

Appendix C— Waterfowl Use of San Francisco Bay Subregions

Wintering waterfowl use of San Francisco Bay is extensive. More than 250,000 birds have been counted during the last several midwinter January waterfowl surveys. Generally, early migrants show up in September, peak numbers occur in December or January and use continues through May. In order to document the importance of the Bay to wintering waterfowl, the U.S. Fish and Wildlife Service conducted twice-monthly surveys between October and April of 1988–89 and 1989–90. Six geographically distinct regions were used to delineate the Bay. Four open water regions included the North Bay (San Pablo Bay), Central Bay (San Francisco Bay), South San Francisco Bay, and Suisun Bay. Two wetland regions primarily comprised of salt evaporation ponds included the North Bay salt ponds and South Bay salt ponds.

Although the 1998 midwinter survey indicated wintering waterfowl were distributed fairly equally among the six regions, each holding from 13 percent to 23 percent of the total, the 1999 midwinter survey showed a larger proportion of birds using the Central (36%) and North Bay (28%) regions. Suisun Bay was not surveyed in 1999 due to poor weather. Certain regions are typically used more extensively by certain species than others. For example, in 1999, the North (San Pablo) Bay accounted for over 60 percent of the Bay's wintering canvasbacks. The North Bay and South Bay salt ponds were also important with 20 percent and 12 percent of the canvasbacks, respectively. Scaup were observed primarily in the Central Bay (55%), North Bay (25%) and South Bay (17%) regions. Buffleheads were primarily concentrated in the North Bay (38%) and South Bay salt

ponds (30%), as well as in the Central Bay (24%). In 1998 and 1999, ruddy ducks accounted for more than 90 percent of the use of both salt pond regions.

The more comprehensive winter surveys from 1988 to 1990 reveal less seasonal, regional, and annual distribution of waterfowl use in the San Francisco Bay. Overall, diving ducks made up the majority of all waterfowl in the four open Bay regions. In both years, the South San Francisco Bay and Central Bay regions had similar use patterns. Less than 2,000 were present in October; their numbers peaked at 36,000–55,000 in December/January, and their numbers declined slowly through early April, with more than 10,000 still present. In both the North and Suisun Bays, diving duck use fluctuated widely between years and throughout the season. In the North Bay, few birds were present in early October, but in one year, large concentrations (140,000) were observed by mid-October. Waterfowl populations remained high into spring, with up to 70,000 birds still present in March. The North Bay received high use both years, accounting for 30 percent of the Bay's totals. North Bay salt ponds had three to four times more diving ducks than dabbling ducks, while the South Bay salt ponds conversely had two times more dabblers than divers. In both regions, dabblers began appearing in August, while divers arrived later in November. Dabbling use was consistent between years in the North Bay salt ponds and fairly consistent in the South Bay salt pond region, while diver numbers were less consistent. The majority of both diving and dabbling ducks were observed in salt ponds with salinity levels equal to or less than 64 parts per thousand.