

## ECHINOIDEA CARE

SOP# = ECHI3

**PURPOSE:** To describe the methods of care for sea urchins and sand dollars.

**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 4 species of echinoids that are found around BMSC.

<b><u>Species:</u></b>	Sand dollar	<i>Dendraster excentricus</i>
	Green sea urchin	<i>Strongylocentrotus droebachiensis</i>
	Red sea urchin	<i>Strongylocentrotus franciscanus</i>
	Purple sea urchin	<i>Strongylocentrotus purpuratus</i>

**Identification:** Refer to Eugene N. Kozloff's book, "Seashore Life of the Northern Pacific Coast" for in depth descriptions of individual specimens,

***Dendraster excentricus:*** The sand dollar is a flat sea urchin with irregular, unevenly developed and short, hair-like spines. Color varies from gray-lavender, brown, red brown to dark purple. Diameter is about 10cm. Found partially or completely buried in sand.

***Strongylocentrotus droebachiensis:*** Green sea urchins may be found in the lower part of the intertidal region. Their colour is tan with a greenish tinge. Their spines are crowded, short, and fine and the body of a large specimen is about 8 cm in diameter.

***Strongylocentrotus franciscanus:*** Red sea urchins are commonly found subtidally, but may also be present in intertidal zone. Their spines are long (over 5 cm) and dark red to purple; the body may be more than 12 cm in diameter.

***Strongylocentrotus purpuratus:*** Purple urchins are commonly found in the intertidal zone of areas with strong wave action; their spines are short, stout and rich purple. The body may be as large as 8 cm in diameter.

**Sites:** Intertidal and subtidal sites are found on the shores off the Deer Group Islands, Dixon I., Scott's Bay, off the Blowhole, and at the Harbor mouth across from Aguilar Pt.

**Collection Methods:** **Hand:** small buckets with handles for carrying urchins, large bucket to hold urchins in while transporting to the station. **Scuba:** Divers will need mesh collecting bags to gather urchins and should be transferred to water filled coolers for transportation back to the station.

**Holding:** Urchins must be held in tanks supplied with flowing seawater. The tanks must be deep enough to cover the largest urchin with 5 cm of water. The urchins must have

enough room that they do not injure one another with their spines.

**Feeding:** 2-3 different species of seaweed (Bullkelp, Macrokelp, Sealettuce) should be placed in urchin tanks. The urchins will feed on the seaweed as they wish. The seaweed should be replaced once a week.

**Tank Cleaning:** Once a month the urchins should be placed into a large green bucket for holding while the tank is scrubbed and washed with warm freshwater. Rinse the tank with seawater and then refill. Place the urchins back in the tank once refilling has begun. Since urchins produce a lot of feces, once a week, the water should be drained from the tank to drain away waste and rotting seaweed. The sea urchins can be left in the tank during this draining period as long as they are not out of water for more than 5 minutes.

**Animal Return:** Return animals to the site of their collection.

**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.

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March 2008