

UNITED STATES DEPARTMENT OF INTERIOR  
U.S Fish and Wildlife Service  
P.O. Box 1306  
Albuquerque, New Mexico 87103

3-201  
(10-86)

Federal Fish and Wildlife Permit

1. Permittee

City of Austin, Texas  
P.O. Box 1088  
Austin, Texas 78767

2. Authority - Statutes

16 USC 1539(a)

Regulations

50 CFR 17.22

3. NUMBER

PRT - 839031

4. Renewable

Yes  
 No

5. May Copy

Yes  
 No

6. Effective

10/2/98

7. Expires

10/2/13

8. NAME AND TITLE OF PRINCIPLE OFFICER

Kirk Watson, Mayor

9. TYPE OF PERMIT

Endangered Species

10. LOCATION WHERE AUTHORIZED ACTIVITY MAY BE CONDUCTED

Zilker Park, Austin, Texas

11. Conditions and Authorizations:

- a) General conditions set out in Subpart D of 50 CFR, and specific conditions contained in Federal Regulations cited in Block #2 above, are hereby made part of this permit. All activities authorized herein must be carried out in accord with and for the purposes described in the application submitted. Continued validity, or renewal, of this permit is subject to complete and timely compliance with all applicable conditions, including the filing of all required information and reports.
- b) The validity of this permit is also conditioned upon strict observance of all applicable Foreign, State, Local or other Federal law.
- c) Valid for use by Permittee Named Above
- d) Acceptance of this permit serves as evidence that the permittee understands and agrees to abide by the "Special Conditions for Native Endangered and Threatened Species" (copy enclosed).
- e) The permittee must maintain a valid 10(a)(1)(A) permit to cover the capture and handling of Barton Springs salamanders in association with the activities covered under this permit.
- f) Additional conditions and authorizations attached (numbered 1-41) also apply.

11. CONDITIONS AND AUTHORIZATIONS (CONTINUED)

3-201  
(10-86)

- g) The permittee is authorized to "take" (kill, harm, or harass) the Barton Springs salamander at the four spring sites collectively known as Barton Springs, incidental to the activities described in the EA/HCP for operation and maintenance of the pool and adjacent spring sites. The authorized "take" is detailed in Section 6.5 of the EA/HCP. The four spring sites include Barton Springs Pool (also known as Parthenia), Eliza Spring (also known as the Elks Pit or Polio Pit), Old Mill Spring (also known as Sunken Garden or Walsh Spring), and Upper Barton Spring.
- h) The current "No Surprises" policy of the U.S. Fish and Wildlife Service (Service) provides that additional mitigation requirements or financial compensation shall not be required of the applicants or its successors or assigns beyond the level of mitigation for those species adequately addressed in the identified HCP. With respect to this permit, the HCP and supporting documents adequately address the federally listed Barton Springs salamander. No other listed species were addressed.
- i) The authorization granted by the permit is subject to full and complete compliance with, and implementation of, the terms and conditions of the Environmental Assessment/Habitat Conservation Plan (EA/HCP), Biological Opinion, and all specific conditions contained in this permit. These permit terms and conditions shall supersede and take precedence over any inconsistent provisions in the EA/HCP, the Biological Opinion, or other permit documents.

12. Reporting requirements Annually on October 1 of each year.

ISSUED BY: 	TITLE: Regional Director, Region 2	DATE: 10/5/98
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ADDITIONAL CONDITIONS AND AUTHORIZATIONS (continued from letter 11-e above)

1. The City of Austin will coordinate the management of salamander habitat areas and be responsible for maintaining information and scientific data on the Barton Springs salamander. The City of Austin will also be responsible for the timely transmittal of information and data to the Service. The City of Austin will submit an annual report to the US Fish and Wildlife Service, Austin Ecological Field Services Office, 10711 Burnet Road, Suite 200, Austin, Texas 78758. The annual report will address the status of the salamander, analysis of biological data, and a review of pool maintenance and management activities during the year. The City of Austin will be responsible for all measures in the HCP. In the annual report, each point of the HCP will be addressed. The permit and HCP will be for a period of 15 years. Copies of the annual report will also be submitted to the City Manager and City Council.

2. The City of Austin will make daily visual inspections of all habitat areas (spring sites) and note any problem conditions such as vandalism, trash and debris, introduction of exotic fish or animals, or disturbance of habitat.
3. When the pool is lowered for cleaning and maintenance, trained City of Austin staff will visually inspect all of the exposed areas of the pool for stranded salamanders before cleaning and maintenance activities begin. This visual inspection will also include Eliza Spring, Old Mill Spring (Sunken Garden), and Upper Barton Spring. Any stranded salamanders will be moved to permanent water. This measure will be in place upon the issuance of this permit. Until the dam or comparable water control device is installed in the shallow end of the pool, a minimum of four biologists will be present at drawdown to search for stranded salamanders. After installation of the water control device, a minimum of two biologists will be present when the pool is lowered.
4. The City of Austin will modify the existing gate system on the lower dam for the drawdown of the pool. The new gate system will be designed to control the rate of drawdown and the level of water in the pool. The current system is an all or nothing approach that does not allow control or manipulation of the drawdown process, which is most critical during low aquifer conditions. The new gate system will be in place within one year of the issuance of this permit. If low aquifer conditions (flows less than 54 cubic feet per second) occur during this one-year period, the City of Austin will modify or suspend pool maintenance procedures (in consultation with the Service), to minimize and mitigate incidental take of salamanders.
5. The City of Austin will install a pump system to provide spring water for pool maintenance. The pump system will also provide spring water for the fissures areas during pool drawdown. This pump would use spring water from the main pool. This measure will be in place within six months of permit issuance.
6. The City of Austin will clean the shallow end of Barton Springs Pool without drawdown of the entire pool. One option is to install a water control structure between the shallow and deep ends of the pool to create a permanent barrier between the cleaning operations and the main salamander habitat. The purpose of this water control structure is to eliminate the drawdown of the deep end during routine cleaning of the shallow end. This measure will be in place within six months of permit issuance. If the installation of the water control structure is not completed within the six month deadline due to construction delays or adverse weather conditions, the City of Austin will modify or suspend pool maintenance procedures (in consultation with the Service), to minimize and mitigate incidental take of salamanders.
7. The City of Austin will modify the beach area in Barton Springs Pool. Portions of the beach area will be replaced with walkways and wading areas made of exposed aggregate concrete, limestone or other hardened surface. The remaining beach area will be lowered to a minimum depth of 2 meters (6 1/2 feet) and additional salamander habitat will be created to mitigate for any loss of habitat. This measure will be in place within six months of permit issuance.

- a) The City of Austin may clean the walkway on an as needed basis (~ 1 per week) using pressure washers (underwater) or other agreed to means.
  - b) The salamander habitat would be cleaned using low-pressure hoses or other agreed to means. This cleaning would be done quarterly or as needed to keep the upper 2-3 inches of habitat from becoming embedded with sediment.
  - c) The City of Austin will maintain 11,000 square feet of "beach habitat" for the salamander. Gravel or cobble or appropriate size will be used to replace sections of the habitat that get washed out.
  - d) The City of Austin will clean non-salamander habitat areas in the deep end of the pool quarterly or as needed using a combination of high-pressure hoses and a vacuum system.
8. The City of Austin will not drawdown the deep end of the pool if flow in the aquifer lower than 54 cfs. This measure will minimize the impact of low aquifer levels at the adjacent spring sites, as well as conserve water in the aquifer during low flow conditions.
  9. The City of Austin will place thin limestone slabs over fissures in the shallow section of the fissures area to minimize impacts from recreational use.
  10. The City of Austin will lower the water in the deep end of the pool, if necessary, for cleaning only with Service concurrence. The water in the deep end of the pool will not be lowered when the lowering would cause Eliza Spring to go dry. This measure will be in place after the water control structure is installed or an alternative is implemented.
  11. The City of Austin will maintain water over the fissure area during pool drawdown in order to minimize the stranding of salamanders. The ability to retain water over the fissures will be in place at the time of permit issuance. The City of Austin will clean the fissure area quarterly or as needed, using a combination of low-pressure hoses and wire hand brushes or other agreed to means. In addition, until the water control structure is in place or the beach area is lowered, the City of Austin will use a spring water sprinkler system to keep the beach area wet during drawdown.
  12. The City of Austin will control surface water runoff around Barton Springs Pool, Eliza Spring, Old Mill Spring (Sunken Garden), and Upper Barton Springs. During heavy rains, stormwater runoff can carry sediment and potential pollutants directly into Barton Springs, Eliza Spring, Old Mill, and Upper Barton Springs. Plans and schedules for the improvements, approved by the Service, will be complete within one year of the issuance of this permit. All of this work will be completed within two years of permit issuance. The City will also install temporary silt and erosion control measures in order to minimize adverse impacts due to surface water runoff. These measures will be in place upon issuance of the permit.

13. The City of Austin will modify Old Mill Spring (Sunken Garden) to restore the natural surface spring flow into Barton Creek. The pipe that currently drains the spring will be capped. This improvement will be in place within one year of the issuance of this permit.
14. The City of Austin will improve the efficiency of the Barton Creek bypass. As currently designed, the cleaning grate at the upstream end of the bypass quickly becomes clogged during storms. The clogging of the grate decreases the efficiency of the bypass and increases the frequency of floods that affect Barton Springs Pool. A more efficient system will be in place within one year of the issuance of this permit.
15. The City of Austin will implement a program to increase public awareness and community support for the salamander and the Barton Springs portion of the Edwards Aquifer. The SPLASH! Exhibit at Barton Springs Pool will be a major focus of this effort.
16. Access to Eliza Spring and Old Mill Spring (Sunken Garden) will be restricted to ensure no disturbance of salamander habitat at these spring areas. These sites will be used as outdoor educational facilities for the study of the biology and ecology of Central Texas springs. These measures will be in place within one year of permit issuance.
17. Educational signs (kiosks) will be installed to enhance public awareness of the salamander and aquifer. Outdoor educational displays will highlight the biology and ecology of the Central Texas springs with emphasis on the Barton Springs salamander. These measures will be in place within one year of permit issuance.
18. The City of Austin will set up a fund for conservation and research efforts for the Barton Springs salamander. The City will deposit \$45,000 annually (for the term of the permit) into this fund from the revenues generated by Barton Springs Pool. This fund will also be open to donations from any group or private individual. A committee of technical representatives will decide the allocation of money from this fund. At a minimum, the committee will consist of one technical representative from the City and one technical representative from the Service. These technical representatives must be experienced in salamander biology. Other committee members could include State, County, University or other qualified biologists and karst aquifer hydrogeologists and swimmer/stakeholder representatives. The City and the Service would both retain veto power in deciding how the money is allocated. The funds will be used for study of salamander biology, captive breeding and refugia; watershed related research, improved pool cleaning techniques, education, and/or land acquisition. The committee will decide how the money will best be spent. The funding will be in place within six months of permit issuance.
19. The City of Austin will deposit \$10,000 (in addition to the \$45,000 mentioned above) into the conservation fund. This will mitigate for the incidental take that occurred as a result of cleaning the pool and operation from May 30, 1997 (listing effective date) to the date the permit is issued. The fund will be set up and the money deposited within 6 months of permit issuance.
20. The City of Austin will prohibit the use of high-pressure hoses in salamander habitat.

21. The City of Austin may remove woody debris by any methods approved by the Service. All debris will be visually inspected for salamanders before and after removal.
22. In the event of a flash flood or potential flash flood, it is necessary to prepare Barton Springs Pool area to limit damage. To prepare for such an event, sections of fence, trash cans, railings and other items are moved to higher ground. The Endangered Species Biologist for City of Austin will be notified before Barton Springs is lowered. Barton Springs will not be lowered if the flow is lower than 54 cfs or if the City of Austin Endangered Species Biologist indicates that Barton Springs Pool should not be lowered.
23. The City of Austin may clean sediment and debris from the adjacent spring sites using low-pressure hoses or other agreed to means on an as needed basis.
24. The City of Austin will not allow the introduction of exotic plants or animals in any springs in Zilker Park.
25. The City of Austin will not move salamanders between spring sites.
26. The City of Austin may manually trim aquatic vegetation that reaches the surface of the water.
27. The City of Austin will not allow unauthorized SCUBA in any springs in Zilker Park.
28. The City of Austin will prohibit the deliberate disturbance of substrate in the primary salamander habitat. This measure will be effective upon the issuance of this permit.
29. Sediment and debris that is collected during routine cleaning of the pool will be removed from the pool and disposed of properly. This will be accomplished by pumping the material into a vacuum truck for disposal, irrigating the lawns or other agreed to means. The sediment and debris will not be dumped into Barton Creek as a means of disposal. This measure will be effective upon the issuance of this permit.
30. Since there is a seasonal rate of turnover in the staff involved in the pool cleaning process, the City of Austin will have professional supervisors direct and document all cleaning procedures at the pool. This measure will be in place upon the issuance of this permit.
31. The City of Austin will ensure that all people working at the pool (lifeguards and other staff) are knowledgeable about the salamander. Yearly training will be given to teach staff about the salamanders and the ecology of Edwards Aquifer springs. This measure will be in place upon the issuance of this permit.
32. The City of Austin will ensure that all people surveying for salamanders are properly trained. The survey work should be done under the terms and conditions of a current scientific permit issued to the City of Austin. This measure will be in place upon the issuance of this permit.

33. The City of Austin will provide yearly spill and response training for all that perform maintenance activities in and around the springs in Zilker Park. The annual training will address spill and response protocols, proper containment techniques, and remediation. An annual inventory of necessary containment and remediation equipment will be conducted during the training session, and after the use of the equipment in response to any spill. This measure will be in effect upon the issuance of this permit.
34. Specific areas will be designated for the fueling and maintenance of equipment and vehicles used in maintaining the springs and the areas around the springs. These areas should be selected away from the springs to avoid the chance of impacts to the spring habitats. Absorbent pads will be used during all operation, fueling, and maintenance activities. This measure will be in effect upon the issuance of this permit.
35. The City, with concurrence of the Service, will develop a policy for silt and gravel removal in the deep end of the pool. In the past, silt removal in the deep end has been necessary after the pool has been flooded by Barton Creek, but the City does not have a policy that outlines when and how the removal of material should occur. The take estimate may change due to this policy but would probably be a minor amendment to the HCP. The new policy will be in place within one year of the issuance of this permit.
36. The City of Austin will, in concurrence with the Service, develop a catastrophic spill response plan for Barton Springs. The new plan will be in place within one year of the implementation of this permit. This plan will address spill prevention, containment, remediation, and salamander rescue.
37. Structural and habitat restoration will occur at Eliza Spring and Old Mill Spring. Habitat restoration will include enhancement of bottom substrate with clean cobble and gravel, and the establishment of native species of aquatic plants. Care will be taken to ensure that non-native invertebrates are not introduced. Old Mill Spring enhancement will include the restoration of full surface flow to the stream. All restoration efforts will be reviewed and approved by the Service before implementation. This work will be completed within two years of the issuance of this permit.
38. The City of Austin will continue to conduct monthly salamander surveys at all spring sites, in compliance with Federal and State Scientific Monitoring Permits.
39. The City of Austin will form an Advisory Committee of local and regional experts that will meet at least annually to discuss and refine pool maintenance activities. A variety of interests including swimmers, biology, and hydrogeology will be represented on this committee. In addition, this committee will review this HCP and make suggestions for needed amendments as deemed necessary. The Advisory Committee will also be responsible for refining the habitat conservation plan through adaptive management. Data collected will be used to adapt management actions. The City of Austin will be responsible for implementation of adaptive management changes.

40. The City of Austin must reduce loadings of petroleum hydrocarbons, heavy metals and sediments to Barton Springs from current development and other activities located within the Barton Springs Zone, within the City limits, and subject to the City's jurisdiction. This reduction in loadings will be achieved through the measures set out in the NPDES stormwater permit and its reasonable and prudent measures listed in Appendix A of the EA/HCP.

41. The City of Austin will maintain a viable captive breeding population of Barton Spring salamanders. The City will designate a staff biologist and dedicate a minimum of \$20,000 annually to the development and maintenance of this program. The purpose of this program is to provide a contingency plan for the species if a catastrophic event were to occur. Funding and design of the new program will be in place within six months of the issuance of this permit.

# TAKE DISCUSSION FROM EA/HCP

Take, as defined under the Endangered Species Act, means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The term incidental take refers to "take" that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. In the case of this HCP, pool maintenance and recreational use are "otherwise lawful activities." There are several actions involved with pool maintenance and recreational use that could potentially cause incidental take. Under the Preferred Alternative, pool drawdown, cleaning, and use (wading and standing) causes the incidental take. The definition of incidental take can be further broken down into "harass" and "harm".

The term "harass" in the definition of take means an intentional or negligent act or omission, which creates the likelihood of injury to wildlife, by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3). Pool drawdown is an intentional act, which creates the likelihood of injury to salamanders from stranding by disrupting normal feeding and sheltering. The Barton Springs salamander is a gill breathing aquatic animal. The stranding salamanders without access to water with oxygen, clearly constitutes harassment. The stranded salamanders must be moved to permanent water. This action, although necessary to prevent further injury, disrupts normal sheltering, and may impact normal feeding.

The term "harm" in the definition of take means an act, which actually kills or injures wildlife (50 CFR 17.3). In the case of pool drawdown, this would apply to any stranded salamander that was not found or which was killed or injured in any way. In the case of recreational use of the pool, this definition would apply to any salamanders that were stepped on by swimmers or waders and killed or injured.

**Determining Anticipated Incidental Take Levels.** In determining the amount of incidental take that will be authorized during the term of the permit, three factors must be determined: (1) the method for calculating incidental take; (2) the level of incidental take and related impacts expected to result from the proposed project activities; and (3) the level of incidental take that the section 10 permit will actually authorize (USFWS 1998).

Proposed incidental take levels can be expressed in an HCP in one of two ways. The first is in terms of the number of animals to be "killed", "harmed", or "harassed" if those numbers are known or can be determined. The second way to express incidental take is in terms of the amount or extent of habitat affected by a specified activity, in cases where the specific number of individuals is unknown or indeterminable.

For this HCP, incidental take is expressed in terms of habitat area because precise numbers of affected salamanders are indeterminable. Data from the experimental pool cleaning gives some indication of the number of salamanders occupying the various habitats affected during pool cleaning. The data also provide an indication of the general range of take anticipated in each area. However, the number of salamanders found stranded during any one pool cleaning varied from 1 to 101. It is not possible to accurately estimate the number of salamanders affected. Therefore, we chose to express and permit incidental take in terms of habitat areas and types of methods used rather than salamander numbers. The level of take that the permit will be authorized is defined by area of impact and proposed activity in Table 3.

**Table 3. Incidental Take Authorized By Habitat Area and Activity.**

Habitat Area	Approximate Square Feet	Activity for which incidental take of Barton Springs salamander is authorized.
Barton Springs Pool	90,000	Recreation, pool cleaning, flood management, and pool cleaning (Oct. 98 - Mar 99).
Beach Area	11,000	Sidewalk construction, habitat cleaning.
Fissure Area	3,500	Recreation, habitat cleaning, drawdown.
Upper Barton Spring	400	Recreation, habitat cleaning, drawdown.
Eliza Spring	800	Drawdown, cleaning, flood management, habitat improvement.
Old Mill Spring	1,700	Drawdown, cleaning, habitat improvement.

*Barton Springs Pool* – Recreational use (wading and standing) may cause incidental take of salamanders. Under the HCP, the beach area will be deepened and no take from recreational use is anticipated. The fissure area will be open to recreational use and incidental take from people may occur in this area. The placement of flat limestone blocks should adequately minimize this incidental take. Salamanders may stray into other areas of the pool where people could cause incidental take. These areas include the shallow end, the rocks around the diving board and the new sidewalk area. These areas are not considered salamander habitat but some level of incidental take may occur. Incidental take of Barton Springs salamanders from recreational use within Barton Springs Pool and Upper Barton Springs is authorized.

Under the HCP the pool would no longer be drawn down for routine cleaning. The shallow end would either be cleaned with underwater cleaning equipment or be located behind a dam. Little incidental take will be anticipated from shallow end pool cleaning. The deep end of the pool is not considered salamander habitat. The use of fire hoses and the underwater vacuum system should result in little incidental take in this area. The possibility of incidental take exists for any area in the pool. Therefore, incidental take of Barton Springs salamanders from shallow and deep end cleaning methods will be authorized. Two other areas of salamander habitat exist within the main pool; these are the beach and fissure areas. These two areas are discussed below.

Between the issuance of the permit and March 1999, the City of Austin will be allowed to clean the pool up to ten times using the current drawdown methods. This is to give the City time to try underwater pool cleaning techniques and/or construct a water control structure. Incidental take will be anticipated in the main pool and adjacent spring sites. This incidental take will be authorized.

*Beach Area-* A new sidewalk along the north wall of the pool will be constructed. Incidental take (harass, harm and kill), before and during construction, is anticipated because heavy equipment will be used to relocate the salamander habitat. The area will be searched and salamanders will be moved to permanent water. This will result in harassment. Not all salamanders will be found because the beach is so large (11,000 square feet) and salamanders are not easily found. Incidental take in the form of harm and kill is anticipated. This will be a one-time impact with expected long-term benefits. The new sidewalk would not be salamander habitat so little take is anticipated from underwater cleaning methods in this area. The salamander habitat will be moved over and deepened. The new salamander habitat will be cleaned using low-pressure hoses. Incidental take in the form of harassment is anticipated. This area must be cleaned because the build up of sediment would cause a loss of salamander habitat. Incidental take from the activity of cleaning salamander habitat will be authorized. In addition, the one-time incidental take associated with the sidewalk placement and relocation of salamander habitat will be authorized.

*Fissure Area-* The fissure area is known salamander habitat that is exposed when the pool is drawn down. Salamanders are stranded in this area when the pool is drawn down. Under the HCP, a pump/sprinkler system will be used to keep this area wet during drawdown. This would minimize the amount of incidental take associated with the drawdown. In addition, recreational use of this area will be allowed under the HCP. This recreational use may cause the incidental take of salamanders. Large, flat limestone blocks will be used to cover the portions of the fissure area where the probability of incidental take is the highest. This would minimize the amount of incidental take from recreational use. In addition, this area will be cleaned with low-pressure hoses and hand held wire brushes. Cleaning will maintain the areas as salamander habitat. Cleaning will prevent the build up of sediment that would cause a loss of salamander habitat. The incidental take from sidewalk construction, drawdown, and cleaning of the fissure area will be authorized.

*Upper Barton Spring-* Upper Barton Spring is located upstream of the main pool. It is a spring, which flows when the flow from Barton Springs exceeds 50 cfs. This is a known salamander habitat area. The level of the spring drops slightly when the pool is lowered. There is the possibility that incidental take of salamanders may occur from drawdown. The area is also used for recreational purposes, though this use is thought to be relatively light. Incidental take (harass, harm, and kill) may occur from the recreational use of this area. The remote location and small surface area (400 square feet) of salamander habitat afford Upper Barton Spring some level of protection. At this time it does not seem necessary to restrict this area from recreational use. This area has never needed to be cleaned to remove sediment. However, the need may arise during the term of the permit. The area will be cleaned with low-pressure hoses which would result in some incidental take (harass). Therefore, incidental take of Barton Springs salamanders at Upper Barton Spring from drawdown, recreational use, and cleaning is authorized.

*Eliza Spring-* Eliza Spring is heavily influence by the water level in the main pool. Drawdown of the pool causes the incidental take (stranding/harass) of salamanders. The configuration of this spring area, with steps, causes stranding to occur regularly with the lowering of the pool. Incidental take will be anticipated to occur each time the pool is lowered, including for flood management purposes. At an aquifer flow rate of about 50-cfs, drawdown of the pool causes Eliza Spring to go below the concrete surface of the spring. In the past a pump system has been used to lessen the impact of stranding on the salamanders. Under the HCP, drawdown would not be allowed when this condition would result. The build up of sediment in the spring site has made it necessary to clean this area to improve and maintain salamander habitat. This cleaning will be accomplished with low-pressure hoses and shovels to remove and redistribute sediment. This activity would cause incidental take (harass, harm, kill). Lethal take (harm, kill) will be anticipated to be very low.

Habitat improvement plans for Eliza Spring include removal of the concrete bottom, enhancement of gravel substrate, and the planting of native plants. Any of these activities may result in some incidental take (harass, harm, kill). Lethal take (harm, kill) will be anticipated to be very low. The project may have a short-term impact but should provide for better habitat conditions in the long-term. Recreational use will not be allowed under the HCP. Therefore, no incidental take from recreation is anticipated. Incidental take of Barton Springs salamander at Eliza Springs for drawdown, cleaning, and habitat improvement is authorized.

*Old Mill Spring (Sunken Garden)-* The effect of pool drawdown is much less severe at Old Mill Springs than at Eliza Spring. The "bowl" nature of this spring's basin and the lack of ledges greatly lessen the chance of stranding salamanders. Under the Preferred Alternative, drawdown would not occur when Old Mill Spring would go dry. Therefore no take is anticipated from drawdown. In the event that drawdown will be necessary during the period when it would impact salamanders at Old Mill Spring, incidental take is anticipated. This area has never needed to be cleaned to remove sediment. However, the need may arise during the term of the permit. The area will be cleaned with low-pressure hoses which would result in some incidental take (harass). Recreational use would not be allowed under the HCP. Therefore no incidental take from recreation is anticipated.

Habitat improvement plans for Old Mill Spring include the restoration of surface flow, enhancement of gravel substrate, and the planting of native plants. Any of these activities may result in some incidental take (harass, harm, kill). Lethal take (harm, kill) is anticipated to be very low. Incidental take at Old Mill Spring (Sunken Garden) of Barton Springs salamander from pool drawdown, cleaning, and habitat improvement is authorized.

**Effects of take on the survival and recovery potential for the Barton Springs salamander.**

We have presented the estimated range of salamander numbers that will be taken under the proposed alternative to illustrate the anticipated effects (Table 4). Barton Springs is a very complex and dynamic system. It is extremely difficult to predict precise numbers based on this complexity. Estimates are based on the actual numbers from our experimental pool cleaning results. In all cases, the lower end of the range is 0 or 1 because these are the actual results from the experiments. We do not anticipate that the maximum amount of take would occur each year. Rather we have presented the data to describe the range of probable impacts.

The assessment of take is based upon data collected by the City of Austin from 1993-1998 and data collected by the City of Austin and the Service during March through September of 1998. In addition, data collected by various researchers have also been reviewed. Appendices B and C include data used in the assessment of take.

**Table 4: Estimated possible impact by Area/Activity.** Incidental Take will be permitted based on area and activity, not on the estimated numbers. The purpose of these numbers is to illustrate the general range of take anticipated. All activities would not be expected to occur each year.

Area/Activity	Number of Salamanders	x number of times Area/Activity	Total Take
Beach/Habitat cleaning (Non-lethal/harass)*	1-84	x 4 cleanings	4-336/year
Fissures drawdown/cleaning (Non-lethal/harass)*	0-19	x 2 drawdowns x 4 cleanings	0-38/year 0-76/year
Eliza Spring (Non-lethal/harass)*	0-17 0-38	x 2 drawdowns x 1 cleanings	0-34/year 0-38/year
Old Mill Spring (Non-lethal/harass)*	0-5	x 2 drawdowns x 2 cleanings	0-10/year 0-10/year
Upper Barton Spring (Non-lethal/harass)*	0-2	x 2 drawdowns x 2 cleanings	0-4/year 0-4/year
Flood Preparation Fissures and Eliza Spring (Non-lethal/harass)*	0-36	x 5 Floods	0-180/year
Barton Springs Pool and Upper Barton Springs/Recreation (Lethal/harm, kill) (Non-lethal/harass)	20 100	x1 year	20/year 100/year
<b>Total Non-lethal/harass</b>	—	—	<b>4-654/year</b>
<b>Total Lethal/harm, kill (Recreation)</b>	—	—	<b>20/year</b>

\* May include a minor amount of lethal incidental take (harm, kill)

In addition to the yearly impacts described above, there will be incidental take from the improvement projects that the HCP requires. These will be one-time activities that have short-term impacts but long-term benefits. These impacts are displayed in Table 5.

**Table 5. One time range of impacts from improvements measures in the HCP.** This take will be mostly non-lethal (harass) but would include very low lethal take (harm/kill).

Habitat Improvement Eliza Springs	0-80	1 project	0-80/one time
Habitat Improvement Old Mill Springs	0-55	1 project	0-55/one time
Beach Relocation	0-85	1	0-85/one time
Estimated Take Aug 98 – Mar 99 (includes dam construction, if necessary)	0-101	x 10 cleanings	0-1010/one time
<b>Total One Time Take</b>			<b>0-1230</b>

The take associated with recreational use would involve stepping on salamanders. In the Final Rule to List the Barton Springs Salamander as Endangered (Federal Register Volume 62, No. 83, 4/30/97), the Service stated that the use of the pool does not appear to pose any threat to the salamander. New information on the salamander distribution within the pool, suggests that incidental take from recreational use may occur. This take will be classified as harm. Our estimate of incidental take is based on the surface area available for these activities (about 40,000-sq. ft.) and the probability that salamanders will be using these areas (very low). Our incidental take estimate, from wading and standing, will be 20 salamanders per year (harmed/killed). In addition salamanders may be harassed by recreational use; our estimate of the number of salamanders harassed will be 100 salamanders per year. This would include any take at Upper Barton Springs. Because access to Eliza Spring and Old Mill Spring (Sunken Garden) will be restricted, no take from these sites is anticipated from recreation.

Under the Preferred Alternative, the pool will not be drawn down, after March 1999, without Service concurrence (except for in the preparation for a flood – see Flood Discussion below). For the purpose of estimating the incidental take involved with these drawdowns the Service will assume two drawdowns per year. While up to four drawdown could be allowed the Service does not expect this many drawdowns that are not in relation to floods. The pool will not be drawn down if the aquifer flows are less than .50 cfs or when the drawdown would cause Eliza Spring to go dry. The take associated with pool drawdown involves the stranding of salamanders. This incidental take, assuming that any stranded salamanders are found and returned to the water, will be harassment. Take (harm) from these activities may also occur if the stranded salamanders are not found. However, the possibility of missing a salamander exists and therefore the “harm” from these actions and any other actions (such as a bird eating a stranded salamander), which may cause harm, need to be included in the estimate of take. Under this alternative the pool is not drawn down when the shallow end is cleaned. There should be little take associated with cleaning the shallow end of the pool. The cleaning of the deep end of the pool will also be conducted with the water level full.

The salamander habitat on the beach area will be lowered and a sidewalk or other hardened surface will be placed adjacent to the wall. The new hardened surface (sidewalk) would not be habitat and no incidental take should occur in this area from the underwater cleaning. The salamander habitat will be moved over and deepened so that it is not exposed during pool drawdown and would not be impacted by swimmers and waders. This area of salamander habitat will be cleaned quarterly or as needed and may result in the “harassment” of salamanders. This would occur from the hosing of the habitat to keep the upper 2-3 inches free of sediment. Due to the nature of the pool and the way sediment builds up, this cleaning is necessary to maintain the salamander habitat. The activity of cleaning the 11,000 square feet of salamander habitat would cause harassment of any salamanders present.

There is a provision under this alternative that, if necessary (i.e. if flooding occurs), the pool will be drawn down, with concurrence of the Service. The number of drawdowns allowed per year, without amending the permit will be four. During drawdown, a pump system will be installed to keep a high volume/low pressure of water over the fissures during any drawdown. The pumping of springwater would alter the salamander habitat. The aquatic environment would change from

relatively stable water to flowing water. This will be like changing from a pond to a creek. The cleaning of the fissure area with low-pressure hoses also may cause take in the form of "harassment". We estimate that 19 salamanders could be harassed with each drawdown. Assuming two drawdowns per year, harassment of 38 salamanders is estimated in the fissure area. Cleaning of the fissures (about 4 times per year) would result in an estimated incidental take of 76 salamanders. The incidental take from drawdown and cleaning of the fissure area will be authorized.

In Eliza Spring, the City of Austin documented salamander mortality from dewatering and stranding of salamanders during pool drawdown under low aquifer conditions in 1997. The Preferred Alternative would not allow for drawdown to occur when Eliza Springs would go dry. On one occasion, during August of 1998, 17 salamanders were found stranded on the steps of the concrete enclosure when the pool was lowered for cleaning. The take at Eliza Spring associated with pool drawdown involves the stranding of salamanders. This "incidental take", assuming that any stranded salamanders are found and returned to the water, in a timely manner, will be harassment. Assuming two drawdowns per year, incidental take of 34 salamanders is estimated at Eliza Spring. Additional incidental take may occur during cleaning of sediment from Eliza Spring. We estimate harassment of 34 salamanders during two spring cleanings per year.

The effect of pool drawdown is much less severe at Old Mill Springs (Sunken Garden). The "bowl" nature of this spring's basin and the lack of ledges make the chance of stranding salamanders much less than in other sites. Under the Preferred Alternative, drawdown would not occur when Old Mill Spring would go dry. Therefore no take is anticipated from drawdown. In the event that drawdown would be necessary during the period when it would impact salamanders at Old Mill Spring, we estimate incidental take of 5 salamanders. Assuming that the pool is drawn down twice a year, the estimated number of salamanders harassed is 10 per year. The number of salamanders impacted may be higher for any one event. However, the Service does not expect this to happen more than once or twice during the term of the permit. Therefore, the number has been set lower to account for expected take over the term of the permit. Additional incidental take may occur during cleaning of sediment from Old Mill Spring. We estimate incidental take of 10 salamanders during two spring cleanings per year.

Habitat restoration is also proposed for Eliza Spring and Old Mill Springs (Sunken Garden). Service concurrence will be necessary for any proposed habitat improvement work. The majority of this incidental take should be harassment with temporary impacts. There should be a long-term benefit to the salamander population resulting from this work. The incidental take during these restoration efforts is estimated at 80 and 55 for Eliza Spring and Old Mill Spring, respectively.

The impacts of flood management will be authorized under the permit. It is very difficult to predict the amount of incidental take associated with future flooding. Impacts to salamanders in the fissure area and Eliza Spring will be expected. Incidental take could occur from stranding during flood preparation and after flooding (before gates are raised). For the purpose of estimating these impacts the Service will assume five floods per year. The number of salamanders impacted will be about 20 from the fissures and 17 from Eliza Spring. The total

estimated impact would be 185 salamanders per year. The incidental take of Barton Springs salamanders from flood preparation and after flooding (before gates are raised) will be authorized.

Included in the assessment of take is the take that will be allowed from the time that the permit is issued until the water control structure is installed or an alternative is devised and the beach area is lowered (October 98 – March 99). Current pool cleaning methods, including drawdown, will be used along with any improvements found during this period. The Service is authorizing 10 pool cleanings using these methods. A total amount of incidental take is estimated at 1010 salamanders for these ten pool cleanings.

Population estimates for the Barton Springs salamander are not available and there are no data for accurate estimates. It is impossible to obtain an accurate population estimate because of the inability to obtain a valid sample. The rocks, cracks, large surface area of the springs, and inaccessibility of the aquifer make it impossible to obtain a consistently accurate sample. Based on the experience of finding a much higher range of salamanders in the main pool during drawdown events as compared to SCUBA surveys, we believe that the population is probably 3 to 5 times higher than the highest observed numbers found during SCUBA surveys. SCUBA surveys, in three documented instances, have underestimated the number of salamanders by 55 to 85% (55, 75, and 85). These were cases where actual SCUBA counts were completed shortly before drawdown. The number from SCUBA counts was compared to the number found during drawdown.

Using SCUBA surveys, the following numbers have been documented. Chippendale reported the highest observed number in the main pool as over 150 individuals found on a two-hour dive in the main springs (Chippendale et al., 1993). The highest number reported in recent surveys (last five years) was 71, as found by the City of Austin and the Service in August of 1998 (about 5 hours of effort). The highest observed number at Eliza Spring, not including drawdown information, has been 38 salamanders. The highest observed number at Old Mill Spring has been 60 salamanders. At Upper Barton Spring the highest observed number of salamanders is 14.

During drawdown surveys the highest numbers observed in the main pool has been 84. The highest number reported for Eliza Spring is 188. We have not had surveys in Old Mill Spring or Upper Barton Spring when the aquifer was at a level where these springs could be affected.

The HCP would allow for incidental take of salamanders from the operation and maintenance of Barton Springs and the adjacent spring sites. The majority of the authorized take will be non-lethal harassment of salamanders. This will be from drawdowns (which are greatly reduced). The best salamander habitat in the main pool is located at the outflow from the main springs. This area has never been substantially impacted by pool drawdown and represents the highest density of salamanders in the pool.

There is also a very positive effect of the current pool cleaning techniques as opposed to the techniques that were used at the time of listing. Stranded salamanders that are found are returned to permanent water. Except for work at Eliza Spring when drawdown caused it to go dry, no one

was out looking for salamanders in areas that went dry during drawdown. Mortality of stranded salamanders was probably much higher under the previous methods.

The added protection for Eliza Spring and Old Mill Spring should also increase salamander numbers. The restoration of these two spring sites should provide additional habitat and enhanced habitat quality at these two sites. Within the pool itself, the lowering of the beach area and the protection of the fissure area should improve habitat conditions for salamanders compared to past use.

In addition, the conservation fund would focus on research that would include a better understanding of Barton Springs salamander population dynamics. The adaptive management strategy in the HCP (see Section 6.0) would allow for improvements to pool cleaning procedures as our knowledge of the species increases. This provision will ensure that we can further lessen management impacts during the term of the permit. The hazardous materials spill and response plan should also serve to reduce the threats to the population.

The amount of take should be more than offset by the improvements for the population. Overall, the HCP should improve conditions for the Barton Springs salamander and a net increase in the number of individuals is expected.

## Biological Opinion for the City of Austin, Texas (Permit # PRT-839031)

This provides the U.S. Fish and Wildlife Service's (Service) Biological Opinion regarding the issuance of an Endangered Species Act (Act) section 10(a)(1)(B) permit. The Federal action under consideration is the issuance of a permit authorizing the incidental take of the Barton Springs salamander (*Eurycea sosarum*) under the authority of sections 10(a)(1)(B) and 10(a)(2) of the Act. This is an intra-Service biological opinion since the Service is the issuing agency. The City of Austin, Texas (Applicant) has submitted an application (PRT-839031) for an incidental take permit, under the Act, to take the federally listed endangered Barton Springs salamander. Along with the application, the Applicant submitted an Environmental Assessment/Habitat Conservation Plan that has been reviewed for mitigation acceptability. The implementing regulations for section 10(a)(1)(B) of the Act, as provided for by 50 CFR 17.22, specify the criteria by which a permit allowing the incidental "take" of listed endangered species pursuant to otherwise lawful activities may be obtained. The purpose and need for the section 10(a)(1)(B) permit is to ensure that incidental take resulting from the operation and maintenance of Barton Springs Pool and Adjacent Springs will be minimized and mitigated to the maximum extent practicable. Further, the permit is designed to ensure that the incidental take will not appreciably reduce the likelihood of survival and recovery of this federally listed endangered species in the wild.

### Consultation Chronology

The listing of the Barton Springs salamander went into effect on May 30, 1997. The City of Austin began working with the Service to obtain a section 10(a)(1)(B) permit before the listing took effect. Numerous meetings and phone conversations took place between April, 1997 and January, 1998. Documented meetings between the City and Service staff took place on the following dates: 4/24/97, 7/17/97, 7/24/97, 10/21/97, 10/22/97, 10/28/97, 10/30/97, 11/25/97, 12/22/97, 1/8/98, 1/12/98, 1/16/98, and 1/24/98. Draft documents were exchanged between the City and the Service during this time period. These draft documents include the following dates 5/28/97, 8/14/97, 10/97, 12/97. On January 27, 1998, the City of Austin filed an application for a section 10(a)(1)(B) permit. The application, draft news release, draft Federal Register notice, and Environmental Assessment/Habitat Conservation Plan (EA/HCP) were sent from the Austin Field Office to the Regional Director's Office in Albuquerque, New Mexico, on February 2, 1998. Comments were sent back to Austin on March 2, 1998. A revised package was sent to the Regional Director's Office on March 3, 1998. The Notice of Availability for the EA/HCP was published on March 16, 1998. A thirty-day public comment period was open until April 15, 1998. A public meeting on the EA/HCP was held on April 7, 1998, and the public comment period was extended on April 16, 1998 (by Federal Register Notice) until April 30, 1998. On March 26, 1998, the Service and the City announced their intention to further study the effects of pool cleaning under the terms and conditions of their respective scientific permits. Experiments were conducted on eight dates between March 31, 1998, and May 21, 1998. Based on the results of the experimental pool cleaning, a second phase of experimentation was conducted between June 25, 1998, and September 17, 1998. On July 15, 1998, the Service published a second Notice of

Availability for the EA/HCP in the Federal Register. This was a revised document based on the results of the first phase of experimental pool cleaning. The public comment period was open until August 14, 1998. The Service and the City held an informational public meeting on July 27, 1998, and two public hearings on July 28, 1998 and July 30, 1998. Numerous informal public meetings with interested community members, including swimmers and environmentalists, were held throughout August and September.

### **Extent of Take**

Incidental take of the Barton Springs salamander may occur at Barton Springs Pool, Eliza Spring, Old Mill Spring, and Upper Barton Spring, due to recreational activities and/or routine pool maintenance, depending on aquifer levels and spring discharges. However, minimizing pool drawdown, lowering the beach area, restricting public access to Eliza Spring and Old Mill Spring, and other HCP measures would substantially minimize the level of take. The following section is written assuming that the measures proposed in the HCP are fully implemented. The extent of take is more fully discussed in the EA/HCP, Section 6.5.

### **Effect of Take**

The effect of take is more fully discussed in the EA/HCP, Section 6.5. The HCP would allow for incidental take of salamanders from the operation and maintenance of Barton Springs and the adjacent spring sites. The majority of the authorized take will be non-lethal harassment of salamanders. This will be from drawdowns (which are greatly reduced). The best salamander habitat in the main pool is located at the outflow from the main springs. The area has never been substantially impacted by pool drawdown and represents the highest density of salamanders in the pool.

There is also a very positive effect of the current pool cleaning techniques as opposed to the techniques that were used at the time of listing. In addition, current techniques return stranded salamanders to permanent water. Except for work at Eliza Spring when drawdown caused it to go dry, no one was examining the areas that went dry during drawdown for salamanders. Mortality of stranded salamanders was probably much higher under the previous methods.

The added protection for Eliza Spring and Old Mill Spring should also increase salamander numbers. The restoration of these two spring sites should provide additional habitat and enhanced habitat quality at these two sites. Within the pool itself, the lowering of the beach area and the protection of the fissure area should improve habitat conditions for salamanders when compared to past use.

In addition, the conservation fund would focus on research that would include a better understanding of Barton Springs salamander population dynamics. The adaptive management strategy in the HCP would allow for improvements to pool cleaning procedures as our knowledge of the species increases. This provision will ensure that we

can further lessen management impacts during the term of the permit. The hazardous materials spill and response plan should also serve to reduce the threats to the population.

The amount of take should be more than offset by the improvements for the population. Overall, the HCP should improve conditions for the Barton Springs salamander and a net increase in the number of individuals is expected.

### **Reasonable and Prudent Measures**

1. The Service will be responsible for monitoring HCP implementation and annually reviewing the reports from the City of Austin to ensure that the provisions of the HCP are being implemented as agreed.
2. The Service will continue to work closely with the Applicant and interested members of the public to ensure that the measures are implemented.

### **Terms and Conditions**

In order to be exempt from the prohibitions of section 9 of the Act, the following non-discretionary terms and conditions, which implement the reasonable and prudent measures described above, must be complied with:

1. A section 10(a)(1)(B) permit, as evaluated in this Biological Opinion, must be issued by the Service.
2. The section 10(a)(1)(B) permit must:
  - a) Include descriptions of the area and activities under which incidental take of the Barton Springs salamander is allowed.
  - b) Include adaptive management provisions to improve conditions during the term of the permit.
  - c) Incorporate the Habitat Conservation Plan, including all measures as evaluated in this Biological Opinion.

If during the implementation of the HCP and permit, the amount or extent of incidental take outlined in this Biological Opinion is exceeded, if new information reveals effects of the actions that may affect listed species in a manner that was not considered in this document, the proposal is significantly modified, and/or if new species are listed or critical habitat is designated that may be affected by this action, formal consultation must be reinitiated to avoid violation of section 9 of the Act. If it is determined that the impact of additional taking will cause an irreversible and adverse impact on the species, construction or other activities related to the take must cease in the interim period between the initiation and completion of the new consultation.

The incidental take statement provided in this Biological Opinion satisfies the requirements of the Act. This statement does not constitute an authorization for take of migratory birds under the Migratory Bird Treaty Act, the Bald Eagle Protection Act, or any other Federal statute.

### Conservation Recommendations

Sections 2(b), 2(c), and 7(a)(1) of the Act mandate that Federal agencies use their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. The term "conservation recommendations" has been defined as suggestions from the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding development of information. We recommend the following additional actions for the listed species:

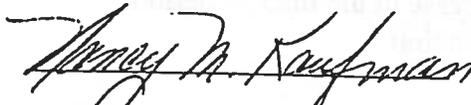
1. The Service should coordinate on all future section 10(a)(1)(B) mitigation activities within the mitigation program of this section 10(a)(1)(B) permit.

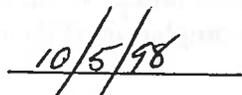
In order for the Service to be kept informed of actions that either minimize or avoid adverse effects or that benefit listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations. Additionally, the Applicant should coordinate with the Service on the development and planning stages for the implementation of any of these conservation recommendations.

### Reinitiation Notice

This concludes the Service's formal consultation on issuance of a permit pursuant to section 10(a)(1)(B) of the Act, to allow the incidental take of the Barton Springs salamander during the operation and maintenance of Barton Springs and the adjacent spring sites, for the 15-year term of the permit. Reinitiation of formal consultation is required if: 1) the amount or extent of incidental take is exceeded; 2) new information reveals effects of the action that may impact listed species or critical habitat in a manner or to an extent not considered in this opinion; 3) the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or, 4) a new species is listed or critical habitat is designated that may be affected by the action.

A complete list of references is included in the EA/HCP, Section 7.0

  
Regional Director, Region 2

  
Date



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

P.O. Box 1306  
Albuquerque, New Mexico 87103  
<http://ifw2es.fws.gov>

In Reply Refer To:  
R2/ES-SE

OCT - 5 1998

### Memorandum

To: Regional Director

From: Acting Programmatic Assistant Regional Director, Ecological Services

Subject: Barton Springs salamander Habitat Conservation Plan and Associated Documents

The attached Environmental Assessment/Habitat Conservation Plan and associated documents have been negotiated over a period of 16 months, including addressing comments from the public received over a 75-day public comment period.

It is my recommendation that the associated documents be approved and the permit be issued for this Habitat Conservation Plan. If you agree, please sign and date as indicated. Thank you.

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UNITED STATES FISH AND WILDLIFE SERVICE  
ENVIRONMENTAL ACTION MEMORANDUM

Within the spirit and intent of the Council on Environmental Quality's regulations for implementing the National Environmental Policy Act (NEPA) and other statutes, orders, and policies that protect fish and wildlife resources, I have established the following administrative record and have determined the action of: Operation and Maintenance of Barton Springs Pool and Adjacent Springs, by the City of Austin, Travis County, Texas.

- is a categorical exclusion as provided by 516 DM 6 Appendix. No further documentation will be made.
- is found not to have significant environmental effects as determined by the attached Environmental Assessment/ Habitat Conservation Plan and Finding of No Significant Impact.
- is found to have special environmental conditions as described in the attached Environmental Assessment/Habitat Conservation Plan. The attached Finding of No Significant Impact will not be final nor any actions taken pending a 30-day period of public review (40 CFR 1501.4(e)(2)).
- is found to have significant effects, and therefore a "Notice of Intent" will be published in the Federal Register to prepare an Environmental Impact Statement before the project is considered further.
- is denied because of environmental damage, Service policy, or mandate.
- is an emergency situation. Only those actions necessary to control the immediate impacts of the emergency will be taken. Other related actions remain subject to NEPA review.

Other supporting documents: Environmental Assessment/Habitat Conservation Plan for Issuance of a Section 10(a)(1)(b) Permit for Incidental Take of the Barton Springs Salamander During Operation and Maintenance of Barton Springs Pool and Adjacent Springs, City of Austin, Texas.

Thomas M. Kraufman      10/5/98  
Director/Regional Director      Date

(1) Leslie A. Dief      10/2/98  
Initiator      Date

(2) Steph C. Degea      10-5-98  
PARD      Date

(3) Brian Hanson      10-2-98  
Special Review      Date

UNIVERSITY OF CALIFORNIA  
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DEPARTMENT OF MEDICAL HISTORY  
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DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
10711 BURNET ROAD, SUITE 200  
AUSTIN, TEXAS 78758

FINDING OF NO SIGNIFICANT IMPACT

ISSUANCE OF AN ENDANGERED SPECIES  
SECTION 10(a)(1)(B) PERMIT FOR THE INCIDENTAL TAKE  
OF THE BARTON SPRINGS SALAMANDER (*EURYCEA SOSORUM*)  
FOR THE OPERATION AND MAINTENANCE OF BARTON SPRINGS POOL  
AND ADJACENT SPRINGS, FOR THE CITY OF AUSTIN, TEXAS

The U.S. Fish and Wildlife Service (Service) prepared an environmental assessment for the issuance of a section 10(a)(1)(B) permit for the incidental take of the Barton Springs salamander, a federally-listed endangered species. Such an action will provide the City of Austin a permit to operate and maintain four springs, collectively known as Barton Springs. Issuance of an Endangered Species Act section 10 (a)(1)(B) permit for the incidental take of the endangered Barton Springs salamander (*Eurycea sosorum*) during the operation and maintenance of Barton Springs Pool and adjacent springs by the City of Austin, TX.

Proposed Action

The proposed federal action is the issuance of an Endangered Species Act section 10 (a)(1)(B) permit for the incidental take of the endangered Barton Springs salamander (*Eurycea sosorum*) during the operation and maintenance of Barton Springs Pool and adjacent springs by the City of Austin, Texas.

Details of the mitigation proposal are provided in the Environmental Assessment/Habitat Conservation Plan prepared for this action. The Habitat Conservation Plan measures and actions ensure that the criteria established, for issuance of an incidental take permit, would be fully satisfied.

Alternatives Considered

1. No action.
2. Maintenance Procedures Prior to Listing (May 1997).
3. Preferred Alternative.
4. Operating Barton Springs Pool with a Reduction in the Frequency of Maintenance Procedures.





# United States Department of the Interior

FISH AND WILDLIFE SERVICE

WASHINGTON, D.C. 20240

ADDRESS ONLY THE DIRECTOR  
FISH AND WILDLIFE SERVICE

Implemented June 1982

## Special Conditions for Marine Mammals and Native Endangered and Threatened Species Permits

1. Permittee must comply with the attached General Permit Conditions specified by the Office of Management Authority.
2. Any dead or injured specimens of the authorized wildlife found may be salvaged or cared for.
3. Unless otherwise authorized on the face of the permit, the wildlife must be immediately released at or near the capture site after the permitted activity.
4. Unexpected death or escape of the authorized wildlife shall be reported to the Office of Management Authority (703/358-2104) before the end of the next business day.
5. BIRD BANDING, marking, radio tagging, etc., must be conducted in accordance with a Federal Bird Marking and Salvage permit.

THE FOLLOWING CONDITIONS APPLY UNTIL AUTHORIZED DISPOSAL OF THE WILDLIFE, REGARDLESS OF THE EXPIRATION DATE OF THE PERMIT:

6. The authorized wildlife may NOT be sold, donated or transferred unless the receiver has first been issued authorization by the Director.
7. Any dead authorized wildlife shall be preserved and held for scientific purposes whenever practical.
8. Any live SEA TURTLES held must be maintained in accordance with the "Care and Maintenance Standards for Sea Turtles Held in Captivity" specified by the Office of Management Authority.
9. MARINE MAMMALS must be cared for and maintained in accordance with the Animal and Plant Health Inspection Service's regulations on "Marine Mammals; Humane Handling, Care, Treatment, and Transportation."



Washington, D.C. 20500

MEMORANDUM FOR THE SECRETARY

Subject: [Illegible]

[Illegible text]

[Illegible text]