CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Cicurina wartoni*

COMMON NAME: Warton cave meshweaver

LEAD REGION: Region 2

INFORMATION CURRENT AS OF: Feb. 2003

STATUS/ACTION (Check all that apply):
___ New candidate
_X_ Continuing candidate
    _X_ Non-petitioned
    __ Petitioned - Date petition received: ___
        __ 90-day positive - FR date: ___
        __ 12-month warranted but precluded - FR date: ___
        __ Is the petition requesting a reclassification of a listed species?
__ Listing priority change
    Former LP: __
    New LP:__
Latest date species first became a Candidate: _____
___ Candidate removal: Former LP: ___ (Check only one reason)
    ___ A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.
    ___ F - Range is no longer a U.S. territory.
    ___ M - Taxon mistakenly included in past notice of review.
    ___ N - Taxon may not meet the Act=s definition of Aspecies.@
    ___ X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Arachnid, *Dictynidae*

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Texas

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Travis County, Texas

LEAD REGION CONTACT: Susan Jacobsen, 505-248-6641

LEAD FIELD OFFICE CONTACT: Austin, Texas Field Office, Tannika Engelhard, 512-490-0057.

BIOLOGICAL INFORMATION: (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

This meshweaver (spider) is a member of the family Dictynidae, and a member of the subgenus *Cicurella*. It was first collected in 1990 by James Reddell, Marcelino Reyes, and Lee Sherrod and in 1992 described by Gertsch. Members of this subspecies are mostly small forms derived from eight-eyed spiders and are progressively losing or have lost their eyes (Gertsch 1992). The majority of the eyeless *Cicurina* are known only from the Edwards Plateau region in central Texas and are obligate cave-dwelling species.

This meshweaver (spider) is sedentary and spins a small web in and under detritus and small rocks and preys on other small invertebrates. It is eyeless, unpigmented, known only from female specimens and is 0.25 inches long. A small, shallow cave in Travis County, Texas, is the only known location of this species.

THREATS (Describe threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change):

A. <u>The present or threatened destruction, modification, or curtailment of its habitat or range</u>.

This species is known from only one small cave in northwest Travis County. The species and its habitat are subject to threats from fire ants and possible habitat degradation due to construction of a subdivision. Site plans for development of the property were approved by Austin in 1987. The Service issued a biological opinion on this project to the Corps of Engineers on December 30, 1994. The project description was modified from the 1987 plan so that development is set back 250-500 feet from the northern side of the cave, while the area to the south will remain undeveloped. This cave preserve is contiguous with the Balcones Canyonlands Preserve. The cave has been gated to prevent human access, while allowing continued air flow and nutrient input. At this time, however, there is inadequate fencing around the Balcones Canyonlands Preserve for the bird habitat and there are entryways in the cave preserve area that allow access to the cave entrance. Service staff visited the site on two occasions in early 2001 and found that construction of the road and several homes has been completed on the northern side of the cave preserve area, less than 500 feet from the entrance of the cave.

B. <u>Overutilization for commercial, recreational, scientific, or educational purposes</u>.

None known.

C. <u>Disease or predation</u>.

Imported red fire ants (*Solenopsis invicta*) are known to exist on the tract where the cave is located and pose a significant threat to karst invertebrates, including this meshweaver. Fire ants are voracious predators, and there is evidence that overall arthropod diversity drops in their presence (Vinson and Sorensen 1986; Porter and Savignano 1990). Elliott (1990) notes that fire ant activity has increased dramatically in Central Texas since 1989. A site visit to the cave containing this meshweaver, by Service employees, consultants to the landowner, and Corps of Engineers personnel in summer, 1993, revealed an active fire ant mound 30 feet east of the cave

entrance in a small clearing.

D. The inadequacy of existing regulatory mechanisms.

Currently, no State laws protect this meshweaver or directly address protection of its habitat. Cave protection laws of the City of Austin provide for a 100 foot buffer zone around significant aquifer recharge features and Texas Commission on Environmental Quality (TCEQ) rules generally affect only significant recharge features. The cave containing this species does not receive significant recharge (Mike Warton, Texas Cave Management Association, pers. comm., 1993) and would not likely qualify for protection under the City of Austin or TCEQ regulations. Invertebrates are not included on Texas Parks and Wildlife Department=s list of threatened and endangered species. The Department regulations do not contain provisions for protecting habitat of any listed species.

The Service has been working with the landowner to develop a Conservation Agreement, which would incorporate additional conservation measures included in the 1994 biological opinion. The measures would include fencing, periodic (every two to three months) surveillance, revegetating man-made openings with native plants, removal of any trash dumps, pesticide and fertilizer restrictions, and fire ant control, using Service-approved methods. However, no progress toward the development of a Conservation Agreement with the landowner has been made in the last year.

In 2001, the listing priority for this species was elevated to a 2 because the conservation agreement had not been completed and implemented. The cave has been gated to prevent unauthorized human access and deter vandalism and trash dumping, while allowing continued air flow and nutrient input. However, the cave gate may alter the natural flow of surface water, nutrients, and air into the cave, and the nearby development may have some adverse effects on the cave ecosystem. Fire ants remain a constant threat. Recommended management (including fire ant control, complete fencing) is not yet in place to adequately protect this only known location of the species. Also, as part of the reasonable and prudent measures, the preserve which also contains an endangered songbird is supposed to be completely fenced to prohibit human entry. The perimeter of this preserve is the back edge of private lots, many of which have gates in them installed by landowners, thus the fence is not adequate to prohibit entry into the preserve.

E. Other natural or manmade factors affecting its continued existence.

Although many caves in the Austin metropolitan area have been subject to extensive vandalism and trash dumping, the cave gate should help deter these activities. Fencing around the preserve area would further deter these activities, though complete fencing is not yet in place.

BRIEF SUMMARY OF REASONS FOR REMOVAL OR LISTING PRIORITY CHANGE:

FOR RECYCLED PETITIONS: N/A

a. Is listing still warranted? ___

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? ___

c. Is a proposal to list the species as threatened or endangered in preparation? ___

d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners):

The only known population of this meshweaver is located on private land.

PRELISTING (Describe status of conservation agreements or other conservation activities):

Landowners agreed to preserve the cave as a part of a section 7 consultation with the Corps of Engineers. A final Candidate Conservation Agreement has been expected for some time, but is still not finished as of February 2003.

REFERENCES

Barr, T.C., Jr., 1968. Cave ecology and the evolution of troglobites. Evol. Biol. 2:15-21.

Elliott, W.R. 1992 (revised 1993). Fire Ants and Endangered Cave Invertebrates: A Control and Ecological Study. Section 6 report prepared for the Texas Parks and Wildlife Department and the U.S. Fish and Wildlife Service.

Gertsch, W.J. 1992. Distribution patterns and speciation in North American cave spiders wit a list of the troglobites and revision of the *cicurinas* of the subgenus *Cicurella*. Pages 75-122 in: Texas Memorial Museum Speleological Monographs 3: Studies on the cave and endogean fauna of North America II. Edited by James Reddell. 257 pp.

Holsinger, J.R. 1988. Troglobites: The evolution of cave-dwelling organisms. Am. Scientist 76:147-153.

Howarth, F.G. 1983. Ecology of cave arthropods. Ann. Rev. Entomol. 28:365-389.

Porter, S.D., and S.A. Savignano. 1990. Invasion of polygyne fire ants decimates native ants and disrupts arthropod community. Ecology. 71(6):2095-2106.

U.S. Fish and Wildlife Service. 1993. Draft Recovery Plan for Endangered Karst Invertebrates in Travis and Williamson Counties, TX. Albuquerque, NM. 133 pp.

Veni & Associates. 1992. Geologic controls on cave development and the distribution of cave fauna in the Austin, TX region. Section 6 report prepared for the U.S. Fish and Wildlife Service and Texas Parks and Wildlife Department. V + 77 pp.

Vinson, S.B., and A.A. Sorensen. 1986. Imported Fire Ants: Life History and Impact. Texas Department of Agriculture. 1986. 28 pp.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High*	Imminent*	Monotypic genus	1
		Species*	2*
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: The species is known from one small cave in Travis County, Texas and is threatened by red-imported fire ants and possible habitat degradation due to a road and home construction that was completed in 2001, less than 500 feet from the cave entrance. While contiguous with the Balcones Canyonlands Preserve, the cave entrance and the surrounding small setback are privately-owned and lack provisions for monitoring and management, including fire ant control.

Imminence: The Warton cave meshweaver is assigned a listing priority number of two due to high, imminent threats to the species, such as habitat degradation and limited distribution.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Tom Bauer March 14, 2003
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____ _____
Director, Fish and Wildlife Service Date

Do not concur: _____ _____
Director, Fish and Wildlife Service Date

Director's Remarks: _____

_____

Date of annual review: 02/12/2003

Conducted by: Tannika Engelhard, Austin FWS Office

Comments:

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