

(7) *Comment:* The Service should consider only designating the cave cricket foraging area plus a buffer area, or about 5.34 ac, as critical habitat around each cave.

Our Response: We agree that the immediate area around an occupied cave is very important for cave cricket foraging and other reasons, and that this area should be included in the critical habitat designation. However, there are additional physical and biological features that we have identified as essential to the conservation of the species, consistent with the definition of critical habitat in section 3 of the Act. The area recommended by the commenter would not adequately provide for the features and related primary constituent elements that we have identified as being essential to the conservation of these species (see "Critical Habitat" and "Primary Constituent Elements" sections, below).

(8) *Comment:* Based on the Testudo Tube Cave example in Williamson County, 31 acres (26-acre preserve plus a buffer area) may be an adequate area for critical habitat units.

Our Response: Testudo Tube Cave Preserve in Williamson County, Texas, is surrounded by several hundred acres of undeveloped land and is adjacent to an even larger preserved area of several thousand acres, resulting in an effective "preserve" size of much larger than 31 acres. We will be interested in long-term studies of the Testudo Tube Cave Preserve that may provide additional information about the adequacy of the size of the preserve. We note also that designating critical habitat does not establish a preserve (see "Critical Habitat" section).

(9) *Comment:* Boundaries of the critical habitat units are arbitrary and not properly defined. The boundaries should be based on biology and not roads and surface features.

Our Response: While the general size of the critical habitat unit boundaries are based on primary constituent elements needed by the species, in the proposed rule we did use roads and other surface features to make it easy for the public to identify the boundaries. In the changes to the boundaries in this final rule, we did not use surface features, but instead used specific coordinates to describe the boundaries. This allowed us to base boundaries mainly on biological, hydrological, and geological considerations, thereby delineating critical habitat areas more precisely.

(10) *Comment:* Critical habitat needs to be defined to include three new caves that have been discovered to contain

listed species since the proposed rule was published.

Our Response: Of the three caves that were discovered to contain listed species since the proposed rule was published, two (Hackberry Sink and Dancing Rattler Cave) are located in Government Canyon State Natural Area. We have determined that the management for the caves and the species in the Natural Area provides adequate special management considerations for the primary constituent elements, and consequently units within the Natural Area that we proposed for designation are not included in this final rule. (See the "Lands Covered Under Existing Conservation Plans" section for further details.) One cave (Crownridge Canyon Cave) is in a new location, but was not included in this final determination because there would have been no opportunity for public comment had we included the area in critical habitat. Under our rulemaking procedures and the Administrative Procedure Act, we would first need to propose the area for designation and seek public review and comment on such a proposal before a designation would be possible. Because of the court-approved settlement agreement that set a deadline for finalizing this rule, we did not have enough time to republish a proposed rule that might have included the Crownridge Canyon Cave in the critical habitat designation. We note that the listed species in Crownridge Canyon Cave do occur in other caves within the critical habitat designation. Although we are not able to consider including Crownridge Canyon Cave in this designation of critical habitat, we believe the cave and the associated karst ecosystem to be important to the conservation of the species. Because the cave is known to be occupied, it will be covered by applicable provisions under sections 7 (requiring Federal agencies to consult under the "jeopardy standard"), 9, and 10 of the Act.

(11) *Comment:* The Service ignored the potential for the species to occur in void spaces within the bedrock lying between caves.

Our Response: We agree that the species occur within, and use, subsurface voids in karst rock and areas between occupied caves, and we indicated this in the proposed rule for critical habitat. However, we do not have data to quantify such areas. Using the best available data, we designated critical habitat to incorporate the specific areas on which are found the primary constituent elements of a karst ecosystem in the vicinity of caves

known to be occupied by the endangered species.

(12) *Comment:* How can a cave located within an area lacking a healthy surface plant community contain an intact subsurface environment?

Our Response: The surface vegetative community has been significantly altered by urbanization in some of the designated critical habitat units. Since the caves still contain the endangered species, we believe that the areas have maintained the primary constituent elements related to the karst subsurface environment and surface and subsurface drainages. We recognize that intensive management of the remaining surface habitat may be needed to compensate for lack of natural plant and animal communities on the surface.

Issue 2: Data Quality

(13) *Comment:* The available data used in the proposed rule is not adequate to support this critical habitat designation. There seems to be a particular lack of data on species biology, ecology, and distribution of the species and information on which to base the unit boundaries and areas.

Our Response: As per section 4(b)(2) of the Act, we are required to designate critical habitat "on the basis of the best scientific data available," and we believe our designation meets that requirement. In general, the biology and ecology of the karst-adapted species are not well understood. Consequently, the criteria we used to delineate critical habitat, and the areas we delineated, were based on components of the karst ecosystem for which sufficient information exists to determine their importance to the listed species, and for which specific areas can be identified and mapped. The "Information Sources" and "Criteria Used to Designate Critical Habitat" sections below provide additional information regarding the basis for our designation.

(14) *Comment:* The number of Bexar County caves and those containing listed species should be updated to the latest available information. Will the Service designate critical habitat for new locations of the listed species that will be discovered subsequent to publication of the final rule for critical habitat designation?

Our Response: We fully agree that our knowledge of the caves in Bexar County that are known to provide habitat for endangered karst invertebrates should be as current as possible. This knowledge will help the Service evaluate the threats to the species, the status of the species, and plan for their conservation. We recognize that additional caves are likely to be found