

## 27. COASTAL FRESHWATER MARSH

### PANTANO COSTANERO DE AGUA DULCE

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**Location:** California; Marin Co.; Marshall; Livermore Marsh; 38° 10'N, 122° 54'W; Tomales Quadrangle, USGS. **Continuity:** Established 1986; 5 yr. **Size:** 10.5 ha. **Description of Plot:** See *J. Field Ornithol.* 60 (suppl.):64 (1989). **Weather:** Mean temperature 8.3°C (range 6.6–10°C). **Coverage:** 10.2 h; 8 visits (mornings): 25 Jan.; 1, 7, 14, 21, 22, 25, 28 Feb. **Count:** Canvasback, 48.9 ind./visit (8 visits); Ruddy Duck, 20.5 (8); Red-winged Blackbird, 17.8 (8); Marsh Wren, 13.3 (8); Black-crowned Night-Heron, 10.4 (7); American Coot, 10.0 (7); Song Sparrow, 8.5 (8); Bufflehead, 3.6 (8); Golden-crowned Sparrow, 3.1 (5); Cinnamon Teal, 2.9 (3); Wrentit, 2.9 (8); American Wigeon, 2.5 (6); Ruby-crowned Kinglet, 2.5 (8); California Quail, 2.4 (1); Black Phoebe, 2.4 (8); Anna's Hummingbird, 2.2 (7); Yellow-rumped Warbler, 2.2 (6); Common Yellowthroat, 1.6 (8); Swamp Sparrow, 1.6 (5); Hermit Thrush, 1.5 (5); Mallard, 1.4 (4); Common Snipe, 1.3 (5); Pied-billed Grebe, 1.1 (6); Northern Flicker, 1.1 (6); Tree Swallow, 1.1 (1); American Robin, 0.9 (3); Ring-necked Duck, 0.8 (1); Allen's Hummingbird, 0.8 (2); Scrub Jay, 0.6 (4); Fox Sparrow, 0.6 (3); Lincoln's Sparrow, 0.6 (4); Bushtit, 0.5 (2); Snowy Egret, 0.5 (3); Virginia Rail, 0.5 (3); Common Goldeneye, 0.4 (2); Northern Harrier, 0.4 (2); California Towhee, 0.4

(2); Gadwall, 0.2 (1); Sora, 0.2 (2); Killdeer, 0.2 (1); Belted Kingfisher, 0.2 (2); House Finch, 0.2 (1); Common Moorhen, 0.1 (1); Great Blue Heron, 0.1 (1); Turkey Vulture, 0.1 (1); Cooper's Hawk, 0.1 (1); Chestnut-backed Chickadee, 0.1 (1); Hutton's Vireo, 0.1 (1); Orange-crowned Warbler, 0.1 (1); Pine Siskin, 0.1 (1). **Total:** 50 species; 176 ind./visit (670 ind./40 ha). **Remarks:** Black-crowned Night-Herons (max. 16) and ca 1000 Red-winged and Tricolored Blackbirds roosted in the lower marsh. Counts of Red-winged Blackbirds represent individual males exhibiting early territorial behavior. Canvasbacks (max. 60) exhibited local movement between Livermore Marsh and Abbott's Lagoon, 4 km to the S. All Common Yellowthroats observed were males. Marsh Wrens occupied all areas of the marsh, but breed only in the lower third. **Acknowledgments:** Susan Kelly provided valuable assistance in summarizing the results. This work was supported by Chevron U.S.A., Inc. San Francisco, CA, and by Audubon Canyon Ranch, Stinson Beach, CA.