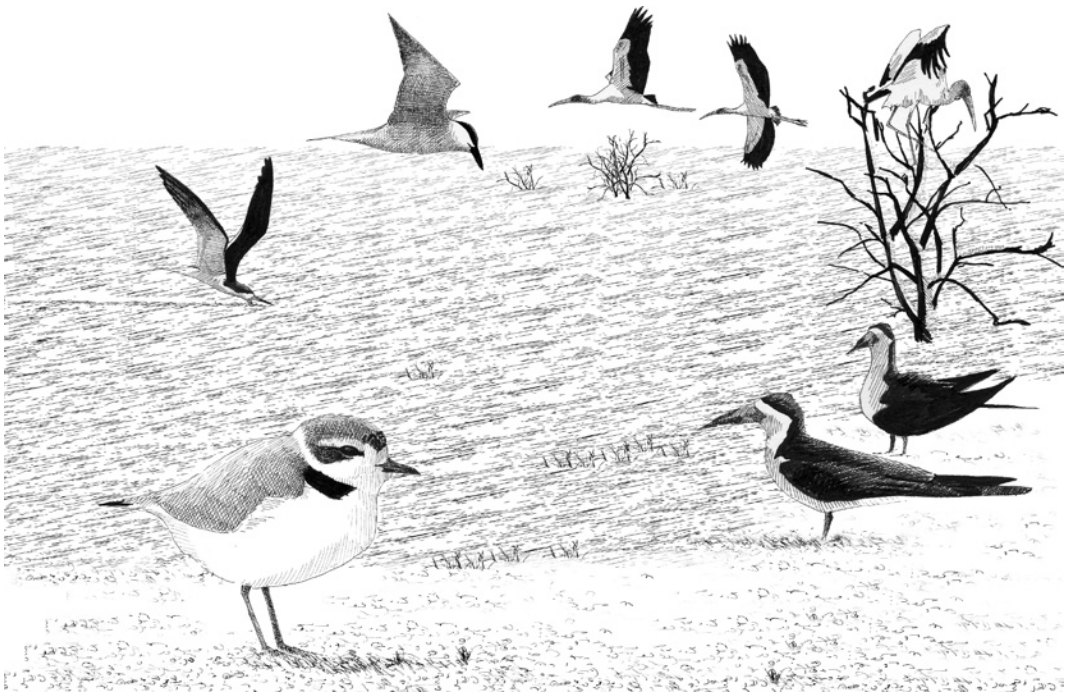


II

SPECIES ACCOUNTS



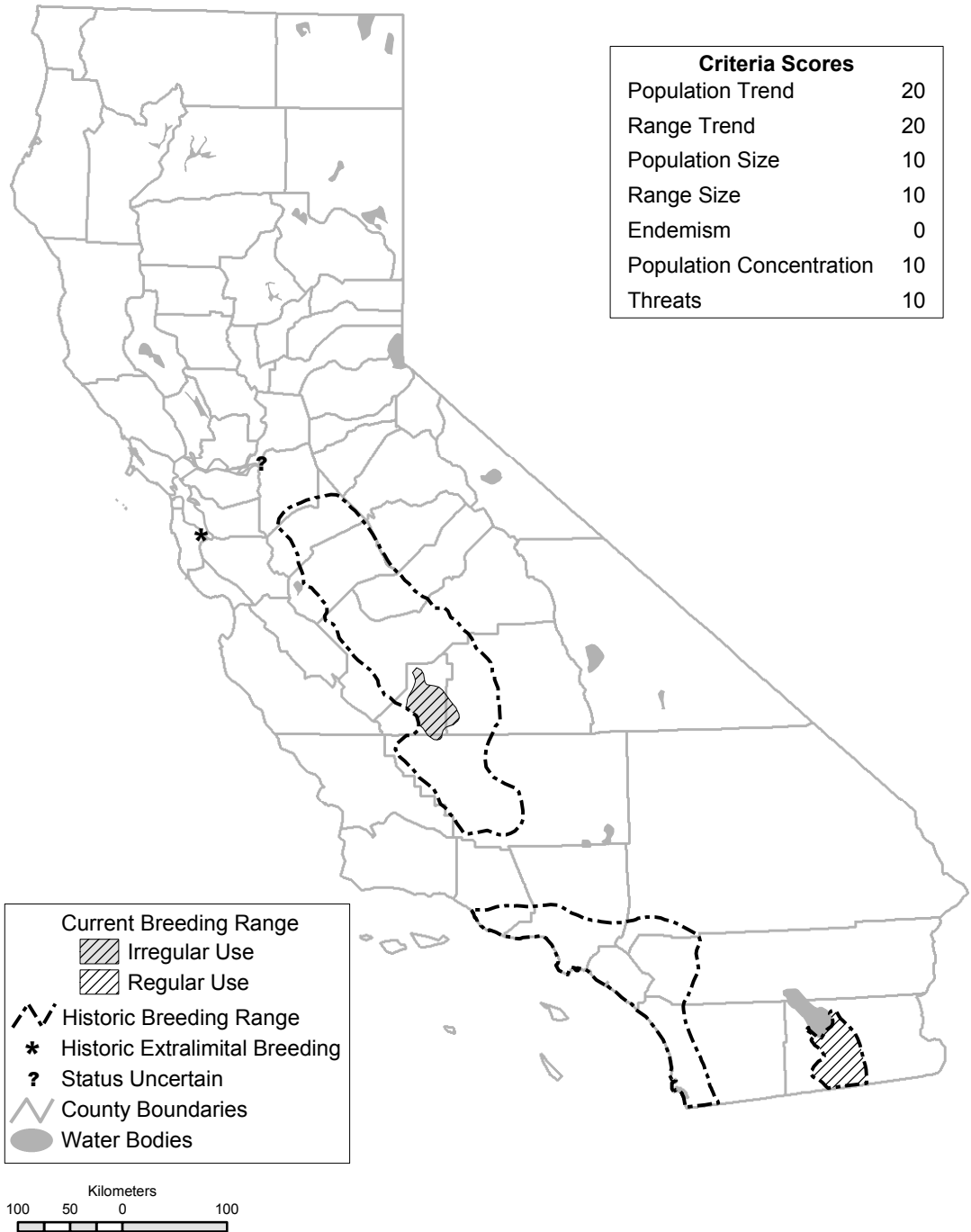
Andy Birch

PDF of Fulvous Whistling-Duck account from:

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FULVOUS WHISTLING-DUCK (*Dendrocygna bicolor*)

ROBERT A. HAMILTON



Current and historic (ca. 1944) breeding range of the Fulvous Whistling-Duck in California; historic status along lower Colorado River (not mapped) is uncertain. Numbers and range have declined dramatically. In recent years, birds have bred in very small numbers almost exclusively, and perhaps only sporadically, in the Salton Sea–Imperial Valley area.

SPECIAL CONCERN PRIORITY

Currently considered a Bird Species of Special Concern (breeding), priority 1. Included on the special concern list since its inception (Remsen 1978, highest priority; CDFG 1992).

BREEDING BIRD SURVEY STATISTICS FOR CALIFORNIA

Data inadequate for trend assessment (Sauer et al. 2005).

GENERAL RANGE AND ABUNDANCE

Monotypic, with *D. b. helva* (Wetmore and Peters 1922) generally no longer considered valid (references in Hohman and Lee 2001). Nearly cosmopolitan, with populations in Africa, Madagascar, India, Burma, Hawaii, the Caribbean, and throughout tropical America. Resident along Pacific coast of Mexico north to southern Sonora, where historically “rare” (Russell and Monson 1998). In the United States, breeds in southeastern California (formerly more widely), coastal Texas, coastal Louisiana, and eastern Florida (Hohman and Lee 2001). Most populations believed stable, but declining in Madagascar and southern Asia (Scott and Rose 1996, Grimmitt et al. 1999) and nearly extirpated from California. These ducks are prone to erratic, long-distance wanderings that may lead to range extensions if hospitable conditions are encountered (e.g., recent colonization of Florida and Cuba; Bellrose 1980). Most California breeders are assumed to winter in western Mexico (Bellrose 1980, M. A. Patten in litt.), although one banded in March 1956 at the Salton Sea, Imperial County, was recovered in November 1957 in southeast Texas (Bellrose 1980).

SEASONAL STATUS IN CALIFORNIA

Occurs mainly as a summer resident and migrant from mid-April (formerly mid-Mar) to late August (formerly Oct; Grinnell and Miller 1944, Patten et al. 2003). Breeding season extends from roughly late April through early August, exceptionally to early October, at least historically (W. B. Minturn unpubl. notes). Winter status poorly known historically, with occasional birds in the Central Valley at that season thought possibly to be mostly cripples or otherwise abnormal (Grinnell and Miller 1944). Further work has shown that in winter through the 1970s the species was irregular in central California (McCaskie et al. 1988), where now absent, and annual in the Imperial

Valley, where now casual (Patten et al. 2003). Hundreds or sometimes “thousands” of migrants or postbreeding dispersers formerly congregated at favored areas in late summer before migrating out of the state for winter (Dickey and van Rossem 1923, Patten et al. 2003).

HISTORIC RANGE AND ABUNDANCE IN CALIFORNIA

The species formerly bred in California at the south end of San Francisco Bay in Santa Clara County (two records), in the San Joaquin and Imperial valleys, and on the southern Pacific slope (Grinnell and Miller 1944). In 1879, marshes of the Sacramento–San Joaquin River Delta west of Stockton spanned approximately 32 km from east to west, and “a great many” Fulvous Whistling-Ducks were seen flying northward through this area 5–7 May 1879 (Belding 1905). No sign of nesting was reported, however, and marshes of the delta were largely reclaimed and cultivated by around the turn of the century (Belding 1905).

Establishment of extensive irrigation in the Los Banos area of the San Joaquin Valley in the late 19th century created particularly hospitable habitat for Fulvous Whistling-Ducks (Barnhart 1901, Tyler 1913, Grinnell et al. 1918). The first individuals were found there some time around 1895, the state’s first nest was detected there in 1896, and within five more years the birds had “increased with such rapidity that they [had become] common summer residents” (Barnhart 1901). Four decades later, the Los Banos area was the state’s “chief breeding ground” and remained one of few places in California where this duck was considered to be “common” (Grinnell and Miller 1944).

In the Tulare Basin of the southern San Joaquin Valley, Buena Vista Lake in Kern County was a local center of abundance. It held at least 50 nests in 1921, plus “thousands” of migrants during favorable years (Dickey and van Rossem 1923). Then measuring about 10 by 13 km, the lake presumably had very large expanses of suitable habitat, and the number of nesting birds was undoubtedly much higher than represented by the 50 nests actually counted (G. Gerstenberg, M. Peters in litt.).

Along the southern coast, Willett (1933) reported two nests at Nigger Slough (Harbor Lake), Los Angeles County, in 1903; small young in the San Luis Rey River Valley, San Diego County, in 1931; and birds “fairly plentiful” (but no nests) at San Jacinto Lake, Riverside County, in 1911. At the

time he wrote, however, he questioned whether the species still bred in the region.

In the Salton Sea area, nesting was recorded 13 km northwest of Calipatria, Imperial County, in 1936 and 1937; the species was considered a "common" transient in the Imperial Valley, where apparently it had "only recently begun to breed" (Grinnell and Miller 1944). Nesting was never documented along the lower Colorado River, though its former occurrence and subsequent decline in numbers (Garrett and Dunn 1981, Rosenberg et al. 1991) suggest that small numbers possibly bred there historically.

RECENT RANGE AND ABUNDANCE IN CALIFORNIA

By the middle of the 20th century, numbers of nesting and postbreeding whistling-ducks had declined greatly in the San Joaquin Valley and on the coastal slope of southern California. By the early 1960s, breeding was largely limited to areas around Mendota, Fresno County, and the Salton Sea, Imperial County (Anderson in McCartney 1963). The species has not been recorded in northern California away from the San Joaquin Valley since 1976 (McCaskie et al. 1988, Beedy 1993), and it is now very close to extirpation as a breeder in the state as a whole (see map).

Residents in the northern San Joaquin Valley recall that, during the 1940s, farmers provided shotgun shells to be used in nocturnal hunting of whistling-ducks during spring; one farmer reportedly hunted them from a small plane (M. Peters in litt.). Such persecution was problematic enough that, for a short period starting in 1952 or 1953, the U.S. Fish and Wildlife Service conducted a program to alleviate conflicts between whistling-ducks and rice growers of the San Joaquin Valley by employing biplanes to herd the birds out of rice fields and toward stockpiles of grain set out in fields near South Dos Palos, Merced County (R. Wilbur pers. comm.). Nesting in the Los Banos area continued through at least the early 1950s, with broods produced at "pot holes along the San Joaquin River bottoms and some of the better duck club properties" (Peters 2000). Starting around that time, however, water-intensive rice crops in the San Joaquin Valley were converted to earlier maturing varieties that did not require late-season irrigation. This provided inferior duck habitat, and over time the region converted to cotton and other crops that were of little or no value to Fulvous Whistling-Ducks (R. Wilbur pers. comm.).

In the southern San Joaquin Valley, the species was still nesting at Tulare Lake, Kings County, in 1946, when W. B. Minturn (unpubl. notes) recorded a pair with seven nearly fledged young "in a big drainage ditch" on the late date of 5 October. Tulare Lake was ultimately doomed by upstream diversion of tributary streams for irrigation (this alone had caused the lake to dry up for the first time in 1898), levee building and wetland reclamation, and dam construction on the Tulare Lake Basin's four rivers between 1953 and 1962 (R. Hansen in litt.).

At Mendota WA, numbers of Fulvous Whistling-Ducks recorded in the harvest totals declined from 136 in the period 1955 to 1960, to 35 from 1960 to 1970, to just one since 1980 (Peters 2000). From 1957 to 1960, personnel at Mendota WA saw "many" adults in summer but no nests or broods (Gerstenberg and Rey 2004). In May 1984 and 1985, approximately 10 adults were seen at Mendota Pool, at the junction of Fresno Slough and the San Joaquin River (J. Seay in litt.). Just to the south, at Mendota WA, the most recent records are of nine adults in August 1990, three in August 1991 (S. Brueggemann in Peters 2000), and two on 26 April 1992 (J. Seay in litt.). Observations in 1983 included one adult on 21 April and four adults and five ducklings on 24 June at Kern NWR, Kern County, and an adult with three young, plus seven adult-sized birds, from 26 July to 9 August, in flooded harvested barley fields in the Tulare Lake Basin, Kings County (Gerstenberg and Rey 2004, Kern NWR files). In the latter county, one whistling-duck was at the East Hacienda flood basin on 30 June 1982 and two were at the Hacienda evaporation basin on 19 July 1985 (Kern NWR files). In 2006, reports of Fulvous Whistling-Ducks included an adult at Pixley NWR, Tulare County, on 29 April; up to four birds (2 ad., 2 juv.) at "Dead Pig Ponds" about 13 km southeast of Corcoran, Tulare County, from 9 October to 18 November (fide S. Summers); and a "pair" (one shot by a hunter) at Kern NWR on 11 November (P. Williams in litt.).

Since the late 1970s, significantly more summer water has become available for wildlife management in the San Joaquin Valley (R. Wilbur pers. comm.). Recent estimates of potentially suitable nesting habitats in Merced and Fresno counties identified 2428 ha of wetlands and about 4047 ha of rice, and while several thousand ibis now nest in these areas, whistling-ducks have not responded in kind (Peters 2000). Perhaps not enough birds now return to California to permit successful colonization of such areas.

On the coastal slope of southern California, the last reported nesting locality was at Playa del Rey, Los Angeles County, where birds could be found until the early 1950s (Garrett and Dunn 1981).

In the Salton Sea area, at least 20 pairs nested in the Imperial Valley during the mid-1960s, and high counts of postbreeding birds at the Salton Sea from mid-August to early September, 1949 to 1951, ranged from 240 to 460 (Patten et al. 2003). Numbers of both breeders and postbreeders declined steadily through the 1990s. Presently, the Imperial Valley—around Finney and Ramer lakes and at the Alamo River delta near Red Hill—is the Fulvous Whistling-Duck's last California toehold. Up to five pairs were believed to have nested in the Imperial Valley during the 1990s, with the last confirmed breeding record furnished by a female with 10 young at Finney Lake on 27 June 1999 (Patten et al. 2003). A group of up to nine adults at sites in the Imperial Valley, 10–28 June 2002, showed no evidence of breeding (NAB 56:486), and the region's most recent records, of apparent migrants, are of two birds near Westmorland on 23 April 2003 (NAB 57:403) and seven in a flooded fallow field near El Centro on 19 April 2004 (NAB 58:433). While scattered breeding could still occur, the species is essentially extirpated from California in that role.

Since Fulvous Whistling-Ducks are reportedly “among the most abundant of captive waterfowl” (Todd 1996), occasional sightings away from known and potential breeding areas in the San Joaquin and Imperial valleys—particularly those in coastal areas—may involve escapees (e.g., Garrett and Dunn 1981). Naturally, the species' propensity for long-distance wanderings, particularly after breeding, must also be considered.

ECOLOGICAL REQUIREMENTS

The Fulvous Whistling-Duck is a species of freshwater and coastal marshes. In the United States, it shows a preference for rice fields and tall-grass areas flooded to a depth of <0.5 m, with some use of adjacent uplands (McCartney 1963, Hohman and Lee 2001). During the nesting season, rice fields “infested with weeds appear to be preferred over purer stands” (Meanley and Meanley 1959). Freshwater marshes with dense stands of emergent vegetation and open-water areas with floating aquatic plants are used “to a much lesser extent” than rice fields in the North American range as a whole (Hohman and Lee 2001), though such habitats were regularly used in California outside of

rice-producing areas (e.g., Shields 1899, Grinnell and Miller 1944).

Nests are typically constructed of marsh grasses and sedges (*Carex* spp.) and are placed over water within emergent swamps and on dry hummocks between ponds (Shields 1899, Bryant 1914). Bancroft (1901), however, found a nest “placed in a bunch of wire grass fully 500 feet from water” and published secondhand the account of nests being established “in grainfields fully one-half mile from water.” Other examples of nest sites include “an old night heron nest about eight feet up in a willow tree” and “inside of a stack of dried tiles” (J. G. Tyler unpubl. notes). The nest may have an overhanging canopy of vegetation and a ramp of vegetation leading to the nest cup, which is often lined with fine grasses instead of the more usual down (Shields 1899, Bent 1925, Bellrose 1980).

Fulvous Whistling-Ducks feed nocturnally and are almost totally granivorous as adults; birds obtain the seeds of various grasses, sedges, and other emergent vegetation by dabbling and diving (Landers and Johnson 1976, Hohman and Lee 2001). The types of seeds ingested vary depending on availability and whether the habitat selected is natural or agricultural (Hohman and Lee 2001). An association with rice fields has been widely noted, although in Louisiana the ingestion of rice itself was found to be largely limited to water-seeded fields during the first part of the nesting season, with weed seeds comprising the bulk of the diet in dry-seeded fields and in all fields in late summer and fall (Meanley and Meanley 1959). A later study of water-seeded rice fields in Louisiana found that rice was consumed in proportion to its availability, that the ducks showed significant feeding preferences for wild millet seeds (*Echinochloa* spp.) and aquatic earthworms (*Oligochaeta*), and that ingestion of animal foods did not exceed 4% at any time during the nesting cycle (Hohman et al. 1996). Duckling diet is poorly known but may contain a higher proportion of aquatic animals than that of adults (Turnbull et al. 1989a, Hohman and Lee 2001).

THREATS

As noted previously, many Fulvous Whistling-Ducks were undoubtedly shot in efforts to preserve rice crops, and hunting for sport or market may also have been considerable in years when the birds remained in the state into October (Grinnell et al. 1918, Dickey and van Rossem 1923). Large-scale hunting is no longer possible in the state, but

with the species' population at such a precarious level, even minimal losses to hunting must be considered cause for concern. Shooting on the wintering grounds may pose a greater threat; Fulvous Whistling-Ducks recently accounting for "9% of the waterfowl harvest in Sinaloa, Mexico" (Migoya and Baldassarre 1993 in Hohman and Lee 2001).

Contamination by the pesticide aldrin severely depleted Texas and Louisiana populations in the 1960s and 1970s (Flickinger and King 1972); elevated aldrin levels were present in 7 of 15 adults collected in Texas in 1983 (Flickinger et al. 1986), nine years after the substance was banned in the United States. In 1984–1985, low levels of organochlorines and organophosphates were found in 29 of 30 specimens from south Florida (Turnbull et al. 1989b), with contamination suspected to have originated in the United States and other countries (Hohman and Lee 2001). Harm to the species from toxic substances is not known in California, but the threat has not been assessed; contamination on the wintering grounds is perhaps more likely to affect the California population adversely.

Avian botulism apparently killed three young whistling-ducks in the Tulare Lake Basin in 1983 (Gerstenberg and Rey 2004) and at least two birds at the Salton Sea between 1996 and 2001 (U.S. Fish & Wildlife Service unpubl. data). These are small numbers, but high relative to the current population, and additional afflicted birds may not have been found.

MANAGEMENT AND RESEARCH RECOMMENDATIONS

- Protect occupied and potentially suitable nesting and foraging areas and restore or create additional habitat.
- Maintain water in brood ponds and semi-permanent wetlands until at least mid-August to accommodate this late-nesting species.
- Consider flooding additional wetlands in the San Joaquin Valley, particularly on federal and state refuges, through the spring and summer, while identifying and preserving areas suitable for foraging and nesting.
- Implement Peters' (2000) proposal to transplant Fulvous Whistling-Ducks from Louisiana to sites in the San Joaquin Valley over a three-year period, after determining the best potential release sites. Future management of such sites should emphasize

the actions specified above that promote the maintenance of viable whistling-duck populations into the future.

- Assess habitat suitability to determine whether wetland management techniques, pesticides, food availability, nesting substrate, or some other factor(s) prevent whistling-ducks from using seemingly appropriate habitats in the state.

MONITORING NEEDS

To monitor California's presently miniscule Fulvous Whistling-Duck population, personnel of the Salton Sea NWR and Imperial WA should coordinate annual ground surveys of suitable breeding habitat on public and private wetlands in the Imperial Valley. Unless the species shows signs of rebounding in the San Joaquin Valley, it is unlikely that ground surveys across that vast area would be worth the effort (M. Peters in litt.).

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