

and approved karst management plans submitted by each agency. These plans commit TPWD and DOD to long-term management and monitoring strategies that for the listed species and their habitat on their respective lands. The "Lands Covered Under Existing Conservation Plans" section explains the reasons why we did not include these areas in this designation of critical habitat.

#### Critical Habitat Unit Descriptions

Unless otherwise indicated in the unit descriptions below, each unit encompasses the following components: one or more occupied caves; the footprint of each cave; a 150 m (492 ft) area around the cave to encompass the cave cricket foraging area (50 m (164 ft)) and a buffer of 100 m (328 ft) against the effects of urban edges and red imported fire ant invasion; the surface and subsurface drainage areas associated with each cave as estimated in Veni (2002), to the extent possible; and, where possible, a minimum of 16 ha (40 ac) of surface vegetation encompassing each cave or cave cluster. Also, where possible, each unit was delineated to include contiguous deposits of Zone 1 karst-bearing rock as defined by Veni (2002) underlying the cave cricket foraging area plus buffer, the drainage areas, and the vegetative area.

As explained previously (see "Critical Habitat Delineation" section), some of the units include human-constructed, aboveground, impervious structures (e.g., buildings, paved roads) that do not contain the primary constituent elements and are not considered to be critical habitat. They are included within the mapped unit because subsurface areas under these structures are considered to be critical habitat, since subterranean spaces containing the karst species, or transmitting moisture and nutrients through the karst ecosystem, extend underneath these existing human-constructed structures. Within the units, landscaped areas associated with existing human-constructed structures also are not considered to be critical habitat because they do not contain the primary constituent elements, although they may provide some foraging area for cave crickets and other troglodites that are an important source of nutrients to the karst ecosystem.

Critical habitat boundaries are described as the area bounded by coordinates provided as geographic longitude and latitude coordinate pairs (e.g., -98.7612682, 29.4363049), referenced to North American Horizontal Datum 1983 (NAD 83). Coordinates were derived from 2001

digital orthophotographs obtained from the Bexar County Appraisal District. A description of each unit designated, including the current status of the lands in and around the unit, is presented below.

#### Unit 1e1

Unit 1e1 contains two occupied caves (Table 3). The surface of the unit consists primarily of undeveloped land. The majority of the unit is privately owned, with a small portion occurring on the City of San Antonio's Iron Horse Canyon tract, which was purchased under the Proposition 3 program. Proposition 3 is the Parks Development and Expansion Venue Project passed by San Antonio voters in 2000 for preservation of undeveloped Edwards Aquifer Recharge Zone lands. This unit is surrounded by undeveloped, privately owned land, including the City of San Antonio's Iron Horse Canyon tract and the La Cantera Canyon Ranch karst management area, which is being managed in perpetuity for the conservation of the species under a section 10(a)(1)(B) permit. (See "Lands Covered Under Existing Conservation Plans" section.) This unit contains all of the components described above, with the exception of a portion of the groundwater drainage area and cave cricket foraging area and buffer associated with San Antonio Ranch Pit extends onto La Cantera's Canyon Ranch karst management area, which is being managed for the conservation of the listed karst invertebrates.

#### Unit 1e2

Unit 1e2 contains one occupied cave (Table 3). The surface of the unit consists primarily of undeveloped lands with a few small roads. The entire unit occurs on the City of San Antonio's Iron Horse Canyon property. This unit contains all of the components described above.

#### Unit 1e3

Unit 1e3 contains two occupied caves (Table 3). The surface of the unit consists of undeveloped land with several small roads. The majority of the land is privately owned with a portion of the unit occurring on the City of San Antonio's Iron Horse Canyon property. This unit is surrounded by undeveloped, privately owned land, the City of San Antonio's Iron Horse Canyon property, and TPWD's Government Canyon State Natural Area. This unit contains all of the components described above, with the exception of a portion of the 21 ha (51 ac) subsurface drainage area shared by both caves that occurs on TPWD's Government Canyon

State Natural Area, which we did not include in the designation (see "Lands Covered Under Existing Conservation Plans" section).

#### Unit 2

Two occupied caves occur within this Unit 2 (Table 3). The surface of Unit 2 consists of large, privately owned tracts, which appear to be primarily undeveloped with the exception of several small buildings and two or three small roads. The unit is surrounded by primarily undeveloped privately owned land. This unit contains all of the components described above, with the exception of a small portion of the 80-acre subsurface drainage basin associated with these caves that extends outside of the western boundary of this unit. This area was not included in this final determination because it was not identified in the proposed rule and therefore was not available for public comment. Although not included in the critical habitat area, minimizing impacts to the subsurface drainage area associated with these caves may be important for the conservation of the species in that cave.

#### Unit 3

Unit 3 consists of large tracts of primarily undeveloped privately owned land. La Cantera's Helotes Blowhole/Helotes Hilltop karst management area (approximately 10 ha (25 ac)) occurs entirely within this unit and contains two occupied caves (Table 3). This management area was acquired by La Cantera under their Section 10(a)(1)(B) permit, which requires that these caves and the surrounding lands be managed in perpetuity for the conservation of the species. We did not include these caves and associated management areas in the designation of critical habitat (see "Lands Covered Under Existing Conservation Plans" section). This unit was delineated to encompass the portion of the cave cricket foraging area plus buffer, the 16 ha (40 ac) vegetation area, and the subsurface drainage basin shared by the occupied caves that extends outside of the area protected under the La Cantera HCP. The majority of the unit overlies a contiguous deposit of Zone 1 karst-bearing rock and a small portion of Zone 3 as defined in Veni (2002), which underlies part of the cave cricket foraging area and buffer.

#### Unit 4

Unit 4 includes one occupied cave (Table 3). Lands surrounding Unit 4 consist of relatively large undeveloped tracts with some subdivided residential tracts that appear to be partially developed. The majority of the unit