

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 17**

[Docket No. FWS-R2-ES-2020-0048;  
FF09E21000 FXES11110900000 201]

RIN 1018-BE78

**Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for the Georgetown and Salado Salamanders**

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

**ACTION:** Proposed rule; revisions and reopening of comment period.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), are revising our proposed designation of critical habitat for the Georgetown salamander (*Eurycea naufragia*) and Salado salamander (*Eurycea chisholmensis*) in Bell and Williamson Counties, Texas. Based on published genetic analyses, we are revising the distribution of the Georgetown and Salado salamanders and are adjusting previously proposed critical habitat units accordingly. We also propose changes to our description of the physical or biological features essential to the conservation of the species. We propose a total of approximately 1,519 acres (ac) (622 hectares (ha)) of critical habitat for the species in Bell and Williamson Counties, Texas. The total amount of critical habitat we are proposing for both salamanders has increased by approximately 116 ac (47 ha). The reasons for this increase are the addition of a new occupied site for the Salado salamander and refined mapping of previously proposed critical habitat units based on more precise spring locations.

We also announce the availability of a draft economic analysis (DEA) of the revised proposed designation of critical habitat for the Georgetown and Salado salamanders.

**DATES:** We will accept comments received or postmarked on or before November 16, 2020. Comments submitted electronically using the Federal eRulemaking Portal (see

**ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by October 30, 2020.

Comments previously submitted need not be resubmitted, as they will be fully considered in preparation of the final rule.

**ADDRESSES:** *Written comments:* You may submit comments by one of the following methods:

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

<http://www.regulations.gov>. In the Search box, enter FWS-R2-ES-2020-0048, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment Now!"

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS-R2-ES-2020-0048, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

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

*Availability of supporting materials:* For the critical habitat designation, the coordinates or plot points or both from which the maps are generated are included in the administrative record and are available at [https://www.fws.gov/southwest/es/AustinTexas/ESA\\_Sp\\_Salamanders.html](https://www.fws.gov/southwest/es/AustinTexas/ESA_Sp_Salamanders.html) and at <http://www.regulations.gov> under Docket No. FWS-R2-ES-2020-0048. Any additional tools or supporting information that we may develop for the critical habitat designation will also be available at the Service website set out above, and may also be included in the preamble of this document and/or at <http://www.regulations.gov>.

**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; telephone 512-490-0057.

Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800-877-8339.

**SUPPLEMENTARY INFORMATION:****Executive Summary**

*Why we need to publish a rule.* Under the Act, to the maximum extent prudent and determinable, we must designate critical habitat for any species that we determine to be an endangered or threatened species under the Act. Listing a species as an endangered or threatened species and designation of

critical habitat can only be completed by issuing a rule.

*What this document does.* We are revising and reopening the comment period for our proposed designation of critical habitat for the Georgetown and Salado salamanders. We have determined that designating critical habitat, both subsurface and surface, is both prudent and determinable for the Georgetown and Salado salamanders. In this document, we propose a total of approximately 1,519 acres (ac) (622 hectares (ha)) of subsurface and surface critical habitat for the species in Bell and Williamson Counties, Texas.

*The basis for our action.* Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

*We prepared an economic analysis of the proposed designation of critical habitat.* In order to consider economic impacts, we have prepared an economic analysis for the revised proposed critical habitat designation. We hereby announce the availability of the economic analysis and seek public review and comment.

*We will seek peer review.* In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we are seeking the expert opinions of independent specialists to ensure that our critical habitat proposal is based on scientifically sound data and analyses. We invite these peer reviewers to comment on our specific assumptions and conclusions in this revised proposal to designate critical habitat. Because we will consider all comments and

information we receive during the comment period, our final designation may differ from this proposal.

### Information Requested

We intend that any final action resulting from this revised proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties during this reopened comment period on our proposed designation of critical habitat for the Georgetown and Salado salamanders that was published in the **Federal Register** on August 22, 2012 (77 FR 50768), revisions to the proposed rule published in the **Federal Register** on January 25, 2013 (78 FR 5385), and this revised proposed rule. Comments previously submitted need not be resubmitted, as they will be fully considered in preparation of the final rule.

We request that you provide comments specifically on the critical habitat determination and related economic analysis under Docket No. FWS-R2-ES-2020-0048.

We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and existing regulations that may be addressing those threats.

(4) Additional information concerning the historical and current status, range, distribution, and population size of this species, including the locations of any additional populations of this species.

(5) The reasons why we should or should not designate habitat as "critical habitat" under section 4 of the Act (16 U.S.C. 1531 *et seq.*), including information to inform the following factors that the regulations identify as reasons why designation of critical habitat may be not prudent:

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

(b) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(c) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States; or

(d) No areas meet the definition of critical habitat.

(6) Specific information on:

(a) The amount and distribution of Georgetown and Salado salamander habitat,

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

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

(d) What areas not occupied at the time of listing are essential for the conservation of the species. We particularly seek comments:

(i) Regarding whether occupied areas are inadequate for the conservation of the species; and

(ii) Providing specific information regarding whether or not unoccupied areas would, with reasonable certainty, contribute to the conservation of the species and contain at least one physical or biological feature essential to the conservation of the species.

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

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

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

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

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

Because we will consider all comments and information we receive during the comment period, our final designation may differ from this proposal. Based on the new information we receive (and any comments on that new information), our final designation may not include all areas proposed, may include some additional areas, and may exclude some areas if we find the benefits of exclusion outweigh the benefits of inclusion. Such final decisions would be a logical outgrowth of this proposal, as long as: (1) We base the decisions on the best scientific and commercial data available and take into consideration the relevant impacts; (2) we articulate a rational connection between the facts found and the conclusions made, including why we changed our conclusion; and (3) we base removal of any areas on a determination either that the area does not meet the definition of "critical habitat" or that the benefits of excluding the area will outweigh the benefits of including it in the designation. You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made "solely on the basis of the best scientific and commercial data available."

If you submitted comments or information on the August 22, 2012, proposed rule (77 FR 50768) or during any other comment period, please do not resubmit them. We will incorporate them into the public record as part of this comment period, and we will fully consider them in the preparation of our final determination. Our final determination concerning critical habitat will take into consideration all written comments and any additional information we received during previous comment periods as well as the comment period that opened when this proposed rule published.

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

If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>.

#### Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing. For the immediate future, we will provide these public hearings using webinars that will be announced on the Service's website, in addition to the **Federal Register**. The use of these virtual public hearings is consistent with our regulation at 50 CFR 424.16(c)(3).

#### Previous Federal Actions

It is our intent to discuss only those topics directly relevant to the designation of critical habitat for the Georgetown and Salado salamanders in this document. For more information on

the Georgetown and Salado salamanders, their habitat, or previous Federal actions, refer to the final listing rule published in the **Federal Register** on February 24, 2014 (79 FR 10236), which is available online at <http://www.regulations.gov> (at Docket No. FWS-R2-ES-2012-0035).

On August 22, 2012, we proposed to list the Georgetown salamander (*Eurycea naufragia*), Salado salamander (*Eurycea chisholmensis*), Jollyville Plateau salamander (*Eurycea tonkawae*), and Austin blind salamander (*Eurycea waterlooensis*) as endangered species and to designate critical habitat for these species under the Act (77 FR 50768). We proposed to designate approximately 1,031 acres (ac) (423 hectares (ha)) in 14 units located in Williamson County, Texas, as critical habitat for the Georgetown salamander, and approximately 372 ac (152 ha) in 4 units located in Bell County, Texas, as critical habitat for the Salado salamander. That proposal had a 60-day comment period, ending October 22, 2012. We held a public meeting and hearing in Round Rock, Texas, on September 5, 2012, and a second public meeting and hearing in Austin, Texas, on September 6, 2012.

On January 25, 2013, we revised the locations of proposed critical habitat units 2, 3, 5, 8, and 12 for the Georgetown salamander based on new information (78 FR 5385). We reopened the public comment period for 45 days to allow comments on the revisions to the proposed critical habitat and the draft economic analysis.

On August 20, 2013, we extended the deadline for our final listing and critical habitat determination for the Georgetown and Salado salamanders for 6 months due to scientific disagreements regarding conservation status of these species and reopened the comment periods on our August 22, 2012 and January 25, 2013 proposals for 30 days (78 FR 51129). In addition, we announced the availability of new information and reopened those comment periods for an additional 30 days on January 7, 2014 (79 FR 800).

On February 24, 2014, we (1) finalized the listing of the Georgetown and Salado salamanders as threatened species under the Act (79 FR 10236); and (2) proposed a rule under section 4(d) of the Act (a proposed "4(d) rule") containing regulations necessary and advisable to provide for the conservation of the Georgetown salamander, with a 60-day public comment period, ending April 25, 2014 (79 FR 10077).

On April 9, 2015, we revised the proposed 4(d) rule for the Georgetown salamander and reopened the public

comment period for 30 days, ending May 11, 2015 (80 FR 19050). We finalized the 4(d) rule for the Georgetown salamander on August 7, 2015 (80 FR 47418).

#### Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions regarding our proposed listing and critical habitat rule (77 FR 50768; August 22, 2012) from 22 knowledgeable individuals with scientific expertise concerning the hydrology, taxonomy, and ecology that is important to these salamander species. We requested expert opinions from taxonomists specifically to review the proposed rule in light of an unpublished report by Forstner (2012, entire) that questioned the taxonomic validity of the four central Texas salamanders as separate species. We received responses from 13 of the peer reviewers.

During the first comment period, we received some contradictory public comments, and we also found new information relative to the listing determination. For these reasons, 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 20 knowledgeable individuals with expertise in the two areas identified above. We received responses from eight peer reviewers during this second review. The peer reviewers generally concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions to improve the final listing and critical habitat rule. Peer reviewer comments were addressed and incorporated into the final listing rule as appropriate.

Finally, we are seeking peer review for a third time from independent specialists on this revised proposed rule during the open comment period (see **DATES**, above).

#### 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.

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (*i.e.*, range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (*e.g.*, migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals).

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

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Designation also does not allow the government or public to access private lands, nor does designation 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 Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon

the proposed activity, or to restore or recover the species; instead, they must 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 that occur in specific occupied areas, we focus on the specific features that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. When designating critical habitat, the Secretary will first evaluate areas occupied by the species. The Secretary will only consider unoccupied areas to be essential where a critical habitat designation limited to geographical areas occupied by the species would be inadequate to ensure the conservation of the species. In addition, for an unoccupied area to be considered essential, the Secretary must determine that there is a reasonable certainty both that the area will contribute to the conservation of the species and that the area contains one or more of those physical or biological features essential to the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available.

Further, our Policy on Information Standards Under the 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 and summarized in the listing rule. Additional information sources may include any generalized conservation strategy, criteria, or outline that may have been developed for the species; the recovery plan for the species; articles in peer-reviewed journals; conservation plans developed by States and counties; scientific status surveys and studies; biological assessments; other unpublished materials; or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions found in section 9 of the Act. 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 this species.

Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

### Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the Secretary may, but is not required to, determine that a designation would not be prudent in the following circumstances:

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

(ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(iii) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(iv) No areas meet the definition of critical habitat; or

(v) The Secretary otherwise determines that designation of critical habitat would not be prudent based on the best scientific data available.

As discussed in the final listing rule for the Georgetown and Salado salamanders (79 FR 10236; February 24, 2014), there is currently no imminent threat of collection or vandalism identified under Factor B for these species, and identification and mapping of critical habitat is not expected to initiate any such threat. In our final listing rule, we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to the Georgetown and Salado salamanders and that those threats in some way can be addressed by section 7(a)(2) consultation measures. These species occur wholly in the jurisdiction of the United States, and we are able to identify areas that meet the

definition of critical habitat. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) have been met and because there are no other circumstances the Secretary has identified for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for the Georgetown and Salado salamanders.

### Critical Habitat Determinability

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

(i) Data sufficient to perform required analyses are lacking, or

(ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of "critical habitat."

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where these species are located. This and other information represent the best scientific data available and led us to conclude that the designation of critical habitat is determinable for the Georgetown and Salado salamanders.

### Changes From Previously Proposed Critical Habitat

In this revised proposal, we are notifying the public of changes to the proposed critical habitat designation for the Georgetown and Salado salamanders. Based on additional information we received during the comment period on our January 25, 2013, revised proposed critical habitat rule (78 FR 5383) and on research published since 2013, we propose to reassign some critical habitat units previously proposed for the Georgetown salamander to the Salado salamander, expand critical habitat, and refine mapped locations of specific spring sites. In addition, based on public comment, we separated the summary of essential physical or biological features (formerly primary constituent elements) for both salamander species into surface and subsurface habitat categories and added additional details in order to clarify habitat needs of both species. We also propose changes to our description

of the physical or biological features essential to the conservation of the species.

Research conducted since our initial proposed critical habitat designation (77 FR 50768; August 22, 2012) assessed population structure, phylogeny, and distribution of multiple *Eurycea* species across the Edwards-Trinity Aquifer of west-central Texas through analyses of genome-wide DNA (Devitt et al. 2019a, entire). The results of this work have significant implications for the distribution of the many central Texas *Eurycea* species, including the Georgetown and Salado salamanders. Salado salamanders from the Salado Creek watershed retained their genetic distinctiveness as a species.

Salamanders from the Berry Creek watershed, formerly considered as the Georgetown salamander, were more genetically similar to the Salado salamander and assigned to that species (Devitt et al. 2019a, p. 2,629). This reassignment of populations expands the range of the Salado salamander and reduces the range of the Georgetown salamander to those spring sites south and east of Lake Georgetown in the North and Middle Forks of the San Gabriel River watershed (Devitt et al. 2019a, p. 2,629). A single salamander collected from Georgetown Springs, long considered as the Georgetown salamander, was more genetically similar to the Jollyville Plateau salamander and assigned to that species (Devitt et al. 2019a, p. 2,629). This Jollyville Plateau salamander population may no longer be extant, as salamanders have not been observed at Georgetown Springs since 1991 (Devitt et al. 2019a, p. 2,629). In summation, this information changed our understanding of current ranges of both species, with the current range of the Georgetown salamander considered as south and east of Lake Georgetown in the North and Middle Forks of the San Gabriel River watershed, and the Salado salamander occurring north of Lake Georgetown to the Salado Creek watershed (Devitt et al. 2019a, p. 2,629).

Based on analyses from Devitt et al. (2019a, p. 2,629), Units 1, 2, 3, and 5 of previously proposed critical habitat for the Georgetown salamander are now assigned to the Salado salamander. Researchers, including Devitt et al. (2019b, pp. 4, 13), have not genetically assessed salamanders from previously proposed critical habitat Unit 4, Walnut Spring for the Georgetown salamander. Walnut Spring is located north of Lake Georgetown and west of Twin Springs, a site sampled by Devitt et al. (2019b, pp. 13–14) and assigned to the Salado salamander rather than the Georgetown

salamander. Given Walnut Spring's location north of Lake Georgetown, we consider that spring as a site inhabited by the Salado salamander. We propose to treat Walnut Spring as a critical habitat unit for the Salado salamander and not the Georgetown salamander, with no change in amount of critical habitat at Walnut Spring.

Analyses by Devitt et al. (2019a, p. 2,629) further indicate that the *Eurycea* population at Georgetown Springs, previously assigned to the Georgetown salamander (Chippindale et al. 2000), should instead be assigned to the Jollyville Plateau salamander. This site would represent the northern-most record of the Jollyville Plateau salamander in Williamson County. We propose to remove Georgetown Springs, previously proposed as Unit 14 (San Gabriel Springs Unit) of critical habitat for the Georgetown salamander, from further consideration in this proposed rule given the site is now recognized as occupied by the Jollyville Plateau salamander (Devitt et al. 2019a, p. 2,629).

Based on additional information we received during the comment period on our January 25, 2013, publication (78 FR 5383), we propose to expand the extent of surface critical habitat for both the Georgetown and Salado salamanders. In the August 22, 2012, proposed rule (77 FR 50768), 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 feet (ft) (50 meters (m)), as this was the farthest a salamander has been observed from a spring outlet. However, we are revising the proposed 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 study completed by Bendik et al. (2016, p. 9) that found Jollyville Plateau salamander movement occurring up to 262 ft (80 m) from a spring outlet in a single year and the presence of the physical or biological features essential to the conservation of the species in the unit. Due to their similar life histories, this knowledge was applied to the Georgetown and Salado salamanders. Because the surface designation overlays, or is contained within, the subsurface critical habitat, this expansion did not increase the total acreage of critical habitat for either species.

An additional observation from Bendik et al. (2016, p. 9) at Bull Creek in Travis County provided evidence that Jollyville Plateau salamanders can travel up to 1,640 ft (500 m) from a spring outlet over multiple years. However, the

unique hydrology where that observation was made leads us to conclude that it should not be extrapolated to the Georgetown and Salado salamanders. The area of Bull Creek where this particular observation was made is known for its alluvial deposits (COA 2012, p. 6), which discharge spring water through non-obvious seeps, instead of open springheads (SWCA 2012, p. 77). This type of hydrology seems to create suitable habitat for salamanders along long stretches of streams, rather than a short stretch of springwater-influenced habitat following an open spring outlet (Bendik 2013, pers. comm.). We have no information indicating that any Georgetown or Salado salamander sites function in the same manner as these Bull Creek alluvial resurgence areas. As currently known, Georgetown and Salado salamanders do not have access to the same extent or nature of aquatic surface habitat as the Jollyville Plateau salamander (Pierce et al. 2010, pp. 14–15). Therefore, we conclude that the 1,640 ft (500 m) distance traveled by a Jollyville Plateau salamander is an observation unique to the hydrological setting and does not apply to the Georgetown or Salado salamander sites.

New information we received during the comment period on our January 25, 2013, publication (78 FR 5383) identified new Georgetown salamander populations and provided additional data that allowed critical habitat units to be mapped more precisely. As critical habitat units were shifted from the Georgetown salamander to the Salado salamander, based on Devitt et al. (2019, entire), critical habitat units for both species were re-numbered. New locations for Salado salamander were also discovered through sampling efforts after January 25, 2013. Georgetown and Salado salamanders are restricted to subterranean spaces in aquifers and on the surface to springs and associated outflow where groundwater emerges from the underlying aquifer emerges. They are not capable of unaided, long-distance surface dispersal between isolated springs given their aquatic life history. Most springs in Bell and Williamson counties, and their underlying aquifer connections, are historical landscape features that predate European settlement of the North American continent (Brune 1981, pp. 65–69, 473–476). Given their limited mobility, and the long-term presence of springs across this landscape, both species certainly occupied these additional locations at the time of listing in 2014 (79 FR 10235). Springs within the Robertson Springs complex,

occupied by the Salado salamander, were also mapped to a greater level of detail. We, therefore, propose the following additions and adjustments to specific critical habitat units for these salamander species.

Revision of the Hogg Hollow Spring unit of critical habitat for the Georgetown salamander involves the addition of a new location 1,207 ft (368 m) southeast of Hogg Hollow Spring. As the subsurface habitat of these two locations overlapped, we merged them into one critical habitat unit. Formerly critical habitat Unit 6, the Hogg Hollow Spring unit is renumbered as critical habitat Unit 2 for the Georgetown salamander. We also added an additional Georgetown salamander location (Garey Ranch Spring) 3.4 miles (mi) (5.4 kilometers (km)) southwest of Shadow Canyon Spring.

Revision of the IH-35 Unit (Unit 4) of critical habitat for the Salado salamander includes finer-scale mapping of spring openings within this unit and the addition of new locations for the species at Anderson Spring and Side Spring (Diaz and Montagne 2017, p. 6). A new location for the Salado salamander was also identified at King's Garden Main Spring (Unit 5) by Cambrian (2018, pp. 5–6). Individuals from this site were not sampled by Devitt et al. (2019a, entire), but the site's location north of Lake Georgetown places it within the current range of the Salado salamander defined by Devitt et al. (2019a, p. 2,629). We moved the boundaries of critical habitat at Bat Well Cave (formerly Georgetown salamander critical habitat Unit 3 and renumbered as Salado salamander critical habitat Unit 10) approximately 328 ft (100 m) to the northeast, based on information that stated this is where salamanders were found in the cave underground (Hunter and Russell 1993, p. 7–8). We also re-evaluated Cobbs Well and concluded that this location is part of the same population of Salado salamanders (formerly Georgetown salamanders) as Cobbs Springs rather than its own separate subsurface population, due to its proximity to Cobbs Springs (within the 984-ft (300-m) subsurface habitat of Cobbs Springs). We, therefore, removed Cobbs Well as a separate occupied location from proposed Salado salamander critical habitat Unit 6 (formerly Georgetown salamander critical habitat Unit 1), reducing the subsurface critical habitat acreage for this unit from 83 ac (34 ha) to 68 ac (28 ha). Cobbs Well is still contained within Unit 6 for the Salado salamander.

For the Georgetown salamander, these proposed revisions decrease the total

proposed critical habitat designation by five units and approximately 300 ac (124 ha). The total number of proposed critical habitat units, landownership by type, and size of the proposed critical habitat units for the Georgetown salamander are presented in Table 1, below.

For the Salado salamander, these proposed revisions increase the total proposed critical habitat designation by six units and approximately 415 ac (171 ha). The total number of proposed critical habitat units, landownership by type, and size of the proposed critical habitat units for the Salado salamander are presented in Table 2, below.

The total amount of critical habitat we are proposing for both salamanders has increased by approximately 116 ac (47 ha). The reasons for this increase are the addition of a new occupied site for the Salado salamander and refined mapping of previously proposed critical habitat units based on more precise spring locations.

#### **Physical or Biological Features Essential to the Conservation of the Species**

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and that may require special management considerations or protection. The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic, or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkali soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological

features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species. In considering whether features are essential to the conservation of the species, the Service may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

Based on public comment, we separated the summary of essential physical or biological features (formerly primary constituent elements) for these salamander species into surface and subsurface habitat categories and added additional details in order to clarify habitat needs of both species. We derive the specific physical or biological features essential to the conservation of the Georgetown and Salado salamanders from studies of the 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 for the Georgetown and Salado salamanders (79 FR 10236; February 24, 2014).

Observational and experimental studies on the habitat requirements of Georgetown and Salado salamanders are rare. In the field of aquatic ecotoxicology, it is common practice to apply the results of experiments on common species to other species that are of direct interest (Caro *et al.* 2005, p. 1,823). In addition, the field of conservation biology is increasingly relying on information about surrogate species to predict how related species will respond to stressors (for example, see Caro *et al.* 2005 pp. 1,821–1,826; Wenger 2008, p. 1,565). In instances where information was not available for the Georgetown and Salado salamander

specifically, we have provided references for studies conducted on similarly related species, such as the Jollyville Plateau salamander and Barton Springs salamander (*Eurycea sosorum*), which occur within the central Texas area, and other salamander species that occur in other parts of the United States. The similarities among these species may include: (1) A clear systematic (evolutionary) relationship (for example, members of the Family Plethodontidae); (2) shared life-history attributes (for example, the lack of metamorphosis into a terrestrial form); (3) similar morphology and physiology (for example, the lack of lungs for respiration and sensitivity to environmental conditions); (4) similar prey (for example, small invertebrate species); and (5) similar habitat and ecological requirements (for example, dependence on aquatic habitat in or near springs with a rocky or gravel substrate). Depending on the amount and variety of characteristics in which one salamander species can be analogous to another, we used these similarities as a basis to infer further parallels in what Georgetown and Salado salamanders require from their habitat. We have determined that the Georgetown and Salado salamanders require the physical or biological features described below.

#### *Space for Individual and Population Growth and for Normal Behavior*

##### **Georgetown and Salado Salamanders**

The Georgetown salamander occurs in wetted caves and where water emerges from the ground as a spring-fed stream. The Salado salamander occurs where water emerges from the ground as a spring-fed stream. Within the spring ecosystem, salamanders’ proximity to the springhead is presumed important because of the appropriate stable water chemistry and temperature, substrate, and flow regime. *Eurycea* salamanders, which includes Georgetown and Salado salamanders, are rarely found more than 66 ft (20 m) from a spring source (TPWD 2011, p. 3). Georgetown salamanders have been found within 164 ft (50 m) of a spring opening (Pierce *et al.* 2011a, p. 4). However, they are most abundant within the first 16 ft (5 m) (Pierce *et al.* 2010, p. 294) of a spring opening. Pierce *et al.* (2013, p. 2) found little movement of Georgetown salamanders within two spring sites, but their study limited the search area to the first 92 ft (28 m) of the spring run. However, Jollyville Plateau salamanders, a closely related species, have been found up to 262 ft (80 m) both upstream and downstream



from a spring outlet (Bendik *et al.* 2016, p. 9). Bendik *et al.* (2016, p. 9) demonstrates that *Eurycea* salamanders, such as the Jollyville Plateau salamander, in central Texas can travel greater distances from a discrete spring opening than previously thought, including upstream areas, if suitable habitat is present.

Georgetown and Salado salamanders likely use the subterranean aquifer for habitat throughout the year, similar to other *Eurycea* species (Bendik and Gluesenkamp 2012, pp. 4–5; Bendik *et al.* 2013, pp. 10–12, 15; Bendik 2017, p. 5,013; Diaz and Bronson-Warren 2018, p. 11; Devitt *et al.* 2019a, p. 2,625). Morphological forms of Georgetown salamander with cave adaptations have been found at two caves (TPWD 2011, p. 8), indicating that they spend all of their lives underground at these two locations. We assume that the Salado salamander also uses subsurface areas given recruitment of individuals to the surface from the underlying aquifer, with surface recruitment at one occupied spring opening in Bell County estimated at 0.03 salamanders per day (Diaz and Bronson-Warren 2019, p. 7). Therefore, based on the information above, we identify springs, associated streams, and underground spaces within the Northern Segment of the Edwards Aquifer to be physical or biological features essential for individual and population growth and for normal behavior of the Georgetown and Salado salamanders.

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

##### Georgetown and Salado Salamanders

No species-specific dietary study has been completed, but the diet of the Georgetown 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). Crustaceans from the Class Ostracoda were the most commonly observed prey item for Salado salamanders (Diaz and Bronson-Warren 2018, pp. 8, 14). Other invertebrates consumed by the Salado salamander included amphipods, aquatic snails, and larvae of mayflies and caddisflies (Diaz and Bronson-Warren 2018, p. 14). 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 Georgetown and Salado salamanders if present in the invertebrate community.

Georgetown and Salado salamanders are strictly aquatic and spend their entire lives submersed in water from the Northern Segment of the Edwards Aquifer (Pierce *et al.* 2010, p. 296; Diaz and Bronson-Warren 2019, p. 7). These salamanders, and the prey that they feed on, require water sourced from the Edwards Aquifer at sufficient flows (quantity) to meet all of their physiological requirements (TPWD 2011, p. 8). This water should be flowing and unchanged in chemistry, temperature, and volume from natural conditions. Normal water temperature at two relatively undisturbed Georgetown salamander sites ranged from 64.1 to 73.1 degrees Fahrenheit (°F) (17.9 to 22.9 degrees Celsius (°C)) throughout the year (Pierce 2012, pp. 7–8). 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 Georgetown and Salado salamanders' 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 threshold, as the related Barton Springs salamander demonstrates declining abundance with declining dissolved oxygen levels (Turner 2009, p. 14). In addition, low dissolved oxygen concentrations (below 4.5 milligrams per liter (mg/L)) resulted in a number of physiological effects in the related San Marcos salamander including decreased metabolic rates and decreased juvenile growth rates (Woods *et al.* 2010, p. 544). Georgetown salamander sites are characterized by high levels of dissolved oxygen, typically 6 to 8 mg/L (Pierce and Wall 2011, p. 33). Therefore, we presume that the dissolved oxygen level of water is important to the Georgetown and Salado salamanders for respiratory function.

The conductivity of water is also important to salamander physiology. 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 micro Siemens per cm (µS/cm) (Bowles *et al.* 2006, p. 117). Salamanders were significantly more abundant at undeveloped sites where water conductivity averaged 600 µS/cm

(Bowles *et al.* 2006, p. 117). Because of their similar physiology to the Jollyville Plateau salamander, we presume that the Georgetown and Salado salamanders will have a similar response to elevated water conductance. Normal water conductance at a relatively undisturbed Georgetown salamander site ranges from 604 to 721 µS/cm throughout the year (Pierce *et al.* 2010, p. 294). Although one laboratory study on the related San Marcos salamander demonstrated that conductivities up to 2,738 µS/cm 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. In the absence of better 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 of 6 to 8 mg/L, water conductance of 604 to 721 µS/cm, and water temperature of 64.1 to 73.1 °F (17.9 to 22.9 °C), to be physical or biological features essential for the nutritional and physiological requirements of the Georgetown and Salado salamanders.

#### *Cover or Shelter*

##### Georgetown and Salado Salamanders

Similar to other *Eurycea* salamanders in central Texas, Georgetown and Salado 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).

Georgetown and Salado salamanders have been observed under rocks, leaf litter, woody debris, and other cover objects (Pierce *et al.* 2010, p. 295; Gluesenkamp 2011a, TPWD, pers. comm.). Georgetown salamanders appear to prefer large rocks over other cover objects (Pierce *et al.* 2010, p. 295), which is consistent with other studies on *Eurycea* habitat (Bowles *et al.* 2006, pp. 114, 116). Although no study has



demonstrated the substrate preference of the Salado salamander, we presume that this species prefers large rocks over other cover objects, similar to other closely related *Eurycea* salamanders. Larger rocks provide more suitable interstitial spaces for foraging and cover.

If springs stop flowing and the surface habitat dries up, Jollyville Plateau salamanders recede with the water table and persist in groundwater refugia until surface flow returns (Bendik 2011a, p. 31). Access to refugia allows populations some resiliency against drought events. Due to the similar life history and habitats of the Georgetown, Salado, and Jollyville Plateau salamanders, we presume that access to subsurface refugia for shelter during drought is also important for the Georgetown and Salado salamanders.

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

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

##### Georgetown and Salado Salamanders

Little is known about the reproductive habits of these species in the wild. However, the Georgetown and Salado salamanders are fully aquatic, spending all of their 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 2011a, TPWD, pers. comm.; Bendik 2011b, COA, pers. comm.).

Therefore, based on the information above, we identify access to subsurface or subterranean, water-filled voids of varying sizes (e.g., caves, conduits, fractures, and interstitial spaces) to be a physical or biological feature essential for breeding and reproduction for this species.

#### *Summary of Essential Physical or Biological Features for the Georgetown and Salado Salamanders*

We derive the specific physical or biological features essential for the Georgetown and Salado salamanders from studies of these species' habitat, ecology, and life history, as described above. We have determined that the following physical or biological features are essential to the conservation of the Georgetown and Salado salamanders:

##### Georgetown Salamander

###### (1) For surface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater issuing to the surface from the underlying aquifer 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 Georgetown salamander's prey base). The Service is unaware of any studies that specifically define the water quality constituents or contaminants that would have deleterious effects on these salamanders. 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 of aquatic surface habitats is similar to natural aquifer conditions, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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. 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 porous voids between rocks in the streambed that extend down into the water table.

###### (2) For subsurface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater quality is similar to natural aquifer conditions. 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 Georgetown 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, with temperatures

from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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.

##### Salado Salamander

###### (1) For surface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater quality issuing to the surface from the underlying aquifer 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 Salado 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 of aquatic surface habitats is similar to natural aquifer conditions, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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. The substrate and interstitial spaces have minimal sedimentation.

(C) *Aquatic invertebrates for food.* The spring environment is capable of supporting 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 porous voids between rocks in the streambed that extend down into the water table.

###### (2) For subsurface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater quality 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 Salado 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, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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 is capable of supporting an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

### Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the species at the time of listing contain features which are essential to the conservation of the species and which may require special management considerations or protection. The features essential to the conservation of this 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.

The areas proposed for critical habitat include both surface and subsurface critical habitat components. The surface critical habitat includes the spring outlets and outflow up to the high water line and 150 ft (80 m) of downstream habitat, but does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas); nor does it include upland habitat adjacent to streams. However, the subterranean aquifer may extend below such structures beneath the surface habitat. The subsurface critical habitat includes underground features in a circle with a radius of 984 ft (300 m) around the springs. Most of our proposed critical habitat is a subsurface designation and only includes the physical area beneath any buildings on the surface.

We detailed threats to surface and subsurface habitats in Factor A: The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range of the final listing rule for the Georgetown and Salado salamanders (79 FR 10235). The

Georgetown and Salado salamanders are sensitive to modification of surface (*i.e.*, spring openings and outflow) and subsurface habitats. Due to the connectivity between the surface and subsurface habitats, an impact to one will affect the other. Examples of surface habitat modifications may include (but are not limited to) damage to spring openings, sedimentation due to construction activities, and installation of impoundments. Examples of impacts to subsurface habitat may include (but are not limited to) pipeline construction, replacement, and maintenance, excavation for construction or quarrying, and groundwater depletion that can reduce spring flow. The depth of the subsurface habitat will vary from site to site.

For these salamanders, special management considerations or protections may be needed to address identified threats. Management activities that could ameliorate threats to surface habitat include (but are not limited to): (1) Protecting the quality of cave and spring water by implementing comprehensive programs to control and reduce point sources and non-point sources of pollution throughout the Northern Segment of the Edwards Aquifer; (2) minimizing the likelihood of pollution events or surface runoff from existing and future development that would affect groundwater quality; (3) protecting groundwater and spring flow quantity (for example, by implementing water conservation and drought contingency plans throughout the Northern Segment of the Edwards Aquifer); (4) protecting water quality and quantity from present and future quarrying; (5) excluding cattle and feral hogs from spring openings and outflow through fencing to protect spring habitats from damage; and (6) fencing and signage to protect spring habitats from human vandalism. Some of the management activities listed above, such as those that protect spring flow and groundwater quality, protect both surface and subsurface habitats, as these are interconnected.

Additional management activities that could ameliorate threats that are specific to subsurface habitat include (but are not limited to): (1) The development and implementation of void mitigation plans for construction projects to prevent impacts to salamanders in the event of severed aquifer conduits or interrupted groundwater flow paths; (2) site-specific plans developed by geotechnical engineers to prevent changes to subsurface water flow from construction activities; (3) the presence of environmental monitors during construction, excavation, and drilling

activities to monitor spring flow; and (4) post-construction monitoring of spring flow. Because subsurface habitat differs with regard to groundwater flow paths, depth, and amount of water-bearing rocks with voids that can support salamanders, management and mitigation plans to ameliorate threats will need to be developed on a site-specific basis.

### Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. 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), Hillis et al. (2001), and Devitt et al. (2019). Finally, salamander site locations and observations were verified with the aid of salamander biologists, museum collection records, and site visits.

We are not currently proposing to designate any additional areas outside the geographical area occupied by these species because we have determined that occupied areas are sufficient to conserve the Georgetown and Salado salamanders, 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. This critical habitat designation delineates the habitat that is physically occupied and used by the species rather than delineating all land or aquatic areas that influence 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 may be necessary for

the conservation of the species. For the purpose of designating critical habitat for the Georgetown and Salado 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 determine whether a salamander population has been extirpated from a spring site due to these species' ability to occupy the inaccessible subsurface habitat. We, therefore, consider any site that had a salamander observation occupied at the time of listing to be currently occupied, unless that spring or cave site had been destroyed.

Based on our review, the critical habitat areas (described below) are within the geographical range occupied by at least one of the two salamander species and meet the definition of critical habitat. The true extent to which the subterranean populations of these species exist below ground 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 proposed critical habitat rule, the best scientific evidence available suggests that a population of groundwater-dependent *Eurycea* salamanders can extend at least 984 ft (300 m) from the spring opening through underground conduits or voids between rocks. For example, the Austin blind salamander is believed to occur underground throughout the entire Barton Springs complex (Dries 2011, pers. comm.). The spring habitats used by salamanders of the Barton Springs complex are not connected on the surface, so the Austin blind salamander population extends at least 984 feet (ft) (300 meters (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.

We are proposing to designate critical habitat in areas that we have determined are occupied by one of the two salamanders and contain physical or biological features essential for the conservation of the species. We delineated both surface and subsurface critical habitat components. As previously stated, a Jollyville Plateau salamander was observed to have traveled up to 1,640 ft (500 m) after multiple years in Bull Creek (Bendik et al. 2016, p. 9). However, 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). This was the furthest distance a *Eurycea* salamander has been observed from a spring outlet in a single year (Bendik et al. 2016, p. 9) and is likely a more reasonable distance for salamander's in common hydrological settings. We applied this maximum distance to account for the potential movement and surface habitat use of Georgetown and Salado salamanders upstream and downstream of spring openings. It is reasonable to consider the downstream and upstream habitat occupied based on the dispersal capabilities observed in individuals of very similar species. 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. This circle does not include upland habitat adjacent to streams. The surface critical habitat includes the spring outlets and outflow up to the ordinary high water mark (the average amount of water present in nonflood 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 we are designating as critical habitat does not include human made structures (such as buildings, aqueducts, runways, roads, and other paved areas) within this circle, nor does it include upland habitat adjacent to streams.

We delineated the subsurface critical habitat unit boundaries by starting with the cave or spring point locations that are occupied by the salamanders. Depth to subsurface habitat will vary from site to site based on local geology. 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 Austin blind salamander is

a reasonable surrogate for Salado and Georgetown salamanders as it also inhabits subsurface, water-filled voids in the underlying Edwards Aquifer (Hillis et al. 2001, p. 23). 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 distance was applied to the Georgetown and Salado salamanders given their reliance on subsurface aquifer habitats (Bendik and Gluesenkamp 2012, pp. 4–5; Bendik et al. 2013, pp. 10–12, 15; Bendik 2017, p. 5,013; Diaz and Bronson-Warren 2018, p. 11; Devitt et al. 2019, p. 2,625). Polygons that were within 98 ft (30 m) of each other were merged together as these areas have the potential to be connected underground (Devitt et al. 2019a, pp. 2,629–2,630). Each merged polygon was then revised by removing extraneous divots or protrusions that resulted from the merge process.

Developed areas of surface habitat, such as lands covered by buildings, pavement, and other structures, lack physical or biological features for the Georgetown and Salado 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 inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We propose to designate as critical habitat lands that we have determined are occupied at the time of listing (*i.e.*, currently occupied) and that contain all of the physical or biological features that are essential to support life-history processes of the species.

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 under Proposed Regulation Promulgation. 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-2020-0048, and on our internet site [https://www.fws.gov/southwest/es/AustinTexas/ESA\\_Sp\\_Salamanders.html](https://www.fws.gov/southwest/es/AustinTexas/ESA_Sp_Salamanders.html).

### Proposed Critical Habitat Designation

In Tables 1 and 2 below, we present the revised proposed critical habitat units for the Georgetown and Salado salamanders. All units are considered

occupied by the relevant species at the time of listing. We also provide revised unit descriptions for all Georgetown and Salado salamander critical habitat units. The critical habitat areas we describe below constitute our current best assessment of subsurface and surface areas that meet the definition of critical habitat for the Georgetown and Salado salamanders. During periods of drought or dewatering on the surface in and around spring sites, access to the subsurface water table must be provided for shelter and protection. Surface critical habitat includes the spring

outlets and outflow up to the high water line and 262 ft (80 m) of downstream habitat, but does not include terrestrial habitats or humanmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule or land adjacent to streams; however, the subterranean aquifer may extend below such structures. The subterranean critical habitat includes underground features in a circle with a radius 984 ft (300 m) around the springs.

TABLE 1—PROPOSED CRITICAL HABITAT UNITS FOR THE GEORGETOWN SALAMANDER

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
1. Water Tank Cave Unit .....	Private .....	68 (28)
2. Hogg Hollow Spring Unit .....	Private, Federal .....	122 (49)
3. Cedar Hollow Spring Unit .....	Private .....	68 (28)
4. Lake Georgetown Unit .....	Federal, Private .....	134 (54)
5. Buford Hollow Spring Unit .....	Federal, Private .....	68 (28)
6. Swinbank Spring Unit .....	City, Private .....	68 (28)
7. Avant Spring Unit .....	Private .....	68 (28)
8. Shadow Canyon Spring Unit .....	City, Private .....	68 (28)
9. Garey Ranch Spring Unit .....	Private .....	68 (28)
Total .....	.....	732 (299)

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

TABLE 2—PROPOSED CRITICAL HABITAT UNITS FOR THE SALADO SALAMANDER

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
1. Hog Hollow Spring Unit .....	Private .....	68 (28)
2. Solana Spring Unit .....	Private .....	68 (28)
3. Cistern Spring Unit .....	Private .....	68 (28)
4. IH-35 Unit .....	Private, State, City .....	175 (71)
5. King's Garden Main Spring Unit .....	Private .....	68 (28)
6. Cobbs Spring Unit .....	Private .....	68 (28)
7. Cowan Creek Spring Unit .....	Private .....	68 (28)
8. Walnut Spring Unit .....	Private, County .....	68 (28)
9. Twin Springs Unit .....	Private, County .....	68 (28)
10. Bat Well Cave Unit .....	Private .....	68 (28)
Total .....	.....	787 (323)

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

### Georgetown Salamander

Critical habitat units proposed for the Georgetown salamander may require special management because of the potential for groundwater pollution from current and future development in the watershed, present operations and future expansion of quarrying activities, depletion of groundwater, and other threats (see *Special Management Considerations or Protection*). All proposed units are occupied by the Georgetown salamander. The proposed designation includes the spring outlets

and outflow up to the high water mark and 262 ft (80 m) of upstream and downstream habitat. Units are 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. For cave populations of the Georgetown salamander, the unit is delineated by drawing a circle with a radius of 984 ft (300 m) around the underground location of the salamanders, representing the extent of the proposed subsurface critical habitat.

### Unit 1: Water Tank Cave Unit

Unit 1 consists of approximately 68 ac (28 ha) of private land in west-central Williamson County, Texas. A golf course crosses the unit from northwest to southeast, and there are several roads in the eastern part of the unit. A secondary road crosses the extreme southern portion of the unit, and there are residences in the northwestern, southwestern, and west-central portions of the unit. This unit contains Water Tank Cave, which is occupied by the Georgetown salamander. The unit

contains the physical or biological features essential for the conservation of the species.

#### Unit 2: Hogg Hollow Spring Unit

Unit 2 consists of approximately 122 ac (49 ha) of U.S. Army Corps of Engineers land and private land in Williamson County, Texas. The unit is located south of Lake Georgetown and is mostly undeveloped. The northwestern part of the unit includes Sawyer Park, part of the Lake Georgetown recreation area. This unit contains two springs: Hogg Hollow Spring and Hogg Hollow 2 Spring, which are occupied by the Georgetown salamander. Hogg Hollow Spring is located on Hogg Hollow, and Hogg Hollow 2 Spring is located on an unnamed stream, both tributaries to Lake Georgetown. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 3: Cedar Hollow Spring Unit

Unit 3 consists of approximately 68 ac (28 ha) of private land in west-central Williamson County, Texas. A secondary road crosses the extreme southern portion of the unit, and there are residences in the northwestern, southwestern, and west-central portions of the unit. This unit contains Cedar Hollow Spring, which is occupied by the Georgetown salamander. The spring is located on Cedar Hollow, a tributary to Lake Georgetown. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 4: Lake Georgetown Unit

Unit 4 consists of approximately 134 ac (54 ha) of Federal and private land in west-central Williamson County, Texas. Part of the unit is the U.S. Army Corps of Engineers' Lake Georgetown property. There are currently no plans to develop the property. There is some control of public access. Unpaved roads are found in the western portion of the unit, and a trail begins in the central part of the unit and leaves the northeast corner. A secondary road crosses the extreme southern portion of the unit, and there are residences in the northwestern, southwestern, and west-central portions of the unit. A large quarry is located a short distance southeast of the unit. This unit includes two springs, Knight (Crockett Gardens) Spring and Cedar Breaks Hiking Trail Spring, which are occupied by the Georgetown salamander. The springs are located on an unnamed tributary to Lake Georgetown. A portion of the northern part of the unit extends under Lake Georgetown. The unit contains the

physical or biological features essential for the conservation of the species.

#### Unit 5: Buford Hollow Spring Unit

Unit 5 consists of approximately 68 ac (28 ha) of Federal and private land in west-central Williamson County, Texas. The unit is located just below the spillway for Lake Georgetown. The U.S. Army Corps of Engineers owns most of this unit as part of Lake Georgetown. The D.B. Wood Road, a major thoroughfare, crosses the eastern part of the unit. The rest of the unit is undeveloped. This unit contains Buford Hollow Springs, which is occupied by the Georgetown salamander. The spring is located on Buford Hollow, a tributary to the North Fork San Gabriel River. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 6: Swinbank Spring Unit

Unit 6 consists of approximately 68 ac (28 ha) of City and private land in west-central Williamson County, Texas. The unit is located near River Road south of Melanie Lane. The northern part of the unit is primarily in residential development, while the southern part of this unit is primarily undeveloped. This unit contains Swinbank Spring, which is occupied by the Georgetown salamander. The spring is located just off the main channel of North Fork San Gabriel River. The unit contains the physical or biological features essential for the conservation of the species. The population of Georgetown salamanders in the spring is being monitored monthly as part of the Williamson County Regional HCP's efforts to conserve the species.

#### Unit 7: Avant Spring Unit

Unit 7 consists of approximately 68 ac (28 ha) of private land in west-central Williamson County, Texas. The northern part of a large quarry is along the southwestern edge of the unit. The rest of the unit is undeveloped. This unit contains Avant's (Capitol Aggregates) Spring, which is occupied by the Georgetown salamander. The spring is close to the streambed of the Middle Fork of the San Gabriel River. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 8: Shadow Canyon Spring Unit

Unit 8 consists of approximately 68 ac (28 ha) of City and private land in west-central Williamson County, Texas. The unit is located just south of State Highway 29. This unit contains Shadow Canyon Spring, which is occupied by the Georgetown salamander. The spring

is located on an unnamed tributary of South Fork San Gabriel River. The unit contains the essential physical or biological features for the conservation of the species. The unit is authorized for development under the Shadow Canyon HCP. Impacts to the endangered golden-cheeked warbler (*Dendroica chrysoparia*) and Bone Cave harvestman (*Texella reyesi*) are permitted under the Shadow Canyon HCP; however, impacts to Georgetown salamander are not covered under the HCP.

#### Unit 9: Garey Ranch Spring Unit

Unit 9 consists of approximately 68 ac (28 ha) of private land in Williamson County, Texas. The unit is located north of RM 2243. The unit is mostly undeveloped. A small amount of residential development enters the southern and eastern parts of the unit. This unit contains Garey Ranch Spring, which is occupied by the Georgetown salamander. It is located on an unnamed tributary to the South Fork San Gabriel River. The unit contains the physical or biological features essential for the conservation of the species.

#### Salado Salamander

Critical habitat units proposed for the Salado salamander may require special management because of the potential for groundwater pollution from current and future development in the watershed, present operations and future expansion of quarrying activities, depletion of groundwater, and other threats (see *Special Management Considerations or Protection*). All proposed units are considered to be occupied by the Salado salamander. The proposed designation includes the spring outlets and outflow up to the high water mark and 262 ft (80 m) of upstream and downstream habitat. Units are 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. For cave populations of the Salado salamander, the unit is delineated by drawing a circle with a radius of 984 ft (300 m) around the underground location of the salamanders, representing the extent of the proposed subsurface critical habitat.

#### Unit 1: Hog Hollow Spring Unit

Unit 1 consists of approximately 68 ac (28 ha) of private land located in southwestern Bell County, Texas. The unit is primarily undeveloped ranch land. This unit contains Hog Hollow Spring, which is occupied by the Salado salamander. The unit is located on a tributary to Rumsey Creek in the Salado Creek drainage and contains the physical or biological features essential

for the conservation of the species. In 2016, the owners of the spring entered into an agreement with The Nature Conservancy for a perpetual conservation easement that provides long-term protection for this site.

#### Unit 2: Solana Spring Unit

Unit 2 consists of approximately 68 ac (28 ha) of private land located in southwestern Bell County, Texas. The unit is primarily undeveloped ranch land. This unit contains Solana Spring, which is occupied by the Salado salamander. The unit is located on a tributary to Rumsey Creek in the Salado Creek drainage and contains the physical or biological features essential for the conservation of the species. In 2016, the owners of the spring entered into an agreement with The Nature Conservancy for a perpetual conservation easement that provides long-term protection for this site.

#### Unit 3: Cistern Spring Unit

Unit 3 consists of approximately 68 ac (28 ha) of private land located in southwestern Bell County, Texas, on the same private ranch as Units 1 and 2 for the Salado salamander. The unit is primarily undeveloped ranch land. This unit contains Cistern Spring, which is occupied by the Salado salamander. The unit is located on a tributary to Rumsey Creek in the Salado Creek drainage and contains the physical or biological features essential for the conservation of the species. In 2016, the owners of the spring entered into an agreement with The Nature Conservancy for a perpetual conservation easement that provides long-term protection for this site.

#### Unit 4: IH-35 Unit

Unit 4 consists of approximately 175 ac (71 ha) of private, State, and City of Salado land located in southwestern Bell County, Texas, in the southern part of the Village of Salado. The unit extends along Salado Creek on both sides of Interstate Highway 35 (IH 35). The IH 35 right-of-way crosses Salado Creek and is owned by the Texas Department of Transportation. The unit is a mixture of residential and commercial properties on its eastern portion, with some undeveloped ranch land in the western part west of IH-35. This unit contains Robertson Springs complex, located on private property. West of IH-35 consists of two springs, Creek Spring and Sam Bass Spring, and five spring openings, Bathtub, Beaver Upper, Beaver Middle, Headwaters, and Maria, occupied by the Salado salamander. East of IH-35, the Downtown Spring complex of Unit 4 contains five springs, Anderson Spring,

Big Boiling Spring, Lazy Days Fish Farm, Lil' Bubbly Spring, and Side Spring, which are all located on private property and occupied by the Salado salamander.

The spring habitat within this unit has been modified. In the fall of 2011, the outflow channels and edges of Big Boiling and Lil' Bubbly Spring were reconstructed by a local organization, with large limestone blocks and mortar, to increase human access and visitation. In addition, in response to other activity in the area, the U.S. Army Corps of Engineers issued a cease-and-desist order to the Salado Chamber of Commerce in October 2011, for unauthorized discharge of dredged or fill material that occurred in this area (Brooks 2011, U.S. Corps of Engineers, in litt.). This order was issued in relation to the need for a section 404 permit under the Clean Water Act (33 U.S.C. 1251 *et seq.*). A citation from a Texas Parks and Wildlife Department (TPWD) game warden was also issued in October 2011, due to the need for a sand and gravel permit from the TPWD for work being conducted within TPWD jurisdiction (Heger 2012a, pers. comm.). The citation was issued because the Salado Chamber of Commerce had been directed by the game warden to stop work within TPWD jurisdiction, which they did temporarily, but work started again contrary to the game warden's directive (Heger 2012a, pers. comm.). A sand and gravel permit was obtained on March 21, 2012. The spring run modifications were already completed by this date, but further modifications in the springs were prohibited by the permit. Additional work on the bank upstream of the springs was permitted and completed (Heger 2012b, pers. comm.).

#### Unit 5: King's Garden Main Spring Unit

Unit 5 consists of approximately 68 ac (28 ha) of private land in northern Williamson County, Texas. The unit is undeveloped land. The unit contains King's Garden Main Spring, which is occupied by the Salado salamander. The surface population of King's Garden Main Spring has been observed at the spring's outlet. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 6: Cobbs Spring Unit

Unit 6 consists of approximately 68 ac (28 ha) of private land located in northwestern Williamson County, Texas. The unit is undeveloped land. This unit contains Cobbs Spring, which is occupied by the Salado salamander. Cobbs Springs is located on Cobbs Springs Branch. The subsurface

population of Cobbs Spring has been observed in Cobbs Well (Gluesenkamp 2011a, TPWD, pers. comm.), which is located approximately 328 ft (100 m) to the southwest of the spring. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 7: Cowan Creek Spring Unit

Unit 7 consists of approximately 68 ac (28 ha) of private land located in west-central Williamson County, Texas. The northern portion of the unit is residential development; the remainder is undeveloped. This unit contains Cowan Creek Spring, which is occupied by the Salado salamander. The spring is located on Cowan Creek. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 8: Walnut Spring Unit

Unit 8 consists of approximately 68 ac (28 ha) of private and Williamson County land located in west-central Williamson County, Texas. The western, eastern, and northeastern portions of the unit contain low-density residential development; the southern and north-central portions are undeveloped. The extreme southeastern corner of the unit is part of Williamson County Conservation Foundation's Twin Springs Preserve. This unit contains Walnut Spring, which is occupied by the Salado salamander. The spring is located on Walnut Spring Hollow. The unit contains the physical or biological features essential for the conservation of the species.

#### Unit 9: Twin Springs Unit

Unit 9 consists of approximately 68 ac (28 ha) of private and Williamson County land located in west-central Williamson County, Texas. The northern portion of the unit contains low-density residential development; the remainder of the unit is undeveloped. The majority of the unit is part of Williamson County Conservation Foundation's Twin Springs Preserve. The preserve is managed by Williamson County Conservation Foundation as a mitigation property for the take of golden-cheeked warbler and Bone Cave harvestman under the Williamson County Regional HCP. The preserve habitat will be undeveloped in perpetuity. Salamander populations are monitored, and there is some control of public access. This unit contains Twin Springs, which is occupied by the Salado salamander. The spring is located on Taylor Ray Hollow, a tributary of Lake Georgetown. The unit contains the physical or biological

features essential for the conservation of the species.

#### Unit 10: Bat Well Cave Unit

Unit 10 consists of approximately 68 ac (28 ha) of private land located in west-central Williamson County, Texas. The western, northern, and southern portion of the unit contains residential development. This unit contains Bat Well Cave, a cave occupied by the Salado salamander. The cave is located in the Cowan Creek watershed. The unit contains the physical or biological features essential to the conservation of the species.

### Effects of Critical Habitat Designation

#### Section 7 Consultation

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

We published a final rule revising the definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed 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, authorized, or carried out by a Federal

agency—do not require section 7 consultation.

Compliance with the requirements of section 7(a)(2), is documented through our issuance of:

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

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

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Service Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

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

Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinitiate formal consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law) and, subsequent to the previous consultation, we have listed a new species or designated critical habitat that may be affected by the Federal action, or the action has been modified in a manner that affects the species or critical habitat in a way not considered in the previous consultation. In such situations, Federal agencies sometimes may need to request reinitiation of consultation with us, but the regulations also specify some exceptions to the

requirement to reinitiate consultation on specific land management plans after we subsequently list a new species or designate new critical habitat. See the regulations for a description of those exceptions.

#### *Application of the “Destruction or Adverse Modification” Standard*

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate 7(a)(2) of the Act by destroying or adversely modifying such habitat, or that may be affected by such designation.

Activities that the Service may, during a consultation under section 7(a)(2) of the Act, find are likely to destroy or adversely modify critical habitat include, but are not limited to:

- (1) Actions that would physically disturb the surface or subsurface habitat upon which these two salamander species depend. Such activities could include, but are not limited to, channelization, removal of substrate, clearing of vegetation, construction of commercial and residential development, quarrying, 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 Georgetown and Salado 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*

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

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

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

The first sentence in section 4(b)(2) of the Act requires that we take into consideration the economic, national security, or other relevant impacts of designating any particular area as critical habitat. We describe below the process that we undertook for taking into consideration each category of impacts and our analyses of the relevant impacts.

#### *Consideration of Economic Impacts*

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. To assess the probable economic impacts of a designation, we must first evaluate specific land uses or activities and projects that may occur in the area of the critical habitat. We then must evaluate the impacts that a specific critical habitat designation may have on restricting or modifying specific land uses or activities for the benefit of the species and its habitat within the areas proposed. We then identify which conservation efforts may be the result of the species being listed under the Act versus those attributed solely to the designation of critical habitat for this particular species. The probable economic impact of a proposed critical habitat designation is analyzed by comparing scenarios both “with critical habitat” and “without critical habitat.”

The “without critical habitat” scenario represents the baseline for the analysis, which includes the existing regulatory and socio-economic burden imposed on landowners, managers, or other resource users potentially affected by the designation of critical habitat (e.g., under the Federal listing as well as other Federal, State, and local regulations). The baseline, therefore, represents the costs of all efforts attributable to the listing of the species under the Act (i.e., conservation of the species and its habitat incurred regardless of whether critical habitat is designated). The “with critical habitat” scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts would not be expected without the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat, above and beyond the baseline costs. These are the costs we use when evaluating the benefits of inclusion and exclusion of particular areas from the final designation of critical habitat should we choose to conduct a discretionary 4(b)(2) exclusion analysis.

For this particular designation, we developed an incremental effects memorandum (IEM) considering the probable incremental economic impacts that may result from this proposed designation of critical habitat. The information contained in our IEM was then used to develop a screening analysis of the probable effects of the designation of critical habitat for the Georgetown and Salado salamanders (Industrial Economics, Incorporated (IEC) 2020, entire). We began by conducting a screening analysis of the proposed designation of critical habitat in order to focus our analysis on the key factors that are likely to result in incremental economic impacts. The purpose of the screening analysis is to filter out particular geographic areas of critical habitat that are already subject to such protections and are, therefore, unlikely to incur incremental economic impacts. In particular, the screening analysis considers baseline costs (i.e., absent critical habitat designation) and includes probable economic impacts where land and water use may be subject to conservation plans, land management plans, best management practices, or regulations that protect the habitat area as a result of the Federal listing status of the species. Ultimately, the screening analysis allows us to focus our analysis on evaluating the specific areas or sectors that may incur probable incremental economic impacts as a result of the designation. The screening analysis also assesses whether there are units that may incur probable incremental economic impacts as a result of the designation. The screening analysis also assesses whether units are unoccupied by the species and thus may require additional management or conservation efforts as a result of the critical habitat designation for the species; these additional efforts may incur incremental economic impacts. This screening analysis combined with the information contained in our IEM are what we consider our draft economic analysis (DEA) of the proposed critical habitat designation for the Georgetown and Salado salamanders and is summarized in the narrative below.

Executive Orders (E.O.s) 12866 and 13563 direct Federal agencies to assess the costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consistent with the E.O. regulatory analysis requirements, our effects analysis under the Act may take into consideration impacts to both directly and indirectly affected entities, where practicable and reasonable. If

sufficient data are available, we assess to the extent practicable the probable impacts to both directly and indirectly affected entities. As part of our screening analysis, we considered the types of economic activities that are likely to occur within the areas likely affected by the critical habitat designation. In our evaluation of the probable incremental economic impacts that may result from the proposed designation of critical habitat for the Georgetown and Salado salamanders, first we identified, in the IEM dated April 14, 2020, probable incremental economic impacts associated with the following categories of activities: (1) Future stream/river crossings and bridge replacements and maintenance; (2) pipeline construction, replacement, maintenance, or removal; (3) electrical transmission line construction; (4) stream restoration activities for habitat improvement; (5) herbicide and pesticide use along stream banks; (6) irrigation and water supply system installations; (7) livestock management and livestock facilities construction; (8) bank stabilization projects; (9) disaster debris removal; (10) repairs to existing and damaged roads, bridges, utilities, and parks; (11) construction of tornado safe rooms, and demolition of flood-prone structures; (12) return of land to open space in perpetuity; and (13) removal of hazardous fuels in wildland urban interface to reduce the risk of catastrophic wildfire. We considered each industry or category individually. Additionally, we considered whether their activities may have any Federal involvement. Critical habitat designation generally will not affect activities that do not have any Federal involvement; under the Act, designation of critical habitat only affects activities conducted, funded, permitted, or authorized by Federal agencies. In areas where the Georgetown or Salado salamander are present, Federal agencies already are required to consult with the Service under section 7 of the Act on activities they fund, permit, or implement that may affect the species. If we finalize this proposed critical habitat designation, consultations to avoid the destruction or adverse modification of critical habitat would be incorporated into the existing consultation process.

In our IEM, we attempted to clarify the distinction between the effects that result from the species being listed and those attributable to the critical habitat designation (*i.e.*, difference between the jeopardy and adverse modification standards) for the Georgetown and Salado salamander's critical habitat.

Because all of the units we are proposing to designate as critical habitat for the Georgetown and Salado salamanders are occupied, we do not expect that the critical habitat designation will result in any additional consultations above and beyond those caused by the species' listing. The conservation recommendations provided to address impacts to the occupied critical habitat will be the same as those recommended to address impacts to the species because the habitat tolerances of the Georgetown and Salado salamanders are inextricably linked to the health, growth, and reproduction of the salamanders, which are present and confined year-round in their occupied critical habitat. Furthermore, because the proposed critical habitat and the Georgetown and Salado salamanders' known range are identical, the results of consultation under adverse modification are not likely to differ from the results of consultation under jeopardy. In the event of an adverse modification determination, we expect that reasonable and prudent alternatives to avoid jeopardy to the species would also avoid adverse modification of the critical habitat. The only incremental impact of critical habitat designation that we anticipate is the small (not expected to exceed \$38,500 per year) administrative effort required during section 7 consultation to document effects on the physical and biological features of the critical habitat and whether the action appreciably diminishes the value of critical habitat as a whole for the conservation of the listed species (IEc 2020).

The proposed critical habitat designations for the Georgetown and Salado salamanders amount to a total of approximately 1,519 ac (622 ha) in Bell and Williamson Counties, Texas. In these areas, any actions that may affect the species or its habitat would also affect designated critical habitat, and it is unlikely that any additional conservation efforts would be recommended to address the adverse modification standard over and above those recommended as necessary to avoid jeopardizing the continued existence of the Georgetown and Salado salamanders. While this additional analysis will require time and resources by both the Federal action agency and the Service, it is believed that, in most circumstances, these costs would predominantly be administrative in nature and would not be significant.

Incremental costs are likely to be minor and primarily limited to administrative efforts that consider adverse modification in consultation.

This finding is based on these factors: (1) All activities with a Federal nexus occurring within the proposed critical habitat designations will be subject to section 7 consultation requirements regardless of critical habitat designation due to the presence of listed species; and (2) since the Service predicts that the majority of project modifications avoiding jeopardy and adverse modification overlap, there will only be a limited number of project modification requests that are solely caused by a critical habitat designation (IEc 2020). The estimated \$38,500 per year of incremental costs associated with the designation of critical habitat is well below \$100 million and, therefore, is unlikely to trigger additional requirements under State or local regulations. Further, while some perceptual effects may arise, they are not expected to result in substantial costs.

As we stated earlier, we are soliciting data and comments from the public on the DEA, as well as all aspects of this proposed rule. We may revise the proposed rule or supporting documents to incorporate or address information we receive during the public comment period. In particular, we may exclude an area from critical habitat if we determine that the benefits of excluding the area outweigh the benefits of including the area, provided the exclusion will not result in the extinction of this species.

During the development of a final designation, we will consider any additional economic impact information we receive through the public comment period, and, as such, areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

#### *Consideration of National Security Impacts*

In preparing this proposal, we have determined that the lands within the proposed designation of critical habitat for Georgetown and Salado salamanders are not owned, managed, or used by the Department of Defense or the Department of Homeland Security, and, therefore, we anticipate no impact on national security or homeland security. However, during the development of a final designation we will consider any additional information received through the public comment period on the impacts of the proposed designation on national security or homeland security to determine whether any specific areas should be excluded from the final critical habitat designation under authority of section 4(b)(2) and our

implementing regulations at 50 CFR 424.19.

#### *Consideration of 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 discussed above. We consider a number of factors including whether there are permitted conservation plans covering the species in the area such as HCPs, safe harbor agreements, or candidate conservation agreements with assurances, or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at the existence of tribal conservation plans and partnerships and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this proposal, we have determined that there are currently no HCPs or other management plans for the Georgetown or Salado salamanders, and the proposed designation does not include any tribal lands or trust resources. We anticipate no impact on tribal lands, partnerships, or HCPs from this proposed critical habitat designation.

During the development of a final designation, we will consider any information currently available or received during the public comment period regarding the economic, national security, or other relevant impacts of the proposed designation and will determine whether any specific areas should be excluded from the final critical habitat designation under authority of section 4(b)(2) and our implementing regulations at 50 CFR 424.19.

#### **Required Determinations**

##### *Clarity of the Rule*

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

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

If you feel that we have not met these requirements, send us comments by one

of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

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

Executive Order (E.O.) 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 waived their review regarding their significance determination of this proposed rule.

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 of 1996 (SBREFA; 5 U.S.C. 801 et seq.), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not

have a significant economic impact on a substantial number of small entities.

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

Under the RFA, as amended, and as understood in the light of recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies would be directly regulated if we adopt the proposed critical habitat designation. There is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities would be directly regulated by this rulemaking, the Service certifies that, if made final as proposed, the proposed critical

habitat designation will not have a significant economic impact on a substantial number of small entities.

In summary, we have considered whether the proposed designation would result in a significant economic impact on a substantial number of small entities. For the above reasons and based on currently available information, we certify that, if made final, the proposed critical habitat designation will not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required.

#### *Executive Order 13771*

We do not believe this proposed rule is an E.O. 13771 (“Reducing Regulation and Controlling Regulatory Costs”) (82 FR 9339, February 3, 2017) regulatory action because we believe this rule is not significant under E.O. 12866; however, the Office of Information and Regulatory Affairs has waived their review regarding their E.O. 12866 significance determination of this proposed rule.

#### *Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. In our economic analysis, we did not find that this proposed critical habitat designation would 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 finding:

(1) This proposed rule would not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal

program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

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

(2) We do not believe that this rule would significantly or uniquely affect small governments because 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 draft economic analysis states that 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 E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for Georgetown and Salado salamanders in a takings implications assessment. The Act does not authorize the Service to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed for the proposed designation of critical habitat for Georgetown and Salado salamanders, and it concludes that, if adopted, this designation of critical habitat does not pose significant takings implications for lands within or affected by the designation.

#### *Federalism—Executive Order 13132*

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

with, appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the proposed rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The proposed designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical or biological features of the habitat necessary for 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 State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

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

#### *Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, this proposed rule identifies the

elements of physical or biological features essential to the conservation of the species. The proposed areas of designated critical habitat are presented on maps, and the proposed rule provides several options for the interested public to obtain more detailed location information, if desired.

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

This rule does not contain information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) is not required. We may not conduct or sponsor and you are 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)).

#### *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 have determined that no tribal lands fall within the boundaries of the proposed critical habitat for the Georgetown or Salado salamanders, so no tribal lands would be affected by the proposed designation.

#### **References Cited**

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

#### **Authors**

The primary authors of this proposed rule are the staff members of the Service's Austin Ecological Services Field Office.

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

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

#### **Proposed Regulation Promulgation**

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

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

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

**Authority:** 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. In § 17.11(h), revise the entries for “Salamander, Georgetown” and “Salamander, Salado” in the List of Endangered and Threatened Wildlife under “AMPHIBIANS” to read as set forth below:

#### **§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*

(h) \* \* \*

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* AMPHIBIANS	*	*	*	*
* Salamander, Georgetown ...	* <i>Eurycea naufragia</i> .....	* Wherever found .....	* T	* 79 FR 10236, 2/24/2014; 50 CFR 17.43(e); <sup>4d</sup> 50 CFR 17.95(d). <sup>CH</sup>
* Salamander, Salado .....	* <i>Eurycea chisholmensis</i> .....	* Wherever found .....	* T	* 79 FR 10236, 2/24/2014; 50 CFR 17.95(d). <sup>CH</sup>
*	*	*	*	*

■ 3. Amend § 17.95(d) by adding entries for “Georgetown Salamander (*Eurycea naufragia*)” and “Salado Salamander (*Eurycea chisholmensis*)” in the same order that these species appear in the table at § 17.11(h) to read as follows:

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

\* \* \* \* \*

(d) *Amphibians.*

\* \* \* \* \*

**Georgetown Salamander (*Eurycea naufragia*)**

(1) Critical habitat units are depicted for Williamson County, Texas, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of Georgetown salamander consist of the following components:

(i) For surface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater issuing to the surface from the underlying aquifer 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 Georgetown salamander's prey base). The Service is unaware of any studies that specifically define the water quality constituents or contaminants that would have deleterious effects on these salamanders. 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 of aquatic surface habitats is similar to natural aquifer conditions, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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. 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 porous voids between rocks in the streambed that extend down into the water table.

(ii) For subsurface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater quality is similar to natural aquifer conditions. 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 Georgetown 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, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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.

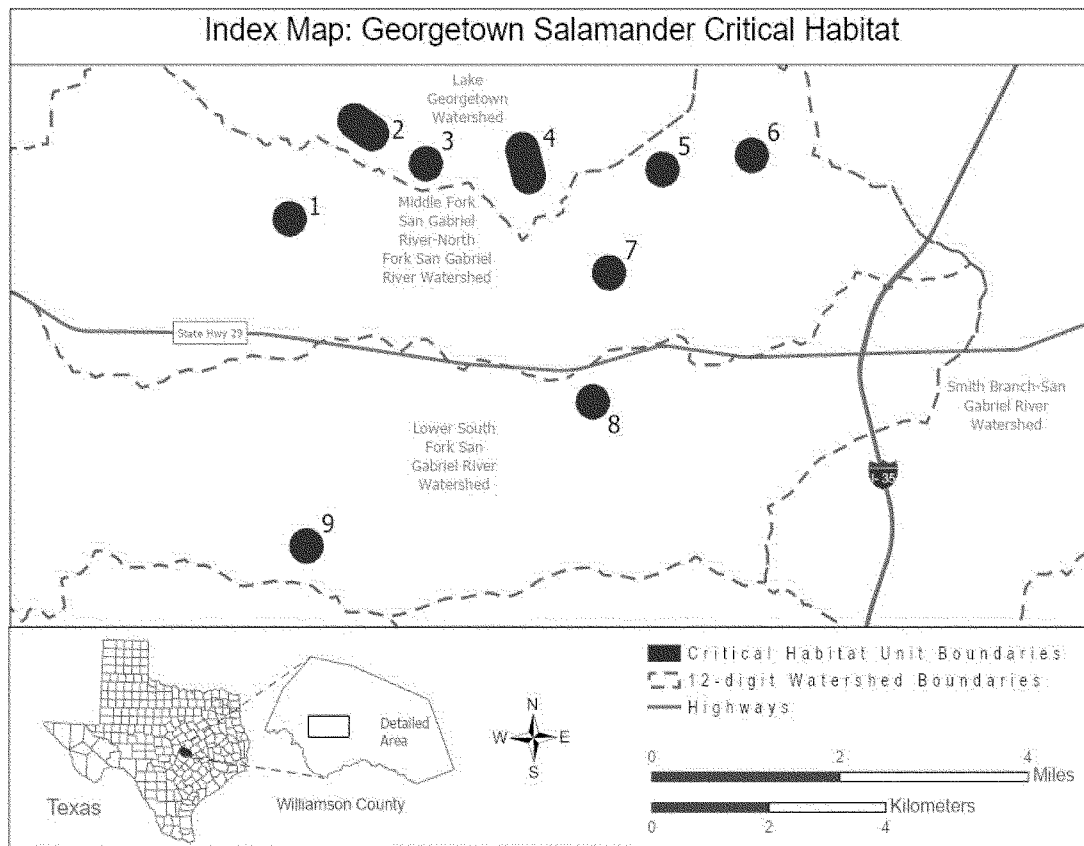
(3) Surface critical habitat includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat, including the dry stream channel during

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 U.S. Geological Survey 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 Service's internet site at <http://www.fws.gov/southwest/es/AustinTexas/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0048, and at the field office responsible for this designation. You may obtain field office location information by contacting one

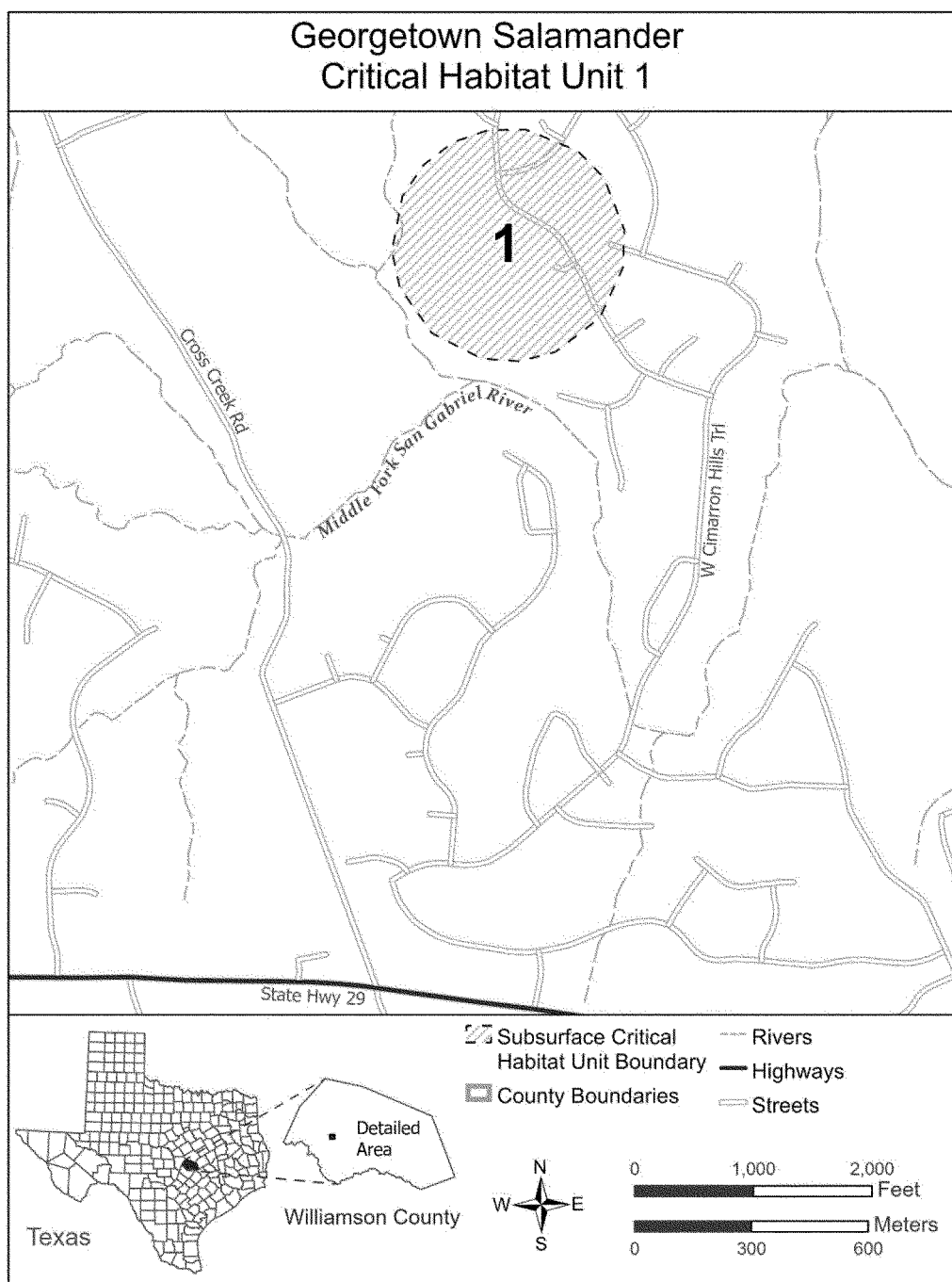
of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) *Note:* Index map follows:  
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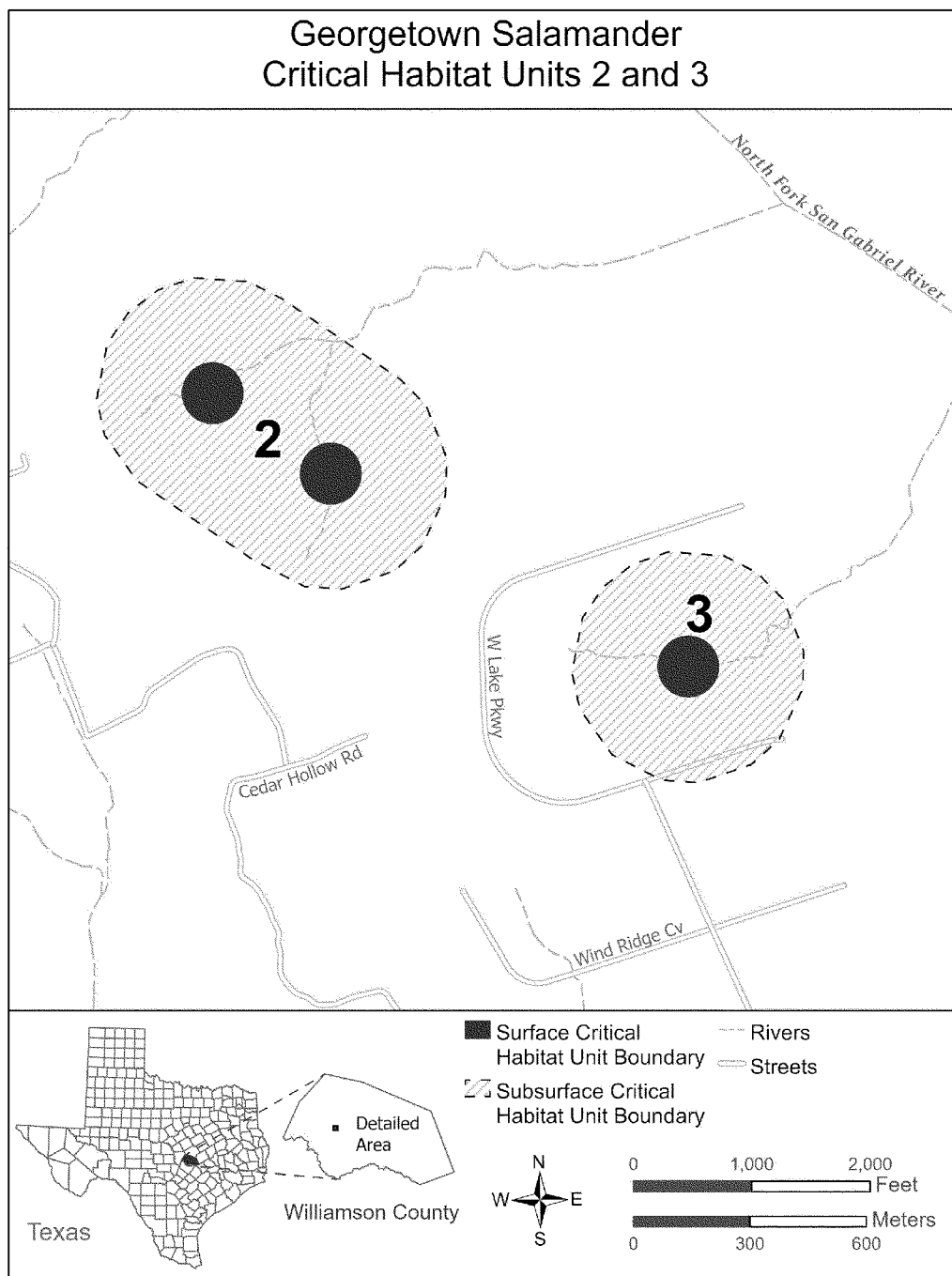


(6) Unit 1: Water Tank Cave Unit, Williamson County, Texas. Map follows:





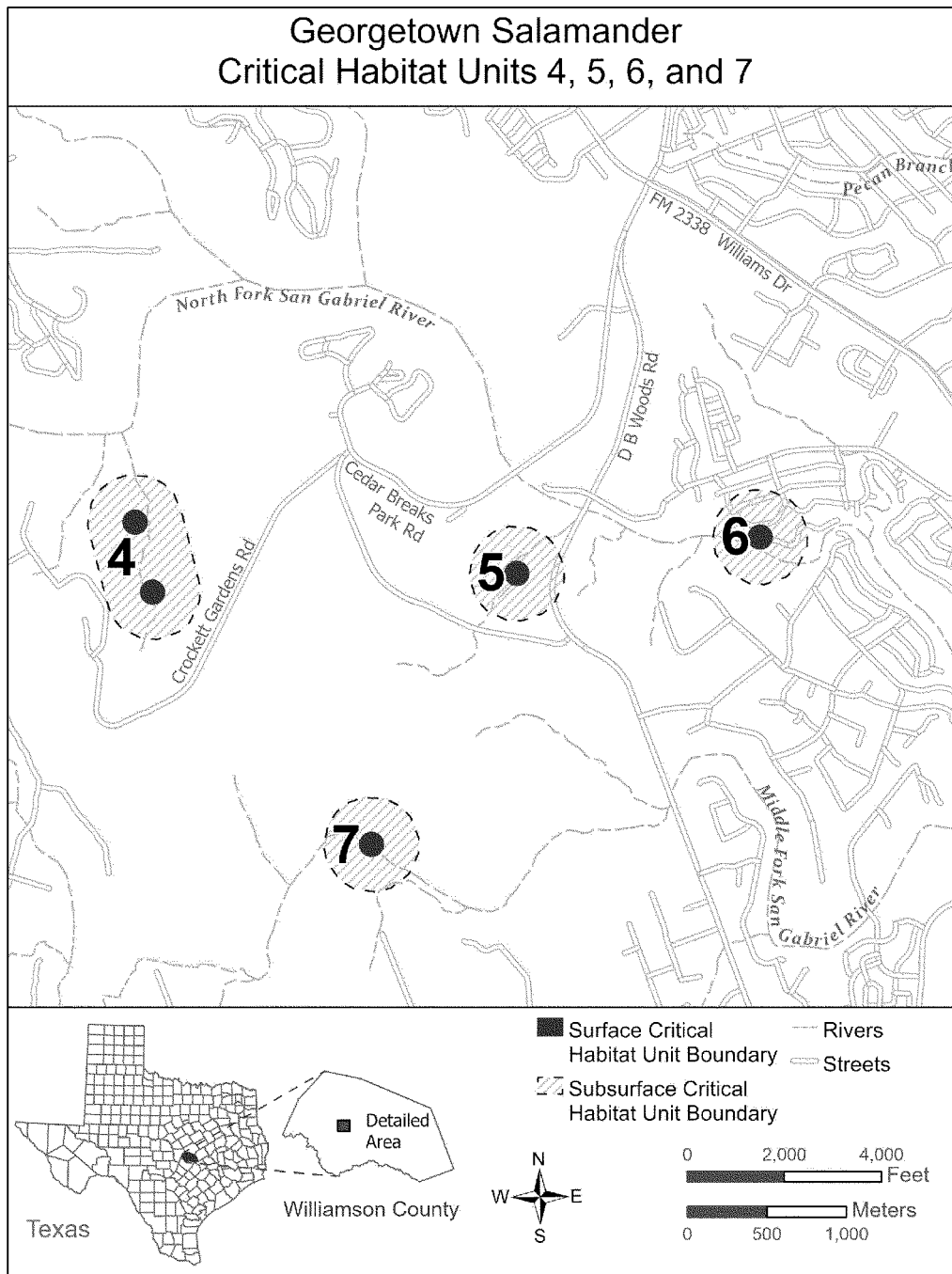
(7) Unit 2: Hogg Hollow Spring Unit, Williamson County, Texas. Map of Units 2 and 3 follows.



(8) Unit 3: Cedar Hollow Spring Unit, Williamson County, Texas. Map of Unit

3 is provided at paragraph (7) of this entry.

(9) Unit 4: Lake Georgetown Unit, Williamson County, Texas. Map of Units 4, 5, 6, and 7 follows:



(10) Unit 5: Buford Hollow Spring Unit, Williamson County, Texas. Map of Unit 5 is provided at paragraph (9) of this entry.

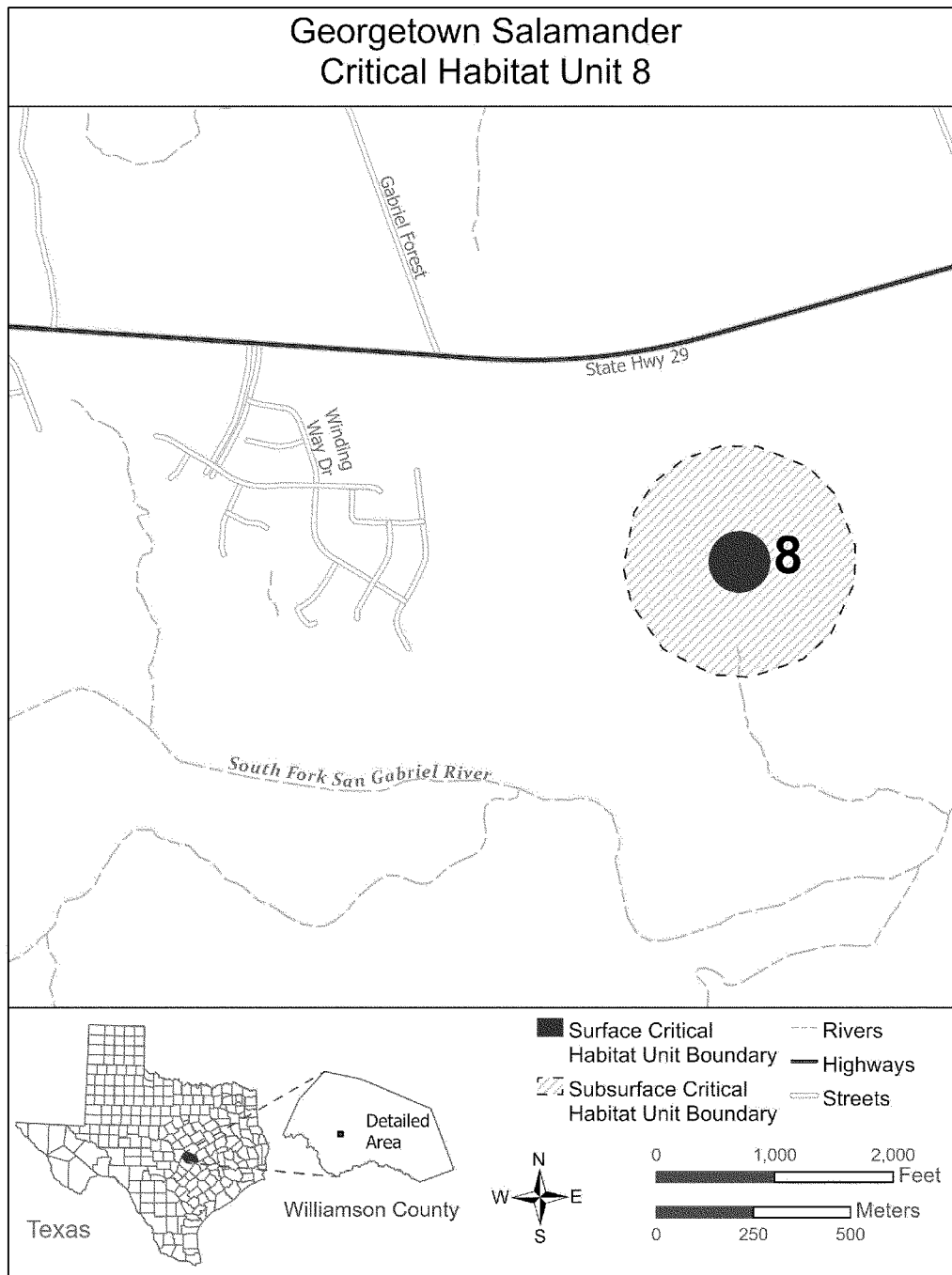
(11) Unit 6: Swinbank Spring Unit, Williamson County, Texas. Map of Unit

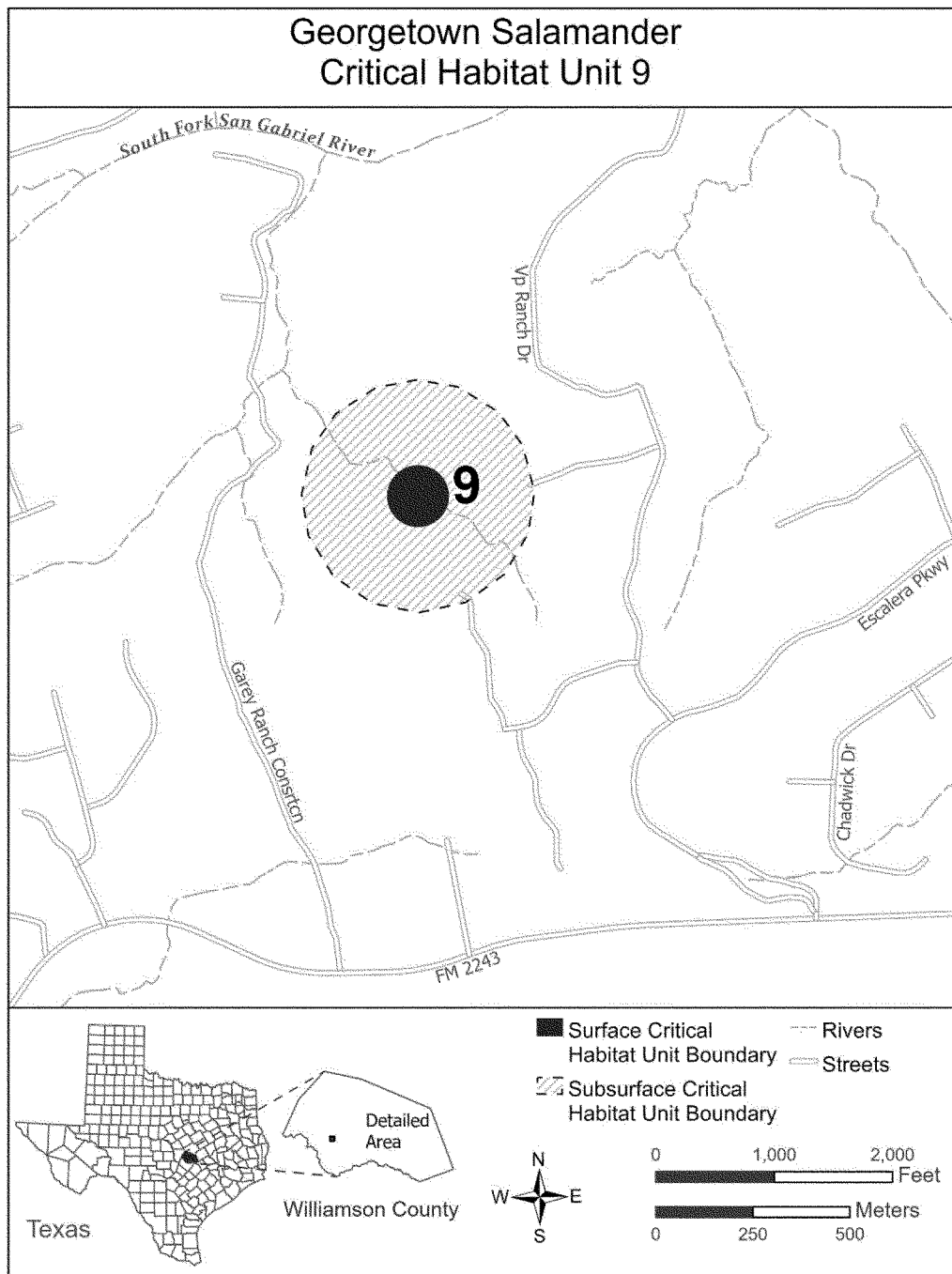
6 is provided at paragraph (9) of this entry.

(12) Unit 7: Avant Spring Unit, Williamson County, Texas. Map of Unit 7 is provided at paragraph (9) of this entry.

(13) Unit 8: Shadow Canyon Spring Unit, Williamson County, Texas. Map follows:

(14) Unit 9: Garey Ranch Spring Unit, Williamson County, Texas. Map follows:



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\* \* \* \* \*

**Salado Salamander (*Eurycea chisholmensis*)**

(1) Critical habitat units are depicted for Bell and Williamson Counties, Texas, on the maps in this entry.

(2) Within these areas, the physical or biological features essential to the conservation of Salado salamander consist of the following components:

(i) For surface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer.* Groundwater

quality issuing to the surface from the underlying aquifer 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 Salado 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 of

aquatic surface habitats is similar to natural aquifer conditions, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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. The substrate and interstitial spaces have minimal sedimentation.

(C) *Aquatic invertebrates for food*. The spring environment is capable of supporting 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 porous voids between rocks in the streambed that extend down into the water table.

(ii) For subsurface habitat:

(A) *Water from the Northern Segment of the Edwards Aquifer*. Groundwater quality 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 Salado 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, with temperatures from 64.1 to 73.1 °F (17.9 to 22.8 °C), dissolved oxygen concentrations from 6 to 8 mg/L, and specific water conductance from 604 to 721 µS/cm.

(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 is capable of supporting an aquatic invertebrate community that includes crustaceans, insects, or flatworms.

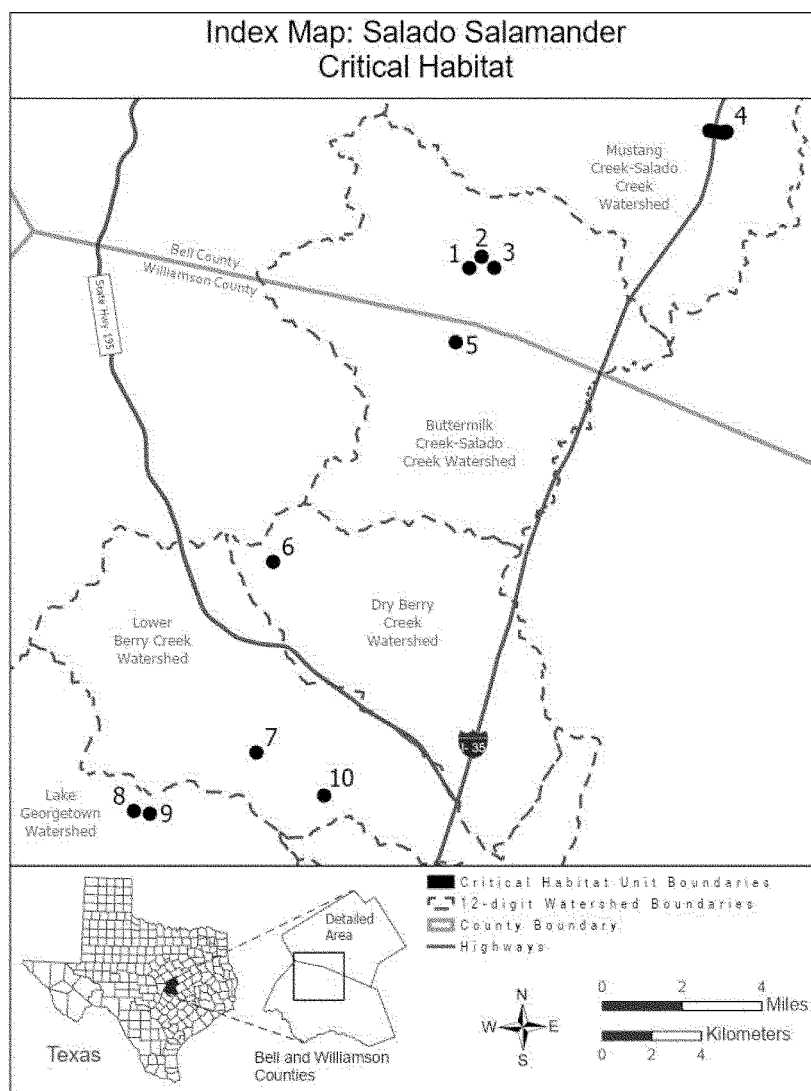
(3) Surface critical habitat includes the spring outlets and outflow up to the high water line and 262 ft (80 m) of upstream and downstream habitat, including the dry stream channel during periods of no surface flow. The surface critical habitat does not include manmade structures (such as buildings, 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 U.S. Geological Survey 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 Service's internet site at <http://www.fws.gov/southwest/es/AustinTexas/>, at <http://www.regulations.gov> at Docket No. FWS-R2-ES-2020-0048, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

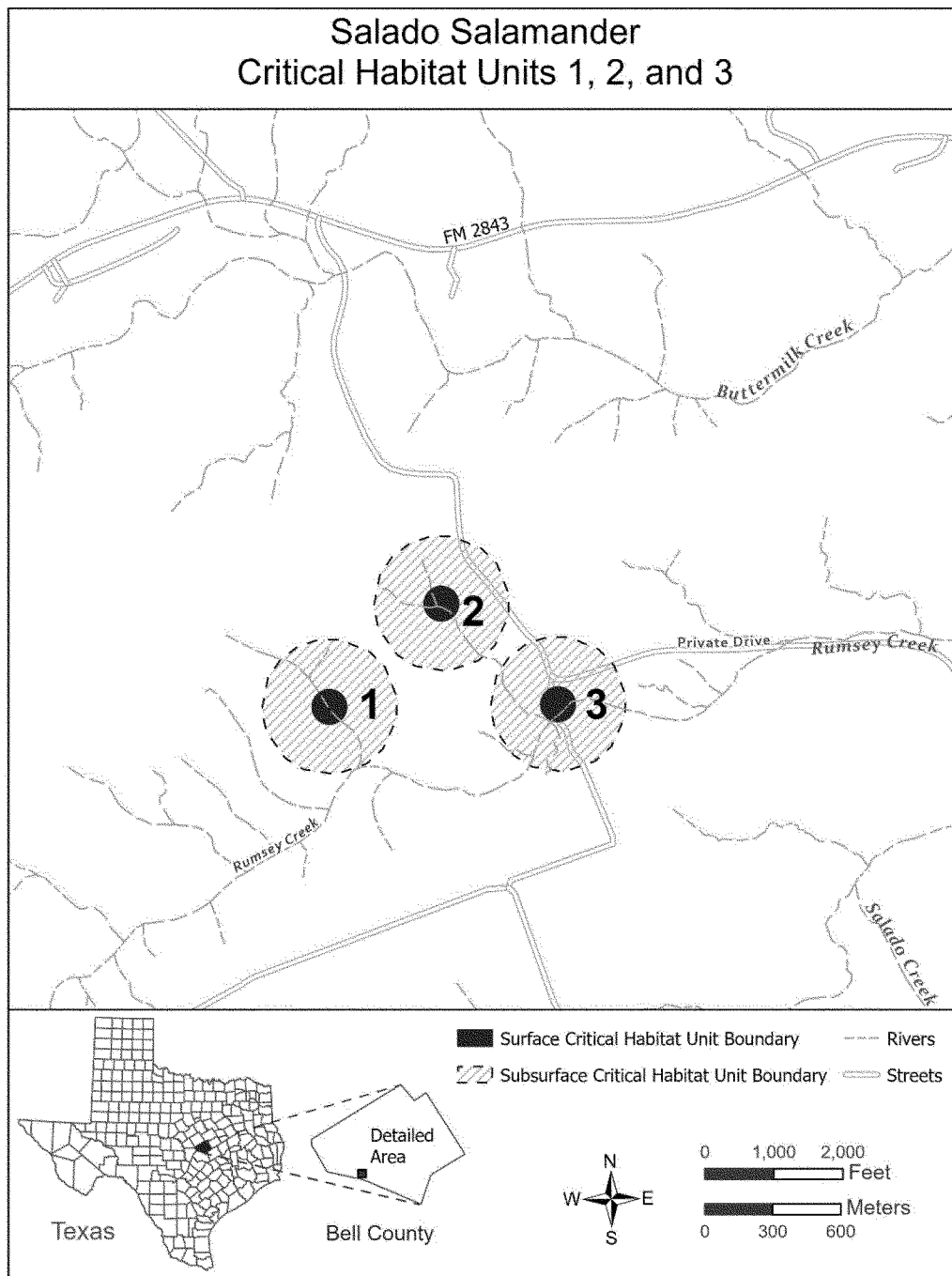
(5) *Note*: Index map follows:

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(6) Unit 1: Hog Hollow Spring Unit, Williamson County, Texas. Map of Units 1, 2, and 3 follows:

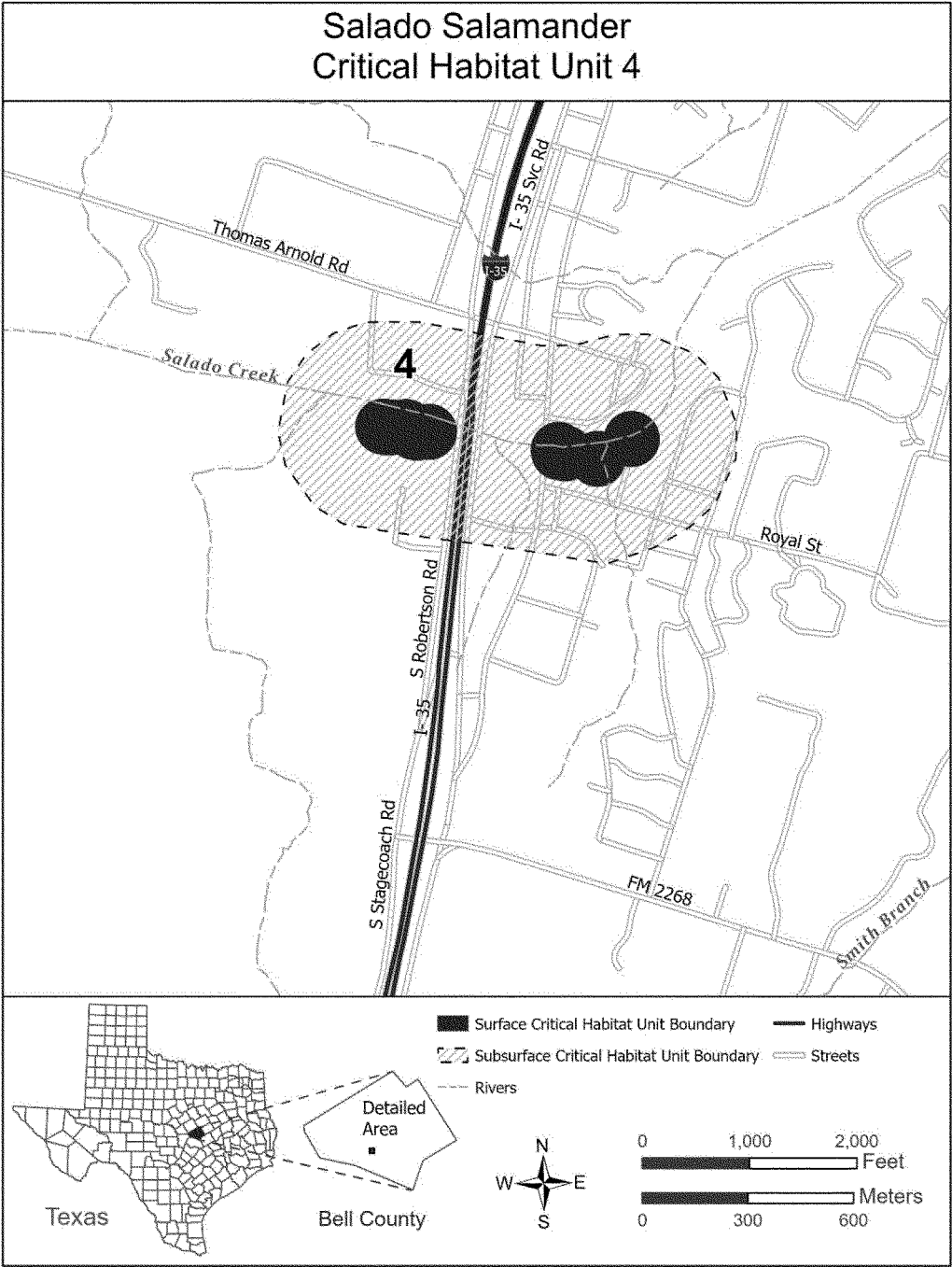




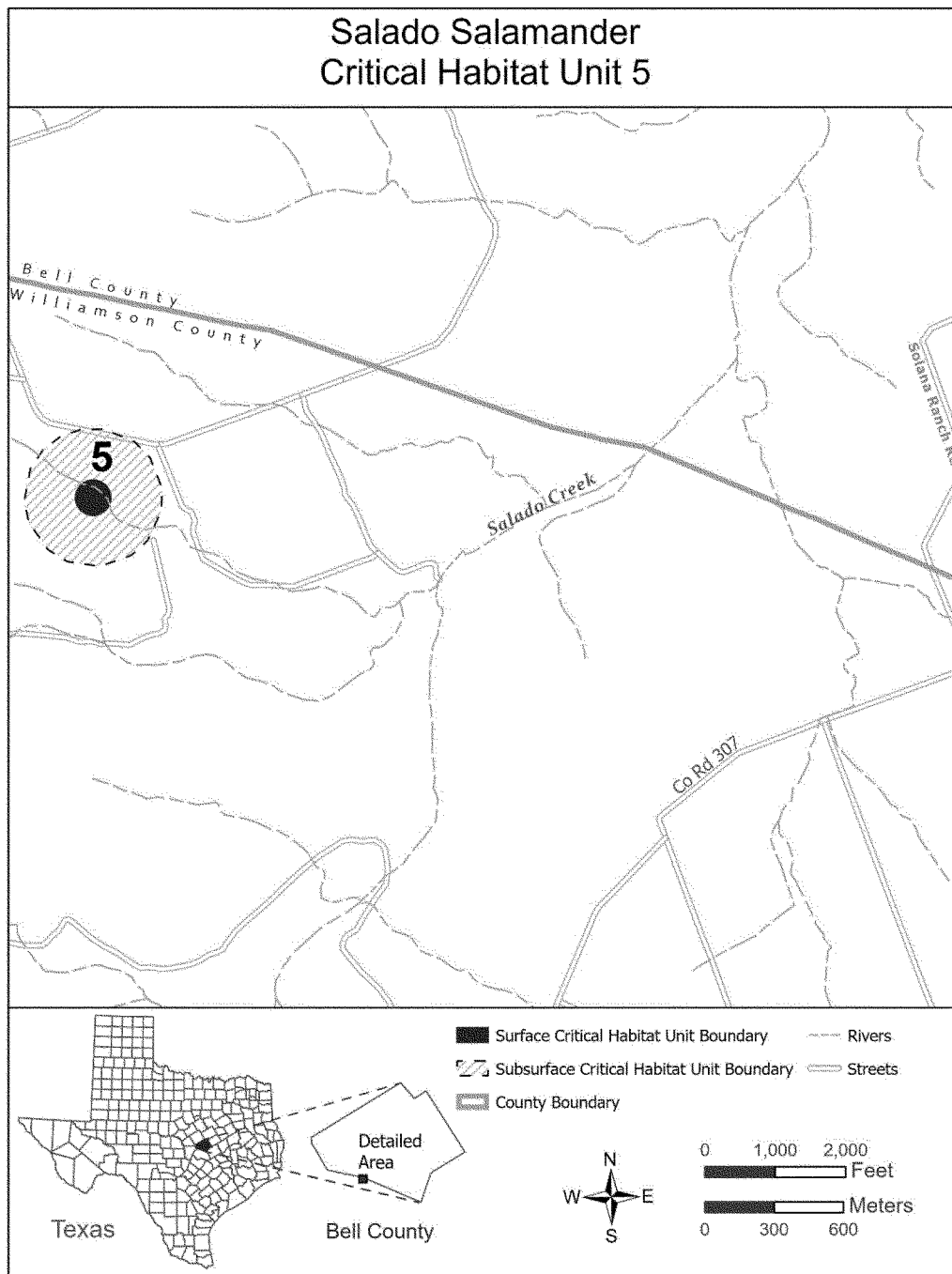
(7) Unit 2: Solana Spring Unit. Map of Unit 2 is provided at paragraph (6) of this entry.

(8) Unit 3: Cistern Spring Unit. Map of Unit 3 is provided at paragraph (6) of this entry.

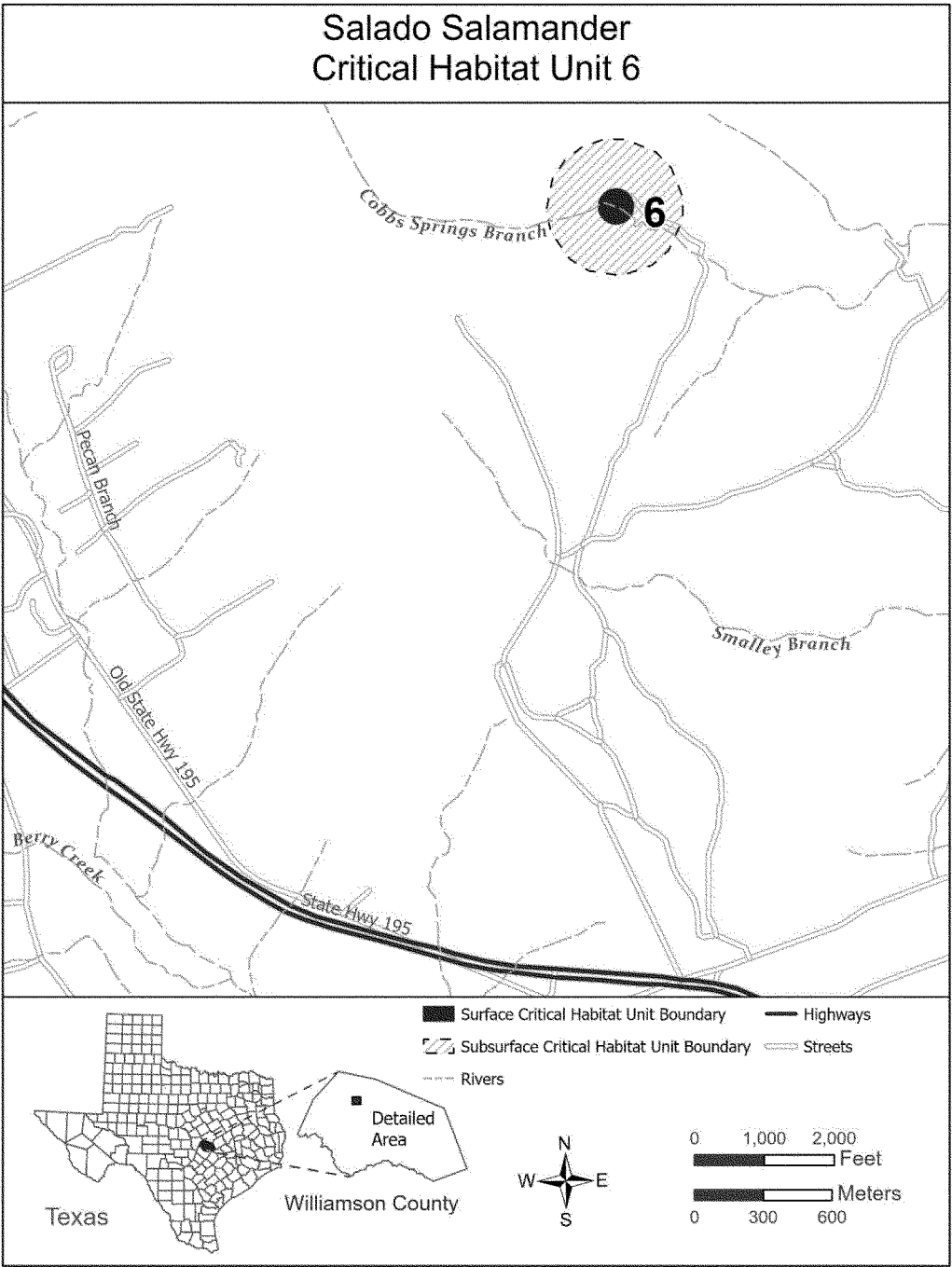
(9) Unit 4: IH-35 Unit. Map follows:



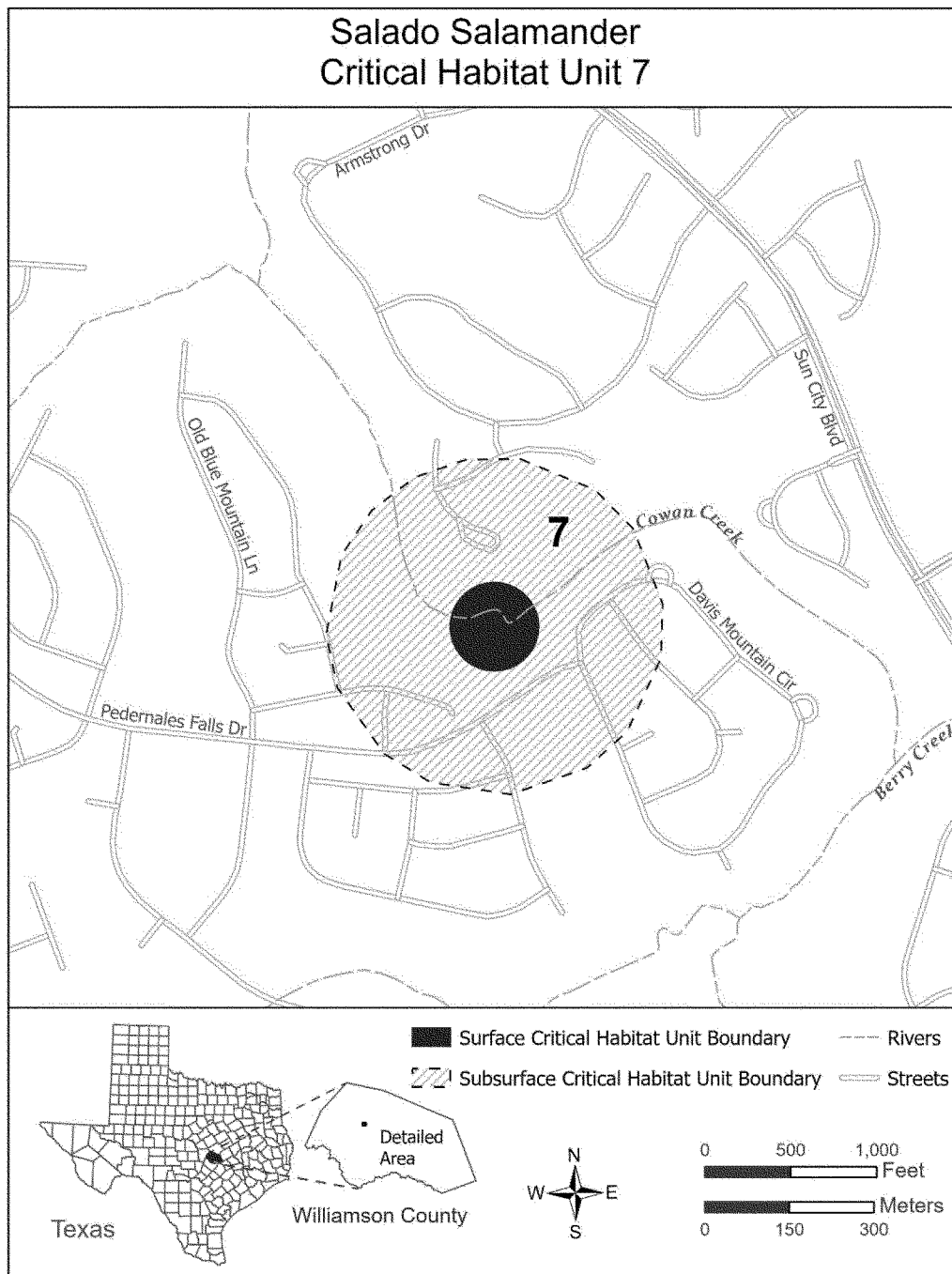
(10) Unit 5: King’s Garden Main  
Spring Unit. Map follows:



(11) Unit 6: Cobbs Spring Unit. Map follows:



(12) Unit 7: Cowan Creek Spring Unit.  
Map follows:

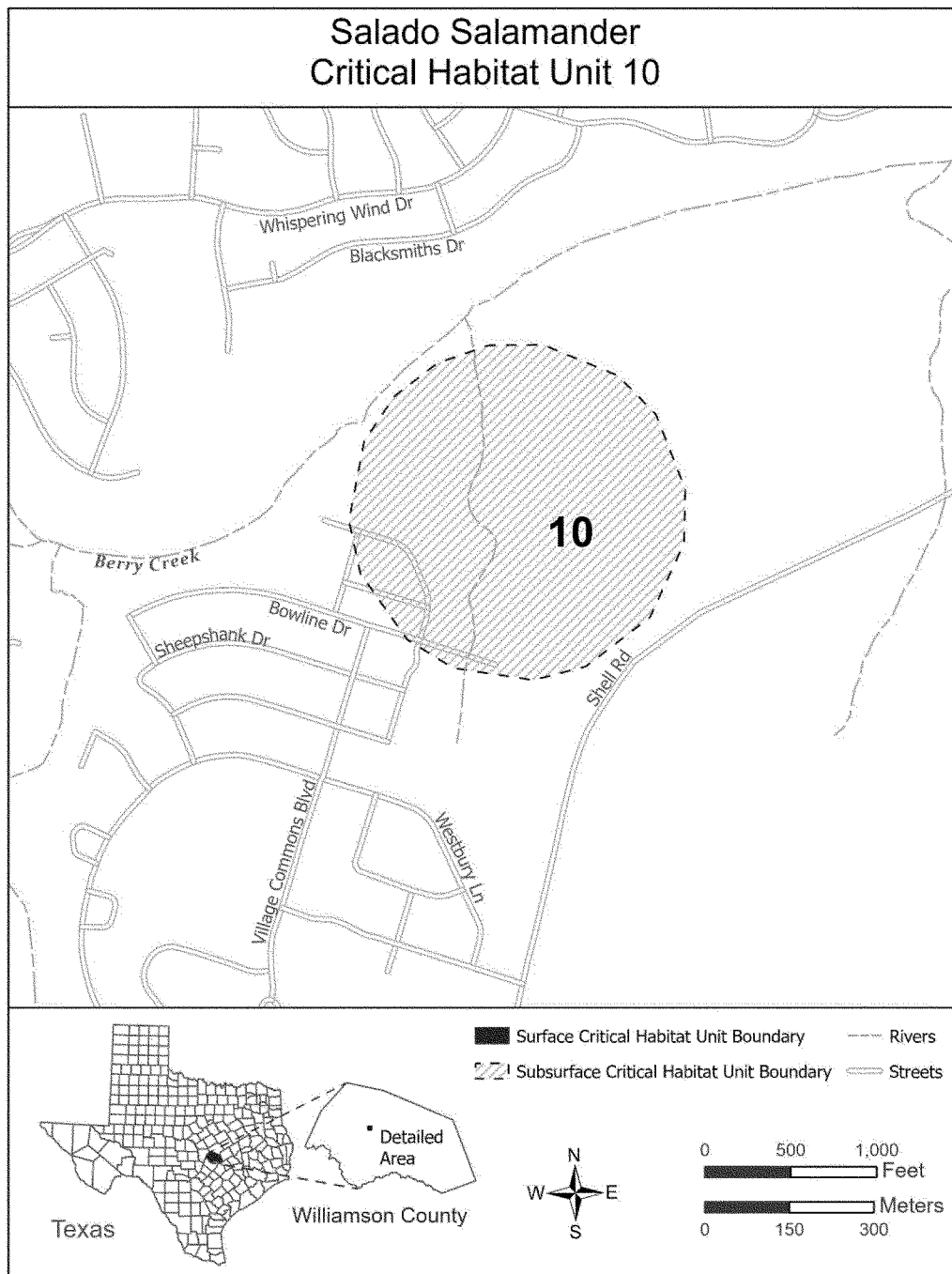


(13) Unit 8: Walnut Spring Unit. Map of Units 8 and 9 follows:



(14) Unit 9: Twin Springs Unit. Map of Unit 9 is provided at paragraph (12) of this entry.

(15) Unit 10: Bat Well Cave Unit. Map follows:



\* \* \* \*

Aurelia Skipwith,  
Director, U.S. Fish and Wildlife Service.  
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BILLING CODE 4333-15-C