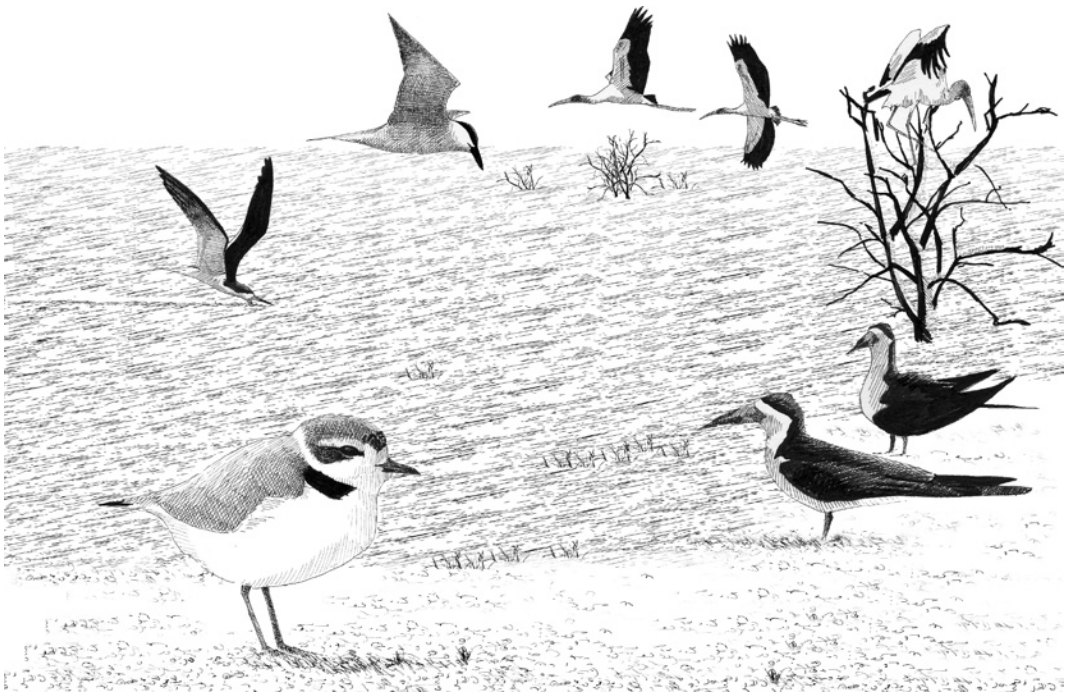


II

SPECIES ACCOUNTS



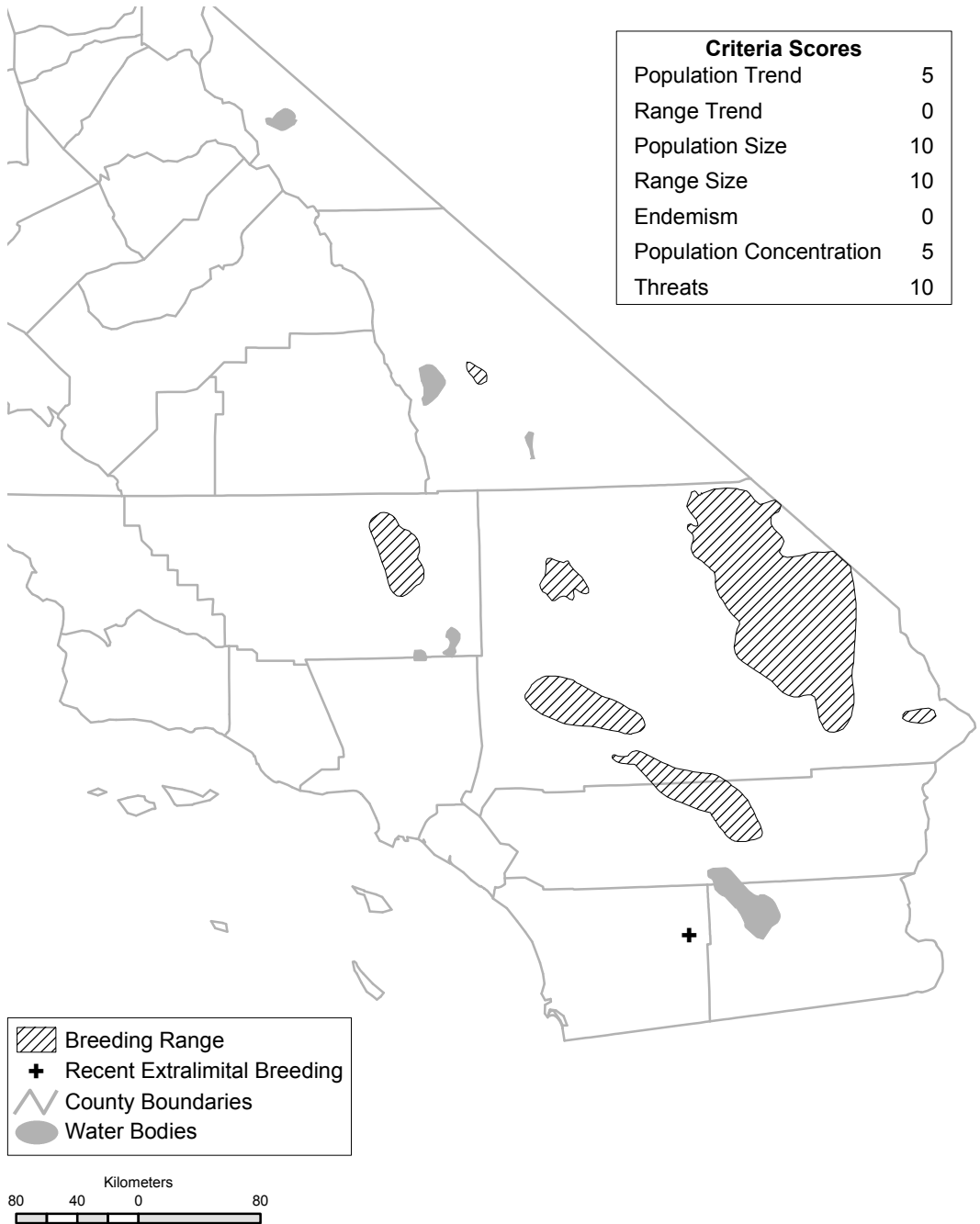
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BENDIRE'S THRASHER (*Toxostoma bendirei*)

JOHN STERLING



Breeding range of the Bendire's Thrasher in California. An increase in the known breeding range in the latter half of the 20th century appears to reflect greater observer coverage rather than thrasher expansion. A sharp decline in numbers in the western Mojave sometime between the late 1980s and 2001, apparently now reversed, may be indicative of annual variation in the thrasher's response to fluctuating climatic conditions or other forces influencing population dynamics at the edge of the species' range.

SPECIAL CONCERN PRIORITY

Currently considered a Bird Species of Special Concern (breeding), priority 3. Included on the list since its inception (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

The breeding range of the Bendire's Thrasher extends from southern Nevada, Utah, and Colorado south through southeastern California, Arizona, and western New Mexico to Sonora, northern Sinaloa, and extreme northern Chihuahua, Mexico. The winter range encompasses southern Arizona, southwestern New Mexico, and Sonora and northern Chihuahua (England and Laudenslayer 1993). There is little information on the abundance of this patchily distributed species. Relative abundance survey-wide on Breeding Bird Surveys, 1968–2004, was 0.38 birds per route ($n = 44$ routes; Sauer et al. 2005). Abundance can vary greatly annually, apparently in response to climatic variables such as rainfall (see below).

SEASONAL STATUS IN CALIFORNIA

Occurs primarily as a summer resident in California from March to late August (rarely Oct or later); breeds from late March to late July, and most birds leave the state by mid-August (Garrett and Dunn 1981, England and Laudenslayer 1993).

HISTORIC RANGE AND ABUNDANCE IN CALIFORNIA

The known historic range in California included only a few localities scattered in the Mojave and northern Colorado deserts. Documented records were from Palm Springs and Whitewater, Riverside County, and from Morongo Pass, Victorville, Lanfair Valley, and Cima, San Bernardino County (Grinnell and Miller 1944); there also is a nest record for 56 km southeast of Needles, San Bernardino County (WFVZ nest record). Grinnell and Miller (1944) stated that the Bendire's Thrasher population in California was "far scattered and aggregate numbers [were] small." The species was described as "fairly common in May, 1896" (Heller 1901) near Warren's Wells in Joshua Tree National Park. However, sporadic surveys

within the park from 1945 to 1960 failed to find this species (Miller and Stebbins 1964).

RECENT RANGE AND ABUNDANCE IN CALIFORNIA

Although the current range in California includes many locations where thrashers were unknown prior to 1945, this most likely represents a substantial increase in survey effort rather than a range expansion in recent decades. Prior to their extensive surveys in 1986 and 1987, England and Laudenslayer (1989a, b) summarized all documented breeding season records from the state within the following areas: (1) Eastern Mojave Region, the southern area of Clark Mountain, Cima Dome, Mid Hills, Lanfair, Gold, Pinto, and Round valleys, and Granite Pass between the Granite and Providence mountains, San Bernardino County; (2) Southern Mojave Region, in the vicinity of Lucerne Valley/Victorville, Yucca Valley/Pioneertown, and in Joshua Tree National Park, San Bernardino County; and (3) Colorado Desert Region, the Turtle Mountains and elsewhere between Needles and Blythe, San Bernardino and Riverside counties (see map).

England and Laudenslayer (1989a, b) greatly expanded knowledge of the range and abundance of the Bendire's Thrasher by surveying for this species throughout California's Mojave and (northern) Colorado deserts in 1986 and 1987. They surveyed 44 transects, but only 23 of these in both years. Areas where they found previously unreported or poorly documented populations were around Kelso Valley and Butterbrecht Spring, Kern County; the Old Woman Mountains area, the north side of Clark Mountain, Shadow Valley, upper Fenner Valley, north of Cima Dome, Ward Valley, Apple Valley, and within and near the Superior Valley north of Barstow, San Bernardino County; and Lee Flat, Inyo County. All breeding season records are from elevations of 1900–5800 ft (575–1775 m), but most are from 3100–5000 ft (950–1525 m). Limited repeat surveys in March–May 1996 and April–May 1998 produced detection rates in the Lanfair Valley that were similar in 1996 but considerably lower in 1998 compared with 1986–1987, whereas in the Providence Mountains they were somewhat lower in both 1996 and 1998 than in 1986–1987 (S. England and W. Laudenslayer Jr. unpubl. data).

Outlying nesting records from south or east of the known range are from Chemehuevi Wash (east of U.S. 95), San Bernardino County (in 2003 and 2005; C. McCreehy/PRBO in litt.), and 4 km

southwest of Ocotillo Wells, San Diego County (in 1993, following a very wet winter; Unitt 2004).

In a follow-up to the 1986–1987 surveys in 2001, observers used the same transects and points but only in the western and southern Mojave Desert, on the periphery of the species' range. This subset of 28 transects was surveyed two to three times versus once in 1986 and/or 1987. Only 3 Bendire's Thrashers were detected in 2001 versus 31 and 23 in 1986 and 1987, respectively (Jones & Stokes 2001). During 2001, southern California was undergoing a severe drought, and it is likely that these survey results indicate a population decline in response to these dry conditions. Since 2001, there have been no follow-up surveys, but during 2005, which had substantial winter and spring precipitation, there were many reports of Bendire's Thrashers throughout the Mojave, including breeding in the far western Mojave in Kelso Valley, Kern County, and in Lee Flat, Inyo County, at the northern outpost of the species' range (NAB 59:656, SPCR files).

Evidence of annual variation in both distribution and abundance in the Mojave comes from studies of the avifauna of Joshua Tree National Park. Miller and Stebbins (1964) described numbers of Bendire's Thrashers in Joshua Tree as "distinctly variable from year to year." Heller (1901) considered them fairly common at the western edge of the park in 1896, but Miller and Stebbins (1964) found them absent in Joshua Tree during spring field trips in 1945–1947, 1951, and 1960. Similarly, Bendire's Thrashers have subsequently been found at Joshua Tree (Garrett and Dunn 1981; England and Laudenslayer 1987, 1989b), but they were not detected there during surveys in 2001 (one was found just south of the park).

England and Laudenslayer (1989a) strongly stated that they had an "inadequate understanding of Bendire's Thrasher ecology and populations to draw conclusions about population trends." Apparently, no research since has improved upon this state of knowledge.

ECOLOGICAL REQUIREMENTS

The ecological requirements of Bendire's Thrashers in California are largely unknown. Generally, they are closely associated with plants in the genera *Yucca* and *Opuntia*, as well as "firmly packed dirt" with less rocks, sand, and desert pavement than other Mojave soil types. Bendire's Thrashers generally avoid areas with steep slopes and rocky terrain. They are found infrequently in areas with hard, rocky, or loose sandy soils, and these areas,

including the Antelope Valley, may be unsuitable for sustaining breeding populations (England and Laudenslayer 1987, 1989a, b; England 1998).

In the Mojave Desert, nearly all Bendire's Thrashers breed in Mojave desert scrub with either Joshua Tree (*Yucca brevifolia*), Spanish Bayonet (*Yucca baccata*), Mohave Yucca (*Yucca schidigera*), cholla cacti (*Opuntia* spp.), or other succulents. They selectively occupy areas with high density and cover of these species. However, density of Joshua Trees and height of perennial shrubs do not predict the presence of Bendire's Thrashers. The composition of plant species varies by location. At higher elevations in the east Mojave, some thrashers occupy areas dominated by Blackbrush (*Coleogyne ramossissima*), with scattered junipers (*Juniperus* spp.), columnar cholla cactus, and Joshua Trees. At Lee Flat at the north end of their range, these thrashers occupy areas with a sparse overstory of Joshua Trees and shrub cover primarily of Shadscale (*Atriplex confertifolia*), Winter Fat (*Krascheninnikovia lanata*), Spiny Menodora (*Menodora spinescens*), and Spiny Hop-sage (*Grayia spinosa*). Other habitats used consist of a variety of plants in association with columnar cholla cactus, Joshua Tree, Mojave Yucca, or Spanish Bayonet. These include Creosote Bush (*Larrea tridentata*), Burrobrush (*Hymenoclea salsola*), Mormon Tea (*Ephedra nevadensis*), Burro-weed (*Ambrosia dumosa*), and Big Galleta (*Pleuraphis rigida*), as well as California Buckwheat (*Eriogonum fasciculatum*), Cooper Box Thorn (*Lycium cooperi*), Anderson Box Thorn (*L. andersonii*), rhatany (*Krameria* spp.), Bladder Sage (*Salazaria mexicana*), and goldenbush (*Ericameria* spp.; England and Laudenslayer 1987, 1989a, b; England 1998). At Chemehuevi Wash, three nests were built in Blue Palo Verde (*Cercidium floridum* ssp. *floridum*) and one was built in box thorn (*Lycium* sp.). All four nests were placed on the edge of the wash's woodland corridor, that is, the palo verde/creosote interface (C. McCreedy/PRBO unpubl. data).

Bendire's Thrashers place their open-cup nests, made of sticks and lined with soft materials, 0.2–6.1 m (typically 0.7–1.5 m) high in shrubs, trees, and cacti (England and Laudenslayer 1993). In California, most pairs raise a single brood, although a record of a second brood suggests that they may at least occasionally raise more than one (England and Laudenslayer 1989a, 1993). There is no information on breeding site fidelity, reproductive success, or annual survivorship in California (England and Laudenslayer 1993).

These thrashers forage for ants, termites, insect larvae, grasshoppers, beetles, and some fruit and seeds, most often procured on the ground but

occasionally gleaned or plucked from vegetation (England and Laudenslayer 1993).

THREATS

Housing and agricultural development are grave threats to Bendire's Thrasher populations (England 1998). This is especially the case in the West Mojave, where many areas (e.g., Apple Valley, the Yucca Valley–Landers–Joshua Tree region, Indian Wells Valley, and Lucerne Valley) have been, and are likely to continue to be, heavily developed. Within the thrasher's range, there are large military bases that will probably not be developed but that have military operations that degrade or destroy thrasher habitat. These bases include Fort Irwin, Twenty-nine Palms Marine Corps Base, Edwards Air Force Base, and China Lake Naval Weapons Center. Other direct threats include the removal of yuccas and cholla cacti as well as off-road vehicle disturbance during the breeding season. Fortunately, some Bendire's Thrasher populations are currently protected from many of these threats by the Joshua Tree National Park, Death Valley National Park, The Wildlands Conservancy, the University of California's Burns Reserve, the East Mojave National Scenic Area, and some other Bureau of Land Management (BLM) lands. Still, because isolated populations of Bendire's Thrashers occupy small pockets of habitat, those in "protected areas" may be vulnerable to extirpation from stochastic events such as catastrophic wildfire and severe drought.

MANAGEMENT AND RESEARCH RECOMMENDATIONS

- Create conservation management areas for Bendire's Thrashers on public (BLM) lands with existing and historically occupied habitat. Within these areas, restrict vehicle use to roads and prohibit the harvesting of yucca and cacti.
- Study basic breeding biology of the Bendire's Thrasher in a range of occupied habitats and locations in California.
- Investigate the factors influencing reproductive success and annual survivorship of Bendire's Thrashers in California, including lot sizes in housing developments; identify areas that serve as population sources or sinks. If possible, implement management actions that greatly reduce the effects of any adverse factors that may reduce reproductive success and annual survivorship.
- Investigate the potential competition between Northern Mockingbirds (*Mimus polyglottus*) and Bendire's Thrashers. If mockingbirds are systematically excluding Bendire's Thrashers, then actively manage to reduce mockingbird numbers in conservation management areas.

MONITORING NEEDS

California's breeding population of Bendire's Thrashers should be monitored every year to assess short-term and long-term population trends, particularly with respect to changes reflecting climatic variability. At a minimum, all transects surveyed in 1986, 1987, and 2001 (England and Laudenslayer 1987, Jones & Stokes 2001) should be surveyed yearly following the same protocols. Additional transects should be added in areas with potential habitat. Reproductive success should be monitored annually until there are enough data to discern factors influencing reproductive success, annual survival, and population trends.

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