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Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Austin Blind and Jollyville Plateau Salamanders; Final Rule

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R2–ES–2013–0001; 4500030113]

RIN 1018–AZ24

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Austin Blind and Jollyville Plateau Salamanders

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service, designate critical habitat for the Austin blind salamander (*Eurycea waterlooensis*) and Jollyville Plateau salamander (*Eurycea tonkawae*) under the Endangered Species Act. In total, approximately 4,451 acres (ac) (1,801 hectares (ha)) in Travis and Williamson Counties, Texas, fall within the boundaries of the critical habitat designation. The effect of this regulation is to conserve the Austin blind and Jollyville Plateau salamanders' habitat under the Endangered Species Act.

DATES: This rule becomes effective on September 19, 2013.

ADDRESSES: This final rule and final economic analysis are available on the Internet at *http://www.regulations.gov* and *http://www.fws.gov/southwest/es/AustinTexas/* at Docket No. FWS–R2–ES–2013–0001. Comments and materials received, as well as supporting documentation used in preparing this final rule, are available for public inspection, by appointment, during normal business hours, at U.S. Fish and Wildlife Service, Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

The coordinates, plot points, or both, from which the maps are generated, are included in the administrative record for this critical habitat designation and are available at *http://www.fws.gov/southwest/es/AustinTexas/*, and *www.regulations.gov* at Docket No. FWS–R2–ES–2013–0001, and at the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we may develop for this critical habitat designation will also be available at the three locations stated above.

FOR FURTHER INFORMATION CONTACT: Adam Zerrenner, Field Supervisor, U.S. Fish and Wildlife Service, Austin Ecological Services Field Office, 10711 Burnet Rd, Suite 200, Austin, TX 78758; by telephone 512–490–0057; or by facsimile 512–490–0974. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Endangered Species Act, any species that is determined to be a threatened or endangered species requires critical habitat to be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule.

This rule will designate 4,451 ac (1,801 ha) of critical habitat for the Austin blind salamander and Jollyville Plateau salamander. The critical habitat is located across 33 units within Travis and Williamson Counties, Texas. We are designating the following amount of critical habitat for these two salamanders:

- Austin Blind salamander: 120 ac (49 ha) in 1 unit
- Jollyville Plateau salamander: 4,331 ac (1,753 ha) in 32 units

We have prepared an economic analysis of the designation of critical habitat. In order to consider economic impacts, we have prepared an analysis of the economic impacts of the critical habitat designations and related factors. We announced the availability of the draft economic analysis (DEA) in the **Federal Register** on January 15, 2013 (78 FR 5385), allowing the public to provide comments on our analysis. We have incorporated the comments and have completed the final economic analysis (FEA) concurrently with this final determination.

Peer review and public comment. We sought comments from independent specialists to ensure that our designation is based on scientifically sound data and analyses. We obtained opinions from 22 knowledgeable individuals with scientific expertise to review our technical assumptions, analysis, and whether or not we had used the best available information. These peer reviewers generally concurred with our methods and conclusions and provided additional information, clarifications, and suggestions to improve this final rule. Information we received from peer review is incorporated in this final revised designation. We also considered all comments and information received during the comment periods.

Previous Federal Actions

These actions are described in the Previous Federal Actions section of the final listing rule published elsewhere in today's **Federal Register**.

Background

For background information on the biology, taxonomy, distribution, and habitat of the Austin blind and Jollyville Plateau salamanders, see the Background section of the final listing rule published on elsewhere in today's **Federal Register**.

Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for the Austin blind salamander and Jollyville Plateau salamander during two comment periods. The first comment period associated with the publication of the proposed rule (77 FR 50768) opened on August 22, 2012, and closed on October 22, 2012. We also requested comments on the proposed critical habitat designation and associated draft economic analysis during a second comment period that opened January 25, 2013, and closed on March 11, 2013 (78 FR 5385). We held public meetings and hearings on September 5 and 6, 2012, in Round Rock and Austin, Texas, respectively. We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during these comment periods.

We received a total of approximately 416 comments during the public comment periods for the proposed listing rule, proposed critical habitat rule, and associated documents. All substantive information provided during the comment periods has either been incorporated directly into the final critical habitat rule or addressed below. Comments from peer reviewers and state agencies are grouped separately below. All other substantial public comments are grouped into general issues specifically relating to the proposed critical habitat designation for these two salamander species. Beyond the comments addressed below, several commenters submitted additional reports and references for our consideration, which were reviewed and incorporated into the critical habitat final rule as appropriate.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions

during the first comment period from 22 knowledgeable individuals with scientific expertise with the hydrology, taxonomy, and ecology that is important to these salamander species. We received responses from 13 of the peer reviewers.

During the first comment period, we received public comments that were in disagreement with our proposed rule, and we also developed new information related to the listing decision. Therefore, we conducted a second peer review on (1) salamander demographics and (2) urban development and stream habitat. During this second peer review, we solicited expert opinions from knowledgeable individuals with expertise in the two areas identified above. We received responses from eight peer reviewers.

Aside from the specific comments addressed below, peer reviewers from both comment periods generally agreed that the best available scientific information was used to develop the proposed rule and the U.S. Fish and Wildlife Service's (Service) analysis of the available information was scientifically sound.

Peer Reviewer Comments

(1) *Comment:* Several peer reviewers stated that there should be larger subsurface areas designated as critical habitat considering that these species heavily rely upon subterranean habitat. One suggested that more emphasis be placed on the Barton Springs and the Northern Edwards segments of the Edwards Aquifer because the recharge zones that allow water to enter these segments of the aquifer support habitat for these species. Another suggested that the recharge and contributing zones of the aquifers be included in critical habitat.

Our Response: In accordance with section 3(5)(A) of the Endangered Species Act (Act), we are designating critical habitat in specific areas within the geographic area occupied by the species at the time of listing that contain the physical and biological features essential for the conservation of the species and which may require special management. We acknowledge that the recharge zone of the aquifers supporting salamander locations is very important to the conservation of the species. However, our goal with this critical habitat designation is to delineate the habitat that is physically occupied and used by the species rather than delineate all land or aquatic areas that influence the species. There is no evidence to support that the entire recharge zone of the aquifers is occupied by the salamander species.

(2) *Comment:* One peer reviewer stated that the 984-foot (ft) (300-meter (m)) extent of salamander populations within the subsurface could be increased to 3,281 ft (1,000 m), because this is the distance that larval *Eurycea lucifiga* (a related species) were found from a cave entrance. Another reviewer stated this distance could be increased to 20,013 ft (6,100 m) because this is the distance across which *E. tridentifera* (another related species) were observed in the subsurface. Two reviewers stated that using one distance for all sites is flawed because this distance does not consider site-specific hydrogeological conditions and may greatly underestimate or overestimate the true amount of subsurface habitat. One reviewer stated that the Service should contract a basic hydrogeological study for each site. This study should include examination and analysis of hydrogeological factors such as lithology, fractures, morphologic features, related karst features, flow rates and behavior, cave maps, and the development of a conceptual model of the origin of each locality's groundwater drainage system. Additionally the results of any groundwater tracer studies should be included.

Our Response: The Northern Segment of the Edwards Aquifer is poorly studied and site-specific hydrogeological information does not exist for most of the salamander sites. However, we have reviewed the available hydrogeological information and determined that there is not enough information to modify our original 984-ft (300-m) circular subsurface designation without further long-term study. We acknowledge that related salamander species in Texas have subterranean populations that extend further than our designation. However, we are delineating the 984-ft (300-m) distance based upon the population extent of the Austin blind salamander. We believe this species is the best representation of the subterranean habits of the Jollyville Plateau salamander due to its genetic relatedness and geographic proximity to the Jollyville Plateau salamander. Due to time constraints and limited fiscal resources, we are not able to conduct a hydrogeological study for each site. Fully understanding all of the subsurface flow patterns and connections for every salamander site will require numerous years of research. In addition, peer reviewers agreed that it is acceptable to use and apply ecological information on closely related species if species-specific information is lacking. Therefore, as required by section 4(b)(2) of the Act, we used the best scientific data available to designate critical habitat. If additional data become available in the future, the Secretary can revise the designation under the authority of section 4(a)(3)(A)(ii) of the Act, as appropriate.

(3) *Comment:* One reviewer provided site-specific hydrologic information on Wheless Spring and Buttercup Creek-area caves that they believed should be considered when delineating subsurface critical habitat.

Our Response: We have reviewed the information and determined that there is not enough information to modify our original 984-ft (300-m) circular subsurface designation for these sites without further long-term study. For example, knowing a general groundwater flow path of Wheless Spring or Buttercup Creek caves does not preclude the flow of groundwater and movement of salamanders in other directions to and from the site, and our circular subsurface designation captures this possibility.

Comments From States

Section 4(i) of the Act states, ''the Secretary shall submit to the State agency a written justification for his failure to adopt regulations consistent with the agency's comments or petition.'' Comments received from the State regarding the proposal to designate critical habitat for the Austin blind and Jollyville Plateau salamanders are addressed below.

(4) *Comment:* State Representative Tony Dale, Texas Comptroller of Public Accounts Susan Combs, United States Senator John Cornyn, and United States Representative John Carter all stated that the draft economic analysis (DEA) underestimates the economic impact of the listing and critical habitat designation. These comments reference impacts including increased cost of development, increased cost of transportation projects, increased traffic congestion, and decreased tax revenue as being omitted from the DEA.

Our Response: As described in Chapter 2 of the DEA, the analysis qualitatively describes the baseline protections accorded the Austin blind and Jollyville Plateau salamanders absent critical habitat designation (including the listing of these species) and monetizes the potential incremental impacts precipitated specifically by the critical habitat designation. The Service does not anticipate requesting additional project modifications to avoid adverse modification of critical habitat beyond those requested to avoid jeopardy to the species. Therefore,

incremental impacts associated with the designation of critical habitat are expected to be limited to administrative costs of section 7 consultation and do not include impacts, such as increased cost of development, increased cost of transportation, and decreased tax revenue.

(5) *Comment:* The Texas Comptroller of Public Accounts stated that the DEA should consider the impact of regulatory uncertainty.

Our Response: Chapter 2 of the DEA notes that indirect impacts due to regulatory uncertainty may occur. The types of data necessary for quantifying costs associated with regulatory uncertainty, such as information linking public perceptions of regulation to economic choices, are unavailable. As a result, potential impacts due to regulatory uncertainty are described qualitatively but cannot be monetized in the DEA.

(6) *Comment:* The Texas Comptroller of Public Accounts stated that the DEA should use a lower discount rate to reflect changes in the economy over the last decade.

Our Response: In accordance with OMB Circular A–4, the DEA evaluates incremental impacts using two discount rates. The body of the report presents results using a 7 percent discount rate. Appendix B presents results using a 3 percent discount rate for comparison.

(7) *Comment:* The Texas Department of Transportation asserts that the DEA underestimates costs associated with future transportation projects within critical habitat. Projects that occur within critical habitat typically require significant engineering to avoid adverse modification of critical habitat. As an example, one 2008 project in Bexar County, Texas, resulted in incremental project modification costs of approximately $2.3 million for the construction of a 400-ft (122-m) section of road. The DEA does not estimate impacts associated with such costs.

Our Response: The Service does not anticipate requesting additional project modifications to avoid adverse modification of critical habitat above those to avoid jeopardy to these species. As a result, any project modification costs incurred for future transportation projects are assumed to occur in the baseline and are not quantified in the analysis. However, text has been added to Section 4.4 of the final economic analysis (FEA) noting the potential for large incremental costs if additional engineering is required to avoid adverse modification of critical habitat by transportation projects beyond that to avoid jeopardy.

(8) *Comment:* The Texas Comptroller of Public Accounts states that the DEA does not include a reasonable comparison of costs and benefits. The DEA should use existing studies and procedures to describe biological benefits in monetary terms.

Our Response: The primary purpose of this critical habitat designation is to support the conservation of the Austin blind and Jollyville Plateau salamander species. As described in Chapter 5 of the DEA, quantification and monetization of this conservation benefit requires information on the incremental change in the probability of conservation resulting from the critical habitat designation. Such information is not available, and as a result, monetization of the primary benefit of critical habitat designation is not possible.

(9) *Comment:* The Texas Comptroller of Public Accounts states that the DEA is unclear about whether the proposed critical habitat designation will result in any conservation benefit to the salamanders.

Our Response: The DEA discusses only economic benefits of the critical habitat designation. Conservation benefits of the critical habitat designation, such as Federal regulatory protection and public education, are described in the Exclusions section of this final critical habitat rule.

(10) *Comment:* The Texas Parks and Wildlife Department (TPWD) commented that the 984-ft (300-m) area proposed for subsurface critical habitat and the 164-ft (50-m) area proposed for surface habitat may not accurately represent the needs of the species. The methods of delineation described in the proposed rule may over-represent habitat in some case while under-representing it in others. Factors that must be appropriately considered include ground water recharge, drainage basins, flow routes, and springsheds directly relevant to salamanders' known life history. This analysis will likely require evaluation of information derived from GIS analysis of surface topography, potentiometric studies, dye tracing, and data from the Texas Speleological Survey database (primarily cave maps). Methods for the delineation of hydrogeologic areas in karst of the Edwards Aquifer can be found in Veni (2003).

Our Response: Due to time constraints and our limited fiscal resources, we are not able to conduct a hydrogeological evaluation for each site. Based on our review, the critical habitat areas constitute our best assessment at this time of areas that are within the geographical range occupied by at least one of the two salamander species and are considered to contain features essential to the conservation of these species. If additional data become available in the future, the Secretary can revise the designation under the authority of section 4(a)(3)(A)(ii) of the Act, as appropriate. Please see our response to Comment 2 above.

Public Comments

Critical Habitat Designation

(11) *Comment:* Salamander critical habitat is not determinable. The information sufficient to perform required analyses of the impacts of the designation is lacking and the biological needs of the species are not sufficiently well known to permit identification of an area as critical habitat. The Service makes numerous admissions that it does not understand the surface and subsurface habitat needs of the salamanders, lacks specific ecological and hydrogeological data, fails to understand the biological needs of the species, and repeatedly requests information on how the critical habitat designation can be improved for the final rule. Also, the Service does not have enough species-specific information to determine what the needs of each of the salamanders are and improperly uses other salamanders, amphibians, and *Eurycea* species to determine critical habitat.

Our Response: While we recognize the uncertainty inherent in identifying subsurface habitat boundaries for these two salamander species, we used the best available scientific evidence at the time of this final rule to designate critical habitat, as required by the Act. Making a not determinable finding for critical habitat only delays the decision for 1 year, after which we still have to designate critical habitat, per the Act. Fully understanding all of the subsurface flow patterns and connections for every salamander site will require numerous years of research. In addition, peer reviewers agreed that it is acceptable to use and apply ecological information on closely related species if species-specific information is lacking.

(12) *Comment:* One commenter stated that because the Austin blind salamander is unlike the Jollyville Plateau salamander in its exclusive use of deep aquifer habitat it is inappropriate to use Austin blind salamander ecological habits for the delineation of all the proposed critical habitat units for the Jollyville Plateau salamander.

Our Response: We disagree that the Austin blind salamander is unlike the Jollyville Plateau salamander,

considering that this species has cave populations that live exclusively in subterranean habitats. Furthermore, peer reviewers agreed that it is acceptable to use and apply ecological information on closely related species if species-specific information is lacking.

(13) *Comment:* The Service has not demonstrated that salamanders actually occupy the entirety of critical habitat units. Except where the Service has actual data on downstream occupation, the only area it can designate as critical habitat is the occupied spring outlet. There is no evidence of the extent of occupied subterranean habitat. This approach is legally insufficient and arbitrary because it circumvents the Service's obligation to identify critical habitat that is occupied at the time a species is listed.

Our Response: We believe the proposed and final critical habitat rules are legally sufficient. Based on the best available scientific evidence at the time of this final rule, the surface critical habitat component was delineated by starting with the spring point locations that are occupied by the salamanders and extending a line upstream and downstream 262 ft (80 m), because this is the farthest a salamander has been observed from a spring outlet. The subsurface critical habitat was delineated based on evidence that suggests the salamander population can extend at least 984 ft (300 m) from the spring opening through underground conduits. We defined an area as occupied based upon the reliable observation of a salamander species by a knowledgeable scientist. Although we do not have data for every site indicating that a salamander was observed 262 ft (80 m) downstream, we believe it is reasonable to consider the downstream habitat occupied based on the dispersal capabilities observed in individuals of the same species or very similar species. See the *Criteria Used To Identify Critical Habitat* section in the final critical habitat rule for more information.

(14) *Comment:* The proposed rule does not name the scientist who identified salamanders at each site or the date that the observations were made.

Our Response: We do not believe that this level of detail is needed in the rulemaking. However, all materials used in preparation of this rule are available for inspection, by appointment, during normal business hours, at U.S. Fish and Wildlife Service, Austin Ecological Services Field Office,10711 Burnet Rd, Suite 200, Austin, TX 78758; by telephone 512–490–0057; or by facsimile 512–490–0974.

(15) *Comment:* It is improper and, in fact, damaging to both the Service and the Act for the Service to cast critical habitat designation over age-restricted, residential homes and then narratively state that those homes are excluded from critical habitat. If the Service does not intend to include improvements and developed areas in critical habitat, it should draw them out on properly scaled maps.

Our Response: Removing developed areas from our critical habitat maps is not practical with current mapping technologies. Because we are unable to delineate specific stream segments on the map due to the small size of the streams, we drew a circle with a 262-ft (80-m) radius representing the extent the surface critical habitat of the site exists upstream and downstream. Any such lands left inside surface critical habitat boundaries shown on the maps of this final rule have been excluded by text in the final rule and are not designated as critical habitat. Therefore, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the underground or surface critical habitat (see the *Application of the ''Adverse Modification'' Standard* section of the final critical habitat rule). In addition, most of our critical habitat is a subsurface designation and only includes the physical area beneath any buildings on the surface.

(16) *Comment:* A study by the City of Austin suggests that obvious, discrete spring orifices are not the sole habitat of the Jollyville Plateau salamander. These salamanders have been documented to move at least 262 ft (80 m) upstream and downstream from a spring opening, which is significantly farther than reported in the proposed rule. However, this 262-ft (80-m) distance is likely an underestimate of the dispersal capabilities of these salamanders.

Our Response: We have incorporated this new information into our final surface critical habitat designation. See the *Criteria Used To Identify Critical Habitat* section in the final critical habitat rule for more information.

Primary Constituent Elements (PCEs)

(17) *Comment:* The Service has improperly identified the physical or biological features essential to the conservation of the species. PCE 1 is meaningless and legally insufficient because there are no parameters describing what water quality levels actually exert lethal or sublethal effects on the salamanders. PCE 2 does not actually say what size rock is needed or how many such rocks are needed and in what configuration.

Our Response: Our description of the PCEs has been updated in the final critical habitat rule, and we believe that they are accurate and sufficiently detailed. While we have specified rock size needed by these species, the changes we made do not address what water quality levels actually exert lethal or sublethal effects on the salamanders or the number or configuration of rocks because this information is unknown.

(18) *Comment:* The proposed rule improperly designates critical habitat units in heavily developed areas that the Service acknowledges do not contain the necessary elements for the conservation of both salamanders. The Service acknowledges that some critical habitat units contain only some elements of the physical or biological features necessary to support Austin blind and Jollyville Plateau salamanders. It is legally improper for the Service to designate areas that do not contain the PCEs as critical habitat at time of designation.

Our Response: Occupied critical habitat always contains at least one or more of the physical or biological features that provide for some life-history needs of the listed species. However, an area of critical habitat may be in a degraded condition and not contain all physical and biological features or PCEs at the time it is designated, or those features or elements may be present but in a degraded or less than optimal condition. In the case of a highly urbanized salamander site, some PCEs such as rocky substrate and access to the subsurface habitat may be present, even if the water quality PCE is not. Salamander populations at degraded sites, such as these, have lower probabilities of persistence than undeveloped sites; however, their probabilities of persistence may increase where the ability exists to develop, restore, or improve functionality of certain PCEs. We consider these sites to meet the definition of critical habitat because they are occupied at the time of listing and contain those physical or biological features essential to the conservation of the species, which may require special management considerations or protections.

(19) *Comment:* By drawing a circle with a radius of 984 feet (300 m) around springs, the Service appears to be taking the position that urban areas that contain 55 percent or more impervious cover are beneficial and are essential for the conservation of the species. This is in direct conflict with the threats analysis performed by the Service. If a

highly urbanized area that has been developed for 30 to 40 years and has more than 55 percent impervious cover with no water quality controls is considered to contain features essential for the conservation of the Jollyville Plateau salamander, then it is pretty clear that this area does not require special management considerations or protection.

Our Response: Please see our response to Comment 18 above. Special management considerations or protection may be needed for highly urbanized areas in order to develop, restore, or improve functionality of certain PCEs.

(20) *Comment:* The proposed rule does not list or describe the PCEs for subterranean critical habitat. Further, it does not describe how subterranean critical habitat might be adversely modified or identify the potential threats to the subterranean critical habitat.

Our Response: The PCEs have been clarified in this final rule to reflect different PCEs for the surface and subsurface habitats. A description of how critical habitat may be adversely modified is found in the *Application of the ''Adverse Modification'' Standard* section of the final critical habitat rule. Regarding threats to the subsurface habitat, we described different scenarios under which subsurface habitat could be destroyed or degraded under *Factor A: The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range* in the final listing rule that published elsewhere in today's **Federal Register**.

(21) *Comment:* The Jollyville Plateau salamander is not confined to springs discharging from only the Edwards formation. There is at least one significant Jollyville Plateau salamander site in a spring that discharges from the Walnut formation (Ribelin Spring), another in the Glen Rose (Pit Spring), and another that appears to be alluvial (Lanier Spring). Additionally, water from the Trinity aquifer and Blanco River contribute to the Barton Springs segment discharge (Johnson *et al.* 2012), highlighting the importance of these water sources as well. Tritium data documents that groundwater at the Edwards/Walnut contact is pre-modern in age (recharged prior to about 1950) whereas the springs and creeks generally contain modern water (recharged after about 1950). This suggests that many springs are not directly connected to the shallow groundwater table.

Our Response: We agree with this assessment and have edited the language accordingly in the final listing and critical habitat rules.

(22) *Comment:* Water temperatures for Jollyville Plateau salamander sites have a greater range than presented in the proposed rule. For example, one undeveloped Jollyville Plateau salamander spring (Cistern) has a temperature range from 66.4 to 73.4 degrees Fahrenheit (F) (19.1 to 23.0 degrees Celsius (C)).

Our Response: The PCEs for the Jollyville Plateau salamander have been updated to incorporate this broader temperature range.

(23) *Comment:* On pg. 50809, the proposed rule stipulates: ''During periods of drought or dewatering on the surface in and around spring sites, access to the subsurface water table must exist to provide shelter and protection.'' The Austin blind salamander is an almost entirely subterranean species so subterranean habitat is critically important, regardless of whether drought conditions exist or not. However, we also believe this to be true for all proposed species, that the subterranean habitat is a critical component necessary for survival of each species. All central Texas *Eurycea,* with the possible exception of Typholomolge (*E. rathbuni, E. waterlooensis, E. robusta;* Hillis *et al.* 2001), depend heavily on both surface and subsurface habitat. This dependency is evidenced by natural history observations such as (1) absence of eggs laid in surface habitat (Nathan Bendik and Laurie Dries, City of Austin, personal observation), (2) use of subterranean habitat as refugia (Bendik and Gluesenkamp 2012, entire), as well as the distribution of numerous ''surface'' species (i.e., have well-developed eyes and pigmentation) occurring in both springs and caves (Chippindale *et al.* 2000).

Our Response: These comments were incorporated in the final critical habitat rule.

Uniform Critical Habitat Designations

(24) *Comment:* Several commenters stated that we did not take site-specific hydrogeologic features into account when delineating critical habitat.

Our Response: Please see our response to Comment 2 above.

(25) *Comment:* Several commenters stated that our critical habitat designations were not sufficiently large enough to protect the species from threats that could impact habitat from outside critical habitat boundaries, such as urban development in the watershed.

Our Response: See our response to Comment 1 above. In addition, the purpose of designating critical habitat is not to remove threats for the species, but is instead to identify those areas occupied by the species at the time it is listed on which are found those physical or biological features essential to the conservation of the species and which may require special management or protection. While our designation of critical habitat does not remove the threat from urban development, for example, it does identify those areas that are critical to the conservation of the species, which provides awareness about occupied sites to nearby landowners and land managers, and it informs them that they should consider their impacts on those sites. A critical habitat designation does not signal that areas outside the designated area is unimportant or may not need to be managed or conserved for recovery of the species. We acknowledge that areas outside our critical habitat designations, such as the recharge zone of the aquifers supporting salamander locations, are very important to the conservation of the species. However, our goal with this critical habitat designation is to delineate the habitat that is physically occupied and used by the species rather than delineate all land or aquatic areas that influence the species.

(26) *Comment:* Some commenters pointed out that dye trace studies conducted by the City of Austin indicate subsurface flow in the Jollyville Plateau area is generally to the north, east, and northeast. Another dye trace study conducted by the City of Austin indicates that groundwater flow is strongly influenced by the regional dip. By the nature of water flow, elevations lower than the elevation of a spring outlet in this area cannot recharge the spring. Furthermore, no activities downgradient or downstream of a spring can adversely impact that spring. Therefore, critical habitat should not be designated below the elevation of a spring outlet.

Our Response: We are designating subsurface areas that may be occupied by the salamander species, and we assume salamanders are capable of moving upgradient (against subsurface flow) just as they move upstream on the surface. In general, we agree that it is less likely that downgradient activities would adversely change water quality or quantity in a spring compared to upgradient activities. However, because the subsurface is karst, the exact extent of groundwater recharge areas is difficult to predict without extensive long-term studies. In the absence of these types of studies, we cannot be certain that an area a short distance downgradient does not contain subsurface habitat connected to the

spring in some way. It is possible that activities downgradient of a spring could impact that spring. For example, a pumping well on one side of a drainage, if pumped long enough, or at a sufficiently high rate (or a combination of these), can draw down the water table causing a spring on the opposite side of a drainage to go dry or flow at a lower rate.

(27) *Comment:* Krienke Springs has an additional recharge feature located downstream, outside of the critical habitat Unit 1. We recommend extending Jollyville Plateau salamander critical habitat Unit 1 downstream to include this recharge feature.

Our Response: Please see our response to Comment 1 regarding why we are not designating critical habitat in areas that are both not occupied by the species and do not contain the physical and biological features essential for the conservation of the species.

Exclusions

(28) *Comment:* Several requests for exclusion and comments were made about specific habitat conservation plans (HCPs):

(1) Four Points has voluntarily addressed the Jollyville Plateau salamander in their HCP and employs measures to avoid, minimize, and mitigate for potential impacts to the Jollyville Plateau salamander that may occur on the property, thereby satisfying permit issuance criteria under section 10(a)(1)(B) of the Act if the species were to become listed in the future;

(2) the Buttercup Creek HCP is stated as not covering the Jollyville Plateau salamander when in fact it does and with ''no surprises'' assurances. Along with development of the Buttercup Creek HCP, the Service and Forestar entered into a *Permit Implementing and Preserve Management Agreement,* which fulfills the criteria in the proposed rule to ameliorate threats to the Jollyville Plateau salamander;

(3) the Grandview Hills HCP covers land within critical habitat Unit 14, which contains three springs that are occupied by the Jollyville Plateau salamander, which are covered under the Tomen-Parke Associates, LTD 10(a)(1)(B) permit with ''no surprises'' assurances for the Jollyville Plateau salamander; and

(4) Ribelin Ranch HCP covers a substantial portion of critical habitat Unit 17, and although the Jollyville Plateau salamander is not a covered species under this HCP, it does provide numerous conservation measures that significantly benefit the species. Requests for exclusion from critical habitat were made for Four Points, Buttercup Creek, Grandview Hills, and Ribelin Ranch HCPs by the HCP permit holders.

Our Response: See the *Exclusions Based on Other Relevant Impacts* section in the final critical habitat rule for our discussion related to areas excluded under the Four Points, Buttercup Creek, and Grandview Hills HCPs. Regarding the Ribelin Ranch HCP, the permittee permanently preserved golden-cheeked warbler (*Setophaga chrysoparia*) habitat onsite, which includes Jollyville Plateau salamander occupied springs. The permittee committed to xeriscaping and replanting developed areas with native vegetation, installing fences between developed areas and preserves, and restricting access to the preserves to authorized personnel only. However, the Ribelin Ranch HCP does not include the Jollyville Plateau salamander as a covered species and states that: (1) stormwater runoff from developed areas will enter Bull Creek and West Bull Creek (Section 3.5); (2) some degradation of water quality may occur due to runoff, which may negatively impact the salamander (Sections 5.1.1.2, 5.1.1.9, 5.1.2.7, 5.1.2.9); and (3) increased impervious cover may result in a decrease in spring flows in Bull and West Bull creek drainages (Section 5.1.1.7, 5.1.2.7). Additionally, the commenter stated that the high school upstream of the spring will be expanding in the future. Because the Jollyville Plateau salamander is not a covered species under the Ribelin Ranch HCP and the conservation measures do not significantly benefit the species, we determined that the benefits of excluding Ribelin Ranch from critical habitat do not outweigh the benefits of including this area.

(29) *Comment:* The Service ignores most HCPs already in place. Those areas protected by HCPs, management plans, and water quality programs do not require special management or protection because water quality programs and other HCPs within the area provide substantial management considerations and protection.

Our Response: In designating critical habitat, we identified areas, per the definition of critical habitat in the Act, occupied by one of these species of salamander on which are found physical or biological features (a) essential to their conservation, and (b) which may require special management considerations or protection. We did consider and exclude all HCPs that specifically covered the Austin blind or Jollyville Plateau salamanders in their HCP and for which the Service issued a permit and provided ''No Surprises'' coverage. For more on the weighing of the benefits of inclusion with the benefits of exclusion for these areas, see the Exclusions section in the final critical habitat rule.

(30) *Comment:* The City of Austin stated that there is no benefit to excluding critical habitat for the Austin blind salamander based on the plan area of the City of Austin's Barton Springs HCP.

Our Response: We agree with this assessment. At the time of the proposed rule, we proposed critical habitat for the Austin blind salamander in this area, but considered excluding lands under the Barton Springs HCP. However, in accordance with section 4(b)(2) of the Act, we have determined not to exclude lands under the Barton Springs HCP and to designate critical habitat for the Austin blind salamander in this area in the final critical habitat rule.

(31) *Comment:* One commenter requested exclusion of the Knox Tract in Jollyville Plateau salamander critical habitat Unit 30 because it is not essential to the conservation of the species due to the amount of development in the area, and the benefits of exclusion outweigh the benefits of inclusion. The benefits of exclusion include avoiding financial impacts to a small developer.

Our Response: We have evidence that some of the PCEs are present at this site, such as rocky substrate and access to subsurface habitat. Special management is needed to protect the PCEs that are present within this unit. Regarding whether or not Unit 30 is essential to the conservation of Jollyville Plateau salamanders, salamander populations at degraded sites such as these have lower probabilities of persistence than undeveloped sites. The commenter did not specify the benefits of including the unit in our critical habitat designation. We think those benefits include educational and regulatory benefits afforded to all of our critical habitat designations (see comment 28 above). We conducted a final economic analysis that considered how small businesses might be affected by the critical habitat designation. Based on the expected number of consultations, this analysis estimated the cost per small developer ranges from 0.05 to 0.09 percent of the annual revenue of the average small developer ($4.6 million). Therefore, we concluded that the final critical habitat rule would not result in a significant economic impact on small developers. More specifically, our analysis estimated the incremental impact to Unit 30 could be $940,000 over the next 23 years, due to the administrative cost of consultation (Industrial Economics

2013, p. 4–14). Furthermore, 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 consultation. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

(32) *Comment:* Several commenters requested exclusion of critical habitat units (Units 3, 14, 17, and 31 for the Jollyville Plateau salamander) due to significant economic impacts, stating that these economic costs will far exceed any limited educational and regulatory benefits.

Our Response: We have considered the economic impacts of designation to all parties through an economic analysis and have determined that this designation will not result in significant economic impacts. According to our draft economic analysis, the total economic cost of designating critical habitat Units 3 and 14 was estimated to be $3.4 million and $120,000, respectively, over the next 23 years. The total economic cost of designating critical habitat Unit 17 was estimated to be $380,000 over the next 23 years. The total economic cost of designating critical habitat Unit 31 was estimated to be $930,000 over the next 23 years. All of these costs are administrative in nature and result from the consideration of adverse modification in section 7 consultations (Industrial Economics 2013, Exhibit 4–5). In addition, we concluded that the critical habitat final rule would not result in a significant economic impact on a substantial number of small entities (see *Regulatory Flexibility Act (5 U.S.C. 601* et seq.) section in the final critical habitat rule).

(33) *Comment:* Clarify if a Four Points HCP exclusion includes the location of the Four Points shaft.

Our Response: The Four Points HCP exclusion does not include the Four Points shaft location because the shaft is not located within the area that was proposed as critical habitat.

Draft Economic Analysis (DEA)

(34) *Comment:* The DEA should have been published at the same time as the proposed rule.

Our Response: At the time the proposed rule was published for the four central Texas salamanders on August 22, 2012, we lacked the available economic information necessary to complete the draft economic analysis. However, upon completion of the draft economic analysis, we published a notice of availability of the draft economic analysis for the designation of critical habitat for these species on January 25, 2013 (78 FR 5385) and reopened the public comment period for the proposed designation. The draft economic analysis was available for public review and comment for 45 days, beginning on January 25, 2013, and ending on March 11, 2013.

Our current regulation at 50 CFR 424.19 states: ''The Secretary shall identify any significant activities that would either affect an area considered for designation as critical habitat or be likely to be affected by the designation, and shall, after proposing designation of such an area, consider the probable economic and other impacts of the designation upon proposed or ongoing activities.'' The Service interprets 'after proposing' to mean after publication of the proposed critical habitat rule. While we have proposed a revision to these regulations to change the timing of the economic analysis, we still follow our current practice until such regulation revision is finalized.

(35) *Comment:* Some commenters stated that the surface watersheds draining into critical habitat areas were not delineated correctly in the DEA. The DEA includes areas a great distance downgradient of salamander habitat that are extremely unlikely to impact habitat.

Our Response: As described in the proposed rule, activities occurring upstream of salamander habitat may result in increased flow rates, sedimentation, contamination, changes in stream morphology and water chemistry, and decreased groundwater recharge. Therefore, economic activity may affect proposed critical habitat for the salamanders even if the activity occurs beyond the boundary of the proposed designation. The identification of upstream areas requires detailed analysis of hydrologic and geographic information. This type of analysis is beyond the scope of the DEA. However, to avoid understating impacts, the DEA makes the simplifying assumption that activities occurring throughout the entire watershed associated with each proposed critical habitat unit may affect the salamanders and their habitat. This assumption may overstate impacts in cases where significant economic activity is forecast in areas downstream of proposed critical habitat. Text has been added to Chapter 4 of the FEA clarifying the uncertainty associated with this assumption.

For the purposes of assessing impacts to the sites from impervious cover, the Service did revise the surface watersheds that were presented in the proposed rule. The revised surface watersheds were delineated to capture only the area draining directly into the surface habitat of specific sites (Service 2013).

(36) *Comment:* One commenter believes that the DEA contradicts itself by first indicating that water management activities are not a threat to the Jollyville Plateau salamander but are a threat to the Austin blind salamander (paragraph 26 of the DEA), then stating that water management activities are a threat later (paragraph 135).

Our Response: Paragraph 26 of the DEA states that ''Construction of dams and impoundments alter the natural hydrological regime and may negatively affect salamander habitat. In particular, the entire range of the Austin blind salamander has been affected by the construction of impoundments for recreational purposes in the Barton Springs system.'' Providing this example for the Austin blind salamander was not meant to downplay the significance of water management as a threat to the Jollyville Plateau salamander. Clarifying language has been added to the FEA.

(37) *Comment:* One commenter states that the DEA does not correctly identify the watersheds associated with proposed critical habitat. In particular, the proposed unit for the Austin blind salamander should be associated with the Barton Creek watershed rather than the Lake Austin watershed.

Our Response: The DEA verifies information provided in the proposed rule using GIS data for HUC–12 watersheds. According to GIS data, the proposed unit for the Austin blind salamander is located within the Lake Austin HUC–12 watershed.

(38) *Comment:* One commenter notes that the DEA refers to the Town Lake watershed, which has since been renamed the Lady Bird Lake watershed.

Our Response: A footnote has been added to the FEA indicating that Town Lake was renamed Lady Bird Lake by the City of Austin City Council on July 26, 2007.

(39) *Comment:* One commenter notes that the DEA refers to the entire range of the Austin blind salamander as being affected by impoundment construction; however, the subterranean range is not

known. This comment suggests referring instead to ''the entire known range.''

Our Response: The text of the FEA has been changed as suggested.

(40) *Comment:* One commenter provides clarification that the City of Austin has submitted an amended Barton Springs HCP to the Service that includes the Austin blind salamander as a covered species.

Our Response: Chapters 2 and 3 of the DEA note that the Barton Springs Pool HCP is currently undergoing revision to add the Austin blind salamander as a covered species.

(41) *Comment:* One commenter provides new information about the Water Quality Protection Lands program overseen by the Wildlands Conservation Division of the Austin Water Utility. This program provides baseline protection to the Austin blind salamander by purchasing open space within the Barton Springs Zone.

Our Response: Text has been added to Chapter 3 of the FEA describing this conservation program.

(42) *Comment:* One commenter states that the DEA should not include costs to protect the Austin blind salamander and its habitat that result from protection of the co-occurring Barton Springs salamander under the Barton Springs Pool HCP.

Our Response: Costs associated with baseline conservation, such as that provided by the Barton Springs Pool HCP, are not quantified in the DEA. To clarify, the DEA estimates present-value incremental impacts of approximately $43,000 in the area currently covered by the Barton Springs Pool HCP. Of this cost, approximately $42,000 is associated with the ongoing programmatic reinitiation of consultation for the Barton Springs Pool HCP. The remainder of forecast impacts is associated with formal consultation on a small number of residential development projects.

(43) *Comment:* The DEA mistakenly referred to Schlumberger, Ltd. as the current permittee of the Concordia HCP.

Our Response: The most recent amendment to this HCP issued the permit to Concordia University Texas at Austin, as noted in the comment. The FEA has been revised accordingly.

(44) *Comment:* One commenter notes that the Edwards Aquifer Protection Program established by the Texas Commission on Environmental Quality does not cover the Jollyville Plateau salamander's entire habitat. In particular, the majority of the Bull Creek watershed is not protected by this program.

Our Response: The DEA states that conservation measures implemented as part of the Edwards Aquifer Protection Program may provide some benefit to the Jollyville Plateau salamander and its habitat. The information provided in the comment is consistent with this statement. Additional clarification has been added to the FEA to indicate that not all areas occupied by the Jollyville Plateau salamander will benefit from this program.

(45) *Comment:* One commenter states that the DEA incorrectly claims that the Jollyville Plateau salamander is not a covered species under the Buttercup Creek HCP.

Our Response: The Jollyville Plateau salamander is identified as ''*Eurycea* new species'' in the Buttercup Creek HCP and was later identified as the Jollyville Plateau salamander. This correction has been made in the description of baseline protections in the FEA.

(46) *Comment:* One commenter states that the claim made in paragraph 92 of the DEA that ''there are currently no known local statutes or regulations that directly protect the species'' is inaccurate and contradicted later in Section 3.3 of the DEA.

Our Response: This statement is meant to convey the fact that at the time the DEA was written, we were not aware of any statutes or regulations with the primary purpose of protecting the Austin blind or Jollyville Plateau salamanders. However, many local measures provide ancillary protection to the species. This sentence has been removed from the FEA.

(47) *Comment:* Multiple comments express concern that the DEA overstates incremental costs associated with critical habitat designation by forecasting reinitiations of section 7 consultations for existing HCPs.

Our Response: The DEA conservatively assumes that consultations on HCPs will be reinitiated to avoid underestimating costs associated with the proposed designation. In some cases, HCP permittees may not decide to amend their permits, thus not requiring the Service to reinitiate consultation to include coverage of the salamanders and their associated critical habitat. Language has been added to the FEA indicating this possibility.

(48) *Comment:* Multiple commenters state that the DEA understates the cost of section 7 consultation.

Our Response: The DEA relies on the best available information on administrative costs. As described in Exhibit 2–1 of the DEA, the consultation cost model is based on: data gathered from three Service field offices (including a review of consultation records and interviews with field office staff); telephone interviews with action agency staff (for example, the Bureau of Land Management, Forest Service, U.S. Army Corps of Engineers); and telephone interviews with private consultants who perform work in support of permittees. In the case of Service and other Federal agency contacts, we determined the typical level of effort (hours or days of work) required to complete several different types of consultations, as well as the typical Government Service (GS) level of the staff member performing this work. In the case of private consultants, we interviewed representatives of firms in California and New England to determine the typical cost charged to clients for these efforts (for example, biological survey, preparation of materials to support a Biological Assessment). The model is periodically updated with new information received in the course of data collection efforts supporting economic analyses and public comment on more recent critical habitat rules. In particular, the administrative costs used in the DEA were updated based on information provided in the Service's incremental memorandum, included as Appendix C of the DEA. In addition, the GS rates have been updated annually.

(49) *Comment:* One commenter states that formal section 7 consultations will take up to 4 years to complete and involve multiple rounds of project review and revision, resulting in higher consultation costs than those applied in the DEA.

Our Response: The length of the formal consultation process is specified under the Act. In particular, the Federal action agency has 180 days to complete the biological assessment, the Service has 90 days to formulate their biological opinion and incidental take statement, and both parties have 45 days to review and finalize the biological opinion. Therefore, in total we do not anticipate the formal consultation process lasting longer than approximately 11 months.

(50) *Comment:* One commenter asserts that the DEA underestimates the portion of the cost of section 7 consultation attributable to the designation of critical habitat (that is, the incremental cost). The commenter states that critical habitat designation will substantially increase the time and effort involved in section 7 consultation. The commenter bases this assertion on the fact that it is relatively simple to arrive at a non-jeopardy opinion for projects affecting salamanders at only one or two locations, but any action involving impacts to critical habitat

would likely result in a finding of adverse modification.

Our Response: While the comment is noted by the Service, we do not believe that the designation of critical habitat will substantially increase the time and effort involved in section 7 consultation. In particular, because the conditions under which jeopardy and adverse modification may occur are so similar and closely related, the Service does not expect the designation of critical habitat to substantially increase the cost of consultation.

(51) *Comment:* One commenter indicates that in the context of section 7 consultation on development activities, preparation of the biological assessment will most likely be paid for by the private developer or land owner. Assuming otherwise leads to an underestimate of impacts to third parties in the DEA and an underestimate of impacts to small businesses in the SBREFA analysis.

Our Response: In our FEA of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Austin blind and Jollyville Plateau salamanders and the designation of critical habitat. The FEA has been modified to reflect the fact that preparation of the biological assessment will most likely be paid for by the third party participants to a consultation. This change leads to an increase in the impact on small businesses in the SBREFA analysis. The FEA estimates that 6,853 small developers across the study area will be affected by this rule. Based on the expected number of consultations, the cost per developer ranges from 0.05 to 0.09 percent of the annual revenue of the average small developer ($4.6 million). The FEA estimates that two small surface mining businesses will each incur $880 in administrative costs. This represents less than 0.01 percent of their average annual revenue ($10 million). Finally, the FEA estimates that nine small HCP permittees will be impacted by the rule at a cost of approximately $6,925 per permittee. This cost represents less than one percent of the annual revenues, assuming the average annual revenue is $1.1 million (Industrial Economics 2013, pp. A–6, A–7, A–8). Based on the above reasoning and currently available information, we concluded that this rule would not result in a significant economic impact on a substantial number of small entities.

(52) *Comment:* Two commenters note that the City of Cedar Park and the surrounding area are rapidly growing. The commenters are concerned that the designation of critical habitat will result in negative impacts to existing and future development through the imposition of burdensome Federal regulation. The commenters assert that these regulations could potentially reduce the number of homes and businesses built, increase the cost to own property, and decrease the city's tax base.

Our Response: In Section 4.2, the DEA acknowledges that the City of Cedar Park is rapidly growing and that potential effects on the regional real estate market may occur. However, these effects would be considered baseline impacts because conservation efforts recommended by the Service are assumed to occur due to the listing of the species and not the designation of critical habitat. The DEA focuses on the incremental impacts of the critical habitat designation and does not quantify impacts associated with the listing of the salamanders. As described in Chapter 2 of the DEA, incremental impacts of the critical habitat designation are limited to the administrative cost of section 7 consultation. These administrative costs are not considered high relative to real estate development value, and therefore, are not expected to have an effect on real estate markets.

(53) *Comment:* One comment states that the designation of critical habitat could significantly affect the planned Leander Transit Oriented Development by requiring low-density development to avoid adverse modification of critical habitat.

Our Response: The DEA addresses impacts to development in Section 4.2. Because the Service does not anticipate requesting additional project modifications to avoid adverse modification of critical habitat beyond those requested to avoid jeopardy to the species, any impacts resulting from restrictions on development density would occur in the baseline due to the listing of the species. Therefore, such impacts are not quantified in the DEA. Incremental impacts associated with the designation of critical habitat are expected to be limited to administrative costs of section 7 consultation.

(54) *Comment:* One commenter indicates that the assumption made in the DEA that only vacant land develops is invalid. The commenter explains that land currently classified for agriculture, ranch, and farm uses may also be developed in the future.

Our Response: The development analysis has been modified in the FEA to include agriculture, ranch, and farm land in addition to vacant land as potentially developable. This change results in a forecast that assumes more land being developed by 2035.

(55) *Comment:* One commenter takes issue with the use of the City of Austin's data on site plan cases in the development analysis. The commenter states that site plan cases are solely used for small, nonresidential development, and use of this data ignores, and, therefore, excludes all residential development from the analysis.

Our Response: As described in Section 4.2.3 of the DEA, the data on development site plan cases is used only to calculate average project size within the study area. This data is not used to limit the areas affected by the proposed critical habitat designation or the type of development affected by the proposed critical habitat designation. Because of the narrow focus of site plan cases (that is, small, nonresidential development), the FEA uses a modified assumption of average project size.

(56) *Comment:* One commenter states that the DEA does not estimate impacts associated with activities in upstream areas that may affect critical habitat. The commenter goes on to state that the analysis incorrectly excludes incremental impacts on over 90 percent of the lands included in the study area.

Our Response: As first described in paragraph 3 of the executive summary to the DEA, the study area for the analysis is defined as all lands within the watersheds containing areas proposed for critical habitat designation. This broad definition of the study area is meant to capture the effect that conditions in the areas surrounding the critical habitat units have on water quality and quantity in salamander habitat. Exhibit 4–4 in the DEA provides information on the projected acres of development within the watersheds outside of the proposed critical habitat units as context for the area of land that may be developed within the proposed designation. In the DEA, development is restricted to vacant parcels not currently preserved in perpetuity.

(57) *Comment:* One comment states that the DEA underestimates impacts to development activities by failing to consider the economic impact of restricting development.

Our Response: Section 4.2 of the DEA does consider the economic impact of restricting development. However, as described in this section, all conservation efforts recommended as part of section 7 consultation would be recommended absent critical habitat designation. These baseline conservation efforts may include restricting future development within certain areas and establishing protected preserves to offset water quality

impacts. The DEA focuses on quantifying the incremental impacts of the critical habitat designation and, therefore, does not quantify the economic impact of restricting development due to the listing of the species.

Other Comments

(58) *Comment:* The Service has not met its burden for identifying how the proposed critical habitat units may require special management. The Service makes the same generic statement regarding special management that it does for nearly all of the critical habitat units in the proposed rule: ''This critical habitat unit requires special management because of the potential for groundwater pollution from current and future development in the watershed, potential for vandalism, and depletion of groundwater.'' The Service does not identify the sources of potential groundwater pollution or the magnitude of this threat. This does not meet the burden under the *Cape Hatteras* or *Home Builders* case, which stated ''Rather than discuss how each identified PCE would need management protection, the Service lists activities that once resulted in consultation and makes a conclusory statement that dredging or shoreline management could result in permanent habitat loss.'' The Service's critical habitat designation is legally deficient without a more robust description as to why the particular area requires special management or protection.

Our Response: Although we did not list activities that identify the sources and magnitude of threats within each critical habitat unit, we believe that the level of detail provided in the unit descriptions is legally sufficient. The source and magnitude of threats for specific sites is often unknown. In our critical habitat designation, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection. Each unit description states whether or not the unit has the features that need special management. Please see *Special Management Considerations or Protections* section of the final critical habitat rule for particular management needs of the physical or biological features.

(59) *Comment:* It is unclear what the impact will be to activities outside of critical habitat that may impact water quality in critical habitat areas.

Our Response: A critical habitat designation does not signal that habitat outside the designated area is unimportant or may not to be managed or conserved for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects outside of designated critical habitat areas may still result in jeopardy or in adverse effects on areas within critical habitat, if those activities are affecting the critical habitat.

Summary of Changes From Proposed Rule

During the second comment period (January 25 to March 11, 2013), we notified the public of changes to the proposed critical habitat designation based on additional information we received during the first comment period (August 22 to October 22, 2012). On January 25, 2013 (78 FR 5385), we proposed to revise Units 3, 4, 5, 9, 10, 17, 22, 23, and 28 for the Jollyville Plateau salamander. At that time and along with numerous other changes, we combined proposed Units 3, 4, and 5 for the Jollyville Plateau salamander into one proposed critical habitat unit, Unit 3 (Buttercup Creek Unit) based on eight new locations. Please see the January 25, 2013, **Federal Register** document (78 FR 5385) for additional changes to the proposed rule.

Based on additional information we received during the second comment period regarding the source of water in Austin blind salamander and Jollyville Plateau salamander habitat, we refined our description of the primary constituent elements to more accurately reflect the habitat needs of these two species. We also separated the primary constituent elements into surface and subsurface habitat categories for both salamander species in order to clarify the needs of the species.

In the proposed rule, surface critical habitat was delineated by starting with the cave or spring point locations that are occupied by the salamanders and extending a line downstream 164 ft (50 m) because this was the farthest a salamander has been observed from a spring outlet. However, in this final rule, we revised surface critical habitat to include 262 ft (80 m) of stream habitat upstream and downstream from known salamander sites. This revision is based on a recent study completed by the City of Austin (Bendik 2013, pers. comm.) and is the farthest a Jollyville Plateau salamander has been observed from a spring outlet. Due to their similar life histories, this knowledge was applied to the Austin blind salamander. Because the surface designation is contained within the extent of the subsurface critical habitat, this expansion did not increase the total acreage of critical habitat.

Based on new information that we did not have at the time of publication of the proposed rule or the revised proposed rule and notice of availability on January 25, 2013, we made a number of changes to our critical habitat units. We moved the location of Brushy Creek Spring (Jollyville Plateau salamander critical habitat Unit 2) approximately 98 ft (30 m) to more accurately mark the location of this spring. We also removed several units, which has resulted in a discontinuous list of unit numbers for the Jollyville Plateau salamander (see TABLE 3 later in this document).

We removed Salamander Cave (Jollyville Plateau salamander critical habitat Unit 29) based on new information that suggests this cave opening had been filled about 20 years ago. Therefore, the exact location of the cave is currently unknown. Finally, we added two additional locations for the Jollyville Plateau salamander to critical habitat (Downstream of Small Sylvia Spring 1, Downstream of Small Sylvia Spring 2). These two new locations were within 213 ft (65 m) of two existing critical habitat units (Units 22 and 33) and resulted in the merging of those two units into a single unit (Unit 22). Total critical habitat acreage for Unit 22 is 439 ac (178 ha) as a result of this merging.

In response to comments, we conducted a weighing analysis of the Grandview Habitat Conservation Plan (HCP), Four Points HCP, and Buttercup Creek HCP and have excluded these areas from critical habitat. As a result of these exclusions, critical habitat unit 3 for the Jollyville Plateau salamander was split into five smaller subunits, and the size of critical habitat units 14 and 19 was reduced by 44 ac (18 ha) and 157 ac (64 ha), respectively.

Overall, the total amount of critical habitat designated decreased by 603 ac (244 ha) in this final rule compared to the proposed rule, including proposed changes announced in the January 25, 2013, **Federal Register** notice (78 FR

5385). A summary of the changes in critical habitat acreage are presented in Table 1.

TABLE 1—SUMMARY OF CHANGES IN CRITICAL HABITAT ACREAGE FOR THE JOLLYVILLE PLATEAU SALAMANDER SPECIES IN THE FINAL RULE

Critical habitat units that changed	Proposed critical habitat in acres (hectares)	Final critical habitat in acres (hectares)	Change in acres (hectares)
3. Buttercup Creek Unit	699 (283)	*323 (131)	−376 (−152)
14. Kretschmarr Unit	112 (45)	68 (28)	−44 (−18)
19. Bull Creek 3 Unit	254 (103)	97 (39)	−157 (−64)
22. Sylvia Spring Area Unit	238 (96)	439 (178)	+201 (+81)
29. Salamander Cave Unit	68 (28)	0 (0)	−68 (−28)
33. Tributary 4 Unit	159 (64)	0 (0)	−159 (−64)
Total of all units	5,054 (2,045)	4,451 (1,801)	−603 (−244)

*This represents the sum of the five subunits created from the exclusion.
Note: Area sizes may not sum due to rounding.

Critical Habitat

Background

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

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

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

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

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

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation 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 we are 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 articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects outside the designated critical habitat areas may still result in adverse effects on areas within critical habitat, if those activities are affecting the critical habitat. In addition, federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of these species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, HCPs, or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

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

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

(3) Cover or shelter;

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

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

We derive the specific physical or biological features essential for the Austin blind and Jollyville Plateau salamanders from studies of these species' habitat, ecology, and life history as described in the Critical Habitat section of the proposed rule to designate critical habitat published in the **Federal Register** on August 22, 2012 (77 FR 50768), and in the information presented below. Additional information can be found in the final listing rule published elsewhere in today's **Federal Register**. We have determined that the Austin blind and Jollyville Plateau salamanders require the following physical or biological features:

Space for Individual and Population Growth and for Normal Behavior

Austin Blind Salamander

The Austin blind salamander has been found where water emerges from the ground as a spring. However, this species is rarely seen at the surface of the spring, so we assume that it is subterranean for most of its life (Hillis *et al.* 2001, p. 267). Supporting this assumption is the fact that the species' physiology is cave-adapted, with reduced eyes and pale coloration (Hillis *et al.* 2001, p. 267). Most individuals found on the surface near spring openings are juveniles (Hillis *et al.* 2001, p. 273), and it is unclear if this means adults are able to retreat back into the aquifer or if juveniles are more likely to be flushed to the surface habitat. Austin blind salamanders have been found in the streambed a short distance (about 33 ft (10 m)) downstream of Sunken Gardens Spring (Laurie Dries 2011, COA, pers. comm.). However, Jollyville Plateau salamanders, a closely related species, have been found farther from a spring opening in the Bull Creek drainage. A recent study using mark-recapture methods found marked individuals moved up to 262 ft (80 m) both upstream and downstream from the Lanier Spring outlet (Bendik 2013, pers. comm.). This study demonstrates that *Eurycea* salamanders can travel greater distances from a discrete spring opening than previously thought, including upstream areas, if suitable habitat is present. Therefore, based on the information above, we identify springs, associated streams, Barton Springs pool, and underground spaces within the Barton Springs Segment of the Edwards Aquifer to be the primary space essential for individual and population growth and for normal behavior.

Jollyville Plateau Salamander

The Jollyville Plateau salamander occurs in wetted caves and where water emerges from the ground as a spring-fed stream. Within the spring ecosystem, proximity to the springhead is presumed important because of the appropriate stable water chemistry and temperature, substrate, and flow regime. *Eurycea* salamanders are rarely found more than 66 ft (20 m) from a spring source (TPWD 2011, p. 3). However, Jollyville Plateau salamanders have been found farther from a spring opening in the Bull Creek drainage. A recent study using mark-recapture methods found marked individuals moved up to 262 ft (80 m) both upstream and downstream from the Lanier Spring outlet (Bendik 2013, pers. comm.). This study demonstrates that *Eurycea* salamanders can travel greater distances from a discrete spring opening than previously thought, including upstream areas, if suitable habitat is present. Jollyville Plateau salamanders are also known to retreat underground to wetted areas (such as the aquifer) for habitat when surface habitats go dry (Bendik 2011a, p. 31). We presume that these salamanders also use subsurface areas to some extent during normal flow conditions. Forms of Jollyville Plateau salamander with cave morphology have been found in several underground streams (Chippindale *et al.* 2000, pp. 36–37; TPWD 2011a, pp. 9–10). Therefore, based on the information above, we identify springs, associated streams, and underground spaces within the Trinity Aquifer, Northern Segment of the Edwards Aquifer, and local alluvial aquifers to be the primary space essential for individual and population growth and for normal behavior.

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

Austin Blind Salamander

No species-specific dietary study has been completed, but the diet of the Austin blind salamander is presumed to

be similar to other *Eurycea* species, consisting of small aquatic invertebrates such as amphipods, copepods, isopods, and insect larvae (reviewed in COA 2001, pp. 5–6). The feces of one wild-caught Austin blind salamander contained amphipods, ostracods, copepods, and plant material (Hillis *et al.* 2001, p. 273). In addition, flatworms were found to be the primary food source for the co-occurring Barton Springs salamander (*Eurycea sosorum*) (Gillespie 2013, p. 5), suggesting that flatworms may also contribute to the diet of the Austin blind salamander.

Austin blind salamanders are strictly aquatic and spend their entire lives submersed in water from the Barton Springs Segment of the Edwards Aquifer (Hillis *et al.* 2001, p. 273). Under drought conditions, Barton Springs (particularly Sunken Gardens/Old Mill Spring) also receives some recharge from the Blanco River (Johnson *et al.* 2012, p. 82), whose waters originate from the Trinity Aquifer. These salamanders, and the prey that they feed on, require water at sufficient flows (quantity) to meet all of their physiological requirements. Flows at Barton Springs have never gone dry during the worst droughts of Texas (Hauwert *et al.* 2005, p. 19). This water should be flowing and unchanged in chemistry, temperature, and volume from natural conditions. The average water temperature at Austin blind salamander sites in Barton Springs is between 67.8 and 72.3 °F (19.9 and 22.4 °C) (COA 2011, unpublished data). Concentrations of contaminants should be below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Austin blind salamander's prey base).

Edwards Aquifer *Eurycea* species are adapted to a lower ideal range of oxygen saturations compared to other salamanders (Turner 2009, p. 11). However, *Eurycea* salamanders need dissolved oxygen concentrations to be above a certain concentration, as the co-occurring Barton Springs salamander demonstrates declining abundance with declining dissolved oxygen levels (Turner 2009, p. 14). Woods *et al.* (2010, p. 544) observed a number of physiological effects to low dissolved oxygen concentrations (below 4.5 milligrams of oxygen per liter (mg L^{-1})) in the related San Marcos salamander (*Eurycea nana*), including decreased metabolic rates and decreased juvenile growth rates. Barton Springs salamander abundance is highest when dissolved oxygen is between 5 to 7 mg L^{-1} (Turner 2009, p. 12). Therefore, we assume that the dissolved oxygen level of water is important to the Austin blind salamander as well. The mean annual dissolved oxygen (from 2003 through 2011) at Main Spring, Eliza Spring, and Sunken Garden Spring was 6.36, 5.89, and 5.95 mg L^{-1}, respectively (COA 2011, unpublished data).

The conductivity of water is important to salamander physiology because it is related to the concentration of ions in the water. Increased conductivity is associated with increased water contamination and decreased *Eurycea* abundance (Willson and Dorcas 2003, pp. 766–768; Bowles *et al.* 2006, pp. 117–118). The lower limit of observed conductivity in developed Jollyville Plateau salamander sites where salamander densities were lower than undeveloped sites was 800 microsiemens per centimeter (µS cm^{-1}) (Bowles *et al.* 2006, p. 117). Salamanders were significantly more abundant at undeveloped sites where water conductivity averaged 600 µS cm^{-1} (Bowles *et al.* 2006, p. 117). Because of its similar physiology to the Jollyville Plateau salamander, we assume that the Austin blind salamander will have a similar response to elevated water conductance. Although one laboratory study on the related San Marcos salamander demonstrated that conductivities up to 2,738 µS cm^{-1} had no measurable effect on adult activity (Woods and Poteet 2006, p. 5), it remains unclear how elevated water conductance might affect juveniles or the long-term health of salamanders in the wild. Furthermore, higher conductivity in urban streams is well-documented and is correlated with decreases in invertebrate species, the prey base of this species (Coles *et al.* 2012, p. 63, 78). Based on the best available information on the sensitivity of salamanders to changes in conductivity (or other contaminants) in the wild, it is reasonable to assume that salamander survival, growth, and reproduction will be most successful when water quality is unaltered from natural aquifer conditions. The average water conductance at Main Spring, Eliza Spring, and Sunken Garden Spring is between 605 and 740 µS cm^{-1} (COA 2011, unpublished data).

Therefore, based on the information above, we identify aquatic invertebrates and water from the Barton Springs Segment of the Edwards Aquifer with adequate dissolved oxygen concentration, water conductance, and water temperature to be physical or biological features essential for the nutritional and physiological requirements of this species.

Jollyville Plateau Salamander

As in other *Eurycea* species, the Jollyville Plateau salamander feeds on aquatic invertebrates that commonly occur in spring environments (reviewed in COA 2001, pp. 5–6). A stomach content analysis by the City of Austin demonstrated that this salamander preys on varying proportions of ostracods, copepods, mayfly larvae, fly larvae, snails, water mites, aquatic beetles, and stone fly larvae depending on the location of the site (Bendik 2011b, pers. comm.). In addition, flatworms were found to be the primary food source for the related Barton Springs salamander (Gillespie 2013, p. 5), suggesting that flatworms may also contribute to the diet of the Jollyville Plateau salamander if present in the invertebrate community.

Jollyville Plateau salamanders are strictly aquatic and spend their entire lives submersed in water sourced from the Northern Segment of the Edwards Aquifer, the Trinity Aquifer, and local alluvium (loose unconsolidated soils) (COA 2001, pp. 3–4; Bowles *et al.* 2006, p. 112; Johns 2011, p. 5–6). These salamanders, and the prey that they feed on, require water at sufficient flows (quantity) to meet all of their physiological requirements. This water should be flowing and unchanged in chemistry, temperature, and volume from natural conditions. The average water temperature at Jollyville Plateau salamander sites with undeveloped watersheds ranges from 65.3 to 73.4 °F (18.5 to 23 °C) (Bowles *et al.* 2006, p. 115; COA 2012, pers. comm.). Concentrations of water quality contaminants should be below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Jollyville Plateau salamander's prey base).

Edwards Aquifer *Eurycea* species are adapted to a lower range of oxygen saturations compared to other salamanders (Turner 2009, p. 11). However, *Eurycea* salamanders need dissolved oxygen concentrations to be above a certain concentration, as the related Barton Springs salamander demonstrates declining abundance with declining dissolved oxygen levels (Turner 2009, p. 14). In addition, Woods *et al.* (2010, p. 544) observed a number of physiological effects to low dissolved oxygen concentrations (below 4.5 mg L^{-1}) in the related San Marcos salamander, including decreased metabolic rates and decreased juvenile growth rates. The average dissolved oxygen level of Jollyville Plateau

salamander sites with little or no development in the watershed ranges from 5.6 to 7.1 mg L^{-1} (Bendik 2011a, p. 10). Based on this information, we conclude that the dissolved oxygen level of water is important to the Jollyville Plateau salamander for respiratory function.

The conductivity of water is also important to salamander physiology because it is related to the concentration of ions in the water. Increased conductivity is associated with increased water contamination and decreased *Eurycea* abundance (Willson and Dorcas 2003, pp. 766–768; Bowles *et al.* 2006, pp. 117–118). The lower limit of conductivity in developed Jollyville Plateau salamander sites where salamander densities were lower than undeveloped sites was 800 µS cm^{-1} (Bowles *et al.* 2006, p. 117). Salamanders were significantly more abundant at undeveloped sites where water conductivity averaged 600 µS cm^{-1} (Bowles *et al.* 2006, p. 117). The average water conductance of Jollyville Plateau salamander sites with little or no development in the watershed ranges from 550 to 625 µS cm^{-1} (Bendik 2011a, p. 10, Bowles *et al.* 2006, p.115). Although one laboratory study on the related San Marcos salamander demonstrated that conductivities up to 2,738 µS cm^{-1} had no measurable effect on adult activity (Woods and Poteet 2006, p. 5), it remains unclear how elevated water conductance might affect juveniles or the long-term health of salamanders in the wild. Furthermore, higher conductivity in urban streams is well-documented and is correlated with decreases in invertebrate species, the prey base of this species (Coles *et al.* 2012, p. 63, 78). Based on the best available information on the sensitivity of salamanders to changes in conductivity (or other contaminants) in the wild, it is reasonable to presume that salamander survival, growth, and reproduction will be most successful when water quality is unaltered from natural aquifer conditions.

Therefore, based on the information above, we identify aquatic invertebrates and water from the Northern Segment of the Edwards Aquifer, including adequate dissolved oxygen concentration, water conductance, and water temperature, to be physical or biological features essential for the nutritional and physiological requirements of this species.

Cover or Shelter

Austin Blind Salamander

The Austin blind salamander spends most of its life below the surface in the aquifer, and may only be flushed to the surface accidentally (Hillis *et al.* 2001, p. 273). This species should therefore have access back into the aquifer through the spring outlets.

While on the surface near spring outlets, they move into interstitial spaces (empty voids between rocks) within the substrate, using these spaces for foraging habitat and cover from predators similar to other *Eurycea* salamanders in central Texas (Cole 1995, p. 24; Pierce and Wall 2011, pp. 16–17). These spaces should have minimal sediment, as sediment fills interstitial spaces, eliminating resting places and also reducing habitat of the prey base (small aquatic invertebrates) (O'Donnell *et al.* 2006, p. 34). Austin blind salamanders have been observed under rocks and vegetation (Dries 2011, COA, pers. comm.).

Therefore, based on the information above, we identify rocky substrate, consisting of boulder, cobble, and gravel, with interstitial spaces that have minimal sediment, to be an essential component of the physical or biological features essential for the cover and shelter for this species. Access to the aquifer is also an essential component of these physical or biological features.

Jollyville Plateau Salamander

Similar to other *Eurycea* salamanders in central Texas, Jollyville Plateau salamanders move an unknown depth into the interstitial spaces (empty voids between rocks) within the substrate, using these spaces for foraging habitat and cover from predators (Cole 1995, p. 24; Pierce and Wall 2011, pp. 16–17). These spaces should have minimal sediment, as sediment fills interstitial spaces, eliminating resting places and also reducing habitat of the prey base (small aquatic invertebrates) (O'Donnell *et al.* 2006, p. 34).

Jollyville Plateau salamanders have been observed under rocks, leaf litter, and other vegetation (Bowles *et al.* 2006, pp. 114–116). There was a strong positive relationship between salamander abundance and the amount of available rocky substrate (Bowles *et al.* 2006, p. 114). Salamanders were more likely to use larger rocks (larger than 2.5 inches (in) or 64 millimeters (mm)) compared to gravel (Bowles *et al.* 2006, p. 114, 116).

If springs stop flowing and the surface habitat dries up, Jollyville Plateau salamanders are known to recede with the water table and persist in groundwater refugia until surface flow returns (Bendik 2011a, p. 31). Access to subsurface refugia allows populations some resiliency against drought events.

Therefore, based on the information above, we identify rocky substrate, consisting of boulder, cobble, and gravel, with interstitial spaces that have minimal sediment, to be an essential component of the physical or biological features essential for the cover and shelter for this species. Access to the subsurface groundwater table is also an essential component of these physical or biological features.

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

Austin Blind Salamander

Little is known about the reproductive habits of this species in the wild. However, the Austin blind salamander is fully aquatic and, therefore, spends all of its life cycles in aquifer and spring waters. Eggs of central Texas *Eurycea* species are rarely seen on the surface, so it is widely assumed that eggs are laid underground (Gluesenkamp 2011, TPWD, pers. comm.; Bendik 2011b, COA, pers. comm.).

Therefore, based on the information above, we identify underground spaces to be an essential component of the physical or biological features essential for breeding and reproduction for this species.

Jollyville Plateau Salamander

Little is known about the reproductive habits of this species in the wild. However, the Jollyville Plateau salamander is fully aquatic and, therefore, spends all of its life cycles in aquifer and spring waters. Eggs of central Texas *Eurycea* species are rarely seen on the surface, so it is widely assumed that eggs are laid underground (Gluesenkamp 2011, TPWD, pers. comm.; Bendik 2011b, COA, pers. comm.).

Therefore, based on the information above, we identify underground spaces to be an essential component of the physical or biological features essential for breeding and reproduction for this species.

Primary Constituent Elements for the Austin Blind and Jollyville Plateau Salamanders

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the Austin blind and Jollyville Plateau salamanders in areas occupied at the time of listing, focusing on the features' primary constituent elements. Primary constituent elements (PCEs) are those specific elements of the physical or biological features that provide for a species' life-history processes and are

essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to the Austin blind and Jollyville Plateau salamanders are:

Austin Blind Salamander

Surface Habitat PCEs

i. *Water from the Barton Springs Segment of the Edwards Aquifer.* The groundwater is similar to natural aquifer conditions as it discharges from natural spring outlets. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Austin blind salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with constant surface flow. The water chemistry is similar to natural aquifer conditions, with temperatures from 67.8 to 72.3 °F (19.9 and 22.4 °C), dissolved oxygen concentrations from 5 to 7 mg L^{-1}, and specific water conductance from 605 to 740 μS cm^{-1}.

ii. *Rocky substrate with interstitial spaces.* Rocks in the substrate of the salamander's surface aquatic habitat are large enough to provide salamanders with cover, shelter, and foraging habitat (larger than 2.5 in (64 mm)). The substrate and interstitial spaces have minimal sedimentation.

iii. *Aquatic invertebrates for food.* The spring environment supports a diverse aquatic invertebrate community that includes crustaceans, insects, and flatworms.

iv. *Subterranean aquifer.* Access to the subsurface water table exists to provide shelter, protection, and space for reproduction. This access can occur in the form of large conduits that carry water to the spring outlet or fissures in the bedrock.

Subsurface Habitat PCEs

i. *Water from the Barton Springs Segment of the Edwards Aquifer.* The groundwater is similar to natural aquifer conditions. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Austin blind salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with continuous flow in the subterranean habitat. The water chemistry is similar to natural aquifer conditions, including temperature, dissolved oxygen, and specific water conductance.

ii. *Subsurface spaces.* Conduits underground are large enough to provide salamanders with cover, shelter, and foraging habitat.

iii. *Aquatic invertebrates for food.* The habitat supports an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

Jollyville Plateau Salamander

Surface Habitat PCEs

i. *Water from the Trinity Aquifer, Northern Segment of the Edwards Aquifer, and local alluvial aquifers.* The groundwater is similar to natural aquifer conditions as it discharges from natural spring outlets. Concentrations of water quality constituents and contaminants should be below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Jollyville Plateau salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with at least some surface flow during the year. The water chemistry is similar to natural aquifer conditions, with temperatures from 64.1 to 73.4 °F (17.9 to 23 °C), dissolved oxygen concentrations from 5.6 to 8 mg L^{-1}, and specific water conductance from 550 to 721 μS cm^{-1}.

ii. *Rocky substrate with interstitial spaces.* Rocks in the substrate of the salamander's surface aquatic habitat are large enough to provide salamanders with cover, shelter, and foraging habitat (larger than 2.5 in (64 mm)). The substrate and interstitial spaces have minimal sedimentation.

iii. *Aquatic invertebrates for food.* The spring environment supports a diverse aquatic invertebrate community that includes crustaceans, insects, and flatworms.

iv. *Subterranean aquifer.* Access to the subsurface water table should exist to provide shelter, protection, and space for reproduction. This access can occur in the form of large conduits that carry water to the spring outlet or porous voids between rocks in the streambed that extend down into the water table.

Subsurface Habitat PCEs

i. *Water from the Trinity Aquifer, Northern Segment of the Edwards Aquifer, and local alluvial aquifers.* The groundwater is similar to natural aquifer conditions. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Jollyville Plateau salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with continuous flow. The water chemistry is similar to natural aquifer conditions, including temperature, dissolved oxygen, and specific water conductance.

ii. *Subsurface spaces.* Voids between rocks underground are large enough to provide salamanders with cover, shelter, and foraging habitat. These spaces have minimal sedimentation.

iii. *Aquatic invertebrates for food.* The habitat supports an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of these species may require special management considerations or protection to reduce the following threats: water quality degradation from contaminants, alteration to natural flow regimes, and physical habitat modification.

For these salamanders, special management considerations or protection are needed to address threats. Management activities that could ameliorate threats include (but are not limited to): (1) Protecting the quality of groundwater by implementing comprehensive programs to control and reduce point sources and non-point sources of pollution throughout the Barton Springs and Northern Segments of the Edwards Aquifer and contributing portions of the Trinity Aquifer, (2) protecting the quality and quantity of surface water by implementing comprehensive programs to control and reduce point sources and non-point sources of pollution within the surface drainage areas of the salamander spring sites, (3) protecting groundwater and spring flow quantity (for example, by implementing water conservation and drought contingency plans throughout the Barton Springs and Northern Segments of the Edwards Aquifer and contributing portions of the Trinity

Aquifer), (4) fencing and signage to protect from human vandalism, (5) protecting water quality and quantity from present and future quarrying, and (6) excluding cattle and feral hogs through fencing to protect spring habitats from damage.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(1)(A) of the Act, we use the best scientific data available in determining areas that contain the features that are essential to the conservation of the Austin blind and Jollyville Plateau salamanders. During our preparation for designating critical habitat for the two salamander species, we reviewed: (1) Data for historical and current occurrence, (2) information pertaining to habitat features essential for the conservation of these species, and (3) scientific information on the biology and ecology of the two species. We have also reviewed a number of studies and surveys of the two salamander species that confirm historical and current occurrence of the two species including, but not limited to, Sweet (1978; 1982), Russell (1993), Warton (1997), COA (2001), Chippindale *et al.* (2000), and Hillis *et al.* (2001). Finally, salamander site locations and observations were verified with the aid of salamander biologists, museum collection records, and site visits.

In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—are necessary to ensure the conservation of the species. We are not designating any additional areas outside the geographical area occupied by the species, although we acknowledge that other areas, such as the recharge zone of the aquifers supporting salamander locations, are very important to the conservation of the species. We also recognize that there may be additional occupied areas outside of the areas designated as critical habitat that we are not aware of at the time of this designation that are necessary for the conservation of the species. For the purpose of designating critical habitat for the Austin blind and Jollyville Plateau salamanders, we define an area as occupied based upon the reliable observation of a salamander species by a knowledgeable scientist. It is very difficult to prove unquestionably that a salamander population has been extirpated from a spring site due to these species' ability to occupy the inaccessible subsurface habitat. We therefore considered any site that had a salamander observation at any prior time to be currently occupied, unless that spring or cave site had been destroyed.

Based on our review, the critical habitat areas described below constitute our best assessment at this time of areas that are within the geographical range occupied by at least one of the two salamander species and are considered to contain features essential to the conservation of these species. The extent to which the subterranean populations of these species exist belowground away from outlets of the spring system is unknown. Because the hydrology of central Texas is very complex and information on the hydrology of specific spring sites is largely unknown, we will continue to seek information to increase our understanding of spring hydrology and salamander underground distribution to inform conservation efforts for these species. At the time of this final critical habitat rule, the best scientific evidence available suggests that a population of these salamanders can extend at least 984 ft (300 m) from the spring opening through underground conduits or voids between rocks.

We are designating as critical habitat areas that we have determined are occupied by at least one of the two salamanders and contain elements of physical or biological features essential for the conservation of the species. We delineated both surface and subsurface critical habitat components. The surface critical habitat component was delineated by starting with the spring point locations that are occupied by the salamanders and extending a line upstream and downstream 262 ft (80 m) because this is the farthest a salamander has been observed from a spring outlet (Bendik 2013, pers. comm.). When determining surface critical habitat boundaries, we were not able to delineate specific stream segments on the map due to the small size of the streams. Therefore, we drew a circle with a 262-ft (80-m) radius representing the extent the surface population of the site is estimated to exist upstream and downstream. The surface critical habitat includes the spring outlets and outflow up to the ordinary high water line (the average amount of water present in non-flood conditions, as defined in 33 CFR 328.3(e)) and 262 ft (80 m) of upstream and downstream habitat (to the extent that this habitat is ever present), including the dry stream channel during periods of no surface flow. We acknowledge that some spring sites occupied by one of the two salamanders are the start of the watercourse, and upstream habitat does not exist for these sites. The surface habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) within this circle.

We delineated the subsurface critical habitat unit boundaries by starting with the cave or spring point locations that are occupied by the salamanders. From these cave or spring points, we delineated an area with a 984-ft (300-m) radius to create the polygons that capture the extent to which we believe the salamander populations exist through underground habitat. This radial distance comes from observations of the Austin blind salamander, which is believed to occur underground throughout the entire Barton Springs complex (Dries 2011, COA, pers. comm.). The spring outlets used by salamanders of the Barton Springs complex are not connected on the surface, so the Austin blind salamander population extends a horizontal distance of at least 984 ft (300 m) underground, as this is the approximate distance between the farthest two outlets within the Barton Springs complex known to be occupied by the species. This knowledge was applied to the Jollyville Plateau salamanders due to its similar life history. The subsurface polygons were then simplified to reduce the number of vertices, but still retain the overall shape and extent. Once that was done, polygons that were within 98 ft (30 m) of each other were merged together because these areas are likely connected underground. Each new merged polygon was then revised by removing extraneous divits or protrusions that resulted from the merge process.

Developed areas such as lands covered by buildings, pavement, and other structures lack physical or biological features for the Austin blind and Jollyville Plateau salamanders. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent or subsurface critical habitat.

The critical habitat designation is defined by the map or maps, as modified by any accompanying

regulatory text, presented at the end of this document in the rule portion. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on *http://www.regulations.gov* at Docket No. FWS–R2–ES–2013–0001, on our Internet site (*http://www.fws.gov/southwest/es/AustinTexas/ESA_Sp_Salamanders.html*) and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT** above).

Final Critical Habitat Designation

We are designating a total of 33 units for designation for the Austin blind and Jollyville Plateau salamanders based on essential physical or biological features being present to support the salamanders' life-history processes. The critical habitat areas described below constitute our best assessment at this time of areas that meet the definition of critical habitat. Some units contain all of the identified elements of physical or biological features and support multiple life-history processes. Some units contain only some elements of the physical or biological features necessary to support Austin blind and Jollyville Plateau salamanders' particular use of that habitat. In some units, the physical or biological features essential for the conservation of these salamanders have been impacted at times, and in some cases these impacts have had negative effects on the salamander populations there. We recognize that some units have experienced impacts and may have physical or biological features of lesser quality than others. Special management considerations or protection may be needed at these sites to provide for long-term sustainability of the species at these sites. In addition, high-quality sites need protection, and in some cases management, to maintain their quality and ability to sustain the salamander populations over the long term.

We are designating 1 unit as critical habitat for the Austin blind salamander and 32 units as critical habitat for the Jollyville Plateau salamander (33 units total). The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for the Austin blind and Jollyville Plateau salamanders. As previously noted, we are designating both surface and subsurface critical habitat components. The surface critical habitat includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat, but does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas); however, the subsurface critical habitat may extend below such structures. The subsurface critical habitat includes underground features in a circle with a radius of 984 ft (300 m) around the cave and surface salamander locations. The 33 units we are designating as critical habitat are listed and described below, and acreages are based on the size of the subsurface critical habitat component, because it encompasses the surface critical habitat. All units described below are occupied by one of the two salamander species.

TABLE 2—CRITICAL HABITAT UNIT FOR THE AUSTIN BLIND SALAMANDER

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
1. Barton Springs Unit	City, Private	120 (49)
Total		120 (49)

NOTE: Area estimates reflect all land within critical habitat unit boundaries.

TABLE 3—CRITICAL HABITAT UNITS FOR THE JOLLYVILLE PLATEAU SALAMANDER

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
1. Krienke Spring Unit	Private	68 (28)
2. Brushy Creek Spring Unit	Private	68 (28)
3A. Buttercup Creek Unit	Private, City	260 (105)
3B. Buttercup Creek Unit	Private	28 (11)
3C. Buttercup Creek Unit	Private	3 (1)
3D. Buttercup Creek Unit	Private	16 (6)
3E. Buttercup Creek Unit	Private	17 (7)
6. Avery Spring Unit	Private	237 (96)
7. PC Spring Unit	Private	68 (28)
8. Baker and Audubon Spring Unit	Private	110 (45)
9. Wheless Spring Unit	Private, County	145 (59)
10. Blizzard R-Bar-B Spring Unit	Private, County	88 (36)
11. House Spring Unit	Private	68 (28)
12. Kelly Hollow Spring Unit	Private	68 (28)
13. MacDonald Well Unit	Private, County	68 (28)
14. Kretschmarr Unit	Private	68 (28)
15. Pope and Hiers (Canyon Creek) Spring Unit	Private	68 (28)
16. Fern Gully Spring Unit	Private, City	68 (28)
17. Bull Creek 1 Unit	Private, City, County	1,198 (485)
18. Bull Creek 2 Unit	Private, City, County	237 (96)
19. Bull Creek 3 Unit	Private, City	97 (39)
20. Moss Gully Spring Unit	City, County	68 (28)
21. Ivanhoe Spring Unit	City	68 (28)
22. Sylvia Spring Area Unit	Private, City, County	439 (178)
24. Long Hog Hollow Unit	Private	68 (28)
25. Tributary 3 Unit	Private	68 (28)

TABLE 3—CRITICAL HABITAT UNITS FOR THE JOLLYVILLE PLATEAU SALAMANDER—Continued

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
26. Sierra Spring Unit	Private	68 (28)
27. Troll Spring Unit	Private, City	98 (40)
28. Stillhouse Unit	Private, City	203 (82)
30. Indian Spring Unit	Private	68 (28)
31. Spicewood Spring Unit	Private	68 (28)
32. Balcones District Park Spring Unit	Private, City	68 (28)
Total		4,331 (1,753)

NOTE: Area sizes may not sum due to rounding. Area estimates reflect all land within critical habitat unit boundaries.

We present below brief descriptions of all units and reasons why they meet the definition of critical habitat for the Austin blind and Jollyville Plateau salamanders. The function of each unit with respect to species conservation is to contribute to the redundancy, representation, and resiliency of its respective species, which determines the species' probability of persistence. Redundancy means a sufficient number of populations to provide a margin of safety to reduce the risk of losing a species or certain representation (variation) within a species. Representation means conserving ''some of everything'' with regard to genetic and ecological diversity to allow for future adaptation and maintenance of evolutionary potential. Resiliency is the ability of a species to persist through severe hardships (Tear *et al.* 2005, p. 841).

Austin Blind Salamander

Unit 1: Barton Springs Unit

The Barton Springs Unit consists of 120 ac (49 ha) of City and private land in the City of Austin, Travis County, Texas. Most of the unit consists of landscaped areas managed as Zilker Park, which is owned by the City of Austin. The southwestern portion of the unit is dense commercial development, and part of the southern portion contains residential development. Barton Springs Road, a major roadway, crosses the northeastern portion of the unit. This unit contains Parthenia Spring, Sunken Gardens (Old Mill) Spring, and Eliza Spring, which are occupied by Austin blind salamander. The springs are located in the Barton Creek watershed. Parthenia Spring is located in the backwater of Barton Springs Pool, which is formed by a dam on Barton Creek; Eliza Spring is on an unnamed tributary to the bypass channel of the pool; and Sunken Gardens Spring is located on a tributary that enters Barton Creek downstream of the dam for Barton Springs Pool. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the contributing and recharge zone for the Barton Springs segment of the Edwards Aquifer, depletion of groundwater, runoff from impervious cover within the surface watershed into surface habitat, and impacts of the impoundment (see *Special Management Considerations or Protection* section). Special management may also be needed to protect the surface from disturbance as part of the operation of Barton Springs Pool, and this management is being provided as part of the Barton Springs Pool HCP. Twenty-two ac (9 ha) of this unit are covered by the Barton Springs Pool HCP, which covers adverse impacts to the Barton Springs salamander and the Austin blind salamander.

The designation includes the underground aquifer in this area and the springs and fissure outlets, and their outflows 262 ft (80 m) upstream and downstream. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Because we did not have specific points for species locations, we used the center of Eliza and Sunken Gardens springs and the southwestern point of a fissure in Parthenia Springs as the center point for the circles.

Jollyville Plateau Salamander

Unit 1: Krienke Spring Unit

Unit 1 consists of 68 ac (28 ha) of private land in southern Williamson County, Texas. The unit is located just south of State Highway 29. The northern part of the unit is under dense residential development, while the southern part of the unit is less densely developed. County Road 175 (Sam Bass Road) crosses the northern half of the unit. This unit contains Krienke Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on an unnamed tributary of Dry Fork, which is a tributary to Brushy Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, impacts of the impoundment, and depletion of groundwater (see *Special Management Considerations or Protection* section). Private landowners have shown interest in conserving the area and are providing some management of the area.

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subterranean critical habitat.

Unit 2: Brushy Creek Spring Unit

Unit 2 consists of 68 ac (28 ha) of private land in southern Williamson County, Texas. The unit is centered just south of Palm Valley Boulevard and west of Grimes Boulevard. The northern part of the unit is covered with commercial and residential development, while the southern part is less densely developed. Some areas along the stream are undeveloped. This unit contains Brushy Creek Spring, which is occupied by the Jollyville Plateau salamander. The spring is near Brushy Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because

of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subterranean critical habitat.

Unit 3: Buttercup Creek Unit

In the proposed rule, Unit 3 consisted of 699 ac (283 ha) of City of Austin, City of Cedar Park, State of Texas, and private land in southern Williamson County and northern Travis County, Texas. Under section 4(b)(2) of the Act, certain lands in this unit have been excluded from the final rule for critical habitat (see *Application of Section 4(b)(2) of the Act* section below). The remaining portions of the unit not within the boundaries of the HCP were retained as critical habitat subunits because these areas still contained subsurface primary constituent elements of the physical or biological features essential to the conservation of the species. We created five subunits following the exclusion. All of the subunits are occupied by the Jollyville Plateau salamander. A description of these subunits follows.

Subunit 3A

Subunit 3A consists of 260 ac (105 ha) of City of Austin, City of Cedar Park, and private land in southern Williamson County and northern Travis County, Texas. The subunit is located between Anderson Mill Road and Lakeline Boulevard. The subunit is mostly covered with residential property on the eastern half and undeveloped area of parks on the western half. This subunit contains four caves, Hunter's Lane Cave, Testudo Tube, Bluewater Cave #1, and Bluewater Cave #2, which are all occupied by the Jollyville Plateau salamander. The subunit contains subsurface primary constituent elements of the physical or biological features essential to the conservation of the Jollyville Plateau salamander.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, potential for vandalism, and depletion of groundwater (see *Special Management Considerations or Protection* section). These caves are currently gated and locked.

The critical habitat designation includes the cave openings. The subunit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the cave openings, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Those areas within the boundary of the Buttercup Creek HCP were then excluded from the subunit.

Subunit 3B

Subunit 3B consists of 28 ac (11 ha) of private land in southern Williamson County, Texas. The unit is located east of Anderson Mill Road and west of Lakeline Boulevard. The unit is mostly under a quarry, except for the eastern portion, which is covered by several buildings and a parking lot. This subunit does not contain a cave opening. The subunit contains subsurface primary constituent elements of the physical or biological features essential to the conservation of the Jollyville Plateau salamander.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, depletion of groundwater, and potential impacts from quarry operations (see *Special Management Considerations or Protection* section).

The subunit was delineated by drawing a circle with a radius of 984 ft (300 m) around nearby cave openings, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Those areas within the boundary of the Buttercup Creek HCP (including the cave openings) were then excluded from the subunit.

Subunit 3C

Subunit 3C consists of 3 ac (1 ha) of private land in southern Williamson County, Texas. The unit is located east of Lakeline Boulevard. The subunit is under residential development. This subunit does not contain a cave opening. The subunit contains subsurface primary constituent elements of the physical or biological features essential to the conservation of the Jollyville Plateau salamander.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The subunit was delineated by drawing a circle with a radius of 984 ft (300 m) around nearby cave openings, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Those areas within the boundary of the Buttercup Creek HCP (including the cave openings) were then removed from the subunit.

Subunit 3D

Subunit 3D consists of 16 ac (6 ha) of private land in southern Williamson County, Texas. The subunit is located east of Lakeline Boulevard and north of Buttercup Creek Boulevard. The subunit is under residential development. This subunit does not contain a cave opening. The subunit contains subsurface primary constituent elements of the physical or biological features essential to the conservation of the Jollyville Plateau salamander.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The subunit was delineated by drawing a circle with a radius of 984 ft (300 m) around nearby cave openings, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Those areas within the boundary of the Buttercup Creek HCP (including the cave openings) were then removed from the subunit.

Subunit 3E

Subunit 3E consists of 17 ac (7 ha) of private land in southern Williamson County, Texas. The subunit is located east of Lakeline Boulevard. Buttercup Creek Boulevard crosses the subunit from east to west. The subunit is under residential development. This subunit does not contain a cave opening. The subunit contains subsurface primary constituent elements of the physical or biological features essential to the conservation of the Jollyville Plateau salamander.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The subunit was delineated by drawing a circle with a radius of 984 ft

(300 m) around nearby cave openings, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles. Those areas within the boundary of the Buttercup Creek HCP (including the cave openings) were then removed from the subunit.

Unit 6: Avery Springs Unit

Unit 6 consists of 237 ac (96 ha) of private land in southern Williamson County, Texas. The unit is located north of Avery Ranch Boulevard and west of Parmer Lane. The unit has large areas covered by residential development. The developed areas are separated by fairways and greens of a golf course. This unit contains three springs (Avery Springhouse Spring, Hill Marsh Spring, and Avery Deer Spring) that are occupied by the Jollyville Plateau salamander. The springs are located on three unnamed tributaries to South Brushy Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the three springs, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles.

Unit 7: PC Spring Unit

Unit 7 consists of 68 ac (28 ha) of private land in southern Williamson County, Texas. State Highway 45, a major toll road, crosses the north central part of the unit from east to west, and Ranch to Market Road 620 goes under the toll road midway between the center and the western edge. Except for roadways, the unit is undeveloped. This unit contains PC Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on Davis Spring Branch. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subterranean critical habitat.

Unit 8: Baker and Audubon Spring Unit

Unit 8 consists of 110 ac (45 ha) of private land in northern Travis County, Texas. The unit is located south of Lime Creek Road and southwest of the intersection of Canyon Creek Drive and Lime Springs Road. The unit is wooded, undeveloped, and owned by Travis Audubon Society and Lower Colorado River Authority. The entire unit is managed as part of the Balcones Canyonlands HCP. This unit contains two springs (Baker Spring and Audubon Spring) that are occupied by the Jollyville Plateau salamander. The springs are in the drainage of an unnamed tributary to Cypress Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Special management is being provided by the preserve because the surface watersheds of these two springs are entirely contained within the preserve. Special management may also be needed because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from potential physical disturbance (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles.

Unit 9: Wheless Spring Unit

Unit 9 consists of 145 ac (59 ha) of private and Travis County land in northern Travis County, Texas. The unit is located about 0.8 mi (1.3 km) west of Grand Oaks Loop. The unit is wooded and consists of totally undeveloped land. The unit is managed as part of the Balcones Canyonlands Preserve HCP. An unpaved two-track road crosses the unit from north to south. This unit contains three sites (Wheless Spring, Wheless 2 and Spring 25) that are occupied by the Jollyville Plateau salamander. The springs are in the Long Hollow Creek drainage that leads to Lake Travis. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watersheds of these three sites are entirely contained within the preserve. Special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from potential physical disturbance (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles.

Unit 10: Blizzard R-Bar-B Spring Unit

Unit 10 consists of 88 ac (36 ha) of private and Travis County land in northern Travis County, Texas. The unit is located west of Grand Oaks Loop. The extreme eastern portion of the unit is on the edge of residential development; a golf course (Twin Creeks) crosses the central portion; and the remainder is wooded and undeveloped. This unit contains three sites (Blizzard R-Bar-B Spring, Blizzard 2, and Blizzard 3) that are occupied by the Jollyville Plateau

salamander. The springs are located on Cypress Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watersheds of these three springs are partially contained within the preserve. Special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the sites, representing the extent of the subterranean critical habitat. We joined the edges of the resulting circles.

Unit 11: House Spring Unit

Unit 11 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is located just north of Benevento Way Road. Dies Ranch Road crosses the extreme eastern part of the unit. The entire unit is covered with dense residential development except for a narrow corridor along the stream, which crosses the unit from north to south. Several streets are located in the unit. This unit contains House Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on an unnamed tributary to Lake Travis. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subterranean critical habitat.

Unit 12: Kelly Hollow Spring Unit

Unit 12 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is located southeast of the intersection of Anderson Mill Road and Farm to Market Road 2769. With the exception of a portion of Anderson Mill Road along the northern edge of the unit, this unit is primarily undeveloped woodland. This unit contains Kelly Hollow Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on an unnamed tributary to Lake Travis. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subterranean critical habitat.

Unit 13: MacDonald Well Unit

Unit 13 consists of 68 ac (28 ha) of private and Travis County land in northern Travis County, Texas. The unit is centered near the intersection of Grand Oaks Loop and Farm to Market Road 2769. Farm to Market Road 2769 crosses the unit slightly north of its center. The northern portion of the unit contains residential development and part of Twin Creeks Golf Course. This unit contains MacDonald Well, which is a spring occupied by the Jollyville Plateau salamander. The spring is located on an unnamed tributary to Lake Travis. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watershed of this spring is partially contained within the preserve. Special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the spring, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subterranean critical habitat.

Unit 14: Kretschmarr Unit

Unit 14 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is located west of Ranch to Market Road 620. Wilson Parke Avenue crosses the unit along its southern border. Most of the unit is undeveloped, with one commercial development near the west-central portion. This unit contains two sites (Kretschmarr Salamander Cave and Unnamed Tributary Downstream of Grandview) that are occupied by the Jollyville Plateau salamander. Kretschmarr Salamander Cave is a cave, and Unnamed Tributary Downstream of Grandview is a spring site. Under section 4(b)(2) of the Act, certain lands in this unit have been excluded from the final rule for critical habitat (see *Application of Section 4(b)(2) of the Act* section below). These lands include approximately half of the surface habitat of Unnamed Tributary Downstream of Grandview. This unit also contains approximately half of the surface habitat of SAS Canyon, which is a spring outlet on the Grandview Hills HCP. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Some special management is being provided by the Balcones Canyonlands Preserve, which serves as mitigation for

impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3), because the surface watersheds of these two springs are partially contained within the preserve. However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The surface designation was delineated by drawing a circle with a radius of 262 ft (80 m) around the spring outlets (including a nearby occupied spring within the boundary of the HCP) and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring outlets (including a nearby occupied spring within the boundary of the HCP) and cave, representing the extent of the subsurface critical habitat. We connected the edges of the resulting circles. Those surface and subsurface areas within the boundary of the Grandview Hills HCP were then removed from the unit.

Unit 15: Pope and Hiers (Canyon Creek) Spring Unit

Unit 15 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is located between Bramblecrest Drive and Winchelsea Drive. The unit contains dense residential development on its northern, eastern, and western portions. The central portion of the unit is an undeveloped canyon and is preserved in perpetuity as part of a private preserve. This unit contains Pope and Hiers (Canyon Creek) Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on Bull Creek Tributary 6. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed outside of the preserve into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subsurface critical habitat.

Unit 16: Fern Gully Spring Unit

Unit 16 consists of 68 ac (28 ha) of private and City of Austin land in northern Travis County, Texas. The unit is centered just south of the intersection of Jenaro Court and Boulder Lane. The unit contains dense residential development on much of its northern half. Most of the southern half of the unit is undeveloped land managed by the City of Austin as part of the Balcones Canyonlands HCP Preserve, and a portion is part of the Canyon Creek preserve, a privately managed conservation area. This unit contains Fern Gully Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on Bull Creek Tributary 5. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watershed of this spring is partially contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the spring, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 17: Bull Creek 1 Unit

Unit 17 consists of 1,198 ac (485 ha) of private, City of Austin, and Travis County land in northern Travis County, Texas. The unit extends from the southeastern portion of Chestnut Ridge Road to 3M Center, just north of Ranch to Market Road 2222. The unit contains some residential development on the extreme edge of its northern portion and part of Vandegrift High School near its southeastern corner. Most of the remainder of the unit is undeveloped land managed by the City of Austin and Travis County as part of the Balcones Canyonlands HCP Preserve. This unit contains the following sites: Bull Creek Tributary 6 site 2, Bull Creek Tributary 6 site 3, Bull Creek Tributary 5 site 2, Bull Creek Tributary 5 site 3, Tubb Spring, Broken Bridge Spring, Spring 17, Tributary No. 5, Tributary 6 at Sewage Line, Canyon Creek, Tributary No. 6, Gardens of Bull Creek, Canyon Creek Hog Wallow Spring, Spring 5, Three Hole Spring, Franklin, Franklin Tract 2, Franklin Tract 3, Pit Spring, Bull Creek Spring Pool, Spring 1, Spring 4, Spring 2, Lanier Spring, Cistern (Pipe) Spring, Spring 3, Lanier 90-foot Riffle, Bull Creek at Lanier Tract, Ribelin/Lanier, Spring 18, Horsethief, Ribelin, Spring 15, Spring 16, Spring 14, Lower Ribelin, Spring 13, Spring 12, Upper Ribelin, Ribelin 2, Spring 10, and Spring 9. These springs are occupied by the Jollyville Plateau salamander and are located on Bull Creek and its tributaries. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watersheds of these springs are partially contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the sites, representing the extent of the subsurface critical habitat. We joined the edges of the resulting circles.

Unit 18: Bull Creek 2 Unit

Unit 18 consists of 237 ac (96 ha) of private, City of Austin, and Travis County land in northern Travis County, Texas. The center of the unit is near the eastern end of Concordia University Drive. Concordia University is in the central and eastern parts of the unit. Much of the rest of the unit is undeveloped land managed by the City of Austin and Travis County as part of the Balcones Canyonlands HCP Preserve. This unit contains six springs (Schlumberger Spring No. 1, Schlumberger Spring No. 2, Spring 6, Spring 19, Concordia Spring X, and Concordia Spring Y) that are occupied by the Jollyville Plateau salamander. The springs are located on Bull Creek Tributary 7. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watersheds of these springs are partially contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subsurface critical habitat. We joined the edges of the resulting circles.

Unit 19: Bull Creek 3 Unit

Unit 19 consists of 97 ac (39 ha) of private and City of Austin land in northern Travis County, Texas. The unit is just southeast of the intersection of Ranch to Market Road 620 and Vista Parke Drive. The unit contains some residential development on its western tip, but the rest of the unit is undeveloped land. Much of the remainder of the unit is managed by the City of Austin as part of the Balcones Canyonlands Preserve HCP. This unit contains two sites (Hamilton Reserve West and Gaas Spring) that are occupied by the Jollyville Plateau salamander. The springs are located on Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is partially within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watersheds of these springs are partially contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the springs, which may extend outside of the preserve. The surface habitat also needs special management to protect it from surface runoff from impervious cover outside of the preserve and potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section). Under section 4(b)(2) of the Act, certain lands in this unit have been excluded from the final rule for critical habitat under the Four Points HCP (see *Application of Section 4(b)(2) of the Act* section below).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring outlets (including nearby occupied spring outlets within the boundary of the Four Points HCP), representing the extent of the subsurface critical habitat. We connected the edges of the resulting circles. Those areas within the boundary of the Four Points HCP were then excluded from the unit.

Unit 20: Moss Gully Spring Unit

Unit 20 consists of 68 ac (28 ha) of City of Austin and Travis County land in northern Travis County, Texas. The unit is just east of the eastern end of Unit 19. The unit is all undeveloped woodland, and it is managed by the City of Austin or Travis County as part of the Balcones Canyonlands HCP Preserve. This unit contains Moss Gully Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watershed of this site is entirely contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the spring, which may extend outside of the preserve. The surface habitat also needs special management to protect it from potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 21: Ivanhoe Spring Unit

Unit 21 consists of 68 ac (28 ha) of City of Austin land in northern Travis County, Texas. The unit is east of the northwest extent of High Hollow Drive. The unit is all undeveloped woodland and is managed by the City of Austin as part of the Balcones Canyonlands Preserve HCP. This unit contains Ivanhoe Spring 2, which is occupied by the Jollyville Plateau salamander. The spring is located on West Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

The unit is within the Balcones Canyonlands Preserve, which serves as mitigation for impacts to 35 species covered in the Balcones Canyonlands

HCP (Service 1996, p. 3). However, impacts to the Jollyville Plateau salamander are not covered under this HCP. Some special management is being provided by the preserve because the surface watershed of this site is entirely contained within the preserve. However, special management considerations or protection may be required because of the potential for groundwater pollution and depletion from current and future development in the groundwater recharge area of the spring, which may extend outside of the preserve. The surface habitat also needs special management to protect it from potential physical disturbance of the surface habitat (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 22: Sylvia Spring Area Unit

Unit 22 consists of 439 ac (178 ha) of private, City of Austin, and Williamson County land in northern Travis County and southwestern Williamson County, Texas. The unit is located east of the intersection of Callanish Park Drive and Westerkirk Drive, north of the intersection of Spicewood Springs Road and Yaupon Drive, and west of the intersection of Spicewood Springs Road and Old Lampasas Trail in the Bull Creek Ranch community. Spicewood Springs Road crosses the unit from southwest to east. Residential and commercial development is found in most of the unit. An undeveloped stream corridor crosses the unit from east to west. This unit contains 13 sites (Small Sylvia Spring, Sylvia Spring Area 2, Sylvia Spring Area 3, Sylvia Spring Area 4, Downstream of Small Sylvia Spring 1, Downstream of Small Sylvia Spring 2, Spicewood Valley Park Spring, Tributary 4 upstream, Tributary 4 downstream, Spicewood Park Dam, Tanglewood Spring, Tanglewood 2, and Tanglewood 3) that are occupied by the Jollyville Plateau salamander. Small Sylvia Spring, Sylvia Spring Area 2, Sylvia Spring Area 3, Sylvia Spring Area 4, Downstream of Small Sylvia Spring 1, Downstream of Small Sylvia Spring 2, Spicewood Valley Park Spring, Tributary 4 upstream, Tributary 4 downstream, and Spicewood Park Dam are located on Tributary 4. Tanglewood Spring, Tanglewood 2, and Tanglewood 3 are located on Tanglewood Creek, a tributary to Tributary 4. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subsurface critical habitat. We joined the edges of the resulting circles.

Unit 24: Long Hog Hollow Unit

Unit 24 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is centered east of the intersection of Cassia Drive and Fireoak Drive. Most of the unit is in residential development. There are wooded corridors in the central and eastern portion of the unit. This unit contains one spring (Long Hog Hollow Tributary below Fireoak Spring) that is occupied by the Jollyville Plateau salamander. The spring is located on Long Hog Hollow Tributary. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 25: Tributary 3 Unit

Unit 25 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is centered between Bluegrass Drive and Spicebush Drive. The eastern and western part of the unit is in residential development. There are wooded corridors in the central part of the unit, and scattered woodland in the eastern and western part. There is a golf course in the north-central part of the unit. This unit contains Tributary No. 3, which is occupied by the Jollyville Plateau salamander. The spring is located on Bull Creek Tributary 3. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 26: Sierra Spring Unit

Unit 26 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is located west of the intersection of Tahoma Place and Ladera Vista Drive. The eastern and western part of the unit is in residential development. A wooded corridor crosses the central part of the unit from north to south. A facility that handles automotive fluids is located in the northwest portion of the unit. This unit contains Sierra Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on a tributary to Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around

the spring, representing the extent of the subsurface critical habitat.

Unit 27: Troll Spring Unit

Unit 27 consists of 98 ac (40 ha) of City of Austin and private land in northern Travis County, Texas. The unit is located west of the intersection of Jollyville Road and Taylor Draper Lane. The eastern and western part of the unit is in residential development. A wooded corridor crosses the central part of the unit from north to south. This unit contains two springs (Hearth Spring and Troll Spring) that are occupied by the Jollyville Plateau salamander. The springs are located on a tributary to Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the springs, representing the extent of the subsurface critical habitat. We connected the edges of the resulting circles.

Unit 28: Stillhouse Unit

Unit 28 consists of 203 ac (82 ha) of City of Austin and private land in northern Travis County, Texas. The unit is centered due north of the intersection of West Rim Drive and Burney Drive. The northern and southern part of the unit is in residential development. A wooded corridor crosses the central part of the unit from east to west. This unit contains eight sites: Stillhouse Hollow, Barrow Hollow Spring, Spring 20, Stillhouse Hollow Tributary, Stillhouse Tributary, Little Stillhouse Hollow Spring, Stillhouse Hollow Spring, and Barrow Preserve Tributary. All are occupied by the Jollyville Plateau salamander. The springs are located on an unnamed tributary to Bull Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlets and outflows up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the sites, representing the extent of the subsurface critical habitat. We connected the edges of the resulting circles.

Unit 30: Indian Spring Unit

Unit 30 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is centered just south of Greystone Drive about halfway between its intersection with Edgerock Drive and Chimney Corners Drive. Most of the unit is covered with residential development except for a small wooded corridor that crosses the central part of the unit from east to west. This unit contains Indian Spring, which is occupied by the Jollyville Plateau salamander. The spring is located on an unnamed tributary to Shoal Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the spring, representing the extent of the subsurface critical habitat.

Unit 31: Spicewood Spring Unit

Unit 31 consists of 68 ac (28 ha) of private land in northern Travis County, Texas. The unit is centered just northeast of the intersection of Ceberry Drive and Spicewood Springs Road, just downstream of the bridge on Ceberry Drive. Most of the unit is covered with commercial and residential development except for a small wooded corridor along the stream, which crosses the unit from north to east. This unit contains two sites, Spicewood Spring and Spicewood Tributary, which are occupied by the Jollyville Plateau salamander. The springs are located in an unnamed tributary to Shoal Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around the sites, representing the extent of the subsurface critical habitat.

Unit 32: Balcones District Park Spring Unit

Unit 32 consists of 68 ac (28 ha) of private and City of Austin land in northern Travis County, Texas. The unit is centered about 1,411 ft (430 m) northeast of the intersection of Duval Road and Amherst Drive. Most of the unit is in a city park (Balcones District Park) with a swimming pool. A substantial amount of the park is wooded and undeveloped. There is dense commercial development in the southern and southeastern portions of the unit. This unit contains Balcones District Park Spring, which is occupied by the Jollyville Plateau salamander. The spring is located in the streambed of an unnamed tributary to Walnut Creek. The unit contains primary constituent elements of the physical or biological features essential to the conservation of the species.

Special management considerations or protection may be required because of the potential for groundwater pollution from current and future development in the recharge area, runoff from impervious cover within the surface watershed into surface habitat, potential physical disturbance of the surface habitat, and depletion of groundwater (see *Special Management Considerations or Protection* section).

The designation includes the spring outlet and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat. The unit was further delineated by drawing a circle with a radius of 984 ft (300 m) around

the spring, representing the extent of the subsurface critical habitat.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species to be listed under the Act or result in the destruction or adverse modification of critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory 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, 442 (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 continue to serve its intended conservation role for the species.

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

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

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

(2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define ''reasonable and prudent alternatives'' (at 50 CFR 402.02) as alternative actions identified during consultation that:

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

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

(3) Are economically and technologically feasible, and

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

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the ''Adverse Modification'' Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the Austin blind and Jollyville Plateau salamanders. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species. The function of each unit with respect to species conservation is to contribute to the redundancy, representation, and resiliency of its respective species, which affects the species' probability of persistence.

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

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the Austin blind and Jollyville Plateau salamanders. These activities include, but are not limited to:

(1) Actions that would physically disturb the spring or subsurface habitat upon which these two salamander species depend. Such activities could include, but are not limited to, channelization, removal of the substrate, and other activities that result in the physical destruction of habitat or the modification of habitat so that it is not suitable for the species.

(2) Actions that would increase the concentration of sediment or contaminants in the surface or subsurface habitat. Such activities could include, but are not limited to, increases in impervious cover in the surface watershed, inadequate erosion controls on the surface and subsurface watersheds, and release of pollutants into the surface water or connected groundwater at a point source or by dispersed release (non-point source). These activities could alter water conditions to levels that are harmful to the Austin blind and Jollyville Plateau salamanders or their prey and result in direct, indirect, or cumulative adverse effects to these salamander individuals and their life cycles. Sedimentation can also adversely affect salamander habitat by reducing access to interstitial spaces.

(3) Actions that would deplete the aquifer to an extent that decreases or

stops the flow of occupied springs or that reduces the quantity of subterranean habitat used by the species. Such activities could include, but are not limited to water withdrawals from aquifers, increases in impervious cover over recharge areas, and channelization or other modification of recharge features that would decrease recharge. These activities could dewater habitat or cause reduced water quality to levels that are harmful to one of the two salamanders or their prey and result in adverse effects to their habitat.

Exemptions

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

The Sikes Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an Integrated Natural Resources Management Plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

(1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;

(2) A statement of goals and priorities;

(3) A detailed description of management actions to be implemented to provide for these ecological needs; and

(4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108–136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: ''The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.''

There are no Department of Defense lands with a completed INRMP within or near the critical habitat designation. Therefore, we are not exempting lands from this final designation of critical habitat for the Austin blind and Jollyville Plateau salamanders pursuant to section 4(a)(3)(B)(i) of the Act.

Exclusions

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

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

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise her discretion to exclude the area only if such exclusion would not result in the extinction of the species.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive from the protection from adverse modification or destruction as a result of actions with a Federal nexus; the educational benefits of mapping essential habitat for recovery of the listed species; and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation; the continuation, strengthening, or encouragement of partnerships; or implementation of a management plan that provides equal to or more conservation than a critical habitat designation would provide.

In the case of the Austin blind and Jollyville Plateau salamanders, the benefits of critical habitat include public awareness of the species' presence and the importance of habitat protection and, in cases where a Federal nexus exists, increased habitat protection for the species due to the protection from adverse modification or destruction of critical habitat.

When considering the benefits of exclusion and whether exclusion is likely to result in implementation of a management plan that provides equal or more conservation than a critical habitat designation would provide, we consider a variety of factors, including but not limited to, whether the plan is finalized; how it provides for the conservation of the essential physical or biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

When considering the benefits of exclusion and whether exclusion is likely to result in the continuation, strengthening, or encouragement of partnerships, we consider a variety of factors including but not limited to, whether or not the Service has entered into written conservation agreements with landowners based on conservation partnerships or issued permits with assurances covering the species.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Based on the information provided by entities seeking exclusion, as well as additional public comments received, we evaluated whether certain lands were appropriate for exclusion from this final designation pursuant to section 4(b)(2) of the Act. As a result, we are excluding approximately 576 ac (233 ha) from the portions of Jollyville Plateau salamander proposed critical

habitat Units 3, 14, and 19 that are covered under the Four Points, Grandview Hills, and Buttercup Creek HCPs. The boundaries of these HCPs did not cover the entirety of their respective critical habitat units; therefore, the entire unit was not excluded. Table 3 below provides approximate areas of lands that meet the definition of critical habitat but have been excluded from our final designation. We are excluding these areas because we believe that they are appropriate for exclusion under the ''other relevant impacts'' provisions of section 4(b)(2) of the Act. Please note that we identified some additional areas within our proposed rule that we considered for exclusion, and we received requests for exclusion of additional areas during the public comment periods, but after further analysis we did not exclude these additional areas from critical habitat. Explanations for our conclusions in these cases can be found in the Summary of Comments and Recommendations section of this final rule.

TABLE 4—AREAS EXCLUDED FROM THE DESIGNATION OF CRITICAL HABITAT BY CRITICAL HABITAT UNIT

Critical habitat unit	Specific area	Basis for exclusion	Areas excluded in acres (hectares)
3	Buttercup Creek	Buttercup Creek HCP/Partnership	375 (152)
14	Grandview Hills	Grandview Hills HCP/Partnership	44 (18)
19	Four Points	Four Points HCP/Partnership	157 (64)

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. To consider economic impacts, we prepared a draft economic analysis of the proposed critical habitat designation and related factors (Industrial Economics 2013).

The intent of the final economic analysis (FEA) is to quantify the economic impacts of potential conservation efforts for the central Texas salamanders; some of these costs will likely be incurred regardless of whether we designate critical habitat (baseline). The economic impact of the final critical habitat designation is analyzed by comparing scenarios both ''with critical habitat'' and ''without critical habitat.'' The ''without critical habitat'' scenario represents the baseline for the analysis, considering protections already in place for the species (for example, under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the estimated costs incurred regardless of whether critical habitat is designated. The ''with critical habitat'' scenario describes the estimated incremental impacts (costs) associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those not expected to occur absent the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat above and beyond the baseline costs; these are the costs we consider in the final designation of critical habitat.

The FEA 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 government agencies, private businesses, and individuals. The FEA measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. The Service uses this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the FEA considers those costs that may occur in the 23 years following the designation of critical habitat, which was determined to be the appropriate period for analysis because limited planning information was available for most activities to forecast activity levels for projects beyond a 23-year timeframe. The FEA quantifies economic impacts of the Austin blind and Jollyville Plateau salamanders' conservation efforts associated with the following categories of activity: (1) Development, (2) Water management activities, (3) Transportation projects, (4) Utility projects, (5) Mining, and (6) Livestock grazing.

All incremental costs anticipated to result from the designation are administrative in nature and result from the consideration of adverse modification in section 7 consultations and reinitiation for existing management plans. Consultations associated with development activities account for approximately 98.7 percent of incremental impacts in the FEA. Please refer to the FEA for a comprehensive discussion of the potential impacts.

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation of critical habitat for the Austin blind and Jollyville Plateau salamanders. Consequently, we have determined not to use our discretion to exclude any areas from this designation of critical habitat based on economic impacts. A copy of the FEA with supporting documents may be obtained by contacting the Austin Ecological Services Field Office (see **ADDRESSES**) or by downloading them from the Internet at *http://www.regulations.gov*, Docket No. FWS–R2–ES–2013–0001.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. In preparing this final rule, we have determined that none of the lands within the designation of critical habitat for the Austin blind and Jollyville Plateau salamanders are owned and managed by the Department of Defense. Consequently, the Secretary is not exercising her discretion to exclude any areas from this final designation based on impacts on national security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether the landowners have developed any HCPs or other management plans for the area, or whether there are

conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues and consider the government-to-government relationship of the United States with tribal entities.

Land and Resource Management Plans, Conservation Plans, or Agreements Based on Conservation Partnerships

When considering the benefits of exclusion based on a current land management or conservation plan (HCPs as well as other types), we assess whether:

(1) The plan is complete and identifies how it provides for the conservation of the essential physical or biological features;

(2) there is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations;

(3) the conservation strategies in the plan are likely to be effective;

(4) the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information; and

(5) whether the plan provides equal or more conservation than a critical habitat designation would provide.

When considering the benefits of exclusion based on whether it is likely to result in the continuation, strengthening, or encouragement of partnerships, we assess whether:

(1) The Service has entered into a written conservation agreement with a landowner based on a conservation partnership, or

(2) the Service has issued a permit with assurances covering the species.

Based on consideration of these other relevant factors, we believe the benefits of excluding the Four Points, Grandview Hills, and Buttercup Creek HCP areas outweigh the benefits of including them. Thus, we are excluding approximately 576 ac (233 ha) of non-Federal lands in portions of Units 3, 14, and 19 under these HCPs. See further discussion of our assessment below.

Four Points HCP Overview

The goals of the Four Points HCP are to avoid, minimize, and mitigate for the potential negative effects of construction and operation of mixed use (hotel, commercial, office, and retail) and residential development near and adjacent to currently occupied habitat of the endangered golden-cheeked warbler, endangered karst invertebrates (Tooth Cave ground beetle (*Rhadine persephone*) and bone cave harvestman), and the Jollyville Plateau salamander, and to contribute to conservation of the covered species and other listed and non-listed cave or karst fauna. The Jollyville Plateau salamander was covered as a non-listed species in the HCP and the Service provided ''No Surprises'' assurances covering the Jollyville Plateau salamander. The ''No Surprises'' rule (63 FR 8859, February 23, 1998) generally states that the Service will not require additional commitment of land, water, or financial compensation or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the HCP for species covered by the permit under a properly implemented conservation plan without the consent of the permittee. No surprises assurances apply only to species adequately covered by the HCP in question and only to those permittees who are in full compliance with the terms of their HCP, incidental take permit, and other supporting documents.

The Four Points HCP authorizes incidental take of the golden-cheeked warbler and endangered karst invertebrates (in two caves). Under the Four Points HCP, mitigation for take was implemented by setting aside 179 ac (72 ha) of the property, which remain in a natural undisturbed condition and are preserved in perpetuity for the benefit of the listed and non-listed species. Specifically, one 52-ac (21-ha) on-site preserve contains five caves (four with Tooth Cave ground beetle and three with bone cave harvestman) and high-quality golden-cheeked warbler habitat, and contributes to the maintenance of water quality for Jollyville Plateau salamander springs downstream, both on and offsite of Four Points. Another approximately 127-ac (51-ha) onsite preserve supports high-quality golden-cheeked warbler habitat and contributes to protection of the water quality of onsite Jollyville Plateau salamander springs, Springs 21, 22, and 24. Additionally, development within the upland area that is immediately adjacent to the preserve lands with the Jollyville Plateau salamander will be sited to avoid drainages that contain springs known to support Jollyville Plateau salamanders. As part of the Four Points HCP, the permittee, New TPG—Four Points, is required to protect and manage the preserve areas in perpetuity in accordance with the permit, HCP, and conservation needs of the species.

All of the approximately 157 ac (64 ha) of non-Federal lands under the Four Points HCP in critical habitat Unit 19 that we are excluding have either been authorized for development or preserved in perpetuity for the conservation of the golden-cheeked warbler, Tooth Cave ground beetle, bone cave harvestman, and Jollyville Plateau salamander. The entirety of Unit 19 is not covered under this HCP, and thus, the entire unit was not excluded.

Grandview Hills HCP Overview

The goals of the Grandview Hills HCP are to avoid, minimize, and mitigate for the potential negative effects of construction and operation of residential and commercial development near and adjacent to Jollyville Plateau salamander, golden-cheeked warbler, black-capped vireo, Tooth Cave pseudoscorpion (*Tartarocreagris texana*), and the Kretschmarr Cave mold beetle (*Texamaurops reddelli*). The Jollyville Plateau salamander was covered as a non-listed species in the HCP, and the Service provided ''No Surprises'' assurances covering the Jollyville Plateau salamander.

The Grandview Hills HCP authorizes incidental take of golden-cheeked warbler, black-capped vireo, and karst invertebrates. Implementation of the HCP will result in preservation of approximately 313 ac (127 ha), which includes golden-cheeked warbler and black-capped vireo habitat, one endangered species karst invertebrate cave, and a spring and spring run containing Jollyville Plateau salamanders. Specifically, 266 ac (108 ha) of golden-cheeked warbler habitat will be deeded to the Balcones Canyonlands Preserve, 15 ac (6 ha) of black-capped vireo habitat will be restored, 600-ft (183-m) setbacks will be placed around Amber Cave, buffers will be placed around the Jollyville Plateau salamander spring, and drainage will be routed away from the Jollyville Plateau salamander site. As part of the Grandview Hills HCP, 69 Grandview LP (formerly Tomen-Parke Associates) is required to protect and manage the onsite preserve areas in perpetuity in accordance with the permit, HCP, and conservation needs of the species.

All of the approximately 44 ac (18 ha) of non-Federal lands under the Grandview Hills HCP in critical habtat Unit 14 that we are excluding have either been authorized for development or preserved in perpetuity for the conservation of the golden-cheeked warbler, black-capped vireo, Tooth Cave pseudoscorpion, Kretschmarr Cave mold beetle, and Jollyville Plateau salamander. The entirety of Unit 14 is not covered under this HCP, and thus, the entire unit was not excluded.

Buttercup Creek HCP Overview

The goals of the Buttercup Creek HCP are to avoid, minimize, and mitigate for the potential negative effects of construction and operation of single and multifamily residences and a school near and adjacent to currently occupied habitat of the endangered Tooth Cave ground beetle and other rare cave and karst species, including the Jollyville Plateau salamander, and to contribute to conservation of the listed and non-listed cave or karst fauna. The Jollyville Plateau salamander was covered as a non-listed species in an Implementing Agreement signed by the Service, and the Service provided ''No Surprises'' assurances covering the Jollyville Plateau salamander.

The Buttercup Creek HCP authorizes incidental take of endangered karst invertebrates, if encountered during construction. Under the Buttercup Creek HCP, mitigation for take of the karst invertebrates was implemented by setting aside 12 separate cave preserves (totaling 130 ac (53 ha) and encompassing 37 caves) and two greenbelt flood plains (33 ac (13 ha)) for a total of 163 ac (66 ha), which remain in a natural undisturbed condition and are preserved in perpetuity for the benefit of the listed and non-listed species. There are 21 occupied endangered karst invertebrate caves and 10 Jollyville Plateau salamander caves in the preserves. The shape and size of each preserve was designed to include surface drainage basins for all caves, the subsurface extent of all caves, and connectivity between nearby caves and features. Additionally, for those more sensitive cave preserves, particularly with regard to recharge, 7 of the 12 preserves are to be fenced off to restrict access for only maintenance, monitoring, and research. All preserves are regularly monitored, fences and gates are checked and repaired, and red imported fire ants (*Solenopsis invicta*) controlled. Surface water drainage from streets and parking areas will be diverted by permanent diversion structures to treatment systems and detention ponds or will discharge down-gradient of the cave preserves. An additional 3 to 4 in (76 to 102 mm) of topsoil are added in yards and landscaped areas for additional filtration and absorption of fertilizers, pesticides, and other common constituents. And an education and outreach program informs homeowners about the proper use of fertilizers and pesticides, the benefits of native landscaping, and the disposal of household hazardous waste.

All of the approximately 375 ac (152 ha) of non-Federal lands under the Buttercup Creek HCP in critical habitat Unit 3 that we are excluding have either been authorized for development or preserved in perpetuity for the conservation of the Tooth Cave ground beetle, Jollyville Plateau salamander, and other non-listed species. The entirety of Unit 3 is not covered under this HCP, and thus, the entire unit was not excluded.

Benefits of Inclusion

The principal benefit of including an area in critical habitat designation is the requirement of Federal agencies to ensure that actions that they fund, authorize, or carry out are not likely to result in the destruction or adverse modification of any designated critical habitat, which is the regulatory standard of section 7(a)(2) of the Act under which consultation is completed. Federal agencies must consult with the Service on actions that may affect a listed species, and refrain from 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 cases, the outcome of these analyses will be similar, because effects to habitat will often result in effects to the species. However, the regulatory standard is different, as the jeopardy analysis investigates the action's impact to survival and recovery of the species, while the adverse modification analysis investigates the action's effects to the designated critical habitat's contribution to conservation. This will, in many cases, lead to different results and different regulatory requirements. Thus, critical habitat designation may provide greater benefits to the recovery of a species than listing would alone. Therefore, critical habitat designation may provide a regulatory benefit for the Jollyville Plateau salamander on lands covered under the Four Points, Grandview Hills, and Buttercup Creek HCPs when there is a Federal nexus present for a project that might adversely modify critical habitat.

Another possible benefit of including lands in critical habitat is public education regarding the potential conservation value of an area that may help focus conservation efforts on areas of high conservation value for certain species. We consider any information about the Jollyville Plateau salamander and its habitat that reaches a wide audience, including parties engaged in conservation activities, to be valuable. Designation of critical habitat would provide educational benefits by informing Federal agencies and the public about the presence of listed species for all units.

In summary, we believe that the benefits of inclusion of lands under the Four Points, Grandview Hills, and Buttercup Creek HCPs are (1) a regulatory benefit when there is a Federal nexus present for a project that might adversely modify critical habitat and (2) educational benefits about the Jollyville Plateau salamander and its habitat.

Benefits of Exclusion

The benefits of excluding lands from critical habitat designation with properly implemented HCPs, such as the Four Points, Grandview Hills, and Buttercup Creek HCPs, include relieving the permit holders of any additional regulatory burden that might be imposed as a result of the designation. A related benefit of exclusion is the continued ability to maintain existing relationships and seek new partnerships with future HCP participants, including States, counties, local jurisdictions, conservation organizations, private landowners, and developers, which together can implement conservation actions that we would be unable to accomplish on our own. Not only are HCPs important for listed species, but they can help conserve many species that are not State or federally listed, which might not otherwise receive protection absent the HCPs. We place great value on the partnerships that are developed with HCPs.

The exclusion of lands under the Four Points, Grandview Hills, and Buttercup Creek HCPs from critical habitat will help preserve the partnership we have developed with the permittees, reinforce those relationships we are building with other developers, and foster future partnerships and development of future management plans. The preserve lands under these HCPs are providing some protection for the physical and biological features essential to the conservation of the species. Therefore, exclusion of these lands under the Four Points, Grandview Hills, and Buttercup Creek HCPs from critical habitat will help preserve the partnerships and will foster future partnerships and future conservation efforts. Excluding lands under these HCPs will show that we are committed to our partners to further the conservation for the Jollyville Plateau salamander and other endangered and threatened species.

Benefits of Exclusion Outweigh the Benefits of Inclusion

Four Points HCP

We reviewed and evaluated the benefits of inclusion versus exclusion from critical habitat of the Four Points HCP lands within proposed critical habitat Unit 3. We acknowledge that the Four Points development has not been completed within the watersheds of two of the three springs onsite, and, therefore, there is potential for more conservation benefit to this species at this site. In accordance with their HCP, New TPG—Four Points is required to capture and route runoff from development away from drainages that contain springs known to support Jollyville Plateau salamanders. Additionally, by our issuance of an incidental take permit under the HCP and covering the Jollyville Plateau salamander, the Service has already determined that long-term conservation benefits will result from the implementation of this HCP, which will occur regardless of critical habitat designation. Inclusion of the Four Points HCP lands in the critical habitat designation would provide little additional regulatory protection under section 7 of the Act because no additional future Federal actions that may affect the critical habitat are foreseen. Any potential educational benefits resulting from a critical habitat designation are reduced because the HCP permit holders are already aware of the species' location, and these benefits are outweighed by the benefits of exclusion.

While additional or different conservation measures may be included in future section 7 consultations and HCPs, at the time of this HCP, these conservation measures were considered appropriate to minimize, mitigate, or avoid impacts to the Jollyville Plateau salamander. The Service provided ''No Surprises'' assurances that the permit holders, if appropriately implementing the HCP, would not incur additional commitment of land, water, or financial compensation or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the HCP for this species. Therefore, in consideration of the relevant impact to current and future partnerships as discussed under *Exclusions Based on Other Relevant Factors* above, we determined for the Four Points HCP lands that the benefits of exclusion (continuation, strengthening, and encouragement of conservation partnerships) outweigh the benefits of critical habitat designation (additional regulatory protections from activities with a Federal nexus and educational benefits).

Grandview Hills HCP

We reviewed and evaluated the benefits of inclusion versus exclusion from critical habitat Unit 14 of the Grandview Hills HCP lands. We acknowledge that the Grandview Hills development has not been completed within the watershed of the two springs, and, therefore, there is potential for more conservation benefit to this species at this site. In accordance with their HCP, 69 Grandview LP is required to capture and route runoff from development away from drainages that contain springs known to support the Jollyville Plateau salamander. Additionally, by our issuance of an incidental take permit under the HCP and covering the Jollyville Plateau salamander, the Service has already determined that long-term conservation benefits will result from the implementation of this HCP, which will occur regardless of critical habitat designation. Inclusion of the Grandview HCP lands in the critical habitat designation would provide little additional regulatory protection under section 7 of the Act because no additional future Federal actions that may affect the critical habitat are foreseen. Any potential educational benefits resulting from a critical habitat designation are reduced because the HCP permit holders are already aware of the species' location, and these benefits are outweighed by the benefits of exclusion.

While additional or different conservation measures may be included in future section 7 consultations and HCPs, at the time of this HCP, these conservation measures were considered appropriate to minimize, mitigate, or avoid impacts to the Jollyville Plateau salamander. The Service provided ''No Surprises'' assurances that the permit holders, if appropriately implementing the HCP, would not incur additional commitment of land, water, or financial compensation or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the HCP for this species. Therefore, in consideration of the relevant impact to current and future partnerships and conservation benefits as discussed under *Exclusions Based on Other Relevant Factors* above, we determined for the Grandview Hills HCP lands that the benefits of exclusion (continuation, strengthening, and encouragement of conservation partnerships) outweigh the benefits of critical habitat designation (additional regulatory protections from activities with a Federal nexus and educational benefits).

Buttercup Creek HCP

We reviewed and evaluated the benefits of inclusion versus exclusion from critical habitat Unit 19 of the Buttercup Creek HCP lands. First, the Buttercup Creek development has been completed around each of the cave openings with Jollyville Plateau salamanders. Second, in accordance with their HCP, the permit holder, Forestar, captures and routes runoff from development away from the cave preserves. Finally, by our issuance of an incidental take permit under the HCP and covering the Jollyville Plateau salamander, the Service has already determined that long-term conservation benefits will result from the implementation of this HCP, which will occur regardless of critical habitat designation. Inclusion of the Buttercup Creek HCP lands in the critical habitat designation would provide little additional regulatory protection under section 7 of the Act because no additional future Federal actions that may affect the critical habitat are foreseen. Any potential educational benefits resulting from a critical habitat designation are reduced because the HCP permit holders are already aware of the species' location, and these benefits are outweighed by the benefits of exclusion.

While additional or different conservation measures may be included in future section 7 consultations and HCPs, at the time of this HCP, these conservation measures were considered appropriate to minimize, mitigate, or avoid impacts to the Jollyville Plateau salamander. The Service provided ''No Surprises'' assurances that the permit holders, if appropriately implementing the HCP, would not incur additional commitment of land, water, or financial compensation or restrictions on the use of land, water, or other natural resources otherwise available for development or use under the HCP for this species. Therefore, in consideration of the relevant impact to current and future partnerships and conservation benefits as discussed under *Exclusions Based on Other Relevant Factors* above, we determined for the Buttercup Creek HCP lands that the benefits of exclusion (continuation, strengthening, and encouragement of conservation partnerships) outweigh the benefits of critical habitat designation (additional regulatory protections from activities with a Federal nexus and educational benefits).

In summary, impacts to the Jollyville Plateau salamander from the HCP's

permitted activities within those areas being excluded have already been analyzed and authorized. Once an HCP is permitted, implementation of conservation measures will occur regardless of whether critical habitat is designated within its plan boundaries. Furthermore, we believe that the educational benefits of critical habitat designation are not significant due to the ongoing conservation efforts. Also, we are designating as critical habitat those lands surrounding lands covered by the Four Points, Grandview Hills, and Buttercup Creek HCPs, which already results in educational benefits for the Jollyville Plateau salamander and its habitat without designating the HCP lands as critical habitat. Thus, an inclusion of the Four Points, Grandview Hills, and Buttercup Creek HCP lands would not provide any additional educational benefits. As noted above, the exclusion of the Four Points, Grandview Hills, and Buttercup Creek HCP lands will help to strengthen the relationships between the Service and our partners and provide an incentive for the voluntary development of effective management plans that provide benefits to species. These partnership benefits are significant, because they serve to provide protection and conservation of species on private lands that would not otherwise occur.

The Exclusion Will Not Likely Result in Extinction of the Jollyville Plateau Salamander

The exclusion from final critical habitat designation of the Four Points, Grandview Hills, and Buttercup Creek HCP lands will not result in extinction of the Jollyville Plateau salamander due, in part, to the long-term conservation benefits that result from the implementation of the HCPs. In addition, the jeopardy standard of section 7 of the Act will also provide protection in occupied areas when there is a Federal nexus. Therefore, based on the above discussion, the Secretary is exercising her discretion to exclude 576 ac (233 ha) of land within the boundaries of these three HCPs from this final critical habitat designation.

Required Determinations

Regulatory Planning and Review (Executive Orders 12866 and 13563)

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

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

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) of 1996 (5 U.S.C 801 *et seq.*), 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 effects of the rule on small entities (small businesses, small organizations, and small government 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. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for the Austin blind and Jollyville Plateau salamanders 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, small entities include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses. 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 on these small entities are significant, we consider the types of activities that might trigger regulatory impacts under this rule, as well as the 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.

Importantly, the incremental impacts of a rule must be both significant and substantial to prevent certification of the rule under the RFA and to require the preparation of an initial regulatory flexibility analysis. If a substantial number of small entities are affected by the proposed critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify.

The Service's current understanding of recent case law is that Federal agencies are required to evaluate the potential impacts of rulemaking only on those entities directly regulated by the rulemaking; therefore, they are not required to evaluate the potential impacts to those entities not directly regulated. The designation of critical habitat for an endangered or threatened species only has a regulatory effect where a Federal action agency is involved in a particular action that may affect the designated critical habitat. Under these circumstances, only the Federal action agency is directly regulated by the designation, and, therefore, consistent with the Service's current interpretation of RFA and recent case law, the Service may limit its evaluation of the potential impacts to those identified for Federal action agencies. Under this interpretation, there is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated, such as small businesses. However, Executive Orders 12866 and 13563 direct Federal agencies to assess costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consequently, it is the current practice of the Service to assess to the extent practicable these potential impacts if sufficient data are available, whether or not this analysis is believed

by the Service to be strictly required by the RFA. In other words, while the effects analysis required under the RFA is limited to entities directly regulated by the rulemaking, the effects analysis under the Act, consistent with the E.O. regulatory analysis requirements, can take into consideration impacts to both directly and indirectly impacted entities, where practicable and reasonable.

In conclusion, we believe that, based on our interpretation of directly regulated entities under the RFA and relevant case law, this designation of critical habitat will directly regulate only Federal agencies, which are not by definition small business entities. And as such, we certify that, if promulgated, this designation of critical habitat would not have a significant economic impact on a substantial number of small business entities. Therefore, a regulatory flexibility analysis is not required. However, though not necessarily required by the RFA, in our final economic analysis for this rule we considered and evaluated the potential effects to third parties that may be involved with consultations with Federal action agencies related to this action.

Designation of critical habitat affects only activities authorized, funded, or carried out 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 authorize, fund, or carry out that may affect the Austin blind and Jollyville Plateau salamanders. 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).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Austin blind and Jollyville Plateau salamanders and the designation of critical habitat. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 1 through 4 and Appendix A of the analysis and evaluates the potential for economic impacts related to: (1) Residential and commercial development, (2) surface mining, and (3) habitat and species management.

The FEA analyzes the proposed designation as described in the proposed rule and does not reflect changes to the proposed critical habitat designation made in the final rule. In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on the currently available information, we concluded that this rule would not result in a significant economic impact on a substantial number of small entities (Industrial Economics 2013, pp. A–2–A–8). Therefore, we are certifying that the designation of critical habitat for Austin blind and Jollyville Plateau salamanders will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute ''a significant adverse effect'' when compared to not taking 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 the Austin blind and Jollyville Plateau salamanders' 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 *et seq.*), we make the following findings:

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

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

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

is not a ''significant regulatory action'' under the Unfunded Mandates Reform Act. The FEA concludes incremental impacts may occur due to administrative costs of section 7 consultations for development, water management activities, transportation projects, utility projects, mining, and livestock grazing; however, these are not expected to significantly affect small governments. Incremental impacts stemming from various species conservation and development control activities are expected to be borne by the Federal Government, Texas Department of Transportation, City of Austin, Lower Colorado River Authority, Travis and Williamson Counties, Concordia University, and other entities, which are not considered small governments. Consequently, we do not believe that the critical habitat designation would significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Austin blind and Jollyville Plateau salamanders in a takings implications assessment. As discussed above, the designation of critical habitat affects only Federal actions. Although private parties that receive Federal funding, assistance, or require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. The FEA found that this designation will not affect a substantial number of small entities, but there could be costs of development restrictions in the form of reduced land values. A number of the private landowners are not small businesses. However, we found that 6,864 small developers may be affected by this designation, but the impact is less than 1 percent of average annual sales of these businesses. Based on information contained in the FEA and described within this document, it is not likely that economic impacts to a property owner will be of a sufficient magnitude to support a takings action. The takings implications assessment concludes that this designation of critical habitat for the Austin blind and Jollyville Plateau salamanders does not pose significant takings implications for lands within or affected by the designation.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this rule does not have significant Federalism effects. A federalism impact summary statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, this critical habitat designation with appropriate State resource agencies in Texas. We received comments from Texas Parks and Wildlife Department, Texas Commission on Environmental Quality, Texas Department of Transportation, Office of the Governor, Texas Comptroller of Public Accounts, and the Texas Department of Agriculture and have addressed them in the Summary of Comments and Recommendations, which can be found on the Internet at *http://www.regulations.gov* and *http://www.fws.gov/southwest/es/AustinTexas/* at Docket No. FWS–R2–ES–2013–0001. The designation of critical habitat in areas currently occupied by the Austin blind and Jollyville Plateau salamanders imposes no 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 in that the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

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

Civil Justice Reform—Executive Order 12988

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

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

This rule does not contain 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 (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)). The designation of critical habitat for the Austin blind and Jollyville Plateau salamanders is entirely within the 5th Circuit jurisdiction; therefore, we did not prepare an environmental analysis in connection with this critical habitat designation.

Government-to-Government Relationship With Tribes

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

with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We determined that there are no tribal lands occupied by the Austin blind and Jollyville Plateau salamanders at the time of listing that contain the physical or biological features essential to conservation of the species, and no tribal lands unoccupied by the Austin blind and Jollyville Plateau salamanders that are essential for the conservation of the species. Therefore, we are not designating critical habitat for the Austin blind and Jollyville Plateau salamanders on tribal lands.

References Cited

A complete list of all references cited is available on the Internet at *http://www.regulations.gov,* Docket No. FWS–R2–ES–2013–0001, and *http://www.fws.gov/southwest/es/AustinTexas/,* and upon request from the Austin Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Author(s)

The primary authors of this rulemaking are the staff members of the Austin Ecological Services Field Office with support from staff of the Arlington 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; 1531–1544; 4201–4245; unless otherwise noted.

■ 2. Amend § 17.11(h) by adding entries for ''Salamander, Georgetown'' and ''Salamander, Salado'' in alphabetical order under AMPHIBIANS to the List of Endangered and Threatened Wildlife 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						
*	*	*	*	*	*		*
AMPHIBIANS							
*	*	*	*	*	*		*
Salamander, Austin blind.	*Eurycea waterlooensis.*	U.S.A. (TX)	Entire	E	817	17.95(d)	NA
*	*	*	*	*	*		*
Salamander, Jollyville Plateau.	*Eurycea tonkawae*	U.S.A. (TX)	Entire	T	817	17.95(d)	NA
*	*	*	*	*	*		*

■ 3. Amend § 17.95(d) by adding entries for ''Austin Blind Salamander (*Eurycea waterlooensis*),'' and ''Jollyville Plateau Salamander (*Eurycea tonkawae*)'' in the same alphabetical order in which the species appear in the table at § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(d) *Amphibians.*

* * * * *

Austin Blind Salamander (*Eurycea waterlooensis*)

(1) The critical habitat unit is depicted for Travis County, Texas, on the map below.

(2) Within this area, the primary constituent elements (PCEs) of the physical or biological features essential to the conservation of Austin blind salamander consist of six components:

(i) Surface habitat PCEs.

(A) *Water from the Barton Springs Segment of the Edwards Aquifer.* The groundwater is similar to natural aquifer conditions as it discharges from natural spring outlets. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Austin blind salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with constant surface flow. The water chemistry is similar to natural aquifer conditions, with temperatures from 67.8 to 72.3 °F (19.9 and 22.4 °C), dissolved oxygen concentrations from 5 to 7 mg L^{-1}, and specific water conductance from 605 to 740 μS cm^{-1}.

(B) *Rocky substrate with interstitial spaces.* Rocks in the substrate of the salamander's surface aquatic habitat are large enough to provide salamanders with cover, shelter, and foraging habitat (larger than 2.5 in (64 mm)). The substrate and interstitial spaces have minimal sedimentation.

(C) *Aquatic invertebrates for food.* The spring environment supports a diverse aquatic invertebrate community that includes crustaceans, insects, and flatworms.

(D) *Subterranean aquifer.* Access to the subsurface water table exists to provide shelter, protection, and space for reproduction. This access can occur in the form of large conduits that carry water to the spring outlet or fissures in the bedrock.

(ii) Subsurface habitat PCEs.

(A) *Water from the Barton Springs Segment of the Edwards Aquifer.* The groundwater is similar to natural aquifer conditions. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Austin blind salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with continuous flow in the subterranean habitat. The water chemistry is similar to natural aquifer conditions, including temperature, dissolved oxygen, and specific water conductance.

(B) *Subsurface spaces.* Conduits underground are large enough to provide salamanders with cover, shelter, and foraging habitat.

(C) *Aquatic invertebrates for food.* The habitat supports an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

(3) Surface critical habitat includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat, including the dry stream channel during periods of no surface flow. The surface critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) existing within the legal boundaries on the effective date of this rule; however, the subsurface critical habitat may extend below such structures. The subsurface critical habitat includes underground features in a circle with a radius of 984 ft (300 m) around the springs.

(4) *Critical habitat map units.* Data layers defining map units were created using a geographic information system (GIS), which included species locations, roads, property boundaries, 2011 aerial photography, and USGS 7.5′ quadrangles. Points were placed on the GIS. We delineated critical habitat unit boundaries by starting with the cave or spring point locations that are occupied by the salamanders. From these cave or springs points, we delineated a circle with a 984-ft (300-m) radius to create the polygons that capture the extent to which we believe the salamander populations exist through underground conduits. The polygons were then simplified to reduce the number of vertices, but still retain the overall shape and extent. Subsequently, polygons that were within 98 ft (30 m) of each other were merged together. Each new merged polygon was then revised to remove extraneous divots or protrusions that resulted from the merge process. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the field office Internet site (*http://www.fws.gov/southwest/es/AustinTexas/*), *www.regulations.gov* at Docket No. FWS–R2–ES–2013–0001 and at the Service's Austin Ecological Services Field Office. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Unit 1: Barton Springs Unit, Travis County, Texas. Map of Unit 1 follows:

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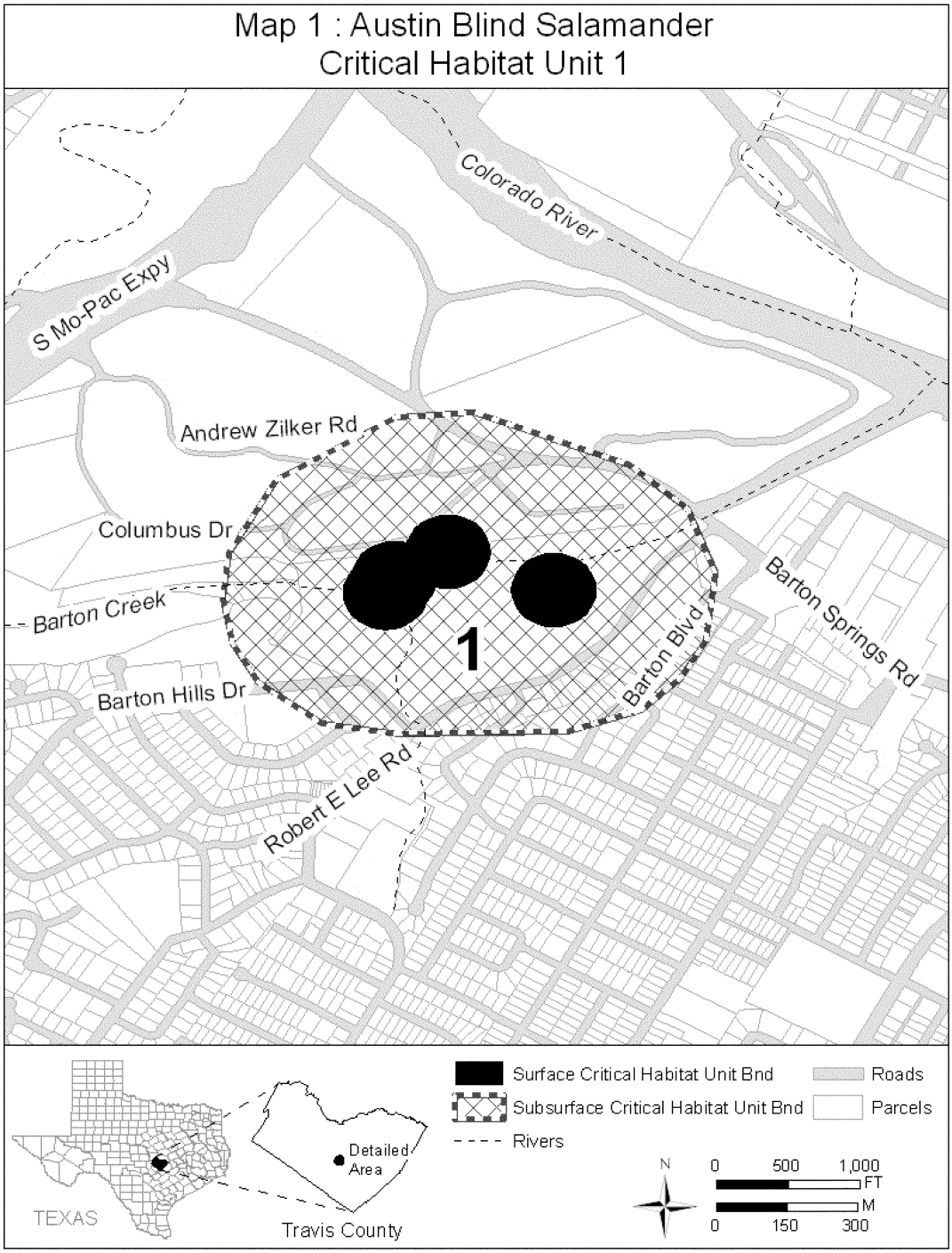

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* * * * *

Jollyville Plateau Salamander (*Eurycea tonkawae*)

(1) Critical habitat units are depicted for Travis and Williamson Counties, Texas, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of Jollyville Plateau salamander consist of six components:

(i) Surface habitat PCEs.

(A) *Water from the Trinity Aquifer, Northern Segment of the Edwards Aquifer, and local alluvial aquifers.* The groundwater is similar to natural aquifer conditions as it discharges from natural spring outlets. Concentrations of water quality constituents and contaminants should be below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Jollyville Plateau salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with at least some surface flow during the year. The water chemistry is similar to natural aquifer conditions, with temperatures from 64.1 to 73.4 °F (17.9 to 23 °C), dissolved oxygen concentrations from 5.6 to 8 mg L^{-1}, and specific water conductance from 550 to 721 μS cm^{-1}.

(B) *Rocky substrate with interstitial spaces.* Rocks in the substrate of the salamander's surface aquatic habitat are

large enough to provide salamanders with cover, shelter, and foraging habitat (larger than 2.5 in (64 mm)). The substrate and interstitial spaces have minimal sedimentation.

(C) *Aquatic invertebrates for food.* The spring environment supports a diverse aquatic invertebrate community that includes crustaceans, insects, and flatworms.

(D) *Subterranean aquifer.* Access to the subsurface water table should exist to provide shelter, protection, and space for reproduction. This access can occur in the form of large conduits that carry water to the spring outlet or porous voids between rocks in the streambed that extend down into the water table.

(ii) Subsurface habitat PCEs.

(A) *Water from the Trinity Aquifer, Northern Segment of the Edwards Aquifer, and local alluvial aquifers.* The groundwater is similar to natural aquifer conditions. Concentrations of water quality constituents and contaminants are below levels that could exert direct lethal or sublethal effects (such as effects to reproduction, growth, development, or metabolic processes), or indirect effects (such as effects to the Jollyville Plateau salamander's prey base). Hydrologic regimes similar to the historical pattern of the specific sites are present, with continuous flow. The water chemistry is similar to natural aquifer conditions, including temperature, dissolved oxygen, and specific water conductance.

(B) *Subsurface spaces.* Voids between rocks underground are large enough to provide salamanders with cover, shelter, and foraging habitat. These spaces have minimal sedimentation.

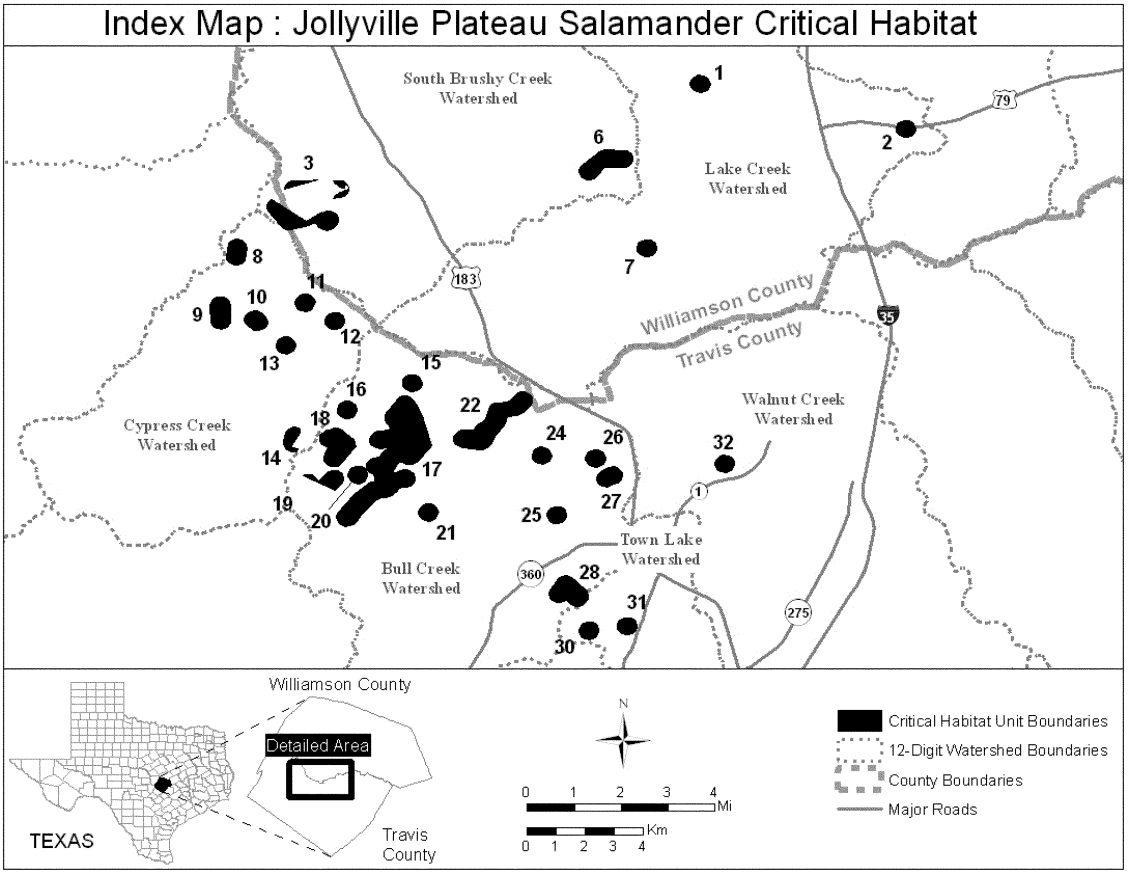
(C) *Aquatic invertebrates for food.* The habitat supports an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

(3) Surface critical habitat includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat, including the dry stream channel during periods of no surface flow. The surface critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) existing within the legal boundaries on the effective date of this rule; however, the subsurface critical habitat may extend below such structures. The subsurface critical habitat includes underground features in a circle with a radius of 984 ft (300 m) around the springs.

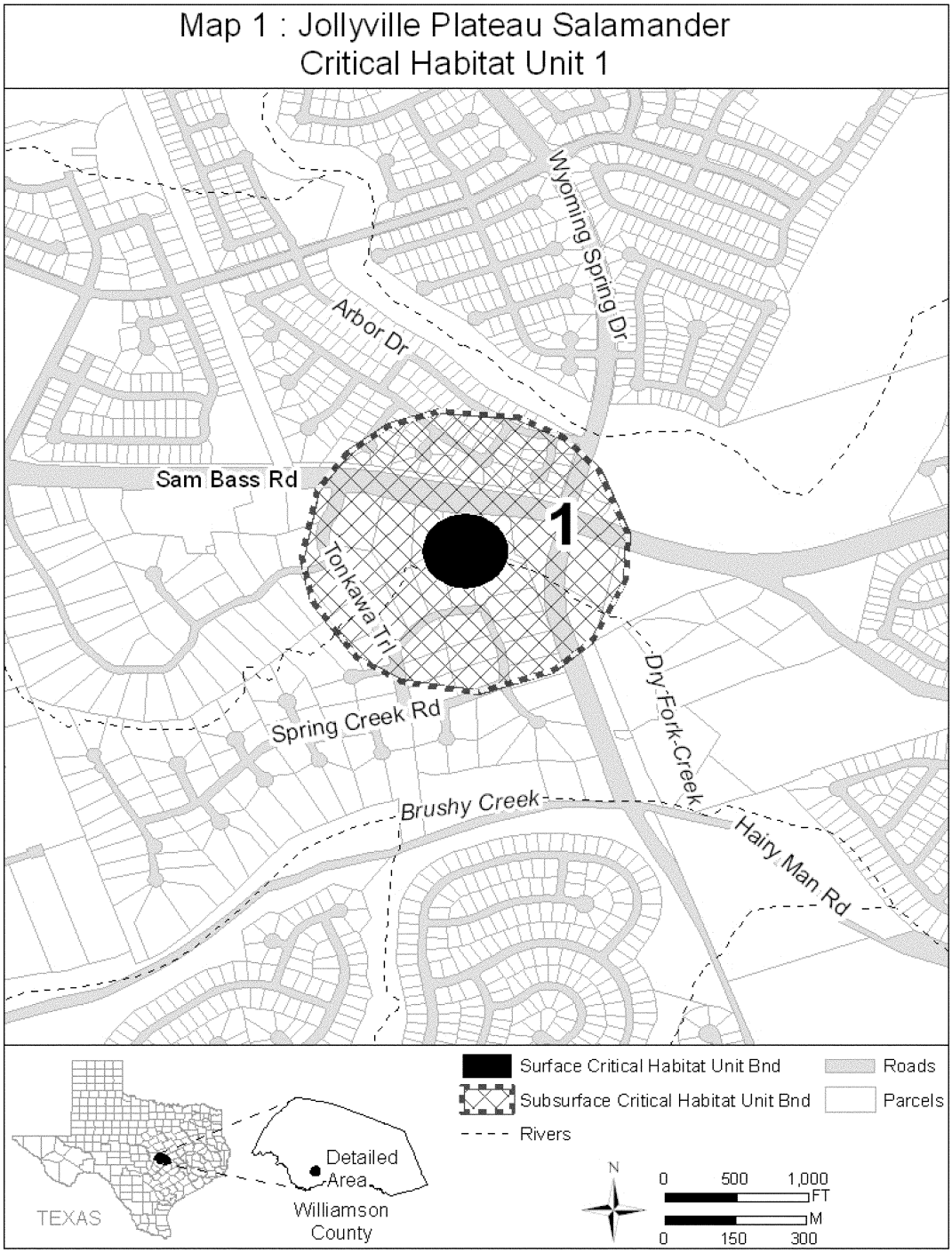
(4) *Critical habitat map units.* Data layers defining map units were created using a geographic information system (GIS), which included species locations, roads, property boundaries, 2011 aerial photography, and USGS 7.5′ quadrangles. Points were placed on the GIS. We delineated critical habitat unit boundaries by starting with the cave or spring point locations that are occupied by the salamanders. From these cave or springs points, we delineated a 984-ft (300-m) buffer to create the polygons that capture the extent to which we believe the salamander populations exist through underground conduits. The polygons were then simplified to reduce the number of vertices, but still retain the overall shape and extent. Subsequently, polygons that were within 98 ft (30 m) of each other were merged together. Each new merged polygon was then revised to remove extraneous divots or protrusions that resulted from the merge process. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at the field office Internet site (*http://www.fws.gov/southwest/es/AustinTexas/), http://www.regulations.gov* at Docket No. FWS–R2–ES–2013–0001 and at the Service's Austin Ecological Services Field Office. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

BILLING CODE 4310–55–P

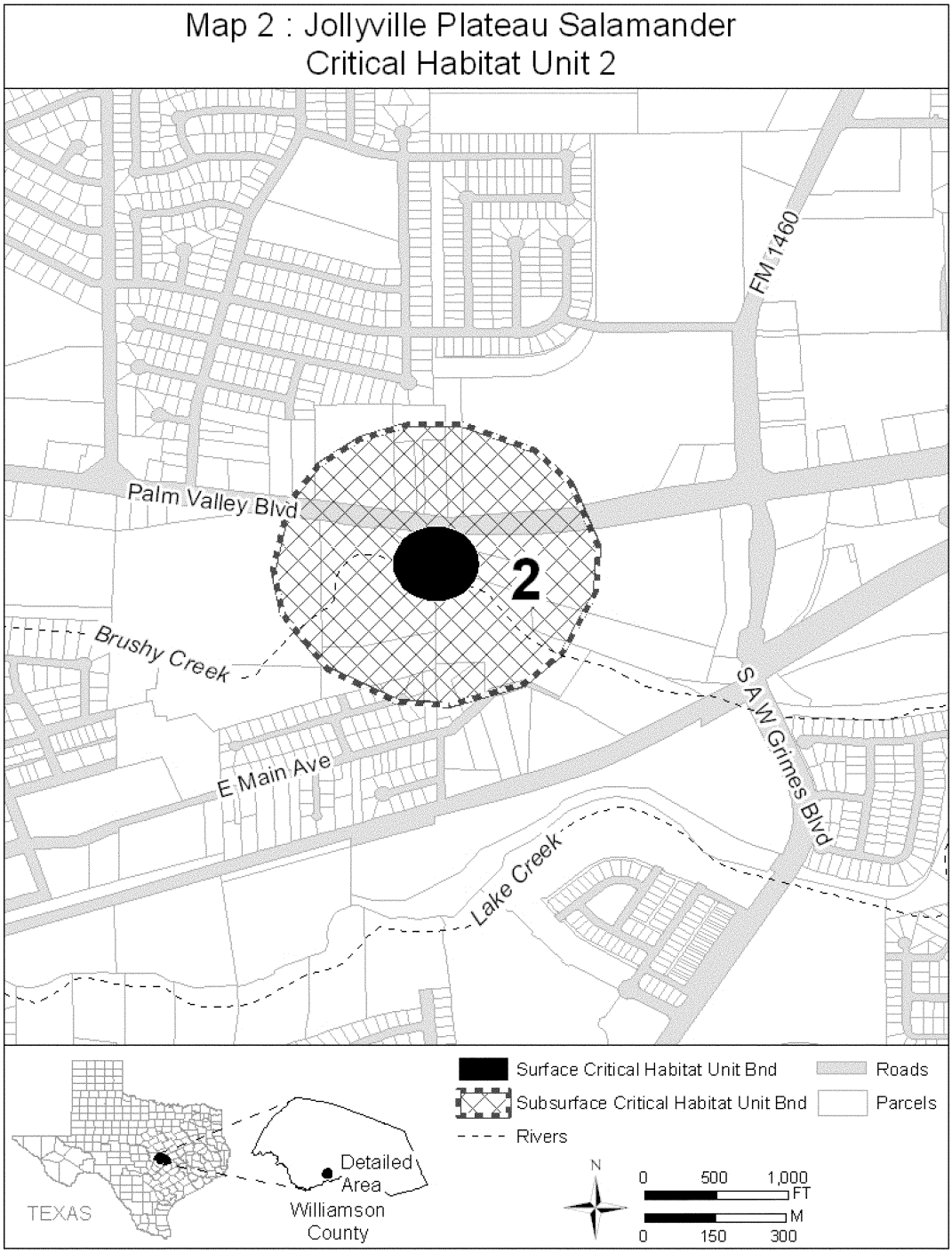
(5) Index map follows:



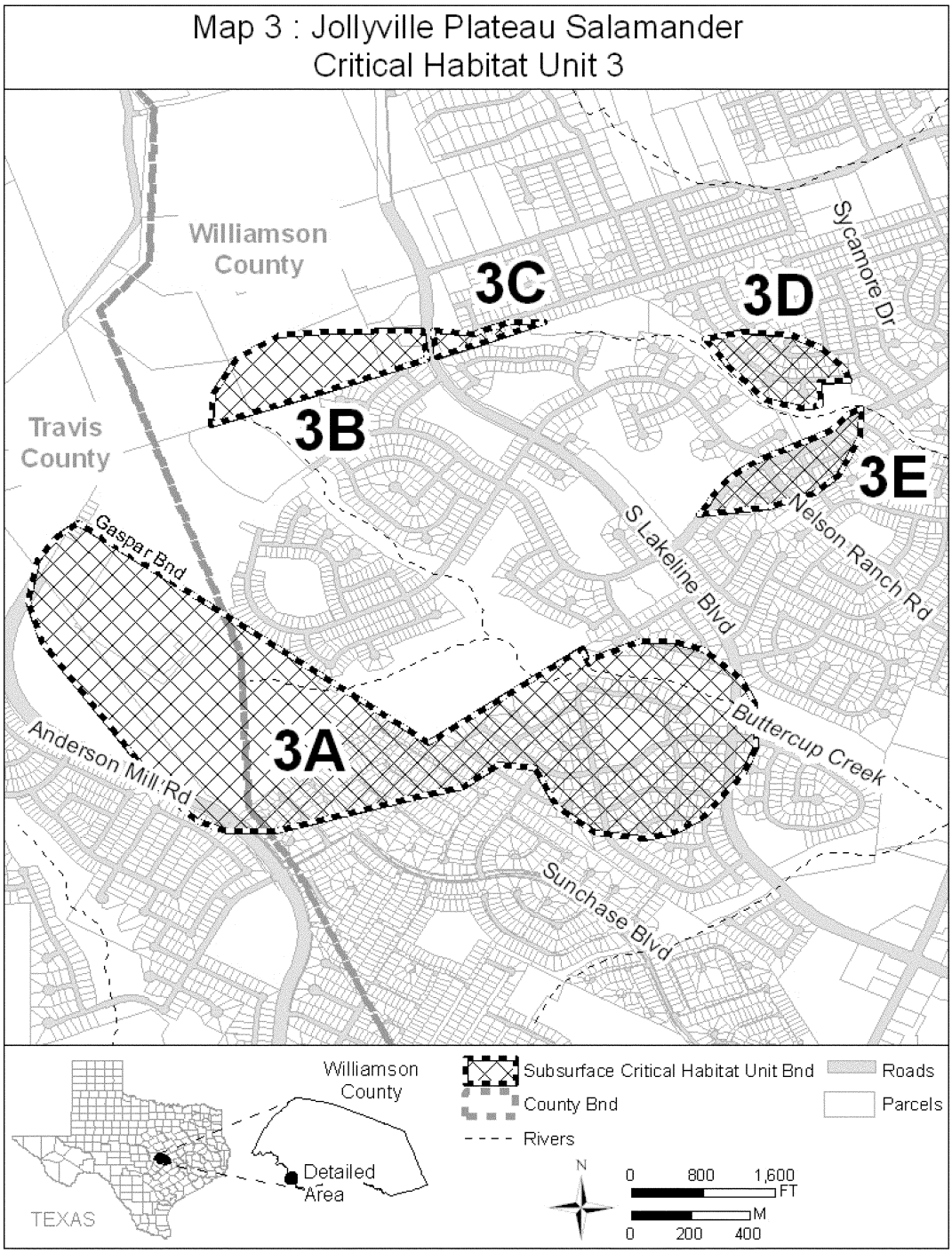
(6) Unit 1: Krienke Spring Unit, Williamson County, Texas. Map of Unit 1 follows:



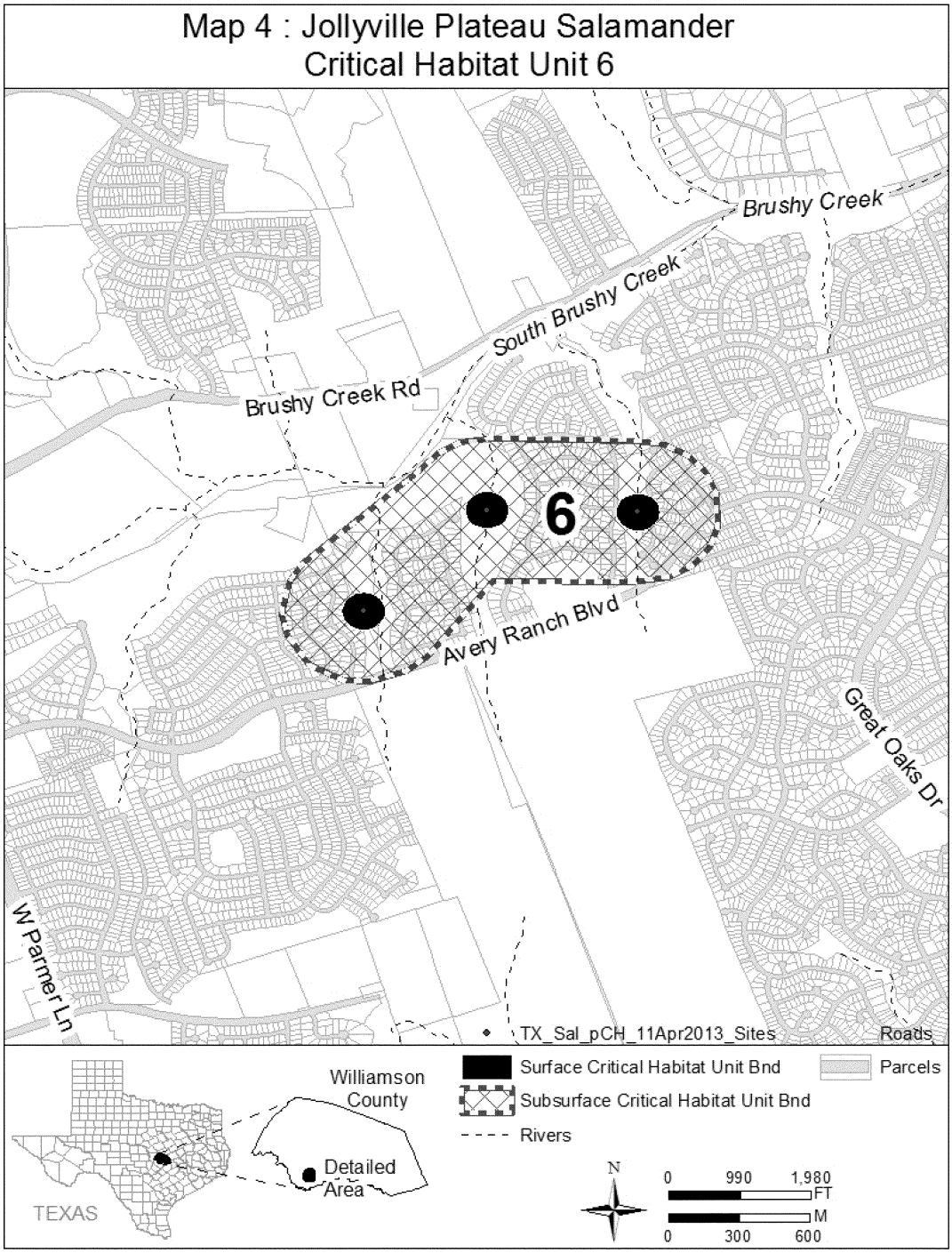
(7) Unit 2: Brushy Creek Spring Unit, Williamson County, Texas. Map of Unit 2 follows:



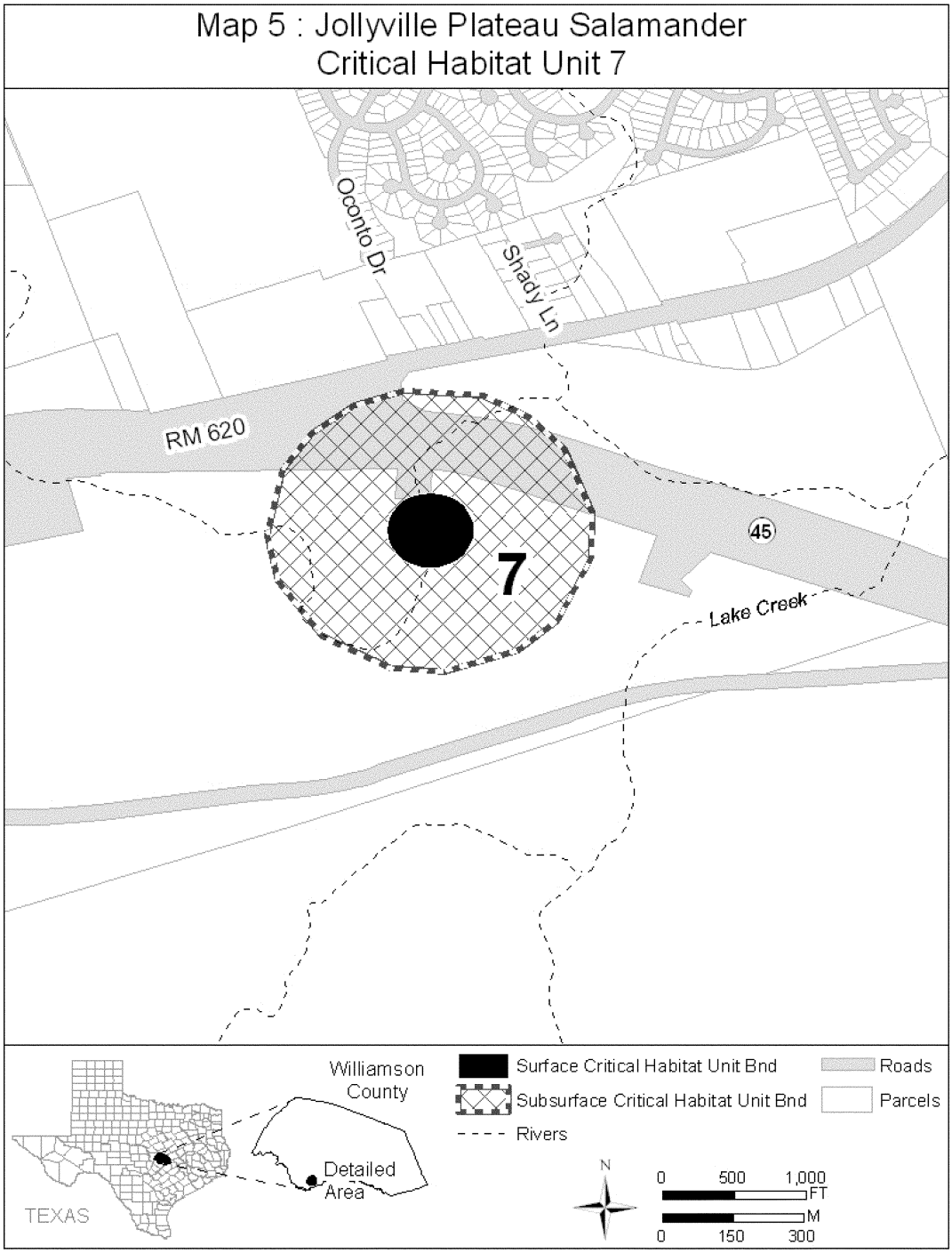
(8) Units 3A, 3B, 3C, 3D, and 3E: Buttercup Creek Units, Williamson and Travis Counties, Texas. Map of Units 3A, 3B, 3C, 3D, and 3E follows:



(9) Unit 6: Avery Springs Unit, Williamson County, Texas. Map of Unit 6 follows:

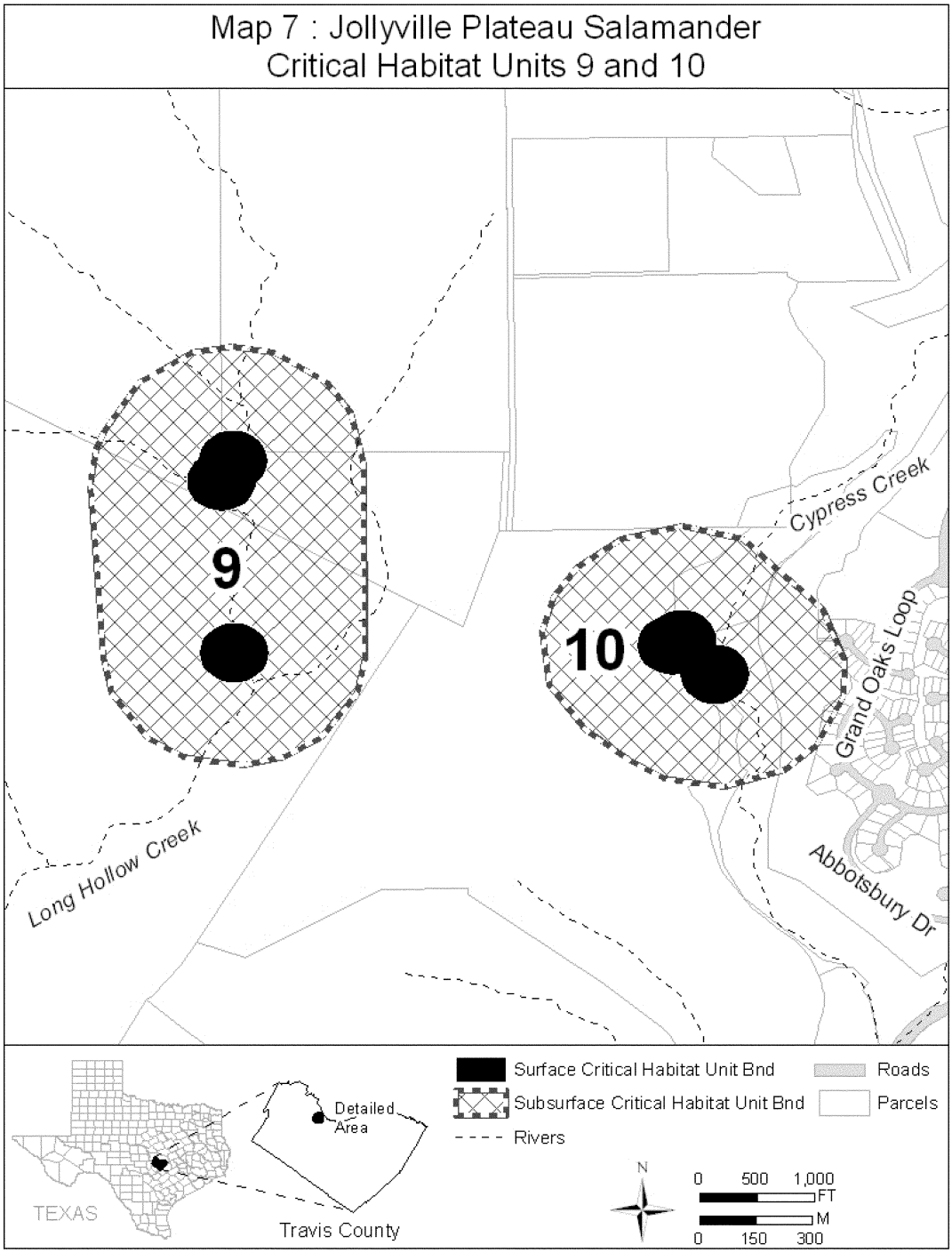


(10) Unit 7: PC Spring Unit, Williamson County, Texas. Map of Unit 7 follows:



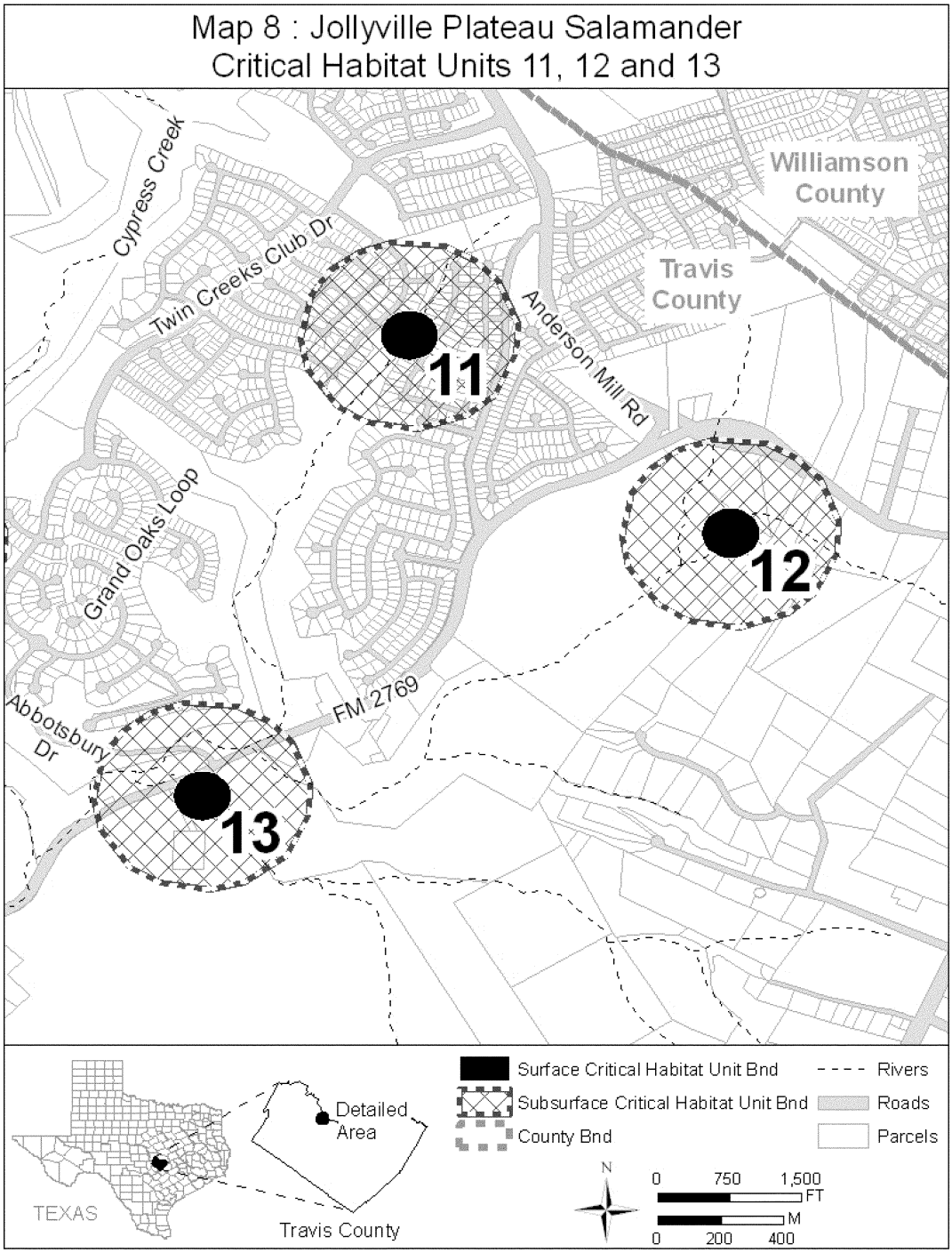
(11) Unit 8: Baker and Audubon Spring Unit, Travis County, Texas, Map of Unit 8 follows:

(12) Unit 9: Wheless Spring Unit, Travis County, Texas. Map of Units 9 and 10 follows:



(13) Unit 10: Blizzard R-Bar-B Spring Unit, Travis County, Texas. Map of Units 9 and 10 is provided at paragraph (12) of this entry.

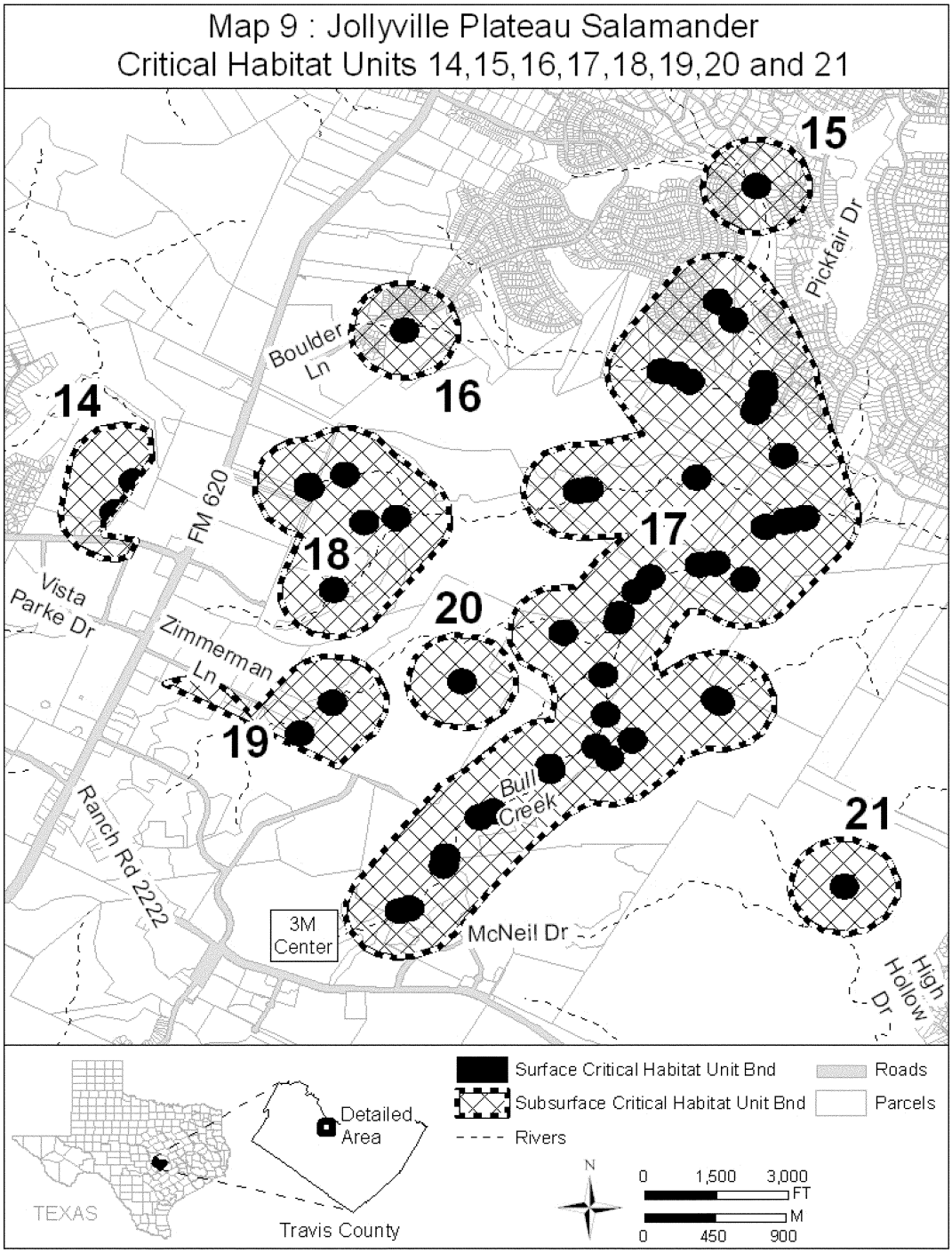
(14) Unit 11: House Spring Unit, Travis County, Texas. Map of Units 11, 12, and 13 follows:



(15) Unit 12: Kelly Hollow Spring Unit, Travis County, Texas. Map of Units 11, 12, and 13 is provided at paragraph (14) of this entry.

(16) Unit 13: MacDonald Well Unit, Travis County, Texas. Map of Units 11, 12, and 13 is provided at paragraph (14) of this entry.

(17) Unit 14: Kretschmarr Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 follows:



(18) Unit 15: Pope and Hiers Spring Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(19) Unit 16: Fern Gully Spring Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(20) Unit 17: Bull Creek 1 Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(21) Unit 18: Bull Creek 2 Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

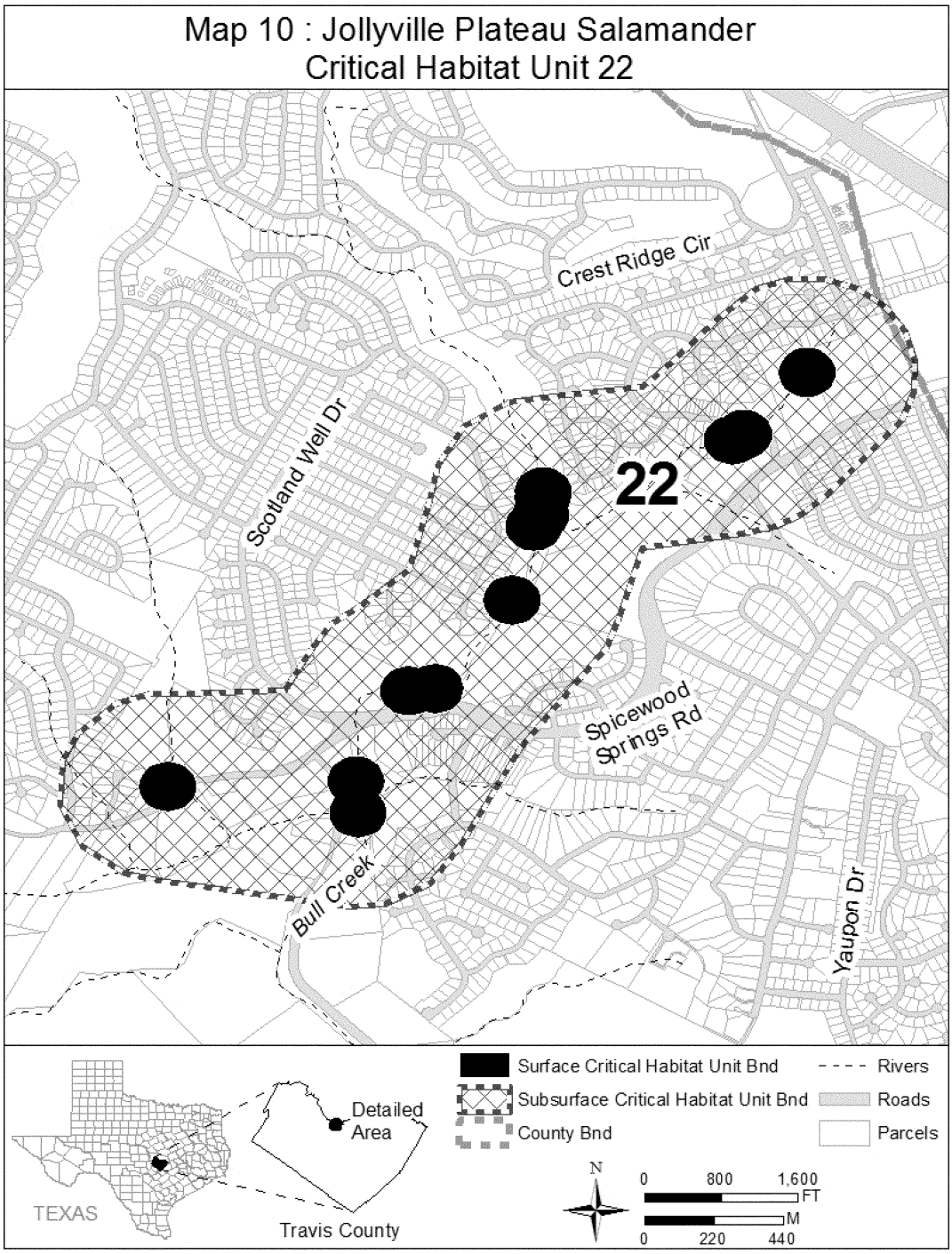
(22) Unit 19: Bull Creek 3 Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(23) Unit 20: Moss Gully Spring Unit, Travis County, Texas. Map of Units 14,

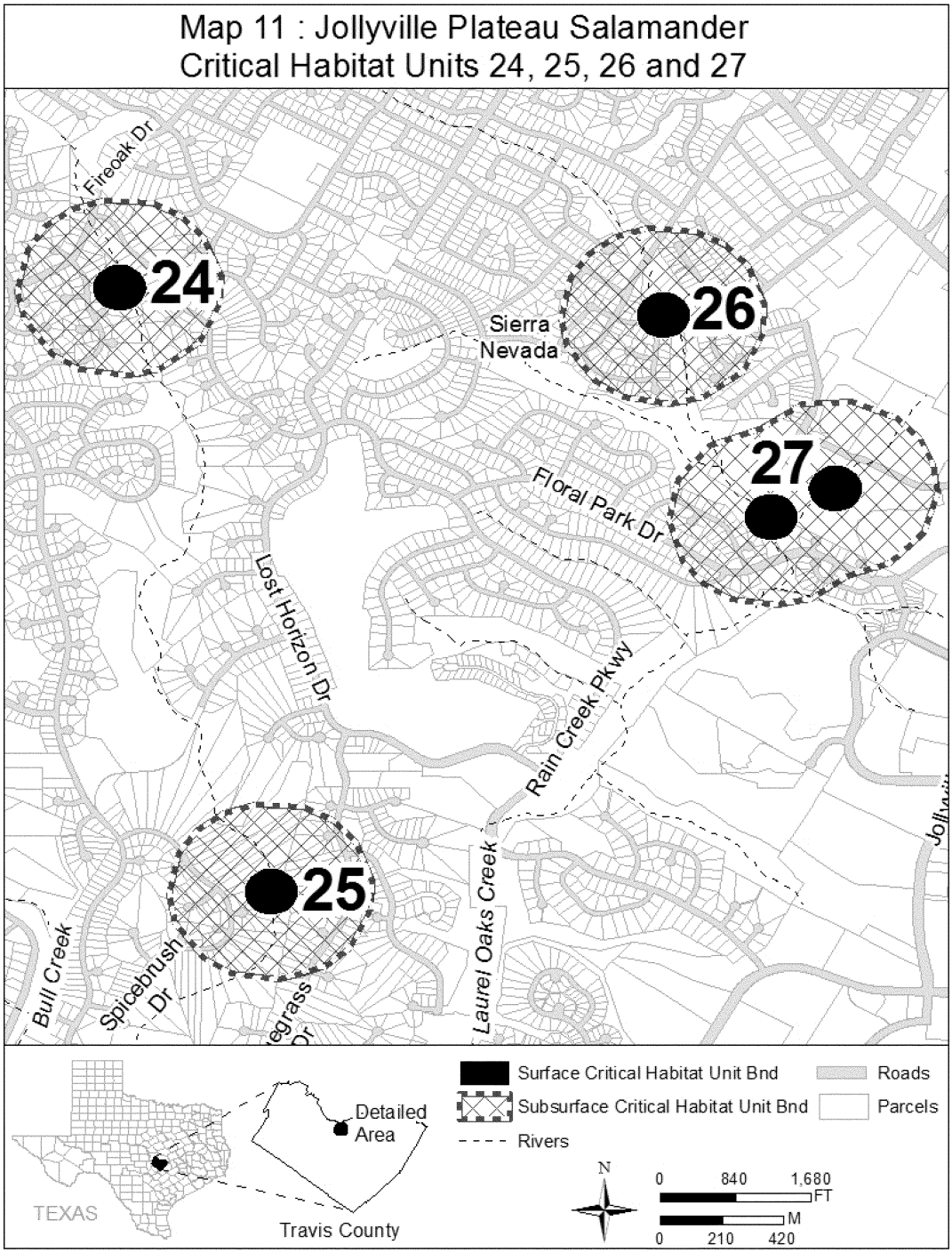
15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(24) Unit 21: Ivanhoe Spring Unit, Travis County, Texas. Map of Units 14, 15, 16, 17, 18, 19, 20, and 21 is provided at paragraph (17) of this entry.

(25) Unit 22: Sylvia Spring Area Unit, Williamson and Travis Counties, Texas. Map of Unit 22 follows:



(26) Unit 24: Long Hog Hollow Unit, Travis County, Texas. Map of Units 24, 25, 26, and 27 follows:

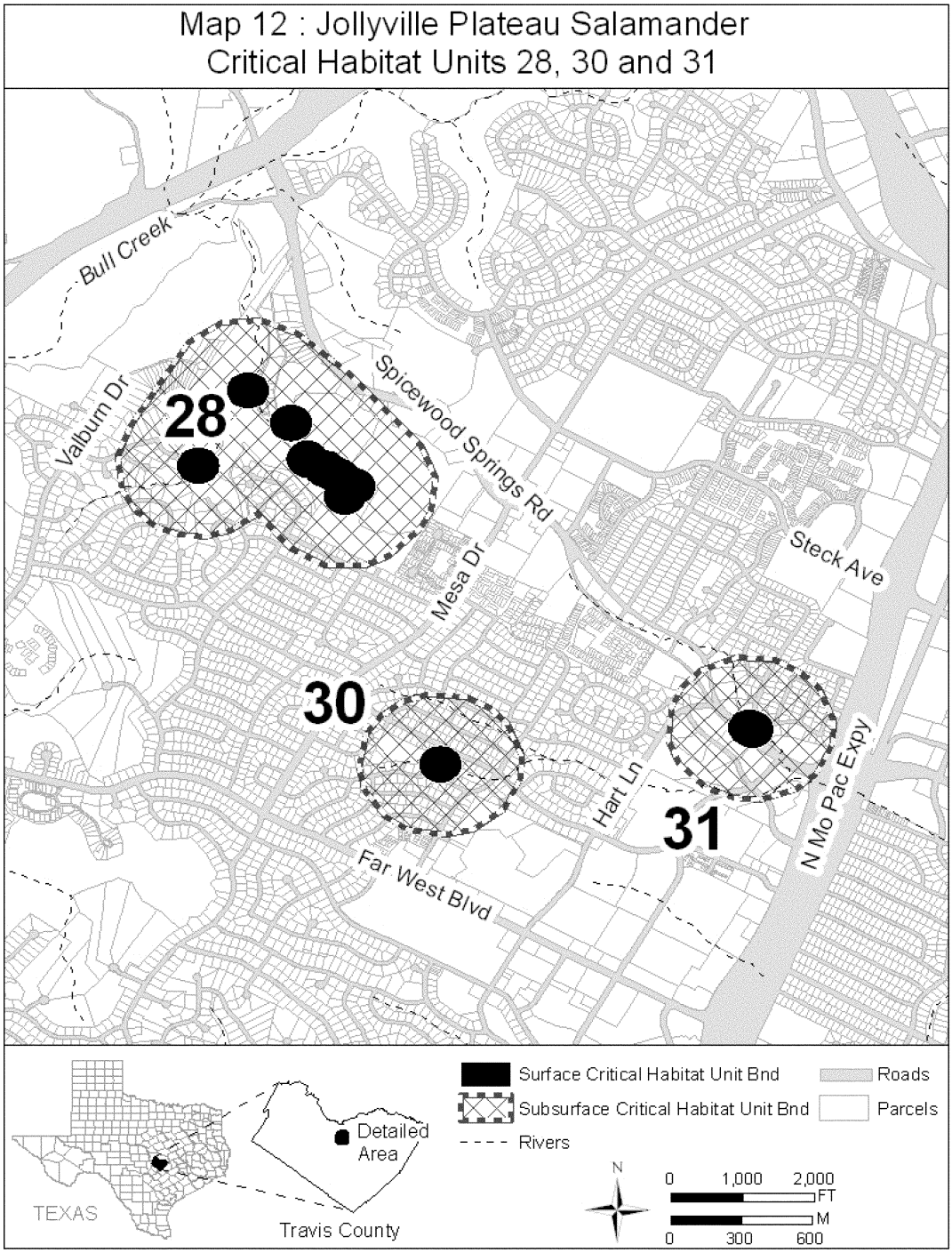


(27) Unit 25: Tributary 3 Unit, Travis County, Texas. Map of Units 24, 25, 26, and 27 is provided at paragraph (26) of this entry.

(28) Unit 26: Sierra Spring Unit, Travis County, Texas. Map of Units 24, 25, 26, and 27 is provided at paragraph (26) of this entry.

(29) Unit 27: Troll Spring Unit, Travis County, Texas. Map of Units 24, 25, 26, and 27 is provided at paragraph (26) of this entry.

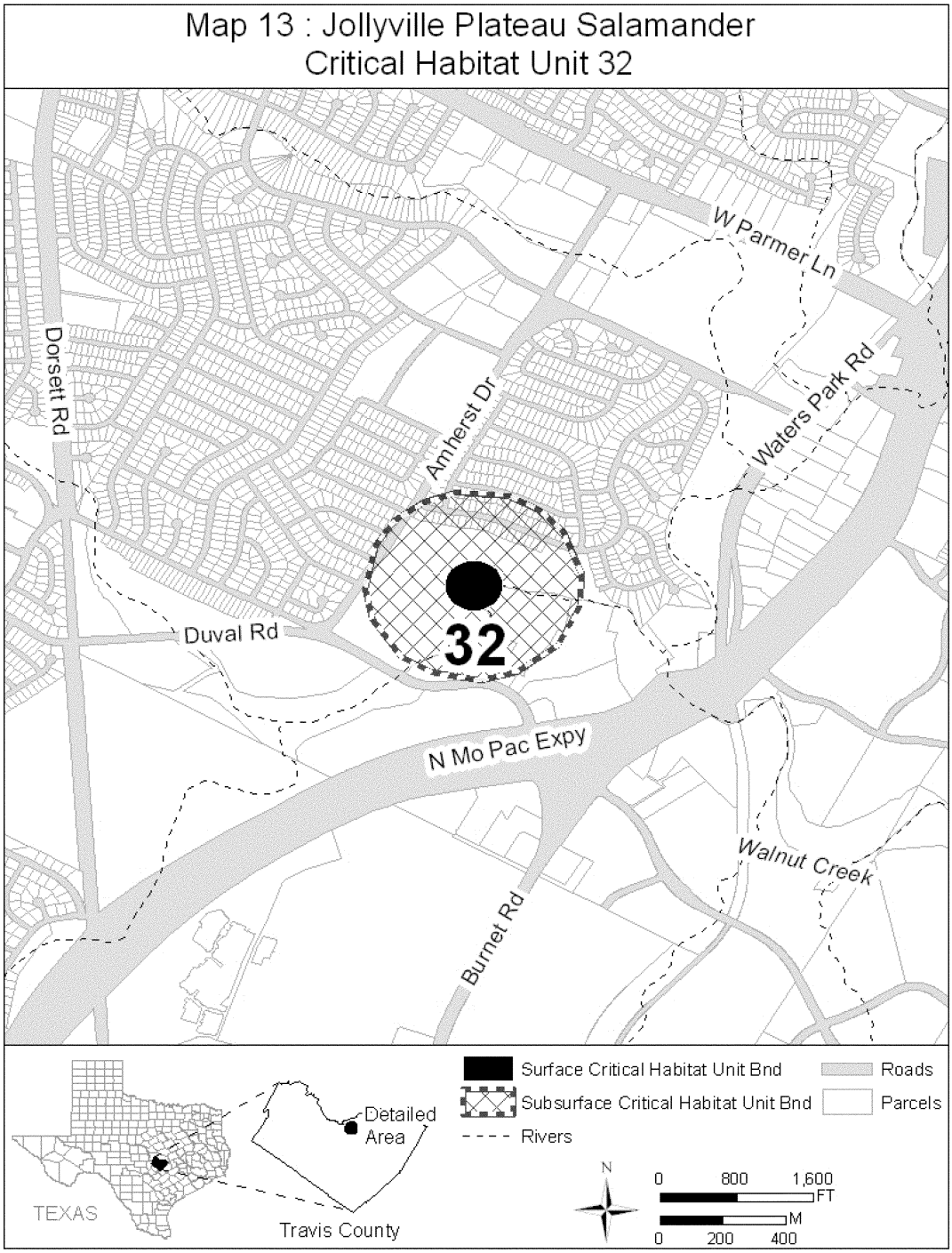
(30) Unit 28: Stillhouse Unit, Travis County, Texas. Map of Units 28, 30, and 31 follows:



(31) Unit 30: Indian Spring Unit, Travis County, Texas. Map of Units 28, 30, and 31 is provided at paragraph (30) of this entry.

(32) Unit 31: Spicewood Spring Unit, Travis County, Texas. Map of Units 28, 30, and 31 is provided at paragraph (30) of this entry.

(33) Unit 32: Balcones District Park Spring Unit, Travis County, Texas. Map of Unit 32 follows:



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Dated: August 6, 2013.

Rachel Jacobson,

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks.

[FR Doc. 2013–19713 Filed 8–19–13; 8:45 am]

BILLING CODE 4310–55–C