

CHECLESET BAY

ER #109

ORIGINAL PURPOSE To provide sufficient high-quality marine habitat for a reintroduced population of sea otters to increase their range and abundance to the point that they are no longer endangered

CURRENT PURPOSE To protect a representative marine ecosystem on the west coast of Vancouver Island which provides habitat for a high diversity of species, including the sea otter and northern sea lion.

OVERVIEW

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|-----------------------------|--------------|-------------------|---|
| Date established: | 10 Dec. 1981 | Location: | Between Kyuquot and the Brooks Peninsula, W coast of Vancouver Island |
| ORC #: | 3109 | | |
| Map number: | 92 L/3;L/4 | | |
| Marine chart number: | 3623; 3683 | Latitude: | 50°51'N |
| | | Longitude: | 127°35'W |

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|--------------------|-----------|-------------------|-----------|
| Total Area: | 35,592 ha | Elevation: | -450-80 m |
| Land: | 511 ha | | |
| Marine: | 35,081 | | |

Access: Accessibly by boat or float plane.

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| Biogeoclimatic Zone: | Coastal Western Hemlock (CWH) |
| Biogeoclimatic Variant: | CWHvh1 Southern Very Wet Hypermaritime |
| Ecosection: | Windward Island Mountains |
| Region: | Vancouver Island |
| Management Area: | Nootka |

COMPOSITION

Physical: The reserve is 30 km in east-west extent. Over 98% of its area is marine, the rest consisting of about 40 islands from under one hectare to 240 ha in size. The northern boundary includes 40 km of Vancouver Island shoreline which, except where protected by islands, is a rocky, high-energy environment. However, a few small estuaries and pocket beaches occur along the Brooks Peninsula shoreline. The largest islands are near shore. These have rocky, indented shorelines, but sheltered areas among them support soft bottom communities. Low cliffs, sea stacks, arches and caves are fairly common coastal features. Small islands and reefs occur offshore for six to eight kilometres and their outer tier, a chain parallel to the coastline, is aptly named the Barrier Islands. These receive the full brunt of Pacific surf. Between the major groups of reefs, and seaward from them, the Continental Shelf seafloor is quite smooth, with a gentle slope to the southwest. Inshore from the outermost reefs the water depth is generally under 45 m except for northeast-southwest troughs excavated by Pleistocene glaciers which flowed from three fjords located to the northwest. Seaward from the outermost reefs the ocean floor drops gradually to 90 m and then plunges abruptly to 450 m at the extreme southwest corner of the reserve.

Biological:

The larger islands support forest cover dominated by Sitka spruce, including a spruce-western hemlock-salmonberry-sword fern association, and a spruce-salal-false lily-of-the-valley-moss association. Western redcedar and red alder occur.

Seabirds nest at three locations in the reserve (*as reported in the 1993 Ecological Reserve Guide*): Thomas Island and nearby reefs; the outer Bunsby-Clara area; and O'Leary-Cuttle-Yule Islets. Estimated breeding pairs are 50 fork-tailed storm-petrels, 1200 Leach's storm-petrels, 80 pelagic cormorants, 380 glaucous-winged gulls and 50 pigeon guillemots. Black oystercatchers breed on several reefs. Bald eagles nest at Bunsby and Thomas Islands, and probably elsewhere. A variety of land birds, including band-tailed pigeons and ruffed grouse, have been recorded on Bunsby Islands, and many feeding or transient seabirds on surrounding waters. Land mammals on one or more of the Bunsby Group are the dusky shrew, Townsend vole, deer mouse, red squirrel, raccoon, mink, black bear and black-tailed deer. None have evolved endemic forms. Western toads, clouded salamanders and northwestern garter snakes also occur.

Eighty-nine sea otters, previously extinct in Canadian waters, were introduced to Checleset Bay from Alaska over the period 1969-1972. By 1984 these had increased to at least 345 animals of which about 200 were within the reserve. Sea otters in Checleset Bay are largely restricted to a 50 km² area directly offshore from the Bunsby Islands, including the Barrier Islands from Clara to Farout. Here they feed extensively on clams, abalone, and sea urchins. At sea otter feeding sites, the giant red sea urchin, which limits the distribution of kelp by grazing, has been almost completely eliminated, allowing extensive growth of kelp to occur. At typical sea otter feeding sites, from shallows to ten metres in depth, the bull kelp *Nereocystis luetkeana* forms a dense surface canopy, the understory contains the kelps *Pterygophora californica*, *Laminaria setchellii*, *Laminaria* spp., or a mixture of these, and large amounts of algal drift and detritus are trapped in crevices. By contrast, reef habitats of similar depth but not yet inhabited by sea otters typically support giant red sea urchin densities up to five to ten per square metre, abalone stocks of one to ten per square metre, and little or no kelp in the sea urchin zone. Many other invertebrates are also more abundant in these areas denuded of kelp by sea urchins than at sea otter feeding sites. The present feeding range of Checleset Bay sea otters is identifiable by the near-absence of giant red sea urchins, however, clams and less preferred invertebrates are present, and a large part of the reserve is still available for population expansion.

Intertidal and subtidal reef habitats support an immense diversity and biomass of invertebrates and algae. Beneath the stands of kelp is a characteristic dense turf of bladed red algae, while cover on the rock surface often includes coralline algae, barnacles, bryozoans, hydroids, sponges, colonial ascidians, tunicates and sea anemones. Despite limited sampling in the reserve to date, forty-nine species of marine algae and 88 of marine invertebrates have been found. Adaptations to heavy surf, including strong attachment devices, heavy integument and clustering of individuals, are very evident here. Being large and containing a variety of marine habitats, the reserve is expected to contain a high proportion of fish species known to occur along the west coast of Vancouver Island.

Cultural: There are numerous First Nations' culturally significant sites in this reserve. A plank house remains at the north end of Checkaklis Island; an ancient rock formation is located in the Ououkinsh Inlet; subsurface shell middens are found on the west shore of the middle Bunsby Island and in a large bay at the south end of this same island.

The ER is fully within the **Ka:'yu:'k't'h'/Chek'tles7et'h' First Nations** territory. There are extensive First Nations' culturally significant sites within this reserve. The reserve covers large areas used for subsistence hunting, fishing, food gathering, botanical harvesting etc.

One island group in the Bunsby Island portion of the ER locally known as Barney's Island is a treaty selected land under Maa-nulth First Nations and is expected to become part of the **Ka:'yu:'k't'h'/Chek'tles7et'h' First Nations** lands as of April 1, 2011.

Additionally, there are numerous treaty selected lands sites immediately adjacent to the ER at Muqin/ Brooks Peninsula and Big Bunsby Parks.

The ER is one of several protected areas covered by an active memorandum of understanding for collaborative management between BC Parks and the **Ka:'yu:'k't'h'/Chek'tles7et'h' First Nations**.

MANAGEMENT CONCERNS

| SIGNIFICANT SPECIES | BC LIST STATUS | COSEWIC STATUS | CF PRIORITY |
|--|----------------|------------------------|-------------|
| Northern Abalone | Red listed | Threatened (2000) | 2 |
| Sea Otter | Blue listed | Special Concern (2007) | 1 |
| Olympia Oyster | Blue listed | Special Concern (2000) | 4 |
| Steller Sea Lion | Blue listed | Special Concern (2003) | 2 |
| <i>Laminaria longpipes</i> marine algae | Blue listed | | |
| <i>Laminaria sinclairii</i> marine algae | Blue listed | | |
| hairy goldfields | Blue listed | | 3 |
| Band-tailed Pigeon | Blue listed | Special Concern (2008) | 2 |
| Leach's Storm Petrel | | | 4 |
| Fork-tailed Storm Petrel | | | 4 |
| Pelagic Cormorant | | | 5 |
| Bald Eagle | | Not At Risk (1984) | 6 |
| Black Oystercatcher | | | 5 |
| Ruffed Grouse | | | 2 |
| Townsend's Vole | | | 6 |
| Black-tailed Deer | | | 6 |
| Western Toad | | Special Concern (2002) | 2 |
| Northwestern Garter Snake | | Not At Risk (2003) | 3 |

THREATS

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| Climate Change: | High water levels, raised sea surface temperatures and increased storm activity may alter the marine community composition within this reserve. Predator/prey dynamics may be altered as result, leading to possible declines in certain species' populations. |
| Recreation: | Current use patterns include camping on islands within the reserve. Access is by marine vessels. |
| Recreation: | Marine vessel use in the reserve disrupts marine conservation values. |
| Pollution: | Plastic waste is an increasing problem in coastal areas. Oil spills is an ever present risk in coastal areas. |

RESEARCH OPPORTUNITIES

Reports are available on sea otter surveys and behaviour, and on the effects of sea otters on subtidal community structure.
The reserve serves as a site for the study of rare and endangered species, near shore ecology, keystone species, otter habitat and otter population biology.

SCIENTIFIC NAMES OF SPECIES MENTIONED IN THE CHECLESET BAY ER ACCOUNT

Flora

alder, red (*Alnus rubra*)
algae (*Laminaria longipipes*)
algae (*Laminaria sinclairii*)
fern, sword (*Polystichum munitum*)
goldfields, hairy (*Lasthenia maritima*)
hemlock, western (*Tsuga heterophylla*)
lily-of-the-valley, false (*Maianthemum dilatatum*)
redcedar, western (*Thuja plicata*)
salal (*Gaultheria shallon*)
salmonberry (*Rubus spectabilis*)
spruce, Sitka (*Picea sitchensis*)

Fauna

Abalone, Northern (*Haliotis kamtschatkana*)
Bear, American Black (*Ursus americanus*)
Cormorant, Pelagic (*Phalacrocorax pelagicus*)
Deer, Black-tailed (*Odocoileus hemionus* ssp. *hemionus*)
Eagle, Bald (*Haliaeetus leucocephalus*)
Grouse, Ruffed (*Bonasa umbellus*)
Guillemot, Pigeon (*Cepphus columba*)
Gull, Glaucous-winged (*Larus glaucescens*)
Mink, American (*Neovison vison*)
Mouse, Deer (*Peromyscus maniculatus*)
Otter, Sea (*Enhydra lutris*)
Oyster, Olympia (*Ostrea conchaphila*)
Oystercatcher, Black (*Haematopus bachmani*)

Pigeon, Band-tailed (*Patagioenas fasciata*)
Raccoon (*Procyon lotor*)
Salamander, Clouded (*Aneides ferreus*)
Sea Lion, Stellar (*Eumetopias jubatus*)
Sea Urchin, Giant Red (*Strongylocentrotus franciscanus*)
Shrew, Dusky (*Sorex monticolus*)
Snake, Northwestern Garter (*Thamnophis ordinoides*)
Squirrel, Red (*Tamiasciurus hudsonicus*)
Storm-petrel, Fork-tailed (*Oceanodroma furcata*)
Storm-petrel, Leach's (*Oceanodroma leucorhoa*)
Toad, Western (*Bufo boreas*)
Vole, Townsend's (*Microtus townsendii*)