

**FIELD GUIDE TO COMMON MOLLUSCAN BIVALVES IN THE CHERRY POINT AND FIDALGO BAY
AQUATIC RESERVES* - Michael Kyte, February 2015**

Note: If a specimen cannot be identified with this key, it may be a species new to the monitoring program. Thus, it is important that the specimen be brought to the attention of one of the program's "experts", photographed, and recorded as bivalve, clam, oyster, or unknown sp. and attach a unique identification number or letter.

Definitions

Bivalve: A mollusk w/ 2 hinged shells, includes clams, oysters, and mussels.

Byssal Threads (Byssus): Bundle of threads used by mussels to attach to hard surfaces.

Concentric: Ridges or lines parallel to shell margin.

Hinge: Toothed area at the umbo beneath the beak and ligament that helps hold the two shells together in bivalves.

ITZ: Intertidal zone.

Periostracum: A protective skin that covers the outside of shells.

Radial: Extending from the hinge or top of clam to shell edges or lips.

Siphon: A tubular structure for bringing in or expelling fluids.

Umbo: The beak or apex of a bivalve shell.

Valve: A shell of a bivalve.

OYSTERS

Crassostrea gigas Pacific oyster. Valves thick, irregular, usually higher than long, no regularly spaced radial ribs, very rough with conspicuous frills; left valve larger, cupped, usually cemented to the substrate, right (upper) usually slightly smaller, flat; up to 25 cm (10 in) high; gray-white, new growth purplish-black; mid to lower ITZ.



Ostrea lurida Olympic Oyster. Valves not much roughened and rarely showing any frills (the sculpturing is usually limited to irregular concentric lines); height up to 5 cm (2 in) (compare to Pacific oyster); upper to mid ITZ. Recently re-introduced in Fidalgo Bay area.



MUSSELS

NOTE: Only two species of mussels are likely to occur in the two aquatic reserves. These are easily distinguished as mussels and from each other.

Mytilus trossulus Pacific blue mussel. Shell smooth with growth lines, little erosion, no major radiating ridges; periostracum smooth, shiny black, sometimes brown, without hairs; shell longer than high; umbones terminal; usually less than 7 cm (3 in), up to 11 cm (4 in); common in upper and mid ITZ, predation limits vertical distribution.



Modiolus modiolus Northern Horsemussel. Shell length 2-3 times height; umbones not quite terminal, periostracum usually brown to black, with long, soft bristles, especially in small individuals and near shell margin; up to 15 cm (6 in) long; low muddy ITZ, usually mostly buried except for shell tips.



JINGLE

The jingle cannot be confused with oysters, mussels, or clams because of its unique appearance.

Pododesmus macrochisma Alaska Jingle. Thin valves, nearly circular in outline; right valve permanently cemented to substrate with large hole near hinge through which byssal material cements the bivalve to the rock; left valve circular, slightly convex, often covered with encrusting species (barnacles, bryozoans, sponge); diameter to 10 cm (4 in); low ITZ on rocks.



CLAMS

NOTE: While clams are usually buried, they may be found on the sediment surface through the action of predators, and, of course, will be encountered during coring. This guide is intended to be used with live specimens; internal details of hinges and valves are assumed not to be visible.

1a. Clam with strong radial ridges.

Clinocardium nuttallii Nuttall Cockle or Heart Cockle. Shells thick, broad, high with strong radial ribs covering both valves; usually light tan, mottled with various brown bands or blotches; siphons short; up to 14 cm (5.5 in); low ITZ; close to and sometimes on sediment surface.



1b. Without strong radial ribs or at sediment surface. ---↓---2

2a. Thick valves without periostracum ----↓-----3

2b. Thin valves, leathery hinge may or may not be visible, with periostracum except Macomas ----↓-----5

3a. ***Saxidomus gigantea*** Washington Butterclam. Shell with large, black external hinge ligament, round to oval, slight gap at one end; valves with concentric ridges no radial ridges, never colored; periostracum, if present, thin not conspicuous; gray to white, may be stained; to 15 cm (6 in); low ITZ, buried deeper than littlenecks or Macomas.



3b. Valves with lattice sculpture (both radial and concentric lines); valves seal tightly without gap; smaller clams. ----↓-----4

4a. **Leukoma staminea** Pacific Littleneck. More round than oval, relatively swollen or inflated; even lattice sculpture across valves; angular checked pattern (if present), valve edges raised in a "seam" near umbo; up to 7.5 cm (3 in); mid to lower ITZ.



4b. **Ruditapes philippinarum** Japanese Littleneck. Shell more oval than round, less deep than *L. staminea*; concentric ridges with higher radial ribs, depressed area at umbo; variable color with gray and brown often with streaks and angular patterns; up to 7.5 cm (3 in); up to mid ITZ.



5a. Leathery hinge not visible, shell with gape; clam inflated (thick). -->6

5b. Leathery hinge visible, shell without gape; clam not inflated (thin). -----7



6a. **Mya arenaria** Softshell clam. Shell elongate with slight gape at both ends; valves brittle, chalky white or gray, light yellow or brownish periostracum, uneven concentric rings, to 17 cm (nearly 7 in), most often 10 cm (4 in) or less; mid to low ITZ.



6b. **Tresus capax** Fat gaper. Shell more round with large gape only at one end; valves chalky white or yellow; periostracum dark brown to black; often over 10 cm (4 in) (up to 20 cm [8 in]), largest clam in either aquatic reserve ITZ; mid to lower ITZ, deeply buried.



7a. **Nuttallia obscurata** Purple Mahogany Clam (Varnish Clam). Shell triangular to oval, thin, flat, with obvious shiny brown periostracum; in upper ITZ.



7b. Shell elongate to oval with or without obvious periostracum, but not as the Purple Mahogany Clam. *Macoma* sp.

---8

8a. **Macoma nasuta** Bent Nose Macoma. Both valves bent; chalky white, sometimes with grayish-brown periostracum; to 11 cm (4.3 in) but usually not more than 6 cm (2.3 in); mid to lower ITZ, deeply buried (20 cm, 8 in).



8b. Posterior portions of valves not bent ---9

9b. **Macoma inquinata** Pointed or Stained Macoma. Outline of valves not almost perfectly oval, posterior end narrowed, less rounded than the anterior end; valves whitish with brown periostracum; up to about 5 cm (2 in);



9a. **Macoma balthica** Baltic Macoma. Valves almost perfectly oval; posterior end nearly as rounded as anterior end; often yellow, pink, or bluish (especially the interior); to about 2 cm (3/4 in); throughout ITZ; can be abundant.

