

## GUNNEL AND PRICKLEBACK CARE

**PURPOSE:** To describe methods of care for gunnels.

**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:** At present there are a number of gunnel and prickleback species commonly found around BMS.

Species:	Penpoint gunnel	<i>Apodichthyes flavidus</i>
	Crescent gunnel	<i>Pholis laeta</i>
	Saddleback gunnel	<i>Pholis ornata</i>
	Rock Prickleback	<i>Xiphister mucosus</i>
	Black prickleback	<i>Xiphister atropurpureus</i>
	Ribbon Prickleback	<i>Phytichthys chirus</i>
	Mosshead warbonnet	<i>Chirolophis nugatory</i>

**Identification:** Refer to Lamb and Edgell's book, "Coastal fishes of the Pacific Northwest" for in depth descriptions of individual specimens.

*Apodichthyes flavidus* : Often has a dark bar across and below the eye and sometimes a row of dark spots along the lateral side. Can be green, wine-red or golden brown depending on which type of algae it eats. Reaches a maximum length of 46cm.

*Pholis laeta*: variously colored but distinctively marked with a series of crescent-shaped markings along the top of each lateral side. Reaches a maximum length of 25cm.

*Pholis ornata* : has a series of U- or V-shaped markings along the top of each lateral side. Olive or orange in color. Reaches a maximum length of 30cm.

*Xiphister mucosus*: up to 58cm long; this fish has dark bands with light centre that radiate from its eyes; sometimes confused with the black prickleback which has the reverse eye pattern, being black bands with thin, white edging that radiate from the eyes.

*Xiphister atropurpureus* : dark purple or black in color, it has dark bands with white margins radiating from the eyes and a distinct white vertical bar at the base of the tail fin. Can reach 30cm in length.

*Phytichthys chirus*: up to 20 cm long; a very pale olive green-brown colour; very muted eye banding; small white spots along the lateral line at the tail end of the animal.

*Chirolophis nugatory*: up to 15cm in length; hides under rocks or empty giant barnacle shells; has cirri (tentacle-like projections) on the head; usually a mottled brown and pale tan colour with black spots on the dorsal fin.

**Sites:** Exclusively shallow marine and intertidal, gunnels are found in the Deer Group Islands, Dixon I., Scott's Bay, off the Blowhole, along Grappler Inlet and at the Harbor mouth across from Aguilar Pt.

**Methods:** Gunnels and pricklebacks are very difficult to catch as they writhe and slip away very easily. A fine-meshed dip net is a great help when collecting.

**Holding:** Held in continually flowing seawater. Lids are necessary. These fish feel extremely exposed without shelter. Shelter such as marine plants and rocks will decrease stress levels.

**Feeding:** gunnels feed on various types of algae; pricklebacks feed on various types of plants and may also incidentally take tiny crustaceans; both gunnels and pricklebacks will eat very small chopped up fish or mussels.

**Tank Cleaning:** Once every 2-3 weeks, fish should be removed from the tank and placed into a holding bucket. The tanks should be drained and the sides and bottom should be scrubbed and rinsed with warm freshwater. The tanks should then be rinsed with cold seawater and allowed to refill, and the gunnels replaced.

**Anesthetic:** size, species, density dependent; approximately 0.2mg/L of MS-222. Always wear gloves when using MS-222.

Clove oil is most effective as an anesthetic at concentrations of 40-60 mg/L, and should be dissolved in ethanol (e.g., 1:9) before mixing into the water.

Clove oil has a slightly faster induction time and a longer recovery time than similar concentrations of TMS. Clove oil has a wide margin of safety between effective and lethal doses, and fish do not show signs of distress when being anaesthetized.

Always oxygenate the anesthetic bath during procedure.

**Euthanasia:** size, species, density dependent; inhalant anesthetic overdose of 0.4 -2.0 g/L of MS-222. Always wear gloves when using MS-222.

**Animal Return:** Animals should be returned to the site of their collection. If any anesthetic chemical has been used on the fish during its holding at BMSC, the animal must not be released before the drug withdrawal time. Withdrawal time should be on the label of an anesthetic in degree-days (degree-days are the accumulated thermal units for a given day. One day at 10C is 10 degree-days).

#### **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 uneaten prey organisms.
5. Check for and remove any foreign organisms.