

**Table 3.8. Top Three Independent Variables (of Nine Investigated) that Explain the Variation in the Densities of 25 Marine Birds**

Species <sup>1</sup>	Number of Birds Recorded During Surveys	Percent Variance Explained by Top Three Variables	Three Most Important Variables of Those Investigated, in Order of Importance <sup>2,3</sup>
Pacific Loon	3,802	10.6	Ocean season, distance to land (-), latitude (-)
Western Grebe	7,080	15.5	Ocean season, distance to land (-), ocean depth (-)
Laysan Albatross	96	6.9	Ocean season, ocean depth (+), distance to land (+)
Black-footed Albatross	3,149	22.2	Ocean depth (+), distance to land (-), year (-)
Northern Fulmar	5,882	21.3	Ocean season, ENSO period, year (+)
Pink-footed Shearwater	4,145	13.1	Ocean depth (-), distance to land (-), ESNO period
Sooty Shearwater	296,065	43.4	Ocean season, year (-), ENSO period
Fork-tailed Storm-Petrel	393	9.2	ENSO period, season, ocean depth (+)
Leach's Storm-Petrel *	1,414	28.4	Ocean season, distance to 2000m isobath (+), ENSO period
Ashy Storm-Petrel *	4,201	17.3	ENSO period, season, year (+)
California Brown Pelican	2,333	15.2	Distance to land (-), latitude (-), Ocean season
Brandt's Cormorant *	9,482	28.7	Distance from colony (-), dist. to 200 m isobath, dist. to land (-)
Double-crested Cormorant *	300	9.7	Dist. from colony (-), dist. to 200m isobath (-), dist. to land (-)
Pelagic Cormorant *	396	6.1	Distance to land (-), ocean depth (-), dist. to 200 m isobath (-)
Red & Red-necked Phalaropes	49,195	9.6	ENSO period, distance to land (-), ocean depth (-)
Heermann's Gull	1,121	6.5	Distance to land (-), ENSO period, latitude (-)
Western Gull *	29,545	44.2	Distance from colony (-), distance to land (-), ENSO period
Glaucous-winged Gull	767	17.1	Ocean season, ocean depth (-), latitude (+)
California Gull *	13,721	24	Ocean season, year (+), latitude (+)
Black-legged Kittiwake	4,565	28.9	Ocean season, ENSO period, year (+)
Common Murre *	131,675	52.3	Distance to colony (-), ocean depth (-), distance to land (-)
Rhinoceros Auklet *	14,679	19.8	Distance to land (-), season, ocean depth (+)
Cassin's Auklet *	63,465	25.8	Distance to land (-), year (-), ocean depth (-)
Tufted Puffin *	235	10.1	Distance from colony (-), year (-), distance to 200 m iso (+)
Marbled Murrelet *	273	4.7	Distance to land (-), latitude (+), ENSO period

Notes

1. Species that breed in the study area have an asterick (\*) after their name.
2. For "continuous" variables, a positive (+) with a variable indicates that density increased with an increase in the magnitude of that variable; (-) denotes the opposite.
3. The nine independent variables used in the regression analysis were: distance to nearest land; ocean season; ocean depth; ENSO period; year; latitude; distance to colony; distance to 200 m isobath; and distance to 2,000 m isobath. Other variables (e.g., availability of prey, thermocline depth) not included here may also have a significant effect.
4. Table results based on analyses in report: NOAA NCCOS Tech Memo NCCOS 40.  
[http://ccma.nos.noaa.gov/products/biogeography/canms\\_cd/welcome.html](http://ccma.nos.noaa.gov/products/biogeography/canms_cd/welcome.html)