5-2021

Vignette 03: Birds of the Salish Sea

Rob Butler
Pacific WildLife Foundation

Recommended Citation

Butler, R. (2021). Birds of the Salish Sea. In K.L. Sobocinski, State of the Salish Sea. Salish Sea Institute, Western Washington University. http://doi.org/10.25710/vfhb-3a69

03 | BIRDS OF THE SALISH SEA

Dr. Rob Butler, Pacific WildLife Foundation

The Salish Sea—the largest inland sea on the west coast of Canada and the United States—supports jobs, supplies food, attracts tourists, provides recreation, is the basis of Indigenous cultures, and provides ecosystem services. Millions of people reside along its shores, and thousands of jobs are connected to the Salish Sea. Tourism and recreation related to bird watching and whale watching is a growing market. The Salish Sea is the ancestral home to Indigenous people whose ancient culture is connected to birds and mammals. The presence and abundance of birds and marine mammals indicates a healthy ecosystem and establishes a baseline for recovery. To sustain these animals and all they provide to us requires saving their homes, halting persecution, and preventing pollution of their food.

The significance of the Salish Sea comes into focus when we look at the diversity and abundance of its birds and mammals, some of which are globally, continentally, and nationally important. Of particular importance is the diversity and abundance of species on the Fraser River Delta. There are more species of birds on the delta than any comparable area in Canada, and nearly half of all 550 species of birds reported for British Columbia have been seen on the delta. Maximum single day counts for all species tallies to about 2 million birds, and the number that pass through on migration is several times greater. For example, over a million shorebirds migrate across the delta and through the Salish Sea annually, and hundreds of thousands of waterfowl spend their non-breeding season there.

Other areas in the Salish Sea attract large numbers of birds and marine mammals. When Pacific herring spawn on the east coast of Vancouver Island in late winter and early spring, tens of thousands of seabirds and seaducks, and hundreds of sea lions assemble to feed on fish and eggs. Channels and passages with high tidal flow can draw thousands of gulls. Whales from Hawaii and Mexico and seabirds from across the Pacific assemble in large flocks at the western entrance to the Strait of Juan de Fuca.

Among the 172 species of birds that use the waters of the Salish Sea each year (Gaydos & Pearson 2011) are waterfowl, loons and grebes, seabirds, herons, birds of prey, and shorebirds, whose collective annual ranges encompass the area bounded by Siberia, the Canadian High Arctic, Florida, and Peru.

Commonly encountered waterfowl in estuaries with agricultural lands in winter are the snow goose, trumpeter swan, American wigeon, northern pintail, green-winged teal, and mallard. Rocky shores yield thousands of surf scoters and Barrow's goldeneyes, and four Pacific Northwest endemic shorebirds: the black turnstone, black oystercatcher, surfbird and rock sandpiper. In spring and summer, mudflats are frequented by over 50 species of shorebirds, including hundreds of thousands of western sandpipers, and some rocky islands support a breeding cadre of Pacific Northwest species such as glaucous-winged gull, pelagic cormorant, pigeon guillemot and black oystercatcher. Late summer brings post-breeding common murres, Heermann's, Bonaparte's, and mew gulls. Ancient murrelets enter the Salish Sea in autumn and marbled murrelets spend the winter there. Killer whales come in search of salmon and marine mammals as prey, harbour porpoise, white-sided dolphins, and humpback whales seek schools of small fish, and gray whales plough up mudflats in pursuit of marine invertebrates.

The diversity and abundance of birds and marine mammals is built on an ecological foundation of marshes, mudflats, rocky shores, mixing of ocean currents, tides, and river flow that provide plankton, fish, and plants as food. High densities of plankton occur off the Fraser River plume, serving as food for herring, sandlance, and anchovy that are eaten by diving birds, gulls, and marine mammals; biofilm forms on estuarine mudflats supplying energy needs for migrating sandpipers; eelgrass growth in spring provides a nursery for small fish for diving birds; and mussels and other marine invertebrates feed the large numbers of seaducks.

A bald eagle takes off from tree branch
Photo: Taylor Bayly

The abundance and diversity of marine birds and mammals has led to conservation initiatives to safeguard their presence. Twenty-two areas in the Salish Sea have been designated as Important Bird and Biodiversity Areas, of which the Fraser River Estuary has the greatest number of global, continental, and national species in Canada. Waters in the southern Strait of Georgia and the Strait of Juan de Fuca have been identified as an Important Cetacean Area for gray and humpback whales and critical habitat for endangered southern resident killer whales.

Despite all that has been learned about marine birds and mammals, large areas of the Salish Sea in Canada have not been systematically surveyed. The Salish Sea Marine Bird and Mammal Atlas is a project led by the Pacific WildLife Foundation with our partner Birds Canada, aimed at systematically mapping the distribution of marine birds and mammals in the Canadian waters. The atlas project used standard protocols to survey birds along the shore and at sea. The atlas will combine three decades of land-based bird surveys in Birds Canada's Coastal Waterbird Survey with surveys at sea led by Pacific WildLife Foundation. The atlas will be available online as an Esri storymap with links to technical reports and raw data of at sea surveys and the Coastal Waterbird Survey. The data will be useful for environmental assessments, sea level rise impacts, and tourism and recreation planning, and will serve as a baseline to measure change in the future.