

ORIGINAL PURPOSE To protect large colonies of breeding seabirds, other nesting birds, endemic mammals and their habitat on one of B.C.'s most remote islands

OVERVIEW

Date established:	4 May 1971	Location:	45 km WNW of Cape Scott, off northern tip of Vancouver Island
ORC #:	3013		
Map number:	102 I/14		
Marine chart number:	3625	Latitude:	50°52'N
		Longitude:	129°05'W

Total Area:	980 ha	Elevation:	-50-210 m
Land:	119 ha		
Marine:	861 ha		

Access: Closed to public to protect nesting birds and their habitat. A permit is required to land on the island. It is accessible by boat or helicopter.

Biogeoclimatic Zones:	Coastal Western Hemlock
Biogeoclimatic Variant:	CWFvh1 Southern Very Wet Hypermaritime
Terrestrial Ecoregion:	Vancouver Island Shelf
Marine Ecoregion:	Vancouver Island Shelf
Region:	Vancouver Island
Management Area:	Cape Scott

COMPOSITION

Physical: This is a rugged, triangular-shaped island with associated offshore islets and reefs, situated on the Cook Bank. The island has steep outer slopes, and an undulating central plateau. Soils are generally well developed, except on the steepest cliffs, but those on the slopes have a high content of small stones.

Biological: The moist, humid climate and abundance of bird droppings promote a dense plant cover over most of the island. Trees are absent. Vegetation and soils are influenced by ocean spray. A mantle of salmonberry, wind-pruned to a height of 0.5-2.0 m, is the most conspicuous vegetation feature, especially on the central upland. Plants commonly associated with the salmonberry are Pacific crab apple, tufted hairgrass and salal. Lady ferns, which normally grow under a forest canopy, form large patches among the salmonberry while tufted hairgrass stands dominate the wind-exposed ridges and slopes. Salal forms dense stands on a few soil-covered rocky promontories. On the high central ridges, communities dominated by Alaska saxifrage, in association with Alaska brome, licorice fern, spiny wood fern and lady fern, also occur. Over 100 vascular plants have been identified here. Most are normally associated with the coastal forest, but species with affinities for shorelines and northern bogs are present. At least eight kinds of introduced weedy plants have been recorded.

In recent years Triangle Island has supported hundreds of thousands of breeding pairs of colonial seabirds - more than any other island on the B.C. coast. These include four burrow-nesting species of the Family Alcidae (Cassin's Auklet, Tufted Puffin, Rhinoceros Auklet, Pigeon Guillemot) and two cliff-nesters (Common and Thick-billed murre). A Cassin's Auklet colony is the largest in the world and is spread over most of the island. Preferred nesting habitat is open and short vegetation on a variety of slopes; dense salmonberry stands and Rhinoceros Auklet colonies are avoided. The largest Tufted Puffin colony on the Pacific Coast south of Alaska is largely restricted to grassy slopes on the southeast and southwest peninsulas. Rhinoceros Auklets prefer the southeastern slopes for nesting. Pigeon Guillemots nest in burrows or among broken rock near the shoreline. Cliff ledges on several rocky peninsulas, islets, and headlands of the main island are nesting sites for about Common Murres. This is the largest of four B.C. colonies. Recently, Thick-billed Murres were discovered nesting in the Common Murre colony, this being the first breeding record for the former species in B.C. Other surface-nesting aquatic birds include the Pelagic Cormorant, Glaucous-winged Gull, and Black Oystercatcher. Additional unique avian features include several nesting pairs of the rare Peale's Peregrine Falcon, and the only known ground-nesting Bald Eagles in British Columbia. Northwestern Crows, Fox Sparrows and Song Sparrows nest commonly in the shrubbery and many more land and oceanic birds visit seasonally. Eight-one bird species have been recorded on the island and adjacent waters.

The only native land mammals present are large-bodied endemic races of the Deermouse and Townsend Vole which have evolved in isolation here for several thousand years. Domestic rabbits, probably introduced by former lighthouse keepers, have become feral. The island is one of only four Steller Sea Lion breeding rookeries in British Columbia, supporting hundreds of animals in the breeding season, and smaller numbers year-round. Harbour Seals are also common.

It is likely Sea Otter were common in the surrounding marine environment prior to extirpation. Occasional sightings are becoming more frequent indicating that Sea Otter are re-establishing colonies in this area.

Cultural:

A site just above the southern beach has extensive middens of mussels intermixed with bird, mammal and fish bones - a result of First Nations occupation. Structural remains from the 1909-1919 lighthouse era are of historic interest.

The ecological reserve is named to recognise Anne Vallée, a graduate student who suffered a fatal accident in 1982 while conducting seabird research on the island.

MANAGEMENT CONCERNS

SIGNIFICANT SPECIES	BC LIST STATUS	COSEWIC STATUS	CF PRIORITY
Northern Abalone	Red listed	Threatened (2000)	2
Common Murre	Red listed		2
Cassin's Auklet	Blue listed		2
Tufted Puffin	Blue listed		2
Hairy Goldfields	Blue listed		3
Rhinoceros Auklet			4
Steller Sea Lion	Blue listed	Special Concern (2003)	2

THREATS

Climate Change:	The IPCC has projected an increase in sea surface temperature and raised sea levels, both of which could result in changes in the presence and life cycles of marine species which are important food sources for the protected seabird populations. The loss of synchrony between seabird phenology and seasonal food source availability has already been documented on Triangle Island in developing Cassin's auklets and their marine food sources, as well as decreased tufted puffins population due to the growing absence of their main food source, the sand lance. (source: based on research by Dr. Colleen Cassidy St. Claire from University of Alberta)
Ecosystem Shift:	Salmonberry is displacing the tufted grasses on exposed slopes. This shift in vegetation cover may impact burrowing seabirds.
Transportation:	Vessel operations including lights and noise disturb marine mammals.

RESEARCH OPPORTUNITIES

The Canadian Wildlife Service has been studying seabirds here since 1974, and several journal papers and unpublished reports are available on Cassin's auklets, rhinoceros auklets and tufted puffins, as well as an account of the total bird fauna. A few regional reports include accounts of the flora and mammals.

The marine environment in this reserve has not been inventoried. Possible warden activities include vegetation cover and intertidal communities monitoring, rabbit management and documenting shoreline erosion.

**SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE ANNE VALLÉE
(TRIANGLE ISLAND) ER ACCOUNT**

Flora

brome, Alaska (*Bromus sitchensis*)
crab apple, Pacific (*Malus fusca*)
fern, lady (*Athyrium filix-femina* ssp. *cyclosorum*)
fern, licorice (*Polypodium glycyrrhiza*)
fern, spiny wood (*Dryopteris expansa*)
hairgrass, tufted (*Deschampsia cespitosa* ssp.)
salal, (*Gaultheria shallon*)
salmonberry (*Rubus spectabilis*)
saxifrage, Alaska (*Saxifraga ferruginea*)

Fauna

Abalone Northern (*Haliotis kamtschatkana*)
Auklet, Cassin's (*Ptychamphus aleuticus*)
Cormorant, Brandt's (*Phalacrocorax penicillatus*)
Cormorant, Pelagic (*Phalacrocorax pelagicus*)
Crow, Northwest, (*Corvus caurinus*)
Deermouse, (*Peromyscus maniculatus sartinensis*)
Eagle, Bald (*Haliaeetus leucocephalus*)
Falcon, Peale's Peregrine (*Falco peregrinus*)
Guillemot, Pigeon (*Cepphus columba*)
Gull, Glaucous-winged (*Larus glaucescens*)
Murre, Common (*Uria aalge*)
Murre, Thickbilled (*Uria lomvia*)
Oystercatcher, Black (*Haematopus bachmani*)
Puffin, Tufted (*Fratercula cirrhata*)
Rabbit, Domestic, (*Oryctolagus cuniculus*)
Sea Lion, Steller (*Eumetopias jubatus*)
Sea Otter (*Enhydra lutris*)
Seal Harbour (*Phoca vitulina*)
Sparrow, Fox (*Passerella iliaca*)
Sparrow, Song (*Melospiza melodia*)
Vole, Townsend's, (*Microtus townsendii cowani*)