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2010 Survey for Belding's Savannah Sparrow (FINAL)

Ballona Wetlands Ecological Reserve
Los Angeles (Playa del Rey), California

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Summary
The results of a breeding survey for the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) at the Ballona Wetlands Ecological Reserve (BWER), Los Angeles County, California, during May-July 2010, are presented. At least 20 nesting territories were held during May and June, as determined by confirmed breeding behavior by pairs on both of the two dates surveyed. Not all 20 territories were occupied at any given time, as birds re-nested through the season. Evidence of probable breeding is presented for the southeastern portion of Area B, near the Freshwater Marsh (property of Playa Vista), which is located more than 500 meters east of the main breeding area near the tidal channels north of Culver Dr. This area, which had rarely been surveyed in prior efforts, and from which no breeding had been suspected during previous surveys, held up to eight individual birds during this survey, including several singing males. For the first time since 1987, a breeding-season record of a Belding's savannah sparrow is documented north of Ballona Creek (Area A), albeit briefly, and in atypical nesting habitat. Finally, incidental, breeding-season usage of the lower Ballona Creek channel itself by this taxon is reported.

Background
The Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) is a small, brown songbird restricted to coastal saltmarshes and adjacent habitats from southwestern California south into northern Baja California, Mexico. One of the few year-round resident bird species of southern California saltmarshes, it has been protected as a State-Endangered species in California since 1974, and regular surveys have been conducted throughout the state since 1973 (every five years since 1986; see Zembal et al. 2006 for most recent survey). In Los Angeles County, it is restricted to only two populations, Ballona Wetlands and Los Cerritos Wetlands in southeastern Long Beach (up to 33 pairs are present at Los Cerritos Wetlands; see Zembal et al. 2006).

The Ballona Wetlands Ecological Reserve (BWER) is located in southwestern Los Angeles County (Figure 1), and has long been divided into several subareas divided by the Ballona Creek channel and Lincoln Blvd.: Area A is the open space north of Ballona Creek and west of Lincoln Blvd., Area B is south of Ballona Creek and west of Lincoln Blvd. (bisected by Culver Blvd.), and Area C is north of Ballona Creek and east of Lincoln Blvd. (Figure 2). Since the late 1970s, focused surveys for the Belding's savannah sparrow at the Ballona Wetlands have been conducted in the main tidal marsh area in the western portion of Area B, centered on the large saltpan, between the Ballona Creek channel and Culver Dr. Surveys were conducted here in 1977 (Massey 1977), 1986 (Zembal et al. 1988), 1987 (Massey 1987), 1989 (White 1989), 1990 (Corey and Massey 1990), 1994-1998 (KBC 1998), 2001 (KBC 2001), and annually from 2004-2009 (KBC, via email). Each of these surveys was restricted to the main tidal marsh area of Area B, with the exception of 1987, when Area A (north of Ballona Creek, west of Lincoln Ave.) was surveyed.

In addition to these focused surveys, general bird surveys of Areas A and B were performed in 1979-1981 (Dock and Schreiber 1981) and in 1990-1991 (Corey 1992), both of which recorded the bird incidentally. Corey (*Ibid*) also visited Area C (north of Ballona Creek, east of Lincoln Ave.) during general bird surveys, but did not record the sparrow here. Thus, Area A (north of Ballona Creek, west of Lincoln Ave.) had not been specifically surveyed for the Belding's savannah sparrow since 1987, Area C (north of Ballona Creek, east of Lincoln Ave.) had apparently never been specifically surveyed for the sparrow in any previous study. The extent of prior surveys of the southern portion of Area B (i.e., south of Culver Blvd.) is difficult to assess; prior to the 1990s, this area was under

cultivation as an agricultural field, and usage by Belding's savannah sparrow would have been limited, particularly in the breeding season.

In 2010, during the first full year of Baseline bird surveys, Cooper Ecological Monitoring, Inc. conducted a Belding's savannah sparrow breeding survey using protocol developed by, and similar to those done previously by KBC, but with two stipulations: 1) that the 2010 survey cover all areas of remaining open space of the Ballona Wetlands Ecological Reserve (BWER); that is, the entirety of Areas A, B, and C; and 2) that the 2010 survey, while covering a much greater area, would be reduced to a two-visit survey - one each in May and June - rather than 2-3 visits each month, as had been done in previous years. A biologist with 15 years of Belding's savannah sparrow survey experience at Ballona approved this protocol as sufficient to map and estimate the number of breeding territories (K. Keane, *in litt.*, May 2, 2010).

Figure 1. Regional setting; see Fig. 2 for detailed view.

Description of Work

Two rounds of surveys were performed, an early-season visit and a late-season visit. The dates and locations are as follows (see Figure 2 for locations):

Round 1:

May 11 (Area A; Area B - south of Culver, to Jefferson)
May 12 (Area B - north of Culver, saltpan/eastern half)
May 14 (Area B - north of Culver; Area B - south of Culver vic. Gas Co.)
May 18 (Area C)

Round 2:

June 20, 21 (Area B - south of Culver, to Jefferson)

June 22 (Area B - north of culver, saltpan/eastern half)
June 25 (Area A; Area B - north of Culver)
June 30 (Area C)

All fieldwork was conducted by Daniel S. Cooper. For each survey, the surveyor (DSC) walked slowly and deliberately through all appropriate habitat [pickleweed (*Salicornia* spp.)- dominated marsh and surrounding herbaceous vegetation], watching and listening for the sparrows. The number and location of each sparrow was recorded, as was, where possible, its categorical age (adult vs. juvenile) and any potential or definitive breeding behavior, such as singing, copulating, carrying nesting material/food, etc. These observations would be transcribed directly onto aerial photos, along with arrows showing the direction of flying birds. Once every individual sparrow in a given area was observed, the observed would walk toward a different part of the marsh, following a rough "figure-8" pattern to ensure full coverage of the habitat (Figure 3). The duration of each survey was variable, depending on the findings for that day and on the complexity of the habitat. Area C took 2 hours to survey, Area A took 3 hours, and Area B took 10 or more hours, over three days. Each survey visit was completed by 11:00 AM, with the visit terminated if conditions such as wind precluded hearing or otherwise detecting individual birds.

Figure 2. Detailed view of survey locations; Freshwater Marsh is the lagoon immediately west of Lincoln Blvd.

Figure 3. Approximate location of survey routes (black lines), Areas A, B, and C.

Determination of "territory"

Because methods for determining territories are somewhat loosely defined, based largely on trained individuals' impressions while surveying (see Zembal et al. 2006),[1] a territory is used here as a location where breeding behavior was confirmed for a single individual or pair of birds (including nest-building, the presence of a dependent juvenile and/or food-carrying by adults, etc.) on both of the survey dates (i.e., May and June visits). Singing was not considered breeding behavior *per se*, but helped in establishing territory boundaries; the position of birds seen or heard simultaneously were denoted by dashed lines on the aerial photos. While this protocol may have under-counted the total number of territories actually present, particularly ones held by especially cryptic or quiet individual birds that were only detectable on just one visit but actually were breeding in that location, this conservative approach was employed given the small number of visits overall.

Results

Definitive breeding behavior by Belding's savannah sparrows over two survey dates was noted at 20 individual territories at BWER (Figure 4). Breeding behavior on just one survey date was detected at

[1] The contract materials stated (May 2, 2010): "the biologist will determine the number of BSS breeding pairs and territories by mapping the locations of singing male BSS and recording observations of other BSS breeding behavior such as nest building and territorial chases. For summer surveys, the biologist will record the locations of family groups and fledgling calls."

an additional seven locations; however, the possibility is strong that these one-day sightings represent birds, including family groups from one of the 20 identified territories, moving around the habitat. An additional 19 locations were noted in which either a singing male or an obvious pair of sparrows was noted (and in one case, an observation was made of a lone juvenile bird, though capable of flight, with a possible adult nearby). These sites could also be considered possible territories; however, with data from only two visits, it is impossible to conclude that they were breeding territories, as opposed to being simply lone males trying to attract a mate, or a foraging pair gathering food for a young bird elsewhere. Therefore, birds observed in these 19 additional locations are best considered engaged in potential, rather than definitive, breeding behavior. Finally, flocks of up to 10 Belding's savannah sparrows were also observed during this survey, all within or near existing territories. Figure 4 presents a map and brief descriptions of these observations.

Geographically, as found by previous surveys at Ballona Wetlands, most breeding territories were located at the northwestern corner of Area B, in an area of tidal channels and dense saltmarsh vegetation dominated by pickleweed. However, the expansion of the study area to include the eastern portion of Area B (south of Culver Dr. and Jefferson Blvd.) brought the discovery of more birds and at least one additional breeding territory, in an area not previously documented as having breeding Belding's savannah sparrow.

Most surprising were two birds together in the southwestern part of Area A on 25 June, where a singing male was discovered during general bird surveys on 10 June (D.S. Cooper, unpublished data). This is not in an area of suitable habitat, and there is no indication that a territory was maintained here. Despite numerous visits made to the exact location during a general bird survey in April and May 2010, no prior observation of a Belding's savannah sparrow here during spring 2010. On the 10 June visit, the male was singing from a tall laurel sumac (*Malosma laurina*) surrounded by ruderal herbaceous vegetation, including garland chrysanthemum (*Chrysanthemum coronarium*) and non-native grasses (Figures 5 and 6). Breeding Belding's savannah sparrows were last recorded in Area A in 1987. This was the only observations of a definite Belding's savannah sparrow away from Area B in areas covered by this survey. However, several Belding's savannah sparrows were observed foraging in pickleweed at the waterline along the Ballona Creek channel adjacent to the main breeding area of Area B during both May and June. This area was well covered by Baseline bird surveys during 2010 (D.S. Cooper, unpublished data), but was not included in the territory mapping effort described here.

A complete list of birds and other wildlife observed during the 2010 Belding's savannah sparrow survey is provided below.

Figure 4. Results of 2010 breeding survey for the Belding's savannah BWER. See below for key:

"Bulls-eye" mark: definitive breeding behavior noted on two dates >1 month apart, May and June
Diamond: definitive breeding behavior noted on one date, either May or June
Triangle: singing male, pair or juvenile, with no definitive breeding behavior (see text).

Figure 5. Belding's savannah sparrow (singing), Area A (photographed by DSC, 10 June 2010).

Figure 6. View of habitat used by the Belding's savannah sparrow in Area A (see Fig. 5), 10-25 June 2010 (photographed by DSC, 10 June 2010).

Literature Cited

Corey, K. 1992. Bird survey of Ballon Wetland, Playa del Rey, CA, 1990-1991. Dept. of Biology, California State Univ., Long Beach (unpubl. report). April 30, 1992.

Dock, C.F. and R.W. Schreiber. 1981. The birds of Ballona. In: Biota of the Ballona Region, Los Angeles County, Supplement I, Marina del Rey/Ballona Local Coastal Plan. Los Angeles Co. Museum of Natural History.

Keane Biological Consulting (KBC). 1996. Avifauna of Playa Vista. Report to Impact Sciences. Sept. 17, 1996 (Appendix to KBC 1998).

Keane Biological Consulting (KBC). 1998. Surveys for Sensitive Avian Species at Playa Vista, 1998. Prepared for Impact Sciences, Dec. 5, 1998.

Keane Biological Consulting (KBC). 2001. Surveys for Sensitive Avian Species at Playa Vista, 2001. Prepared for Impact Sciences.

Massey, B.W. 1977. A census of the breeding population of the Belding's savannah sparrow, 1977 (unpubl. report). Calif. Dept. of Fish and Game, The Resources Agency.

Massey, B.W. 1989. Counts of Belding's savannah sparrows (*Passerculus sandwichensis beldingi*) in the Ballona Wetlands - April/May 1989. Report to the National Audubon Society.

White, A. and P. White. 1989. Belding's savannah sparrow census at Ballona Wetland, 1989. Report to the National Audubon Society, Ballona Wetland Project, Mar. 16, 1989.

Zembal, R.L., K.J. Kramer, R.J. Bransfield, and N. Gilbert. 1988. A survey of Belding's savannah sparrows in California. American Birds: 42(5):1233-1236.

Zembal, R. J. Konecny and S.M. Hoffman. A survey of the Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) in California 2006. Final report to Calif. Dept. of Fish and Game, San Diego, CA, Contract S0450020 (FY04/05).

Table 1. Birds and Other Wildlife Observed during May/June 2010 Surveys

Birds

Canada Goose	*Branta canadensis*
Gadwall	*Anas strepera*
Mallard	*Anas platyrhynchos*
Brown Pelican	*Pelecanus occidentalis*
Double-crested Cormorant	*Phalacrocorax auritus*
Great Blue Heron	*Ardea herodias*
Great Egret	*Ardea alba*
Snowy Egret	*Egretta thula*
White-faced Ibis	*Plegadis chihi*
Cooper's Hawk	*Accipiter cooperii*
Red-shouldered Hawk	*Buteo lineatus*
Red-tailed Hawk	*Buteo jamaicensis*
American Kestrel	*Falco sparverius*
Black-bellied Plover	*Pluvialis squatarola*
Killdeer	*Charadrius vociferus*
Long-billed Curlew	*Numenius americanus*
Least Tern	*Sternula antillarum*
Caspian Tern	*Hydroprogne caspia*
Rock Pigeon	*Columba livia*
Mourning Dove	*Zenaida macroura*
Anna's Hummingbird	*Calypte anna*
Allen's Hummingbird	*Selasphorus sasin*
Hammond's Flycatcher	*Empidonax hammondi*
Dusky Flycatcher	*Empidonax oberholseri*
Pacific-slope Flycatcher	*Empidonax difficilis*
Black Phoebe	*Sayornis nigricans*
Say's Phoebe	*Sayornis saya*
Cassin's Kingbird	*Tyrannus vociferans*
American Crow	*Corvus brachyrhynchos*
Common Raven	*Corvus corax*
Tree Swallow	*Tachycineta bicolor*
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*
Barn Swallow	*Hirundo rustica*
Bushtit	*Psaltriparus minimus*
Wrentit	*Chamaea fasciata*
Northern Mockingbird	*Mimus polyglottos*
California Thrasher	*Toxostoma redivivum*
European Starling	*Sturnus vulgaris*
Common Yellowthroat	*Geothlypis trichas*
California Towhee	*Pipilo crissalis*
Savannah Sparrow (Belding's)	*Passerculus sandwichensis*

	beldingi
Savannah Sparrow (other ssp.)	*Passerculus sandwichensis*
Song Sparrow	*Melospiza melodia*
Black-headed Grosbeak	*Pheucticus melanocephalus*
Blue Grosbeak	*Passerina caerulea*
Red-winged Blackbird	*Agelaius phoeniceus*
Great-tailed Grackle	*Quiscalus mexicanus*
Brown-headed Cowbird	*Molothrus ater*
Hooded Oriole	*Icterus cucullatus*
Bullock's Oriole	*Icterus bullocki*
House Finch	*Carpodacus mexicanus*
Lesser Goldfinch	*Carduelis psaltria*
American Goldfinch	*Carduelis tristis*
House Sparrow	*Passer domesticus*
Orange Bishop	*Euplectes franciscanus*

Mammals

Audubon's cottontail	*Sylvilagus audubonii*
California ground-squirrel	*Spermophilis beecheyi*
Eastern fox-squirrel	*Sciurus niger*

Herptiles

Side-blotched lizard	*Uta stansburiana*
Western fence-lizard	*Sceloporus occidentalis*