affected by aquatic pollutants because their food source (algae and other macroinvertebrates) can be particularly susceptible to pollutant impacts (Buzan 1997, p. 4). Because Devils River minnow occurs in spring-fed waters that are generally free of sedimentation, protection from increased turbidity from suspended sediments or increased sedimentation from runoff are important to maintain suitable habitat (Robertson 2007, pp. 2–3). Areas with waters free of pollution are essential physical features to allow normal behaviors and growth of the Devils River minnow and

to maintain healthy populations of its food sources.

Sites for Breeding, Reproduction, and Rearing of Offspring

The specific sites and habitat associated with Devils River minnow breeding and reproduction have not been documented in the wild. However, Gibson *et al.* (2004) studied preferred conditions for spawning by Devils River minnow in a laboratory setting. Gibson *et al.* (2004, pp. 45–46) documented that the species is a broadcast spawner (they release eggs and sperm into the open water), over unprepared substrates (they don't build nests), and males display some territorial behavior. Broadcast spawning is the most common reproductive method in minnows (Johnston 1999, p. 22; Johnston and Page 1992, p. 604). Fertilized eggs of Devils River minnow were slightly adhesive (or became more adhesive with time) and tended to stick to gravels just below the surface of the substrate (Gibson *et al.* 2004, p. 46). The eggs can hatch less than one week after deposition (Gibson 2007, p. 1). There was little seasonality in spawning periods observed (Gibson *et al.* 2004, p. 45–46), which is consistent with a species that lives in a relatively stable temperature environment, such as spring-fed streams with low seasonal temperature variations. Based on this information, it is likely the species can spawn during most of the year. This is supported by Garrett *et al.* (2004, p. 437), who observed distinct breeding coloration of Devils River minnow (blue sheen on the head and yellow tint on body) in Pinto Creek in December 2001, and Winemiller (2003, p. 16), who found juveniles from early spring to late fall in San Felipe Creek.

a. Substrate. Gibson and Fries (2005, p. 299) found that Devils River minnow preferred gravel for spawning substrate, with size ranging mostly from 2 to 3 cm (0.8 to 1.2 in) in diameter. Gravel and rock substrates are required physical features for spawning (depositing, incubating, and hatching) of Devils River minnow eggs.

b. Cover. In laboratory experiments, Devils River minnow did not spawn in tanks until live potted plants (*Vallisnaria* spp. and *Justici*a spp.) were added; however, eggs were never found on the plants or other parts of the tank (Gibson *et al.* 2004, pp. 42, 43, 46). The plants apparently served as cover for the fish and allowed favorable conditions for spawning to occur. This condition is supported by observations in the wild that associates Devils River minnow with aquatic habitats where vegetative structure is present. This vegetative structure is a biological feature that is important for reproduction of Devils River minnow.

Habitat Protected From Disturbance or Representative of the Historic Geographical and Ecological Distribution of a Species

a. Nonnative Species. The introduction and spread of nonnative species have been identified as major factors in the continuing decline of native fishes throughout North America (Moyle *et al.* 1986, pp. 415–416) and particularly in the southwestern United States (Miller 1961, p. 397; Miller 1977, pp. 376–377). Williams *et al.* (1989, p. 1) concluded that nonnative species were a causal factor in 68 percent of the fish extinctions in North America in the last 100 years. For 70 percent of those fish still extant, but considered to be endangered or threatened, introduced nonnative species are a primary cause of the decline (Lassuy 1995, p. 392). Nonnative species have been referenced as a cause of decline in native Texas fishes as well (Anderson *et al.* 1995, p. 319; Hubbs 1990, p. 89; Hubbs *et al.* 1991, p. 2).

Aquatic nonnative species are introduced and spread into new areas through a variety of mechanisms, intentional and accidental, authorized and unauthorized. Mechanisms for nonnative fish dispersal in Texas include sport fish stocking (intentional and inadvertent, non-target species), aquaculture escapes, aquarium releases, and bait bucket releases (release of fish used as bait by anglers) (Howells 2001, p. 1).

Within the range of the Devils River minnow, nonnative aquatic species of potential concern include: armored (or suckermouth) catfish (*Hypostomus* sp.) in San Felipe Creek (Lopez-Fernandez and Winemiller 2005, pp. 246–251); smallmouth bass (Thomas 2001, p. 1), carp (*Cyprinus carpio*), goldfish (*Carassius auratus*), and redbreast sunfish (*Lepomis auritus*) (Edwards 2007, p. 1) in the Devils River; African cichlid (*Oreochromis aureus*) in San Felipe Creek (Lopez-Fernandez and Winemiller 2005, p. 249) and Devils River (Garrett *et al.* 1992, p. 266); Asian snail (*Melanoides tuberculata*) and associated parasites (McDermott 2000, pp. 13–14) in San Felipe Creek; and Asian bivalve mollusk (*Corbicula* sp.) (Winemiller 2003, p. 25) in San Felipe Creek. Effects from nonnative species can include predation, competition for resources, altering of habitat, changing of fish assemblages (combinations of species), or transmission of harmful diseases or parasites (Aquatic Nuisance Species Task Force 1994, pp. 51–59; Baxter *et al.* 2004, p. 2656; Howells 2001, pp. 17–18; Light and Marchetti 2007, pp. 442–444; Moyle *et al.* 1986, pp. 416–418). Studies have suggested effects on the Devils River minnow from the armored catfish in San Felipe Creek, most likely due to competition for food (Lopez-Fernandez and Winemiller 2005, p. 250). Armored catfish may also be piscivorous and directly prey on Devils River minnow (Wiersema 2007, pp. 5–6). Nonnative aquatic and riparian plants, such as hydrilla, water hyacinth, and giant river cane, also represent concerns for Devils River minnow from altering habitat conditions, food sources, and stream hydrology (Mathews 2007, p. 2).

The absence of impacts from harmful nonnative species is an essential biological feature for the conservation of the Devils River minnow. The persistence of Devils River minnow in its natural habitat depends on either having areas devoid of harmful nonnative aquatic species or having areas where nonnative aquatic species are present, but with sufficiently low levels of impacts to allow for healthy populations of the Devils River minnow.

b. Hydrology. Natural stream flow regimes (both quantity and timing) are vital components to maintaining ecological integrity in stream ecosystems (Poff *et al.* 1997, p. 769; Resh *et al.* 1988, pp. 443–444). Aquatic organisms, like the Devils River minnow, have specific adaptations to use the environmental conditions provided by natural flowing systems and the highly variable stream flow patterns (Lytle and Poff 2004, p. 94). As with other streams in the arid southwestern United States, streams where the Devils River minnow occurs can have large fluctuations in stream flow levels. In Texas, streams are characterized by high variation between large flood flows (occurring irregularly from rainfall events) and extended period of low flows (Jones 1991, p. 513). Base flows in streams containing Devils River minnow are generally maintained by constant spring flows (Ashworth and Stein 2005, p. 4), but in periods of drought, especially in combination with groundwater withdrawals, portions of stream segments can be periodically dewatered. The occurrence of intermittent stream segments within the range of the Devils River minnow is most common in Pinto Creek (Ashworth and Stein 2005, Figure 13; Uliana 2005, p. 4; Allan 2006, p. 1).

Although portions of stream segments included in this designation may experience short periods of low or no flows (causing dry sections of stream), they are still important because the

Devils River minnow is adapted to stream systems with some fluctuating water levels. Fish cannot persist in dewatered areas (Hubbs 1990, p. 89). However, Devils River minnows will use dewatered areas that are subsequently wetted as connective corridors between occupied or seasonally occupied habitat. Fausch *et al.* (2002, p. 490) notes in a review of movement of fishes related to metapopulation dynamics that, ''Even small fishes may move long distances to repopulate rewetted habitats.'' Preventing habitat fragmentation of fish populations is important in reducing extinction risks in rare species (Fagan 2002, p. 3255). Areas within stream courses that may be periodically dewatered but that serve as connective corridors between occupied or seasonally occupied habitat and through which the species may move when the habitat is wetted are important physical features of Devils River minnow habitat.

Flooding is also a large part of the natural hydrology of streams within the range of Devils River minnow. Large floods have been shown to alter fish community structure and fish habitat use in the Devils River (Harrell 1978, p. 67) and in San Felipe Creek (Garrett and Edwards 2003, p. 787; Winemiller 2003, p. 12). Pearsons *et al.* (1992, pp. 427) state that ''Flooding is one of the most important abiotic factors that structure biotic assemblages in streams.'' Floods provide flushing flows that remove fine sediments from gravel and provide spawning substrates for species like the Devils River minnow (Instream Flow Council 2002, p. 103; Poff *et al.* 1997, p. 775). Flooding is the physical mechanism that shapes stream channels by a process known as scour and fill, where some areas are scoured of fine sediments while fine sediments are redeposited in other areas (Gordon *et al.* 1992, pp. 304–305; Poff *et al.* 1997, pp. 771–772). This dynamic process is fundamental to maintaining habitat diversity in streams that ensure healthy ecosystem function (Lytle and Poff 2004, pp. 96–99; Poff *et al.* 1997, pp. 774–777). Allowing natural stream flows, particularly during flood events, is an essential physical process to maintain stream habitats for Devils River minnow.

Primary Constituent Elements for the Devils River Minnow

Within the geographical area we know to be occupied by the Devils River minnow, we must identify the physical and biological features within the geographical area occupied by the Devils River minnow at the time of listing that are essential to the conservation of the species and which may require special management considerations or protections. The physical and biological features are those primary constituent elements (PCEs) laid out in a specific spatial arrangement and quantity to be essential to the conservation of the species.

Based on the above needs and our current knowledge of the life history, biology, and ecology of the species, we have determined that the Devils River minnow's PCEs are:

(1) Streams characterized by:

a. Areas with slow to moderate water velocities between 10 and 40 cm/second (4 and 16 in/second) in shallow to moderate water depths between approximately 10 cm (4 in) and 1.5 m (4.9 ft), near vegetative structure, such as emergent or submerged vegetation or stream bank riparian vegetation that overhangs into the water column;

b. Gravel and cobble substrates ranging in diameter between 2 and 10 cm (0.8 and 4 in) with low or moderate amounts of fine sediment (less than 65 percent stream bottom coverage) and low or moderate amounts of substrate embeddedness; and

c. Pool, riffle, run, and backwater components free of artificial instream structures that would prevent movement of fish upstream or downstream.

(2) High-quality water provided by permanent, natural flows from groundwater springs and seeps characterized by:

a. Temperature ranging between 17 °C and 29 °C (63 °F and 84 °F);

b. Dissolved oxygen levels greater than 5.0 mg/l;

c. Neutral pH ranging between 7.0 and 8.2;

d. Conductivity less than 0.7 mS/cm and salinity less than 1 ppt;

e. Ammonia levels less than 0.4 mg/l; and

f. No or minimal pollutant levels for copper, arsenic, mercury, and cadmium; human and animal waste products; pesticides; fertilizers; suspended sediments; and petroleum compounds and gasoline or diesel fuels.

(3) Abundant aquatic food base consisting of algae; attached to stream substrates; and other microorganisms associated with stream substrates.

(4) Aquatic stream habitat either devoid of nonnative aquatic species (including fish, plants, and invertebrates) or in which such nonnative aquatic species are at levels that allow for healthy populations of Devils River minnows.

(5) Areas within stream courses that may be periodically dewatered for short time periods, during seasonal droughts, but otherwise serve as connective corridors between occupied or seasonally occupied areas through which the species moves when the area is wetted.

This final designation is designed for the conservation of PCEs necessary to support the life history functions that were the basis for the designation and the areas containing those PCEs in the appropriate quantity and spatial arrangement. Because not all life history functions require all the PCEs, not all critical habitat will contain all the PCEs.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the areas occupied by the species at the time of listing contain the physical and biological features that are essential to the conservation of the species and that may require special management considerations or protections. We provide a summary discussion below of the special management needs for the Devils River, San Felipe Creek, and Pinto Creek stream segments. For additional information regarding the threats to the Devils River minnow and the needed management strategies to address those threats, see the Devils River Minnow Recovery Plan (Service 2005, pp. 1.7–1–1.7–7; 1.8–1–1.8–4; 2.5–1–2.5–5).

The following special management needs apply to all three stream segments, Devils River, San Felipe Creek, and Pinto Creek, and will be further discussed for each stream segment in the ''Critical Habitat Designation'' section below.

a. Groundwater Management. The waters that produce all three stream segments issue from springs that are supported by underground aquifers, generally some portion of the Edwards-Trinity Aquifer or the Edwards Aquifer (Ashworth and Stein 2005, pp. 16–33; Barker and Ardis 1996, pp. B5-B6; Brune 1981, pp. 274–277, 449–456; Green *et al.* 2006, pp. 28–29; LBG-Guyton Associates 2001, pp. 5–6; PWPG 2006, pp. 3–5, 3–6, 3–30; USGS 2007, p.2). Regional groundwater flow in this area is generally from north to south (Ashworth and Stein 2005, Figure 8). These aquifers are currently pumped to provide water for human uses including agricultural, municipal, and industrial (Ashworth and Stein 2005, p. 1; Green *et al.* 2006, pp. 28–29; LBG-Guyton Associates 2001, pp. 22–27; PWPG 2006, pp. 3–14, 3–15). Some parts of these aquifers have already experienced large water level declines due to a combination of pumping withdrawals and regional drought (Barker and Ardis 1996, p. B50). There are a number of

preliminary project plans to significantly increase the amount of groundwater pumped in this area to export it to other metropolitan centers (HDR Engineering Inc. 2001, p. 1–1; Khorzad 2002, p. 19; PWPG 2006, pp. 4–54). If the aquifers are pumped beyond their ability to sustain levels that support spring flows, these streams will no longer provide habitat for the Devils River minnow (Ashworth and Stein 2005, p.34; Edwards *et al.* 2004, p. 256; Garrett *et al.* 2004, pp. 439–440). Flow reductions can have indirect effects on fishes by impacting thermal regimes because higher water volumes buffers against temperature oscillations (Hubbs 1990, p. 89).

Groundwater pumping that could affect stream flows within the Devils River minnow's range is subject to local management control. State or Federal agencies do not control groundwater. Local groundwater conservation districts and groundwater management areas are the method for groundwater management in Texas and essentially replace the rule of capture where they exist (Caroom and Maxwell 2004, pp. 41–42; Holladay 2006, p. 3). Most districts are created by action of the Texas Legislature (Lesikar *et al.* 2002, p. 13). The regulations adopted by local groundwater conservation districts vary across the State and often reflect local decisions based on regional preferences, geologic limitations, and the needs of citizens (Holladay 2006, p. 3). The KCGCD is a local authority with some regulatory control over the pumping and use of groundwater resources in Kinney County (Brock and Sanger 2003, p. 42–44). The KCGCD intends to manage the groundwater in Kinney County on a sustainable basis and yet beneficially use the groundwater without exploiting or adversely affecting the natural flow of the intermittent streams, such as Pinto Creek. Additional scientific information is needed on the geology and hydrology in Kinney County to increase the knowledge on the relationships of groundwater and stream flows.

The 16 groundwater management areas in Texas include all of the state's major and minor aquifers. Each GMA is required to determine a future desired groundwater condition for their aquifers. Based on the desired future condition specified, the Texas Water Development Board determines a managed available groundwater level for the groundwater management area. Lands outside of a groundwater conservation district, such as Val Verde County, are not subject to groundwater pumping regulations unless a landowner seeks State funding for a groundwater project. In this case, the project must be included in the groundwater management area's regional water plan. The total groundwater allotments permitted by the groundwater management area must not exceed its managed available groundwater level. Val Verde is Groundwater Management Area 7 and Kinney County is within Groundwater Management Areas 7 and 10.

Currently, there is no groundwater district in Val Verde County. Absent a local groundwater district, groundwater resources in Texas are generally under the ''Rule of Capture,'' (Holladay 2006, p. 2; Potter 2004, p. 9) or subject to the groundwater management area plans. The rule of capture essentially provides that groundwater is a privately owned resource and, absent malice or willful waste, landowners have the right to take all the water they can capture under their land (Holladay 2006, p. 2; Potter 2004, p. 1). The regional water plan adopted by the Plateau Regional Water Planning Group for this area recognizes that groundwater needs to be managed for the benefit of spring flows (PWPG 2006, p. 3–30) and that groundwater use should be limited so that ''base flows of rivers and streams are not significantly affected beyond a level that would be anticipated due to naturally occurring conditions'' (Ashworth and Stein 2005, p. 34; PWPG 2006, p. 3–8). The Plateau Regional Water Plan is a non-regulatory water planning document for a 6-county area (including both Val Verde and Kinney counties) that maps out how to conserve water supplies, meet future water supply needs, and respond to future droughts.

Special management efforts are needed across the range of the Devils River minnow to ensure that aquifers are used in a manner that will sustain spring flows and provide water as an essential physical feature for the species. We would like to work cooperatively with landowners, conservation districts, and others to assist in accomplishing these management needs.

b. Nonnative Species. Controlling existing nonnative species and preventing the release of new nonnative species are special management actions needed across the range of the Devils River minnow. The best tool for preventing new releases is education of the public on the problems associated with nonnative species (Aquatic Nuisance Species Task Force 1994, pp. 16–17). Current nonnative species issues have been cited for possible impacts to the Devils River (smallmouth bass) and San Felipe Creek (armored catfish) (Lopez-Fernandez and Winemiller 2005, p. 247; Thomas 2001, p. 1; Robertson and Winemiller 2001, p. 220). The armored catfish may already be impacting Devils River minnows in San Felipe Creek through competition for common food resources of attached algae and associated microorganisms (Lopez-Fernandez and Winemiller 2005, p. 250). Hoover *et al.* (2004, pp. 6–7) suggest that nonnative catfishes in the family Loricariidae, such as armored catfish, will impact stream systems and native fishes by competing for food with other herbivores, changing plant communities, causing bank erosion due to burrowing in stream banks for spawning, incidentally ingesting fish eggs, and directly preying on native fishes (Wiersma 2007, p. 5). Problematic, nonnative species have not been documented in Pinto Creek.

c. Pollution. Special management actions are needed to prevent point and nonpoint sources of pollution entering the stream systems where the Devils River minnow occurs. Devils River and Pinto Creek are generally free of threats from obvious sources of pollution. San Felipe Creek is in an urban environment where threats from human-caused pollution are substantial. Potential for spill or discharge of toxic materials is an inherent threat in urban environments. In addition, there are little to few current controls in the City of Del Rio to minimize the pollutants that will run off into the creek during rainfall events from streets, parking lots, roof tops, and maintained lawns from private yards and the golf course (Winemiller 2003, p. 27). All of these surfaces will contribute pollutants (for example, fertilizers, pesticides, herbicides, petroleum products) to the creek and potentially impact biological functions of the Devils River minnow. In addition, trash is often dumped into or near the creek and can be a source of pollutants (City of Del Rio 2006, p. 11). Special management by the City of Del Rio is needed (City of Del Rio 2006, p. 13) to institute best management practices for controlling pollution sources that enter the creek and maintain the water quality at a level necessary to support Devils River minnow.

Special management actions may be needed to ensure appropriate best management practices are used in the exploration and development of petroleum resources in the watersheds of the Devils River minnow, particularly the Devils River (Smith 2007, p. 1). This will ensure that site development and drilling practices do not impact groundwater or surface water quality in habitats of the Devils River minnow.

d. Stream Channel Alterations. The stream channels in the three streams where Devils River minnow occurs

should be maintained in natural conditions, free of instream obstructions to fish movement and with intact stream banks of native vegetation. Devils River and Pinto Creek are generally free of stream channel alterations; however, San Felipe Creek has been altered by diversion dams, bridges, and armoring of stream banks (replacing native vegetation and soils with rock or concrete). Special management is needed in all three occupied streams to protect the integrity of the stream channels for the maintenance of the PCEs.

Criteria Used To Identify Critical Habitat

We are designating critical habitat for the Devils River minnow in areas that were occupied by the species at the time of listing and that contain PCEs in the quantity and spatial arrangement to support life history functions essential for the conservation of the species. We are also designating critical habitat in areas not considered to be occupied at the time of listing, but were subsequently discovered to be occupied and are essential for the conservation of the Devils River minnow.

Critical habitat is designated based on sufficient PCEs being present to support the life processes of the species. Some areas contain all PCEs and support multiple life processes. Some areas contain only a portion of the PCEs necessary to support the particular use of that habitat.

a. Range. We evaluated the geographical range of the Devils River minnow, as described in the Recovery Plan (Service 2005, p. 1.4.1–1.4.5). There are five stream segments in the United States (all in Texas) that have ever been known to have been occupied by the Devils River minnow: (1) The Devils River (Val Verde County) from Beaver Lake downstream to near the confluence with the Rio Grande; (2) San Felipe Creek (Val Verde County) from the headsprings on the Lowe Ranch to downstream of the City of Del Rio; (3) Sycamore Creek (Val Verde/Kinney county boundary), only documented from the Highway 277 Bridge crossing; (4) Pinto Creek (Kinney County) from Pinto Springs downstream to 0.5 stream km (0.3 stream mi) upstream of the Highway 90 Bridge crossing; and (5) Las Moras Creek (Kinney County), only documented from the Las Moras Spring in the City of Brackettville.

Each of these five stream segments has (or formerly had) isolated populations of Devils River minnow separated by long distances, unsuitable habitat, or large dams that prevent fish movements. Although each of these streams is a tributary of the Rio Grande, we do not expect any contemporary exchange of individuals between these stream segments. The Devils River minnow is generally associated with upstream reaches of these streams, and connectivity would require movement through downstream reaches, through the Rio Grande, and back upstream through uninhabited reaches. The Devils River minnow has not been documented in the Rio Grande, or any other of its tributaries in the United States in modern times (Contreras-Balderas *et al.* 2002, pp. 228–240; Edwards *et al.* 2002, p. 123; Garrett *et al.* 1992, pp. 261–265; Hoagstrom 2003, p. 95; Hubbs 1957, p. 93; Hubbs 1990, p. 90; Hubbs *et al.* 1991, p. 18; Treviño-Robinson 1959, p. 255). The mainstem Rio Grande is considered unsuitable habitat (Garrett *et al.* 1992, p. 261) because the aquatic habitat is very different (larger volume, higher suspended sediments, different suite of native fishes) than the streams where the Devils River minnow is found. The presence of Amistad Reservoir and Dam has further isolated the Devils River stream segment from the other stream segments. While some exchange of individuals could have occurred across a geologic time scale, any natural exchange of individual Devils River minnows between currently occupied streams in modern times is unlikely because of habitat changes in the Rio Grande, nonnative species, and potential instream barriers.

Lack of access to private property can limit opportunities to sample for the presence of Devils River minnow (such as occurred on Pinto Creek, see Garrett *et al.* 2004, p. 436) and may limit our ability to accurately determine the full range of the species. However, we do not expect any additional streams outside of the known historical range of the species to be occupied. There could be additional stream segments within the known range that may be found to be occupied during future surveys, but the best available information at this time supports only these five stream segments known to be or to have been occupied by Devils River minnow in the United States.

b. Occupancy. We have assessed the occupancy of streams based on the best survey information available. For the purpose of this critical habitat designation, we consider a stream segment to be occupied if Devils River minnow has been found to be present by species experts within the last 10 years, or where the stream segment is directly connected to a segment with documented occupancy within the last 10 years (see the ''Critical Habitat Designation'' section for additional occupancy information). The life expectancy of Devils River minnow is assumed to be about 3 years, although individuals have lived 5 years in captivity (Gibson 2007, p. 1). This represents new information compared to the estimate of 2 years life expectancy from the recovery plan (Service 2005 p. 2.2–3). Ten years is estimated to represent a time period that provides for at least three generations. We believe that a time period that provides for at least three generations allows adequate time to detect occupancy because the time period would encompass potential fluctuations in species abundance associated with seasonal or annual changes. Based on our biological expertise, it is reasonable to assume that combining life expectancy with environmental factors that may occur in a 10-year period will provide us with an indication of habitat occupancy. We expect a variety of environmental factors such as floods, droughts, and average precipitation and hydrologic conditions would be experienced over a 10-year period. Most stream segments have not been surveyed with a high degree of frequency, and this species can be difficult to detect, as even multiple samples within a short time in the same location by the same researcher can yield different results (Garrett *et al.* 2002, p. 478). If Devils River minnow are not documented in a 10-year period, which would encompass at least 3 generations and variable environmental conditions that could influence fish abundance and detect ability, we will consider that stream not occupied.

c. Areas Occupied at the Time of Listing. At the time the Devils River minnow was listed as a threatened species, it was only confirmed to occur at two sites on the Devils River (small tributaries) and in San Felipe Creek in the City of Del Rio, Texas (64 FR 56597). This species is reasonably expected to move throughout connected stream reaches, based on past and recent collection records from these streams (Garrett *et al.* 2002, p. 478). Therefore, we determine there are two stream segments that were occupied at the time of listing: (1) Devils River from Pecan Springs to downstream of Dolan Falls (Garrett 2006a, p. 4; Garrett 2007, p. 1); and (2) San Felipe Creek from the Head Spring to downstream through the City of Del Rio (Garrett 2006b, p. 1; Garrett 2007, p.1). The full extent of both stream segments is considered occupied, as surveys in the last 10 years have confirmed the species' presence in the streams and the unit consists of

contiguous habitat that allows fish movement throughout the stream. Because no collections had been made in Pinto Creek prior to the time of listing, we have chosen to treat this stream as unoccupied for the purposes of this designation (see the description of Pinto Creek under ''Areas Not Occupied at Time of Listing'' section).

d. Primary Constituent Elements. We are proposing to designate the stream segments that we have determined to be occupied at the time of listing and contain sufficient PCEs to support life history functions essential for the conservation of the species. Both of the stream segments occupied at the time of listing (Devils River and San Felipe Creek) contain sufficient PCEs to support life history functions essential for the conservation of the Devils River minnow.

e. Areas Not Occupied at Time of Listing. Section 3(5)(A)(ii) of the Act allows for critical habitat to be designated in areas outside the geographical area occupied by the species at the time it is listed if those areas are essential for the conservation of the species. Three stream segments historically occupied by Devils River minnow but not considered occupied at the time of listing are Pinto Creek, Sycamore Creek, and Las Moras Creek.

Pinto Creek. At the time of listing in 1999, previous fish surveys in Pinto Creek were limited to the locations of public access at highway bridge crossings and did not find the species present (Garrett *et al.* 1992, p. 260). In 2001, fish surveys were conducted in upstream areas of Pinto Creek that had not been sampled before; the surveys discovered a previously unknown population of Devils River minnow (Garrett *et al.* 2004, pp. 436–439). The species has been confirmed to occur from just upstream of the Highway 90 Bridge crossing further upstream to the origin of Pinto Creek at Pinto Springs (Garrett *et al.* 2004, pp. 438–439). Since this stream segment is isolated from other occupied areas, this stream segment was likely occupied at the time of listing, but appropriate surveys had not been conducted to verify it. We find that the Pinto Creek stream segment is essential to the conservation of the Devils River minnow because preliminary analysis has shown significant genetic variation between Devils River minnow populations in Pinto Creek and the Devils River (Conway *et al.* 2007, pp. 9–10). This makes Pinto Creek a unique population of Devils River minnow and an essential unit to maintain overall genetic diversity of the species to improve the likelihood of persistence in the future. In addition, maintaining a population in Pinto Creek is included in the recovery criteria (Service 2005, p. 2.1–2) and Pinto Creek provides the best source of Devils River minnows (due to proximity and habitat similarity) to implement possible future recovery actions if reestablishing the species into nearby Las Moras Creek proves feasible (Garrett *et al.* 2004, p. 440). As a result of this finding, it is not necessary to determine whether Pinto Creek was occupied at the time of listing for purposes of this particular rule.

Sycamore Creek and Las Moras Creek. For the purposes of the designation of critical habitat, Sycamore Creek and Las Moras Creek are not currently considered occupied by the Devils River minnow (that is, they have not been collected in either stream in the last 10 years). The last known occurrence of the species in these stream segments was 1989 for Sycamore Creek (Garrett *et al.* 1992, p. 265) and 1955 for Las Moras Creek (Garrett *et al.* 1992, p. 266; Hubbs and Brown 1956, pp. 70–71). Although recent publications continue to list Sycamore Creek as a stream where Devils River minnow may still occur (Garrett *et al.* 2004, p. 435; Lopez-Fernandez and Winemiller 2005, p. 247), we have a high degree of uncertainty as to the status of the fish in Sycamore Creek. Surveys in 1999 and 2002 from the area of last known occurrence (in 1989) did not yield Devils River minnow (Service 2005, Appendix A). In addition, Garrett *et al.* (1992, pp. 265–266) surveyed portions of Mud Creek (a tributary to Sycamore Creek) in 1989, but found no Devils River minnow. Additional surveys are needed to determine the current status of the fish in the Sycamore Creek watershed. Devils River minnow has not been collected from Las Moras Creek since the 1950s and is believed to be extirpated from the Las Moras Creek drainage. This conclusion is based on the absence of the species in sampling efforts from the late 1970s to 2002 (Hubbs *et al.* 1991, p. 18; Garrett *et al.* 1992, p. 266; Garrett *et al.* 2002, p. 479).

In our proposed critical habitat designation for Devils River minnow we specifically requested information from the public and peer reviewers regarding whether or not Sycamore and Las Moras creeks should be considered essential for the conservation of the Devils River minnow (72 FR 41687). Additionally, these streams were also included in our draft economic analysis. We received several comments, including from multiple peer reviewers, encouraging us to include these streams in the critical habitat because of their importance in the recovery of the Devils River minnow. Three peer reviewers expressed specific support for including Las Moras and Sycamore creeks in the critical habitat designation for the following reasons: (1) To maintain suitable habitat within its range because if left undesignated, the PCEs currently present will fall out of range and potential use for the recovery of the species will be lost; (2) to protect genetic diversity within the range of the species; (3) including them may be important for future recovery efforts, based on metapopulation theory that unoccupied patches are not less important than the occupied ones; (4) not including them as ecologically significant stream segments would be possibly detrimental to the species over time; and (5) if the creeks are determined not to provide essential habitat elements, they could be removed from the designation later or the habitat could be improved by future management. Three peer reviewers did not call for the inclusion of Las Moras and Sycamore creeks in the designation. However, two of those peer reviewers stressed that recovery of the Devils River minnow would need to include restoring the species to these streams to maintain genetic diversity and population redundancy and encouraged us to continue to work on these efforts.

Based on these comments and the guidance in the Devils River Minnow Recovery Plan we have determined these streams are essential for the conservation of the species. The delisting recovery criteria (1) in the Recovery Plan states that we have stable or increasing population trends for at least 10 years throughout the range of the Devils River (middle portion), San Felipe Creek, Sycamore Creek, and Pinto Creek and the species should be reestablished in Las Moras Creek, if scientifically feasible (Service 2005, p. iv). We explain in the following discussion our finding that these two streams are essential. However, we are excluding these areas from critical habitat because we find the benefits of excluding them outweigh the benefits of including them (see the ''Exclusions under Section 4(b)(2) of the Act'' section of this final rule for further details).

Because the recovery objectives, criteria, and strategy include having populations of Devils River minnow in Sycamore Creek and Las Moras Creek (if reestablishment is technologically feasible) (Service 2005, pp. 2.1–1—2.2–3), we find that these two streams are essential for the conservation of the Devils River minnow. Restoring Devils River minnow to Sycamore Creek and Las Moras Creek is important to achieving recovery goals for the species

and optimizes the chances of long-term species conservation because these creeks are isolated, vulnerable to threats, and therefore not likely to be naturally recolonized (Service 2005, p. 2.2–2). As discussed in the recovery plan, the feasibility of restoring populations in these areas is uncertain and the recovery plan provides no information as to which specific reaches of the creeks could support the restored populations. The recovery plan advises additional assessment to develop an effective restoration strategy. Landowner willingness and cooperation will be necessary in both streams before restoration could occur and will require using tools specifically designed for restoration efforts, such as Safe Harbor Agreements and reintroduction as an experimental population under section 10(j) of the Act.

f. Lateral Extent. The areas designated as critical habitat are designed to provide sufficient areas for breeding and non-breeding adults and rearing of juvenile Devils River minnow. In general, the essential physical and biological features of critical habitat for Devils River minnow include the spring heads and the wetted channel during average flow conditions of the stream segments. The Devils River minnow evolved in streams maintained by consistent flows from groundwater springs that varied little seasonally. Episodic floods, sometimes very large floods, are important hydrological processes for maintaining the natural stream channels and fish communities (Harrell 1978, p. 67; Valdes Cantu and Winemiller 1997, pp. 276–277). However, the streams do not have a regular seasonal pattern of flooding. Unlike some other stream fishes, the Devils River minnow is not known to be dependent on high flow events or use flooded habitats in overbank areas for reproduction or rearing of young. Therefore, the floodplain is not known to contain the features essential for the conservation of the Devils River minnow and is not included in this critical habitat designation.

The critical habitat designation includes a lateral extent that is limited to the normal wetted channel at bankfull discharge of the streams included in this designation. For the purposes of this designation, the wetted channel is considered the width of the stream channel at bankfull stage. Bankfull stage is the water height when stream flows just fill the stream to its banks before water spills out onto the adjacent floodplain (Gordon *et al.* 1992, pp. 305–307). The stream discharge that reaches bankfull stage occurs 1 or 2 days each year and has a recurrence interval that averages 1.5 years (Leopold 1994, pp. 129–141). The width of the lateral extent of critical habitat will vary depending on the stream geometry; however, it generally includes the immediate streamside vegetation that can extend into the water column and provide vegetative structure, one of the PCEs.

The critical habitat areas include the stream channels up to bankfull width within the identified stream reaches. The stream beds of navigable waters (stream beds of at least 30 ft wide) in Texas are generally owned by the State, in trust for the public, while the lands alongside the streams can be privately owned (Kennedy 2007, p. 3; Riddell 1997, p. 7). We believe that the bulk of the stream beds (including the small portion of the stream beds' lateral extent that is not under water when streams are not at bankfull stage) for all stream segments included in the critical habitat are considered public property, owned by the State, for the purpose of this rule.

Summary. We are designating critical habitat in areas that we have determined were occupied at the time of listing, and that contain sufficient PCEs to support life history functions essential for the conservation of the species. Stream segments are designated based on sufficient PCEs being present to support the life processes of the species. Some stream segments contain all PCEs and support multiple life processes. Some stream segments contain only a portion of the PCEs necessary to support the particular use of that habitat. For stream segments that were not occupied at the time of listing, we evaluated whether those areas were essential to the conservation of the Devils River minnow.

We find that two stream segments were occupied at the time of listing and contain sufficient PCEs to support life history functions essential for the conservation of the species: (1) Devils River from Pecan Springs to downstream of Dolan Falls, including short stretches of two tributaries, Phillips Creek and Dolan Creek; and (2) San Felipe Creek from the headsprings downstream through the City of Del Rio, including the outflow channels of East and West Sandia springs. We find that a third stream segment, Pinto Creek from Pinto Springs downstream to the Highway 90 Bridge crossing, was subsequently discovered to be occupied after listing and, for purposes of this rule, is essential for the conservation of the Devils River minnow for the reasons discussed above. We also find that Sycamore Creek and Las Moras Creek are essential for the conservation of the Devils River minnow.

Within this final rule, the critical habitat boundary is limited to bankfull width of the stream segments included in the designation, at the height in which stream flows just fill the stream to its banks before water spills out onto the adjacent floodplain. The scale of the critical habitat maps prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of developed areas such as bridge pylons, concrete paving, and other similar structures that lack PCEs for the Devils River minnow. Areas under bridge pylons and concrete paving do not contain PCEs, and we are excluding them from the boundaries of critical habitat, although the structures are too small to digitally delete from maps at the scale that we used to delineate the critical habitat boundaries. Any such structures and the land under them inside critical habitat boundaries shown on the maps of this final rule are not designated as critical habitat. Some such structures likely exist only within the San Felipe Creek Unit. Therefore, Federal actions limited to these areas would not trigger section 7 consultation, unless they affect the species or PCEs in adjacent critical habitat.

Final Critical Habitat Designation

Five areas meet the definition of critical habitat for the Devils River minnow. The five areas are: (1) Devils River Unit; (2) San Felipe Creek Unit; (3) Pinto Creek Unit; (4) Sycamore Creek; and (5) Las Moras Creek. The Devils River, San Felipe Creek, and Pinto Creek units are currently occupied by the Devils River minnow and all five areas constitute our best assessment of areas that meet the definition of critical habitat for the species.

All distances reported in this designation are estimated stream lengths calculated using geographic information system computer software (ArcGIS) approximating the stream channel (reported in stream km and stream mi). Stream channel lines were based on the National Hydrography Dataset and 7.5' topographic quadrangle maps obtained from the U.S. Geological Survey. We made some minor adjustments using the 2004 National Agriculture Imagery Program digital orthophotos obtained from the Texas Natural Resources Information System. The approximate length of each designated stream segment for each critical habitat unit is shown in Table 1. Critical habitat for Devils River minnow includes a total of 73.5 stream km (45.7 stream mi) that meet the definition of critical habitat for this species.

TABLE 1—CRITICAL HABITAT UNITS FOR THE DEVILS RIVER MINNOW

Critical habitat unit *	Stream km (stream mi) meeting the definition of critical habitat	Stream km (stream mi) excluded from critical habitat	Critical habitat stream km (stream mi)
1. Devils River Unit (includes Philips and Dolan Creeks)	47.0 (29.2)	47.0 (29.2)	0 (0)
2. San Felipe Creek Unit (includes outflow of East and West springs)	9.0 (5.6)	0 (0)	9.0 (5.6)
3. Pinto Creek Unit	17.5 (10.9)	0 (0)	17.5 (10.9)
4. Sycamore Creek Unit	4.0 (2.5)	4.0 (2.5)	0 (0)
5. Las Moras Creek Unit	18.8 (11.7)	18.8 (11.7)	0 (0)
Total	96.3 (59.9)	69.8 (43.4)	26.5 (16.5)

* The stream beds of the units meeting the definition of critical habitat are considered public and owned by the State of Texas.

Below, we provide brief descriptions of the Devils River, San Felipe Creek, and Pinto Creek, Sycamore Creek, and Las Moras Creeks units and reasons why each meets the definition of critical habitat for the Devils River minnow.

Unit 1: Devils River Unit

Unit 1 consists of approximately 43.6 stream km (27.1 stream mi) of the Devils River; 1.1 stream km (0.7 stream mi) of Phillips Creek; and 2.3 stream km (1.4 stream mi) of Dolan Creek. Phillips Creek and Dolan Creek are small tributaries to the Devils River that contain the PCEs and are occupied by the Devils River minnow. The upstream boundary on the Devils River is at, and includes, Pecan Springs. The downstream boundary on the Devils River is 3.6 stream km (2.2 stream mi) below Dolan Falls. Phillips Creek is included in this unit from the confluence with the Devils River to a point 1.1 stream km (0.7 stream mi) upstream. Dolan Creek is included from the confluence with the Devils River 2.3 stream km (1.4 stream mi) upstream to Dolan Springs. Including all three streams, the total distance in the Devils River Unit is approximately 47.0 stream km (29.2 stream mi).

The Devils River minnow was originally described from this unit in the 1950s (Hubbs and Brown 1956, p. 70), and it has been continually occupied ever since (Harrell 1978, pp. 64, 67; Garrett *et al.* 1992, p. 261; Service 2005, Appendix A). The Devils River minnow occupied this unit at the time of listing; at that time, the fish had been collected from only a few locations. Subsequent surveys by TPWD have established current occupancy of this entire unit (Service 2005, Appendix A). The upstream boundary of critical habitat represents the beginning of the permanent flow of the river (De La Cruz 2004, p. 1). The downstream boundary, 3.6 stream km (2.2 stream mi) downstream of Dolan Falls, represents the downstream extent of collections of the Devils River minnow by TPWD (Garrett 2007, p. 1).

The Devils River Unit contains one or more of the PCEs essential for conservation of the Devils River minnow. Special management in the Devils River Unit may be needed to control groundwater pumping to ensure spring flows are maintained and to prevent the introduction of nonnative species. See additional discussion above in the ''Special Management Considerations or Protections'' section.

Areas meeting the definition of critical habitat for Devils River minnow do not include lands adjacent to the stream channels. However, land ownership adjacent to the streams in the Devils River Unit is primarily private. Private ownership of the area includes The Nature Conservancy's 1,943-ha (4,800-ac) Dolan Falls Preserve, which also includes river frontage on the Devils River and Dolan Creek. The Nature Conservancy has owned this area since 1991 (The Nature Conservancy 2004, p. 9). The Nature Conservancy also holds conservation easements on about 66,800 ha (about 165,000 ac) of private land along the Devils River or in the Devils River watershed (McWilliams 2006, p. 1). The only public land adjacent to the streams of this unit is the State-owned Devils River State Natural Area (DRSNA) managed by the TPWD. The portion of this unit within the DRSNA includes about 1.6 stream km (1.0 stream mi) along the east bank of the Devils River and about 1.9 stream km (1.17 stream mi) along both banks of a portion of Dolan Creek.

As described below, we are excluding the Devils River Unit from the critical habitat designation for Devils River minnow (see the ''Exclusions Under Section 4(b)(2)'' section).

Unit 2: San Felipe Creek Unit

Unit 2 consists of approximately 7.9 stream km (4.9 stream mi) on San Felipe Creek, 0.8 stream km (0.5 stream mi) of the outflow of San Felipe Springs West, and 0.3 stream km (0.2 stream mi) of the outflow of San Felipe Springs East. The upstream boundary on San Felipe Creek is the Head Springs located about 1.1 stream km (0.7 stream mi) upstream of the Jap Lowe Bridge crossing. The downstream boundary on San Felipe Creek is in the City of Del Rio 0.8 stream km (0.5 stream mi) downstream of the Academy Street Bridge crossing. The unit includes the outflow channels of San Felipe Springs West and San Felipe Springs East. These channels are included in the critical habitat unit from their spring origin downstream to the confluence with San Felipe Creek. Including all three streams, the total distance included in the critical habitat in the San Felipe Creek Unit is approximately 9.0 stream km (5.6 stream mi). For specific coordinates of the boundaries for the critical habitat designation, please reference to the unit descriptions in the Regulation Promulgation section below.

San Felipe Creek was occupied by the Devils River minnow at the time of listing and is still occupied (Hubbs and Brown 1956, p. 70; Garrett *et al.* 1992, pp. 261, 265; Service 2005, Appendix A; Lopez-Fernandez and Winemiller 2005, p. 249). Although limited survey data are available, we consider the entire unit occupied because the habitat is contiguous, allowing fish to move in the upstream portions of the unit (Garrett 2006b, p. 1). The boundaries of critical habitat include all areas where TPWD has collected Devils River minnow within the San Felipe Creek Unit (Garrett 2007, p. 1).

The San Felipe Creek Unit contains one or more of the PCEs essential for conservation of the Devils River minnow. There are several unnatural barriers to fish movement that may currently segment the reaches within the City of Del Rio. Portions of the stream banks in the City of Del Rio have been significantly altered by arming with concrete and the invasion of an exotic cane (*Arundo donax*). However, much of the riparian area remains a functional part of the stream ecosystem,

contributing to the physical (for example, stream bank stabilization and water runoff filtration) and biological (for example, invertebrate communities using riparian vegetations and input of nutrient material from riparian vegetation) features of Devils River minnow habitat. Water quality in San Felipe Creek has been a concern due to the urban environment through which much of the creek flows. Potential for spill or discharge of toxic materials is an inherent threat in urban environments (City of Del Rio 2006, p. 13). The threats to the San Felipe Creek Unit that require special management include the potential for large-scale groundwater withdrawal and exportation that would impact spring flows, surface water diversion, pollution from urban runoff, nonnative vegetation on stream banks, other nonnative species (such as the armored catfish), and potential new nonnative species' introductions into the stream.

Land ownership adjacent to the streams areas being designated as critical habitat within the San Felipe Creek Unit includes private ranch lands from the Head Springs downstream to the City of Del Rio. Within the city limits, the City owns various tracts of land along the stream. Some of these areas are developed as public use parks and others have been recently obtained through a buyout program from the Federal Emergency Management Agency following damages from the 1998 flood (City of Del Rio 2006, pp. 5–6). Most of the City-owned property along the creek appears to be on the east bank of the creek, while the west bank is primarily private-owned residences. The San Felipe Springs East and West and their immediate outflow channels are on a golf course, privately owned by the San Felipe Country Club. In all, we estimate that the City of Del Rio owns about 1.1 stream km (0.7 stream mi) along both banks of the creek and spring outflow channels, mainly located downstream of the Highway 90 Bridge. Through the remainder of the City of Del Rio, we estimated the City of Del Rio owns about 2.2 stream km (1.4 stream mi) along the east bank of San Felipe Creek in parcels fragmented by private holdings.

Unit 3: Pinto Creek Unit

Unit 3 consists of approximately 17.5 stream km (10.9 stream mi) on Pinto Creek. The upstream boundary is Pinto Springs. The downstream boundary is 100 m (330 ft) upstream of the Highway 90 Bridge crossing of Pinto Creek. For specific coordinates of the boundaries for the critical habitat designation, please reference the unit descriptions in the Regulation Promulgation section below.

Pinto Creek was not considered occupied by Devils River minnow at the time of listing; however, Devils River minnows were documented in 2001 in upstream reaches of the creek where fish surveys had not been previously conducted (Garrett *et al.* 2004, pp. 437). The Pinto Creek Unit is essential for the conservation of the Devils River minnow because fish from this stream show significant genetic variation from other populations (Service 2006, p. 15). Because of its proximity to Las Moras Creek and the genetic variation from the more western population, fish from Pinto Creek would be the likely source population for possible future reintroduction into formerly occupied areas (Garrett *et al.* 2004, p. 440).

The boundaries of critical habitat represent all the areas within Pinto Creek where Devils River minnow has been collected (Garrett *et al.* 2004, p. 437–438). Further, the Pinto Creek Unit contains one or more of the PCEs essential for conservation of the Devils River minnow. The main threat to the Pinto Creek Unit that requires special management is the potential for large-scale groundwater withdrawal that, in combination with nature hydrological variation, could significantly impact spring flows. While nonnative species are not currently known to be a problem in Pinto Creek, preventing nonnative species from being introduced into the stream is an additional threat needing special management. Land ownership adjacent to the Pinto Creek Unit is all private ranches.

Unit 4: Sycamore Creek

The documented habitat for Devils River minnow in Sycamore Creek is at the U.S. Highway 277 bridge (Garrett *et al.* 1992, p. 265). Based on this information, we have estimated a critical habitat area of 4 stream km (about 2.5 stream mi) encompassing this site. Garrett *et al.* (1992, p. 265–266) recognized that the majority of surface flow in the drainage comes from Mud Creek, an eastern tributary that confluences with Sycamore Creek approximately 3 stream km (about 2 stream mi) upstream of the U.S. Highway 277 bridge crossing. The origin of the surface flows in Mud Creek is Mud Springs, located about 24 air km (about 15 air mi) north of U.S. Highway 277 crossing of Sycamore Creek and north of the U.S. Highway 90 (Brune 1981, p. 276). Despite collection efforts from Mud Creek, Devils River minnow has not been documented to occur there (Garrett *et al.* 1992, p. 266).

Sycamore Creek was not considered occupied by Devils River minnow at the time of listing. Sycamore Creek is essential for the conservation of the Devils River minnow because it is identified as a necessary population to achieve recovery (Service 2005, p. 2.1–2). The main threat to Sycamore Creek that requires special management is the potential for large-scale groundwater withdrawal that, in combination with natural hydrological variation, could significantly impact spring flows. While nonnative species are not currently known to be a problem in Sycamore Creek, preventing nonnative species from being introduced into the stream is an additional threat needing special management. Land ownership adjacent to Sycamore Creek is all private.

Unit 5: Las Moras Creek

The only confirmed habitat for Devils River minnow in Las Moras Creek is at the headwater spring on the grounds of Fort Clark in Brackettville based on collections in the 1950s (Garrett *et al.* 1992, p. 266; Brune 1981, p. 275). Based on this information and the longitudinal distribution of the fish in Pinto Creek and San Felipe Creek, we estimate that the critical habitat extends approximately 18.8 stream km (about 11.7 stream mi) downstream from Las Moras Spring to the Standard Pacific Railroad bridge crossing.

Las Moras Creek was not considered occupied by Devils River minnow at the time of listing. Las Moras Creek is essential for the conservation of the Devils River minnow because it is identified as a necessary population to achieve recovery (Service 2005, p. 2.1–2). The main threat to Las Moras Creek that requires special management is the potential for large-scale groundwater withdrawal that, in combination with natural hydrological variation, could significantly impact spring flows. Special management is also needed within the local watershed to maintain water quality and stream flows. While nonnative species are not currently known to be a problem in Las Moras Creek, preventing nonnative species from being introduced into the stream is an additional threat needing special management. Land ownership adjacent to Las Moras Creek includes the Fort Clark Springs Association in the upper portion of the reach and the remainder is all private.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that actions they fund,

authorize, or carry out are not likely to jeopardize the continued existence of a listed species or destroy or adversely modify designated critical habitat. Decisions by the Fifth and Ninth Circuit Court of Appeals have invalidated our definition of ''destruction or adverse modification'' (50 CFR 402.02) (see *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir 2004) and *Sierra Club* v. *U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442F (5th Cir 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would remain functional (or retain the current ability for the PCEs to be functionally established) to serve its intended conservation role for the species.

If a species is listed or critical habitat is designated, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. As a result of this 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 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 or destroy or adversely modify critical habitat, we also provide reasonable and prudent alternatives to the project, if any are identifiable. We define ''Reasonable and prudent alternatives'' at 50 CFR 402.02 as alternative actions identified during consultation that:

- Can be implemented in a manner consistent with the intended purpose of the action,
- Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,
- Are economically and technologically feasible, and
- Would, in the Director's opinion, avoid jeopardizing the continued existence of the listed species or 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 such discretionary involvement or control is authorized by law). Consequently, Federal agencies may sometimes need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions may affect subsequently listed species or designated critical habitat.

Federal activities that may affect the Devils River minnow or its designated critical habitat will require section 7 consultation under the Act. Activities on State, Tribal, local, or private lands requiring 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 us under section 10 of the Act) or involving some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency) are examples of agency actions that may be subject to the section 7 consultation process. Federal actions not affecting listed species or critical habitat, and actions on State, Tribal, local or private lands that are not federally funded, authorized, or carried out, do not require section 7 consultations.

There are no Federal lands in the areas we are designating as critical habitat for the Devils River minnow. Laughlin Air Force Base is located east of the City of Del Rio and obtains its municipal water from the City of Del Rio (which ultimately is withdrawn from the two San Felipe Springs). The Amistad National Recreation Area, located around Amistad Reservoir, is owned by the National Park Service and includes the downstream portions of the Devils River, but is not included in the critical habitat designation.

Since the Devils River minnow was listed in 1999, one formal section 7 consultation has occurred specifically concerning the species. That consultation was completed in 2006 with the Federal Highway Administration, through the Texas Department of Transportation, to replace the Beddell Avenue Bridge over San Felipe Creek in the City of Del Rio. One substantial informal consultation was completed in 2001 with the Environmental Protection Agency for funding through the TWDB to the City of Del Rio to upgrade the City's water treatment and distribution facilities. One programmatic consultation was completed with NRCS in 2004 concerning USDA programs for brush management in the western portions of Texas. This consultation concluded that the proposed actions were likely to result in benefits to the Devils River minnow by improving instream flows in the streams where the species occurs. The nature of the proposed brush clearing was not considered to have adverse affects (such as sedimentation) to Devils River minnow. Seven other informal consultations have occurred in the range of the species since its listing in 1999 which only peripherally involved Devils River minnow. Since the listing we provided technical assistance on five other projects that considered Devils River minnow but had no effects on the species. Based on this consultation history, we anticipate similarly low numbers of future Federal actions within the area designated as critical habitat for Devils River minnow.

Application of the ''Adverse Modification'' Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species, or would retain its current ability for the PCEs to be functionally established. Activities that may destroy or adversely modify critical habitat are those that alter the physical and biological features to an extent that appreciably reduces the conservation value of critical habitat for Devils River minnow.

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

Activities that, when carried out, funded, or authorized by a Federal agency, may affect critical habitat and therefore would result in consultation for the Devils River minnow include, but are not limited to:

(1) Actions that would alter the natural flow regime, particularly the reduction of spring flows. These activities could include, but are not limited to, excessive groundwater pumping (significantly greater than current levels), water diversions from streams, and stream impoundments. These activities could reduce the amount of available habitat and space for normal behaviors of Devils River minnow, alter water quality as an indirect effect of reduced flows, alter the mesohabitat (pools, riffles, and runs) conditions necessary for Devils River minnow life history functions, and alter fish community dynamics to unnaturally favor species other than the Devils River minnow.

(2) Actions that would reduce native aquatic vegetation or native vegetation along stream banks. These activities could include, but are not limited to, channelization of the stream, armoring stream banks (replacing native vegetation and soils with rock or concrete), dredging the stream bottom, introducing nonnative plants that would replace native vegetation, or introducing herbivorous nonnative species. Loss of aquatic vegetation would eliminate an important structural component of Devils River minnow habitat (important for predator avoidance and spawning cues) and could reduce the amount of available habitat for reproduction, growth, and feeding.

(3) Actions that would significantly alter water quality or introduce pollutants into streams. Such activities could include, but are not limited to, release of chemicals, biological pollutants, or heated effluents (liquid waste products) into the surface water or connected groundwater at a point source or by dispersed release (non-point source). Sources of pollutants also include, but are not limited to, storm water runoff from urban development without adequate storm water controls, spill of hazardous chemicals into the creek or groundwater, or groundwater contamination by improperly drilled or maintained oil or gas wells. These activities could alter water conditions that are beyond the tolerances of the Devils River minnow or their food sources and could result in direct or cumulative adverse effects to these individuals and their life cycles.

(4) Actions that would significantly increase sediment deposition within the stream channel. Such activities could include, but are not limited to, excessive sedimentation from livestock grazing, road construction, channel alteration, brush clearing, off-road vehicle use, and other watershed and floodplain disturbances. Under some circumstances, these activities could eliminate or reduce the habitat necessary for the reproduction of Devils River minnow and could reduce the availability of food sources by affecting light penetration into the water column, filling in of stream beds with silt, or increasing the embeddedness of stream bottoms that reduces algae availability. The effects of any particular activity on Devils River minnow habitat must be evaluated on project-specific basis. The impacts of any specific activity will depend on the location, extent, and manner in which the activity is carried out.

(5) Actions that would significantly alter channel shape or geometry. Such activities could include, but are not limited to, channelization, impoundment, armoring stream banks, road and bridge construction, mining, dredging, and destruction of riparian vegetation. These activities may alter the natural pattern of available mesohabitats (pools, riffles, and runs). These actions can reduce the amount of habitat available for Devils River minnow to complete its normal life cycle and can give other species, especially nonnative species, competitive advantages. These actions can also lead to increased sedimentation and degradation in water quality to levels that are beyond the tolerances of the fish or their food sources.

Exclusions

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

Section 4(b)(2) of the Act states that the Secretary must designate and revise critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the 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 any factor. In the following sections, we address a number of general issues that are relevant to the exclusions we considered.

Benefits of Designating Critical Habitat

The process of designating critical habitat as described in the Act requires that the Service identify those lands on which are found the physical or biological features essential to the conservation of the species that may require special management considerations or protection, and those areas outside the geographical area occupied by the species at the time of listing that are essential to the conservation of the species. In identifying those lands, the Service must consider the recovery needs of the species, such that, on the basis of the best scientific and commercial data available at the time of designation, the habitat that is identified, if managed, could provide for the survival and recovery of the species.

The identification of those areas that are essential for the conservation of the species and can, if managed, provide for the recovery of a species is beneficial. The process of proposing and finalizing a critical habitat rule provides the Service with the opportunity to determine the physical and biological features essential for conservation of the species within the geographical area occupied by the species at the time of listing, as well as to determine other areas essential to the conservation of the species. The designation process includes peer review and public comment on the identified physical and biological features and areas. This process is valuable to land owners and managers in developing conservation management plans for identified areas, as well as any other occupied habitat or suitable habitat that may not have been included in the Service's determination of essential habitat.

The consultation provisions under section 7(a)(2) of the Act constitute the regulatory benefits of critical habitat. As discussed above, Federal agencies must consult with us on actions that may affect critical habitat and must avoid destroying or adversely modifying critical habitat. Federal agencies must also consult with us on actions that may affect a listed species and refrain from undertaking actions that are likely to jeopardize the continued existence of such species. The analysis of effects to critical habitat is a separate and different analysis from that of the effects to the species. Therefore, the difference in outcomes of these two analyses represents the regulatory benefit of critical habitat. For some species, and in some locations, the outcome of these analyses will be similar, because effects to habitat will often also result in effects to the species. However, the regulatory

standard is different, as the jeopardy analysis looks at the action's impact to survival and recovery of the species and the adverse modification analysis looks at the effects to the designated habitat's contribution to conservation of the species. This will, in many instances, lead to different results, and different regulatory requirements.

For 30 years prior to the Ninth Circuit's decision in *Gifford Pinchot*, consistent with the 1986 regulations, we essentially combined the jeopardy standard with the standard for destruction or adverse modification of critical habitat when evaluating Federal actions that affected currently occupied critical habitat. However, the court of appeals ruled that the two standards are distinct and that adverse modification evaluations require consideration of impacts on species recovery. Thus, critical habitat designations may provide greater regulatory benefits to the recovery of a species than would listing alone.

There are two limitations to the regulatory effect of critical habitat. First, a section 7(a)(2) consultation is required only where there is a Federal nexus (an action authorized, funded, or carried out by any Federal agency)—if there is no Federal nexus, the critical habitat designation of private lands itself does not restrict any actions that destroy or adversely modify critical habitat. Second, the designation only limits destruction or adverse modification. By its nature, the prohibition on adverse modification is designed to ensure that the conservation role and function of those areas that contain the physical and biological features essential to the conservation of the species or of unoccupied areas that are essential for the conservation of the species are not appreciably reduced. Critical habitat designation alone, however, does not require private property owners to undertake specific steps toward recovery of the species.

Once an agency determines that consultation under section 7(a)(2) of the Act is necessary, the process may conclude informally when the Service concurs in writing that the proposed Federal action is not likely to adversely affect critical habitat. However, if the Service determines through informal consultation that adverse impacts are likely to occur, then formal consultation is initiated. Formal consultation concludes with a biological opinion issued by the Service on whether the proposed Federal action is likely to result in destruction or adverse modification of critical habitat.

For critical habitat, a biological opinion that concludes in a determination of no destruction or adverse modification may contain discretionary conservation recommendations to minimize adverse effects to the physical and biological features essential to the conservation of the species, but it would not suggest the implementation of any reasonable and prudent alternative. We suggest reasonable and prudent alternatives to the proposed Federal action only when our biological opinion results in an adverse modification conclusion.

As stated above, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and/or adverse modification of its critical habitat, but not necessarily to manage critical habitat or institute recovery actions on critical habitat. Conversely, voluntary conservation efforts implemented through management plans institute proactive actions over the lands they encompass and are put in place to remove or reduce known threats to a species or its habitat; therefore, implementing recovery actions. We believe that in many instances the regulatory benefit of critical habitat is low when compared to the conservation benefit that can be achieved through conservation efforts or management plans. The conservation achieved through implementing Habitat Conservation Plans (HCPs), Safe Harbor Agreements, or experimental populations established under section 10 of the Act or other habitat management plans is typically greater than would be achieved through multiple site-by-site, project-by-project section 7 consultations involving consideration of critical habitat. Management plans commit resources to implement long-term management and protection to particular habitat for at least one and possibly other listed or sensitive species. Section 7 consultations only commit Federal agencies to prevent adverse modification to critical habitat caused by the particular project; they do not commit Federal agencies to provide conservation or long-term benefits to areas not affected by the proposed project. Thus, implementation of any HCP or management plan that incorporates enhancement or recovery as the management standard may often provide as much or more benefit than a consultation for critical habitat designation.

Another benefit of including lands in critical habitat is that designation of critical habitat serves to educate landowners, State and local governments, and the public regarding the potential conservation value of an area. This helps focus and promote conservation efforts by other parties by clearly delineating areas of high conservation value for Devils River minnow. In general, critical habitat designation always has educational benefits; however, in some cases, it may be redundant with other educational effects. For example, HCPs have significant public input and may largely duplicate the educational benefits of a critical habitat designation. Including lands in critical habitat also would inform State agencies and local governments about areas that could be conserved under State laws or local ordinances.

Recovery Benefits

The process of designating critical habitat as described in the Act requires that the Service identify those lands on which are found the physical or biological features essential to the conservation of the species which may require special management consideration or protections and specific unoccupied areas that are determined to be essential for the conservation of the species. In identifying those lands, the Service must consider the recovery needs of the species, such that the habitat that is identified, if managed, could provide for the survival and recovery of the species. Furthermore, once critical habitat has been designated, Federal agencies must consult with the Service under section 7(a)(2) of the Act to ensure that their actions will not adversely modify designated critical habitat or jeopardize the continued existence of the species. As noted in the Ninth Circuit's *Gifford Pinchot* decision, the Court ruled that the jeopardy and adverse modification standards are distinct, and that adverse modification evaluations require consideration of impacts to the recovery of species. Thus, through the section 7(a)(2) consultation process, critical habitat designations provide recovery benefits to species by ensuring that Federal actions will not destroy or adversely modify designated critical habitat.

It is beneficial to identify those lands that are necessary for the conservation of the species and that, if managed appropriately, would further recovery measures for the species. The process of proposing and finalizing a critical habitat rule provides the Service with the opportunity to determine lands essential for conservation as well as identify the physical and biological

features essential for conservation on those lands. The designation process includes peer review and public comment on the identified features and lands. This process is valuable to landowners and managers in developing habitat management plans for identified lands, as well as any other occupied habitat or suitable habitat that may not have been included in the Service's determination of essential habitat.

However, the designation of critical habitat does not require that any management or recovery actions take place on the lands included in the designation. Even in cases where consultation has been initiated under section 7(a)(2) of the Act, the end result of consultation is to avoid jeopardy to the species and adverse modification of its critical habitat, but not specifically to manage remaining lands or institute recovery actions on remaining lands. Conversely, management plans institute proactive actions over the lands they encompass intentionally to remove or reduce known threats to a species or its habitat and, therefore, implement recovery actions. We believe that the conservation of a species and its habitat that could be achieved through the designation of critical habitat, in some cases, is less than the conservation that could be achieved through the implementation of a management plan that includes species-specific provisions and considers enhancement or recovery of listed species as the management standard over the same lands. Consequently, implementation of an HCP or management plan that considers enhancement or recovery as the management standard will often provide as much or more benefit than a consultation for critical habitat designation conducted under the standards required by the Ninth Circuit in the *Gifford Pinchot* decision.

Conservation Partnerships on Non-Federal Lands

Most federally listed species in the United States will not recover without the cooperation of non-Federal landowners. More than 60 percent of the United States is privately owned (National Wilderness Institute 1995, p. 2), and at least 80 percent of endangered or threatened species occur either partially or solely on private lands (Crouse *et al.* 2002, p. 720). Stein *et al.* (1995, p. 400) found that only about 12 percent of listed species were found almost exclusively on Federal lands (90 to 100 percent of their known occurrences restricted to Federal lands) and that 50 percent of federally listed species are not known to occur on Federal lands at all.

Given the distribution of listed species with respect to land ownership, conservation of listed species in many parts of the United States is dependent upon working partnerships with a wide variety of entities and the voluntary cooperation of many non-Federal landowners (Wilcove and Chen 1998, p. 1407; Crouse *et al.* 2002, p. 720; James 2002, p. 271). Building partnerships and promoting voluntary cooperation of landowners is essential to our understanding the status of species on non-Federal lands, and necessary to implement recovery actions such as reintroducing listed species, habitat restoration, population monitoring, and habitat protection.

Many non-Federal landowners derive satisfaction from contributing to endangered species recovery. We promote these private-sector efforts through the Department of the Interior's Cooperative Conservation philosophy. Conservation agreements with non-Federal landowners (HCPs, safe harbor agreements, 10(j) experimental populations, other conservation agreements, easements, and State and local regulations) enhance species conservation by extending species protections beyond those available through section 7 consultations. In the past decade, we have encouraged non-Federal landowners to enter into conservation agreements, based on the view that we can achieve greater species conservation on non-Federal land through such partnerships than we can through regulatory methods (61 FR 63854; December 2, 1996).

Many private landowners, however, are wary of the possible consequences of encouraging endangered species to their property. Mounting evidence suggests that some regulatory actions by the Federal Government, while well-intentioned and required by law, can (under certain circumstances) have unintended negative consequences for the conservation of species on private lands (Wilcove *et al.* 1996, pp. 5–6; Bean 2002, pp. 2–3; Conner and Mathews 2002, pp. 1–2; James 2002, pp. 270–271; Koch 2002, pp. 2–3; Brook *et al.* 2003, pp. 1639–1643). Many landowners fear a decline in their property value due to real or perceived restrictions on land-use options where threatened or endangered species are found. Consequently, harboring endangered species is viewed by many landowners as a liability. This perception results in anti-conservation incentives because maintaining habitats that harbor endangered species represents a risk to future economic opportunities (Main *et al.* 1999, pp. 1264–1265; Brook *et al.* 2003, pp. 1644–1648).

According to some researchers, the designation of critical habitat on private lands significantly reduces the likelihood that landowners will support and carry out conservation actions (Main *et al.* 1999, p. 1263; Bean 2002, p. 2; Brook *et al.* 2003, pp. 1644–1648). The magnitude of this outcome is greatly amplified in situations where active management measures (such as reintroduction, fire management, and control of invasive species) are necessary for species conservation (Bean 2002, pp. 3–4). The Service believes that the judicious exclusion of specific areas of non-federally owned lands from critical habitat designations can contribute to species recovery and provide a superior level of conservation than critical habitat alone.

The purpose of designating critical habitat is to contribute to the conservation of threatened and endangered species and the ecosystems upon which they depend. The outcome of the designation, triggering regulatory requirements for actions funded, authorized, or carried out by Federal agencies under section 7(a)(2) of the Act, can sometimes be counterproductive to its intended purpose on non-Federal lands. Thus, the benefits of excluding areas that may be covered by effective partnerships or other conservation commitments can often be high.

Benefits of Excluding Lands With HCPs or Other Management Plans From Critical Habitat

The benefits of excluding lands with approved long-term management plans from critical habitat designation include relieving landowners, communities, and counties of any additional regulatory burden that might be imposed by a critical habitat designation. Many conservation plans provide conservation benefits to unlisted sensitive species. Imposing an additional regulatory review as a result of the designation of critical habitat may undermine these conservation efforts and partnerships in many areas. Designation of critical habitat within the boundaries of management plans that provide conservation measures for a species is a disincentive to entities currently developing these plans or contemplating them in the future, because one of the incentives for undertaking conservation is greater ease of permitting where listed species will be affected. Addition of a new regulatory requirement would remove a significant incentive for undertaking the time and expense of management planning.

A related benefit of excluding lands within management plans from critical habitat designation is the unhindered, continued ability it gives us to seek new partnerships with future plan participants, including States, Counties, local jurisdictions, conservation organizations, and private landowners, which together can implement conservation actions that we would be unable to accomplish otherwise. Designating lands within approved management plan areas as critical habitat would likely have a negative effect on our ability to establish new partnerships to develop these plans, particularly plans that address landscape-level conservation of species and habitats. By preemptively excluding these lands, we preserve our current partnerships and encourage additional conservation actions in the future.

Furthermore, both HCP and Natural Community Conservation Plan (NCCP)–HCP applications require consultation, which would review the effects of all HCP-covered activities that might adversely impact the species under a jeopardy standard, including possibly significant habitat modification (see definition of ''harm'' at 50 CFR 17.3), even without the critical habitat designation. In addition, all other Federal actions that may affect the listed species would still require consultation under section 7(a)(2) of the Act, and we would review these actions for possibly significant habitat modification in accordance with the definition of harm referenced above.

The information provided in the previous section applies to all the following discussions of benefits of inclusion or exclusion of critical habitat.

Exclusions Under Section 4(b)(2) of the Act

We found that the public comments we received made a compelling case that excluding the Devils River Unit will provide for maintenance of positive relationships with private landowners along that stretch of river. These relationships are fundamental for implementing recovery actions for the Devils River minnow and outweigh the limited benefits that may occur from the designation of critical habitat there. Maintaining non-Federal partnerships in the other units in San Felipe Creek and Pinto Creek are of equal importance. However, as explained below, we believe that designation of critical habitat in those units does not put our non-Federal partnerships at risk and, therefore, no additional benefits for the Devils River minnow would be expected by excluding those units.

We also found in this final rule that Sycamore Creek and Las Moras Creek are essential streams for the conservation of the Devils River minnow. However, both streams are located exclusively on non-Federal lands and will require significant cooperation with private landowners and implementation of cooperative tools, such as safe harbor agreements and experimental populations established under section 10(j) of the Act, to achieve the recovery goals for the Devils River minnow in these creeks as outlined in the Recovery Plan. These recovery actions would be potentially precluded if critical habitat were designated on these streams since we consider these areas not occupied and landowner cooperation is a necessary step in the restoration and reestablishment of the Devils River minnow to these two creeks.

Devils River Unit

Benefits of Inclusion

The benefits of including lands in critical habitat can be regulatory, educational, or to aid in recovery of species as generally discussed in the ''Benefits of Designating Critical Habitat'' section above. The following is our assessment of the estimated benefits for inclusion of the Devils River Unit.

We expect only minimal regulatory benefits from the designation of critical habitat for the Devils River minnow. As explained in the final economic analysis (FEA) (p. A–1) and the ''Effects of Critical Habitat Designation'' section in this final rule, we have had very few section 7 consultations for this species since its listing, (one formal consultation, nine informal consultations, and five technical assistance events since 1999) and we foresee few section 7 consultations in the next 20 years. Appendix A in the FEA (p. A–5) estimates a total of 2 formal consultations, 21 informal consultations, and 12 technical assistance events over the next 20 years throughout the range of the species. This is because there are few, if any, actions occurring with a Federal nexus within the range of the species that may affect the species or its habitat. The FEA found that no formal section 7 consultations are likely to occur in the Devils River Unit in the next 20 years. Comments received during the public comment period indicated that oil and gas development in the Devils River watershed could adversely affect Devils River minnow habitat in the Devils River. However, we are not aware of a Federal nexus to oil and gas activities that would result in a section 7 consultation and possible regulatory benefit of critical habitat. The lack of section 7 consultations results in very limited regulatory benefits for the designation of critical habitat in the Devils River Unit.

We expect there may be some limited educational benefits associated with the designation of critical habitat. However, most people actively involved in water resource management in these areas likely already know the need for conservation of the Devils River minnow. Designating critical habitat could provide another opportunity to highlight these areas as important for the conservation of the species and provide more specific information on the physical and biological features that define habitat for the species. We expect the educational benefits to be especially limited in the Devils River Unit, where the few local landowners along the river have been engaged in Devils River minnow issues for the 30 years since the species was initially proposed for listing and the river proposed for critical habitat designation in 1978. Many of the families involved in Devils River minnow issues in 1978 are still involved. We therefore foresee very limited additional education value that the designation would be expected to offer to these landowners.

We expect few to no additional benefits to the recovery of the Devils River minnow as a result of the designation of critical habitat in the Devils River Unit. The habitat areas are outlined and the biological features are readily defined in the species' recovery plan. With limited regulatory and educational benefits likely, we foresee no other tangible benefits to further recovery of the species as a result of the designation of critical habitat.

Benefits of Exclusion

Non-Federal Partnerships

The distribution of the Devils River minnow is largely within private ownership, and, therefore, the management of its habitat has limited influence by Federal agency actions. As a result, partnerships with and among non-Federal organizations and private individuals are the key to conserving the Devils River minnow. The top priority task in the Devils River Minnow Recovery Plan, for example, includes ''Seek and maintain the cooperation of landowners'' (Service 2005, p. 3.3–1). Therefore, we believe it is important to consider the potential benefits that will be realized by preserving our positive relationships with landowners and other non-Federal organizations if we

exclude an area from the final critical habitat designation.

The need for strong partnerships on non-Federal lands for the conservation of the Devils River minnow is of heightened importance in the Devils River watershed. The remote, rural area is comprised of large private ranches with very limited influence by public activities. Land management to promote and conserve healthy watersheds, native riparian areas, and groundwater recharge and sustainable use depends on the voluntary actions of the private landowners.

During the second public comment period, at least 12 individuals (either landowners along the Devils River or representatives for those interests) commented negatively about the perceived effects of the designation of the Devils River Unit as critical habitat. They envisioned that the designation would restrict landowner activities, lead to a change in the status of the Devils River minnow from threatened to endangered, and result in a devaluation of land values in the area.

We do not believe that these concerns are likely to be realized. We provide specific responses to these comments in the ''Comments and Responses'' section- that the designation of critical habitat should have little to no effect on landowner actions, is not a factor in the species' status as threatened rather than endangered, and should not result in a stigma effect to decrease land values. However, these widely held perceptions by landowners in the Devils River Unit could result in anti-conservation incentives because furthering Devils River minnow conservation is seen as a risk to future economic opportunities or loss of private property rights.

In addition, we received specific comments from the President of The Devils River Association (a 164-member local landowner organization to promote balance between preservation of the Devils River ecosystem and the desire to use the river and respect private property rights). These comments specifically stated that the Devils River Unit should be excluded because the benefits of doing so outweighed the benefits of inclusion. The comments included a discussion of the importance of cooperation with landowners that has occurred in the past. The comment states that this action (designating the Devils River as critical habitat) ''significantly decreases our interest to work cooperatively with USFWS.'' The comment goes on to state that, ''This action would terribly and, I am afraid, irreparably damage the trust that we have all built up over the last few years.''

Losing landowner trust and cooperation would be a significant setback to recovery efforts for the Devils River minnow on the Devils River. The designation of critical habitat could reduce the likelihood that landowners will support and carry out conservation actions needed to implement the recovery plan. The recovery plan calls for the following actions: monitor the status of Devils River minnow; determine biological and life history requirements; identify specific habitat requirements; and manage Devils River minnow habitat (Service 2005, pp. 2.3–1—2.4–6). All of these actions require the cooperation of private landowners.

One practical aspect of landowner cooperation in this area is the need for access to locations on the Devils River to carry out many recovery actions. In the past, landowners on the Devils River have been open to allowing access to conduct studies and for monitoring efforts by TPWD, the Service, and others. This is important on the Devils River because public access is limited to only two small areas, one on the Devils River State Natural Area and one at the Highway 163 bridge crossing. Past efforts for monitoring the Devils River minnow populations and habitats benefited from landowners voluntarily permitting access on private property to collect valuable information. Field monitoring of the river conditions and fish populations is a vital component to the recovery of the Devils River minnow.

In the past, this non-Federal partnership was under the guidance of the 1998 Devils River Minnow Conservation Agreement. The purpose of this agreement was to expedite conservation measures needed to ensure the continued existence and facilitate recovery of the species prior to a final listing decision. Although the formal agreement expired in 2003 without renewal, the landowners along the Devils River have continued to cooperate with us and TPWD to further the agreement's conservation goals (this was also highlighted in the public comments we received). Without this ongoing non-Federal partnership with private landowners, we expect that conservation opportunities for the species in the Devils River will be greatly reduced. We believe that maintaining non-Federal partnerships with local landowners on the Devils River is a substantial benefit of excluding the Devils River Unit from critical habitat designation and outweighs any benefits expected from including this unit in the designation. We anticipate that exclusion of this unit is likely to provide a superior level of conservation than critical habitat designation.

Conservation Efforts and Management Plans

When performing the required analysis under section 4(b)(2) of the Act to consider any potential exclusions of areas proposed for critical habitat, we considered planned or ongoing conservation efforts within the Devils River minnow's range (described in the proposed rule, 72 FR 41692). We received no new information during the public comment periods on the existence of other plans or conservation efforts, beyond those discussed below in this section. We evaluated these ongoing conservation efforts based on whether excluding one or more critical habitat units might provide recovery benefits for the Devils River minnow. Each effort provides some opportunity to benefit the Devils River minnow. However, we are not excluding any areas based solely on these conservation efforts and management plans.

The Nature Conservancy has a Conservation Area Plan (CAP) and several conservation easements in the Devils River Watershed. The CAP has significant goals for conserving the Devils River watershed and its implementation will provide benefits for the Devils River minnow. The Nature Conservancy has limited opportunity to implement the conservation strategies outside of the lands under their ownership or easement. Implementing the goals of the CAP will depend on the voluntary cooperation of the private landowners throughout the watershed.

We support the past and ongoing conservation efforts by The Nature Conservancy and encourage their continued work. Without the voluntary cooperation of neighboring landowners, the local and State agencies, the efforts by The Nature Conservancy provide only minimal benefits for the Devils River minnow. We believe The Nature Conservancy will continue to work on conservation efforts with or without the designation of critical habitat, and there are no benefits to The Nature Conservancy's ongoing conservation efforts by designating the Devils River Unit as critical habitat. However, there may be benefits accrued by excluding this unit from critical habitat if it increases The Nature Conservancy's ability to work more successfully with private landowners. As discussed above in the ''Benefits of Excluding Lands With HCPs or Other Management Plans From Critical Habitat'' section, designating critical habitat in an area with existing management plans may

provide a disincentive for voluntary cooperation by private landowners. Therefore, to maintain landowner relationships, there could be some benefits to excluding the Devils River Unit.

Benefits of Exclusion Outweigh the Benefits of Inclusion

In weighing the benefits of including versus the benefits of excluding the Devils River Unit, we find that the benefits of exclusion of these lands outweigh the benefits of inclusion of these lands in the critical habitat designation. This is based on the fact that there are very limited benefits to inclusion and substantial benefits from maintaining non-Federal partnerships by excluding this unit. Therefore, we find that excluding Devils River Unit is reasonable under the Secretary's discretion for ''other relevant impacts'' under section 4(b)(2) of the Act. We believe the loss of non-Federal partnerships on the Devils River, as expressed in the public comments we received on the proposed rule, is a relevant impact. The cooperation of private landowners to provide access to the river and participate in other recovery actions is a vital component to conservation of the Devils River minnow, and this could be lost if we designate critical habitat. In contrast, the benefits of inclusion are, as noted above, likely to be minor because of very limited opportunities for additional education and the lack of any Federal nexus for section 7 consultations specific to Devils River minnow in the unit. Recovery of the Devils River minnow is best served by the exclusion of the Devils River Unit.

Exclusion Will Not Result in Extinction of the Species

We have determined that the exclusion of the Devils River Unit that includes 29.2 stream mi (47.0 stream km) from the final designation of critical habitat will not result in the extinction of Devils River minnow. As described above, all of the area we are excluding from critical habitat is occupied by the species, and consultations will still occur under section 7 of the Act if there is a Federal nexus, even in the absence of their designation as critical habitat. Application of the jeopardy standard of section 7 of the Act also provides assurances that the species will not go extinct in the absence of this designation.

In summary, the benefits of including the Devils River Unit in the critical habitat designation for the Devils River minnow are few. The benefits of excluding this area from designated critical habitat are greater, and include maintaining important non-Federal partnerships. We find that the benefits of excluding this area from critical habitat designation outweigh the benefits of including this area and will not result in the extinction of the species.

Sycamore Creek and Las Moras Creek

Benefits of Inclusion

We expect only minimal regulatory benefits from the designation of critical habitat for the Devils River minnow. As explained in the FEA (p. A–1) and the ''Effects of Critical Habitat Designation'' section in this final rule, we have had very few section 7 consultations for this species since its listing (one formal consultation, nine informal consultations, and five technical assistance events since 1999) and we foresee few section 7 consultations in the next twenty years. Appendix A in the FEA (p. A–5) estimates a total of 2 formal consultations, 21 informal consultations, and 12 technical assistance events over the next 20 years throughout the range of the species. This is because there are few, if any, actions occurring with a Federal nexus within the range of the species that may affect the species or its habitat. There are no Federal lands within the watersheds of Sycamore or Las Moras creeks and the FEA found no formal section 7 consultations are likely to occur in the area of Sycamore or Las Moras creeks in the next 20 years. The absence of expected section 7 consultations suggests there are very limited regulatory benefits for the designation of critical habitat in Sycamore or Las Moras creeks.

We expect there may be some limited educational benefits associated with the designation of critical habitat. However, most people actively involved in water resource management in these areas likely already know the need for conservation of the Devils River minnow. Both Sycamore and Las Moras creeks are highlighted in the Devils River Minnow Recovery Plan. The streams are located in Kinney County where we are already actively working with local officials on conservation issues for the Devils River minnow. Designating critical habitat could provide another opportunity to highlight these areas as important for the conservation of the species and to seek specific information on the physical and biological features that define habitat for the species in these creeks. However, as discussed above, we expect the educational benefits of designating critical habitat in Sycamore or Las Moras creeks would be minimal since the importance of these creeks and the need for further information is already highlighted in the recovery plan and in the rules and economic analysis associated with this designation.

We expect few to no additional benefits to recovery of the Devils River minnow if critical habitat were designated in Sycamore or Las Moras creeks. With limited regulatory and educational benefits likely, we foresee no other tangible benefits to further recovery of the species as a result of the designation of critical habitat in these streams.

Benefits of Exclusion

As stated above and in the recovery plan, achieving recovery objectives for the Devils River minnow will include, if feasible, restoring populations in Sycamore and Las Moras creeks. We believe that the best way to achieve these objectives will be to use the authorities under section 10(j) of the Act to reestablish experimental populations or through safe harbor agreements. We believe that section 10(j) of the Act would be an appropriate tool to utilize in future restoration efforts. An overview of the process to establish an experimental population under section 10(j) of the Act is described below. Alternately, developing voluntary safe harbor agreements under section 10 of the Act is another tool that would allow restoring these populations in a cooperative effort with local landowners. Developing safe harbor agreements, as described below will require extensive partnerships with non-Federal landowners. Either alternative to accomplish these recovery objectives would benefit from excluding the areas from critical habitat designation.

Section 10(j) of the Act enables us to designate certain populations of federally listed species that are released into the wild as ''experimental.'' The circumstances under which this designation can be applied are the following: (1) The population is geographically separate from nonexperimental populations of the same species (*e.g.*, the population is reintroduced outside the species' current range but within its probable historic range); and (2) we determine that the release will further the conservation of the species. Section 10(j) is designed to increase our flexibility in managing an experimental population by allowing us to issue a special rule that provides flexibility in how the experimental population is managed. In situations where we have experimental populations, portions of

the statutory section 9 prohibitions (*e.g.*, harm, harass, capture) that apply to all endangered species and most threatened species may no longer apply, and a special rule can be developed that contains the specific prohibitions and exceptions necessary and appropriate to conserve that species. This flexibility allows us to manage the experimental population in a manner that will ensure that current and future land, water, or air uses and activities will not be unnecessarily restricted and that the population can be managed for recovery purposes.

When we designate a population as experimental, section 10(j) of the Act requires that we determine whether that population is either essential or nonessential to the continued existence of the species, on the basis of the best available information. Nonessential experimental populations located outside National Wildlife Refuge System or National Park System lands are treated, for the purposes of section 7 of the Act, as if they are proposed for listing. Thus, for nonessential experimental populations, only two provisions of section 7 would apply outside National Wildlife Refuge System and National Park System lands: section 7(a)(1), which requires all Federal agencies to use their authorities to conserve listed species, and section 7(a)(4), which requires Federal agencies to informally confer with us on actions that are likely to jeopardize the continued existence of a proposed species. Section 7(a)(2) of the Act, which requires Federal agencies to ensure that their activities are not likely to jeopardize the continued existence of a listed species, would not apply except on National Wildlife Refuge System and National Park System lands.

The flexibility gained by establishment of an experimental population through section 10(j) would be of little value if a designation of critical habitat overlaps it. This is because Federal agencies would still be required to consult with us on any actions that may adversely modify critical habitat. In effect, the flexibility gained from section 10(j) would be rendered useless by the designation of critical habitat. In fact, section 10(j)(2)(C)(ii) of the Act states that critical habitat shall not be designated under the Act for any experimental population determined to be not essential to the continued existence of a species.

We strongly believe that, in order to facilitate recovery for the Devils River minnow, we would need the flexibility provided for in section 10(j) of the Act to help ensure the success of reestablishing populations in Sycamore or Las Moras creeks. Use of section 10(j) is meant to encourage local cooperation through management flexibility. Because critical habitat is often viewed negatively by the public, as is the case here as discussed elsewhere in this rule (see Non-Federal Partnerships discussion above), we believe it is important and necessary for recovery of this species that we have the support of the public when we develop and implement recovery actions.

Safe harbor agreements are another alternative that provide voluntary arrangements between us and cooperating non-Federal landowners. This policy's main purpose is to promote voluntary management for listed species on non-Federal property while giving assurances to participating landowners that no additional future regulatory restrictions will be imposed. The agreements are intended to benefit endangered and threatened species, by creating or restoring habitat for the species, while giving landowners assurances from additional restrictions. As part of a safe harbor agreement, we issue an ''enhancement of survival'' permit under section 10 of the Act, to authorize any necessary future incidental take to provide participating landowners with assurances that no additional restrictions would be imposed as a result of their conservation actions.

Developing future safe harbor agreements to facilitate restoration efforts for Devils River minnow in Sycamore and Las Moras creeks would require close cooperation with a number of private or non-Federal landowners. The negative perceptions of landowners regarding critical habitat, as described above, would most likely forestall any opportunity to engage landowners in Devils River minnow restoration using safe harbor agreements. Excluding these two streams from critical habitat provides better opportunities to work with landowners through safe harbor agreements to further restoration efforts of Devils River minnow. The ability to implement these conservation actions provides a clear benefit of excluding these streams from critical habitat designation.

This voluntary approach is consistent with the actions identified in the Recovery Plan necessary to establish additional viable populations of Devils River minnow within its historic range (Service 2005, pp. 2.4–6—2.4–7). The recovery plan recognizes that, ''Support of private landowners will be necessary to plan and implement reestablishment of the Devils River minnow'' (Service 2005, p. 2.4–6). The recovery plan also recognizes the need for landowner agreements (Recovery Action 2.1) to document landowner cooperation and a commitment to future conservation measures to ensure successful repatriation of the species (Service 2005, p. 2.4–6). Working with landowners in the future through either a establishing a section 10(j) experimental population or developing one or more safe harbor agreements would fulfill the anticipated recovery actions envisioned in the recovery plan.

Engaging private citizens and local landowners in proactive, voluntary measures such as restoration through experimental populations or safe harbor agreements requires a high level of trust and cooperation with Federal agencies. We believe it is highly unlikely we will develop this level of cooperation if these streams were designated as critical habitat. The strong negative perceptions that are likely to persist if these lands were designated as critical habitat would prevent us from realizing these voluntary opportunities for restoration in the near future. Maintaining existing non-Federal partnerships and creating new ones are necessary recovery actions to conserve the Devils River minnow. We note that Texas Governor Rick Perry submitted a letter to us dated June 27, 2008, indicating that he believes a cooperative method of land, water, and wildlife management is the best way to protect property rights and support healthy habitats and that critical habitat will do little to improve the habitat of the Devils River minnow. We believe this philosophy of cooperation between private landowners and the Service is consistent with the information in our analysis and is supported by the comments we received.

The Devils River Minnow Recovery Plan also recognizes the need to develop and implement a reintroduction plan, including a captive propagation plan and a genetics management plan (estimated cost of $100,000 per the Recovery Plan) (Service 2005, p. 3.3.–3), as first steps in our restoration efforts (Service 2005, pp. 2.4–7—2.4–8). We've been working to collect the necessary information to develop these plans through research since 2000 with the captive stocks of Devils River minnows being maintained at our San Marcos National Fish Hatchery and Technology Center (Conway *et al.* 2007; Gibson *et al.* 2004; Gibson and Fries, 2005; Service 2005, p. 1.8–2). These scientific studies have provided important baseline biological data on the species through experiments on captive breeding techniques. This information will allow us to develop reintroduction plans and begin seeking funding and landowner

cooperation to put these recovery tools in place to implement restoration efforts.

We have worked with local groups in the past to discuss the opportunities for restoration of the Devils River minnow in Las Moras Creek (Service 2005, p. 1.8–2). The implementation schedule from the recovery plan anticipates that landowner agreements to restore Devils River minnow to former sites of occurrence would, depending on availability of funding and cooperation, occur between years 3 through 6 following the approval of the recovery plan in 2005 (Service 2005, p. 3.3–2). The recovery plan estimates the cost of developing these agreements at $20,000. The recovery plan foresees the development and implementation of a reintroduction plan would occur in years 3 through 8 (Service 2005, p. 3.3–1), at an estimated cost of $200,000. We are committed to continue to actively examine the opportunities for developing the necessary landowner agreements to implement the actions identified in the Devils River Minnow Recovery Plan. The Service's lead field office for the Devils River minnow is also committed to using their funding through the Partners for Fish and Wildlife Program to work with landowners to develop and implement stream channel restoration projects if necessary. At the time of preparation of the Recovery Plan, the Service was not able to determine the cost of future restoration projects.

Benefits of Exclusion Outweigh the Benefits of Inclusion

In weighing the benefits of including versus the benefits of excluding Sycamore and Las Moras creeks, we find that the benefits of exclusion of these streams outweigh the benefits of inclusion of these streams in the critical habitat designation. This is based on the facts that there are very limited benefits to inclusion and substantial benefits to exclusion from maintaining non-Federal partnerships and providing opportunities for using flexible tools for restoration of the species to these streams. Use of these tools (safe harbor agreements and section 10(j) of the Act) would not be possible or effective without landowner cooperation. Therefore, we find that excluding Sycamore Creek and Las Moras Creek is reasonable under the Secretary's discretion for ''other relevant impacts'' under section 4(b)(2) of the Act. We believe the cooperation of private landowners to provide access to the river and participate in restoration actions under section 10 of the Act is a vital component to conservation of the Devils River minnow and these opportunities would be lost if critical habitat were designated. In contrast, the benefits of inclusion are, as noted above, likely to be minor because of limited opportunities for additional education and the lack of any Federal nexus for section 7 consultations specific to Devils River minnow in these two streams. Recovery of the Devils River minnow is best served by the exclusion of the Sycamore Creek and Las Moras Creek from critical habitat designation.

Exclusion Will Not Result in Extinction of the Species

We have determined that the exclusion of Sycamore Creek and Las Moras Creek from the final designation of critical habitat will not result in the extinction of Devils River minnow. As described above, we do not consider either of these streams to be currently occupied by the Devils River minnow. The species occurs in three other streams, two of which are being designated as critical habitat. Excluding these two streams will not affect conservation efforts ongoing throughout the currently occupied range of the species. We do not anticipate any loss of protection to the species or other impacts that would result from excluding these two streams from the designation of critical habitat.

In summary, the benefits of including Sycamore and Las Moras creeks in the critical habitat designation for the Devils River minnow are few. The benefits of excluding these streams from being designated as critical habitat are greater, and include creating important non-Federal partnerships and opportunities for restoration of the populations using tools under section 10 of the Act. We find that the benefits of excluding these two streams from critical habitat designation outweigh the benefits of including them and will not result in the extinction of the species. Therefore, these two streams are not included in the final critical habitat designation.

Pinto Creek Unit

We considered the exclusion of the Pinto Creek unit, but based on the record before us have elected not to exercise our discretion under section 4(b)(2) of the Act to exclude this unit. We expect there may be some limited educational benefits associated with the designation of critical habitat. However, most people actively involved in water resource management in these areas likely already know the need for conservation of the Devils River minnow. Pinto Creek is highlighted in the Devils River Minnow Recovery Plan. The stream is located in Kinney County where we are already working with local officials on conservation issues for the Devils River minnow. Designating critical habitat could provide another opportunity to highlight these areas as important for the conservation of the species and provide more specific information on the physical and biological features that define habitat for the species. We expect the educational benefits of designating critical habitat in Pinto Creek would be minimal.

We considered the Kinney County Groundwater Conservation District (KCGCD) draft management plan in our analysis. An updated management plan by the KCGCD was under development during completion of this final rule, and the final plan was approved after the close of the public comment period. We received comments from the KCGCD that the draft management plan would provide benefits to the Devils River minnow by managing groundwater on a sustainable basis without exploiting or adversely affecting the natural flow of the intermittent streams. We also received comments that groundwater pumping authorized by the KCGCD will result in adverse impact to Devils River minnow habitat in Pinto Creek. The KCGCD management plan was not approved until after the public comment period for this designation and, therefore, was not considered in its entirety as a basis for possible exclusion. We received comments from the KCGCD during the public comment period indicating that the future plan will likely provide spring flows in Pinto Creek. If so, it will be of great value to the conservation of the Devils River minnow and its habitat. We fully expect the KCGCD's plan will be carried out with or without the designation of critical habitat for the Devils River minnow and we look forward to working with the KCGCD to conserve Devils River minnow habitats in Kinney County. Landowners in the District are under the authority of the KCGCD for pumping permits, and their compliance does not depend on their voluntary cooperation. Therefore, we do not expect landowner cooperation with the KCGCD to be influenced by the designation of critical habitat or the exclusion from critical habitat, of Pinto Creek.

However, for all the reasons discussed above under the Devils River Unit, ''Benefits of Exclusion,'' section, maintaining strong non-Federal partnerships with landowners along Pinto Creek are important. This unit flows only through private lands, and there is only one bridge crossing that provides very limited access, so

landowner cooperation here is also vital to accomplishing recovery tasks. In the past we have had good relationships with the landowners along Pinto Creek, and access has been provided upon request. Based on our current relationships with the landowners, particularly in the most upstream reaches, we do not expect that critical habitat designation in this unit will likely negatively impact those relationships. We received only one comment from a landowner on Pinto Creek. This landowner was concerned about the impacts of groundwater pumping on stream flows and did not express any concerns about the proposed designation of critical habitat.

The KCGCD included as a public comment a resolution opposing the designation of critical habitat because they considered the Pinto Creek population of Devils River minnow introduced and stream flows there intermittent. They made no comment relative to any cooperation or potential that it would damage any future non-Federal partnership opportunities. We hope to build a strong partnership with the KCGCD in the future to work together to conserve spring flows in Pinto Creek. While the critical habitat designation may be perceived negatively by the KCGCD, we do not believe it will impact the long-term conservation efforts of the KCGCD. The KCGCD stated in their resolution that they were committed to maintaining natural flows in Pinto Creek. This is part of their authority to manage groundwater pumping through a permitting program. We believe the KCGCD will continue to strive toward maintaining spring flows whether or not the Pinto Creek Unit is included in the designation. Therefore, excluding the Pinto Creek Unit is not anticipated to provide benefits for Devils River minnow through preventing the loss of non-Federal partnerships in the Pinto Creek Unit. We received no other information during the comment period that would indicate there are additional benefits to excluding the Pinto Creek Unit.

San Felipe Creek Unit

We considered the exclusion of the San Felipe Creek Unit, but based on the record before us have elected not to exercise our discretion under section 4(b)(2) of the Act to exclude this unit. There are some limited educational benefits for the designation of the San Felipe Creek Unit. Many local officials and agency personnel are already aware of the need for conservation of San Felipe Creek for the benefit of the Devils River minnow. However, educating the general public (citizens of Val Verde County and the City of Del Rio) is a continuing goal for the recovery of the species (related to water use conservation by the City of Del Rio and preventing water pollution in San Felipe Creek) and requires ongoing efforts to accomplish. Designation of critical habitat could help to elevate the awareness to the public of the importance of the conservation of San Felipe Creek.

We considered the San Felipe Creek management plans by the City of Del Rio and the San Felipe Creek Country Club. These plans, signed in 2003, provide some conservation opportunities for the Devils River minnow in San Felipe Creek. However, to date, many of the actions in the plans have not been implemented. We have worked with the City of Del Rio to draft a new San Felipe Creek Master Plan, but this plan was not completed before the close of the comment period, and we do not know when it will be finalized. Most of the lands along San Felipe Creek are owned by the City of Del Rio. We do not expect the designation of critical habitat to have any bearing on the management of San Felipe Creek by the City of Del Rio. We have a good working relationship with the City of Del Rio, and we expect to continue this relationship. We received no indication from the City of Del Rio that designation of critical habitat would impact our relationship. We believe the City of Del Rio will continue to work toward completion and implementation of the master plan and conservation efforts for San Felipe Creek whether or not critical habitat is designated on San Felipe Creek. Therefore, we do not believe there are any benefits of excluding San Felipe Creek Unit based on these management plans and ongoing conservation efforts.

Economic Analysis

Section 4(b)(2) of the Act requires us to designate critical habitat on the basis of the best scientific information available and to consider the economic and other relevant impacts of designating a particular area as critical habitat. Section 4(b)(2) of the Act allows the Secretary to exclude areas from critical habitat for economic or other reasons if the Secretary determines that the benefits of such exclusion exceed the benefits of designating the area as critical habitat. However, this exclusion cannot occur if it will result in the extinction of the species concerned.

Following the publication of the proposed critical habitat designation, we conducted an economic analysis to estimate the potential economic effects of the designation. The draft analysis (dated December 21, 2007) was made available for public review on February 7, 2008 (73 FR 7237). We accepted comments on the draft analysis until March 10, 2008. Following the close of the comment period, a final analysis of the potential economic effects of the designation was developed taking into consideration the public comments and any new information.

The economic analysis considers the potential economic effects of all actions relating to the conservation of Devils River minnow, including costs associated with sections 4, 7, and 10 of the Act, as well as those attributable to designating critical habitat. It further considers the economic effects of protective measures taken as a result of other Federal, State, and local laws that aid habitat conservation for Devils River minnow in areas containing the features essential to the conservation of the species. The analysis considers both economic efficiency and distributional effects. In the case of habitat conservation, efficiency effects generally reflect the ''opportunity costs'' associated with the commitment of resources to comply with habitat protection measures (such as lost economic opportunities associated with restrictions on land use). The economic analysis also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on small entities and the energy industry. This information can be used by the decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector (see ''Required Determinations'' section below). Finally, the economic analysis looks retrospectively at costs that have been incurred since the date this species was listed as threatened (October 20, 1999; 64 FR 56596), and considers those costs that may occur in the 20 years following designation of critical habitat (*i.e.*, coextensive costs, 2008–2027).

The economic analysis focuses on the direct and indirect costs of the rule. However, economic impacts to land-use activities can exist in the absence of critical habitat. These impacts may result from, for example, section 7 consultations under the jeopardy standard, local zoning laws, State and natural resource laws, and enforceable management plans and best management practices applied by other State and Federal agencies. Economic impacts that result from these types of protections are not included in the analysis as they are considered to be

part of the regulatory and policy baseline.

The economic analysis estimates potential economic impacts resulting from the implementation of Devils River minnow conservation efforts in three categories: (a) Water quality; (b) nonnative species; and (c) Devils River minnow sampling and monitoring. The final economic analysis estimates total pre-designation baseline impacts (8-year total from 1999 to 2007) to be $388,000, assuming a 3 percent discount rate, and $402,000, assuming a 7 percent discount rate. Post-designation baseline impacts over the next 20 years (2008 to 2027) are estimated to be $406,000, assuming a 3 percent discount rate, and $300,000, assuming a 7 percent discount rate. The post-designation incremental impacts (2008 to 2027) are estimated to be $47,600, assuming a 3 percent discount rate, and $33,600, assuming a 7 percent discount rate.

We evaluated the potential economic impact of this designation as identified in the economic analysis. Based on this evaluation, we believe that there are no disproportionate economic impacts that warrant exclusion under section 4(b)(2) of the Act at this time. The final economic analysis is available on the Internet at *http://www.regulations.gov* and *http://www.fws.gov/southwest/es/AustinTexas/* or upon request from the Austin Ecological Services Field Office (see **ADDRESSES** section).

Required Determinations

In our July 31, 2007, proposed rule (72 FR 41679), we indicated that we would defer our determination of compliance with several statutes and Executive Orders until the information concerning potential economic impacts of the designation and potential effects on landowners and stakeholders was available in the draft economic analysis. In this final rule, we affirm the information contained in the proposed rule concerning Executive Order (E.O.) 13132, E.O. 12988, the Paperwork Reduction Act, the National Environmental Policy Act, and the President's memorandum of April 29, 1994, ''Government-to-Government Relations with Native American Tribal Governments'' (59 FR 22951).

Regulatory Planning and Review

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

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

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

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

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

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

Under the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) (5 U.S.C. 802(2)), whenever an agency must publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. SBREFA amended RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for Devils River minnow will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration (SBA), small entities include small organizations, such as independent nonprofit organizations, and small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents, as well as 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.

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

Designation of critical habitat only affects activities conducted, funded, or permitted by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they fund, permit, or carry out that may affect Devils River minnow (see Section 7 Consultation section). Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (see Application of the ''Adverse Modification'' Standard section).

Appendix B of the final economic analysis (FEA) examined the potential for Devils River minnow conservation efforts to affect small entities. The analysis was based on the estimated impacts associated with the proposed critical habitat designation. Based on the analysis, the potential for economic impacts of the designation on small

entities are expected to be borne primarily by the City of Del Rio and other miscellaneous small entities. The identities of these small entities are not known at this time but are expected to include local developers and private landowners that may represent third parties in section 7 consultations on the Devils River minnow in the future. The City of Del Rio and other miscellaneous small entities are expected to incur, at most, combined annualized administrative costs related to consultations for adverse modification of approximately $3,000, assuming a 3 percent discount rate. This estimated $3,000 in combined annual administrative costs is not expected to have a significant impact on small entities, including the City of Del Rio. In addition, because the annualized post-designation incremental impacts expected for the City of Del Rio and other miscellaneous small entities are relatively small, no future indirect impacts associated with post-designation incremental impacts are expected for the small businesses and entities included in this analysis.

Small Business Regulatory Enforcement Fairness Act (5 U.S.C 801 et seq.)

Under SBREFA, this rule is not a major rule. Our detailed assessment of the economic effects of this designation is described in the economic analysis. Based on the effects identified in the economic analysis, we believe that this rule will not have an annual effect on the economy of $100 million or more, will not cause a major increase in costs or prices for consumers, and will not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises. Refer to the final economic analysis for a discussion of the effects of this determination (see **ADDRESSES** for information on obtaining a copy of the final economic analysis).

Executive Order 13211—Energy Supply, Distribution, or Use

On May 18, 2001, the President issued E.O. 13211 on regulations that significantly affect energy supply, distribution, or use. E.O. 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this E.O. that outlines nine outcomes that may constitute ''a significant adverse effect'' when compared without the regulatory action under consideration. The economic analysis finds that none of these criteria are relevant to this analysis. Thus, based on information in the economic analysis, energy-related impacts associated with Devils River minnow conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

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

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501), the Service makes the following findings:

(a) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector and includes both ''Federal intergovernmental mandates'' and ''Federal private sector mandates.'' These terms are defined in 2 U.S.C. 658(5)–(7). ''Federal intergovernmental mandate'' includes a regulation that ''would impose an enforceable duty upon State, local, or tribal governments'' with two exceptions. It excludes ''a condition of Federal assistance.'' It also excludes ''a duty arising from participation in a voluntary Federal program,'' unless the regulation ''relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,'' if the provision would ''increase the stringency of conditions of assistance'' or ''place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding,'' and the State, local, or Tribal governments ''lack authority'' to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. ''Federal private sector mandate'' includes a regulation that ''would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.''

The designation of critical habitat does not impose a legally binding duty on non-Federal government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. Non-Federal entities that receive Federal funding, assistance, permits, or otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat. However, 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 on to State governments.

(b) We do not believe that this rule will significantly or uniquely affect small governments because it will not produce a Federal mandate of $100 million or greater in any year; that is, it is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. The designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. As such, a Small Government Agency Plan is not required.

Executive Order 12630—Takings

In accordance with E.O. 12630 (''Government Actions and Interference with Constitutionally Protected Private Property Rights''), we have analyzed the potential takings implications of critical habitat for the Devils River minnow in a takings implications assessment. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this final designation of critical habitat for Devils River minnow does not pose significant takings implications for lands within or affected by the designation.

Federalism

In accordance with E.O. 13132 (Federalism), the final rule does not have significant Federalism effects. A Federalism assessment is not required. In keeping with Department of the Interior and Department of Commerce

policy, we requested information from, and coordinated development of, this final critical habitat designation with appropriate State resource agencies in Texas. The designation of critical habitat in areas currently occupied by the Devils River minnow is not likely to impose any additional restrictions to those currently in place and, therefore, has little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical and biological features essential to the conservation of the species are more clearly defined, and the PCEs of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultation to occur).

Civil Justice Reform

In accordance with E.O. 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 Order. We are designating critical habitat in accordance with the provisions of the Act. This final rule uses standard property descriptions and identifies the physical and biological features essential to the conservation of the species within the designated areas to assist the public in understanding the habitat needs of the Devils River minnow.

Paperwork Reduction Act of 1995

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

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

It is our position that, outside the Tenth Circuit, we do not need to prepare environmental analyses as defined by the NEPA 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 assertion was upheld in the courts of the Ninth Circuit (*Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. Ore. 1995), cert. denied 116 S. Ct. 698 (1996)).

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, and the Department of 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. We have determined that there are no tribal lands occupied at the time of listing that contain the features essential for the conservation of Devils River minnow, and no Tribal lands that are unoccupied areas that are essential for the conservation of the Devils River minnow. Therefore, we are not designating critical habitat for the Devils River minnow on Tribal lands.

References Cited

A complete list of all references cited in this rulemaking is available upon request from the Field Supervisor, Austin Ecological Services Field Office (see **ADDRESSES**).

Author(s)

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

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—[AMENDED]

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

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

■ 2. Amend § 17.11(h) by revising the entry for ''Minnow, Devils River'' under ''FISHES'' to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
FISHES							
*	*	*	*	*	*		*
Minnow, Devils River	*Dionda diaboli*	U.S.A. (TX), Mexico	Entire	T	669	17.95(e)	NA
*	*	*	*	*	*		*

■ 3. Amend § 17.95(e) by adding an entry for ''Devils River Minnow (*Dionda diaboli*)'' in the same alphabetical order that the species appears in the table at § 17.11(h) to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(e) *Fishes.*

* * * * *

Devils River Minnow (*Dionda diaboli*)

(1) Critical habitat units are depicted for Val Verde County and Kinney County, Texas, on the maps below.

(2) The primary constituent elements of critical habitat for the Devils River

minnow are the following habitat components:

(i) Streams characterized by:

(A) Areas with slow to moderate water velocities between 10 and 40 cm/second (4 and 16 in/second) in shallow to moderate water depths between approximately 10 cm (4 in) and 1.5 m (4.9 ft), near vegetative structure, such as emergent or submerged vegetation or stream bank riparian vegetation that overhangs into the water column;

(B) Gravel and cobble substrates ranging in diameter between 2 and 10 cm (0.8 and 4 in) with low or moderate amounts of fine sediment (less than 65 percent stream bottom coverage) and low or moderate amounts of substrate embeddedness; and

(C) Pool, riffle, run, and backwater components free of artificial instream structures that would prevent movement of fish upstream or downstream.

(ii) High-quality water provided by permanent, natural flows from groundwater spring and seeps characterized by:

(A) Temperature ranging between 17 °C and 29 °C (63 °F and 84 °F);

(B) Dissolved oxygen levels greater than 5.0 mg/l;

(C) Neutral pH ranging between 7.0 and 8.2;

(D) Conductivity less than 0.7 mS/cm and salinity less than 1 ppt;

(E) Ammonia levels less than 0.4 mg/l; and

(F) No or minimal pollutant levels for copper, arsenic, mercury, and cadmium; human and animal waste products; pesticides; fertilizers; suspended sediments; and petroleum compounds and gasoline or diesel fuels.

(iii) An abundant aquatic food base consisting of algae attached to stream substrates and other microorganisms associated with stream substrates.

(iv) Aquatic stream habitat either devoid of nonnative aquatic species (including fish, plants, and invertebrates) or in which such nonnative aquatic species are at levels that allow for healthy populations of Devils River minnows.

(v) Areas within stream courses that may be periodically dewatered for short time periods, during seasonal droughts, but otherwise serve as connective corridors between occupied or seasonally occupied areas through which the species moves when the area is wetted.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, airports, roads, and other paved areas) and the land on which they are located existing on the effective date of this rule and not containing one or more of the primary constituent elements.

(4) *Critical habitat map units.* Data layers defining map units were created in ArcGIS using the National Hydrography Dataset and 7.5' topographic quadrangle maps obtained from U.S. Geological Survey to approximate stream channels and calculate distances (stream km and stream mi). We made some minor adjustments to stream channels using the 2004 National Agriculture Imagery Program digital orthophotos obtained from the Texas Natural Resources Information System. For each critical habitat unit, the upstream and downstream boundaries are described as paired geographic coordinates X, Y (meters E, meters N, UTM Zone 14, referenced to North American Horizontal Datum 1983). Additionally, critical habitat areas include the stream channels within the identified stream reaches and areas within these reaches up to the bankfull width.

(5) Note: Index map of critical habitat units for the Devils River minnow follows:

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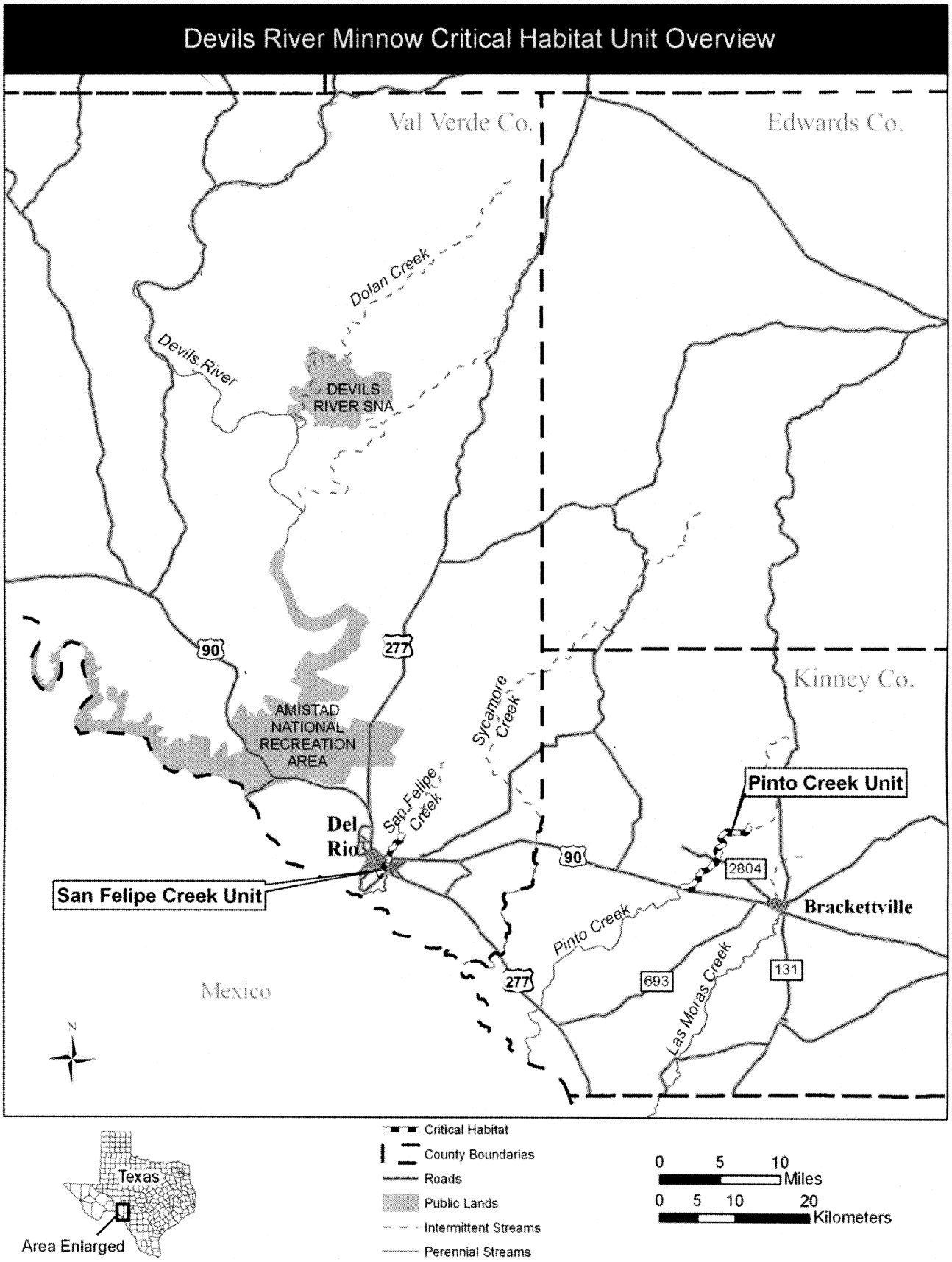
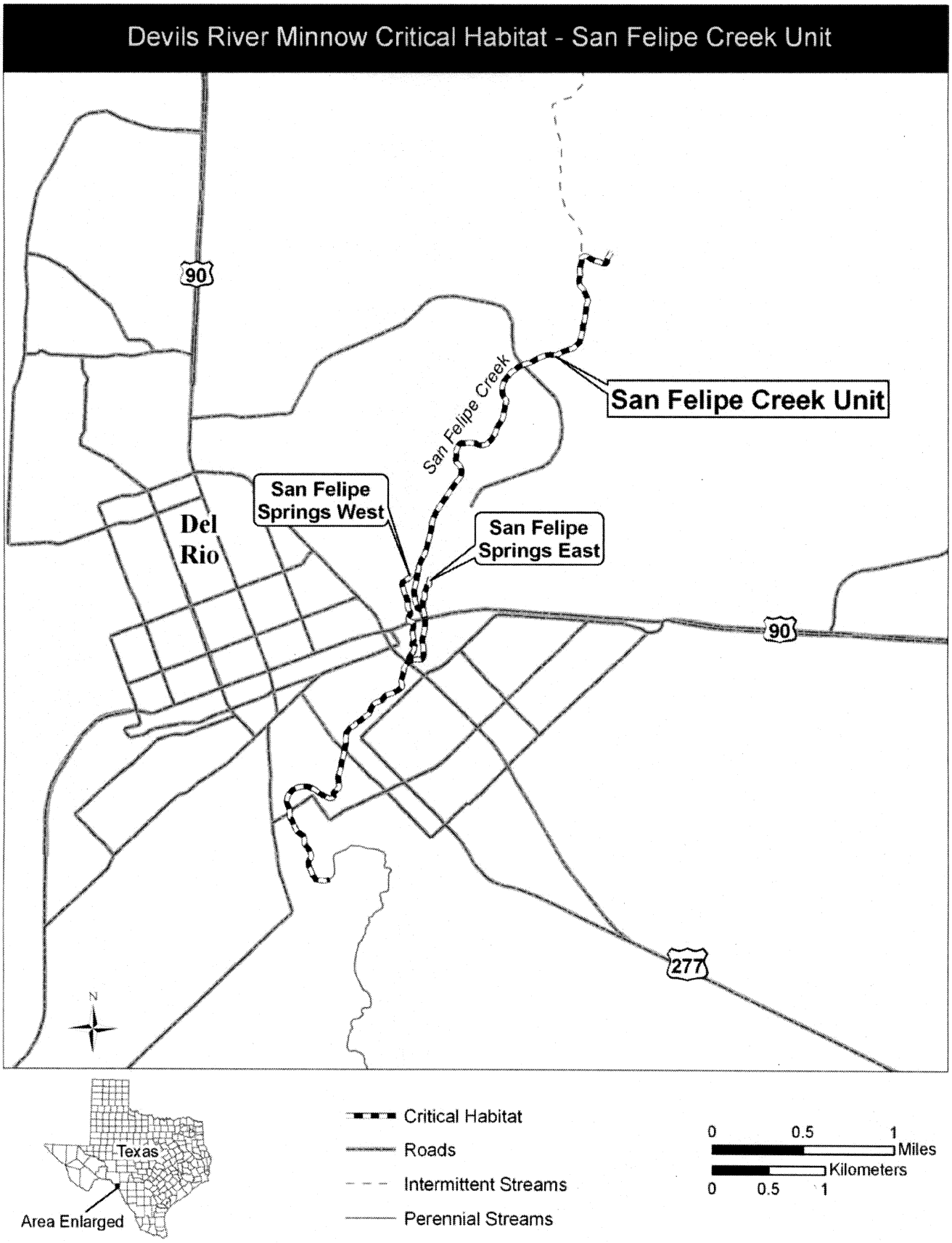

Devils River Minnow Critical Habitat Unit Overview
Val Verde Co.
Edwards Co.
Kinney Co.
Mexico
Dolan Creek
Devils River
DEVILS RIVER SNA
AMISTAD NATIONAL RECREATION AREA
Sycamore Creek
San Felipe Creek
Del Rio
San Felipe Creek Unit
Pinto Creek Unit
Brackettville
Pinto Creek
Las Moras Creek
90
277
2804
693
131
N
Texas
Area Enlarged
Critical Habitat
County Boundaries
Roads
Public Lands
Intermittent Streams
Perennial Streams
0 5 10 Miles
0 5 10 20 Kilometers

(6) Unit 2: San Felipe Creek, Val Verde County, Texas.

(i) Unit 2 consists of approximately 7.9 stream km (4.9 stream mi) on San Felipe Creek, 0.8 stream km (0.5 stream mi) of the outflow of San Felipe Springs West, and 0.3 stream km (0.2 stream mi) of the outflow of San Felipe Springs East. The upstream boundary on San Felipe Creek is the Head Springs (UTM 318813E, 3253702N) located about 1.1 stream km (0.7 stream mi) upstream of the Jap Lowe Bridge crossing. The downstream boundary on San Felipe Creek is in the City of Del Rio 0.8 stream km (0.5 stream mi) downstream of the Academy Street Bridge crossing (UTM 316317E, 3248147N). This unit includes the outflow channels from the origin of the two springs, San Felipe Springs West (UTM 317039E, 3250850N) and San Felipe Springs East (UTM 317212E, 250825N), downstream to the confluence with San Felipe Creek. Including all three streams, the total distance in Unit 2 is approximately 9.0 stream km (5.6 stream mi).

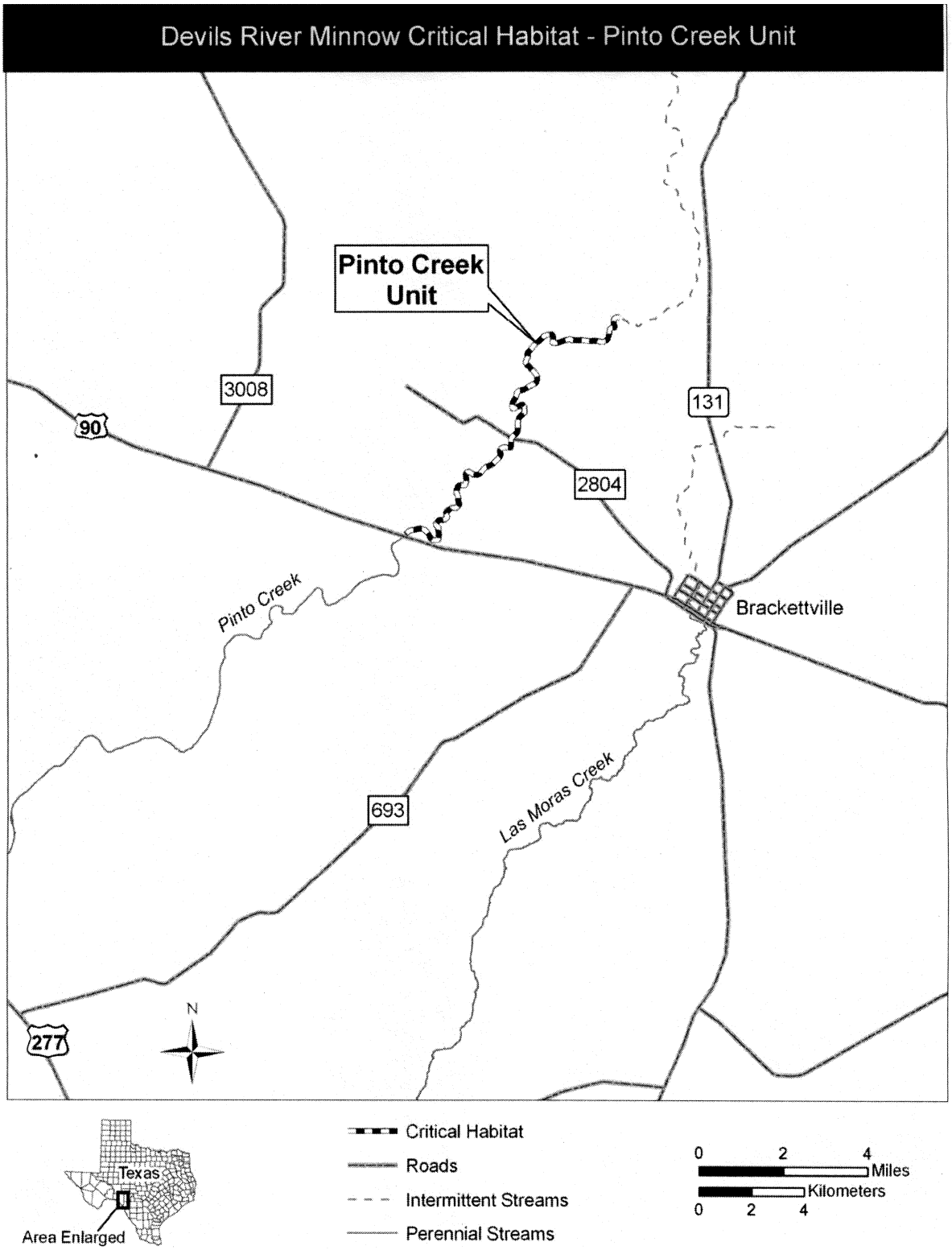
(ii) Note: Map of Unit 2, San Felipe Creek Unit, follows:


Devils River Minnow Critical Habitat - San Felipe Creek Unit
90
San Felipe Creek
San Felipe Creek Unit
San Felipe Springs West
San Felipe Springs East
Del Rio
90
277
N
Texas
Area Enlarged
Critical Habitat
Roads
Intermittent Streams
Perennial Streams
0 0.5 1
Miles
Kilometers
0 0.5 1

(7) Unit 3: Pinto Creek, Kinney County, Texas.

(i) Unit 3 consists of approximately 17.5 stream km (10.9 stream mi) on Pinto Creek. The upstream boundary is Pinto Springs (UTM 359372E, 3254422N). The downstream boundary is 100 m (330 ft) upstream of the Highway 90 Bridge crossing of Pinto Creek (UTM 351163E, 3246179N).

(ii) Note: Map of Unit 3, Pinto Creek Unit, follows:



* * * * *

Dated: July 29, 2008.

Lyle Laverty,

Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. E8–17985 Filed 8–11–08; 8:45 am]

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