ANTHOZOA CARE

SOP# - ANTH1

PURPOSE: To describe the method of care for anthozoans.

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:
There are 12 common species of anthozoans that are found around BMSC.

English Name	Scientific Name
Aggregating anemone	*Anthopleura elegantissima*
Green Surf anemone	*Anthopleura xanthogrammica*
Brooding anemone	*Epiactis prolifera*
Plumose anemone	*Metridium senile*
Swimming anemone	*Stomphia coccinea*
Sand-rose anemone	*Urticina columbiana*
Orange Cup coral	*Balanophyllia elegans*
Orange sea pen	*Ptilosarcus gurneyi*
White-spotted Rose anemone	*Urticina lofotensis*
Fish-eating anemone	*Urticina piscivora*
Stubby Rose anemone	*Urticina coriacea*
Painted anemone	*Urticina crassicornis*
Tube anemone	*Pachycerianthus fimbriatus*

Identification

Species	Description
Anthopleura elegantissima	▪ Most common anemone along the Pacific coast. ▪ Aggregates on rocks, especially where sand and shell fragments accumulate. ▪ Anemone column is studded with little tubercles. ▪ Tubercles and column are olive green, conferred by unicellular algae that live symbiotically in the anemone tissues. ▪ Tentacles are clear and tipped with pink.

	▪ Usually found in colonies of clones.
Anthopleura xanthogrammica	▪ Solitary anemone. ▪ Characterized by a broad flat oral disc. ▪ Colour of disk and tentacles is a muted emerald green. ▪ Diameter of the tentacular crown when fully expanded may reach 15 cm.
Epiactis prolifera	▪ Small; usually only 3cm tall when fully extended. ▪ Usually brown to greenish brown in colour, but may be red, pinkish, or dull green when found on rocks, and green, blue, or purple when found on eelgrass. ▪ Oral disk and column generally marked with radially arranged white lines. ▪ Known for unusual life history strategy of brooding its young on its pedal disk.
Metridium senile	▪ Abundant in areas protected from strong wave action. ▪ Commonly attached to floats. ▪ May attain height of 25cm or more. ▪ Can be white, tan, brownish orange or other similar colors. ▪ Has hundreds of relatively small tentacles.
Urticina columbiana	▪ Sand dwelling. ▪ Can be up to 15cm in diameter. ▪ Tentacles and column are usually greenish-gray or olive gray. ▪ Tentacles may have a reddish suffusion. ▪ Column streaked with red or can be entirely red.
Urticina lofotensis	▪ Irregular white spotting on a bright pink column is distinctive.
Urticina piscivora	▪ Deep maroon column with no markings ▪ White or red oral disc. ▪ Juvenile specimens are much brighter and look quite different. ▪ One of the largest Northern Pacific sea anemones.
Urticina coriacea:	▪ Fairly large anemone with a diameter to about 6 inches. ▪ Column ranges from brick red to bright red, but is rarely visible because sand and bits of shell cling to and cover it. ▪ Tentacles are short, blunt, and banded; often red and gray.

	▪ Found in areas of coarse sediment low in the intertidal of rocky beaches; divers can find specimens to a depth of 50 feet.
Urticina crassicornis	▪ Relatively large anemone; open crown of tentacles may be 10 inches across. ▪ The stalk may be solid red, cream, or brown, or it may be blotched olive green and red. ▪ Tentacles are thick and blunt with bands of color. ▪ Found in the intertidal in protected areas, such as under rock ledges.
Balanophyllia elegans	▪ Fairly small ▪ Bright orange cup coral. ▪ Tentacles are barely tinged with orange and are almost transparent. ▪ Looks like a squat sea anemone, about 2cm in height and diameter. ▪ Tentacles bear nodules loaded with stinging cells. ▪ Often found in very exposed situations in dark conditions, such as caves.
Ptilosarcus gurneyi	▪ Plumose sea pen pale to rich orange in color. ▪ Has a fleshy stalk and feather-like branches. ▪ Buried portion consists of a bulbous-shaped peduncle, which comprises about half the animal. ▪ Can reach 46cm in height. ▪ When disturbed, sea pen produces a greenish luminescence. ▪ Preyed upon by several species of nudibranchs.
Pachycerianthus fimbriatus	▪ Brown in colour. ▪ Very long tentacles. ▪ Encased in a tube, which is buried. ▪ Many can be found together, forming huge fields on level, soft substrates. ▪ Some may reach nearly 2 ft (~60 cm) in length.

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.

Sites

Intertidal and subtidal sites are found on the shores of:

- The Deer Group Islands
- Dixon I.
- English Bay (Scott's Bay)
- Off the Blowhole
- Along Grappler Inlet
- At the Harbor mouth across from Aguilar Pt.

Species	Location
Anthopleura elegantissima	Intertidal on rocks
Anthopleura xanthogrammica	Intertidal and shallow subtidal on rocks
Epiactis prolifera	Eelgrass or in quiet rocky bay areas
Metridium senile	Subtidal, often attached to floats and the docks and piling around BMSC
Urticina columbiana	Sand dwelling
Urticina lofotensis, Urticina piscivora	Outer coast rocky habitats
Urticina coriacea	Areas of coarse sediment low in the intertidal of rocky beaches; divers can find it to a depth of 50 feet.
Urticina crassicornis	Low in the intertidal in protected areas such as under rock ledges.
Balanophyllia elegans	Subtidal, attached to rocky surfaces often found in very exposed habitats in dark conditions such as caves.
Ptilosarcus gurneyi	Sandy bottoms at depths of between 8m and 100m
Pachycerianthus fimbriatus	Forms huge fields on level soft substrates

Collection Methods

Items needed:

Grab/collection bag to hold plastic bags

Bucket with lid or cooler with handles to hold during transport

Species	Method of Collection
Anthopleura elegantissima, Anthopleura xanthogrammica, Epiactis prolifera, Metridium senile, Stomphia coccinea, Urticina columbiana, Urticina lofotensis, Urticina piscivora, Urticina coriacea, Urticina crassicornis	Can be collected either by hand intertidally or scuba/skin diving. ▪ Hand: small buckets or cooler with handles for carrying. ▪ Scuba: plastic bags to hold water and animals.
Balanophyllia elegans	Must be collected with the rock that they are attached to.
Ptilosarcus gurneyi	Gently dig animal out of sediment.
Pachycerianthus fimbriatus	Gently dig out of sediment. ▪ Note: Specimen may be as long as 2ft and collection may require a lot of

	digging.

Holding

- Held in continually flowing seawater.
- Inflow must be adequate and directed to provide a current.
- Lids are not necessary.

Species	Method of Holding
Anthopleura elegantissima, Anthopleura xanthogrammica, Epiactis prolifera, Metridium senile, Stomphia coccinea, Urticina columbiana, Urticina lofotensis, Urticina piscivora, Urticina coriacea, Urticina crassicornis, Balanophyllia elegans	▪ All like a moderately high water flow. ▪ Provide rocks (or Petri dishes for experiments) for them to attach to it they have become unattached.
Ptilosarcus gurneyi	▪ Provide at least 3 inches of sandy/small shell sediment for animal to dig in.
Pachycerianthus fimbriatus	▪ Provide at least 4 inches of muddy/sandy sediment for animal to dig into.

Feeding

Frequency:

Large anemones: fed every 5 to 8 days.

Filter feeders: fed at least every 3 days.

Food:

- Chopped fish or mussels are adequate food for large anemones.
- Plumose anemones can only eat very small animals; large zooplankton is preferable.
- Corals, burrowing anemones, and sea pens are filter feeders and feed on small planktonic animals.

Tank Cleaning

Frequency: Once every two weeks.

Procedure:

1. Anthozoans should be removed from the tank and placed into a holding bucket.
2. The tanks should be drained and the sides and bottom should be scrubbed and rinsed with warm freshwater.
3. The tanks should then be rinsed with cold seawater and allowed to refill, and the anthozoans replaced.

Note: Burrowing anthozoans need not be removed when cleaning tank. Just circulate the top inch of sediment and then siphon off detritus from top layer of sediment.

Return of Animals

Anemones must be attached to a rock when they are returned, otherwise they will be swept away by the tide. Alternatively, intertidal ones can be placed in a tide pool and left to reattach as long as they have 3-4 hours to do so before the tide comes in.

Other Information

Anesthetic: MS222

Euthanasia: Bubbling C02 through water.

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.

SOP# = Anth1
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