

POLYPLACOPHORA CARE

SOP# = MOLL4

PURPOSE: To describe methods of care for chitons.

POLICY: To provide optimum care for all animals.

RESPONSIBILITY: Collector and user of the animals. If these are not the same person, the user takes over responsibility of the animals as soon as the animals have arrived on station.

PROCEDURE: The following are commonly found species around BMSC.

Species:

Gumboot chiton	<i>Cryptochiton stelleri</i>
Lined chiton	<i>Tonicella lineata</i>
Blue-line chiton	<i>Tonicella undocaerulea</i>
Lovely chiton	<i>Tonicella venusta</i>
Mossy chiton	<i>Mopalia muscosa</i>
Northern hairy chiton	<i>Mopalia kennerleyi</i>
Black leather chiton	<i>Katharina tunicata</i>
Merten's chiton	<i>Lepidozona mertensii</i>

Identification: Refer to Eugene N. Kozloff's book, "Seashore Life of the Northern Pacific Coast" and Gotshall's "Guide to Marine Invertebrates: Alaska to Baja California" for in depth descriptions of individual specimens.

Cryptochiton stelleri: These are the largest chitons in the world, and can reach a length of 32cm. All eight of their shell plates are completely covered by a thick, leathery, gritty girdle. It is usually brick red or reddish brown.

Tonicella lineata: The lines on these chitons can be quite faint but generally wavy lines on the extremities of each shell distinguish it. Colouration can be extremely variable. They are usually about 5cm in length.

Tonicella undocaerulea: These chitons have very brilliant blue zigzag lines on a background of orange and pink shell plates. Their length is up to 5cm.

Tonicella venusta: These are small chitons often found on rocks encrusted with coralline algae. Their size is usually no longer than 1.7cm. They are generally red with zigzag lines on the terminal shells.

Mopalia muscosa: These chitons can measure up to 10cm in length. They have very bristly hairs growing thickly around the outside margin of the animal. They are usually a dull brown colour.

Mopalia kennerleyi: These chitons have alternating light and dark bands on a wide girdle. There are flattened brown hairs with three rows of whitish spines that cover the girdle. They grow quite large to a size of 7.6cm. Their colour can be a dull light orange, off white or a pale brown.

Katharina tunicata: The eight shell plates are nearly covered by the mantle. They

are black in colour except for the visible white plates. The undersurface is a dull yellowish orange. The numerous separate gills are arranged in a single row on each side of the broad foot. These chitons can be up to 7cm long.

Lepidozона mertensii: These chitons are usually about 5cm in length. They are most frequently found on the underside of rocks. They are nearly uniformly brick red or reddish brown in color, sometimes with conspicuous blotches of white. The surface of its girdle is composed of tiny scales.

Sites: Intertidal and subtidal sites are found on the shores of the Deer Group Islands, Dixon I., Scott's Bay, off the Blowhole, along Grappler Inlet and at the Harbor mouth across from Aguilar Pt. All the above-mentioned chitons can be found intertidally to subtidally.

Collection Methods: It is quite difficult to remove a chiton of a rock without damaging it. It is best to collect the rock with the chiton, if possible. If not, it may be gently pried off the rock using a metal spatula. *Tonicella venusta* can be collected subtidally found by diving or dredging up rocks that it is attached to.

Holding: Held in continually flowing seawater in large tanks. Lids are necessary since chitons tend to climb up above the water line.

Feeding: Most chitons are herbivores; grazing on the film of diatoms and other algae that coat rocks. The gumboot chiton often feeds on red algae. Allowing a tank to grow a layer of diatoms before the animals are collected is the best way to ensure they have a sufficient quantity of food during their holding. Occasionally, kelp can be added to the tank, as the chitons will graze on it as well as the diatoms growing on the kelp.

Tank Cleaning: Once a month the rocks to which the chitons are attached should be removed from the tank and placed into a holding bucket. The tanks should be drained and the sides and bottom should be rinsed with warm freshwater. The sides and bottom should only be scrubbed clean if there is an over abundance of diatoms growing. Always leave some diatoms on the tank during cleaning process. The tanks should then be rinsed with cold seawater and allowed to refill, and the chitons replaced.

DAILY ACTIVITIES:

1. Ensure water is flowing into the tank at a reasonable rate.
2. Ensure the standpipe is in place and not blocked.
3. Check for and remove any dead animals.
4. Check for and remove any rotting kelp.
5. Check for and remove any foreign organisms.