

A PETITION TO THE STATE OF CALIFORNIA FISH AND GAME COMMISSION

for action pursuant to to section 670.1, Title 14, California Administrative Code, and sections 2072 and 2072.3 of the Fish and Game Code, relating to listing and delisting endangered and threatened species of plants and animals.

I. SPECIES BEING PETITIONED:

Common Name: Gila Woodpecker

Scientific Name: *Melanerps uropygialis*

II. RECOMMENDED ACTION:

(Check the appropriate categories.)

Endangered: X List: X
Threatened: Delist:

III. SUMMARY OF REASONS FOR RECOMMENDED ACTION:

(Provide a brief statement on why the action is being recommended. This should include an account of the status of the species involved and any factors listed in Section 670.1, Title 14, California Administrative Code, that threaten its survival. If the species is recommended for delisting, tell why any one or a combination of the aforementioned factors no longer threaten its existence.)

In California, the Gila Woodpecker (*Melanerpes uropygialis*) is a permanent resident of mature cottonwood-willow, and to a lesser extent, mesquite riparian forests of the of the Sonoran desert area (the low desert area of south-eastern California). The lower Colorado River historically has provided almost all of this habitat type in California. There, the Gila Woodpecker was regarded as common, and early in this century it expanded its range into the cottonwood groves of the Imperial Valley. Since that time the species has undergone drastic population decline attributable to the massive loss of mature riparian habitat in the Colorado River valley, and compounded by competition for nesting cavities by exotic European Starlings (*Sturnus vulgaris*) in the Imperial Valley. Due to this decline, the Gila Woodpecker was included o the California Department of Fish and Game's Bird Species of Special Concern List (Remsen 1978). In a recent extensive survey of bird populations and riparian habitat use along the Colorado River, Hunter (1984) estimated that there are approximately 200 Gila Woodpeckers left in California with relatively few successfully breeding pairs. The continued existence of this species in California is seriously threatened by further reduction of mature riparian habitat along the lower Colorado River due to water development projects and recent severe and prolonged flooding coupled with continued competition with introduced starlings for nest sites.

The Gila Woodpecker is a native species in serious danger of becoming extinct throughout all, or a significant portion, of its range in California due to a

combination of loss of habitat and competition, and should be classified as endangered pursuant to Section 2062 of the California Fish and Game Code.

SUPPORTING INFORMATION

IV. NATURE AND DEGREE OF THREAT:

(Discuss types of direct or indirect threat to each population, significant portion of range or habitat. Indicate immediacy of threat and magnitude of loss or rate of decline expected without protective measures.)

In California, Gila Woodpeckers are native residents that only exist along the lower Colorado River and in the Imperial Valley where they occupy remnants of the mature cottonwood-willow riparian forests. In these areas there are two serious problems facing the species (Hunter 1984): the loss of old-growth riparian cottonwood-willow forests and competition for nest sites with the exotic European Starling.

Hunter (1984) reports that in almost all historical accounts the lower Colorado River 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*). The flow of the river was calm in the 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). Further damage continues to occur. 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 water development and flood control projects. During the last three years there has been extensive, prolonged flooding along the lower Colorado River, causing serious habitat destruction and further reducing the remaining mature cottonwood-willow riparian forests.

The 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 and it is not used by the Gila Woodpecker. Alteration of river flow patterns also resulted in permanent flooding of former cottonwood and willow regeneration seedbeds. Flow pattern changes combined with salt cedar intrusion have prevented regeneration of naturally occurring cottonwood-willow and mesquite riparian forests.

In the early 1900's the Gila Woodpecker expanded its range into the Imperial Valley (Grinnell and Miller 1944) where, until recently, it occupied areas

with mature cottonwoods, such as parks, urban areas, ranches, and resorts. Remsen (1978) reports that the Imperial Valley population was reduced to a few pairs near Brawley and although habitat still exists there, areas formerly supporting Gila Woodpeckers now have many starlings.

With such extreme reduction of riparian habitat, competition with starlings for nest sites has become a major factor in reducing Gila Woodpecker numbers and in their inability to take advantage of what little is left of the existing habitat. Starlings force the abandonment of nest cavities by Gila Woodpeckers. The result is reduced woodpecker productivity with fewer young surviving the year to compete against starlings in successive years. Hunter (1984) documented problems that several breeding pairs of Gila Woodpeckers had with starlings on ranches and in parks. Starlings repeatedly forced abandonment of nests with eggs and/or fledglings and confiscated nesting cavities, causing extremely low reproductive success for the Gila Woodpecker pairs.

Hunter (1984) feels that the lack of native habitat coupled with reduced productivity due to starling interference will limit any recovery in the Gila Woodpecker population for the foreseeable future. Although starlings do not appear to be a problem at most riparian sites, the lack of suitable native habitat restricts woodpecker populations to privately-owned residences, resorts and parks where starlings definitely interfere with nesting success. Also, Hunter noted that there is little available habitat, only small isolated stands of cottonwood less than 50 acres in extent. These areas generally are not occupied by Gila Woodpeckers, because of their requirement for larger areas of suitable habitat. Although some young are produced, there is relatively little habitat available for them to disperse to after they fledge.

The problem of declining habitat for Gila Woodpeckers is critical since prolonged flooding in the early 1980's has likely degraded most of the remaining cottonwood-willow and mesquite riparian forest. Prompt action is needed to reestablish these habitats before Gila Woodpeckers disappear completely from the lower Colorado River valley and no longer occur in the State of California.

V. HISTORIC AND CURRENT DISTRIBUTION:

(Historic- Indicate historical range by county and physiographic description and number of historical sites of species occurrence. Attach California range map.)

(Current- Describe number and quality of known extant populations and assess potential for introduction to historical sites. Attach detailed maps (15' scale topographic) of extant occurrences.)

The Gila Woodpecker historically has been described as occurring in California along the Colorado River valley as far north as Fort Mohave and in the Imperial Valley (Figure 1) (Grinnell 1914, Grinnell and Miller 1944, American Ornithologists' Union 1957 and 1983, Hunter 1984). This area includes the southeastern edge of San Bernardino County, the eastern edge of Riverside County, and most of Imperial County in California.

GILA WOODPECKER

Historic Distribution in California

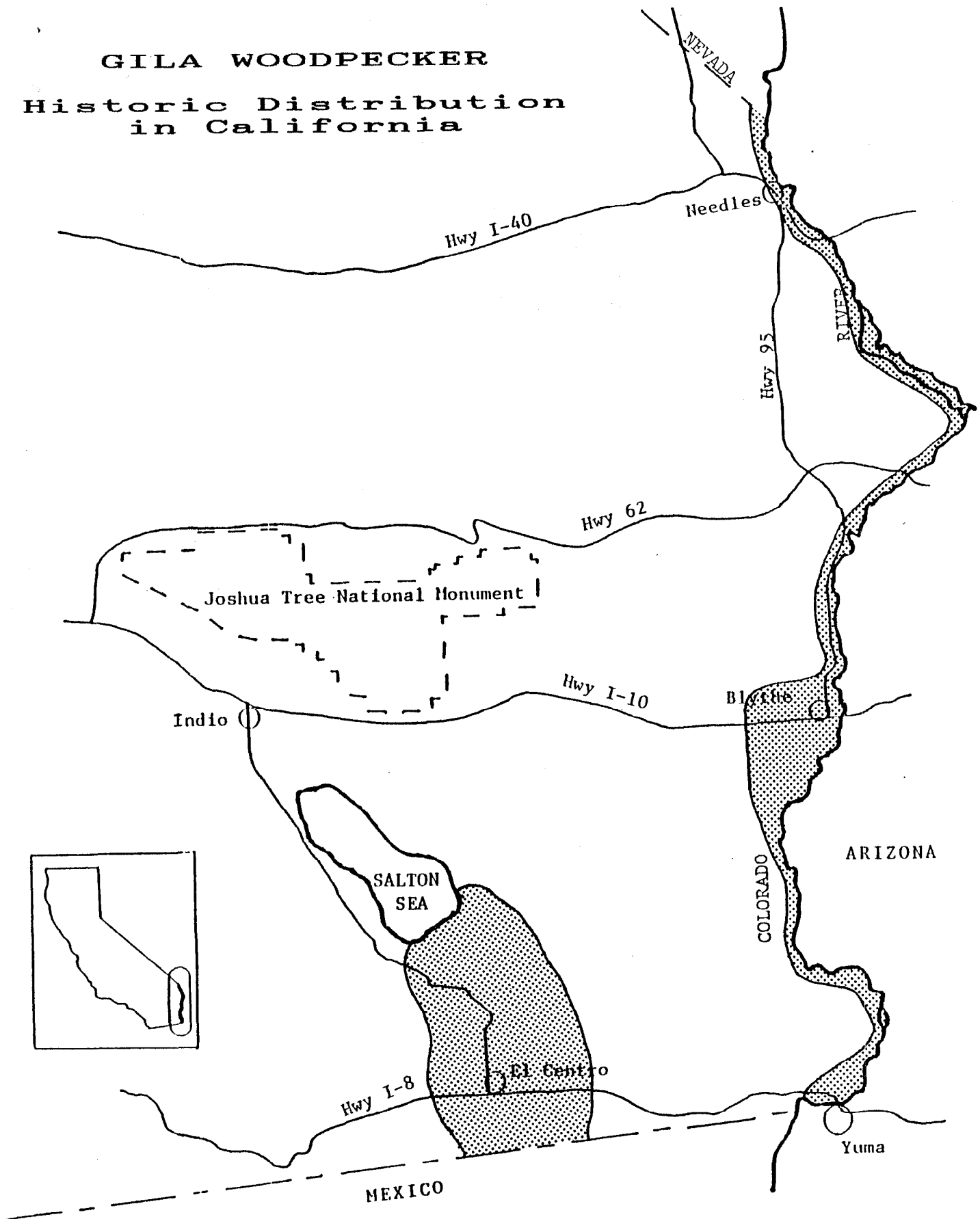


FIGURE 1. Historic Distribution of the Gila Woodpecker (*Melanerpes uropygialis*) in California; as described by Grinnell 1914, Grinnell and Miller 1944, and AOU 1957 and 1983.

Currently the Gila Woodpecker only occurs in scattered locations along the California side of the Colorado River. Several sitings have been made in the most recent surveys conducted along the Colorado River valley by Hunter (1984) and Laymon and Halterman (1986) (Figure 2). More precise locations of the birds observed in these two surveys are shown on Attachments "A" through "M" (USGS 15' and 7.5' quadrangle maps - **NOT ATTACHED IN PDF FORMAT**).

The near-term prognosis for introducing Gila Woodpeckers to historical sites is dim. The major reason for their decline is massive destruction of native riparian habitat, and they most likely now occupy all of the little remaining habitat that is suitable. Large-scale, long-term revegetation projects would have to occur in the Colorado River valley before introductions of Gila Woodpeckers to formerly occupied geographical areas can be considered. The existing population may be able to naturally expand into these areas as they are developed and slowly become suitable, making special introduction projects unnecessary.

VI. HISTORIC AND CURRENT ABUNDANCE:

(Provide historic and current population numbers, densities, vigor, sex and age structures and explanation of population fluctuations relative to natural events or threats.)

Historically, the Gila Woodpecker has been described as common, characteristic, and abundant throughout the Colorado River valley as far north as Fort Mohave (Coues 1866, Cooper 1869, Hunter 1984). Grinnell (1914) found them at every station along both sides of the river during his survey. After an early 1900's expansion of range, Gila Woodpeckers also were considered to be common in the Imperial Valley wherever there were cottonwoods (Grinnell and Miller 1944) and it was reported that every farmhouse had a pair (McCaskie in Remsen 1978).

Hunter (1984) estimates that there are presently only about 200 individual Gila Woodpeckers in California, with the actual breeding population size being much lower. In his recent survey of Colorado River bird populations he observed a total of 45 Gila Woodpeckers on the California side. Of these birds, 48% were using private ranches, residences or parks, and Hunter feels that almost all resorts with tall willows from Needles to Blythe will support one to three pairs, depending on size and number of tall trees present. All birds observed in riparian habitat along the river were in areas with cottonwood and willow trees, and of these birds, there were only eleven breeding pairs. Existing riparian vegetation along the Colorado River, now primarily consisting of exotic salt cedar, supports few Gila Woodpeckers, and the birds observed in the salt cedar forests were most likely young dispersing from established territories during the summer. Taking into account existing suitable riparian habitat, Hunter estimates that there are approximately 185 individuals in riparian vegetation, and adding to this the number of birds found in residential areas he comes to the estimate of 200. The fact that many of these are young dispersing into sub-optimal habitats in summer leads to the conclusion that the actual breeding population is much smaller.

Remsen (1978) reports that the formerly abundant population in the Imperial Valley is reduced now to a few pairs near Brawley. Hunter (1984) also

GILA WOODPECKER

Current Distribution in California

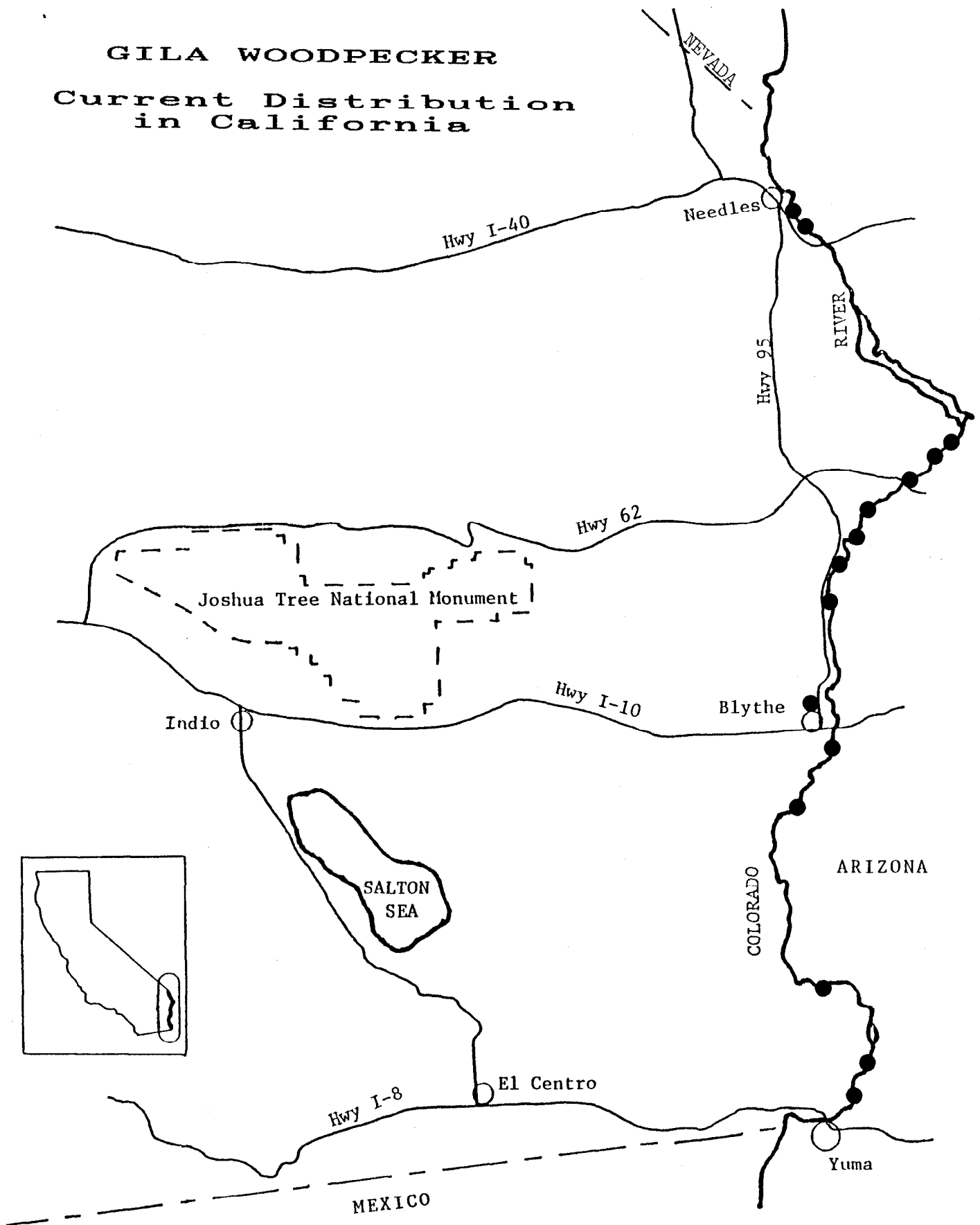


FIGURE 2. Current Distribution of the Gila Woodpecker in California; after Hunter 1984 and Laymon and Halterman 1986. (See Attachments "A" through "M" for exact locations.) ● = 1984-86 sitings

investigated several suitable areas near Blythe that should have supported Gila Woodpeckers but none were observed, and he found none in a area near Laguna Dam that reportedly has had many in the past.

Laymon and Halterman (1986) estimate that the total population of Gila Woodpeckers in California must be below 30 pairs, based on their summer 1986 survey of southern California riparian areas. They found only 27 individuals in nine locations on the California side of the Colorado River. They conclude that the Gila Woodpecker population must be considered gravely endangered in the state.

VII. SPECIES DESCRIPTION AND BIOLOGY:

(Include applicable information on species identification, seasonal activity or phenology, reproductive biology, mortality/natality, longevity, growth rate, food habits and use of habitat.)

Bent (1939) describes the Gila Woodpecker as conspicuous, and being noisier and more active than other birds. It is a medium-sized woodpecker with grayish-brown head, neck, and underparts and the back is narrowly barred with black and white. In flight there is a conspicuous white patch in the wing and at the base of the primaries and conspicuous black and white barring on the central tail feathers. The male has a red crown patch but this is visible only at short range. Gila Woodpeckers are non-migratory residents (Bent 1939, Grinnell and Miller 1944) and appear to be more abundant in summer than in winter (Brush, Anderson and Ohmart 1983).

Nests generally are restricted to sufficiently decayed cottonwoods and willows in riparian areas (and to Saguaros in desert areas of their range outside California). The nest opening is approximately 1.95 inches in diameter and the excavation continues horizontally about three inches before it turns downward into the main cavity, averaging 12 to 20 inches in depth. Both sexes participate in the excavation process and the same nest hole is usually used for more than one season. Since this species is morphologically well adapted for excavation in softwood rather than hardwood snags they are restricted to using cottonwood and willow snags (and Saguaros) for nest cavities (Brush et al. 1983).

Three to five eggs are laid in April or May and incubation is shared by both parents and lasts about two weeks. Fledglings stay with their parents until they are able to feed themselves, and after that a second brood may be produced if there is a sufficient food supply (Bent 1939).

Although nest hole openings can be oriented in any direction, the tendency is towards a northerly (Inouye, Huntly and Inouye 1981) or northwesterly (Korol and Hutto 1984) direction and this may be an adaptive response to high ambient temperatures, especially since a second clutch may be produced in July, the hottest (>38°C) month of the year (Inouye et al. 1981). Temperatures inside north-facing nests were consistently lower than the outside temperature and lower than temperatures in south-facing cavities.

Food items reported by Bent (1939) include insects (eg. ants, beetles, grasshoppers), Saguaro fruit and pulp, mistletoe berries (from mistletoe

parasitizing cottonwoods, oaks and mesquite), cactus pulp, berries, corn in fields, peaches and pears from fruit trees, and at a feeding station they ate watermelon, grapes, table scraps, meat (raw and cooked), suet and the softer parts of bones. Bent adds that they are known to systematically search for and consume birds eggs, and to collect galls and chisel out the contents. There has been no indication that food is stored.

Because they are not morphologically adapted for hardwood excavation, Gila Woodpeckers use nonexcavating foraging techniques such as probing and gleaning on snags and eating mistletoe berries (Brush et al. 1983). The sexes have different foraging behavior patterns (Martindale 1983). Males spend more foraging time pecking for insect larvae and spend much time guarding the nest. Females spend more time foraging, primarily searching for adult insects, and have a higher rate of delivering food to the nestlings. When ambient temperatures are high the birds tend to spend more time resting on the shady sides of vegetation.

The Gila Woodpecker. has been described as a dominant member of the desert riparian community and its excavations provide homes for many species of birds including Elf Owls (listed as Endangered), Cactus Wrens, Lucy Warblers, Ferruginous Pygmy Owls, Saguaro Screech Owls, Desert Sparrow Hawks, and Western (Purple) Martins (Bent 1939). Occasionally snakes, lizards, rats, and mice have been found in empty nest cavities. In riparian habitat along the lower Colorado River the major secondary cavity-nesting birds that use Gila Woodpecker excavations are the native Brown-crested and Ash-throated flycatchers and the exotic European Starling (Brush 1983).

Reuse and sequential use of successful nest cavities suggest that riparian cavity-nesters, including the Gila Woodpecker, are site-faithful (Brush 1983). This may be advantageous when nest sites are limited, but also can result in a greater potential for competition, especially from major secondary cavity nesters such as flycatchers and starlings. In riparian habitat along the lower Colorado River, Brush (1983) observed three pairs of starlings ousting Gila Woodpeckers from nests occupied by the woodpeckers in prior years. Since this aggression occurred during February, early in the year, and since snags were abundant at this site and provided numerous alternate sites for nesting and excavating, the woodpeckers in this case were able to use alternate nest sites and breed successfully while keeping the same territories. Sequential use of Gila Woodpecker nests can also occur, with or without aggression, and may in fact be an adaptation to avoid aggression. This strategy can be successful in riparian habitats since food is abundant in June and July and delayed nesting would not preclude successful fledging. In one case that Brush observed, successful prolonged aggression toward persistent Brown-crested Flycatchers allowed a pair of Gila Woodpeckers to fledge young, and afterwards the flycatchers took over the nest cavity.

VIII. HABITAT REQUIREMENTS:

(Describe physical habitat required for all life history stages of species including plant community, soils, microhabitat, slope, aspect, elevation, setting, climate and any other specific requirements.)

Grinnell and Miller (1944) described the Gila Woodpecker in California as a common resident of mainly old-growth riparian cottonwoods and willows of the southeastern desert areas. They also occurred at that time (early 1900's) in the belt of Saguaros on the desert mesa a few miles above Laguna Dam. Bent (1939) describes the center of abundance of the species as the southwestern desert mesa of Arizona where Saguaros occur, adding that they are especially common in river bottoms with a heavier growth of mesquite and in foothill canyons with cottonwoods, willows, and sycamores. The American Ornithologists' Union (1983) includes towns in arid regions as places where Gila Woodpeckers can be found.

Hunter (1984) found that Gila Woodpecker densities were significantly correlated with habitat type and that the birds prefer the densest types of old-growth cottonwood-willow riparian forest. Along the Colorado River there was a strong relationship between Gila Woodpeckers and high foliage density and diversity coupled with high numbers of cottonwoods and willows in the riparian habitat. No year to year trends in habitat use were observed, but habitat breadth broadened in summer, late summer and fall and narrowed during winter and spring of the same years. This seems to indicate that Gila Woodpeckers are most habitat selective during the breeding season, followed by a post-breeding broadening of habitat use during summer and fall indicating a possible dispersal of young into secondary habitats.

In their study of habitat selection and resource availability among cavity-nesting riparian birds, Brush et al. (1983) found that the occurrence of Gila Woodpeckers in southwestern riparian habitats is dependent on the availability of nest sites in softwood. The Gila Woodpecker is a primary cavity nester (they excavate their own cavities) whose population density is greatly dependent on the availability of snags. In both summer and winter Gila Woodpeckers preferred cottonwoods and were rare in mesquite or snagless. They foraged by probing and gleaning on snags and eating mistletoe. Brush et al. pointed out that this species is morphologically less well adapted for hardwood excavation and more suited for softwoods, which accounts for the greater use of nonexcavating types of foraging, dependence on softwood snags for cavity excavation, and less frequent occurrence in mesquite. Gila Woodpeckers did not use tamarisk snags at all. Grinnell and Miller (1944) also felt that the primary factor for their presence seemed to be tree trunks that are soft enough to allow nest hole excavation, especially if berry-bearing mistletoe is present.

IX. CURRENT AND RECOMMENDED MANAGEMENT:

(Explain existing state, federal, local or private management of known populations and available protection mechanisms. Indicate any methods or procedures useful for protecting the physical and biological features of the environment for conservation of the species.)

The primary reason for the decline of the Gila Woodpecker population in California has been the removal of essentially all of the native riparian habitat along the Colorado River. The river is near the western edge of the geographical range of this species, and although relatively common in Arizona, especially in areas dominated by Saguaros, the only places they occur in

California at this time is along the Colorado River in the remnants of old-growth riparian woodland, and possibly in the Imperial Valley. There are presently no existing state, federal, local or private management programs for known populations of Gila Woodpeckers aimed at insuring their continuing existence in California. Acquiring, creating, maintaining and enhancing riparian woodland along the Colorado River is the only way to insure the continued survival of the Gila Woodpecker in the state.

Gila Woodpeckers are limited by the availability of nest sites whether they are inhabiting riparian woodland or upland desert habitats. In order to excavate nest cavities, softwood snags such as cottonwood and willow, of a size large enough in diameter to accommodate a nest cavity, must be present. Mature (old-growth) cottonwoods and willows that have died and become snags in a dense riparian forest are the preferred nest sites. Additionally, Gila Woodpeckers will only inhabit riparian areas where the habitat is extensive enough to provide all resources necessary to allow for successful raising of broods. The more extensive the habitat, the more likely it is that they will occur there.

The only effective approach for long-term preservation of all lower Colorado River riparian forest species will be to restore the native habitat by careful revegetation of large tracts of cleared land or land vegetated by exotics along the banks of the river. Renovation and management of existing habitat can occur by selectively removing exotic salt cedar and replanting with native vegetation.

Experimental large scale revegetation (>50 acres) conducted under contract with the Bureau of Reclamation along the Colorado River has been quite successful (Hunter 1984) and might provide the solution for expanding habitat and increasing numbers of Gila Woodpeckers and other riparian forest bird species in California. In this experimental program, it took five growing seasons to convert desolate dredge spoilings with little vegetation and wildlife to a young healthy cottonwood-willow woodland, with growth of up to 10 feet per year. Although the trees on this site will not be large enough to provide snags of sufficient size for 25-50 years, careful interim management including development of artificial nest sites could attract Gila Woodpeckers and provide improved habitat, perhaps giving some fledged young a place to disperse to. Smaller revegetation efforts (<25 acres) generally will not provide enough continuous habitat even after fully mature to support Gila Woodpecker breeding pairs or to provide for the establishment of population centers to support their recovery. Smaller scale revegetation projects might be advantageous in areas adjacent to existing riparian woodlands, thus adding to the overall extent of suitable habitat.

Acquiring and preserving remaining tracts of mature old-growth cottonwood-willow riparian habitat that is presently in private ownership along the Colorado River, especially any areas that are fairly extensive, is a necessary, short-term approach to preserving the Gila Woodpecker and the other species of Colorado River riparian birds. However, very little of this habitat is left, and what is, is on Indian land and/or under the jurisdiction of other governmental agencies.

In lieu of, or /prior to, actual habitat acquisition, it would be prudent to initiate land stewardship and educational programs that stress the importance of these existing remnants of riparian woodlands to wildlife, as well as their

recreational value. The importance of snags to wildlife must be stressed. These programs should include farmers, ranchers, resort owners, native Americans, and governmental agencies.

Besides acquiring and safeguarding existing riparian woodland, additional management efforts should be made to make the habitat productive and attractive to Gila Woodpeckers, and to ensure the riparian woodland's continued existence. Proper control of flooding with the purpose of enhancing existing riparian forests is an extremely important management tool. River management activities and high water or prolonged flooding have the potential to either enhance or destroy existing woodlands. Prolonged abnormal flooding during late summer and fall or for several years in a row can cause the death of most or all mature riparian trees resulting in total destruction of the habitat.

A method of attracting Gila Woodpeckers to existing but sub-optimal riparian woodlands would be to provide additional nesting opportunities where few or none presently exist. Gila Woodpeckers can only excavate cavities in softwood snags of sufficient diameter to contain a completed nest cavity at a safe height above the ground. In riparian areas where the cottonwood-willow vegetation is young and fairly dense or if softwood trees are large but there are no snags, artificial snags and/or nest boxes could be provided, or a few selected trees of appropriate size could be girdled so that they become snags. This would not only benefit the primary cavity nester in this case, the Gila Woodpecker, but all of the Colorado River riparian bird species that are secondary cavity nesters dependent upon previously excavated nest-holes. This is also an approach to help lessen the impact of starlings on Gila Woodpecker nesting attempts, since the woodpeckers are able to breed while retaining the same territory even after being ousted by starlings as long as the opportunity exists to build or find other cavities.

Another possible short-term solution for enhancing Gila Woodpecker breeding efforts, would be to control starlings in the vicinity of breeding pairs in areas with limited nesting sites. Before this is undertaken it would be desirable to evaluate starling interference with breeding woodpecker pairs in riparian areas to find out if they are, in fact, as threatening there as they have been found to be in residential areas. Starling control in residential and ranch areas has been unsuccessful because of their extremely high numbers (Hunter 1984). In riparian areas, however, where the habitat is extensive enough and alternate nest sites are available, Gila Woodpecker pairs have successfully fledged young after being ousted from their original nest sites by starlings (Brush et al. 1983).

X. INFORMATION SOURCES:

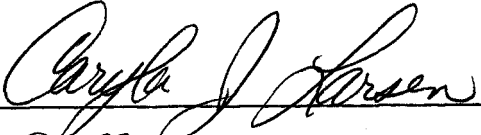
(Cite literature, specimen collection records and other pertinent reference materials. Attach documents critical to recommended action. List names, addresses and telephone numbers of persons cited.)

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