

# **Manson's Lagoon on Cortes Island, B.C.**



*Manson's Landing • Cortes Island, B.C.*

## **Fauna and Flora associated with a portion of Manson's Landing Provincial Park**

**Fred C. And Ruth M. Zwickel,  
Manson's Landing, B.C.  
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Fauna and Flora Associated with  
Manson's Lagoon, a portion of  
Manson's Landing Provincial Park

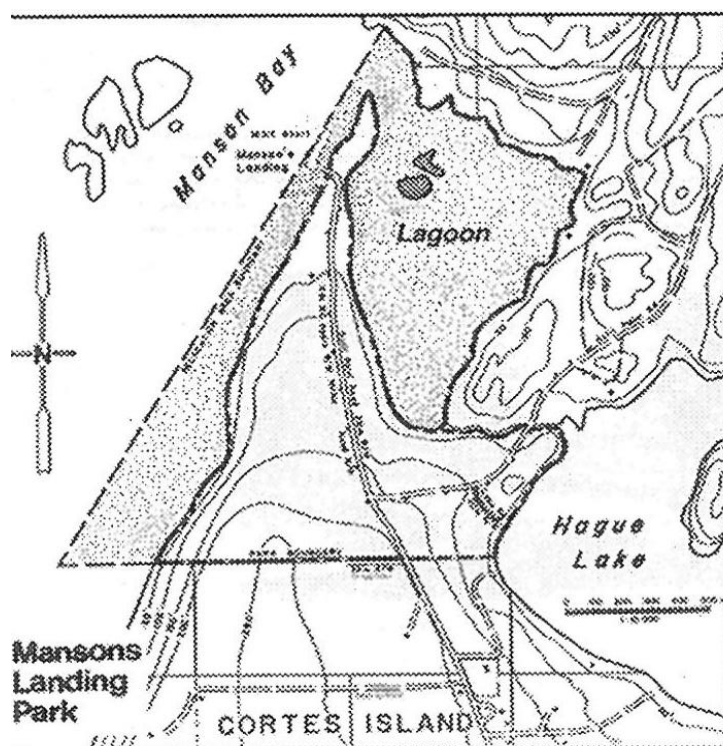
This inventory is prepared from observations in and around Manson's Lagoon by ourselves and others. We began to keep records of fauna and flora in the general area in 1987 and intensified our activities in 1988 and beyond, in cooperation with the provincial Parks Branch. This is the 12th revision, our 1st report having been submitted to the Parks Branch in February 1989.

Most observations were made from our home on the e. side of the lagoon, or during time spent on the water or tideflats. Included are animals living in the lagoon, utilizing it at some time of year, or that have been identified out to about 200 m landward from high tide line. Plants are those found in the lagoon or out to about 200 m landward from high tide line. The inventory undergoes continuous revision. Some identifications are tentative. Annotations are based on general observations and impressions only and are subject to revision. We have not attempted to catalogue insects or most terrestrial invertebrates, or assign status to terrestrial plants. We have done little with marine plankton, a very large group whose species often require specialist skills for identification. Some plants and animals identified in earlier drafts now appear to have been excluded by successional, or other, changes.

We identify the habitats to which we refer. A long 'barrier' *sandspit* forms the w. boundary of the lagoon and separates it from Manson's Bay. At the s. end of the lagoon is a *deep hole*, some 3 to 4 m deep at low tide. A *main channel* flows from there to Manson's Bay, even at low tide. Extensive sand or sand/mud/gravel *tideflats* and shallow *tidepools* are present at tidal levels below about 2 m. Two small *islets* occur as islands at tidal levels above about 2 m. Beaches on the w. side of the lagoon, i.e. those on the *sandspit*, are generally sandy; those to the n. and e., mainly rocky, in some cases *rock cliffs*. *Forests* on the n. and e. shorelines are quite open, dominated by Douglas fir and western red cedar, with scattered western hemlock and Pacific madrone. *Forests* on the s. and s.w. shorelines are more dense, dominated by Douglas-fir and western red cedar, mixed with western hemlock, lodgepole pine, and Pacific madrone. We use *residential upland* to refer to non-forested openings created by man, e.g. gardens, orchards, and other areas around homes. Although *residential upland* is limited, mainly along the n. and e. boundaries of the lagoon, some species are associated mainly with this habitat, or *residential upland/ forest edge*.

Fred C and Ruth M Zwickel, Manson's Landing, B.C., 29 November 2003

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## Number of species identified in major groups of organisms:

<b>PROTISTA</b>	1 only (undoubtedly many more)
<b>INVERTEBRATES</b>	107 species
<u>Marine</u>	101
Molluscs	44 (20 bivalves, 23 gastropods, 1 octopus)
Crustaceans	26 (12 crabs, 6 shrimp, 4 isopods, 2 barnacles, 1 copepod, 1 amphipod)
Echinoderms	10 (5 starfish, 1 brittle star, 2 sea cucumbers, 1 sea urchin, 1 sand dollar)
Other	21 (10 worms, 3 sea squirts, 3 anemones, 2 bryozoans, 2 jellyfish, 1 comb jelly)
<u>Terrestrial snails</u>	6
<b>VERTEBRATES</b>	180 species
<u>Fishes</u>	29 (includes 3 salmonids)
<u>Amphibians</u>	3 (1 newt, 2 frogs)
<u>Reptiles</u>	4 (1 lizard, 3 snakes)
<u>Birds</u>	129 (64 are aquatic or use lagoon, tideflats, or tidepools for feeding)
<u>Mammals</u>	15 (4 make extensive use of lagoon)
<b>MARINE PLANTS</b>	25 species (23 algae, 2 grasses)
<b>TERRESTRIAL PLANTS</b>	224 species
<u>Fungi</u>	68
<u>Vascular plants</u>	157 (11 ferns/ horsetails, 11 grasses/ sedges, 5 conifers, 130 other)

### *Protista (former Protozoa)*

#### **Noctiluca**

(*Noctiluca scintillans*)

This is the single celled organism most commonly involved in producing bioluminescence in local marine waters in summer and fall. It can be very abundant. On 18 June 2003, a strong orange-coloured bloom of this organism was present in the Cortes Island area, dubbed "orange crush" by some residents. Concentrations of this bloom were present along the eastern edge of the lagoon on this date pushed there by a westerly breeze.

### *Jellyfish and sea anemones (Coelenterata)*

#### **Lion's mane jellyfish**

(*Cyanea capillata*)

First record--large number stranded on tideflats after very strong west wind, 25 September 1999. Counted 17 along ~200 m of beach, n.e. side of lagoon; the largest was ~70 cm in diameter. Since 1st record, have had some in lagoon each summer up to and including 2003. Appear mid-to-late summer

**Moon jellyfish**  
(*Aurelia aurita*)

Very abundant late summer, autumn, fewer in winter; many stranded on tideflats.

**Green burrowing anemone**  
(*Anthopleura artemisia*)

Occasional in tidepools by islets (SLM).

**White plumose anemone**  
(*Metridium senile*)

Occasional in tidepools by islets. Brown and white individuals have been seen.

**Haliplanella**  
(*Haliplanella lineata*)

Occasional, in cracks on rock surfaces on islets (SLM).

### Comb Jellies (Ctenophora)

**Sea gooseberry**  
(*Peurobrachia bachei*)

Occasionally very abundant, especially summer; move in and out of lagoon with tides.

### Ribbon worms (Nemertea)

**Green nemertean**  
(*Emplectonema* sp)

Found in clumps of mussels (NLM).

**Restless worm**  
(*Paranemertes peregrina*)

Found in clumps of mussels (NLM).

### Sand and tubeworms (Polychaeta)

**Ophiodromus**  
(*Ophiodromus pugettensis*)

One collected in tidepool near mouth of lagoon. Status?

**Large musselworm**  
(*Nereis vexillosa*)

Occasionally found while digging clams in tideflats. Also, in clusters of mussels.

**Armored scaleworm**  
(*Haedosydna brevisetosa*)

Found in clumps of mussels and shell litter (SLM).

**Harmothoe** (scaleworm)  
(*Harmothoe imbricata*)

Found in clumps of mussels and shell litter (SLM).

**Threadworm**  
(*Notomastus tenuis?*)

Abundant some sand flats e. side of lagoon, likely elsewhere.

**Pacific lugworm**  
(*Abarenicola pacifica*)

Subterranean. One identified from sandflat e. side of lagoon, castings on surface suggest it is common.

**Calcareous tubeworm**  
(*Serpula vermicularis*)

Common, on rocks and logs.

**Tiny tube worm**  
(*Spirorbis bifurcatus?*)

On shells and rocks. Common to abundant.

## *Snails, nudibranch, clams, octopuses (Mollusca)*

**Lined chiton**  
(*Tonicella insignis*)

Uncommon, rare? One identified, lower main channel.

**Mossy chiton**  
(*Mopalia muscosa*)

Uncommon, rare? One identified, 1 Jul 2001.

**Woody chiton**  
(*Mopalia fignosa*)

Common, in tide pools and rocky habitats.

**Red-flecked mopalia**  
(*Mopalia spectabilis*)

Uncommon, rare? One specimen identified.

**Masked Limpet**  
(*Tectura persona*)

Common on rock cliffs and exposed rocks in upper intertidal.

**Plate limpet**  
(*Tectura scutum*)

Common on rock cliffs and exposed rocks in upper intertidal.

**Finger limpet**  
(*Lottia digitalis*)

Occasional on solid rock (SLM).

**Shield limpet**  
(*Lottia pe/ta*)

Common on solid rock (SLM).

**Chink shell**  
(*Lacuna* sp)

Egg masses found on eelgrass (SLM).

**Sitka littorine**  
(*Littorina sitkana*)

Uncommon. One found at islets (CG and AD). We have seen others occasionally since then.

**Checkered littorine**  
(*Littorina scutulata*)

Very abundant among acorn barnacles and rock crevices, upper high tide level. Shells used by very small hermit crabs.

**Mudflat snail**  
(*Batillaria zonalis*)

Extremely abundant on tideflats; millions? Shells used by small hermit crabs. Introduced species.

**Wrinkled slippersnail**  
(*Crepidatella dorsata*)

One found on clam shell 30 Jul 2003 (SLS)--1st record. A few days later SLS finds a piece of oyster shell with 5, of varying sizes. Perhaps more common than these records suggest--just missed?

**Arctic moonsnail**  
(*Cryptonatica affinis*)

SLS finds a single shell, very small, occupied by a granular hermit crab. In very shallow water, e. side of lagoon, 2 Aug 2003--only record.

<b>Lewis's moonsnail</b> ( <i>Euspira lewisii</i> )	Common in tidepools and main channel. Egg cases common.
<b>Wrinkled whelk</b> ( <i>Nucella lamellosa</i> )	Occasional in tidepools by islets and in main channel. May have been introduced into lagoon from elsewhere. Since at least 2000, common in and under clusters of oysters on tide flats.
<b>Spindle whelk</b> ( <i>Lirabuccinum dirum</i> )	Common, some rocky habitats, and on clam and oyster shells on tideflats. Shells used by hermit crabs. Perhaps has declined in recent years, paralleling loss of eelgrass.
<b>Dovesnail</b> ( <i>Alia</i> sp)	Found in shell litter (SLM).
<b>Bubble shell</b> ( <i>Haminoea vesicula</i> )	Has been extremely abundant in tidepools with eelgrass in summer; lays eggs on eelgrass. Not seen in e. side tidepools for at least 6 years. See depletion of eelgrass, below. Reported present lower main channel, summer 1997 (SLM).
<b>Barnacle nudibranch</b> ( <i>Onchidoris bilamellata</i> )	Occasional, on rock surfaces on islets (SLM).
<b>Sea lemon</b> ( <i>Archidoris montereyensis</i> )	Occasional, in tidepools or on rock cliffs. Nine individuals seen to date.
<b>Hooded nudibranch</b> ( <i>Melibe leonina</i> )	Rare? Two specimens seen in lagoon. Likely a seasonal tidal transient and more common than our records indicate.
<b>Opalescent nudibranch</b> ( <i>Hermisenda crassicornis</i> )	Reported as uncommon on sea weeds in main channel (SLM).
<b>Banana slug</b> ( <i>Ariolimax columbianus</i> )	Common, forest and residential upland/forest edge; terrestrial species.
<b>Arion</b> ( <i>Arion ater</i> )	Abundant, residential upland/forest edge; a terrestrial slug. Only the black-colour-phase has been seen. Increasing (common 1989, abundant 1990, very abundant 1991, 92, 93, 94, 95). Numbers appeared down in 1996 and 1997, but still common. Occasional summers 1998, 99, 2000, 01, 02. Abundant 2003.
<b>Phrysaon</b> ( <i>Phrysaon andersoni</i> )	Rare, 1 only found near our orchard, 8 Oct 1998; terrestrial slug.
<b>Monadenia</b> ( <i>Monadenia fidelis</i> )	Occasional, forest and residential upland/forest edge; terrestrial snail.



<b>Haplotrema</b> ( <i>Haplotrema vancouverensis</i> )	Occasional. Mainly in our garden; terrestrial snail.
<b>Vespericola</b> ( <i>Vespericola colombiana</i> )	Two only have been seen, 1 in our garden, 1 in our yard; terrestrial snail.
<b>Blue mussel</b> ( <i>Mytilus edulis</i> )	Common to abundant in rocky crevices and associated with oyster shells.
<b>Giant horse mussel</b> ( <i>Modiolus rectus</i> )	Two shells found in lagoon. Very rare. We have seen no live specimens.
<b>Pacific oyster</b> ( <i>Crassostrea gigas</i> )	Common; has been very abundant but reduced by commercial harvesting. Some recovery 1996-2000 and beyond. Introduced species.
<b>Native oyster</b> ( <i>Ostrea lurida</i> )	One possible specimen has been seen in lagoon (perhaps a small Pacific oyster?); attached to a rock. Very rare, if present.
<b>Jingle shell</b> ( <i>Pododesmus cepio</i> )	Uncommon. A few live records in tidepools near islands. Few shells found on tideflats.
<b>Inconspicuous macoma</b> ( <i>Macoma balthica</i> )	Shell remains suggest it is common. We have seen only 1 live specimen.
<b>Sand clam</b> ( <i>Macoma secta</i> )	Uncommon?; shells occasionally found on tideflats and in tidepools. We have seen only 1 live specimen.
<b>Polluted macoma</b> ( <i>Macoma irus</i> )	We have seen only 2 shells, but it is so similar to the bent-nosed clam that it may be more common than indicated.
<b>Bent nose clam</b> ( <i>Macoma nasuta</i> )	Common on tideflats; often dug with littleneck clams.
<b>Varnish clam</b> ( <i>Nuttallia obscurata</i> )	One shell found in lagoon by SLM, June 1994. Several have been seen on spit outside lagoon, near government dock. By 2000 very well established inside mouth of lagoon. First seen in BC in 1980s; native of Asia. May have been introduced with oysters or from pumping of bilges. Now established at Smelt Bay, Hollyhock, Shark Spit, and Gorge Harbour.
<b>Horse clam</b> ( <i>Tresus capax</i> )	Shell remains suggest it is common. Occasional live specimens seen.
<b>Mud shrimp clam</b> ( <i>Orobitella rugifera</i> )	Found commonly on mud shrimp (SLM).
<b>Heart cockle</b> ( <i>Clinocardium nuttallii</i> )	Common on sandy tideflats; often dug with littleneck clams.

**Native littleneck clam**  
(*Prototheca staminea*)

Common to abundant on tideflats. Decreased due to commercial digging in 1980s. Appears to have increased, with reduced commercial digging in recent years.

**Japanese littleneck clam**  
(*Venerupis japonica*)

Abundant, especially on upper intertidal mud/sand/gravel flats. Decreased due to commercial digging in 1980s. Appears to have increased, with reduced commercial digging in recent years. Introduced species.

**Butter clam**  
(*Saxidomas giganteus*)

Shell remains suggest locally common. We have seen occasional live specimens.

**Round diplodon**  
(*Diplodonta orbel/a*)

Occasional shells identified from lagoon, but they are likely more abundant than these records indicate and have been missed because of small size. We have seen no live specimens.

**False mya**  
(*Cryptomya californica*)

Likely common, based on shells on tideflats. We have seen 1 live specimen. Lives in burrows of mud and ghost shrimp.

**Softshell clam**  
(*Mya arenaria*)

Common, based on shells on tideflats and tidepools. Occasionally dug with littleneck clams. Introduced species.

**Shipworm**  
(*Bankia setacea*)

Occasionally wood flotsam with signs of the shipworm are found in the lagoon. We have seen no live specimens.

**Pacific octopus**  
(*Octopus dofleini*)

One baby is reported to have been found under a rock in the main channel just inside mouth of the lagoon and another under a rock on outside of the spit (NO).

*Copepods, barnacles, isopods, amphipods, shrimp, crabs*  
**(Crustacea)**

**Clausidium** (copepod)  
(*Clausidium vancouverense*)

Common under carapace of some ghost shrimp.

**Common acorn barnacle**  
(*Balanus glandula*)

Very abundant on rock cliffs and on exposed rocks and clam and oyster shells, upper intertidal. Other species present?

**Acorn barnacle**  
(*Chthamalus dalli*)

Common on exposed rocks, clam and oyster shells; intertidal.

<b>Gribble</b> ( <i>Limnoria lignorum</i> )	Occasional in wood flotsam found in lagoon.
<b>Water-line isopod</b> ( <i>Cirolana harfordi</i> )	Common in shell litter, under loose gravel, and in mussel clumps (SLM).
<b>Rockweed isopod</b> ( <i>Idotea wosnesenskii</i> )	One found swimming in lagoon July 1996 (MGS); another Aug 1997. More common in rockweed at islets (SLM).
<b>Rock louse</b> ( <i>Ligia occidentalis</i> )	One found on rock outcrop by our boat launch, east side of lagoon, 9 Aug 2002--only record (BRS).
<b>Sand flea</b> ( <i>Traskorchestia traskiana</i> )	Very abundant on sandy beaches above upper tide level, around and under debris.
<b>Skeleton shrimp</b> ( <i>Caprella sp</i> )	Abundant in algae on float in deep hole.
<b>Broken-backed shrimp</b> ( <i>Heptacarpus sitchensis</i> )	Occasional in tide pools with algal growth, especially sea lettuce. May be more than 1 species present.
<b>Hippolyte</b> (shrimp) ( <i>Hippolyte clarki</i> )	Uncommon? / rare? Two identified from tidepool.
<b>Crangon shrimp</b> ( <i>Crangon nigricauda</i> )	Once common in tide pools and main channel. Appears to have declined in recent years, paralleling loss of eelgrass.
<b>Mud shrimp</b> ( <i>Upogebia pugettensis</i> )	Common in some upper intertidal mud/ sandflats.
<b>Ghost shrimp</b> ( <i>Callinassa californiensis</i> )	Common in some upper intertidal mud/sand flats.
<b>Granular hermit crab</b> ( <i>Pagurus granosimanus</i> )	Has been abundant in shallow tidepools with eelgrass. But, see depletion of eelgrass, below.
<b>Hairy hermit crab</b> ( <i>Pagurus hirsutiusculus</i> )	Has been common? in shallow tidepools with eelgrass. But, see depletion of eelgrass, below.
<b>Porcelain crab</b> ( <i>Petrolisthes eriomerus?</i> )	One claw of a porcelain crab found in lagoon near deep hole by NLM, 19 Jul 2002. Likely this species. Only record. May have come in with tide?
<b>Kelp crab</b> ( <i>Pugettia producta</i> )	Common in deep hole, lower main channel, and tidepools with eelgrass. But, see depletion of eelgrass, below. Large die-off in shallow tidepools summer 1999. Common in tide pools 2003 but appears to have experienced another summer die-off this year.

**Helmet crab**  
(*Telmessus cheiragonus*)

Uncommon in main channel and tidepools with eelgrass. But, see depletion of eelgrass, below. Die-off in shallow tidepools summer 1999. Rarely seen since 2000.

**Red rock crab**  
(*Cancer productus*)

Common in shallow tidepools with eelgrass and in main channel. But, see depletion of eelgrass, below. Large die-off in shallow tidepools summer 1999. Rarely seen 2003 but some dead individuals have been found.

**Dungeness crab**  
(*Cancer magister*)

Rare? in main channel (MGS), said to have once been common in lagoon (MC).

**Graceful crab**  
(*Cancer gracilis*)

Common in shallow tidepools at low tide. We have missed this one in the past, lumping it with the red rock crab. Likely less common in e. side tidepools than earlier due to depletion of eelgrass. Large die-off in shallow tidepools summer 1999. Much less abundant in 2003 than when native eelgrass was thriving.

**Black-clawed crab**  
(*Lophopa nopeus bellis bellis*)

One dead individual found in tidepool, 11 Aug 1999 (SLS)--only record for lagoon.

**Hairy shore crab**  
(*Hemigrapsus oregonensis*)

Very abundant in upper intertidal areas with rock crevices and broken rocks.

**Purple shore crab**  
(*Hemigrapsus nudus*)

Common, same habitats as above.

**Pea crab**  
(*Pinnixa faba*)

Common, inside shells of horse clams (SLM).

### *Bryozoans* (**Bryozoa**)

**Membranipora** (bryozoan)  
(*Membranipora membranacea*)

Common, encrusted on kelp in fall (SLM).

**Orange encrusting bryozoan**  
(*Schizoporella* sp)

Common, encrusted on clam shells and rocks.

### *Starfish, sand dollars, sea cucumbers* (**Echinodermata**)

**Leather star**  
(*Dermasterias imbricata*)

Uncommon in some tidepools. Occasional in lower main channel.

**Mottled star**  
(*Evasterias troschelii*)

Occasional, in main channel.

**Giant pink star**  
(*Pisaster brevispinus*)

Occasional, in tidepools and main channel.

**Purple sea star**  
(*Pisaster ochraceus*)

Occasional, rock faces and broken rock, mud flats.  
Common in lower main channel.

**Sunflower star**  
(*Pycnopodia helianthoides*)

Uncommon in deeper pools of main channel.

**Amphipholis** (brittle star)  
(*Amphipholis squamata?*)

Rare? First noted in tidepool at n. end of n. islet, by BN; on sea lettuce, July 1998--likely this species. Later found in lower main channel by SLM, on and under rocks?

**Green sea urchin**  
(*Strongylocentrotus droebachiensis*)

Two live specimens found in e. side tidepool, 1997 (1 by LH); also 1 small test. Perhaps brought into lagoon with oysters. SLM reports small individuals in shell litter.

**Sand dollar**  
(*Dendraster excentricus*)

Very abundant in shallow tidepools and main channel; millions? Suffer from disturbance by clam diggers. Have increased in areas depleted of eelgrass.

**Orange sea cucumber**  
(*Cucumaria miniata*)

Uncommon, in tidepools by islets and lower main channel.

**California sea cucumber**  
(*Parastichopus californicus*)

Two found in lower main channel; 1 in tidepool by islets. Uncommon? rare?

### Sea squirts (Ascideacea)

**Mushroom tunicate**  
(*Distaplia occidentalis*)

Common on float in deep hole.

**Transparent sea squirt**  
(*Corella inflata*)

Common on float in deep hole.

**Stalked tunicate**  
(*Styela gibbsii*)

Occasional, on float in deep hole. On stalks of seaweed in main channel according to SLM.

### Fishes (Pisces)

**Dogfish shark**  
(*Squalus acanthias*)

Uncommon tidal transient, sometimes stranded in tidepools; sometimes captured there by bald eagles.

**Big skate**  
(*Raja binoculata*)

One (1.3 m long) being fed on by bald eagles and turkey vultures, May 1992. Fresh, appeared to have been stranded on tide flats. Likely a tidal transient. A 2nd (1.6 m long) found dead Sept 1992; fresh, found belly-up, no apparent injury but subcutaneous hemorrhaging. Large live skate

	in tidepool, Sept 1993; likely this species.
<b>Chum salmon</b> ( <i>Oncorhynchus keta</i> )	Reported coming into mouth of inlet creek from Hague Lake; we have seen none.
<b>Coho salmon</b> ( <i>Oncorhynchus kisutch</i> )	Reported coming into mouth of inlet creek from Hague Lake, 1990 and 1991; we have seen none. These were likely returnees from stocking in Hague Lake, 1988 and 1989. No recent records (2000).
<b>Coastal cutthroat trout</b> ( <i>Oncorhynchus clarki clarki</i> )	Reported in lagoon (JD); we saw 1 taken by a fisherman at mouth of lagoon. About 27-28 Aug 2001, MGS sees an otter eating an ~30 cm cutthroat in lagoon.
<b>Plainfin midshipman</b> ( <i>Porichthys notatus</i> )	Several found in main channel, partly buried in sand under water-logged sheets of plywood. Breeding?
<b>Tube-snout</b> ( <i>Aulorhynchus flavidus</i> )	Reported in lagoon (RGC); we have seen none.
<b>Three-spined stickleback</b> ( <i>Gasterosteus aculeatus</i> )	Common in deep hole at low tide. Occasional in tidepools and main channel.
<b>Pipefish</b> ( <i>Syngnathus griseolineatus</i> )	Occasional, associated with sargassum in main channel.
<b>Shiner perch</b> ( <i>Cymatogaster aggregata</i> )	Common in schools around floats in deep hole at low tide. Also, schools in tidepools. Young seen in main channel at low tide.
<b>Striped sea perch</b> ( <i>Embiotica lateralis</i> )	Common around subtidal rocks at mouth of main channel when tide is in (MGS). Young seen in mid main channel at low tide. Adults likely tidal transients.
<b>Pile perch</b> ( <i>Rhacochilus vacca</i> )	Common around subtidal rocks at mouth of main channel when tide is in (MGS). Likely a tidal transient.
<b>High cockscomb</b> ( <i>Anoplarchus purpureus</i> )	Reported in lagoon (RGC); we have identified 2 (1991).
<b>Black prickleback</b> ( <i>Xiphister atropurpureus</i> )	Reported in lagoon (RGC); we have seen none.
<b>Penpoint gunnel</b> ( <i>Apodichthys flavidus</i> )	Common in main channel and occasional in tidepools at low tide.
<b>Crescent gunnel</b> ( <i>Pholis laeta</i> )	Likely common. Two identified.

<b>Saddleback gunnel</b> ( <i>Pholis ornata</i> )	One found on incoming tide.
<b>Rockweed gunnel</b> ( <i>Xerepes fucorum</i> )	Common in main channel, occasional in tidepools at low tide.
<b>Pacific sandlance</b> ( <i>Ammodytes hexapterus</i> )	Can be very abundant on incoming tides, in spring and summer. Heavily used by gulls and mergansers.
<b>Arrow goby</b> ( <i>Clevelandia ios</i> )	One found in sand while clam digging. Another in claws of a <i>Hemigrapsus</i> crab. Occasional on sandy bottoms.
<b>Blackeye goby</b> ( <i>Coryphopterus nicholsi</i> )	Reported in lagoon (RGC); we have seen none.
<b>Kelp greenling</b> ( <i>Hexagrammos decagrammus</i> )	Identified in main channel near mouth of lagoon on incoming tide (MGS).
<b>Sharpnose sculpin</b> ( <i>Clinocottus acuticeps</i> )	Occasional in tide pools near mouth of lagoon.
<b>Pacific staghorn sculpin</b> ( <i>Leptocottus armatus</i> )	Common, mouth of main channel when tide is in (MGS). One identified in main channel at low tide
<b>Tidepool sculpin</b> ( <i>Oligocottus maculosus</i> )	Very abundant in tidepools and main channel
<b>Cabezon</b> ( <i>Scorpaenichthys marmoratus</i> )	Two small juveniles have been identified. Status uncertain.
<b>Tidepool snailfish</b> ( <i>Liparis florae</i> )	One juvenile found on incoming tide (HLZ).
<b>Speckled sanddab</b> ( <i>Citharichthys stigmaeus</i> )	Small flatfish were common in shallow tide pools in early years. Two have been identified as this species. Few seen in recent years--see depletion of eelgrass, below.
<b>Starry flounder</b> ( <i>Platyichthys stellatus</i> )	Reported in lagoon by RGC. We have identified 1 juvenile.

**NOTE:** RGC suggests there may be as many as 20 more species, many of which are likely tidal transients.

### *Salamanders, frogs (Amphibia)*

<b>Pacific coast newt</b> ( <i>Taricha granulosa</i> )	Common, in open forest. Found crossing trails and roads in damp weather.
<b>Pacific treefrog</b> ( <i>Hyla regilla</i> )	Common; often heard calling e. side of lagoon. We have seen several.

**Red-legged frog**  
(*Rana aurora*)

In overflow creek from Hague Lake (GS); we have seen none.

*Lizards, snakes* (Reptilia)

**Northern alligator lizard**  
(*Elgaria coerulea*)

JD reported that her cat brought home specimens from near mouth of lagoon. She finds a dried, intact specimen, early September 1992. One found e. side of lagoon, flattened in our driveway, 1997 (SLS).

**Northwestern garter snake**  
(*Thamnophis sirtalis*)

Rare?, residential upland, especially grassy openings and forest edge. None seen 1994, 95; 1 in 96, none 1997, 1 in 98, none 1999-2003.

**Puget garter snake**  
(*Thamnophis ordinoides*)

Common, residential upland, especially grassy openings and forest edge.

**Coast garter snake**  
(*Thamnophis elegans*)

Common, residential upland, especially grassy openings and forest edge.

*Birds* (Aves)

**Pacific loon**  
(*Gavia pacifica*)

Winter resident?. We have only 1 certain sighting in the lagoon (Jan 1996), but, see common loon.

**Common loon**  
(*Gavia immer*)

Occasional summer, fall; winter resident but may be confused with Pacific loon in winter plumage.

**Pied-billed grebe**  
(*Podilymbus podiceps*)

One record only, mid Dec; 1 bird.

**Horned grebe**  
(*Podiceps auritus*)

Uncommon winter visitor.

**Western grebe**  
(*Aechmophorus occidentalis*)

Rare winter visitor and during migration.

**Double-crested cormorant**  
(*Phalacrocorax auritus*)

Three records only; 1 in Oct, feeding at edge of flock of red-breasted mergansers and 2 in Nov, a single and a pair.

**Pelagic cormorant**  
(*Phalacrocorax pelagicus*)

One record only, 1 bird, early Nov, in main channel just inside mouth of lagoon.

**Great blue heron**  
(*Ardea herodias*)

Common year - round resident. Extensive use of tidepools for feeding. As many as 17 have been seen feeding at one time; often, 10-12 prior to 1993.

Less common 1993-2000; due to depletion of eelgrass? Maximum of 8 seen feeding in lagoon 1995, most often 1-4; maximum of 4 in 1997; since then usually. Up to ~15 once roosted in trees around lagoon in winter. In recent years



	usually 5. Sometimes see 4-5 feeding in tidepools, spring/summer 2003, usually 2-3.
<b>Trumpeter swan</b> ( <i>Olor buccinator</i> )	Occasional migrant and winter visitor. Two neck banded birds from a transplant into Oregon were seen, May 1993. One dead bird, Apr 1999.
<b>Greater white-fronted goose</b> ( <i>Anser albifrons</i> )	Passes over in spring/ fall migrations. One loafing at end of spit with a flock of Canada geese, Oct 1995. Four flushed from tide flat, Sep 1998.
<b>Snow goose</b> ( <i>Chen caerulescens</i> )	Pass over in spring/fall migrations. One only sighting in lagoon (KS and ZS).
<b>Canada goose</b> ( <i>Branta canadensis</i> )	Common winter resident in recent years (since ~ 1990). Winter of 1992/ 93, ~40 moved back and forth between lagoon, Gorge Harbour, Gunflint, Hague, and Anvil Lakes. Since winter of 1993/94 only occasionally in lagoon, perhaps due to depletion of eelgrass, see below. Breeding records in Gorge Harbour each year since 1993. Migrants pass over in large numbers in spring and fall.
<b>Wood duck</b> ( <i>Aix sponsa</i> )	Very rare, 1 sighting only; 2 males (partial eclipse, or juvenal plumage) and 2 females.
<b>Green-winged teal</b> ( <i>Anas crecca</i> )	Rare, 2 spring sightings; a pair and a lone female. Seven autumn sightings, 3 females, a flock of 10 (1 female and perhaps 9 juveniles), 2 flocks of 11 (females and/ or immature males), a flock of ±15, and 2 separate pairs.
<b>Mallard</b> ( <i>Anas platyrhynchos</i> )	Occasional spring/fall migrants and winter/spring visitors. Feed in tidepools. May visit lagoon from Hague, Gunflint, and Anvil Lakes?
<b>Northern pintail</b> ( <i>Anas acuta</i> )	Two records only; a pair feeding in tidepool, late Sep (male in eclipse or juvenal plumage), 3 females and / or large juveniles 23 Aug.
<b>Blue-winged teal</b> ( <i>Anas discors</i> )	Rare, 1 spring sighting only by us; a male. Another in Sep, a male in eclipse or juvenal plumage (JS).
<b>Northern shoveler</b> ( <i>Spatula clypeata</i> )	Two records only: a pair (in eclipse plumage?) Sep, and a female, early Oct.
<b>Gadwall</b> ( <i>Anas strepera</i> )	One record only, a pair, May 1995.
<b>American wigeon</b> ( <i>Anas americana</i> )	Occasional spring/ fall migrant, winter visitor. May visit lagoon from Hague, Gunflint, Anvil lakes?

<b>Ring-necked duck</b> ( <i>Aythya collaris</i> )	Rare spring/fall migrant and winter visitor.
<b>Greater scaup</b> ( <i>Aythya marila</i> )	Common winter resident. The 4th or 5th most common wintering duck in lagoon. One only seen winter of 1999/2000. Few sightings since 2000, now uncommon.
<b>Lesser scaup</b> ( <i>Aythya affinis</i> )	One mid-winter record (1990/91), a male; 17 (9 males, 8 females), Mar 1995.
<b>Harlequin duck</b> ( <i>Histrionicus histrionicus</i> )	Common winter resident prior to about 1995 but less common since then. Only occasional sightings since winter of 1997 /98.
<b>Old squaw</b> ( <i>Clangula hyemalis</i> )	One female with a flock of $\pm 100$ surf scoters, early Feb 1991. Flock of 14 feeding just outside end of spit, winter 1995/96. Small flock feeding inside mouth of lagoon winter 1997/98 (GM).
<b>Black scoter</b> ( <i>Melanitta nigra</i> )	Very rare winter visitor and migrant.
<b>Surf scoter</b> ( <i>Melanitta perspicillata</i> )	Once very abundant winter resident; most common duck on the lagoon in winter (several hundred). Few in lagoon winter 1996/97; almost none winters of 1997/98 and 1998/99. None seen in lagoon winter 1999/2000. Four, 29 Dec 2001; 6-11, 18 Jan 2002; 2-3, 22-24 Nov 2002; 1 group of 10- 12 late Dec 2002 and early Jan 2003.
<b>White-winged scoter</b> ( <i>Melanitta fusca</i> )	Very rare winter visitor and migrant.
<b>Common goldeneye</b> ( <i>Bucephala clangula</i> )	Common winter resident. Until winter 1995/ 96, 4th or 5th most common wintering duck in lagoon. Reduced numbers since winter 1997/98.
<b>Barrow's goldeneye</b> ( <i>Bucephala islandica</i> )	Once an uncommon winter visitor but common since winter 1994/ 95. More abundant last 8 winters than common goldeneye. Together, the 2 goldeneyes were the 3rd most common winter ducks in lagoon since 1997/ 98.
<b>Bufflehead</b> ( <i>Bucephala albeola</i> )	Common winter resident. The 3rd most common winter duck in lagoon in earlier years. Reduced numbers winter 1997/ 98, but likely 2nd most common among the ducks. First or 2nd most common since winter of 1999 / 2000 --see red-breasted merganser.
<b>Hooded merganser</b> ( <i>Lophodytes cucullatus</i> )	Occasional winter visitor. Breeds at nearby Anvil Lake (CG).

<b>Common merganser</b> ( <i>Mergus merganser</i> )	Occasional winter resident, uncommon summer visitor, breeds on or near lagoon, perhaps at Hague Lake. Broods sometimes seen in lagoon.
<b>Red-breasted merganser</b> ( <i>Mergus serrator</i> )	Abundant winter resident. Normally the 2nd most common wintering duck in the lagoon. Reduced numbers since winter 1997 /98. First or 2nd most common since winter of 1999/2000--see bufflehead.
<b>Turkey vulture</b> ( <i>Cathartes aura</i> )	Common spring / summer resident, occasionally feeds on tidflats in lagoon.
<b>Osprey</b> ( <i>Pandion haliaetus</i> )	Rare visitor to lagoon. Two or 3 records only.
<b>Bald eagle</b> ( <i>Haliaeetus leucocephalus</i> )	Common year-round resident; feeds on tidflats and in tidepools. Takes occasional duck.
<b>Sharp-shinned hawk</b> ( <i>Accipiter striatus</i> )	Common resident, forest. We have 1 late fall sighting--taking a junco off our feeder; occasional other sightings chasing birds at our feeder. Other sightings on sandspit by GS.
<b>Cooper's hawk</b> ( <i>Accipiter cooperii</i> )	Rare resident, forest. One record attacking a Steller's jay at our feeder; 2 other sightings by us. Others by GS.
<b>Northern goshawk</b> ( <i>Accipiter gentilis</i> )	One sighting by HM, s.w. part of lagoon, 5 Jul 1999.
<b>Red-tailed hawk</b> ( <i>Buteo jamaicensis</i> )	Rare. Reported flying over lagoon (GS). We have seen 2.
<b>Merlin</b> ( <i>Falco columbarius</i> )	Summer resident. Likely breeding; likely 1 territorial pair, spring/summer 1991. A returnee? (spring 1992) but did not appear to stay. Likely territorial pairs, summers of 1993, 94, 95, (perhaps 1 young raised 95, 3 seen late summer by HM), 96, 97, 98, 99. Likely territorial pairs summers of 2000, 01, 02, 03.
<b>Blue grouse</b> ( <i>Dendragapus obscurus</i> )	Common summer resident, forest. Occasionally strays into residential upland. Perhaps more common in 1980s than 1990s. Appears to have been a good production year, 2003.
<b>Ring-necked pheasant</b> ( <i>Phasianus colchicus</i> )	One male seen on spit, late Feb 1997 (GM). Likely an aviary escapee or recent release.
<b>Virginia rail?</b> ( <i>Rallus limicola</i> )	Small blackish rail runs across our driveway. About 1/ 2 grown. Likely a young Virginia rail.

<b>American coot</b> ( <i>Fulica americana</i> )	One record only, 1 bird mixed with flock of ducks, mainly surf scoters, Dec 1990 (MGS).
<b>Sandhill crane</b> ( <i>Grus canadensis</i> )	Passes over in spring migration. Not seen to stop. One flock passes over, Dec 1994.
<b>Black-bellied plover</b> ( <i>Pluvialis squatarola</i> )	Rare migrant (GS); we have seen none.
<b>Killdeer</b> ( <i>Charadrius vociferous</i> )	Occasional migrant (summer resident?) (GS); we have seen none.
<b>Black oystercatcher</b> ( <i>Haematopus bachmani</i> )	One pair appears to have had a territory (and nest?) on 1 of islets in early 1980 s--no evidence that they nested. Two seen at mouth of lagoon, spring 1998 (GM, HM). One feeding on small exposed rock below Hentchel's house, 8 Mar 2001. Five feeding at edge of main channel 15 Jun 2003. They were seen, or heard, off and on for 3 to 4 weeks.
<b>Greater yellowlegs</b> ( <i>Tringa melanoleuca</i> )	Uncommon migrant, feeds on tideflats. Usually seen as singles; 1 flock of 10-15.
<b>Wandering tattler</b> ( <i>Heteroscelus incanus</i> )	Rare late summer visitor (GS); we have seen none.
<b>Whimbrel</b> ( <i>Numenius phaeopus</i> )	Rare spring/fall migrant (GS). We have seen none.
<b>Marbled godwit</b> ( <i>Limosa fedoa</i> )	CS reports having seen a lone marbled godwit at end of Manson's Spit, 28 Aug 2003.
<b>Black turnstone</b> ( <i>Arenaria melanocephala</i> )	Common fall and early winter on spit and working rocks near entrance to lagoon.
<b>Western sandpiper</b> ( <i>Calidrus mauri</i> )	Flocks feed on foreshore on outside of spit, late summer. One flock of $\pm 15$ e. side of lagoon, May 1996. Two unidentified species of small sandpipers have been seen in lagoon mixed with a flock of greater yellowlegs. The larger perhaps westerns, smaller may have been least sandpipers--see least, below. Occasional flocks of unidentified 'peeps' are seen in lagoon, but generally shorebirds are uncommon. Why?
<b>Least sandpiper</b> ( <i>Calidrus minutilla</i> )	Occasional migrant (summer resident?) (GS); we have seen none for sure--see western, above.
<b>Rock sandpiper</b> ( <i>Calidris ptilocnemis</i> )	Seen at mouth of lagoon (GS).
<b>Dunlin</b> ( <i>Calidrus alpina</i> )	Rare in winter (GS); we saw $\pm 20$ fly across spit into lagoon, Oct 1997. Flock of $\pm 10$ feeding on

tideflats, 6 Aug 1999.

**Short-billed dowitcher**  
(*Limnodromus griseus*)

Rare fall visitor (GS). We see at least 4 dowitchers on log nears. end of south island (2002). CG and AD identify them as short-billed by their call.

**Common snipe**  
(*Gallinago gallinago*)

Rare in freshwater marshy area, near e. edge of lagoon. Migrant only? None seen for several years, then 1 early Feb 1998.

**Bonaparte's gull**  
(*Larus philadelphia*)

Abundant spring/ summer/ fall resident. Leave lagoon about mid-May to mid-July, presumably off to breeding grounds. Return about mid Jul. Leave mid to late Oct. Return early to mid-April.

**Ring-billed gull**  
(*Larus delawarensis*)

MGS sees an adult preening on tideflat in front of our house, e. side of lagoon, 13 Aug 2001. Two feeding in shallow tidepool in front of our house, 3 Sep 200 2. Only records.

**Mew gull**  
(*Larus canus*)

Common winter resident. Some summer residents.

**California gull**  
(*Larus californicus*)

Late summer visitor, usually immatures (GS). We have identified 1 immature: in Sep.

**Herring gull**  
(*Larus argentatus*)

Occasional in lagoon, mid-winter. Might be Thayer's gulls (*Larus thayeri*)?

**Western gull**  
(*Larus occidentalis*)

GS sees 1 feeding on tideflats with a flock of other gulls, w. side of lagoon, 11 Feb 2000.

**Glaucous-winged gull**  
(*Larus glaucescens*)

Common to abundant year-round resident, except less common in nesting season.

**Caspian tern**  
(*Sterna caspia*)

Two fly into lagoon over end of spit, circle lagoon and fly back out, 5 Jul 1999 (HM).

**Marbled murrelet**  
(*Brachyramphus marmoratus*)

One seen in lagoon, Sep 1995. Occasionally seen in Manson's Bay, just outside lagoon. A 2nd record inside lagoon, 12 Jul 2002, a single adult, very tame. A 3rd record, 23 or 24 Aug 200 3, a single bird in non-breeding plumage, immature?

**Band-tailed pigeon**  
(*Columba fasciata*)

Once a common summer resident, forest and residential upland. Uncommon in recent years.

**Great-horned owl**  
(*Bubo virginianus*)

Uncommon resident, forest.

**Barred owl**  
(*Strix varia*)

One heard singing, spring 1990. One seen by HM. One flies into our yard, 21 Oct 1999. One chased by a raven near our junction with Noble's

	driveway, spring 2003. Occasionally heard calling late summer and fall, 2003.
<b>Common nighthawk</b> ( <i>Chordeiles minor</i> )	Uncommon summer resident over lagoon and surrounding forest.
<b>Black swift</b> ( <i>Cypseloides niger</i> )	Seen flying over Disney's at mouth of lagoon, Jun and Jul 1993 (CG, AD, GM, and HM).
<b>Rufous hummingbird</b> ( <i>Selasphorus rufus</i> )	Abundant summer resident, residential upland and forest edge. Known breeder.
<b>Belted kingfisher</b> ( <i>Ceryle alcyon</i> )	Common year-round resident, feeds in lagoon.
<b>Red-breasted sapsucker</b> ( <i>Sphyrapicus ruber</i> )	Common year-round resident, forest and residential upland.
<b>Downy woodpecker</b> ( <i>Picoides pubescens</i> )	Uncommon resident, forest.
<b>Hairy woodpecker</b> ( <i>Picoides villosus</i> )	Common resident, forest/ residential upland edge.
<b>Northern flicker</b> ( <i>Colaptes auratus</i> )	Common summer resident, residential upland and forest. Occasional in winter.
<b>Pileated woodpecker</b> ( <i>Dryocopus pileatus</i> )	Uncommon year-round resident, forest, residential upland. Has increased?, since about 1992?.
<b>Hammond's flycatcher</b> ( <i>Empidonax hammondi</i> )	A male identified by call at spit by MKM, summer 1995.
<b>Pacific slope flycatcher</b> ( <i>Empidonax difficilis</i> )	Male seen and heard singing on spit, 1993 (CG and AD).
<b>Tree swallow</b> ( <i>Tachycineta bicolor</i> )	Comes to lagoon area from Hague Lake to feed (GS). We have seen none.
<b>Violet-green swallow</b> ( <i>Tachycineta thalassina</i> )	Uncommon summer resident, residential upland, spit. Not seen in recent years.
<b>Northern rough-winged swallow</b> ( <i>Stelgidopteryx serripennis</i> )	Late summer migrant (GS). We have seen none.
<b>Barn swallow</b> ( <i>Hirundo rustica</i> )	Rare summer resident. Reported at spit. Said to have nested at Disney's at mouth of lagoon in at least 1 year. We have seen none for sure.
<b>Steller's jay</b> ( <i>Cyanocitta stelleri</i> )	Common fall/winter/spring resident, residential upland and forest. Increased in recent years? Uncommon summer; likely dispersed for breeding.

<b>Northwestern crow</b> ( <i>Corvus caurinus</i> )	Common year-round resident, feeds on tideflats and breeds in forest edge and residential upland. A banded individual from Mitlenatch came to our feeder winters 1993/94 to 1995/96--16+ years old (band read with telescope), oldest banded North American crow on record. Not seen since Mar 1996. Second most common bird at our feeder in winter.
<b>Common raven</b> ( <i>Corvus corax</i> )	Common visitor to forest edge and over lagoon, common year-round resident in general area. More common in vicinity of lagoon, beginning in 2001.
<b>Chestnut-backed chickadee</b> ( <i>Parus rufescens</i> )	Common year-round resident, residential upland and forest. Known breeder.
<b>Red-breasted nuthatch</b> ( <i>Sitta canadensis</i> )	Uncommon year-round resident.
<b>Brown creeper</b> ( <i>Certhia americana</i> )	Uncommon resident, forest.
<b>House wren</b> ( <i>Troglodytes aedon</i> )	Rare summer resident near mouth of lagoon (GS). We have seen none.
<b>Winter wren</b> ( <i>Troglodytes troglodytes</i> )	Common year-round resident, forest and forest / residential upland edge. Known breeder.
<b>Golden-crowned kinglet</b> ( <i>Regulus satrapa</i> )	Common year-round resident, forest.
<b>Ruby-crowned kinglet</b> ( <i>Regulus calendula</i> )	Uncommon summer resident, fall migrant; rare winter resident?, forest.
<b>Swainson's thrush</b> ( <i>Catharus ustulatus</i> )	Common summer resident, forest and residential upland. Known breeder.
<b>Hermit thrush</b> ( <i>Catharus guttatus</i> )	Occasional spring/fall migrant (GS). We have seen only 1, at our feeder, mid Nov.
<b>American robin</b> ( <i>Turdus migratorius</i> )	Abundant migrant, common summer resident, residential upland and forest edge. Known breeder.
<b>Varied thrush</b> ( <i>Ixoreus naevius</i> )	Common year-round resident, forest and residential upland.
<b>Cedar waxwing</b> ( <i>Bombycilla cedrorum</i> )	Two sightings only, Sep 1991; feeding on bittercherries at edge of lagoon.
<b>Starling</b> ( <i>Sturnus vulgaris</i> )	Common breeder near human habitation, residential upland. Occasional winter visitor to our feeder, more common winters 1997/98 to 1999/ 2000. Known breeder. Introduced species. None seen summer 2003.

<b>Hutton's vireo</b> ( <i>Vireo huttoni</i> )	One landed on our feeder, then flew off, Oct 1997.
<b>Orange-crowned warbler</b> ( <i>Vermivora celata</i> )	Identified by song (CG). Common summer resident (GS); we found predation remains of 1 in our garden.
<b>Yellow warbler</b> ( <i>Dendroica petechia</i> )	Once an uncommon summer resident, residential upland/forest edge. Not seen since early 1990s.
<b>Yellow-rumped warbler</b> ( <i>Dendroica coronata</i> )	Common summer resident, forest. Rare winter resident (GS).
<b>Black-throated gray warbler</b> ( <i>Dendroica nigrescens</i> )	We have occasional summer records. Summer resident (GS).
<b>Townsend's warbler</b> ( <i>Dendroica townsendi</i> )	Occasional summer resident (GS). We have seen 3, a male in spring, a pair in autumn.
<b>Wilson's warbler</b> ( <i>Wilsonia pusilla</i> )	Occasional summer resident, forest. Found female by bedroom window, apparently hit window, 3 Jul 03. Flew off.
<b>Western tanager</b> ( <i>Piranga ludoviciana</i> )	Uncommon summer resident, forest. No records since at least 1990. Declining? Two sightings summer 2003.
<b>Rufous-sided towhee</b> ( <i>Pipilo erythrophthalmus</i> )	Common year-round resident, residential upland and forest edge. Known breeder. Third most common bird at our feeder in winter.
<b>Savannah sparrow</b> ( <i>Passerculus sandwichensis</i> )	One record only, on spit, Sep 1995. (HM).
<b>Fox sparrow</b> ( <i>Passerella iliaca</i> )	Uncommon winter resident, spring migrant?, residential upland and forest edge.
<b>Song sparrow</b> ( <i>Melospiza melodia</i> )	Common year-round resident, residential upland. Known breeder.
<b>White-throated sparrow</b> ( <i>Zonotrichia albicollis</i> )	Two tan forms of white-throated sparrow at our feeder, 13 to 16 Oct 2001. Only records.
<b>Lincoln's sparrow</b> ( <i>Melospiza lincolni</i> )	Occasional spring/fall migrant (GS). We have 1 Sep record; at least 3 individuals, in our orchard.
<b>Golden-crowned sparrow</b> ( <i>Zonotrichia atricapilla</i> )	Uncommon spring migrant, residential upland and forest. Occasional fall migrant (GS).
<b>White-crowned sparrow</b> ( <i>Zonotrichia leucophrys</i> )	Uncommon summer resident on islet and spit. Known breeder (GS). Rare, residential upland.



**Dark-eyed junco** (Oregon)  
(*Junco hyemalis*)

Common fall/ winter/ spring resident, upland and forest edge. Occasional summer breeder. One slate-coloured phase at feeder, late Jan/early Feb 1991. One pair at feeder through summer 2003; plus 2 fledglings in late summer. Most common bird at our feeder in winter.

**Lapland longspur**  
(*Calcarius lapponicus*)

Rare fall migrant on sandspit (GS). We have seen none.

**Red-winged blackbird**  
(*Agelaius phoeniceus*)

Rare summer visitor, residential upland.

**Yellow-headed blackbird**  
(*Xanthocephalus xanthocephalus*)

One seen on south islet, 2 Aug 1998 (MAS).

**Brown-headed cowbird**  
(*Molothrus ater*)

Occasional summer resident, residential upland.

**Purple finch**  
(*Carpodacus purpureus*)

Rare. Two records only; in each case a pair at our feeder, mid-May. A 3rd possible sighting, but may have been a house finch, Oct 1994. One female at feeder, 18 Mar 2001.

**Pine siskin**  
(*Carduelis pinus*)

Uncommon summer resident, forest. Occasional winter flocks.

**American goldfinch**  
(*Carduelis tristis*)

Uncommon summer resident. No sightings since at least 1990. Declining?

**Evening grosbeak**  
(*Coccothraustes vespertinus*)

One record only, a pair at our feeder, mid-Jun.

## *Mammals* (Mammalia)

**Dusky shrew**  
(*Sorex monticolus*)

Four records only, likely more common than this indicates. Three found flattened on our driveway; 1 dead in our orchard, e. side of lagoon. Formerly identified by us, in error, as *S. vagrans* (3) and *S. cinereus* (1).

**Little brown bat?**  
(*Myotis lucifugus*)

A small Myotis size bat is a common summer resident, residential upland and forest edge. Identification uncertain. Could be Yuma Myotis? Other species of bats are likely.

**Northern flying squirrel**  
(*Glaucomys sabrinus*)

Two captured by a cat and brought in alive on n. side of lagoon since 1995 (KC). Both appeared unharmed and were released.

**Douglas squirrel**  
(*Tamiasciurus douglasii*)

Common year-round resident, forest. Appeared to have been more common in 2003 than formerly.

<b>White-footed deer mouse</b> ( <i>Peromyscus maniculatus</i> )	Common year- round resident, forest and around dwellings.
<b>Beaver</b> ( <i>Castor canadensis</i> )	New dam put in on outlet creek from Hague Lake Lake (~50 m above waterfall, 1993). Dam removed to prevent flooding on Hague Lake. No active sign at this location since 1995.
<b>Muskrat</b> ( <i>Ondatra zibethica</i> )	One probable, but unconfirmed, sighting. Perhaps a disperser.
<b>Roof rat</b> ( <i>Rattus rattus</i> )	Common, usually around human habitation. Introduced species.
<b>Cougar</b> ( <i>Felis concolor</i> )	One seen crossing bluff at Ian Noble's (IN), 1 Dec 1999. Fresh scratching on 1 of our apple trees, Jan 2000. Two sightings by RMZ summer 2001; 1st on 12 July, 2nd 3-4 weeks later.
<b>Wolf</b> ( <i>Canis lupus</i> )	Fresh sign in area immediately surrounding lagoon; winters 1986/87, 1990/ 91.
<b>Raccoon</b> ( <i>Procyon lotor</i> )	Reported as common, but we saw few in or around the lagoon until winter 1993/ 94, perhaps because of our dogs. Winters 93/94 and 94/95, at least 5 come regularly to our bird feeder at night; winter 95/96, at least 7 (2 families); winter 96/ 97, at least 12 (2-3 families); winter 97/98, at least 12 (3 families); winter 98/99, at least 13 (3 families); winter 99/2000, at least 6 (1 family+); we no longer have dogs. There has been a large die-off of raccoons throughout Cortes, likely beginning in 2000. Symptoms suggest it was likely caused by distemper. We have seen only 1 on our property since 2001, 18 Feb 2003.
<b>Mink</b> ( <i>Mustela vison</i> )	We have 2":6 sightings. Likely more common than this indicates (MC, JD).
<b>River otter</b> ( <i>Lutra canadensis</i> )	Year-round resident, commonly feeding in lagoon, especially on incoming and high tides. At least 7 in 1995, appeared to be 2 families. At least 7 in 96, appeared to be 2 families. At least 5 in 97, 1 family?, at least 6 in 99, 1 family? At least 9 in summers of 2002 and 2003 (in each case appeared to be 2 families).
<b>Harbour seal</b> ( <i>Phoca vitulina</i> )	Tidal transient; regular visitor to lagoon on incoming and high tides.
<b>Black-tailed deer</b> ( <i>Odocoileus hemionus</i> )	Common resident, residential upland and forest. Occasional on tideflats in lagoon.

## Marine Plants in the Lagoon

### Green Algae (Chlorophyta)

**Sea lettuce**

(*Ulva* spp)

Common in main channel and some tidepools, attached to rocks and oyster shells. Several species present (SLM).

**Spongomorpha**

(*Spongomorpha* sp)

Common in main channel (SLM).

**Sea hair**

(*Enteromorpha* spp)

Present in main channel. Several species present (SLM).

### Brown Algae (Phaeophyta)

**Ralfsia?**

(*Ralfsia* sp)

See *Hildenbrandia* sp.

**Sea cauliflower**

(*Leathesia difformis*)

Occasional in main channel (SLM). Had a large number of these algae in lagoon for about 2 weeks up to at least 21 May 2001--stranded on tide flats e. side of lagoon.

**Scytosiphon**

(*Scytosiphon lamentaria*)

Occasional in main channel and tidepools (SLM).

**Sugar Kelp**

(*Laminaria saccharina*)

Common, lower main channel.

**Giant kelp**

(*Macrocystis integrifolia*)

Occasionally brought into lagoon by tidal currents. Not growing in lagoon.

**Rockweed**

(*Fucus distichus*)

Common, upper intertidal zone on rock cliffs and rocky/sand flats.

**Sargassum**

(*Sargassum muticum*)

Common in lower main channel.

### Red Algae (Rhodophyta)

**Hildenbrandia?**

(*Hildebrandia* sp)

A species of this genus, or *Ralfsia* sp., common on solid rock (SLM). See *Ralfsia*.

**Red laver (Dulse)**

(*Porphyra miniata*)

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Present in main channel. Other species may be present (SLM).

**Coral leaf**

(*Bossiella cretacea*)

Occasional in tidepools (SLM).

<b>Rock crust</b> ( <i>Lithothamnion</i> sp)	Common in tidepools (SLM).
<b>Iodine seaweed</b> ( <i>Prionitis lyalli</i> )	Occasional in main channel (SLM).
<b>Neoagardhiella</b> ( <i>Neoagardhiella</i> sp)	Occasional in main channel (SLM).
<b>Gracilariopsis</b> ( <i>Gracilariopsis sjoestedtii</i> )	Occasional in main channel (SLM).
<b>Gracilaria</b> ( <i>Gracilaria pacifica</i> )	Present in main channel.
<b>Turkish towel</b> ( <i>Gigartina exasparata</i> )	Some growing in islet tidepools and main channel; perhaps fragments also brought in by incoming tides.
<b>Ceramium</b> ( <i>Ceramium pacificum</i> )	Occasional in main channel and tidepools (SLM).
<b>Pterosiphonia</b> ( <i>Pterosiphonia gardneri</i> )	Present in main channel.
<b>Mastocarpus</b> ( <i>Mastocarpus papillatus</i> )	Present in main channel.
<b>Caulacanthus</b> ( <i>Caulacanthus ustulatus</i> )	Occasional on wet solid rock (SLM).

**NOTE:** other, unidentified, marine algae likely present.

### *Eelgrass Family (Zosteraceae)*

<b>Eelgrass</b> ( <i>Zostera marina</i> )	Once abundant in some tidepools e. side of lagoon and parts of main channel. Important habitat for many species. Steady decrease in summers 1992 to 95, likely due to filling of tidepools with sand, thought to be brought on by commercial clam digging. Virtually gone from tidepools by 1995. Decline exacerbated by increase of Canada geese in recent years; they are now less often in lagoon. Many invertebrates and fishes once common or abundant in eelgrass communities are now reduced or extirpated from these areas. Use of tidepools by great blue herons much reduced.
<b>Dwarf eelgrass</b> ( <i>Zostera japonica</i> )	In lagoon at low tide with SLM, 2002. We find several patches of this species on intertidal delta from Hague Lake overflow. Had found only one small patch the year before, the 1st time we had seen it in the lagoon (introduced species). 28 Aug 2003,

go to head of lagoon to check this species. Find only 1 area about 10 x 10 m across with several small patches, all of which were very sparse.

*Terrestrial Plants in Areas  
Around the Lagoon and on Islets*

**FUNGI**

BASIDIOMYCETES

***Russula Family*** (Russulaceae)

- Delicious milk cap** (*Lactarius deliciosus*)
- Bleeding milk cap** (*Lactarius rubrilacteus*)
- Short-stemmed russula** (*Russula brevipes*)
- Short-stalked white russula** (*Russula delica*)
- Emetic russula** (*Russula emetica*)
- Shrimp russula** (*Russula xerampelina*)

***Tricholoma Family*** (Tricholomataceae)

- Oyster mushroom** (*Pleurotus ostrea*)
- Fetid tricholoma** (*Tricholoma zelleri*)
- Honey mushroom** (*Armellariella mellea*)
- Matsutake** (*Armillaria ponderosa*)
- Sweat-producing clitocybe** (*Clitocybe dealbata*)
- Blewit** (*Clitocybe nuda*)
- Blue-green anise mushroom** (*Clitocybe odora*)
- Lackluster laccaria** (*Laccaria laccata*)
- Amethyst laccaria** (*Laccaria amethystina*)
- Clustered collybia** (*Collybia acervata*)

***Parasol Mushroom Family*** (Lepiotaceae)

- Brown-eyed parasol** (*Lepiota cristata*)
- Smooth parasol** (*Lepiota naucina*)
- Shaggy parasol** (*Lepiota rachodes*)

***Pluteus Family*** (Pluteaceae)

- Deer mushroom** (*Pluteus cervinus*)

***Amanita Family*** (Amanitaceae)

- Fly agaric** (*Amanita muscaria*)
- Panther amanita** (*Amanita pantherina*)
- Western woodland amanita** (*Amanita silvicola*)

***Agaricus Family*** (Agaricaceae)

- Abruptly-bulbous agaricus** (*Agaricus abruptibulbous*)
- The prince** (*Agaricus augustus*)
- Felt-ringed agaricus** (*Agaricus hondensis*)
- Flat-topped agaricus** (*Agaricus placomyces*)
- Yellow-staining agaricus** (*Agaricus xanthodermus*)

*InkyCap Family* (Copriniaceae)

**Shaggy mane** (*Coprinus comatus*)

**Inky cap** (*Coprinus atramentarius*)

**Ringed psathyrella** (*Psathyrella longistriata*)

*Stropharia Family* (Strophariaceae)

**Questionable stropharia** (*Stropharia ambigua*)

**Sulfur tuft** (*Naematoloma fasciculare*)

*Cortinarius Family* (Cortinariaceae)

**Silvery-violet cortinarius** (*Cortinarius a/boviolaceus*)

**Cinnabar cort** (*Cortinarius cinnabarinus*)

**Blood-red cortinarius** (*Cortinarius sanguineus*)

**Violet cortinarius** (*Cortinarius violaceus*)

*Paxillus family* (Paxillaceae)

**Velvet pax** (*Paxillus atrotomentosus*)

*Gomphidius Family* (Gomphidaceae)

**Wooly pine spike** (*Chroogomphus tomentosus*)

**Rosy gomphidius** (*Gomphidius subroseus*)

*Bolete Family* (Boletaceae)

**Admirable bolete** (*Boletus mirabilis*)

**Zeller's bolete** (*Boletus zelleri*)

**Red-capped scober stalk** (*Leccinum aurantiacum*)

**Western painted suillus** (*Suillus lakei*)

**Siberian slippery jack** (*Suillus sibiricus*)

**Slippery jack** (*Suillus luteus*)

**Short-stemmed slippery jack** (*Suillus brevipes*)

**Blue-staining slippery jack** (*Suillus tomentosus*)

*Conk Family* (Polyporaceae)

**Red-bellied conk** (*Fomitopsis pinicola*)

*Tooth Fungus Family* (Hydnaceae)

**Toothed jelly fungus** (*Pseudohydnum gelatinosum*)

**Hedgehog mushroom** (*Dentinum repandum*)

*Coral Fungus Family* (Clavariaceae)

**Pink-tipped coral mushroom** (*Ramaria botrytis*)

**Pinkish coral mushroom** (*Ramaria formosa*)

**Gelatinous coral mushroom** (*Ramaria gelatinosa*)

**Cauliflower mushroom** (*Sparassis radicata*)

*Chantererelle family* (Cantherellaceae)

**Scaly chanterelle** (*Gomphus floccosus*)

**White chanterelle** (*Cantherellus subalbidus*)

**Chanterelle** (*Cantherellus cibarius*)  
**Funnel chanterelle** (*Cantherellus infundibuliformis*)

**Jelly Fungus Family** (Tremellaceae)  
**Witch's butter** (*Tremella mesenterica*)  
**Common puffball** (*Lycoperdon perlatum*)

**Bird's Nest Fungi** (Nidulariaceae)  
**Common bird's nest fungus** (*Crucibulum laeve*)

## ASCOMYCETES

**Morel Family** (Morchellaceae)  
**Black morel** (*Morchella elata*)

**Elfin Saddle Family** (Helvellaceae)  
**Fluted black elfin saddle** (*Helvella lacunosa*)

**Cup Fungus Family** (Pezizaceae)  
**Common brown cup** (*Peziza badiocconfusa*)  
**Orange peel fungus** (*Aleuria aurantia*)  
**Orange earth tongue** (*Microglossum rufum*)  
**Candlesnuff fungus** (*Xylaria hypoxylon*)

## VASCULAR PLANTS

**Polypody Fern Family** (Polypodiaceae)  
**Northern maidenhair** (*Adiantum pedatum*)<sup>1</sup>  
**Maidenhair spleenwort** (*Asplenium trichomanes*)<sup>1,2</sup>  
**Lady fem** (*Athyrium filix-femina*)<sup>1</sup>  
**Parsley fern** (*Cryptogramma crispera*)<sup>2</sup>  
**Licorice fern** (*Polypodium glycyrrhiza*)<sup>1,2</sup>  
**Holly fern** (*Polystichum lonchitis*)<sup>1</sup>  
**Sword fern** (*Polystichum munitum*)<sup>1,2</sup>  
**Bracken fern** (*Pteridium aquilinum*)<sup>1</sup>  
**Deer fern** (*Struthiopteris spicant*)<sup>1</sup>

**Horsetail Family** (Equisetaceae)  
**Common horsetail** (*Equisetum arvense*)<sup>1</sup>  
**Common scouring rush** (*Equisetum hyemale*)<sup>1</sup>

**Cypress family** (Cupressaceae)  
**Western red cedar** (*Thuja plicata*)<sup>1</sup>

*Pine Family* (Pinaceae)

**Grand fir** (*Abies grandis*)<sup>1</sup>

**Lodgepole pine** (*Pinus contorta*)<sup>1</sup>

**Douglas fir** (*Pseudotsuga menziesii*)<sup>1,2</sup>

**Western hemlock** (*Tsuga heterophylla*)<sup>1</sup>

*Pondweed Family* (Najadaceae)

**Floating-leaf pondweed** (*Potamogeton natans*)<sup>1</sup>

*Arrow-grass Family* (Juncaginaceae)

**Seaside arrow-grass** (*Triglochin maritimum*)<sup>1</sup>

*Grass Family* (Gramineae)

**Cheat grass** (*Bromus tectorum*)<sup>1,2</sup>

**Orchard grass** (*Dactylis glomerata*)<sup>1,2</sup>

**Giant wild rye** (*Elymus condensatus*)<sup>1,2</sup>

**Dune wild rye** (*Elymus mollis*)<sup>1</sup>

**Scribner witchgrass** (*Panicum scribnerianum*)<sup>1</sup>

**Timothy** (*Phleum pratense*)<sup>1</sup>

**Kentucky blue grass** (*Poa pratensis*)<sup>1</sup>

**Note:** other, unidentified, grasses are present<sup>1,2</sup>

*Sedge Family* (Cyperaceae)

**Small-fruited bulrush** (*Scirpus microcarpus*)<sup>1</sup>: at least 2 other sedges (*Carex* spp.) have been seen<sup>1</sup> but not identified; likely a number of others.

*Arum Family* (Araceae)

**Yellow skunk cabbage** (*Lysichitum americanum*)<sup>1</sup>

*Rush Family* (Juncaceae)

**Common rush** (*Juncus effusus*)<sup>1</sup>

*Lily Family* (Liliaceae)

**Nodding onion** (*Allium cernuum*)<sup>1,2</sup>

**Hooker's onion** (*Allium acuminatum*)<sup>1,2</sup>

**Fool's onion** (*Triteleia hyacinthina*)<sup>2</sup>

**Chocolate lily** (*Fritillaria lanceolata*)<sup>1,2</sup>

**False lily-of-the-valley** (*Maianthemum dilatatum*)<sup>1</sup>

**Meadow death camas** (*Zigadenus venenosus*)<sup>1,2</sup>

*Orchid Family* (Orchidaceae)

**Spotted coral-root** (*Corallorhiza maculata*)<sup>1</sup>



*Willow /Family (Salicaceae)*

**Trembling aspen?** (*Populus tremuloides*)<sup>1</sup>

**Scouter's willow** (*Salix scouleriana*)<sup>1,2</sup>

*Birch Family (Betulaceae)*

**Red alder** (*Alnus rubra*)<sup>1</sup>

*Nettle Family (Urticaceae)*

**Stinging nettle** (*Urtica dioica*)<sup>1</sup>

*Buckwheat Family (Polygonaceae)*

**Lady's thumb** (*Polygonum persicaria*)<sup>1</sup>

**Sheep sorrel** (*Rumex acetosella*)<sup>1,2</sup>

**Curly dock** (*Rumex crispus*)<sup>2</sup>

*Goosefoot Family (Chenopodiaceae)*

**Glasswort** (*Salicornia pacifica*)<sup>1</sup>

*Purslane Family (Portulacaceae)*

**Miner's lettuce** (*Mantia perfoliata*)<sup>1</sup>

**Siberian candyflower** (*Mantia sibirica*)<sup>1</sup>

**Purslane** (*Portulaca oleracea*)<sup>1</sup>

*Pink Family (Caryophyllaceae)*

**Thyme-leaved sandwort** (*Arenaria serpyllifolia*)<sup>1</sup>

**Field chickweed** (*Cerastium arvense*)<sup>1,2</sup>

**Sticky mouse ear** (*Cerastium viscosum*)<sup>1</sup>

**Large mouse ear** (*Cerastium vulgatum*)<sup>1</sup>

**Chickweed** (*Stellaria media*)<sup>1,2</sup>

*Water-lily Family (Nymphaeaceae)*

**Indian pond lily** (*Nuphar polysepalum*)<sup>1</sup>

**Water-lily** (*Nymphaea odorata*)<sup>1</sup>: introduced; 1 plant growing in a pot in inlet creek from Hague Lake, about 50 m above falls.

*Buttercup Family (Ranunculaceae)*

**Western columbine** (*Aquilegia formosa*)<sup>1</sup>

**Western buttercup** (*Ranunculus occidentalis*)<sup>1,2</sup>

**Little buttercup** (*Ranunculus uncinatus*)<sup>1</sup>

*Barberry Family (Berberidaceae)*

**Vanilla leaf** (*Achlys triphylla*)<sup>1</sup>

**Tall Oregon grape** (*Berberis aquilinum*)<sup>1</sup>

**Oregon grape** (*Berberis nervosa*)<sup>1,2</sup>

*Mustard Family* (Cruciferae)

**Tower mustard** (*Arabis glabra*)<sup>1</sup>

**Shepherd's purse** (*Capsella bursa-pastoris*)<sup>1</sup>

**Western bittercress** (*Cardamine oligosperma*)<sup>1</sup>

*/Bleeding Heart Family* (Fumariaceae)

**Western bleeding heart** (*Dicentra formosa*)<sup>1</sup>

*Stonecrop Family* (Crassulaceae)

**Wall-pepper** (*Sedum acre*)<sup>2</sup>

**Pacific sedum** (*Sedum spathulifolium*)<sup>1,2</sup>

**Oregon stonecrop** (*Sedum oreganum*)<sup>1</sup>

*Saxifrage Family* (Saxifragaceae)

**Small flowered alumroot** (*Heuchera micrantha*)<sup>1,2</sup>

**Fringed cup** (*Lithophragma parviflora*)<sup>1,2</sup>

**Rusty saxifrage** (*Saxifraga ferruginea*)<sup>1</sup>

**Triple sugar scoop** (*Tiarella trifoliata*)<sup>1</sup>

*Hydrangea Family* (Hydrangaceae)

**Syringa** (*Philadelphus lewisii*)<sup>1</sup>

*Gooseberry Family* (Grossulariaceae)

**Swamp gooseberry** (*Ribes lacustre*)<sup>1</sup>

**Red flowering currant** (*Ribes sanguineum*)<sup>1</sup>

*Rose Family* (Rosaceae)

**Ninebark** (*Physocarpus capitatus*)<sup>1</sup>

**Western spiraea** (*Spiraea douglasii*)<sup>1</sup>

**Western serviceberry** (*Amelanchier alnifolia*)<sup>1,2</sup>

**Large-leaved avens** (*Geum macrophyllum*)<sup>1</sup>

**Wild strawberry** (*Fragaria virginiana* ?)<sup>1</sup>

**Oceanspray** (*Holodiscus discolor*)<sup>1,2</sup>

**Bitter cherry** (*Prunus emarginata*)<sup>1</sup>

**Dwarf woodland rose?** (*Rosa gymnocarpa* ?)<sup>1</sup>

**Nootka rose** (*Rosa nutkana*)<sup>1,2</sup>

**Himalayan blackberry** (*Rubus discolor*)<sup>1,2</sup>

**Evergreen blackberry** (*Rubus laciniatus*)<sup>1,2</sup>

**Western blackcap** (*Rubus leucodermis*)<sup>1</sup>

**Thimbleberry** (*Rubus parviflorus*)<sup>1</sup>

**Salmonberry** (*Rubus spectabilis*)<sup>1</sup>  
**Trailing blackberry** (*Rubus ursinus*)<sup>1,2</sup>  
**Western mountain ash** (*Sorbus sitchensis*)<sup>1</sup>

*Pea family* (Leguminosae)

**Purple pea** (*Lathyrus nevadensis*)  
**Scotch broom** (*Cytisus scoparius*)  
**Lupine** (*Lupinus* sp.)<sup>1</sup>  
**Red clover** (*Trifolium pratense*)  
**White clover** (*Trifolium repens*)  
**Tomcat clover** (*Trifolium tridentatum*)<sup>2</sup>  
**Sweetclover?** (*Trifolium?* / *Lotus* ?sp)<sup>1,2</sup>

*Geranium Family* (Geraniaceae)

**Carolina geranium** (*Geranium carolinianum*)  
**Dove's foot geranium** (*Geranium molle*)<sup>2</sup>

*Staff -tree Family* ( Celastraceae)

**Oregon boxwood** (*Pachystima myrsinites*)<sup>1</sup>

*Maple Family* (Aceraceae)

**Big-leafed maple** (*Acer macrophyllum*)<sup>1</sup>

*Buckthorn family* (Rhamnaceae)

**Cascara** (*Rhamnus purshiana*)<sup>1</sup>

*St. John's -wort Family* (Hypericaceae)

**Western St. John's-wort** (*Hypericum formosum*)<sup>1</sup>

*Violet Family* (Violaceae)

**Western long-spurred violet** (*Viola adunca*)<sup>1</sup>  
**Smooth yellow violet** (*Viola glabella*)<sup>1</sup>  
**Evergreen violet** (*Viola sempervirens*)<sup>1</sup>

*Evening Primrose Family* (Onagraceae)

**Fireweed** (*Epilobium angustifolium*)<sup>1</sup>  
**Smoothstem willow-herb** (*Epilobium glaberrimum*)<sup>1</sup>

*Parsley Family* (Umbelliferae)

**Queen Anne's lace** (*Daucus carota*)<sup>1</sup>

*Heath Family (Ericaceae)*

**Pacific madrone** (*Arbutus menziesii*)

**Columbia manzanita x Kinnikinnick** (*Arctostaphylos columbiana* x *A. uva ursi*)

**Note:** most plants appear to be hybrids between Columbia manzanita and kinnikinnick according to Richard Hebda of the BC Royal Museum. Some appear more manzanita-like, but not completely so. All likely are hybrids.

**Kinnikinnick** (*Arctostaphylos uva-ursi*)<sup>1</sup>

**Salal** (*Gaultheria shallon*)

**Indian pipe** (*Monotropa uniflora*)

**Red huckleberry** (*Vaccinium parvifolium*)

*Primrose Family (Primulaceae)*

**Western starflower** (*Trientalis latifolia*)

*Morning-glory /Family (Convolvulaceae)*

**Hedge morning-glory** (*Convolvulus sepium*)

*Forget-me-not Family (Boraginaceae)*

**Forget-me-not** (*Myosotis discolor*)<sup>1</sup>

**Rough comfrey** (*Symphytum asperum*)

*Mint Family (Labiatae)*

**Self heal** (*Prunella vulgaris*)

**Hedge nettle** (*Stachys cooleyae*)

**Mint**, at least four species Perhaps domestic?

*Nightshade Family (Solanaceae)*

**Black nightshade** (*Solanum nigrum*)

*Figwort Family (Scrophulariaceae)*

**Mullein** (*Verbascum thapsus*)

**Large-flowered blue-eyed Mary?** (*Collinsia grandiflora*)<sup>1,2</sup>

**Small-flowered blue-eyed Mary** (*Collinsia parviflora*)

**Foxglove** (*Digitalis purpurea*)

**Chickweed monkey flower** (*Mimulus alsinoides*)

**Musk flower** (*Mimulus moschatus*)

**Common monkey flower** (*Mimulus guttatus*;Z)

**American speedwell** (*Veronica americana*)

**Thyme-leaved speedwell** (*Veronica serpyllifolia*)

*Plantain Family (Plantaginaceae)*

**English plantain** (*Plantago lanceolata*)<sup>1</sup>

**Broad-leaved plantain** (*Plantago major*)<sup>1</sup>

**Seaside plantain** (*Plantago maritima*) 1,2

**Madder Family** (Rubiaceae)

**Cleavers** (*Galium arvense*) 1,2

**Honeysuckle Family** (Caprifoliaceae)

**Twinflower** (*Linnaea borealis*)

**Orange honeysuckle** (*Lonicera ciliosa*) 1

**Red elderberry** (*Sambucus ca/licarpa*) 1

**Snowberry** (*Symphoricarpos albus*) 1,2

**Valerian Family** (Valerianaceae)

**Sea blush** (*Plectritis congesta*) 1,2

**Bluebell Family** (Campanulaceae)

**Bluebell** (*Campanula rotundifolia*) 1

**Aster Family** (Compositae)

**Common yarrow** (*Achillea millifolium*) 1,2

**Pearly everlasting** (*Anaphalis margaritacea*) 1

**Lesser burdock** (*Arctium minus*)<sup>1</sup>

**English daisy** (*Bellis perrenis*) 1

**Oxeye daisy** (*Chrysanthemum leucanemum*) 1

**Canada thistle** (*Cirsium arvense*) 1

**Bull thistle** (*Cirsium vulgare*) 1

**Dunal gumweed** (*Grindelia squarrosa*) 1,2

**Cat's ear** (*Hypochaeris radicata*)<sup>1</sup>

**Wall lettuce** (*Lactuca muralis*) 1

**Pineapple weed** (*Matricaria matricarioides*) 1

**Wood groundsel** (*Senecio sylvaticus*)<sup>1</sup>

**Prickly sow thistle** (*Sonchus asper*)<sup>1</sup>

**Dandelion** (*Taraxacum officinale*) 1,2

1 in areas surrounding lagoon.

2 on islets in lagoon.

**Special notes:** domestic apple, cherry, peach, pear, plum, and quince are present on some of the old homestead lands, both within the park and on private lands on the north and east boundaries of the lagoon. Also, domestic garden plants.

Common names may differ among authorities, and in some cases, species may have no common name. Scientific names, too, can differ among authorities but this is less likely to happen than with common names. If common names are unknown, we have substituted generic names

In cases of species or statuses reported by others, the person making the report is identified by initials, as follows: KC=Kathy Cambridge, RGC=Bob Carveth (former Curator of the Fish Museum at UBC), MC=Mabel Christensen, JD=Joan Disney, AD=Aileen Douglas, CG=Christian Gronau, LH=Lisa Hunchak, GM=Gail McKerley, HM=Hoyt McKerley, MKM=Martin K. McNicholl, NLM=Niko Leader Mense, SLM=Sabina Leader Mense, BN=Blythe Nilson, IN=Ian Noble, NO=Nick O'Donnell, CS=Carrie Saxifrage, KS=Ken Schar, ZS=Zoleinna Schar, MAS=Mike Schroeder, JS=Jill Seaton, GS=George Sirk, BRS=Ben Sullivan, MGS=Mike Sullivan, SLS=Sierra Sullivan, HLZ=Heidi Zwickel. In a few cases, identity of those reporting is not known.

Jim Cosgrove and other staff of the Royal BC Museum, Christian Gronau, and Sabina Leader Mense assisted with many invertebrate identifications. David Nagorsen of the Royal BC Museum identified specimens of the dusky shrew. Bob Carveth, former Curator of the Fish Museum at the Univ of BC, and Mike Sullivan, Alberta Wildlife Branch, identified some fish. Mike Hawkes, Dept of Botany, Univ of BC, and Sabina Leader Mense assisted with identifications of some marine algae. A list of fungi found here was provided by Pierre de Trey, Anna Gregg, Nori Fletcher, and George Sirk, Cortes Island residents. Richard Hebda and Chris Brayshaw of the Royal BC. Museum identified some vascular plants. BCParks provided permits to collect specimens for identification.



