CRAB CARE
SOP# = ARTH3

PURPOSE: To describe methods of care for crabs.

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.

IDENTIFICATION: At present there are many crab species found around BMSC, some of the most common below

True Crabs

Name	Identifying Characteristics	Fun Facts
Cancer branneri **Furrowed rock crab**	-Characterized by hairy carapace, legs and chelipeds -Carapace is bright orange-red -The most posterior tooth on the carapace is prominent and sharp - Carapace is about 7.5cm wide 	- can burrow in substrate, leaving only eyes and antennaes visable
Cancer gracilis **Graceful rock crab**	- Color ranges from grayish-brown to brownish-red -Resembles *C. magister* (below) but the upper surface of its carapace is smooth rather than bumpy and its legs are relatively slender -The upper surfaces of the legs are Purple -Width of the carapace does not often exceed 7cm -Regularly associated with eelgrass	- can be considered a pest commercial oyster beds - megalopae and larval stag cling to jellies for transporta

		
Cancer magister **Dungeness crab**	- Upper surface of the carapace is grayish brown, sometimes with a purplish tinge - Carapace is relatively smooth with 1(small teeth on each side - Large specimens may have a carapace 20cm wide 	- megalops and juveniles cling to eelgrass to escape predators and feed on epiphytic diatoms - gravid females (with eggs often bury themselves in sediment for weeks at a tim - Prior to matine, thhe male whill carry his prospective r for up to two weeks while waiting for the female to mo
Cancer oregonensis **Pygmy rock crab**	- The chelipeds are black-tipped but the rest of the carapace is dull red - A number of equal and evenly space teeth between the eyes and the wides part of the carapace - The outline of the carapace is nearly circular and their legs are notably hair - Only about 4cm across at its widest 	- These animals like to fit in neat holes just barely big enough for their bodies and often occupy empty giant barnacle shells. Use round carapace to block opening hole -males use resource defen polygeny (control specific a to reduce competition and r with the females residing there)

Cancer productus **Red rock crab**	- Similar to *C. oregonensis* (above) in that it is dull red with black-tipped claw - Legs are not hairy - A large specimen is about 15cm wide 	- juveniles often have str zebra pattern but can extremely variable
Hemigrapsus nudus **Purple shore crab**	- Nearly rectangular carapace - Usually reddish with a number of distinct purple spots on pincers and fir pair of legs - Legs not particularly hairy - Carapace is only about 2.7 cm acros - Found under loose rocks and in cracks, more likely to be in exposed, rocky areas 	
Hemigrapsus oregonensi **Green shore crab**	- Nearly rectangular carapace similar t H. nudus (above) - Grayish green is colour - Legs have conspicuous fringes of ha - Grows to 4.8 cm across carapace - Typical found in quiet water and roc habitats within estuaries	

		
Lophopanopeus bellus **Black-clawed crab**	- Claws are black-tipped - Varies a great deal in color - Has three teeth on each side at the widest part of the carapace - A large specimen is rarely larger tha 2.5cm wide - Tends to go into 'rigor mortis' when handled 	
Mimulus foliates **Foliate Kelp crab**	- Carapace about 3 cm long - Looks like a *Pugettia* except for its carapace - As wide or slightly wider than it is lor - Often overgrown by sponges, bryozoans and hydroids - Reaches 7.5cm in length - Found along exposed and open coas	

		
Oregonia gracilis **Graceful Decorator crab**	- Carapace is up to 5cm across and almost triangular in shape - It becomes encrusted by sponges, bryozoans, and hydroids - The narrowed anterior end is elongat into two long, nearly parallel rostral ho - Color is mostly light tan - Legs are very long, smooth and slen relative to the body as a whole - Carapace is rough - Chelipeds are delicate 	
Pugettia gracilis **Graceful kelp crab**	- Long, slender legs - Upper surface is somewhat roughen and usually has algae or animals growing on it - Reddish-brown in colour - Carapace is distinctly longer than wi slightly smaller than *P. product* (below - Rarely exceeds 3 cm in length - Has a few sharp spines on the upper surface of the carapace	

		
Pugettia producta **Northern kelp crab**	- Long, slender legs - Color is olive or olive brown and may have some red or orange tones on the lower surface - Carapace is distinctly longer than it is wide, reaching a length of 5cm or mor - Upper side of the carapace is smoot - Remains free of other encrusting Organisms 	

Pugettia richii **Cryptic kelp crab**	- Differs from the graceful kelp crab in that its carapace is covered with spine - Spines on the edges of the carapace are more curved and project at sharpe angles - Pincers are tipped with white - Carapace reaches 4.3cm across - Upper surface is somewhat roughen and usually has algae or animals growing on it 	
Scyra acutijrons **Sharp-nosed crab**	- The shape of the carapace is almost triangular - Short and very flattened rostral horns protruding out of the narrow anterior e - The carapace and legs are roughene which helps colonizing organisms encrust on the surface of the crab - Carapace is about 3.5cm long in a large specimen 	

Chorilia longipes **Longhorn decorator cra**	- Uses very little if any decorative Material - Very slender appendages - Colour is orange and white - Carapace is reaches 4.5 cm across - Often associated with cloud sponges 	

Porcelain crabs

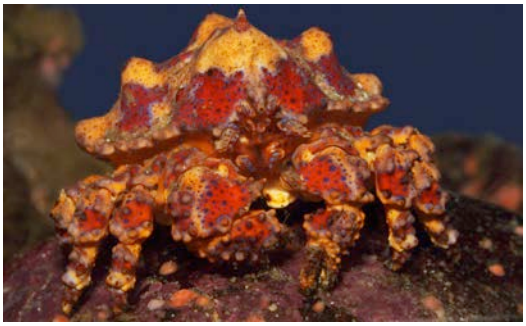
Name	Identifying Characteristics
Petrolisthes eriomerus **Flattop cr**	- finger-like palps on last pair of the mouthparts (the 3rd maxillipeds) are orange-red. - The flattened carapace is sometimes blue, sometimes purplish-red - Nearly circular body about 2cm across - The second antennae, which are longer than the first, are widely spaced and lateral to the eyes - The fifth pair of legs is small and tucked under the body

	
*Petrolisthes cinctipes***Flat porcela crab**	- Has characteristic blue mouthparts - Mouthparts must be open to see colouration - Blue spots at the 'thumb' joints - Carapace around 2.5 cm across 

Galatheid crabs

Name	Identifying Characteristics
Munida quadrispina **Squat lobster**	- Bright orange in colour - Looks like combination of a crab and a small crayfish - Swims in projectile manner using telson - Chelipeds are long and usually extended out in threatening manner - Carapace around 12.5 cm long

	
Cryptolithodes typicus **Butterfly crab**	- Has a soft abdomen but the abdomen is pressed tigh the underside of the cephalothorax - 5th pair of legs are reduced and tucked up under the carapace - The carapace is expanded laterally so that the legs c be hidden away - Carapace about 8 cm across 
Cryptolithodes sitchensis **Umbrella crab**	- Has a broader shell than *C. typicus* - Rostrum (head spike) is flared at outer End - Carapace reaches 10 cm across

	
Phyllolithodes papillosus **Heart crab**	- Named for raised heart-shaped pattern on carapace - Legs and pincers covered with prominent hard spines - Carapace up to 10 cm across 
Lopholithodes mandtii **Puget Sound king crab**	- Juveniles start as brightly orange coloured but become more dull red and purple as adul - Carapace is up to 30cm across - blunt bumps on their carapace 

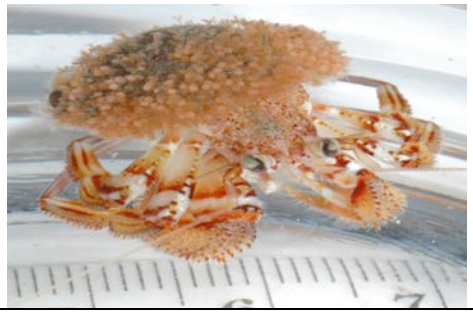
Hermit crabs

Name	Identifying Characteristics
Elassochirus tenuimanus **Widehand Hermit**	- Purple-blue patches on one of the inner segments of its walking legs

	- Carapace and appendages orange, reddish-brown yellow and white - Carapace can reaches 5 cm long - Disproportionally larger and flattened right claw 
Pagurus armatus **Blakeyed hermit**	- Right claw is larger than left - Colour is usually orange with white bands - Legs and claws have spines - Carapace length reaches about 2 cm 
Pagurus hemphilli **Maroon Hermit**	- Have reddish antennae and dark red legs - It has a white spot on the tip of the claw of each walking leg - Legs and claws are hairless - Also has a triangular projection at the anterior end of the carapace - Carapace can reach a length of 1.5 cm

	
Pagurus granosimanus **Grainyhand hermit**	- Dark olive green colour - Numerous light tiny granules covering the appendages - Orange antennae - Almost hairless - antennae do not have white spots as in P. hirsutiusculus (below) - Body/shell is about 2 cm in length 
Pagurus beringanus **Bering Hermit**	- The claw of the 2nd and 3rd leg is distinctive; they h two orange bands separated by a white band - Younger individuals do not show this but can be recognized by an orange band at the joint below the claw - They have iridescent green eyes at all ages - Large specimens are 4cm long

	
Pagurus hirsutiusculus **Hairy hermit**	- Generally hairy - White spots on the antennae - A white or pale blue band around the base of the next-to-last article of the 2nd and 3rd legs - They are abundant in tide pools, between and unc rocks, and under masses of seaweed - They often occupy shells that are a little too small and cannot withdraw their heads completely 
Pagurus caurinus **Greenmark hermit**	- Their green pincers and legs are tipped with orange - Unbanded orange antennae - There is white banding on the legs - Body/shell length is about 1 cm

	
Pagurus samuelis **Blueband hermit**	- Bright blue bands on olive-coloured Legs - Red antennae with no bands - White striped carapace - 2 cm in body/shell length 
Pagurus dalli **Whiteknee hermit**	- White or light markings on its 'knees' - Usually tan-coloured - 1.8 cm body/shell length 
Paguristes ulreyi **Furry hermit**	- Short stout antennae with a definite fringe of long hairs used for filter feeding - Pincers and the recurved ends of the walking legs black tipped - Orange in colour

	- Very hairy - 2.2cm body/shell length 
Discorsopagurus schmitti **Tubeworm hermit**	- Straight abdomens unlike other hermit species and are suited to use empty tubes - Females live in attached tubes - Males wander around in broken pieces - Obvious white banding on their legs - 0.6cm shell/body length 

CAPTURE:

Location	- Shallow intertidal sites along sandy or rocky shores to deep sandy depths - Intertidal 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
Methods	***Species:*** *Cancer branneri, Cancer gracilis, Cancer magister, Cancer productus, Munida quadrispina, Lopholithodes mandtii*	- Can be caught in crab traps on sandy bottoms in deep water
	Species: *Hemigrapsus nudus, Hemigrapsus oregonensis, Petrolisthes eriomerus, Petrolisthes cinctipes*	- Most hermit crabs can be collected Intertidally - Shore and porcelain can be found under loose rocks - Most hermit crabs can be found in tide pools and under surf grass
	Species: *P. ulreyi*, *Elassochirus tenuimanus*, *P. armatu* and *Discorsopagurus scmitti*	- Most likely to be collected by dredging or scuba diving - Not impossible to find by intertidal collecting
	Species: *Cancer oregonensis, Lophopanopeus bellus, Mimulus foliates, Oregonia gracilis, Pugettia gracilis, Pugettia producta, Pugettia richii, Scyra acutijrons, Chorillia longipes, Cryptolithodes typicus, Cryptolithodes sitchensis, Phyllolithodes papillosus, Lopholithodes mandtii, Pagurus ulreyi*, and *Discorsopagurus schmitti*	- Can be collected by scuba diving or dredging.

ANIMAL CARE:

Holding Requirements	- Held in continually flowing seawater - Aeration should be provided - Lids are necessary as all crabs are good climbers - Tank should be large enough to give crabs plenty of space to avoid or another and prevent ‘squabbles’

	- Rocks, sediment and seaweed should be put in tanks to provide habitat and minimize stress
Feeding	- All the above-mentioned crabs will feed on chopped frozen fish or mussels. -The smaller species, particularly the hermit crabs, porcelain crabs, and shore crabs will feed on fish flakes - ***C. magister:*** feeds largely on small clams as well as a variety of other small invertebrates and fishes. - ***Hemigrapsus nudus & H. oregonensis***: will also feed on algae such as *Ulva* - ***Pagurus sp.*** Will also feed on detritus but may also scavenge on dead plant and animal material - ***Pugettia* sp.** Will also feed on brown algae and eelgrass
Tank Cleaning	- Once every two weeks the crabs should be removed from the tank and placed into a holding bucket with a lid and aeration - Shelter should be provided even for this short period of time to avoid squabbles - 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 crabs replaced
Daily Activities	-Ensure water is flowing into the tank at a reasonable rate. -Ensure the standpipe is in place and not blocked. -Check for and remove dead animals. -Check for and remove any uneaten prey organisms. -Check for and remove foreign organisms.
Animal Return	Return animals 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, may be displayed as 'ATUs' (degree-days are the accumulated thermal units for a given day)