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# STATUS AND DISTRIBUTION OF ELF OWLS IN CALIFORNIA, 1979

by

Steven W. Cardiff
Louisiana State University, Baton Rouge

## ABSTRACT

A survey to locate breeding populations of Elf Owls in California during spring and summer 1978 concluded there were probably no more than 20 pairs remaining. These owls were located at just two sites along the Colorado River. Resurveys of these two sites, plus resurveys of most other areas of past occurrence and surveys of several sites not visited during 1978, were conducted from May to July 1979. No additional Elf Owl populations were detected. A pair of Elf Owls was present at the site near Water Wheel Resort north of Blythe, Riverside Co., where a single individual was found in 1978. However, no additional pairs could be found at this location. A thorough search of the Elf Owl site north of Needles, San Bernardino Co., indicated a decrease from 10 pairs in 1978 to only 5 pairs in 1979. As a result of these additional data, the total Elf Owl population of California has been revised downward to an estimated maximum of 10 pairs. Due to impending agricultural encroachment on the Elf Owl site north of Needles, it is recommended that priority be given to securing this area of mesquite woodland. Conversion of this habitat to agricultural use would surely result in virtual extirpation of the Elf Owl in California.

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## RECOMMENDATIONS

1. Conduct additional surveys for breeding Elf Owl populations in those areas mentioned (see Discussion) which have not been checked.

2. Study nesting habits and breeding success of the Elf Owl populations north of Needles, San Bernardino Co., and north of Blythe, Riverside Co., to aid in management decisions.

3. Take immediate action to preserve the Elf Owl population north of Needles, San Bernardino Co., either through direct land purchases or through a subsidized non-development agreement. It would be most desirable to preserve as much land as possible between the Soto ranch and the California-Nevada state line. An additional benefit of this action would be to preserve one of the last sizeable floodplain vegetation tracts still existing along the California bank of the Colorado River. Although the area is not in pristine condition, it does support a number of species which are rapidly becoming scarce in California. A program of enhancement and rejuvenation would almost certainly make the area attractive to additional threatened species.

## INTRODUCTION

From April to July 1978, a study was conducted to determine the past and present status and distribution of the Elf Owl (Micrathene whitneyi) in California through field surveys and review of past literature (Cardiff 1978). The 1978 study was initiated by the California Department of Fish and Game in response to observed shrinkage of the Elf Owl's range and high rates of habitat loss. Objectives were to find and describe existing populations of Elf Owls, observe nesting success, determine habitat preferences and find reasons for population declines. This paper deals with a continuation of the project from May to July 1979 and presents and discusses results of new and repeat surveys.

## METHODS

All field work was conducted between 1 May and 3 July, 1979. During this period, Elf Owls are highly territorial and easily detected by their distinctive vocalizations which are readily given in response to taped calls. Survey techniques were the same as those used in 1978 (Cardiff 1978).

## RESULTS

### 1. Needles area, San Bernardino Co.

River edge thickets of riparian habitat along the Colorado River between 10.1 km (6.3 mi) upstream and 3.2 km (2 mi) downstream of the Needles bridge over the river were surveyed on 16-17 May. No Elf Owls were located. The thin fringes of only marginally suitable habitat, combined with loud car, boat, and train traffic and occasional brush fires apparently make this stretch of the river front uninhabitable for Elf Owls.

Elf Owls were not present at the "willow clump" site, 12.8 km (8 mi) N and 2.4 km (1.5 mi) W of Needles during surveys on 16-17 May. The species probably has been completely driven out of this location, which represents a tiny remnant of a once extensive tract of riparian habitat. The disappearance of Elf Owls here was to be expected since this site receives heavy human disturbance, is probably too small, and has insufficient cover. Starlings (Sturnus vulgaris) occupy many of the available nest cavities early in the season. In 1978 the site probably served only as a temporary residence for the single pair found, since it was the nearest available breeding site after the destruction of a large patch of habitat used by several pairs the previous year.

Resurveys of the Soto ranch area, 4 km (2.5 mi) W and 15.2 km (9.5 mi) N of Needles, were conducted on 17, 22 and 23 May and revealed a minimum estimate of five pairs of Elf Owls. This is a reduction from the estimated nine pairs present in 1978 although no additional habitat clearing had occurred. The best Elf Owl habitat occurs as a rectangular tract of mesquite (Prosopsis) about 0.4 km (0.25 mi) wide east to west and 1.6 km (1 mi) long north to south with the Soto ranch buildings at the SE corner. A thorough search along the edges of this tract produced records of one pair of Elf Owls at the SE corner near the ranch buildings and three pairs in close proximity to each other along the western edge. None were found along the north or east edges or along the edges of an east to west clearing through the center of the tract. This pattern leads me to believe that the owls prefer the habitat edges and do not penetrate deeply into the midst of the mesquite stand. I am at a loss to explain the absence of Elf Owls along much of the area's perimeter.

Another pair of Elf Owls was found in the slightly more open mesquite thickets about 0.4 km (0.25 mi) NE of the rectangular tract; additional pairs may be present in similar unsurveyed habitat which extends to the Nevada state line. The total area of probable Elf Owl habitat in the Soto ranch area is estimated at nearly 800 acres but in view of the reduced number of Elf Owls from the previous year, I estimate that not more than 10 pairs still breed here.

2. Areas between Blythe, Riverside Co., and the San Bernardino Co. line

Suitable areas along the Colorado River were surveyed on 19 June with emphasis on places not covered during 1978. All previously unsurveyed areas produced negative results, including the Clark ranch, 20.8 km (13 mi) by road north of Blythe, where small protected areas of suitable habitat are present. A single pair of Elf Owls was relocated at a site 20.8 km (13 mi) by road south of the San Bernardino Co. line near Water Wheel Resort, as described in 1978. It was definitely established that two individuals were present instead of just a single bird as found the previous year. A thorough survey of the sizeable tract of mesquite inhabited by this pair of owls produced no additional individuals although it appeared there was enough habitat for several pairs. A number of Screech Owls (Otus asio) were also present in the area. Nest site competition is perhaps intense between these species. Surveys of the Hall Island area were prevented by noisy motorcycle riders racing through the habitat. Attempts should be made to visit the area in the future.

3. Cottonwood Spring area, Riverside Co.

Cottonwood and Cotton springs in Joshua Tree National Monument were resurveyed on 18 June with negative results. It appears that Elf Owls have permanently vacated this locality. In the previous report, it was mentioned that rumors indicated Elf Owls might be present at

nearby hidden oases. However, Jon Atwood (pers. comm.), who has spent many field hours in the vicinity, has stated there are no other suitable oases in the immediate area and thus there is little chance Elf Owls still exist in the Cottonwood Spring region.

4. Corn Spring, Riverside Co.

A resurvey of this site also produced negative results and it seems certain that Elf Owls no longer persist here. The Bureau of Land Management has plans to move its campground at this location to a spot farther away from the actual oasis. This effort combined with introduction of nest boxes may entice the species back to Corn Spring.

5. Big Morongo Wildlife Reserve, San Bernardino Co.

A search of this park and riparian habitat along the stretch of Big Morongo Canyon below the park revealed no Elf Owls. Although the species has never been recorded here, it seems that the lush habitat would be highly attractive, especially since several other Sonoran Desert riparian species occur here.

6. Mitchell Camp-Walter's Camp-Three Fingers Lake, Imperial Co.

This area was not visited in 1978. A daylight survey was conducted in this area on 3 July. Although the Colorado River floodplain has a fairly lush growth of mesquite and scattered cottonwoods (Populus) and willows (Salix) in this area, virtually all of the potential Elf Owl habitat lies within the Arizona state line in the Cibola National Wildlife Refuge. Only a thin fringe of poorer quality vegetation exists on the California side of the border. From the daylight habitat assessment, it was decided that it was highly unlikely Elf Owls would be present. Floodplain is absent downriver from Three Fingers Lake and there is no suitable habitat below that point until the floodplain widens again below Imperial Dam.

7. Fort Piute, San Bernardino Co.

This area was not visited during 1978. This lush, isolated oasis is located about 46.4 km (29 mi) NW of Needles and was surveyed on 27 May. No Elf Owls were found. The area has been visited many times in the past by experienced observers and no Elf Owls have ever been recorded. Periodic flash floods through the area probably prevent the riparian habitat from ever becoming mature enough to support such species as Elf Owl, Wied's Crested Flycatcher (Myiarchus tyrannulus), and Summer Tanager (Piranga rubra).

## DISCUSSION

In the 1978 report, it was mentioned that there were two records of Elf Owls from dry desert washes at Coon Hollow and Wiley's Well in Riverside

Co. during August 1976. Further probes into the validity of these records has shown that the Wiley's Well report is completely erroneous. There is considerable doubt concerning the Coon Hollow record as well. It is best that both records be discarded for the time being, especially considering the unprecedented occurrence in this type of habitat.

The combined 1978 and 1979 surveys have resulted in fairly thorough coverage of most southern California regions capable of supporting Elf Owl populations. I feel reasonably certain that no undetected breeding sites remain in the state with the possible exception of three areas described as follows:

1. The Hall Island area along the Colorado River, 32 km (20 mi) N of Blythe and immediately NE of the Aha Quin trailer park, appears to have considerable amounts of mesquite although there are heavy infestations of arroweed and tamarisk and this may make the area only marginally attractive. The western edge of the site was surveyed in 1978, but an attempt to search the interior portions was thwarted by loud off-road vehicles. Return visits should be made to make sure Elf Owls are not present.

2. During 1979 it came to my attention that a population of Sahuaro (Carnegiea gigantea) exists on the NE slopes of the Whipple Mountains, San Bernardino Co. These Sahuaros are located over a 15.5 $km^2$ (6 $mi^2$) area with densities ranging from 5-20 per ha (2-8 per acre) with 104 total individuals present in 1972 (Brum 1972). Vandalism has apparently reduced this number somewhat in recent years. I was unable to visit the site during 1979, but the remote possibility that Elf Owls are present needs to be explored.

3. A complete survey should be made of the floodplain mesquite thickets that lie between the Nevada state line and those areas around the Soto ranch which have already been checked to determine if additional pairs of Elf Owls are scattered over this area.

The decline in the Elf Owl population north of Needles between 1978 and 1979 may either represent an actual population reduction or a possible 1978 overestimate since it is often difficult to determine territorial boundaries in the area. If the apparent 50 percent drop is real, then it is extremely alarming. It is unknown what might have caused such a decline since no visible changes had occurred during the period. In any case, the present population is dangerously small, and it would not take much of a disruption to exterminate the Needles Elf Owls.

Nearly every Elf Owl territory located during 1978-79 was situated at the perimeter of the occupied stand of habitat. This was especially noticeable at the rectangular Soto ranch tract north of Needles and at the site north of Blythe where Elf Owl territories were found at the sharp interface between mesquite thickets and agricultural fields and were absent from the interior of the habitat tracts. This "edge effect" territorial pattern could reflect any number of things including foraging area preferences or prey availability. It did appear that the two areas mentioned above were easily capable of supporting many more territories

than were actually present; and there were many "edge" sites, identical to occupied sites, that were vacant. The presence of unsaturated suitable habitat would lead one to believe that the population density is extremely low and that the birds are not increasing or maintaining stable levels. The few pairs that remain probably occupy the most highly favorable spots in the absence of intense competition for territories.

It is unfortunate that very little time has been spent in making detailed observations of nesting habits and breeding success since this type of information would be invaluable in planning the most feasible and effective ways of maintaining and increasing Elf Owl populations. However, the situation is now so critical that nothing short of swift habitat protection measures will preserve the species in California. If large amounts of time are expended on life history studies before taking any action to safeguard habitats, it will be too late. These two objectives should be pursued simultaneously.

The mesquite stands occupied by Elf Owls near Needles and Blythe are both located on prime agricultural land. The Needles tract is scheduled for clearing in the near future; plans for the tract north of Blythe are unknown. Preservation of the Needles tract is more urgent since most of the remaining pairs of Elf Owls are located here, but it would be desirable to acquire the area north of Blythe as well. The area north of Needles is probably the largest remaining expanse of undeveloped floodplain vegetation remaining on the California side of the Colorado River and should also be considered for its populations of Screech and Long-eared (Asio otus) owls, Bell's Vireo (Vireo bellii), and possibly Wied's Crested Flycatcher and Summer Tanager. Bird life in the area could also be enhanced by replanting of native trees and shrubs, installation of nest boxes, and control of introduced species in the area.

## LITERATURE CITED

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