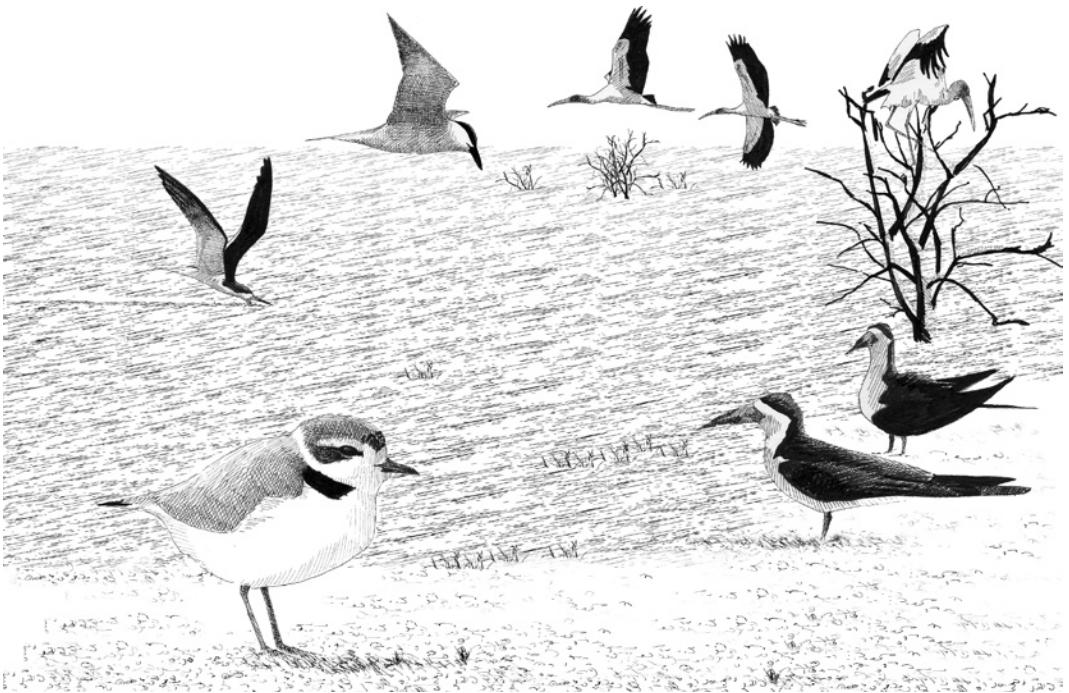


II

SPECIES ACCOUNTS



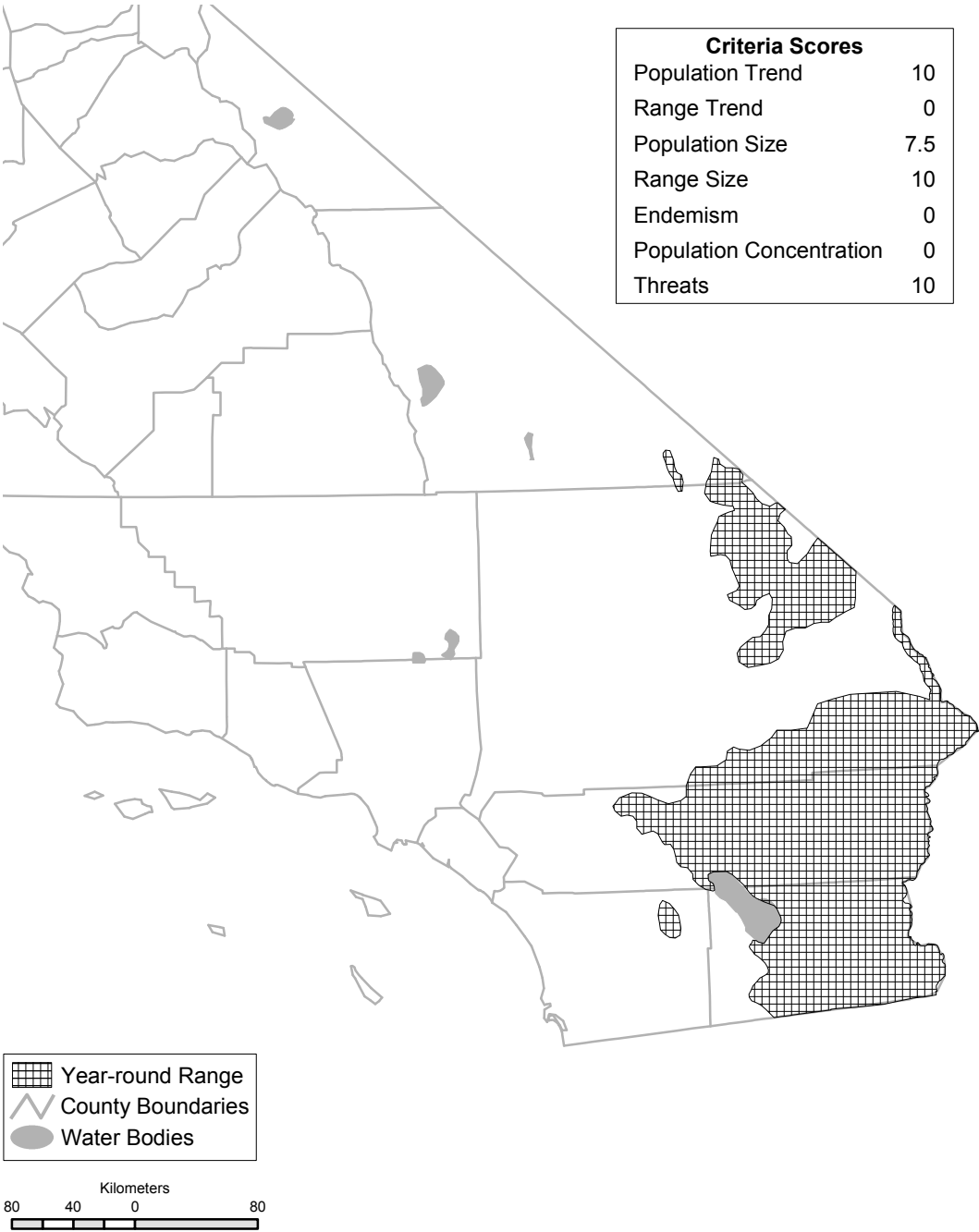
Andy Birch

PDF of Crissal Thrasher account from:

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CRISSAL THRASHER (*Toxostoma crissale*)

SAM D. FITTON



Year-round range of the Crissal Thrasher in California, where restricted to limited regions of the Mojave and Colorado deserts. Outline of the overall range is generally stable, though numbers have declined at least moderately.

SPECIAL CONCERN PRIORITY

Currently considered a Bird Species of Special Concern (year round), priority 3. Included on both prior special concern lists (Remsen 1978, 3rd priority; CDFG 1992).

BREEDING BIRD SURVEY STATISTICS FOR CALIFORNIA

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

GENERAL RANGE AND ABUNDANCE

Distributed in widely scattered patches of appropriate habitat throughout the southwestern portions of the United States from southeastern California east through southern Nevada, southwestern Utah, northern Arizona, and southwestern New Mexico to western Texas and south to south-central Mexico and northeast Baja California (AOU 1998). Three to four subspecies are currently recognized (AOU 1957, Davis and Miller 1960, Phillips 1986). *Toxostoma crissale coloradense* is the breeding resident subspecies in California, where more than half of its range lies. In the United States, this thrasher is apparently most abundant in central-southern New Mexico and the westernmost finger of Texas (Sauer et al. 2005). In California, it is most numerous along the Colorado River and less so to the west and north (Garrett and Dunn 1981).

SEASONAL STATUS IN CALIFORNIA

Year-round resident; breeds from February to late July (Cody 1999).

HISTORIC RANGE AND ABUNDANCE IN CALIFORNIA

Grinnell and Miller (1944) described the range of the Crissal Thrasher (*Toxostoma crissale*) in California as all along the Colorado River, west through the Imperial and Coachella valleys to Palm Springs, and the east slope of the Providence Mountains. These authors did not mention any appreciable range or habitat loss that had occurred up to that time. This thrasher was found from 190 ft (58 m) below sea level near the Salton Sea up to 4500 ft (1372 m), possibly up to 5400 ft (1646 m), in the Providence Mountains. Breeding, however, is chiefly below 500 ft (152 m; Grinnell and Miller 1944). Typical breeding locations were Providence Mountains, San Bernardino County; Colorado River, from Needles to Pilot Knob

(San Bernardino, Riverside, and Imperial counties), and at Fort Yuma (Imperial County); Palm Springs and the Coachella Valley (Indio, Thermal, and Mecca), Riverside County; and Alamo, Imperial County (Grinnell and Miller 1944). These authors considered numbers of this thrasher at the western periphery of its California range to be "small," but the species to be "fairly common" where mesquite habitat was well developed.

RECENT RANGE AND ABUNDANCE IN CALIFORNIA

Although this species is now known from more areas, the general outline of its range in California has probably changed little since 1944 (see map). Recent documentation of occurrence west to Borrego Valley, San Diego County; west and north to the Granite, New York, and Clark mountains, the Kingston Range, and Mesquite Lake, San Bernardino County; and north to the vicinity of Tecopa and Shoshone, Inyo County, appears to reflect increased observer coverage rather than a true range extension (Garrett and Dunn 1981, Cody 1999, J. Sterling pers. comm.). Since the mid-1970s, R. McKernan has likewise found this species in microphyll woodland and riparian washes scattered throughout southeastern San Bernardino and eastern Riverside and Imperial counties in the area between the Salton Sea and Colorado River. Examples of occupied areas are Palen Valley, McCoy Wash/Spring, Chuckwalla Well, Milpitas Wash, Blue Mountain, Mammoth Wash, Augustine Pass, Homer Wash, Ward Valley, Chemehuevi Wash, and Camino (R. McKernan unpubl. data).

The center of abundance in California continues to be the riparian habitat along the Colorado River (Rosenberg et al. 1991, Patten et al. 2003). This despite conversion to unsuitable agricultural lands, row crops, and orchards, which by 1986 left only 25% of the historic floodplain riparian forest (Rosenberg et al. 1991). Remaining suitable habitat has been degraded by altered flood and fire regimes and by changes to the plant species composition (Rosenberg et al. 1991). In the Salton Sea area, habitat loss, degradation, and fragmentation, from agricultural and urban development and invasive tamarisk (*Tamarix* spp.), has resulted in this thrasher becoming increasingly local and "uncommon" (Patten et al. 2003). There are probably fewer than 10 pairs in the disjunct population on the floor of Borrego Valley, where the mesquite habitat is threatened by lowering of the water table as a result of human water use (Unitt 2004). Along

the Amargosa River near Tecopa, Inyo County, C. McCreedy (pers. comm.) recently found densities of Crissal Thrashers higher than expected for that northern desert wash habitat.

ECOLOGICAL REQUIREMENTS

Rangewide, this species occupies a relatively large variety of desert riparian and scrub habitats from below sea level to over 6000 ft (1800 m). In California, the range of habitats is more restricted but still quite broad. The common factor, regardless of habitat type and species of shrub, is dense, low scrubby vegetation. In California, this thrasher occupies predominately riparian scrub or woodland at lower elevations (e.g., Colorado River valley), and the low, dense scrub associated with arroyos at higher elevations in the Mojave Desert, normally at or near the upper reaches of desert scrub vegetation and below the piñon-juniper foothill woodland of the slopes above (Garrett and Dunn 1981, Cody 1999). Dominant species of shrubs or small trees in occupied habitat include mesquite (*Prosopis* spp.), Catclaw (*Acacia greggii*), Ironwood (*Olneya tesota*), palo verde (*Cercidium* spp.), willows (*Salix* spp.), sagebrush (*Artemisia* spp.), Desert Almond (*Prunus fasciculatum*), Desert-thorn (*Lycium cooperi*), Bitterbrush (*Purshia tridentata* var. *glandulosa*), saltbush (*Atriplex* spp.), and tamarisk (Hunter et al. 1988, Rosenberg et al. 1991, Cody 1999, R. McKernan in litt.). These plant species are often found in loose sandy soil or alluvium (Grinnell and Miller 1944). In addition, this thrasher uses agricultural edges (e.g., citrus orchards) for foraging when adjacent to native habitat patches where they nest and forage (Rosenberg et al. 1991).

Nests are most often placed in the densest portions of shrubs (Engels 1940), averaging approximately 1 m above the ground, usually with a portion of the nest plant over the nest (Cody 1999). These well-concealed nest sites may help reduce nest predation and provide cover from the sun (Rosenberg et al. 1991, Cody 1999). Two broods are typically produced per season in the Colorado River valley, but the short winter season may allow for a third brood; birds in higher elevations may not raise a second brood (Cody 1999).

This thrasher is strongly territorial and maintains its territories year round in most areas, though some movement in the nonbreeding season has been noted in some populations (Cody 1999). Territory sizes vary from a low of 5 ha in optimum mesquite thicket to a high of 8–10 ha in less-preferred habitat (Laudenslayer et al. 1992,

Cody 1999). In a desert wash within the Granite Mountains, San Bernardino County, Cody (1999) often found territories discontinuous with conspecific territories centered over the wash but separated by seemingly unsuitable habitat.

The Crissal Thrasher forages on the ground using its long, curved bill to probe through friable soil and sift through leaf litter in search of prey. In an investigation of 32 stomach samples, Rosenberg et al. (1991) found 21 arthropod and two plant taxa. The relative abundance of different food items varied seasonally, with indices of insect abundance in winter only 12% of that in summer (Anderson et al. 1982). Beetles were most important throughout the year, whereas other prey were taken as available—caterpillars in fall, winter, and spring, maggots in summer, grasshoppers in late summer, and ants in winter (Rosenberg et al. 1991). Thrashers also occasionally take small lizards (Bent 1948). They consume fruits, berries, and seeds to a minor degree, mostly from October to April (Cody 1999). Water is often present at occupied sites, and while the species is known to drink water, its presence is not thought to be a critical habitat component (Dobkin and Granholm 1990, Cody 1999).

Some movement in elevation (Engels 1940) and seasonal shifts in habitat use (Anderson et al. 1982, Rice et al. 1983, Rosenberg et al. 1991) have been noted. Rosenberg et al. (1991) reported that population densities tended to increase slightly in tamarisk and Screwbean Mesquite (*Prosopis pubescens*) in late summer and fall, when declines were first noted in the thrasher's primary habitat of Honey Mesquite (*P. glandulosa*), but they were uncertain whether this indicated later breeding in suboptimal habitats or actual habitat shifts by thrashers. Rice et al. (1983) found greater use of tamarisk and cottonwood habitats in spring and of willow in fall.

The factors that primarily regulate this thrasher's population are unknown. In general, however, overall population size likely is regulated by the extent of various types of breeding habitat (Cody 1999).

THREATS

The extent and severity of threats to this species have not been well studied. However, the loss and degradation of this thrasher's requisite habitats—riparian areas, desert washes, and patches of mesquite—is an ongoing and primary threat (Laudenslayer et al. 1992). For example, where highest reported densities for this species in

California occur along the Colorado River, much of the riparian habitat has been converted to agriculture, a smaller amount to urban development.

Riparian habitat restoration is ongoing along the Colorado River, and Crissal Thrashers have been documented using these revegetated areas (Rosenberg et al. 1991, Cody 1999). Further, the stabilization and channelization of the Colorado River has been credited with increasing the amount of Screwbean Mesquite, which forms a plant community suitable for this species. This positive development, however, has been partially countered by clearing and burning of important mesquite stands north of Blythe (Rosenberg et al. 1991). Regardless, it is unlikely that the increase in suitable mesquite and restored habitats has offset the large amount of habitat lost to agriculture and urban development (Rosenberg et al. 1987, 1991).

Invasion of riparian areas by the exotic invasive tamarisk has the potential to impact this species. However, this thrasher has been documented using tamarisk habitat in the lower Colorado River as well as to the east in Arizona, New Mexico, and Texas (Hunter et al. 1988). By contrast, the loss of mesquite to tamarisk results in the loss of Crissal Thrashers in the Salton Sea area (Patten et al. 2003), indicating that this species may respond variably within California to invasive woody plants and loss of Honey Mesquite. The quality—for reproduction and survival—of native versus non-native tamarisk habitats has not been studied.

Though the Crissal Thrasher is apparently more vagile than other sickle-billed thrashers (Laudenslayer et al. 1992), increasing distances between occupied habitat patches could leave these occupied areas functioning as population islands and make birds more prone to extirpation (Soulé 1987).

It is likely that this species is vulnerable to certain types of disturbance. Desert washes and riparian areas are often the locations of off-highway vehicle trails (Remsen 1978). High-intensity recreation use along these narrow corridors could negatively affect this species. Disturbance to this species' habitat by livestock could change its structure enough to render it unsuitable for thrasher use. As elsewhere in California, desert habitats have been changed by the addition of non-native annual plants, which may reach abundances that increase the risk and intensity of fire, the effects of which are unknown for this thrasher.

Some native and non-native predators have increased as a result of agricultural and urban

development. The increase in species such as the Common Raven (*Corvus corax*) and American Crow (*Corvus brachyrhynchus*) could augment nest predation rates on Crissal Thrashers. Common Ravens have been seen along the Colorado River walking through and perched on riparian habitat in an obvious attempt to find prey (W. Boarman pers. comm.).

MANAGEMENT AND RESEARCH RECOMMENDATIONS

- Maintain and restore dense, low scrub (especially <3 m) in riparian, desert wash, and higher-elevation thrasher sites.
- Map the full extent of potential habitat and its occupancy by thrashers.
- Use marked populations to determine the species' ability/tendency to move within and between habitat areas.
- Determine the importance of the populations along the Colorado River, the species' center of abundance in the state, in genetically linking other populations away from the river.
- Initiate demographic studies to determine population viability and the primary factors that influence it (e.g., patch size, habitat type).
- Study the effect of tamarisk invasion in riparian areas on breeding density, various components of reproductive success (e.g., clutch and brood size, nest success), and site fidelity.
- Study the potential impact of various disturbances with particular attention to off-road vehicle use.
- Evaluate whether habitat restoration provides suitable habitat by making comparisons (e.g., breeding density, nest success, site fidelity) with reference sites. Use results to provide specific restoration and management recommendations.

MONITORING NEEDS

The state's breeding habitat should be mapped and monitored for changes in areal extent. Current monitoring strategies (i.e., Breeding Bird Survey and Christmas Bird Count) are inadequate for this species because of its patchy and/or linear distribution and its early commencement of breeding (i.e., peak singing). Standard extensive monitoring protocols (e.g., point count surveys) should be used and adjusted for space and timing issues specific to Crissal Thrashers. A subset of breeding populations

should be intensively monitored annually statewide using territory mapping and nest monitoring, stratified by habitat type, to determine long-term trends in breeding numbers and nest success.

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