

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 ornate</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: These gunnels often have a dark bar across and below the eye and sometimes a row of dark spots along the lateral side. They can be green, wine-red or golden brown depending on which type of algae they eat. They reach a maximum length of 46cm.

Pholis laeta: These are variously coloured but distinctively marked with a series of crescent-shaped markings along the top of each lateral side. These gunnels reach a maximum length of 25cm.

Pholis ornata: There are a series of U- or V-shaped markings along the top of each lateral side. They are olive or orange in color, reaching a maximum length of 30cm.

Xiphister mucosus: These fish have dark bands with light centre that radiate from the eyes. These are sometimes confused with the black prickleback which has the reverse eye pattern, being black bands with thin, white edging that radiate from the eyes. The rock prickleback is up to 58cm long.

Xiphister atropurpureus: These are dark purple or black in color, they have dark bands with white margins radiating from the eyes and a distinct white vertical bar at the base of the tail fin. Can be easily confused with the rock prickleback (above). Black pricklebacks can reach 30cm in length.

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

Chirolophis nugatory: Warbonnets commonly hide under rocks or empty giant barnacle shells. They have cirri (tentacle-like projections) on the head and are usually a mottled brown and

pale tan colour with black spots on the dorsal fin. They can be up to 15cm in length.

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.

Transport: Please follow transport and handling of fish SOP.

Holding: These fish should be 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 occasionally 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: Anesthetizing these animals is size, species, and 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 MS-222. Clove oil has a wide margin of safety between effective and lethal doses, and fish do not show signs of distress when being anaesthetized.

Euthanasia: Euthanasia is size, species, and density dependent; inhalant anesthetic overdose of 0.4 - 2.0 g/L of MS-222.

Animal Return: Animals should be returned to the site of their collection. Be sure to have well oxygenated water in bucket that they are being returned in. If any anesthetic chemical has been used on the fish during it's 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).

Note: MS-222 has a 5 -day withdrawal time for salmon above 10C.

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 and dead animals.
4. Check for and remove any uneaten prey organisms.
5. Check for and remove and foreign organisms.

