

**A Field Guide To**  
**Common Subtidal Plants and**  
**Animals**  
**Second Edition**



**Santa Barbara Coastal Ecosystem**  
**Long-Term Ecological Research Program**



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**Common Subtidal Plants and Animals**  
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**Long-Term Ecological Research Program**

*Edited by*

Dan Reed, Brent Mardian, and Bryn Evans

Marine Science Institute  
University of California  
Santa Barbara, CA USA 93106

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Shane Anderson- *Asterina miniata*, *Embiotica lateralis*, *Squatina californica*,  
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Todd Anderson- *Brachyistius frenatus*

Mike Behrens- *Haliotis kamtschatkana*,

Chris Gotschalk- *Sebastes chrysomelas*

Richard Herman- *Parastichopus parvemensis*

Kevin Lafferty- *Haliotis cracherodii*

## Introduction

This guide contains information on the common marine plants and animals that inhabit the shallow rocky reefs of the Santa Barbara Channel. Its purpose is to aid students, staff, and faculty researchers of the Santa Barbara Coastal Ecosystem Long-Term Ecological Research program (SBC-LTER) in field identification. It also provides those less familiar with the Santa Barbara Channel with a glimpse of the diverse marine life that can be found at SBC-LTER study sites. SBC-LTER is one of 24 sites established and funded by the National Science Foundation to investigate long-term ecological phenomena. More information on SBC-LTER's mission and research can be found at: <http://sbc.lternet.edu>.

## How To Use This Book

Taxa in this book are arranged in phylogenetic order. Each organism is identified by its scientific name and common name, when available. The accompanying one to four letter code in **BOLD** is the SBC-LTER species code that is used to identify the taxa in all SBC-LTER databases. Brief information on key characteristics used in identification, including the size and habitat of most common occurrence, is provided for each taxon.

# Phylum Chlorophyta/Phaeophyta

Chlorophyta/Phaeophyta



## Ulvoid

### UV

- Identification: Bright green algae with thin leafy blades in the genera *Ulva* and *Enteromorpha*.
- Size: Variable in size.
- Habitat: Usually found growing on rocks or epiphytic.



## *Codium fragile*

Dead man's fingers

### COF

- Identification: One to several erect branches from a broad base, then abundantly branched. Color dark green to blackish-green.
- Size: 10-30 cm tall.
- Habitat: Frequent on sides and tops of rocks in areas of high water motion.



## Filamentous brown algae

### FB

- Identification: Small finely branched filamentous brown algae. Frequently forming dense mats. Common genera include *Ectocarpus*, *Giffordia* and *Hinksia*.
- Size: Variable up to 30 cm long.
- Habitat: Growing on rocks and other hard substrates.

# Phylum Phaeophyta



## *Scytosiphon lomentaria*

### SELO

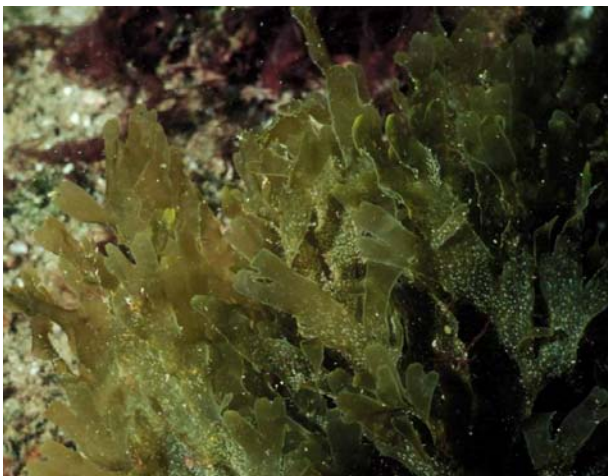
- Identification: Small brown alga with slender tubular thalli. Gregarious in clusters from a crustose holdfast. Larger plants inflated and irregularly constricted.
- Size: 20-30 cm tall, thallus 4-6 mm in diameter.
- Habitat : on sheltered rocks.



## *Colpomenia* spp.

### CP

- Identification: Sac-like alga with broad basal attachment. Color from olive to medium brown.
- Size: Diameter up to 10 cm.
- Habitat: On rocks, occasionally epiphytic.



## *Dictyota* spp./ *Pachydictyon* spp.

### DP

- Identification: Smooth thin blades with rounded tips. Light to dark brown in color. Dichotomous to pinnate branching. No midrib.
- Size: Up to 45 cm tall. Blades 1-2 cm broad.
- Habitat: On rocky substrate.

# Phylum Phaeophyta

Phaeophyta



## *Taonia lennebackeriae*

### TALE

- Identification: Thin strap-like to fan-shaped blade. Light to medium brown in color. Split or lacerated at tips when mature.
- Size: 10-30 cm tall, blades 10-60 mm broad.
- Habitat: Frequent on rocks, often partially embedded in sand.



## *Dictyopteris undulata*

### DU

- Identification: Alga irregularly dichotomous with short terminal branches. Distinguishing feature is the midrib running through the branches. Color yellowish-brown to olive.
- Size: 8-12 cm tall, reaching 24 cm.
- Habitat: Frequent on rocks.



## *Laminaria farlowii*

Oar weed

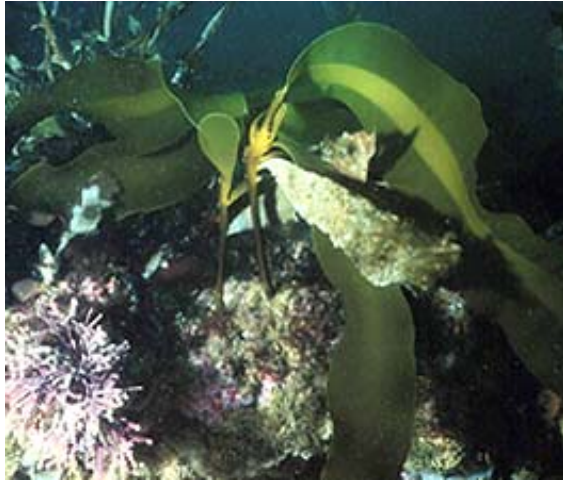
### Lafa / LFJ

- Identification: Single long, wide blade with deep depressions in longitudinal rows. Dark brown in color with short stipe.
- Size: Blade length to 5 m. Stipe 4-7 cm long.
- Habitat: On rocky substrate.



# Phylum Phaeophyta

Phaeophyta



## *Pterygophora californica*

Palm Kelp

### **PTCA / PTJ**

- Identification: Long woody unbranched stipe. Flattened in upper portion. Terminal blade with a midrib. Numerous lateral sporophylls. Small branched holdfast.
- Size: To 2.3 m in height.
- Habitat: May form extensive stands on rocky substrate.



## *Eisenia arborea*

Southern sea palm

### **EA**

- Identification: Erect tree-like stipe that terminates into two branches that bear leafy brown blades with toothed margins. Color usually medium to dark brown.
- Size: Stipe 1-2 m long. Blades can be as long as stipe.
- Habitat: On rocky substrate.



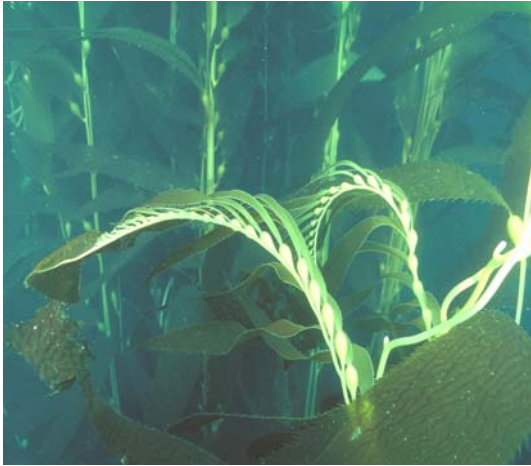
## *Egregia menziesii*

Feather boa kelp

### **EGME / EGJ**

- Identification: A large kelp having a long flat stipe bearing numerous small flat blades and floats along its entire length.
- Size: Plant 5 to 15 m long with blades to 8 cm long.
- Habitat: On rocky substrate.

# Phylum Phaeophyta



## *Macrocystis pyrifera*

Giant Kelp

### **MPS / MPJ**

- Identification: The largest of kelps possessing many round stipes each bearing numerous blades attached by gas filled floats. Large conical holdfast of root like haptera.
- Size: Up to 45.7 m tall.
- Habitat: On rocky substrate and occasionally in sand.



## *Desmarestia ligulata*

Acid weed

### **DL**

- Identification: Thin pinnately branched thallus with slender midvein. Medium to dark brown in color. Finely branched and bushy or coarse with marginal spines.
- Size: 8 m tall.
- Habitat: Growing on rocks and attached to worm tubes in sandy habitats.



## *Sargassum muticum*

### **SAMU**

- Identification: Large alga having small leaf like blades with toothed margins that occur singly along the thallus. Medium to dark brown in color. Small cylindrical pneumatocysts borne in clusters.
- Size: up to 2 m tall, leaves to 10 cm long.
- Habitat: On hard substrate.

# Phylum Phaeophyta/Rhodophyta



## *Cytoseira osmundacea*

Bladder chain

### **CYOS / CYJ**

- Identification: dark brown furoid with radial branches. Tall bushy reproductive parts
- Size: to 8 m tall, blades 1-1.5 cm broad.
- Habitat: On rocks, frequently mingled with *Macrocystis*.



## *Scinaia confusa*

### **SCCA**

- Identification: Rose pink tubular thallus, with regularly branched axes.
- Size: 3-15 cm tall.
- Habitat: grows on rocks.



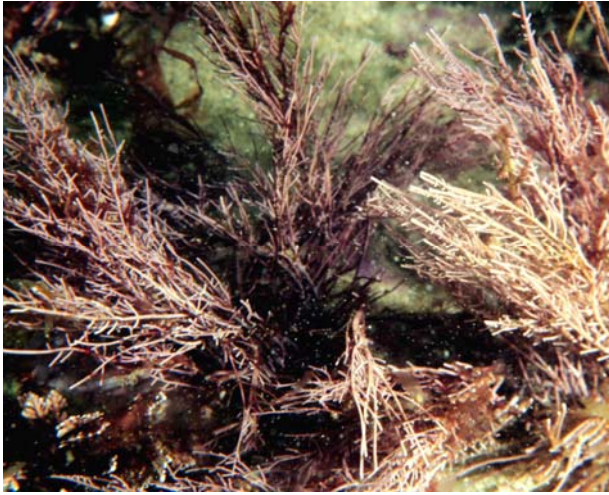
## *Gelidium robustum*

Agarweed

### **GR**

- Identification: Dark red branches, compressed, but basal axes cylindrical. Branches frequently distichous, often geniculate. Branches often covered by white encrusting bryozoans..
- Size: To 40 cm tall.
- Habitat: On tops of reefs in areas of high water motion.

# Phylum Rhodophyta



## *Lithothrix* spp.

Stone hair

### LI

- Identification: Alga dull purple to pink in color. Primary branching dichotomous but irregular lateral branches, gives a stringy look.
- Size: To 13 cm tall.
- Habitat: Found growing on rocks or animals in sandy areas.



## *Corallina officinalis*

### CO

- Identification: Fronds whitish, pinkish, or purplish. Bipinnate to tripinnate branching, with branches in one plane like a feather.
- Size: Height to 15 cm.
- Habitat: On hard substrate.



## *Bossiella orbigniana*

### BO

- Identification: Branches are thin and delicate, always dichotomous. Each segment is wing-nut shaped and has bumps (i.e. conceptacles) on the inner margin.
- Size: Height 15-30 cml.
- Habitat: On rocks.

# Phylum Rhodophyta



## *Calliarthron cheilosporioides*

### CAL

- Identification: Articulate coralline alga with coarse pinnate branching. Segments flat and rounded. Conceptacles (bumps) on the margins of wings. Seen here with an orange epiphytic hydroid (*Garvela annulata*).
- Size: Fronds to 30 cm. Segments to 7 mm.
- Habitat: Frequent growing on rocks.



## Encrusting coralline

### EC

- Identification: Calcified crusts of pinkish algae that cover the surface of hard substrates. Often intermixed with other erect species of coralline algae.
- Size: Variable sized patches that can cover a large proportion of the bottom.
- Habitat: Hard, rocky substrate.



## *Prionitis lanceolata*

### PL

- Identification: Dull, purplish red alga with narrow compressed branches. Cartilaginous in texture.
- Size: 20-30 cm tall, axes and branches 2.5-5 cm wide.
- Habitat: grow on hard substrate.

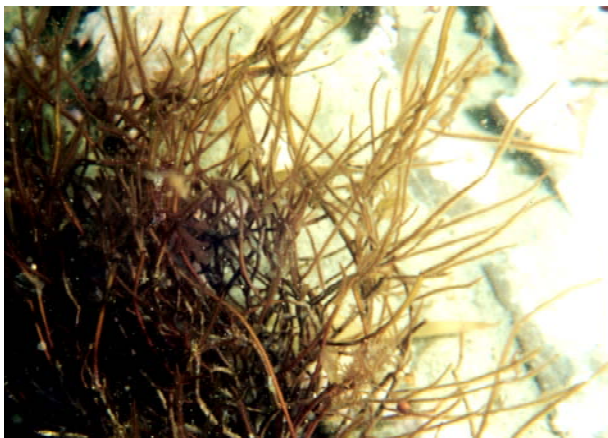
# Phylum Rhodophyta



## *Callophyllis flabellulata*

### CF

- Identification: Flat thin bladed red alga with finely dissected ultimate branches. Rose to orange-red color.
- Size: 4-10 cm tall.
- Habitat: growing on rocks or epiphytic.



## *Gracilaria sp.*

### GS

- Identification: Deep dull reddish algae with numerous cylindrical spaghetti-like branches arising from a discoid holdfast. Branches fleshy to cartilaginous.
- Size: 6-20 cm tall.
- Habitat: Frequently on rocks often embedded in shallow sand.



## *Chondracanthus corymbiferus*

### CC

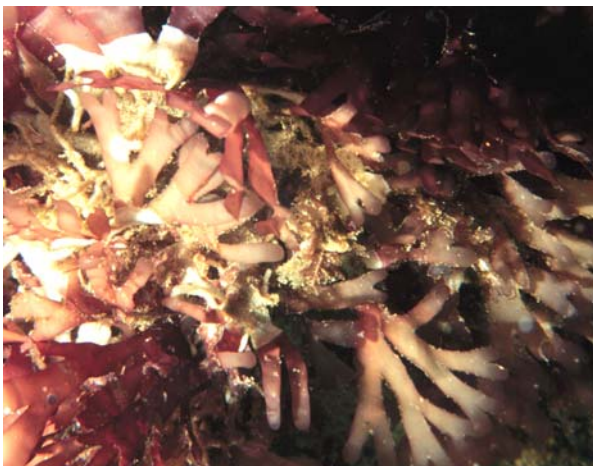
- Identification: Among the largest of all red algae. Blades deep red. Broadly rounded and frequently ruffled, with smooth iridescent bases. Formerly *Gigartina corymbiferus*.
- Size: blades can grow more than 1m, 30 cm wide. Holdfasts 1-5 cm wide.
- Habitat: On hard substrate.

# Phylum Rhodophyta



## *Chondracanthus spinosa* CZ

- Identification: Colors range from purplish to black to brownish to red, grows in thick isolated clumps. Narrower blades than *C. corymbiferus* with large papillae and numerous spinelike to bladelike branchlets.
- Size: 20-30 cm tall, 4-6 cm broad
- Habitat: On hard substrate.



## *Rhodymenia californica* R

- Identification: Thalli bushy and clumped, one to many erect or spreading blades dichotomously or flabellately branched on short stipes. Color dark red to a bleached pink.
- Size: To 15 cm tall.
- Habitat: Found growing on rocks.



## *Nienburgia andersoniana* NA

- Identification: Thin narrow branched blades with a midrib in the lower parts and conspicuously toothed margins. Bright rose to dull carmine.
- Size: Main axes 1-16mm broad.
- Habitat: Found growing on rocks.

# Phylum Rhodophyta



## *Acrosorium uncinatum*

### AU

- Identification: Thin flattened blades with irregular branches. Blades irregularly hooked at ends that cause it to become entangled. Frequently parasitic. Color deep rose red.
- Size: Height to 8 cm tall.
- Habitat: Often found epiphytic on other algae.



## *Botryoglossum farlowianum*

### Grape tongue

### BF

- Identification: Large deep red slightly iridescent blades having densely ruffled margins with numerous proliferations.
- Size: Erect axes 10-50 cm tall, blades 0.15-2 cm wide.
- Habitat: Common growing on rocks.



## *Laurencia sp.*

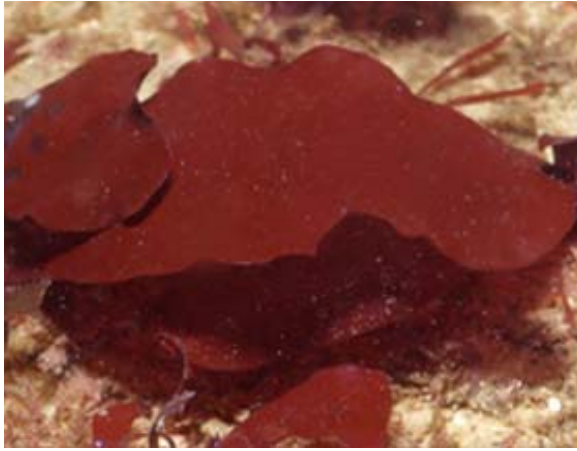
### LS

- Identification: Erect bushy thalli with short stubby branches ending in a blunt tip. Color ranging from brown to rich red.
- Size: 3-10 cm tall.
- Habitat: Found growing on rocks or epiphytic.



# Phylum Rhodophyta

Rhodophyta



## Bladey Red

### BR

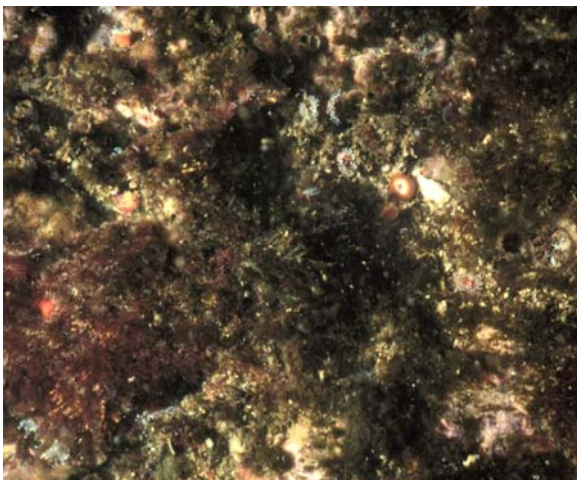
- Identification: Broad catch all category for numerous species of red algae having thin fleshy blades.
- Size: Variable, but can reach 10 cm tall.
- Habitat: Rocky substrate.



## Filamentous red spp.

### FR

- Identification: Thin, finely branched red algae. Frequently forms tufts or clumps. Common genera include: *Polysiphonia*, *Ceramium*.
- Size: Variable, up to 20 cm tall.
- Habitat: On rocky substrate.



## Red Algal Turf

### RAT

- Identification: Low growing turf consisting of polysiphonous filamentous red algae (e.g. *Polysiphonia* spp., *Pterosiphonia* spp, *Tiffaniella* spp.), turf dwelling invertebrates (e.g. tubicolous crustacea and polychaetes) and sediments.
- Size: 1 – 3 cm tall.
- Habitat: On rocky substrate.

# Phylum Tracheophyta

Tracheophyta

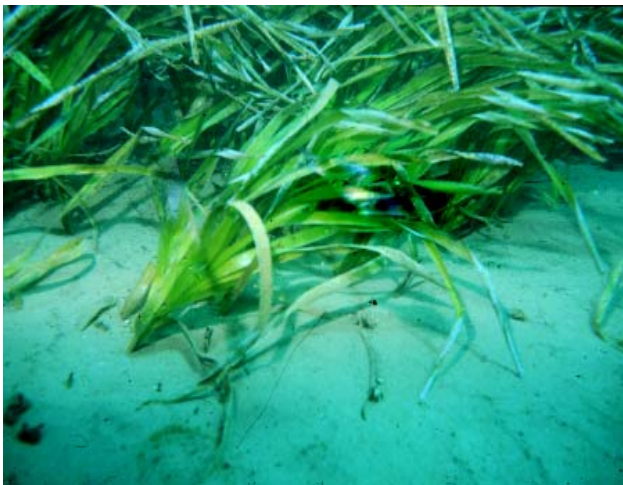


## *Phyllospadix torreyi*

Surfgrass

**PHTO**

- Identification: Bright green narrow wiry leaves with flowering stems arising from a densely mingled rhizomous mat. Separate sexes. Flowers arranged in spadices.
- Size: leaves 2-4 mm wide, 1-2 m long.
- Habitat: open coast on rocky reefs, low intertidal to 6 m depth.



## *Zostera marina*

Eelgrass

**ZOMA**

- Identification: Dull, light green, strap-like leaves with long flowering stems. Monecious. Flowers inconspicuous in spadices.
- Size: leaves 6-12 mm wide, 30-150 cm long, flowering stems 1-3 m long.
- Habitat: protected sandy flats. Intertidal to shallow subtidal in bays and estuaries. Occurring offshore on open coast at depths of 5-20 m.

## Phylum Porifera



### *Spherospongia confederata*

moon sponge

#### SC

- Identification: Massive, smooth gray sponge (leathery in texture) with numerous crater-like oscula on outer ridge.
- Size: Up to 70 cm long and 14 cm thick
- Habitat: On rocky reefs.

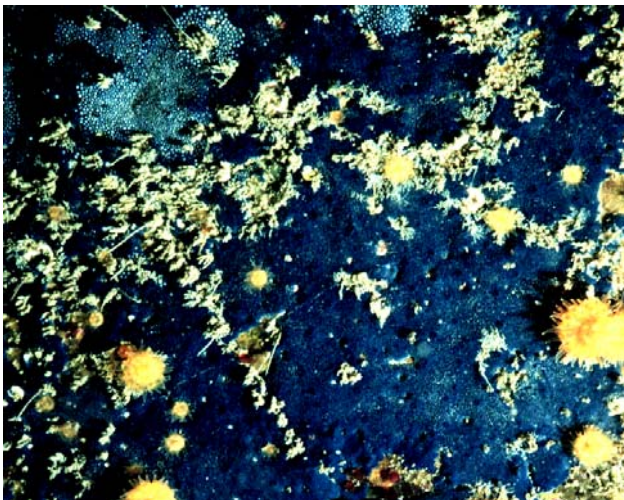


### *Tethya aurantia*

orange puffball

#### TEAU

- Identification: Porous, globose sponge with very rough outer surface. Color ranges from orange to yellow.
- Size: Diameter at least 8 cm.
- Habitat: On sides of reefs and under ledges.



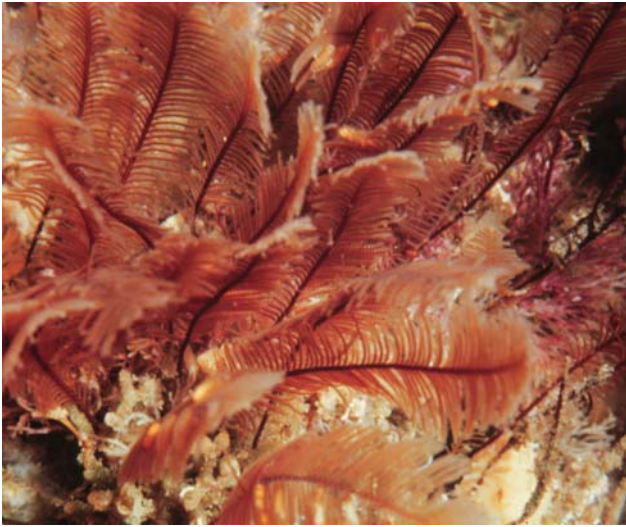
### *Hymenamphiasira cyanocrypta*

cobalt sponge

#### HC

- Identification: Thin, encrusting, usually, cobalt blue sponge.
- Size: Diameter up to 1 m.
- Habitat: common growing on rocky reef areas underneath ledges or on sides of rocks.

# Phylum Cnidaria



## *Aglaophenia* spp.

hydroid

### AS

- Identification: Large feather-like brown plumes consisting of a central stalk with numerous pinnate branches.
- Size: Plumes to about 12 cm.
- Habitat: Attached to rocky substrate.



## *Urticina lofotensis*

white-spotted rose anemone

### URLO

- Identification: Column is very distinctive red, with white spots. Tentacles are scarlet to crimson.
- Size: Maximum column diameter to 10 cm.
- Habitat: Attached to rocky substrate.



## *Urticina piscivora*

fish eating anemone

### URPI

- Identification: Deep red column with tentacles that are usually white, but occasionally red.
- Size: Crown to 8 inches in diameter.
- Habitat: Attached to rocky substrate.

## Phylum Cnidaria



### *Anthopleura spp.*

aggregating anemone

#### **ANSP**

- Identification: Aggregations or solitary individuals. Color from green to reddish.
- Size: Maximum tentacular diameter to 10-15 cm.
- Habitat: Attached to rocky substrate, may be buried in sand.

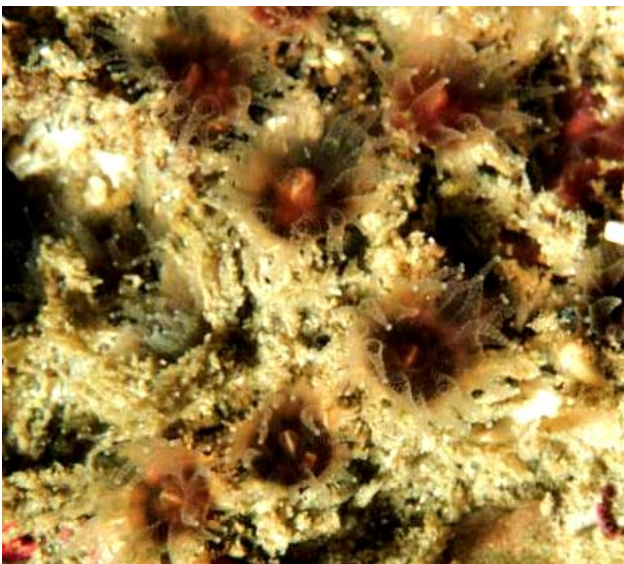


### *Corynactis californica*

club-tipped anemone

#### **CY**

- Identification: Small colonial anemone with bulbous-tipped tentacles. Color varies from orange, red, purple, pink, to almost white.
- Size: Diameter up to 2.5 cm.
- Habitat: attached to rocky substrates.



### *Astrangia lajollaensis*

cup coral

#### **AL**

- Identification: Small cup corals form large colonies. The stony cups are brownish-orange and tentacles are yellowish-orange.
- Size: Cups to about 1 cm in diameter.
- Habitat: on rocky reefs and under ledges.

## Phylum Cnidaria



### *Balanophyllia elegans*

orange cup coral

#### **BAEL**

- Identification: Solitary, orange, cup-shaped coral with orange tentacles.
- Size: Diameter up to 2.5 cm.
- Habitat: Attached to rocky substrate.



### *Paracyathus stearnsi*

brown cup coral

#### **PAST**

- Identification: Small brown solitary cup corals have long, almost clear, tentacles.
- Size: Maximum cup diameter of 4 cm.
- Habitat: Attached to rocky substrate.



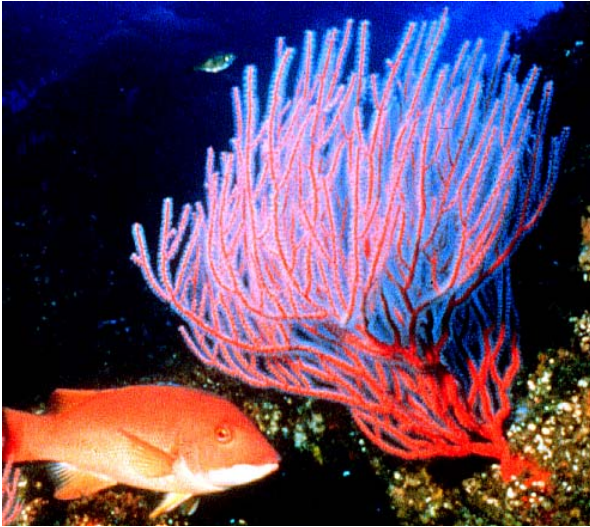
### *Pachycerianthus fimbriatus*

tube dwelling anemone

#### **PAFI**

- Identification: long, slender outer tentacles and shorter inner tentacles. Soft body protected by tube. Tentacles may be creamy white, brown, black, or orange.
- Size: Height to about 30cm, diameter to about 38 mm.
- Habitat: Sand and soft mud bottoms

## Phylum Cnidaria



### *Lophogorgia chilensis*

red gorgonian

#### **LOCH**

- Identification: Sea fan with red branches with white polyps. Branches are not in a single plan.
- Size: Height to about 1 meter.
- Habitat: Attached to rocky substrate.



### *Muricea fruticosa*

brown gorgonian

#### **MUFR**

- Identification: Thick brown branches with white polyps, usually in one plane. Brown in color.
- Size: Height to about 1 meter.
- Habitat: Attached to rocky substrate.



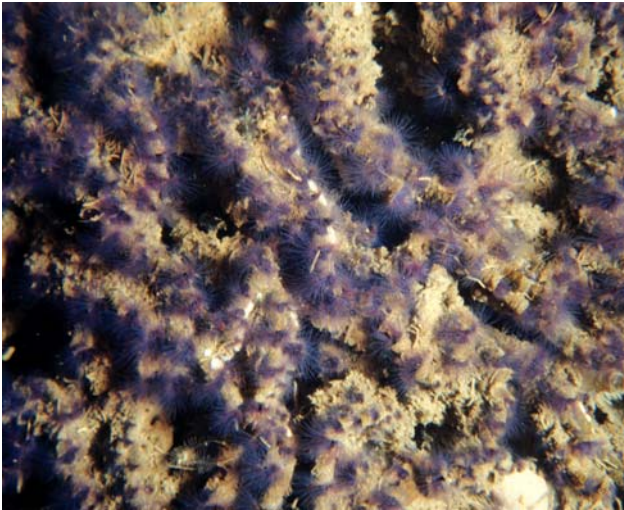
### *Muricea californica*

california golden gorgonian

#### **MUCA**

- Identification: Thick brown branches. Yellow polyps distinguish it from brown gorgonian.
- Size: Height to about 1 meter.
- Habitat: Attached to rocky substrate.

## Phylum Annelida



### *Phragmatopoma californica*

Colonial sand tube worm

#### PA

- Identification: Extensive colonies. Tubes constructed of cemented sand. Short lavender tentacles.
- Size: Diameter up to 1 cm.
- Habitat: Honeycomb colonies on or against rocks in areas of high sand transport.



### *Sabellid worm*

#### SABW

- Identification: Worms in the family Sabellidae that retract into tube when disturbed. The most commonly observed species is the feather duster worm *Eudistylia polymorpha* which is identified by its plume of branched gills that vary in color from tan to orange.
- Size: Crown diameter to 7.5 cm
- Habitat: Attached to rocky substrate.



### *Diopatra ornata*

Ornate tube worm

#### DIOR

- Identification: Tubes usually completely covered with attached pieces of shell, algae, or other debris.
- Size: Tube diameter up to about 2 cm.
- Habitat: On sand or rubble usually near rocks.



# Phylum Annelida

Polychaeta



## *Salmacina tribranchiata*

Fragile tube worm

### ST

- Identification: Small whitish tubes that form tangled complex masses up to a size of about 20 cm in diameter.
- Size: Tube diameter < 2 mm.
- Habitat: Attached to sides or under rocks.

# Phylum Mollusca

Gastropoda



## *Haliotis corrugata*

Pink abalone

### HACO

- Identification: Shell is almost round, with corrugated, scalloped edge. Two to four raised shell holes remain open.
- Size: Length to 25 cm.
- Habitat: In rocky crevices and on sides of rocks.



## *Haliotis cracherodii*

Black abalone

### HACR

- Identification: Shell color ranges from dark blue to black and shell is smooth. Five to 7 holes are usually open.
- Size: Length to 20 cm.
- Habitat: On rocks and in crevices.

## Phylum Mollusca



### *Haliotis rufescens*

Red abalone

#### **HARU**

- Identification: Shell usually brick-red, occasionally with bands of green or white. Three or four of the holes are open.
- Size: Length to 30 cm.
- Habitat: On rocks, occasionally on sand or gravel bottoms.



### *Haliotis kamtschatkana assimilis*

Threaded abalone

#### **HAKA**

- Identification: Flat oblong shell with four to eight open holes that are slightly raised.
- Size: Length to about 175 mm
- Habitat: on rocks or in crevices



### *Megathura crenulata*

Giant keyhole limpet

#### **MECR**

- Identification: Mantle color varies from black to mottled gray and usually covers the entire shell. Shell has a large opening in the center.
- Size: Length of shell to 13 cm.
- Habitat: On rocky substrate.

## Phylum Mollusca



### *Lithopoma undosum*

(Formerly *Astraea undosum*)

Red turban snail

#### LIGL/S

- Identification: Heavily sculptured spiral shell that is frequently covered with encrusting coralline algae. Oval-shaped operculum has large rough ridges.
- Size: Shell diameter to 110 mm.
- Habitat: On rocky substrate.

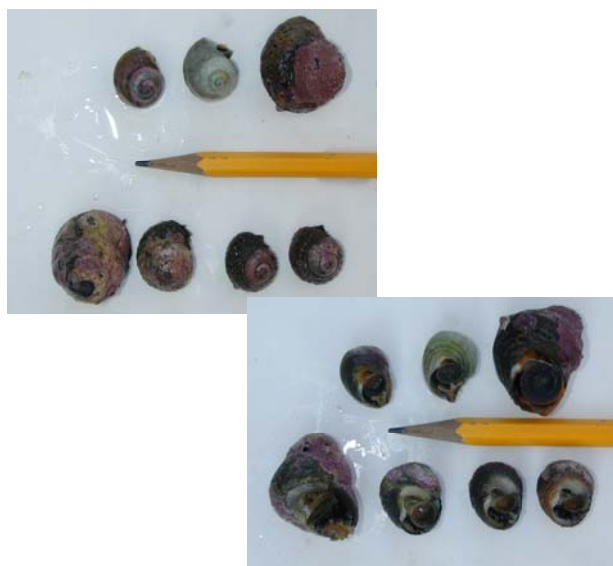


### *Norrisia norrisi*

#### NONO

Norris's top snail

- Identification: Red-brown flattened spiral shell with a bright red foot.
- Size: Shell diameter to 5.5 cm.
- Habitat: On kelp and rocky substrate.



### *Tegula spp.*

#### TESP

Turban snail

- Identification: Shell commonly smooth, rounded-conical. Color orange, black, brown or a combination of these. Foot with dark brown or black sides, white or cream color below.
- Size: Variable, 1-3 cm.
- Habitat: On kelp and rocky substrate.

## Phylum Mollusca



### *Serpulorbis squamigerus*

scaled worm snail

#### SE

- Identification: Shell is a partially coiled tube attached to substrate. No operculum. Usually occurring in aggregations.
- Size: Length of tube to 12 cm.
- Habitat: On rocky or other hard substrate.



### *Cypraea spadicea*

Chestnut cowry

#### CYSP

- Identification: Smooth shell with a brown dorsal surface and white margins on the ventral side. Foot and mantle are orange-brown with dark spots.
- Size: Up to 8 cm in length.
- Habitat: On rocky reefs and underneath ledges.



### *Kelletia kelleitia*

Kellet's whelk

#### KEKE

- Identification: White or gray, robust shell with heavy sculpturing crossed by thin spiral lines. Skin is yellow, mottled with black and white markings.
- Size: Length of shell to 18 cm.
- Habitat: In kelp beds on rocky and soft bottoms.

## Phylum Mollusca



### *Small Kelletia-like spp.*

#### **SKE**

Whelk-like snail

- Identification: Catchall category for small *Kelletia*-like snails. May include juveniles *Kelletii* or other genera such as *Pteropurpura*
- Size: Variable, 1-3 cm.
- Habitat: On rocky substrate.

### *Ceratostoma foliatum*

Leafy hornmouth

#### **CEFO**

- Identification: Three distinctive wing-like processes protrude from the central shell, one on top and one to each side, with a tooth on the outside edge of the opening.
- Size: Length up to 9 cm.
- Habitat: commonly on rocky substrate.



### *Mitra idae*

Ida's miter

#### **MIID**

- Identification: Dark brown, smooth shell covered with a black periostracum. The foot is white.
- Size: Up to 8 cm in length.
- Habitat: On rocky substrate.

## Phylum Mollusca



### *Conus californicus*

California cone

#### **COCA**

- Identification: Smooth light brown shell with a transparent to white foot and a black proboscis.
- Size: Up to 4 cm in length.
- Habitat: On sandy and rocky bottoms.



### *Aplysia californica*

California brown sea hare

#### **APCA**

- Identification: Color varies from reddish, brownish, and/or greenish, overlaid with dark lines and spots.
- Size: Length can exceed 40cm.
- Habitat: Among seaweed, in kelp canopy, sometimes in sandy areas.



### *Aplysia vaccaria*

California black sea hare

#### **APVA**

- Identification: Body dark reddish brown to black, with white speckled patches. Distinguished from *A. californica* by larger size.
- Size: Length up to 75 cm.
- Habitat: Around kelp beds, rocky and sandy areas.

## Phylum Mollusca



### *Crassedoma giganteum*

(Formerly *Hinnites giganteus*)

Rock scallop

#### **CRGI**

- Identification: Orange mantle. Adults cemented to substrate and have thick valves with spines protruding from ribs.
- Size: Shell diameter to 20 cm.
- Habitat: On rocky substrate.



### *Mytilus californianus*

#### **MC**

California mussel

- Identification: Shell thick, pointed at anterior end, broadening posteriorly, sculptured with strong radial ridges and irregular growth lines. Surface often eroded or worn. Blue-black in color.
- Size: Length to 13 cm.
- Habitat: Form large beds on rocks and pilings.



### *Chaceia ovoidea*

#### **CHOV**

wart-neck piddock

- Identification: Boring clam, with siphon sticking out of rock. Siphon distinct dark brown.
- Size: Shell to 12 cm in length. Siphon fully extended can reach 1m in length.
- Habitat: Burrows into clay or shale reefs.

## Phylum Mollusca



### *Parapholas californica*

scaleside piddock

#### **PACA**

- Identification: Boring clam, with white siphon that usually has reddish-brown spots and blotches.
- Size: Shell length to 15 cm. Siphon can extend to 15 cm.
- Habitat: Burrows into clay, soft shale and sandstone reefs.



### *Octopus spp.*

octopus

#### **OCTO**

- Identification: Octopus mimic colors and texture. They always have eight legs.
- Size: Armspan to 300 cm but usually closer to 30 cm.
- Habitat: Usually found hiding in crevices and under rocks.

## Phylum Arthropoda

Crustacea



### *Barnacle spp.*

barnacle

#### **BA**

- Identification: Sessile barnacle, usually with feeding tentacles out. Plates or paired beaks cover the opening of the feeding tentacles.
- Size: Basal diameter ranges from 0.5 cm to 10 cm depending on species. Height from 0.5 cm to 7.5 cm.
- Habitat: Requires hard substrate to attach to, such as rock or the shell of another animal.



# Phylum Arthropoda



## *Panulirus interruptus*

California spiny lobster

### **PAIN**

- Identification: Large reddish brown crustacean with long antennae covered with small sharp spines. Anterior portion of the thorax is covered with sharp spines, large spines on tail. Claws absent.
- Size: Length up to 60 cm.
- Habitat: In crevices and underneath rocks during daytime, forages at night.



## *Loxorhynchus grandis*

Sheep crab

### **LOGR**

- Identification: Large spider crab with robust, oval carapace covered with spines and tubercles. Males have larger chelipeds (claws) than females.
- Size: Carapace up to 16 cm in width.
- Habitat: Common on rocky and soft bottoms.



## *Pugettia producta*

Kelp crab

### **PUPR**

- Identification: Smooth carapace with yellowish brown to reddish coloring. Feeds on algae.
- Size: Carapace width up to 12 cm.
- Habitat: Common on kelp and on rocky substrate.

## Phylum Arthropoda



### *Cancer spp.*

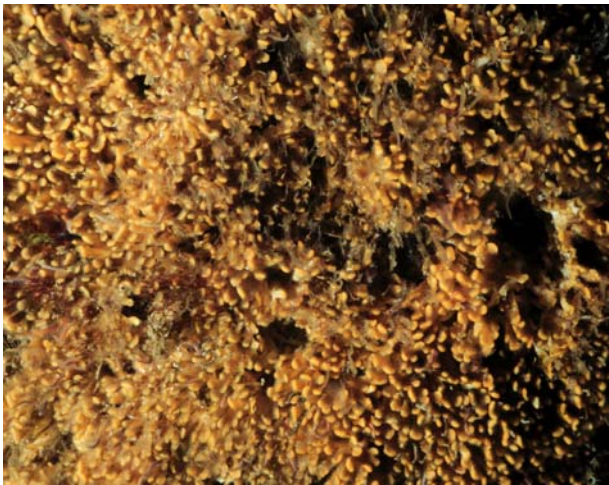
crab

#### **CASP**

- Identification: Typical “crab” shape like you see in the grocery store. Body and legs may be hairy or smooth.
- Size: Carapace width 2-18 cm.
- Habitat: On rocky and sand substrates.

Ectoprocta (Bryozoan)

## Phylum Ectoprocta (Bryozoans)



### *Diaperoecia californica*

staghorn bryozoan

#### **DC**

- Identification: Colonies in coral-like masses, with flattened branches. Color light to dark yellow.
- Size: Colony height to 10 cm .
- Habitat: On rocks and other hard substrate.

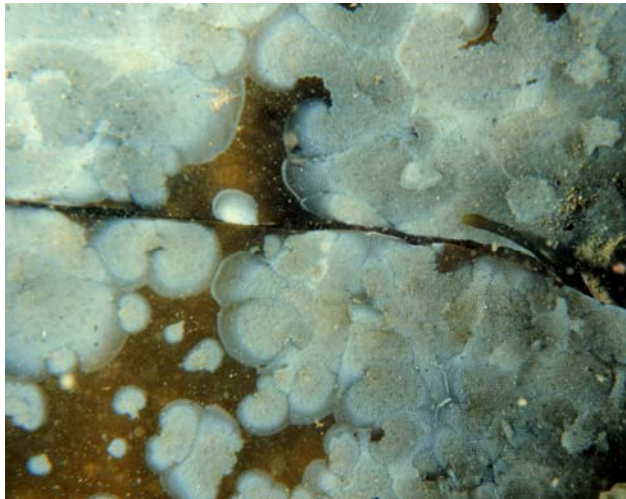


### *Bugula neritina*

#### **BN**

- Identification: Colony bushy, reddish brown or purple in color.
- Size: Colony 3-10 cm in height.
- Habitat: Found growing on rocks and in sandy substrate.

## Phylum Ectoprocta (Bryozoans)



### *Membranipora tuberculata*

encrusting bryozoan

#### MT

- Identification: Small zooids form a white crustose colony, having a honeycomb appearance. Usually epiphytic. Seen here on *Macrocystis*.
- Size: Variable, can cover most of an alga, several cm in diameter.
- Habitat: Often found growing on *Macrocystis*, *Cystiseira*, and especially *Gelidium*.



### *Thalamoporella californica*

#### TC

- Identification: Flesh colored colony dichotomously branched with a basal crust and many projections.
- Size: Colony varying in size but can form large mats.
- Habitat: Found growing on rocks and on some red algae, *Gelidium*, *Lithothrix*, and *Gigartina*, and *Macrocystis*.

## Phylum Echinodermata

Holothuroidea



### *Cucumaria piperata*

#### CUPI

- Identification: Small cucumber. 10 branched tentacles. Usually white, with brown or black speckles.
- Size: Length to about 60 mm.
- Habitat: In rocky areas and crevices.

## Phylum Echinodermata



### *Cucumaria salma*

sea cucumber

#### CUSA

- Identification: Body salmon to orange color with 5 rows of tube feet. Tentacles black and goldish yellow, with white banding.
- Size: Length to 15 cm.
- Habitat: In holes and crevices in rocks.



### *Eupentacta quinquesemita*

White sea cucumber

#### EUQU

- Identification: Small white to yellowish sea cucumber, cannot completely retract its long tube feet.
- Size: Length to 10 cm.
- Habitat: On rocky substrate.



### *Parastichopus californicus*

California sea cucumber

#### PAST

- Identification: Dark red, brown or yellow sea cucumber has stiff, conical papillae. Tube feet only on ventral surface.
- Size: Length to 40 cm.
- Habitat: On rocks and soft substrates.

## Phylum Echinodermata



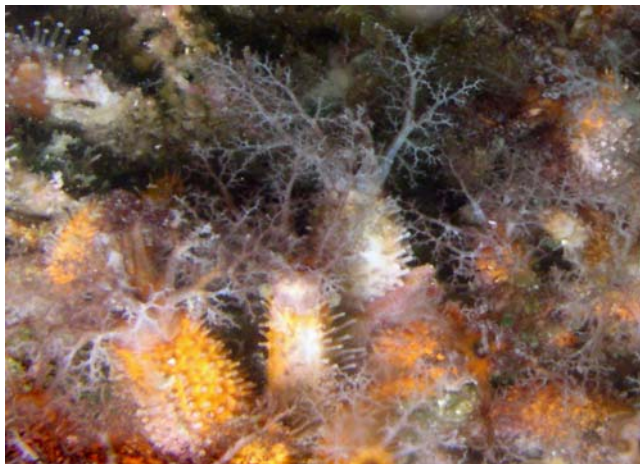
Photo by: Richard Hermann

### *Parastichopus parvimensis*

Warty sea cucumber

#### **PAPA**

- Identification: Brownish sea cucumber is covered with small black-tipped papillae or pseudospines.
- Size: Length to 25 cm.
- Habitat: On soft substrate.



### *Pachythyone rubra*

#### **PRUB**

- Identification: Small brownish white holothurian, with white to opaque feeding appendages and protruding tube feet
- Size: 1cm to 7 cm
- Habitat: on rocky reefs and often feed upon by *Pychnopodia helianthoides*

Echinoidea



### *Lytechinus anamesus*

White sea urchin

#### **LA**

- Identification: small sea urchin with sharp, short white spines. Test is usually white with dark blotches.
- Size: Diameter to about 8 cm.
- Habitat: On soft as well as rocky bottoms, often aggregate around food sources.

## Phylum Echinodermata

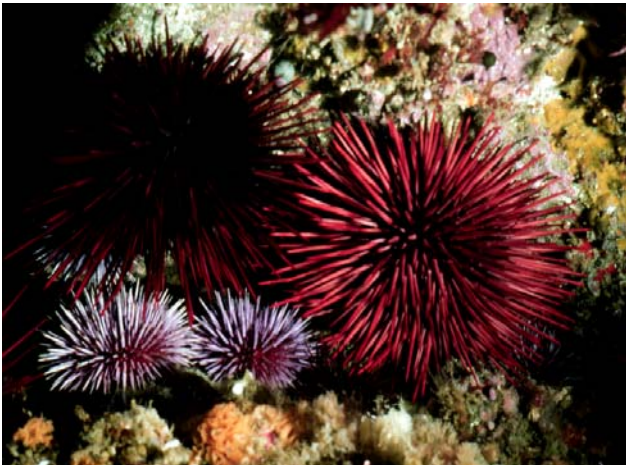


### *Strongylocentrotus purpuratus*

purple sea urchin

#### **SPL/S**

- Identification: Medium sized sea urchin with short purple spines. Frequently bores depressions in rocks.
- Size: Diameter to about 5 cm.
- Habitat: On rocky substrate.



### *Strongylocentrotus franciscanus*

red sea urchin

#### **SFL/S**

- Identification: Large urchin with sharp, long spines. Color ranges from red, red-brown, to dark purple. (Note: small urchins in foreground are *S. purpuratus*)
- Size: Diameter to 10 cm.
- Habitat: On rocky substrate.

**Astroidea**



### *Asterina miniata*

#### **AML/S**

bat star

- Identification: This webbed sea star varies greatly in color. Lacks pedicellariae or spines. Number of arms usually 5, but can be 4 to 9.
- Size: Diameter to 20 cm.
- Habitat: On rocky and sandy substrates.

# Phylum Echinodermata



## *Dermasterias imbricata*

leather star

### **DIL/S**

- Identification: This sea star feels smooth and almost leather-like.
- Size: Diameter to 25 cm.
- Habitat: On rocky substrate, occasionally on sand.



## *Orthasterias koehlerii*

Rainbow sea star

### **OKL/S**

- Identification: Vivid color, ranging from pink with gray to bright red with yellow banding. Small disk with 5 slender arms.
- Size: Arm radius to 21 cm.
- Habitat: On mud, sand, rock and kelp. Depths extending to 250 m.



## *Pisaster brevispinus*

short spined sea star

### **PBL/S**

- Identification: This sea star is always pink. It has short aboral spines.
- Size: Diameter to 60 cm.
- Habitat: On rocky and soft substrates.

# Phylum Echinodermata



## *Pisaster giganteus*

giant spined sea star

### **PGL/S**

- Identification: This sea star has long uniformly spaced spines with swollen tips. Each spine is surrounded by a blue circle.
- Size: Diameter to 60 cm.
- Habitat: On rocky and sand substrates.



## *Pisaster ochraceus*

ochre sea star

### **POL/S**

- Identification: Thick armed star with numerous small white spines on the aboral surface arranged in a reticular pattern. Color varies from dark gray to orange.
- Size: Diameter to 35 cm.
- Habitat: Low intertidal to shallow subtidal on rocky habitats.



## *Pycnopodia helianthoides*

sunflower sea star

### **PHL/S**

- Identification: Large sea star has 20 to 24 flexible arms. Juveniles have 5 arms. Color varies from purple to brown, orange, or yellow.
- Size: Diameter to 90 cm.
- Habitat: On rocky and soft substrates.



## Phylum Echinodermata



### *Mediaster aequalis*

Red seastar

#### MEAE

- Identification: red in color, smooth embossed type texture
- Size: up to 14 cm
- Habitat: live on rocky reefs and feed on a host of other inverts, ascidians, sponges, etc.



### *Ophiothrix spiculata*

spiny brittle star

#### OPSP

- Identification: Small brittle star with long, erect spines on the arms and disc. Often aggregates.
- Size: Diameter usually < 15 cm.
- Habitat: On rocky and soft substrates.



### *Ophioplocus esmarki*

Smooth brittle star

#### OPES

- Identification: Relatively smooth, with a large disc and short spines that can be folded against the arms. Color brown to gray-brown.
- Size: Diameter to 15 cm.
- Habitat: On rocky and soft substrates.

# Phylum Chordata



## *Polyclinum planum*

elephant ear tunicate

### **POPL**

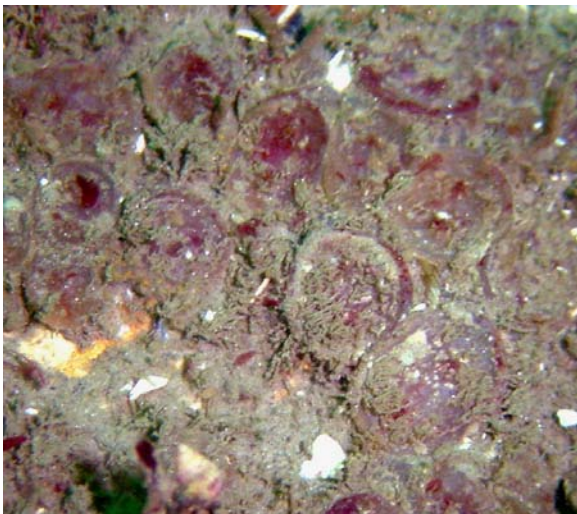
- Identification: Ear-like, lobed colony of zooids attached to substrate by slender stalk. Brown to yellow color.
- Size: Diameter of lobe to about 20 cm.
- Habitat: Attached to rocky substrate.



## *Archidistoma psammion*

### **AR**

- Identification: Colonies form flat slabs or oval lobes. Test is firm, leathery to touch. Color varies from dark brown, purple, maroon, gray, or whitish. Zooids arranged in circular systems.
- Size: 1-2 cm thick and can reach 20 cm long.
- Habitat: On rock surfaces in sand scoured areas.



## *Chelyosoma productum*

### **CHPR**

- Identification: A small flat tunicate that occurs in colonies. Often covered with silt and difficult to see. It is usually a translucent brown and unlike most tunicates feels hard to the touch
- Size: zooid diameter ~ 2 cm
- Habitat: on horizontal rock surface

# Phylum Chordata

Chordata



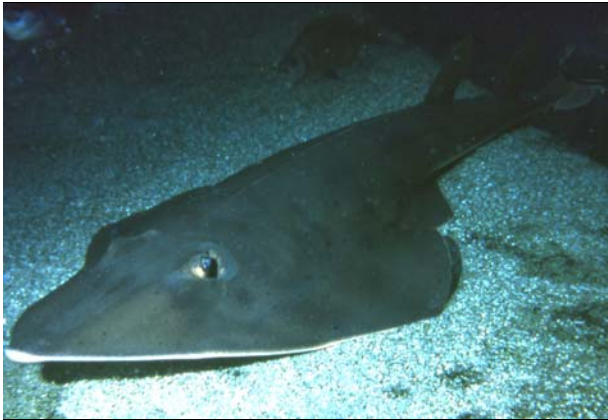
## *Styela montereyensis*

stalked tunicate

### **STMO**

- Identification: Long stalked, solitary tunicate with longitudinal ridges. Color yellow to dark red-brown.
- Size: Height to about 25 cm.
- Habitat: Attached to rocky substrate.

## Family Squatinidae



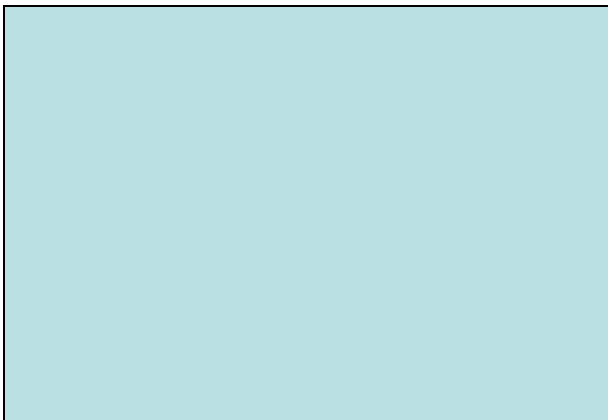
### *Squatina californica*

Pacific angel shark

#### SCAL

- Identification: Flattened forebody with large pectoral fins, rear body and base are tubular, and two dorsal fins near base of tail.
- Size: 0.6m to 1.5m.
- Habitat: Sandy bottoms near rocky reefs and kelp beds. Typically found on bottom, may be partially buried.

## Family Scyliorhinidae



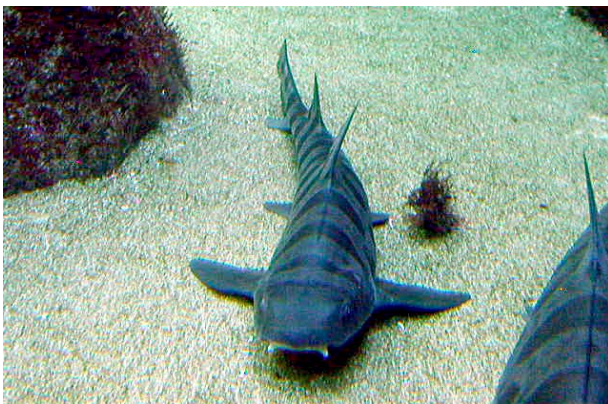
### *Cephaloscyllium ventriosum*

Swell shark

#### CVEN

- Identification: Flattened head, two dorsal fins located towards back of body, and dark spots over body.
- Size: 30cm to 1m.
- Habitat: Sand flats, rocky reefs and kelp beds. Typically found on bottom in caves or crevices.

## Family Carcharhinidae



### *Triakis semifasciata*

Leopard shark

#### TSEM

- Identification: Short, rounded snout and dark saddle blotches that run the length of the body.
- Size: 60cm to 2.1m.
- Habitat: Shallow inshore areas of sand, rocky rubble and mud flats. Often found in bays and protected areas.

## Family Myliobatidae

### *Myliobatis californica*

Bat ray

#### **BRAY**

- Identification: Large bulbous head, long pectoral fins, whip-like tail, and long venom injecting barb at base of tail.
- Size: 60cm to 1.8m (wide).
- Habitat: Anywhere from sand and mud flats to kelp beds. Typically rest on bottom and more active at night.



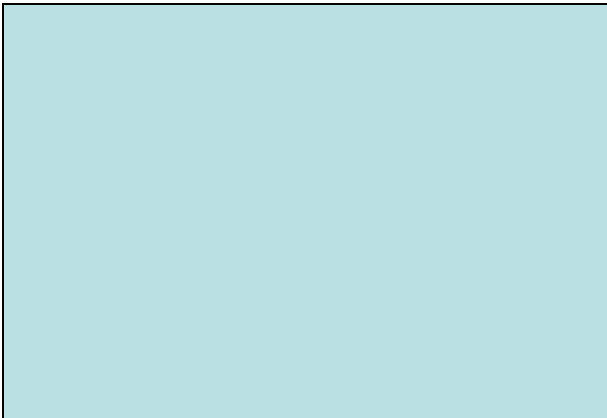
## Family Batrachoididae

### *Porichthys notatus*

Plainfin midshipman

#### **PNOT**

- Identification: Wide, flattened head, protruding eyes, upturn mouth, rows of white spots on head and several rows running the length of the body, and spiny dorsal fin.
- Size: 5cm to 38cm.
- Habitat: Sand and mud bottoms. Buried during the day and hover right above bottom at night.



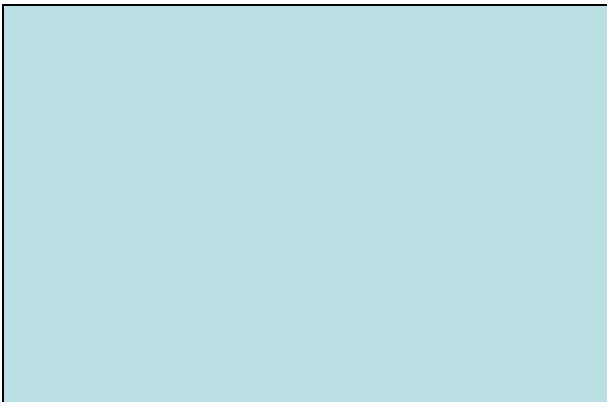
## Family Scorpaenidae

### *Scorpaena guttata*

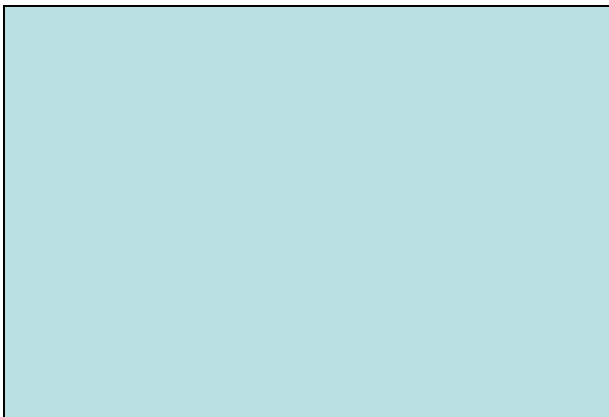
California scorpionfish

#### **SGUT**

- Identification: Spines and short barbels and skin flaps on head and spots on head, body and fins.
- Size: 18cm to 43cm.
- Habitat: Recesses on rocky reefs. Typically lie on bottom nestled in with debris.



## Family Scorpaenidae



### *Sebastes caurinus*

Copper rockfish

#### SCAU

- Identification: White belly, pale fins, and dark band that slopes downward from eye toward pectoral fin. White lateral line extending from dorsal fin toward tail
- Size: 25cm to 57cm.
- Habitat: Rocky areas from offshore reefs to shallow protected bays and areas of kelp. Found in protected areas, rest on bottom.



### *Sebastes serriceps*

Treefish

#### STRE

- Identification: Five to six wide blackish bars across back and base of tail, two dark bands from eye to pectoral fin, and pink lips.
- Size: 15cm to 40cm.
- Habitat: Caves, crevices, and other protective recesses. Often hidden from view.



### *Sebastes chrysomelas*

Black and yellow rockfish

#### SCHR

- Identification: Two dark diagonal bands extend from lower eye and bright yellow spots over dark undercolor.
- Size: 15cm to 39cm.
- Habitat: Rocky areas in caves and crevices. Often rest on bottom.

## Family Scorpaenidae



### *Sebastes carnatus*

Gopher rockfish

#### SCAR

- Identification: Several pale colored splotches on back, two diagonal bands extend from lower eye, and pale blotches on dorsal spines.
- Size: 15cm to 39cm.
- Habitat: Rocky areas in caves and crevices. Often rest on bottom.



### *Sebastes atrovirens*

Kelp rockfish

#### SATR

- Identification: Can change color and markings with background.
- Size: 15cm to 42cm.
- Habitat: Kelp beds and other algae areas. Typically drift in shaded areas.



### *Sebastes mystinus*

Blue rockfish

#### SMYS

- Identification: Slightly projected jaw that extends to midpoint of eye, two to four curved bands around front of head, straight and slanted rear edge of anal fin, and sloping band from eye toward pectoral fin with a smaller band below.
- Size: 20cm to 53cm.
- Habitat: Kelp forests, shallow reefs and open water over deep reefs, rarely in sheltered waters. Found in large schools with other rockfish.

## Family Scorpaenidae



### *Sebastes serranoides*

Olive rockfish

#### **SSER**

- Identification: Lighter coloring below lateral line and several pale spots below dorsal fin.
- Size: 25cm to 60.6cm.
- Habitat: Open waters over banks, reefs and descending coastlines. Congregate in schools.

## Family Hexagrammidae

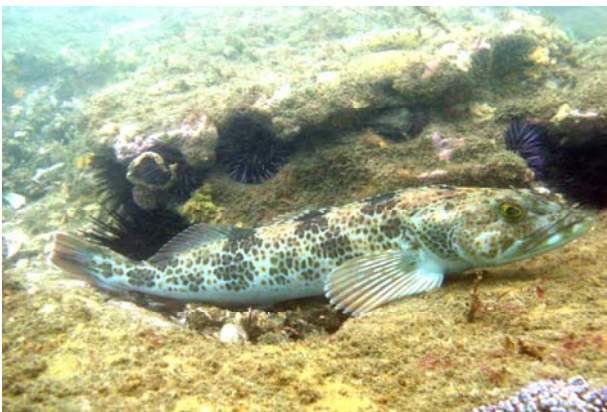


### *Oxylebius pictus*

Painted greenling

#### **OPIC**

- Identification: Pointed snout, five to six dark bands encircle fins and body, and two pair of cirri between eyes and dorsal fin.
- Size: 10cm to 25cm.
- Habitat: Shallow rocky areas and around docks. Typically hover above bottom or move from perch to perch.



### *Ophiodon elongatus*

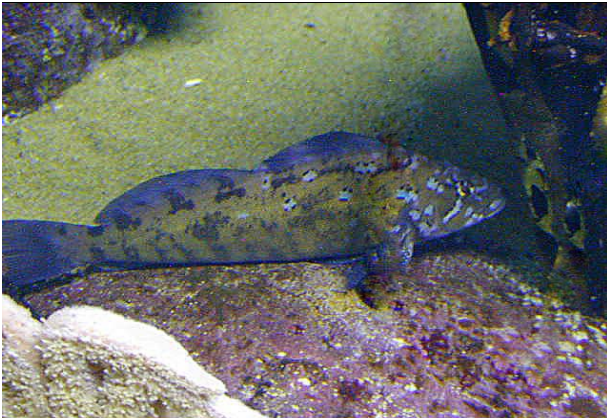
Lingcod

#### **OELO**

- Identification: Single, whitish lateral line, large mouth with prominent canine teeth, and long dorsal separated by notch just before taller rear dorsal.
- Size: 45cm to 1.5m.
- Habitat: Rocky areas. Either rest on bottom or patrol territory.



## Family Hexagrammidae



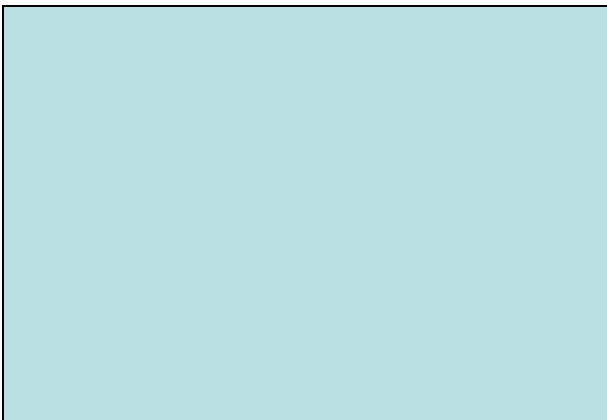
### *Hexagrammos decagrammus*

Kelp greenling

#### **HDEC**

- Identification: Male: Blue irregular spots outlined by small dark spots on head and forebody and a pair of cirri above eyes. Female: Speckled with red-brown to gold over a pale undercolor.
- Size: 25cm to 60.6cm.
- Habitat: Generally kelp beds but also rocky areas and sand bottoms.

## Family Cottidae

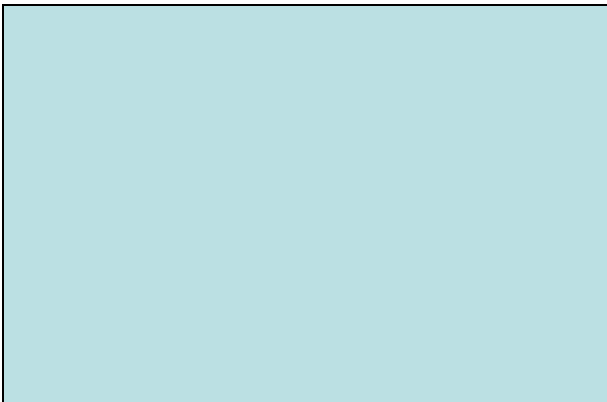


### *Scorpaenichthys marmoratus*

Cabezon

#### **SMAR**

- Identification: Bulbous head, stout body, and prominent cirrus above each eye.
- Size: 40.4cm to 1m.
- Habitat: Rocky bottoms near kelp beds. Usually rest on bottom.



### *Leiocottus hirundo*

Lavender sculpin

#### **LHIR**

- Identification: Slender, tapered elongated body, first two extremely long dorsal fin spines form a spike-like projection, and red to blue spots on spines of dorsal fins aligned diagonally.
- Size: 10cm to 25cm.
- Habitat: Shallow sand flats and rocky reefs around kelp beds.

## Family Serranidae



### *Stereolepis gigas*

Giant sea bass

#### **SGIG**

- Identification: Large mouth, bulky body, low profile foredorsal fin, tall soft dorsal, and sizable black spots.
- Size: 60cm to 2.3m.
- Habitat: Rocky bottoms, rocky outcroppings and kelp forests. Drift in shaded areas.

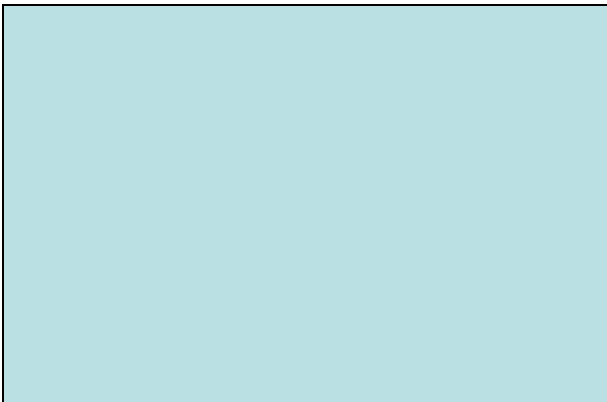


### *Paralabrax clathratus*

Kelp bass

#### **PCLA**

- Identification: Square cut tail, first two spines of foredorsal fin short, and large, pale blotches on back.
- Size: 30cm to 72cm.
- Habitat: Kelp beds, rocky inshore areas and seaweed flats. Also found in deeper patch reefs and areas of sand.



### *Paralabrax nebulifer*

Barred sand bass

#### **PNEB**

- Identification: Square cut tail, dusky bars on side, and third foredorsal spine distinctly longer.
- Size: 25cm to 66cm.
- Habitat: Sandy areas near reefs, rocky outcroppings and kelp beds. Typically rest on bottom.

## Family Girellidae



### *Girella nigricans*

Opaleye

#### **GNIG**

- Identification: Football-shaped profile, one to three white spots on back, and bright blue to blue-green eyes.
- Size: 15cm to 66cm.
- Habitat: Shallow rocky reefs and kelp beds.

## Family Scorpididae



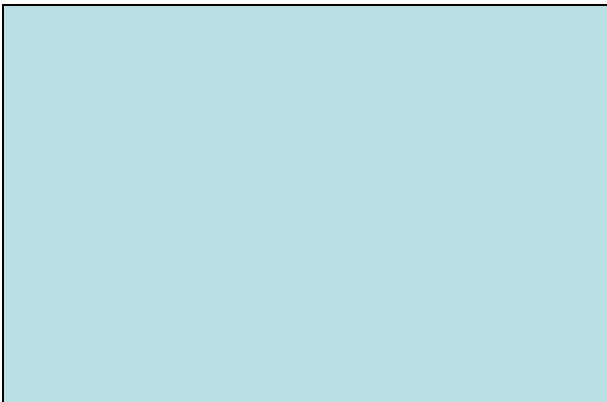
### *Medialuna californiensis*

Halfmoon

#### **MCAL**

- Identification: Football-shaped profile, darker coloring on back graduating to pale shades on sides and a whitish belly, and a dusky spot on upper-rear gill cover.
- Size: 15cm to 45cm.
- Habitat: School near kelp beds, oil rigs and high profile reefs.

## Family Embiotocidae



### *Rhacochilus toxotes*

Rubberlip surfperch

#### **RTOX**

- Identification: Large, fat lips with white to pink tint, thin, football-shaped body, dark bar below front portion of soft dorsal fin, and spinous dorsal fin shorter than soft dorsal.
- Size: 20cm to 47cm.
- Habitat: Kelp forests, rocky outcroppings, jetties and piers.

## Family Embiotocidae



### *Embiotoca jacksoni*

Black surfperch

#### **EJAC**

- Identification: Large lips, thin, football-shaped body, blue strip along base of anal fin, and about nine dusky bars on body.
- Size: 12.6cm to 39cm.
- Habitat: Kelp beds.



### *Hypsurus caryi*

Rainbow surfperch

#### **HCAR**

- Identification: Thin, football-shaped body with a flat belly, bars on back shaded orange, and a black spot on upper corner of mouth.
- Size: 12.6cm to 30cm.
- Habitat: Sandy areas, rocky reefs and around kelp beds.



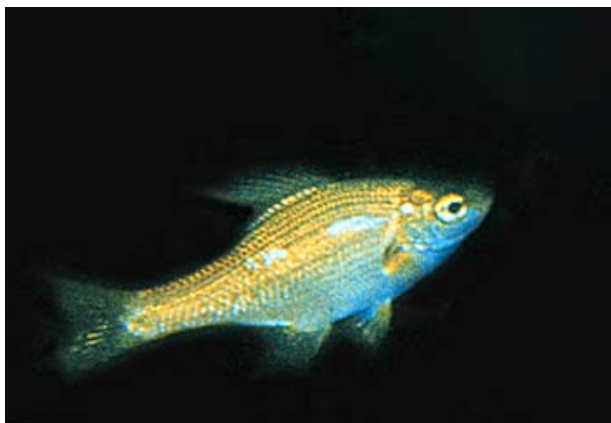
### *Embiotoca lateralis*

Striped surfperch

#### **ELAT**

- Identification: Thin, football-shaped body and several narrow, iridescent blue strips separated by wider orange to copper colored stripes that run laterally.
- Size: 12.6cm to 38cm.
- Habitat: Rocky reefs, kelp forests, eelgrass, leafy algae areas and sandy/rocky surf zones.

## Family Embiotocidae



### *Brachyistius frenatus*

Kelp surfperch

#### **BFRE**

- Identification: Thin body, dark areas on scales that form stripes above midlateral line, concave head above eyes, and snout pointed upward due to prominent lower jaw.
- Size: 9cm to 21.5cm.
- Habitat: Kelp beds.

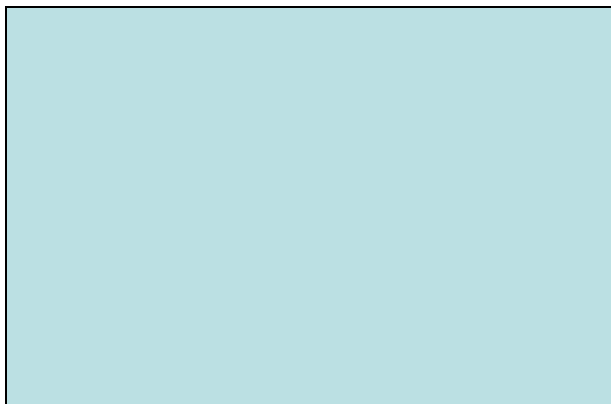


### *Damalichthys vacca*

Pile surfperch

#### **DVAC**

- Identification: Thin, football-shaped body, deeply forked tail, spinous dorsal fin lower than soft, dark bar below front portion of soft dorsal fin, and a black spot behind corner of mouth.
- Size: 15cm to 44cm.
- Habitat: Rocky reefs, kelp forests, under docks and around jetties and oil rigs.



### *Phanerodon furcatus*

White surfperch

#### **PFUR**

- Identification: Thin, football-shaped body, deeply forked tail, and black line at base of dorsal fin.
- Size: 10cm to 32cm.
- Habitat: Shallow bays, near docks and jetties, sandy areas, rocky reefs and around kelp beds.

## Family Pomacentridae



### *Hypsypops rubicundus*

Garibaldi

#### **HRUB**

- Identification: Thin, oval-shaped body, bright orange with a possibility of blue spots, and deeply notched tail between two rounded lobes.
- Size: 12.6cm to 35cm.
- Habitat: Rocky reefs and kelp beds.



### *Chromis punctipinnis*

Blacksmith

#### **CPUN**

- Identification: Typically blue bordered tail, anal and dorsal fins and black spots on scales scattered from mid-body to tail.
- Size: 10cm to 30cm.
- Habitat: Shallow reefs and rocky areas.

## Family Labridae



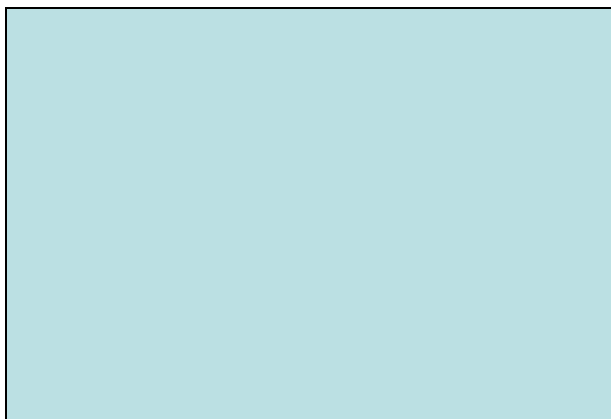
### *Pimelometopan pulchrum*

California sheephead

#### **SPUL**

- Identification: Juvenile: White mid-body stripe, black spots on rear dorsal and anal fins and upper base of tail, and red. Adult: White chin, dark head and rear body, protruding canine teeth, and older species form bulbous lump on nape.
- Size: 30cm to 90cm.
- Habitat: Rocky bottoms, especially kelp beds.

## Family Labridae



### *Oxyjulis californica*

Senorita

#### **OCAL**

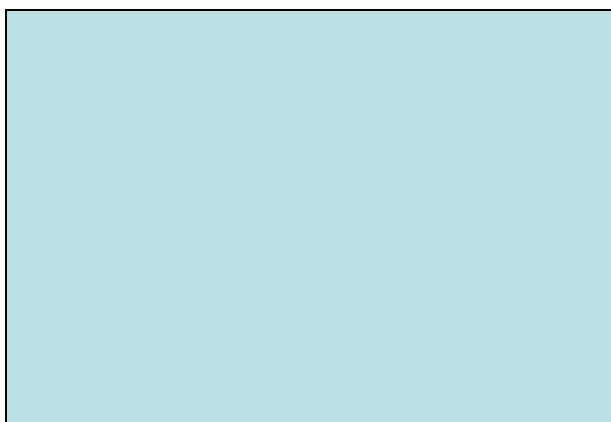
- Identification: White belly, sharp canine teeth that typically protrude from mouth, yellow to orange in color, and large black spot on tail base.
- Size: 8cm to 25cm.
- Habitat: Rocky reefs, kelp beds and boulder-strewn areas surrounded by sand.

### *Halichoeres semicinctus*

Rock wrasse

#### **HSEM**

- Identification: Terminal Phase: Dark bar behind pectoral fin and may have dusky bars on back. Initial Phase: Dark areas on scales from spotted stripe on upper side. Juvenile: Two black spots on dorsal fin and canine teeth protrude from mouth.
- Size: 30cm to 38cm.
- Habitat: Boulder-strewn areas mixed with sand and small rocky reefs.



## Family Clinidae



### *Neoclinus blanchardi*

Sarcastic fringehead

#### **NBLA**

- Identification: Large mouth with jaws extending almost to gill openings, two blue with yellow spots on foredorsal fin, and cirri over eyes.
- Size: 8cm to 30cm.
- Habitat: Hard sand and mud bottoms. Found in crevices, burrows, holes and empty shells.

## Family Clinidae

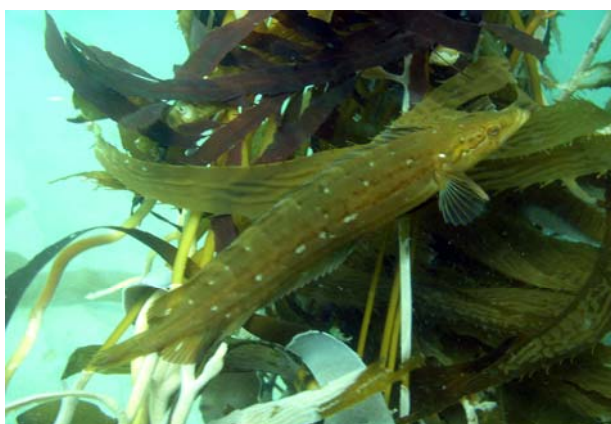


### *Alloclinus holderi*

Island kelpfish

#### AHOL

- Identification: Pale spot extending from cheek lower rear quarter of eye, raised rear dorsal fin, pale cover spots cover body, a row of dark blotches on upper body, and long pectoral fins.
- Size: 5cm to 10cm.
- Habitat: Rocky coastlines, reefs with abundant algal growth and kelp beds.

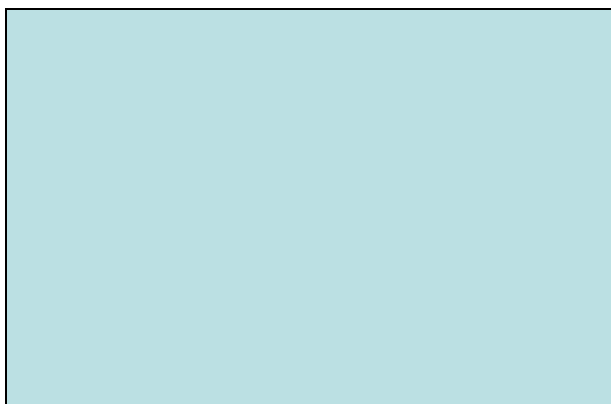


### *Heterostichus rostratus*

Giant kelpfish

#### HRoS

- Identification: Forked tail and an elongated head with a upturned, pointed snout.
- Size: 15cm to 61cm.
- Habitat: Kelp beds and areas of leafy algae growth. Typically found amongst the blades blending in with background.



### *Gibbonsia montereyensis*

Crevice kelpfish

#### GMON

- Identification: Rounded tail fin, short pectoral fins, soft rays of rear dorsal fin are spaced more widely towards rear, and a single row of spots along upper side.
- Size: 6cm to 15cm.
- Habitat: Rocky areas with numerous recesses and abundant algae growth. Typically found in the intertidal zone.



## Family Gobiidae



### *Coryphopterus nicholsii*

Blackeye goby

#### **CNIC**

- Identification: Dark to pale tan, black eye, and black edge of foredorsal fin.
- Size: 4cm to 15cm.
- Habitat: Sandy areas near reefs, outcroppings and docks. Typically found in protective recesses.



### *Lythrypnus dalli*

Bluebanded goby

#### **LDAL**

- Identification: Bright red with four to nine bright blue bars and a tall foredorsal fin.
- Size: 2cm to 6cm.
- Habitat: Open rocky areas.

## Family Bothidae



### *Paralichthys californicus*

California halibut

#### **PCAL**

- Identification: Large mouth, upper jaw extends to or behind eye, and tail arched in middle with outer edges square cut.
- Size: 38cm to 1.5m.
- Habitat: Flat sandy or mud bottoms. Rest on bottom usually covered by bottom material.

## Family Bothidae



### *Citharichthys stigmaeus*

Speckled sanddab

#### **CSTI**

- Identification: Speckles, often small blotches, and ventrally compressed.
- Size: 8cm to 18cm.
- Habitat: Gravel, sand and shell rubble flats. Rest on bottom.