



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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Memorandum

To: Regional Director, Region 2, Albuquerque, New Mexico

Through: Assistant Regional Director, Ecological Services, Region 2, Albuquerque, New Mexico

From: Field Supervisor, Austin Ecological Services Field Office, Austin, Texas

Subject: Findings and Recommendations on Issuance of an Incidental Take Permit (TE839031-1) for the Amended Barton Springs Pool Habitat Conservation Plan

I. DESCRIPTION OF PROPOSAL

The City of Austin (City) submitted a Habitat Conservation Plan (HCP) and applied to the U.S. Fish and Wildlife Service (Service) for an incidental take permit (ITP) pursuant to §10(a)(1)(B) of the Endangered Species Act of 1973, as amended (Act)(16 USC §1531-1544) on September 12, 2012. The HCP is incorporated herein by reference. The requested ITP, which is for a period of 20 years, would authorize incidental take of two animal species, Barton Springs salamander (*Eurycea sosorum*) and Austin blind salamander (*Eurycea waterlooensis*) (the covered species).

Incidental take of the covered species would result from recreation, operations, maintenance, and habitat restoration at Barton Springs Pool (Parthenia Spring), Old Mill Spring, Eliza Spring, and Upper Barton Spring, and conservation activities necessary to manage habitat for the covered species within the permit area (the covered activities are further described in Chapter 4 of the HCP).

The HCP proposes measures to minimize and mitigate the effects of incidental take of the covered species in accordance with the requirements of the Act. The accompanying Final Environmental Assessment (FEA) was prepared to comply with the Service's National Environmental Policy Act of 1969 (NEPA) responsibilities to analyze the effects of issuing the proposed ITP on the human environment. The FEA is incorporated herein by reference. The FEA analyzes the effects of not issuing the proposed ITP (the "no action" alternative describing conditions that would accrue in the absence of the ITP) and the preferred alternative. The resulting effects of both of these alternatives were compared and presented in Chapter 4 of the FEA.



The preferred alternative is issuance of an ITP under section 10(a)(1)(B) of the Act to authorize incidental take of covered species resulting from the City's otherwise lawful, non-Federal, covered activities. The proposed plan area of the HCP includes subterranean and surface aquatic environments and supporting riparian terrestrial habitat around Upper Barton Spring, Old Mill Spring, Eliza Spring, and Barton Springs Pool and an additional surrounding 100 foot buffer area within Zilker Park, Travis County, Texas, where HCP implementation may result in take of covered species (please see Figure 1 of the HCP).

The covered activities described in Chapter 4 of the HCP may generate effects that result in incidental take of covered species including harm, harassment, or death. The City developed a conservation plan that describes how the City will minimize and mitigate, to the maximum extent practicable, the incidental take of covered species resulting from the covered activities described in the HCP, as well as activities specifically intended to contribute to the recovery of the covered species. These measures are identified in Chapter 6 of the HCP.

A number of threatened, endangered, petitioned, and candidate species occur within Travis County (see Section 3.10 in the FEA), and we determined that none of these species may be affected by the proposed action. The City believes that their covered activities will not result in adverse effects to or take of any additional species or adverse modification of their designated critical habitat, and therefore did not list any additional species as covered species or request to include them on the ITP. The No Surprises assurances (50 CFR 17.22(b)(5) and 17.32(b)(5) do not apply to any species other than Barton Springs salamander and Austin blind salamander.

Analysis of Effects

The effects of the proposed action and impacts from HCP implementation on the affected species are fully analyzed in the Service's biological opinion, which is incorporated herein by reference. The proposed plan area has been evaluated for federally listed threatened or endangered species, and further information is available in Chapters 3 and 4 of the HCP, and in the biological opinion.

We find that the combined effects of the proposed HCP actions and measures are not expected to appreciably reduce the survival and recovery of Barton Springs salamander and Austin blind salamander in the wild. Conservation actions described in the HCP, such as removing sediment from salamander habitat areas through routine cleaning, and flow regime improvement will benefit this species. Mitigation measures such as improving salamander habitat through removing concrete fill or floors within springs and maintaining a captive propagation program are expected to support and enhance existing Barton Springs salamander and Austin blind salamander populations and improve habitat suitability for these species. No critical habitat has been designated for the Barton Springs salamander and therefore none will be affected by the proposed action. Effects to designated critical habitat for Austin blind salamander have been analyzed within the biological opinion and no adverse modification of the proposed critical habitat will occur as a result of the proposed action.

II. PUBLIC COMMENT

A Notice of Availability of the draft EA, draft HCP, and permit application, was published in the *Federal Register* on April 22, 2013 (78 FR 23780). The public comment period closed June 21, 2013. The Notice of Availability was posted to the Service's Austin Ecological Services Field Office website (<http://www.fws.gov/southwest/es/AustinTexas/>).

We received 6 comment letters via electronic mail: four from private citizens and two from non-government organizations (NGOs) within Austin. Commenting NGOs included the Save our Springs Alliance and the Barton Springs Polar Club (BSPC). A summary of the comments we received and how we addressed them is included in Appendix D in the EA.

III. INCIDENTAL TAKE PERMIT CRITERIA - ANALYSIS AND FINDINGS

Section 10(a)(1)(B) requires that the Service determine, after public comment, that five issuance criteria are satisfied before a permit can be issued. The five issuance criteria and our analysis and findings follow.

(i) The taking will be incidental.

We have determined that the covered activities including, recreation, operations, maintenance, and habitat restoration at Barton Springs Pool (Parthenia Spring), Old Mill Spring, Eliza Spring, and Upper Barton Spring, and activities necessary to manage habitat for the covered species within the permit area are lawful activities. Any take anticipated from the covered activities under the Barton Springs Pool HCP will be incidental to, and not the purpose of the covered activities. Therefore, we find that the taking of covered species that may occur as a result of the covered activities will be incidental to otherwise lawful activities. Incidental take that may occur as a result of these covered activities is expected to occur in the form of harm, harassment, or mortality, primarily through impacts to habitat.

(ii) The applicant(s) will, to the maximum extent practicable, minimize and mitigate the impacts of such taking.

The City has committed to implement a wide variety of conservation measures intended to minimize and mitigate the impacts of incidental taking that may result from the covered activities.

1. City monitoring, maintenance, and improvement of salamander habitat within Barton Springs Pool, Eliza Spring, Old Mill Spring and Upper Barton Spring (section 6.1.1 in the HCP) including:
 - a. Visual inspections of all protected habitat areas (spring sites when flowing) at least four days a week.
 - b. Development of written habitat management plans for each spring site.

- c. Re-drawing of protected salamander habitat in Barton Springs Pool, with Service approval, to include more habitat that is and can be maintained as suitable for salamander residence and exclude unsuitable habitat based on monitoring data and habitat condition (Figure 16 in the HCP).
 - d. Improvement and maintenance of suitable substrates in salamander habitat including replacement of rocky substrate with limestone gravel or cobble in order to maintain the natural groundwater buffering of karst aquifers.
 - e. Prohibiting the following activities within the spring sites to reduce harassment of salamanders:
 - Unauthorized, deliberate disturbance of salamander habitat, including substrate, aquatic vegetation, algae, and leaf litter or woody material from terrestrial vegetation.
 - Unauthorized, deliberate disturbance or alteration of flow regime.
 - Introduction of non-native flora or fauna into any salamander habitat or Barton Springs Pool.
 - Unauthorized SCUBA in salamander habitat or Barton Springs Pool.
 - f. Cleaning salamander habitat with the spring water of Barton Springs as necessary to keep the upper 2-3 inches of habitat from becoming embedded with sediment.
 - g. Removing woody debris from aquatic habitat if necessary by hand or by any other method approved by the Service.
 - h. Ensuring that sediment, algae and debris disturbed or collected during routine cleaning of Barton Springs Pool will not be disposed of within, allowed to settle within, or otherwise adversely affect aquatic habitat.
2. City reduction and mitigation of the impacts of detrimental anthropogenic pollutants that may enter Barton Springs Pool and Eliza, Old Mill, and Upper Barton springs (section 6.1.2 of the HCP) through:
 - a. Reduction in loadings of petroleum hydrocarbons, heavy metals and sediments to Barton Springs from current development and other activities located within the Barton Springs Zone in areas subject to the City's jurisdiction, and;
 - b. Control of local surface water runoff around Barton Springs Pool, Eliza Spring, Old Mill Spring, and Upper Barton Spring.
 3. City restoration and/or maintenance of the natural flow regime within the four spring sites, including variation in water depth, velocity and turbulence within the channel associated with variation in aquifer discharge, surface water floods, and base flows (section 6.1.3 of the HCP). To accomplish this the City will:
 - a. Allow floodwater to pass through Barton Springs Pool as unimpeded as is feasible.
 - b. Develop and implement a plan for routine silt and gravel removal from the deep channel of the Pool, with Service concurrence.
 - c. Create and maintain a Drawdown Plan, which will provide standard operating procedures for use when Pool water elevation is drawn down.

- d. Not conduct a full drawdown of the water level in Barton Springs Pool if the combined discharge of the Barton Springs complex is less than 54 cubic feet per second (cfs) without concurrence from the Service.
 - e. Receive approval from a City Salamander Conservation Program salamander biologist before the water level in Barton Springs Pool may be drawn down under any flow conditions.
 - f. Visually inspect all exposed habitat during drawdowns for stranded salamanders before cleaning and maintenance activities in those areas begin. Any stranded salamanders will be moved to permanent water.
 - g. Visually inspect water level in Eliza Spring during drawdowns to ensure that water is retained in surface habitat of the spring pool.
 - h. Ensure that a minimum of two City salamander biologists will be present when a full drawdown is conducted for cleaning and maintenance.
 - i. Ensure that a minimum of one City salamander biologist will be present when a partial drawdown is conducted for cleaning and maintenance.
4. City modification, removal, or replacement of existing infrastructure to restore more natural flow regimes and habitats within Barton Springs Pool, Eliza Spring, and Old Mill Spring, including those listed under covered activity number nine, measures a-e above (section 6.1.4 of the HCP).
5. Protection of the evolutionary potential of wild and captive populations of Barton Springs salamander and Austin blind salamander through maintenance and/or enhancement of genetic variation and gene flow among populations of each species, and maintenance of natural selection characteristic of wild environments. Maintenance of evolutionary potential may include artificial selection for adaptations to future environmental conditions in the wild (section 6.1.5 in the HCP).
6. Adoption of benign cleaning methods by the City for the maintenance of Barton Springs Pool to reduce the harassment and/or harm of Barton Springs and Austin blind salamanders (section 6.1.6 of the HCP), including:
 - a. Manually trimming and removing aquatic vegetation (macrophytes, bryophytes and algae) as necessary.
 - b. Designating specific areas at least 25 feet away from the water for the fueling and maintenance of equipment and vehicles used in maintaining the springs and surrounding areas and including absorbent pads underneath to contain any toxins.
 - c. Cleaning the shallow end of Barton Springs Pool without full drawdown of water level in the entire Pool.
 - d. Utilizing spring water for maintenance, and to provide water over fissures during drawdown.
 - e. Prohibiting the use of toxic chemicals for cleaning of Barton Springs Pool.
7. City collection and distribution of salamander monitoring data (section 6.1.7 of the HCP) including:

- a. Development and maintenance of a written City monitoring plan.
 - b. Completion of salamander population surveys at perennial Parthenia, Eliza, and Old Mill springs and at intermittent Upper Barton Spring, when flowing, at least bimonthly throughout the year or another interval sufficient to determine the status of the species and population dynamics as deemed appropriate by a City salamander biologist and approved by the Service.
 - c. Use of Eliza Spring and Old Mill Spring as outdoor educational facilities for the study of the biology and ecology of Central Texas springs.
8. Training of City employees, staff, and volunteers about protected salamander species (section 6.1.7 of the HCP) including:
- a. Yearly training of Barton Springs Pool lifeguards, maintenance staff, and seasonal employees about the protected salamanders, resident aquatic wildlife, and flora and the ecology of Edwards Aquifer springs.
 - b. Training of all people conducting salamander and habitat monitoring.
 - c. Ensuring that all monitoring and surveys are conducted under the terms and conditions of a current federal Endangered Species Act 10(a)(1)(A) scientific permit issued to the City.
9. Additional measures that contribute to recovery (sections 6.1.7.5, 6.2, and 6.3 of the HCP):
- a. The City will form the Barton Springs Scientific Advisory Committee, which will include local and regional experts. The Advisory Committee will meet at least annually to discuss and refine Barton Springs' maintenance and environmental management activities and will also be responsible for helping identify potential revisions to the Plan and suggest adaptive management strategies.
 - b. Access to Eliza Spring and Old Mill Spring will be restricted to ensure no unauthorized disturbance of salamander habitat and/or its supporting riparian habitat.
 - c. The City will maintain a plan and necessary equipment and training for responding to, and mitigating the effects of catastrophic contaminant spills that threaten protected salamanders or their habitat.
 - d. The City will maintain viable, evolutionarily fit captive breeding populations of Barton Springs salamander and Austin blind salamander. The City will designate a staff biologist and dedicate a minimum of \$28,000 annually to the development and maintenance of this program.
 - e. Under conditions when decreased dissolved oxygen concentrations may be harmful to salamanders, the City may supplement dissolved oxygen in Eliza, Old Mill, and Parthenia springs using air pumps, water recirculation, or other methods approved by the Service.
 - f. The City will create a fund for conservation and research efforts for Barton Springs salamander and Austin blind salamander. The City will deposit \$53,000 annually (for the term of the ITP) into this fund from the revenues generated by Barton Springs Pool.

- g. The City will continue to support research projects designed to gather and evaluate data applicable to wild or captive populations of the Barton Springs Salamander, and the Austin Blind Salamander.
- h. The City will continue to provide educational programs to enhance public awareness and community support for Barton Springs salamander, Austin blind salamander, Barton Springs, and the Edwards Aquifer. The SPLASH! Into the Edwards Aquifer Exhibit at Barton Springs Pool will continue to be a major focus of this effort.
- i. The City will cooperatively develop a memorandum of understanding with the Barton Springs Edwards Aquifer Conservation District within one year of ITP issuance.
- j. The City will participate in regional water resource planning efforts to protect Barton Springs salamander and Austin blind salamander.

10. Reporting and Adaptive Management (section 6.4 and 6.5 of the HCP):

- a. The City will submit an annual report on February 1 of each calendar year, or other date approved by the Service, to the Service's Austin Ecological Services Field Office and Southwest Regional Office – Permits Division, the City Manager, and the City Council. The annual report will include assessments of the status of the protected salamander species, analysis of biological data, and review of Barton Springs Pool maintenance and management activities during the year. In the annual report, each point of the amended HCP will be addressed.
- b. The City has proposed an extensive adaptive management program to inform changing proposed actions or conservation measures in the HCP based on data gathered during the implementation of the HCP.

These minimization measures and the associated monitoring and adaptive management strategies described in the HCP are intended to reduce take of the covered species by minimizing and monitoring methods used to maintain and operate Barton Springs Pool. These measures also mitigate for any unavoidable take by restoring spring environments, and promoting the long-term conservation of covered species and their habitats. We find that the proposed mitigation is commensurate with the anticipated level of take anticipated over the duration of the proposed ITP.

The City has also included provisions for reasonably foreseeable changed circumstances. These strategies ensure that the effects of potential taking resulting from changed circumstances will also be minimized and mitigated to the maximum extent practicable. We find, therefore, that the City has minimized and mitigated for the impacts of such taking to the maximum extent practicable.

(iii) The applicant will ensure that adequate funding for the plan will be provided.

The City developed and committed to implementing the Barton Springs Pool HCP. The City has already funded and implemented the previous HCP for 15 years. At least \$28,000 annually is allocated to the operation of the captive breeding facility. At least \$45,000 annually is dedicated

to the operation of the SPLASH! educational exhibit. At least \$10,000 of the SPLASH! funding is derived from Barton Springs Pool entry fee revenues, and at least \$35,000 is derived from Watershed Protection Department funds. At least \$53,000 annually from Barton Springs Pool entry fee revenues is dedicated to a conservation fund. Based on fiscal year 2011 estimates, the Austin Salamander Conservation Center and associated staff costs were approximately \$120,000 annually. The remaining Watershed Protection Department staff activities and materials relating to implementing the conservation measures for Barton Springs salamander and Austin blind salamander were approximately \$230,000. We have determined, therefore, that the City's conservation plan and financial commitments, along with their willingness to address changed and unforeseen circumstances in a cooperative fashion, satisfies this criterion.

(iv) The taking will not appreciably reduce the likelihood of the survival and recovery of the species in the wild.

The legislative history of the Act establishes the intent of Congress that this issuance criteria be based on a finding of "not likely to jeopardize" under Section 7(a)(2) (50 CFR 402.02). As a result, issuance of the ITP has been reviewed by the Service under Section 7 of the Act. Our biological opinion concluded that issuance of the ITP will not jeopardize the continued existence of the covered species in the wild, as described above. No critical habitat is expected to be destroyed or adversely modified. The biological opinion also analyzes other listed and candidate species that may be affected by the implementation of the BSP HCP and concludes that HCP implementation will have no effect on those species. Therefore, the direct and indirect effect of the issuance of the ITP will not appreciably reduce the likelihood of survival and recovery of other listed species or destroy or adversely modify any designated critical habitat as no other listed species or critical habitat occur within the permit area.

(v) The measures, if any, required under subparagraph (A)(iv) will be met; and the Secretary of the Interior has received such other assurances as he may require that the plan will be implemented.

The Service assisted the City in developing their HCP, commented on draft documents, participated in numerous meetings and conference calls, and worked closely with the City throughout the planning and document preparation phases of the proposal to ensure that the conservation needs of the covered species would be assured and recovery would not be precluded by the covered activities. The HCP incorporates our recommendations for minimization and mitigation of impacts, as well as steps to monitor the effects of the HCP and ensure success. The City will submit an annual report to the Service each year the ITP is in effect describing implementation of avoidance, monitoring, minimization, and mitigation measures described in the HCP. Coordination mechanisms have been designed to ensure that changes in conservation measures can be implemented if proposed measures prove ineffective (though adaptive management measures) or if changed circumstances occur over the duration of the ITP. It is our position that no additional measures are required to implement the intent and purpose of the HCP to those detailed in the HCP and its associated ITP.

The Service included the five-point policy as an addendum to the Habitat Conservation Planning Handbook on July 3, 2000 (65 FR 35242). The policy emphasizes the development of biological goals and objectives, adaptive management strategies, monitoring provisions, permit duration considerations, and public participation into HCPs as a way to increase their effectiveness. The BSP HCP addresses each of the criteria for permit issuance and incorporates all aspects of the five-point policy. These elements are described in Chapters 3 and 4 (Status of the Covered Species, Covered Actions and Biological Impacts); Chapter 6.5 (Adaptive Management); Chapter 6.1-6.4 (which includes monitoring and reporting); and Chapter 1 and Appendix D of the HCP (Permit Duration and Public Involvement).

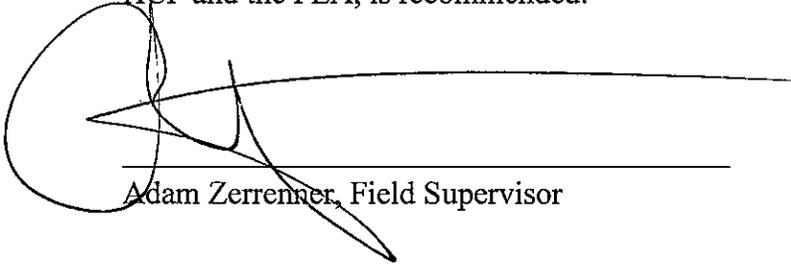
The FEA identified one Alternative in addition to the proposed HCP and issuance of the requested ITP, the No Action Alternative. The Alternatives are generally described in Chapter 2 of the FEA, and detailed description and analysis of these Alternatives are provided in Section 4.0 of the FEA.

IV. GENERAL CRITERIA AND DISQUALIFYING FACTORS – ANALYSIS AND FINDINGS

The Service has no evidence that the ITP should be denied on the basis of the criteria and conditions set forth in 50 CFR 13.21(b)-(c). The City has met the criteria for the issuance of the ITP and there are no disqualifying factors that would prevent the ITP from being issued under current regulations.

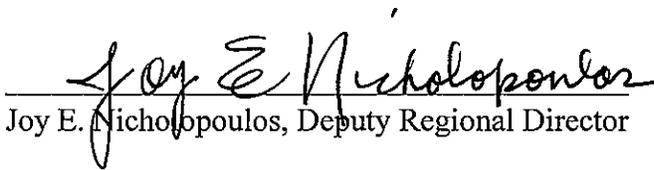
V. RECOMMENDATION ON PERMIT ISSUANCE

Based on the foregoing findings with respect to the proposed action, issuance of an ITP to authorize incidental taking of two animal species, Barton Springs salamander (*Eurycea sosorum*) and Austin blind salamander (*Eurycea waterlooensis*) by the Applicants, in accordance with the HCP and the FEA, is recommended.



Adam Zerrenner, Field Supervisor

Aug. 26, 2013
Date



Joy E. Nicholopoulos, Deputy Regional Director

9/12/13
Date