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San Diego Bay is a major wintering site for the Lesser Scaup: about 3000–5000 converge there each year, the largest concentration in all of southern California. On south San Diego Bay, the scaup is second only to the Surf Scoter as the most abundant bird. Mission Bay has become important too, with about 1000 wintering scaups. Other coastal wetlands have relatively few, but some inland lakes host flocks of dozens. An occasional Lesser Scaup straggles through the summer, but the species is not known to nest south of San Francisco Bay.

Winter: Regular thorough surveys of San Diego Bay 1988-89 (Macdonald et al. 1990) and 1993-94 (Manning 1995, Mock et al. 1994, Stadtlander and Konecny 1994) are the soundest basis for estimating the Lesser Scaup's numbers. Macdonald et al. (1990) and Manning (1995) both found about 2000 in south San Diego Bay outside the salt works. Within and near the salt works, Stadtlander and Konecny (1994) found a maximum of 4409 in February 1993. Preston and Mock (1995) found up to 867 in central San Diego Bay 25 January 1994, and Mock et al. (1994) found up to 301 in the north bay (northwest of the bridge) 12 January 1993. From 1997 to 2001 our less systematic counts ranged up to 3100 on south San Diego Bay (U10) 18 December 1999 (J. L. Coatsworth), suggesting that similar numbers continue, at least in some years.

In Mission Bay our counts ranged up to 1170 in the northeast quadrant of the bay (Q8) 26 January 1999, 1016 there 16 January 2000 (J. C. Worley), and 300 in the southeast corner 24 December 1997 (P. Unitt).

Along the coast away from San Diego and Mission



Photo by Anthony Mercieca

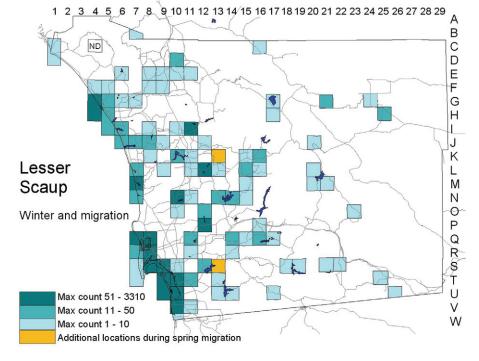
bays the Lesser Scaup is widespread but far less abundant. At the other coastal wetlands the scaup's greatest concentrations are at the Santa Margarita River mouth (G4; up to 150 on 8 February 2000, P. A. Ginsburg), San Elijo Lagoon (L7; during the atlas period, up to 50 on 14 January 2000, A. Mauro), and the San Dieguito River mouth (M7; up to 150 on 26 December 1999, M. Baumgartel).

Inland, the Lesser Scaup occurs in small numbers on most lakes, in large numbers on a few. For no clear reason, particularly large numbers of scaup frequent Dixon Lake (I11; up to 190 on 3 January 1998, J. Russell), Lake Ramona (L12; up to 88 on 25 January 1998, M. and B. McIntosh), Lake Miramar (N10; up to 200 on 3 January 1998, P. Unitt), and Santee Lakes (P12; up to 56 on 5 December 1997, E. Post).

The Lesser Scaup is a rare visitor to the Borrego Valley, recorded on 6 of 19 Anza–Borrego Christmas bird

counts 1984–2002. All records for this area are of three or fewer, except for 13 at Ram's Hill (H25) 20 December 1998 (R. Halford).

Migration: In some years Lesser Scaups begin arriving in early October (Unitt 1984, King et al. 1987), but surveys of San Diego Bay suggest that in others they do not arrive until mid November. Their abundance peaks in January and February. Most Lesser Scaups depart in mid March, but some remain to mid April (20 in the San Diego River flood-control channel, R8, 15 April 1999, J. R. Barth) and a few to mid or late May (three at Buena Vista Lagoon, H5, 11 May 1999, M. Freda; four at Dixon Lake 17 May 1999, A. G. and D. Stanton; one



west of Ramona, K13, 26 May 2000, P. M. von Hendy).

Birds grounded at Vallecito (M25) in early April 1966 and at Angelina Spring (I22) 3 April 1966 (Banks 1967) suggest that the Lesser Scaup, like the Brant and Surf Scoter, uses eastern San Diego County as an overland migration corridor. But no parallel occurrences have come to light since.

A few Lesser Scaups fail to migrate and remain to summer both along the coast and inland. From 1997 to 2001 we noted three such stragglers, at Lake Cuyamaca (M20) 20 June–8 July 1998 (A. P. and T. E. Keenan), at Barrett Lake (S18) 22 June 1997 (J. Hannan), and on south San Diego Bay 11 August 2000 (G. Grantham).

**Conservation:** The number of the Lesser Scaup on San Diego Bay, though difficult to monitor, is one of the primary gauges of the bay's biological viability. Because intensive surveys have followed the same procedure for

only a single year, the San Diego Christmas bird count is the only basis for assessing long-term changes. This count is inconsistent because of variation in coverage, the variable availability of a boat, and, possibly, temporal variation in the birds' arrival. The scaup's abundance does not reach its peak until January, though the count has long been scheduled for the third Saturday of December. Numbers have been higher in some past years, up to about 11,800 on 3 January 1965 and 15 December 1979. They have not exceeded 4000 since 1984. So a decline seems likely, but better monitoring is called for. Just a single-day survey by boat about 1 February would be adequate, if coordinated with coverage of the salt works.

Factors that could affect the scaup include water pollution, chemical contamination of its foods, disturbance by boats, and bayshore development. Among 14 species of water birds studied in San Diego Bay, the scaup avoids developed shorelines the most strongly (J. A. Manning).