Tufted Puffin
(*Fratercula cirrhata*)

State Status: Candidate, 1998
Federal Status: Species of concern
Recovery Plans: None

Figure 1. Tufted puffin (*photo by Peter Hodum*).

Tufted puffins are one of the most distinctive appearing birds in Washington (Figure 1). During the breeding season, they nest in soil burrows, rocky crevices, or occasionally in dense shrubbery on isolated offshore islands, and forage mainly in continental shelf areas. During the remainder of the year, tufted puffins are found on deep oceanic waters.

The tufted puffin was considered common in Washington historically, with 44 nesting colonies documented along the outer coast, in the San Juan Islands, and the Strait of Juan de Fuca. The statewide population was estimated at >25,000 individuals in 1909 and remained in that range for much of the twentieth century (Jewett et al. 1953). Speich and Wahl (1989) estimated the population at 23,342 in the 1980s. However, more recent surveys have found nesting birds at only 19 sites (nearly all along the outer coast) and estimated the total population at no more than several thousand birds (Wahl and Tweit 2000; Hodum et al., unpubl. data; S. Pearson et al., unpubl. data). This work suggests that tufted puffins in Washington have undergone a dramatic population decline and nearly a 60% drop in site occupancy over the past 25 or more years (Figure 2). This decline corresponds with similar population trends in California and Oregon.

Potential causes of the decline of tufted puffins in Washington include prey scarcity, introduced species (primarily European rabbits [*Oryctolagus cuniculus*]), changing oceanic and climatic conditions, oil spills, and entrapment in fishing nets. Increased shoreline development continues to impact forage fish spawning grounds in the San Juan Islands and parts of the Strait of Juan de Fuca. The largest known mortality event in the state was in 1991 during the *Tenyo Maru* oil spill, which killed an estimated 9% of the state's puffin population. Chronic small-scale discharges of oil from routine shipping activity represent another potential risk for the species.

Monitoring. Breeding surveys on Tatoosh Island from 2005 to 2008 indicated an overall fledging success of 23-63% (P. Hodum and S. Pearson, unpubl. data), which is considerably lower than that reported by Piatt and Kitaysky (2002) for several other sites. Annual boat-based surveys for marbled murrelets (*Brachyramphus marmoratus*) and other seabirds indicate that the on-the-water density of tufted puffins between Pt. Grenville and Cape Flattery has declined an average of 8.9% per year from 2001 to 2012 (Figure 3; S. Pearson, unpubl. data). These surveys were made within 8 km of shore from mid-May to late July. Data from the 2009 survey, in which 1,380 km of water were surveyed (Raphael et al. 2007, Falxa et al. 2011), generated an estimate of 2,958 tufted puffins for Washington's outer coast (S. Pearson, unpubl. data). This result represented the estimated number of birds on the water and did not account for individuals provisioning chicks, otherwise attending colonies during the survey period, or those farther offshore.

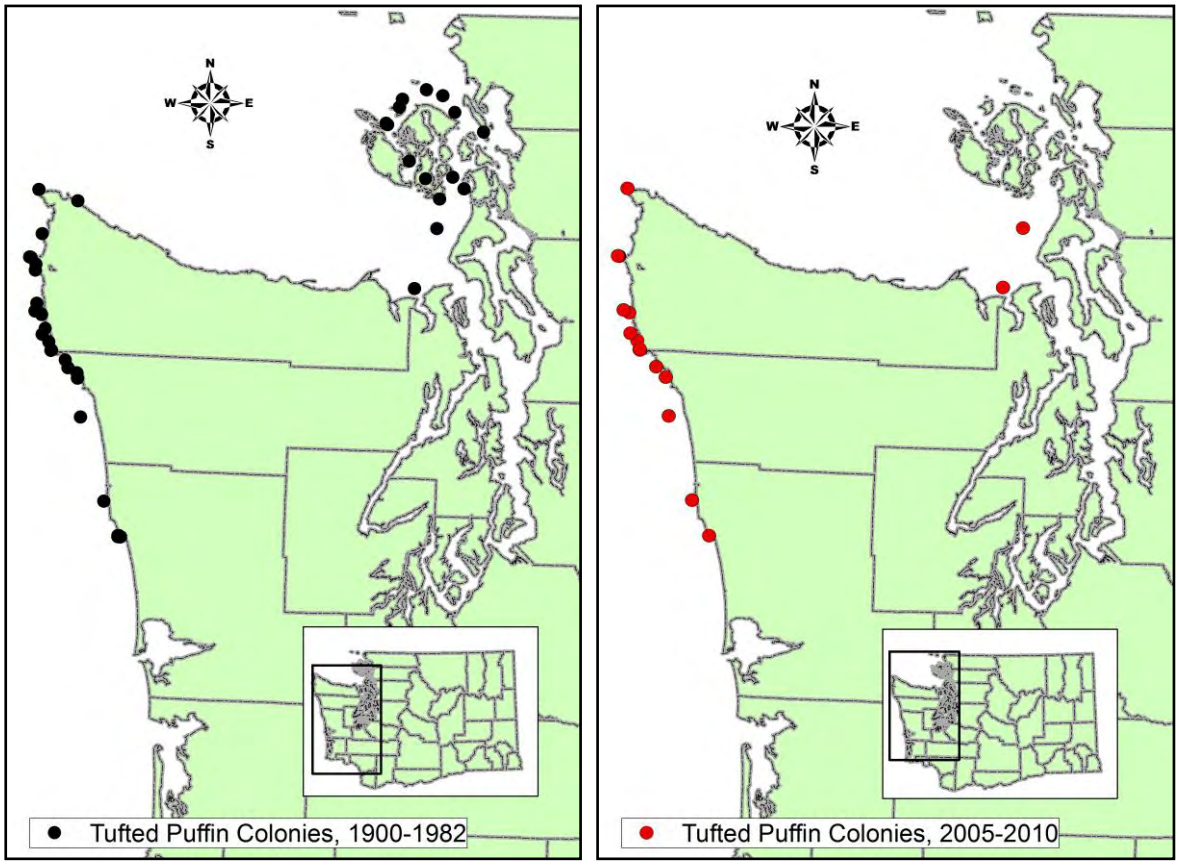

Figure 2. Locations of historical and current tufted puffin colonies in Washington.

Conservation activities. A draft status report for tufted puffins in Washington is being prepared for WDFW with funding from The Seadoc Society. The report will go through the state's listing procedures (WAC 232-12-297, Appendix A) to determine whether a recommendation would be made to list the species as endangered, threatened, or sensitive in Washington. A manuscript is also being prepared to assess the status of Washington's tufted puffin nesting colonies based on recent surveys of historically occupied sites (P. Hodum and S. Pearson, in prep.).

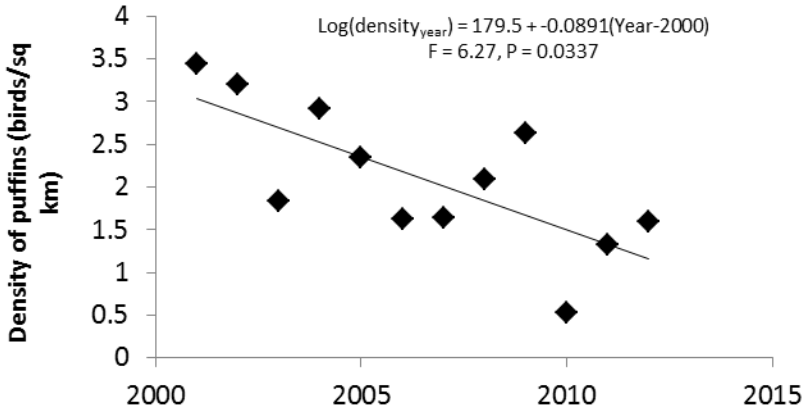

Figure 3. Trend in the on-the-water density of tufted puffins during boat-based surveys within 8 km of shore between Pt. Grenville and Cape Flattery, 2001-2012 (S. Pearson, unpubl. data).

The U.S. Fish and Wildlife Service has recently completed comprehensive conservation plans for the Flattery Rocks, Quillayute Needles, and Copalis National Wildlife Refuges (USFWS 2007), and the Protection Island and San Juan Islands National Wildlife Refuges (USFWS 2010). These will direct management activities over the next 15 years, including measures that should benefit nesting tufted puffin.

Partners and cooperators: U.S. Fish and Wildlife Service, SeaDoc Society, University of Puget Sound, University of Washington, NOAA Fisheries, Makah Tribe, Quinault Tribe, Quileute Tribe, National Park Service.

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