

FIVE-YEAR STATUS REPORT

- I. COMMON NAME: Elf Owl
SCIENTIFIC NAME: Micrathene whitneyi
CURRENT CLASSIFICATION: Endangered
- II. RECOMMENDED ACTION:
- Retain Endangered classification
- III. SUMMARY OF REASONS FOR RECOMMENDED ACTION:

In California the Elf Owl is restricted to the scattered native riparian habitat along the lower Colorado River. This habitat type has been reduced to less than four percent of its original size. Elf Owls have been reported from eight different sites in California, but at the time of listing (1980) Elf Owls were only present at two sites with a total population of about 12 pairs.

Since listing, Elf Owls do not appear to have increased in numbers, or in distribution, despite the release of captive reared birds. Habitat has been reduced further due to prolonged flooding which has killed much of the remaining cottonwood-willow forest and some mesquite forest.

IV. NATURE AND DEGREE OF THREAT:

Elf Owls have suffered from a dramatic reduction in native riparian habitat in California. Elf Owls are native summer residents that exist along the lower Colorado River where they occupy remnants of the mature cottonwood-willow and mesquite riparian forests that historically formed an extensive border along the river. Hunter (1984) reports that in almost all historical accounts of the lower Colorado River it was described as being bordered by large forests of cottonwood (Populus fremontii) and willow (Salix goodingii) with intermittent riparian forests of honey mesquite (Prosopis glandulosa) and screwbean mesquite (P. pubescens). The flow of the river was calm in winter but during late spring and early summer snow melt from the Rocky Mountains caused dramatically increased flows for a short duration, two weeks to a month. Although these flows often scoured areas and destroyed large tracts of forest, they also prepared seedbeds for future willow and cottonwood regeneration.

The quantity of cottonwood dominated forest has decreased from at least 5,000 acres in the 1600's, to 500 acres by 1977 (Ohmart, Deason and Burke 1977), and to less than 200 acres in 1982 (Hunter 1984). Even

further loss has occurred since 1982. Reductions in the quantity and quality of native riparian forests along the Colorado River were due to logging for fuel in the 1800's, clearing for agriculture in the early 1900's, and in recent years, water development and flood control projects. During the last five years there has been extensive, prolonged flooding causing further, serious reductions to the remaining mature cottonwood-willow riparian forests (Holland pers. comm.).

What little habitat that remains is vastly different from the original cottonwood-willow forest. The change in water flow patterns due to the construction of dams has favored the establishment of the exotic salt cedar (Tamarix sp.). This species is much better adapted to the new water flow regime than is cottonwood and it now dominates most riparian areas. However, salt cedar does not support many species of native fauna, including Elf Owls. Alteration of river flow pattern also has resulted in permanent flooding of former cottonwood-willow regeneration seedbeds. Flow pattern changes combined with salt cedar intrusions, have prevented regeneration of naturally occurring cottonwood-willow and mesquite riparian forests.

V. HISTORIC AND CURRENT DISTRIBUTION:

Historic

Prior to 1978 Elf Owls had been recorded from seven different sites in eastern Imperial and Riverside counties, and from southeastern San Bernardino County (Cardiff 1978) (Table 1). Three of these sites, including the original sighting of Elf Owls in California in 1903, are in close proximity to the Colorado River while the other four sites are desert oases.

In 1978 and 1979 Cardiff checked all historical sites and numerous potential sites both along the lower Colorado River in California and in the southeastern California desert area (Cardiff 1978, 1980). His searches resulted in identifying two locations where Elf Owls were present, one approximately 17 km NNW of Needles, San Bernardino County, and commonly referred to as the Soto Ranch (which also included a site at a small clump of willows about 3 km SE of Soto Ranch headquarters), and a second, about 35 km N of Blythe, Riverside County, near Water Wheel Camp. It was on the basis of the results of these surveys that the Elf Owl was listed in October, 1980 as 'Endangered'.

Current

Since listing, but prior to 1987, field researchers studying various bird species of concern along the Colorado River checked for Elf Owls in 1981 and 1983 (Serena, Hunter pers. comm.). These searches, while checking a few other sites, mainly have provided verification of occupancy by Elf Owls at both the Soto Ranch and Water Wheel sites (Table 2).

Table 1. Distribution of Elf Owls in California prior to 1978.

County	Location	Date	No. Found
Imperial			
	near Imperial Dam	1903	2
	"	1910	1
	Bard	1915	2
Riverside			
	Cottonwood Spr., Joshua Tree N.M.	1946	2
	"	1959	2
	"	1962	2
	"	1963	2
	"	1964	2
	"	1967	2
	"	1969	1
	"	1970	1
	Corn Spring	1972	2
	"	1973	2
	"	1975	1
	"	1976	1
	Wiley's Well	1976	2
	Coon Hollow	1976	2
San Bernardino			
	17.5 km NW of Needles	1969	1
	"	1970	4
	"	1972	2
	"	1976	2+
	"	1977	6+

Table 2. Distribution of Elf Owls in California since 1977.

County	Location	Date	No. Found
Riverside			
	near Water Wheel Camp	1978	2
	"	1979	
	"	1981	4
	"	1983	1
San Bernardino			
	~17 km NW of Needles (Soto Ranch)	1978	16
	"	1979	10
	"	1981	7
	"	1983	11
	"	1985	6

A contract has been let for the 1987 field season to resurvey previously checked sites, including the Soto Ranch and Water Wheel sites, and other potential Elf Owl habitat (35 sites in total). By mid-April Elf Owls had been located at the Soto Ranch and Water Wheel sites and at a new location, near Walter's Camp, approximately 20 km SSE of Palo Verde in Imperial County (Halterman pers. comm.).

VI. HISTORIC AND CURRENT ABUNDANCE:

Historic

Elf Owls probably have never been common in California. A single individual or a single pair is all that has been reported at any single historical location except the Soto Ranch. This is probably more the result of the anecdotal quality of historical observations of this species in California than the result of extensive surveys in a given area. Prior to listing, Cardiff's estimates for the Soto Ranch were five to ten pairs (including a pair at the 'willow clump' site in 1978) and an additional pair at the Water Wheel site.

Current

Since 1979, seven individuals (est. 5 pairs) and 15 individuals (est. 11 pairs) were reported at the Soto Ranch site in 1981 and 1983, respectively (Serena, Hunter pers. comm.). None have been found at the 'willow clump' site associated with Soto Ranch. At the Water Wheel site one individual and two pairs were reported in 1981 and 1983, respectively (Serena, Hunter, pers. comm.).

It's too early to determine the numbers of Elf Owls located in the 1987 survey. However, at least two individuals have been located from each of the three sites where this species has been found this year (Halterman pers. comm.).

VII. SPECIES DESCRIPTION AND BIOLOGY:

The Elf Owl is the smallest owl in North America, only five to five and one-half inches long. It is quite nocturnal, has a short tail and yellow eyes. Plumage is spotted with buff and white on a gray or brown base. The breast is white with rust or brown streaks. The top of the head has some rust color and the white 'eyebrows' are obvious.

The Elf Owl is migratory and only spends the breeding season in California. It probably arrives in March and leaves in October. Records of Elf Owls in California are from March 18 to early August with almost 70 percent coming from April and May, the height of the breeding season when males are very territorial.

The nest hole is selected by the male who also assists in the incubation of eggs. A clutch is two to five eggs, usually three, laid at two-day intervals. Incubation takes 14 days and young are ready to leave the nest by late June or early July.

The diet of the Elf Owl consists almost entirely of large insects, centipedes and scorpions. Small birds and amphibians occasionally are taken. The owls usually hunt from a low perch. Using their superb hearing to locate prey, Elf Owls capture most victims in their talons while on-the-wing. Food is taken to a perch where it is consumed.

VIII. HABITAT REQUIREMENTS:

Outside of California the Elf Owl is common in Saguaro cactus habitat and desert riparian habitat. Since saguaro is virtually non-existent in California, the Elf Owl is limited to the cottonwood-willow and mesquite riparian zone along the lower Colorado River. In areas devoid of saguaro, tree size and the proximity of other trees is critical for nesting. Here Elf Owls nest in deserted woodpecker holes which, when placed in larger trees with thick walls next to the cavity, offer insulation from high daytime temperatures.

Salt cedar habitat does not appear to be utilized by Elf Owls. Perhaps the lack of nocturnal insect activity as well as the lack of suitable nesting cavities are the main reasons Elf Owls aren't found in this now dominant vegetation type along the lower Colorado River.

Hunter, while conducting research on bird species of special concern along the lower Colorado River was involved in a vegetation mapping project conducted by Arizona State University for the Bureau of Reclamation (Anderson and Ohmart 1984). The Soto Ranch and Water Wheel sites where Elf Owls were found were classified as HM III and SM III. HM III is defined as an area where honey mesquite constitutes 95-100% of the trees and where there is no understory and the canopy layer exists from 4.5 to 6 m above the ground (Anderson and Ohmart 1976). SM III shows the same structure as HM III but the dominant tree species are screwbean mesquite and salt cedar. These two sites were unique; there were no other areas of mesquite habitat with trees as large or mature on the California side of the lower Colorado River. That the two remaining locations inhabited by Elf Owls are unique in tree size and maturity, indicates the poor chance of finding more than a very few other sites that may support Elf Owls. It also indicates that mesquite forest needs to have trees of a certain size to support Elf Owls. With the current clearing of mesquite habitat and areas of large cottonwood and willow trees, there is little chance of much improvement in the Elf Owl situation.

IX. CURRENT AND RECOMMENDED ACTION:

For the last two years, the Santa Cruz Predatory Bird Research Group and the Bureau of Land Management have been promoting the release of captive reared Elf Owls in Piute Wash, an area of seemingly suitable desert riparian habitat about 25 km NW of Needles and about 15 km from the Colorado River. In April, 1987 no Elf Owls were found in the area of the release site. It is possible that the the migratory nature of the Elf Owl causes introduced birds to return to other sites, maybe not

associated with the Colorado River. Surely this program doesn't address the major problem facing the Elf Owl, the lack of suitable habitat.

It is imperative that currently existing habitat be preserved and that potentially suitable habitat be developed and maintained so that it might support Elf Owls in the future. These actions could be expedited by:

1. Acquisition of the Soto Ranch.
2. Drafting a recovery plan for Elf Owls.
3. Identifying potential Elf Owl habitat and procuring conservation easements.
4. Initiating large-scale revegetation projects to recreate native riparian habitat.
5. Develop a coordinated planning approach working with the U.S. Fish and Wildlife Service, Indian tribes, the U.S. Bureau of Reclamation, and state (including Arizona) and local agencies to re-establish and enhance mature cottonwood-willow and mesquite riparian habitat along the lower Colorado River.

X. SOURCES OF INFORMATION:

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Hunter, W. C. 1984. Status of nine bird species of special concern along the Colorado River. Calif. Dept. of Fish and Game. Sacramento, Calif. Wildlife Management Branch Ad. Rep. No 84-2, 63 pp.

Ohmart, R. D., W. O. Deason, and C. Burke. 1977. A riparian case history: The Colorado River. U.S. For. Serv. Gen. Tech. Rep. RM-43:35-47.

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