

A Field Guide To
Kelp Forests of the Santa
Barbara Channel

Revised Fifth Edition

 Santa Barbara Coastal
Long Term Ecological Research Program



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Kelp Forests of the Santa Barbara
Channel**

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

By

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Introduction

This guide contains information on the common marine seaweeds, invertebrates, and fish 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 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 inhabits the kelp forests in this region.

How To Use This Book

Taxa in this book are generally arranged in phylogenetic order. Each organism is identified by its scientific name and common name, if available. The accompanying one to five letter code in BOLD is the 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. The occurrence and distribution of each organism is described as follows:

Abundant = frequent and numerous

Common = frequent and moderately abundant

Uncommon = infrequent and sparse

Rare = infrequent and extremely sparse

Local = present at only a few sites

Widespread = ubiquitous, present at most sites



Santa Barbara Coastal
Long Term Ecological Research

**About the Santa Barbara Coastal Long Term
Ecological Research Program**

The Santa Barbara Coastal Long Term Ecological Research Program (SBC LTER) is part of the National Science Foundation's (NSF) Long Term Ecological Research (LTER) Network. NSF established the LTER Network in 1980 to support research on long-term ecological phenomena. The LTER Network is a collaborative effort involving more than 1100 scientists and students investigating ecological processes over long temporal and broad spatial scales. The 26 sites in the LTER network represent diverse ecosystems and research emphases. The Network promotes synthesis and comparative research across sites and ecosystems and among other related national and international research programs. The research focus of the SBC LTER is on ecological systems at the land-ocean margin. Although there is increasing concern about the impacts of human activities on coastal watersheds and nearshore marine environments, there have been few long-term studies of linkages among oceanic, reef, beach, wetland, stream, and terrestrial habitats. SBC LTER is helping to fill this gap by studying the effects of oceanic and coastal watershed influences on kelp forest ecosystems in the Santa Barbara Channel. Additional information on the research activities of SBC LTER can be found at <http://sbc.lternet.edu>.

Phylum Bacillariophyta



Benthic Diatoms

DIAT

Identification: Common yellow-brown algae forms a fuzzy film on reef and sand. Delicate strands of these diatoms look like filamentous brown algae but break apart when touched. Common genera: *Vaucheria*

Size: Mats usually under 1 cm tall but can cover several meters of reef. Occasionally 2-4 cm tall strands form and can also cover large areas of reef.

Occurrence: Widespread and abundant

Phylum Chlorophyta



Ulvoid spp.

Sea Lettuce

UV

Identification: Very thin bright green algae with leafy transparent blades. Includes species in the genus *Ulva* and species formerly in the genus *Enteromorpha*.

Size: 5-20 cm

Occurrence: Locally common



Cladophora graminea

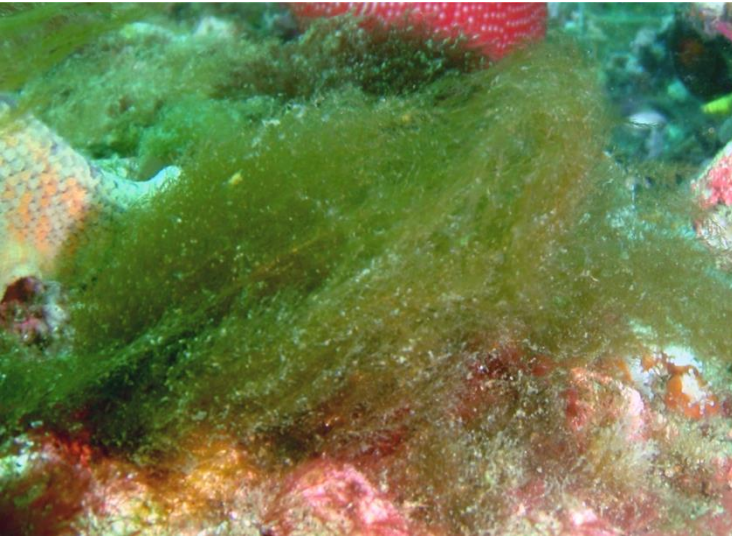
CG

Identification: Grows grayish-green to dark green tufts. Sometimes appear striped. Very long coarse filaments with few orders of branching in upper portions. Primarily dichotomous or trichotomous in lower portions.

Size: 4-10 cm in height

Occurrence: Locally common

Phylum Chlorophyta



Filamentous green algae FG

Identification: Usually small, finely branched, green algae. Common genera include *Enteromorpha* and *Spongomorpha*.

Size: To 10 cm in height, 2-5 cm common locally

Occurrence: . Sometimes epiphytic, common on newly cleared reef in spring, otherwise locally uncommon.



Codium fragile

Dead Man's Fingers

COF

Identification: Spongy, compact, tubular finger like branches extend from a broad base. Color dark green to blackish-green. Often covered in filamentous red algal epiphytes.

Size: To 40 cm in height, 10-20 cm common locally

Occurrence: Locally common on ridges at high relief sites.

Phylum Phaeophyta



Filamentous brown spp. FB

Identification: Tiny, finely branched, brown filaments which can form dense mats. Common genera include *Ectocarpus*, *Giffordia* and *Hincksia*.

Size: To 30 cm, 5-10 cm common locally

Occurrence: Widespread and abundant

Phylum Phaeophyta



Scytosiphon lomentaria SELO

Identification: Slender tubular branching clusters arise from a common holdfast. Larger plants inflated and irregularly constricted.

Size: 5-20 cm in height, branches thin, 1 cm or less in diameter

Occurrence: Locally uncommon, occasionally found on sheltered rocks and on oceanographic moorings.



Colpomenia spp. CP

Identification: Sac-like alga with broad basal attachment. Color from olive to medium brown.

Size: To 10 cm in diameter, 3-5 cm common locally

Occurrence: Common at island sites, uncommon on mainland reefs



Dictyota spp. DP

Identification: Smooth thin blades with small indentations on the rounded tips. Olive to dark brown, often with iridescent margins. Dichotomous to pinnate branching arising from a branched stolon. No midrib.

Size: To 45 cm in height, 5-10 cm common locally; blades 1-2 cm wide

Occurrence: Widespread and common

Phylum Phaeophyta



Dictyopteris undulata

DU

Identification: Distinct midrib running through branches. Thalli irregularly dichotomous with short terminal branches. Color yellowish-brown to olive with some iridescence.

Size: 8-12 cm in height, sometimes reaching 30 cm

Occurrence: Locally uncommon



Taonia lennebackerae

TALE

Identification: Thallus very thin and blade-like with no midrib. Light to medium brown in color. Blades often split or torn along the top margin at maturity.

Size: 10-30 cm in height

Occurrence: Locally common



Desmarestia ligulata

Acid Weed

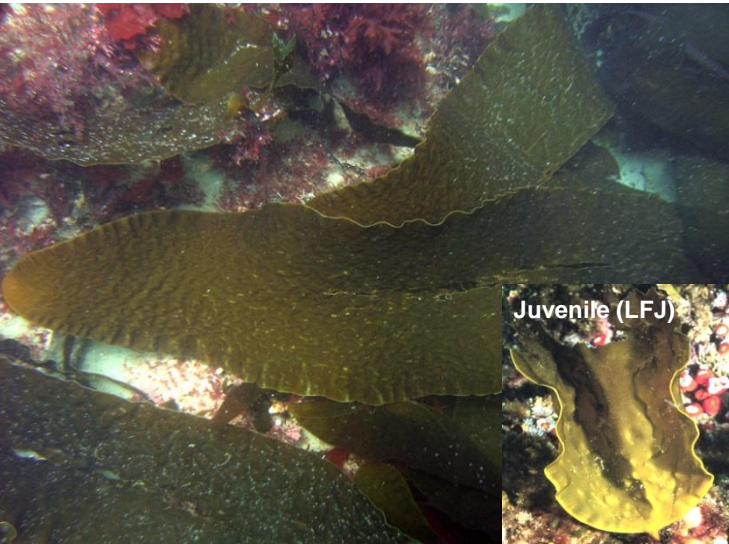
DL

Identification: Thin annual thalli with a midrib that rises from a small discoid holdfast. Olive to dark brown with fine branching in young specimens becoming broader with less branching in mature individuals. Blades lie low along substrate, can blanket the bottom at high densities. Fast growing.

Size: To 3 m long locally

Occurrence: Widespread and abundant

Phylum Phaeophyta



Laminaria farlowii

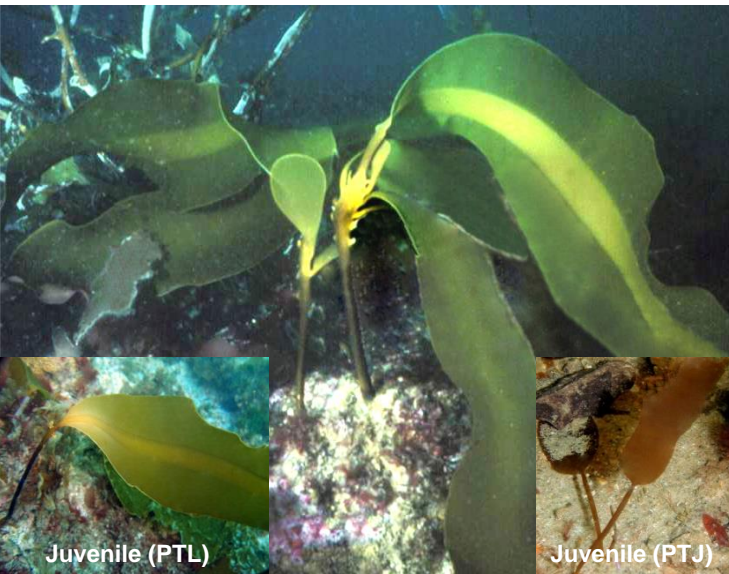
Oar Weed

LAFA / LFJ / LH

Identification: Single long, wide blade with deep depressions in longitudinal rows. Dark brown color with short stipe and strong compact branching haptera.

Size: To 4 m in blade length, with up to a 7 cm stipe length. Juveniles (**LFJ**) < 15 cm blade width

Occurrence: Locally common



Pterygophora californica

Palm Kelp

PTCA / PTL / PTJ / PH

Identification: Long woody stipe flattens at apex to support numerous lateral sporophylls and a terminal blade with a midrib. Medium to dark brown. Juvenile blades similar to *L. farlowii* but with thickening or midrib.

Size: Stipe to 1 m, blades 1-2 m common locally. Juveniles counted in two size classes: **PTJ** < 20 cm stipe length, **PTL** > 20 cm stipe length and < 0.7 cm stipe diameter

Occurrence: Widespread and abundant



Eisenia arborea

Southern Sea Palm

EA / EAJ / EAH

Identification: Erect tree-like stipe that terminates into two branches bearing leafy blades with toothed margins. Juveniles (**EAJ**) begin as a single blade with wavy lobes and spines around the edges (lower left picture).

Size: 1-2 m in height

Occurrence: Abundant at island sites, rare on mainland reefs

Phylum Phaeophyta



Macrocystis pyrifera

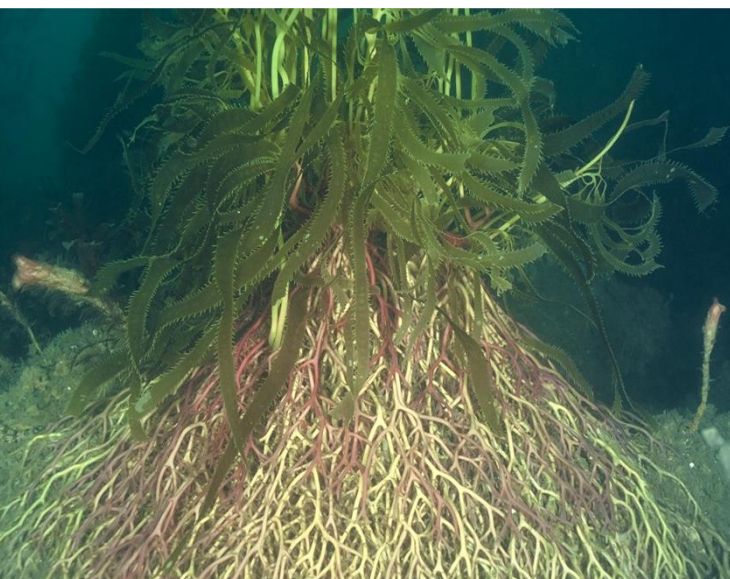
Giant Kelp

MAPY / 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. Juvenile pictured in corner.

Size: To 30 m in length. Juveniles (**MP J**) counted in three size classes: 0-33cm, 34-66cm, 67-99cm

Occurrence: Widespread and abundant



Macrocystis pyrifera holdfast

Giant Kelp holdfast

MH / DMH

Identification: The many long and branched haptera that anchor giant kelp to the reef. Dead holdfast material still attached to the bottom is denoted with the code **DMH**.

Size: To 3 m in diameter

Occurrence: Widespread and common on rocky substrate



Unidentified Phaeophyceae

Juvenile laminariales

BLD

Identification: Newly recruited algae in the order laminariales that is too small to be identified to species.

Size: 1-3 cm

Occurrence: Widespread and common

Phylum Phaeophyta



Egregia menziesii

Feather Boa Kelp

EGME / EGJ / EH

Identification: Canopy forming kelp with a thick, flat stipe with numerous small ovate blades and floats along its entire length. Juvenile (**EGJ**) shown in left picture.

Size: To 15 m in height, blades to 8 cm in length. Juveniles (**EGJ**) < 1m thallus height

Occurrence: Locally common on shallow reefs



Stephanocystis osmundacea

Bladder Chain Kelp

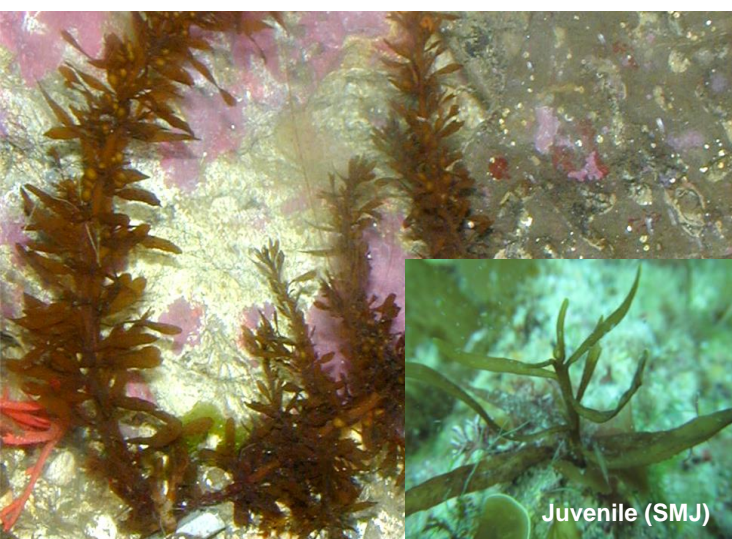
Formerly *Cystoseira osmundacea*

CYOS / CYJ

Identification: Dark brown to light tan bipinnate radial branches flattened in lower portion. Cylindrical holdfast. Often covered in epiphytes. Numerous reproductive fronds rise to the canopy annually, buoyed by many small gas filled bladders.

Size: Reproductive fronds to 8 m, thallus to 1 m in height. Juveniles (**CYJ**) < 5 cm diameter

Occurrence: Widespread and common



Sargassum muticum

Wire-weed

SAMU / SMJ

Identification: Large fucoid alga with small leaf like blades and toothed margins that occur singly along the thallus. Medium to dark brown in color. Small cylindrical vesicles borne in clusters. Juvenile **SMJ** \leq 10 cm height, Adult **SAMU** > 10 cm height

Size: To 2 m in height, blades to 10 cm long

Occurrence: Locally common

Phylum Phaeophyta



Sargassum horneri

Devil-weed

SAHO / SHJ

Identification: Furoid alga with pointed leaf like blades and teardrop shaped vesicles. Juveniles (≤ 10 cm height) low lying fern-like blades that can form dense mats.

Size: Juvenile **SHJ** ≤ 10 cm height, Adult **SAHO** > 10 cm to 4m tall

Occurrence: Widespread and common to Catalina Island.

Phylum Rhodophyta



Anisocladella pacifica

ANPA

Identification: Blades erect, deep rose pink, forming entangled masses frequently buried in fine sand.

Size: 1.5-3cm tall, Blades 2.5-5mm broad

Occurrence: Locally abundant in sandy places, low intertidal.



Fauchea spp.

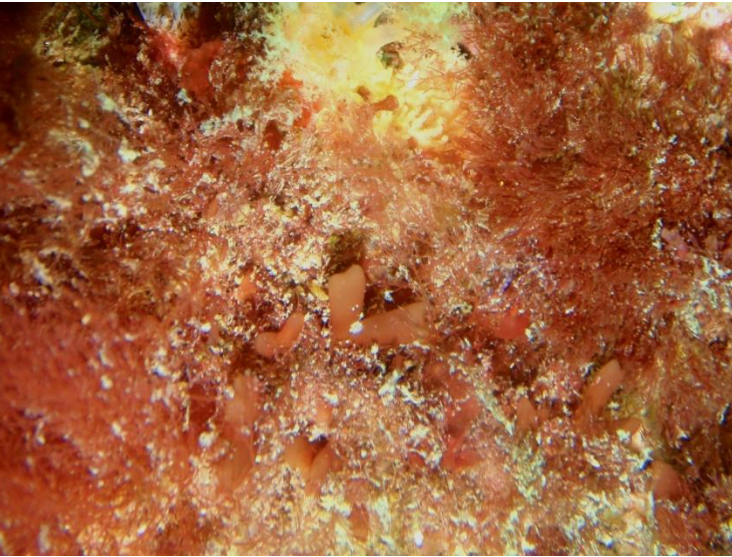
FASP

Identification: Thalli erect or repent, arising from small, discoid bases. Blades usually sessile, irregularly flabellate divided. Brownish red to deep red, or deep red with bluish cast.

Size: Thalli 3-12cm tall.

Occurrence: Widespread but uncommon

Phylum Rhodophyta



Red algal turf species

RAT

Identification: Low growing turf consisting of filamentous and juvenile red algae often mixed with invertebrates. Common genera include: *Polysiphonia*, *Pterosiphonia*, and *Tiffaniella* as well as juveniles of many species that are difficult to tell apart.

Size: 1-3 cm in height

Occurrence: Widespread and common



Scinaia confusa

SCCA

Identification: Rose pink densely branched thallus. Tubular gel filled branches divided dichotomously with pointed tips.

Size: 3-15 cm in height

Occurrence: Common at Carpinteria and Naples Reefs, uncommon elsewhere



Gelidium robustum

Agarweed

GR

Identification: Mostly compressed ovate dark red branches with unbranched basal axes. Lateral branchlets occasionally produce unbranched branchlets from flattened surfaces. Often covered by white encrusting bryozoans.

Size: To 40 cm in height, branches 2-5 mm wide

Occurrence: Locally abundant on ridges of high relief reefs

Phylum Rhodophyta



Encrusting red spp.

ER

Identification: General category used for encrusting leathery species of red algae that form a thin fleshy layer over hard substrates. Common genera include: *Mastocarpus* and *Hildenbrandia*

Size: Variable, patches 3-30 cm in diameter

Occurrence: Locally common in urchin barren areas, uncommon elsewhere



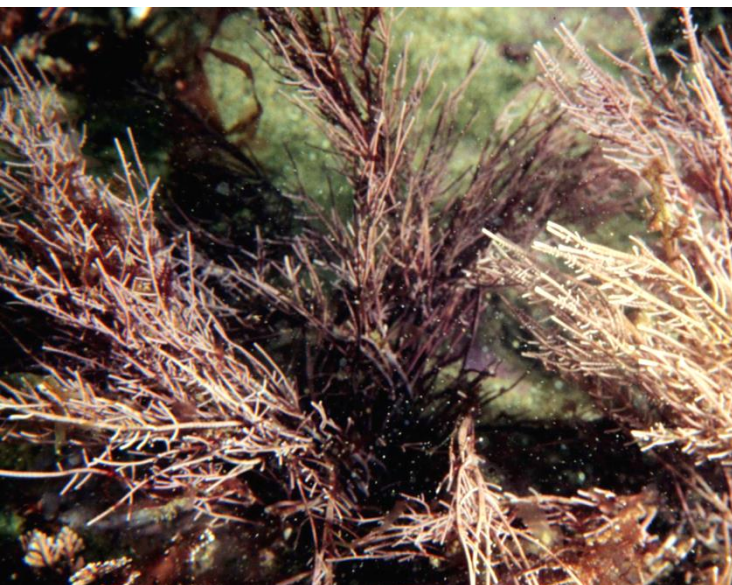
Encrusting coralline spp.

EC

Identification: Calcified crusts of pinkish algae that cover the surface of hard substrates. Most common species in the genera *Pseudolithophyllum*. Often intermixed with other erect species of coralline algae.

Size: Variable

Occurrence: Widespread and abundant



Lithothrix spp.

Stone Hair

LI

Identification: Thinly branched calcified alga. Dull purple to pink in color. Primary branching dichotomous, but irregular lateral branches gives a stringy look. Branched in many planes

Size: To 13 cm in height

Occurrence: Rare

Phylum Rhodophyta



Corallina chilensis

Formerly *Corallina offinalis* var. *chilensis*

Pink Feather Coralline

CO

Identification: Pink to purple calcified fronds with white tips. Bipinnate to tripinnate branches become shorter near apex and tend to lie in one plane.

Size: To 15 cm in height, 3-10 cm common locally

Occurrence: Common and widespread



Bossiella orbigniana

BO

Identification: Pink to purple calcified alga with numerous delicate branches. Branches articulated and nearly always dichotomous with thicker center. Wings curve convexly down midrib. Raised conceptacles in center of segments.

Size: To 15 cm in height, 5-10 cm common locally

Occurrence: Common and widespread



Calliarthron cheilosporioides

CAL

Identification: Articulate pink coralline alga with coarse pinnate branching. Branching sometimes dichotomous near base. Wings angle upward toward long axis of branch. Raised conceptacles along the edge of segments

Size: To 30 cm in height, segments to 7 mm wide

Occurrence: Common at island sites, uncommon but widespread elsewhere

Phylum Rhodophyta



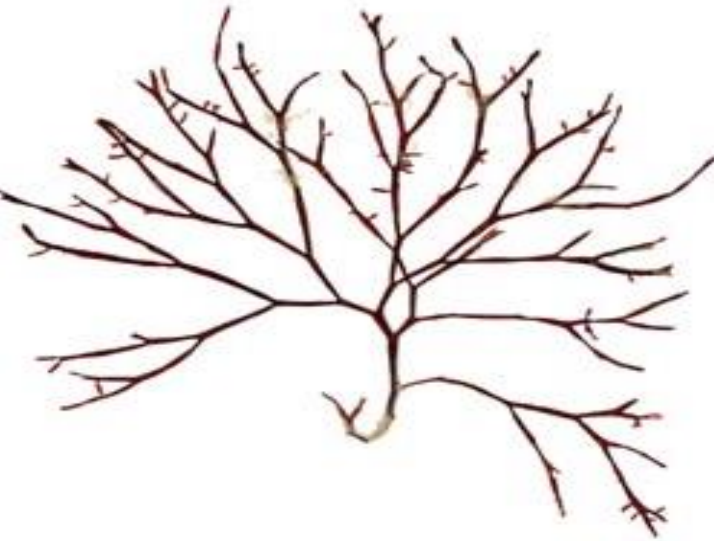
Bladey red spp.

BR

Identification: General category used for species with large ovate blades that are difficult to distinguish. Common Genera: *Halymenia* and *Schizymenia*.

Size: To 40 cm

Occurrence: Common and widespread



Prionitis spp.

PRSP

Identification: Dichotomous or irregularly branched thalli. Deep red flattened blades lie in one plane. Blades taper at tips and branching junctions. Small proliferations along the side of the blades common. Local species *augusta* and *linearis*.

Size: 10-25 cm in height

Occurrence: Rare



Prionitis lanceolata

PL

Identification: 1-2 stipes originating from a discoid holdfast. Irregular branching blades pinnate, tapered to a sharp tip, and frequently longer toward base of plant. Dark red turning to yellow in color.

Size: 20-30 cm in height, branches 1-3 cm wide

Occurrence: Locally uncommon

Phylum Rhodophyta



Callophyllis flabellulata CF

Identification: Branched, firm cartilaginous thallus with apices of branches uneven and finely dissected. Blades without midrib or veins.

Size: 4-10 cm in height

Occurrence: Widespread and common



Sarcodiotheca furcata SAFU

Identification: Drab red color with irregular branching that is narrow below, arising from rounded stipes and a small discoid holdfast. Sharply terminated blades.

Size: To 25 cm in height, blades 10-20 mm wide and to 1 mm thick

Occurrence: Widespread but uncommon



Gracilaria spp. GS

Identification: Numerous thin cylindrical branches arising from a discoid base. Radial branching in irregular directions. Includes all local *Gracilaria* spp. as well as *Sarcodiotheca gaudichaudii*.

Size: 6-20 cm, branches 2-5 mm broad

Occurrence: Widespread and common especially on reefs with sand channels and sand flats

Phylum Rhodophyta



Gymnogongrus complex GYSP

Identification: Includes *G. chiton* (formerly *G. Platyphyllus*), *Ahnfeltiopsis leptophyllus*, and *Ahnfeltiopsis linearis* (formerly *G. leptophyllus* and *G. linearis*). Thalli thick bushy and clumped. Similar to *Prionitis* but with large circular reproductive structures throughout that cover almost the entire width of the blade. Color dark red.

Size: To 15 cm in height

Occurrence: Locally uncommon



Stenogramma interrupta STIN

Identification: Dichotomously branched. Resembles *Rhodymenia*, but has a discoid holdfast and an interrupted midrib when reproductive. May have dark blotches on blade. Color deep red

Size: 6-30 cm

Occurrence: Locally uncommon



Chondracanthus spp.

Formerly *Gigartina* spp., *Mazzaella californica*

CC

Identification: Broad, deep red blades sometimes iridescent, rarely divided but taper to a narrow holdfast. Larger blades are covered in bulbous papillae growths. Local species include *C. corymbiferus* and *C. exasperatus*.

Size: To 1 m in length, holdfasts to 1-5 cm wide

Occurrence: Widespread and abundant

Phylum Rhodophyta



Chondracanthus spinosa

Formerly *Gigartina spinosa*

CZ

Identification: Broad, deep red blades with main branches commonly narrow and repeatedly branched. Blades noticeably narrower than *C. corymbiferus* with larger papillae and numerous spine-like to blade-like branchlets.

Size: 20-30 cm in height, 4-6 cm wide

Occurrence: Locally common at shallow depths, rare elsewhere



Halosaccion glandiforme

Sea Sacs

HAGL

Identification: Several simple sacs which originate from a single holdfast. Pink to dark purple in color. Bladder filled with seawater.

Size: Sac to 25 cm in length, 3-5 cm common locally

Occurrence: Widespread but rare. Occasionally found at Naples



Rhodymenia spp.

R

Identification: Includes *R. californica*, *R. pacifica*, *R. rhizoides*, etc. 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 in height

Occurrence: Widespread and abundant

Phylum Rhodophyta



Feathery Red Algae

FTHR

Identification: General category for red feather-like branching algae that are difficult to distinguish to species underwater. Common genera include *Microcladia*, *Ptilota*, *Neoptilota*, *Plocamium*, *Rhodoptilum*

Size: 10-50 cm in height

Occurrence: Widespread but uncommon



Phycodryx setchellii

PHSE

Identification: Dark pink to brownish-red. Leaf-like dichotomous divisions from base with rounded apices, conspicuous percurrent midribs and lateral veins.

Size: To 20 cm in height

Occurrence: Widespread but uncommon



Polyneura latissima

POLA

Identification: Thin, pink to red crinkly blades with a net-like system of macroscopic veins. Blade margins entire when young, becoming uneven with age..

Size: 12-15 cm in height

Occurrence: Widespread and common

Phylum Rhodophyta



Nienburgia andersoniana

NA

Identification: Alternating irregular branches with spines on margins usually in one plane. Upper portions have inconspicuous midrib with lateral veins.

Size: Main axes 1-2 cm broad, 5-20 cm in height

Occurrence: Widespread and common



Acrosorium ciliolatum

Formerly *Acrosorium uncinatum*

AU

Identification: Thin, ribbon-like, irregularly branched blades. Blades irregularly hooked at ends. Frequently epiphytic. Color deep rose red. Commonly found attached to *Diopatra ornata* tubes.

Size: 3-10 cm diameter clumps

Occurrence: Locally common



Cryptopleura spp.

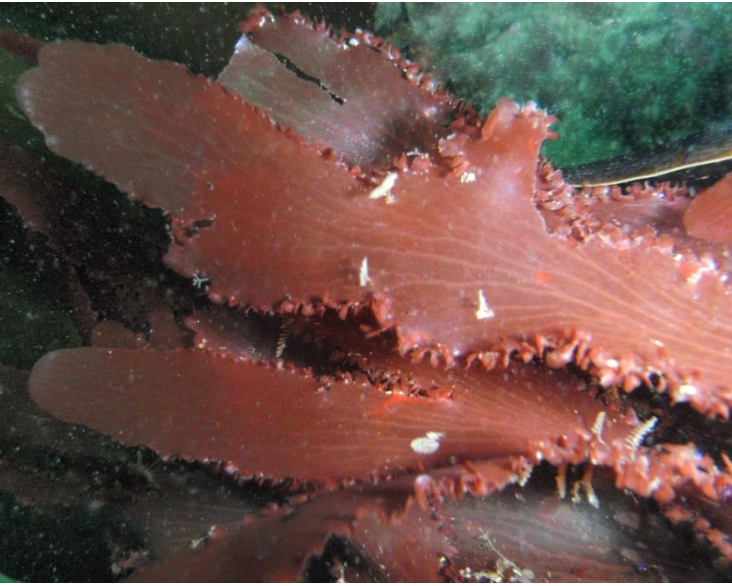
CRYP

Identification: Thalli differentiated into erect, ribbon-like bases. Blades characterized by a collection of macroscopic veins dividing and gradually spreading upward, becoming narrow and eventually microscopic.

Size: 10-30 cm in height

Occurrence: Locally uncommon

Phylum Rhodophyta



Cryptopleura ruprechtiana

Formerly *Botryoglossum farlowianum*

Grape Tongue

BF

Identification: Large deep red slightly iridescent blades with visible veins and densely ruffled blade margins.

Size: Erect axes 10-50 cm in height, blades 2-3 cm wide

Occurrence: Widespread and common



Filamentous red spp.

FR

Identification: Thin, finely branched polysiphonous red algae. Frequently forms tufts or clumps. Common genera include *Ceramium* and *Polysiphonia*

Size: To 20 cm in height

Occurrence: Widespread and common



Osmundea spectabilis

Formerly *Laurencia spectabilis*

LX

Identification: Dense cluster of axes on a conical base. Blades are thick, pinnate, flattened, with round tips. Texture tough, elastic. Color purplish red.

Size: To 30 cm

Occurrence: Locally uncommon

Phylum Rhodophyta



Laurencia spp.

LS

Identification: Erect bushy thalli with short stubby pinnate or radial branches ending in a blunt tip with terminal cystocarps. Color ranging from brown to rich red. Often encrusted with many epiphytes and silt.

Size: 3-10 cm in height

Occurrence: Locally common

Phylum Magnoliophyta



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.

Occurrence: Widespread and common at shallow depths



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 and 30-150 cm long, flowering stems 1-3 m long

Occurrence: Locally abundant in sand at protected sites

Phylum Porifera



Leucilla nuttingi

Urn Sponge

LNUT

Identification: Urn-shaped, cream white with a single osculum at the distal end. Usually found in groups of 5-10 individuals.

Size: To 4 cm tall

Occurrence: Widespread and common



Spheciospongia confoederata

Moon Sponge

SC

Identification: Massive, smooth gray sponge, leathery in texture, with numerous crater-like oscula on outer ridge.

Size: To 1 m in diameter, to 30 cm thick

Occurrence: Locally common



Tethya californiana

Formerly *Tethya aurantia*

Orange Puffball Sponge

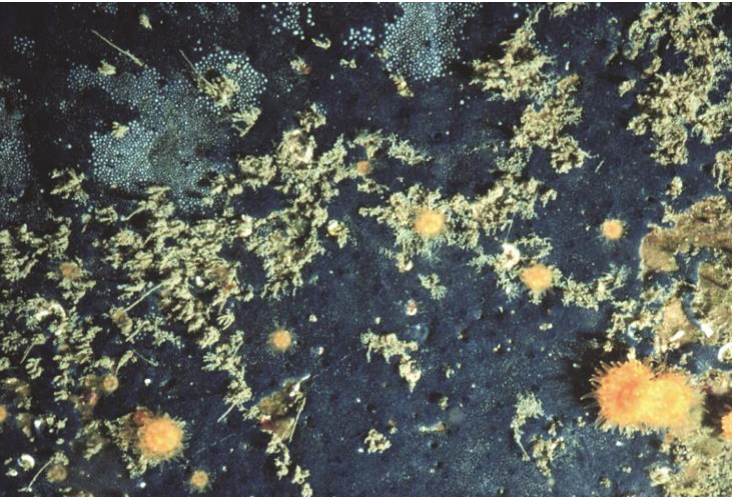
TEAU

Identification: Porous, globose sponge with very rough outer surface. Color ranges from orange to yellow. Cylindrical or ball shaped.

Size: To 20 cm in diameter, 5-10 cm locally

Occurrence: Common and widespread

Phylum Porifera



Acanthancora cyanocrypta

Formerly *Hymenamphistra cyanocrypta*

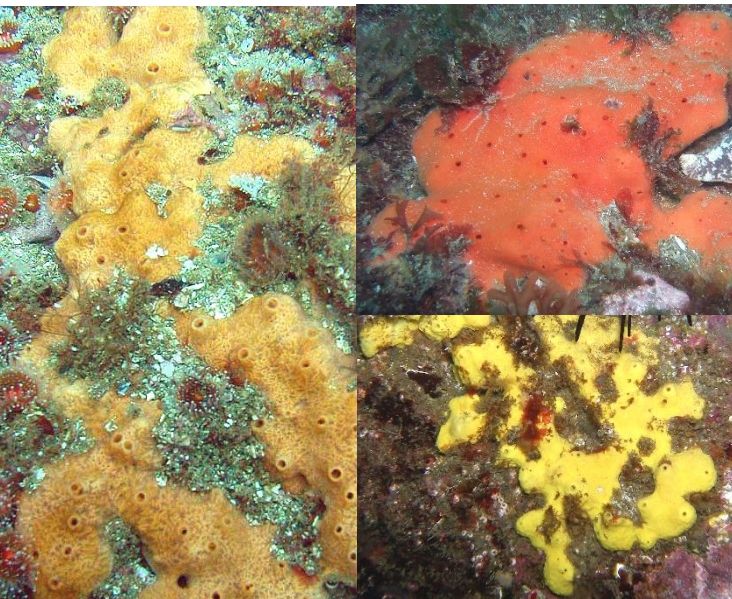
Cobalt Sponge

HC

Identification: Thin encrusting sponge. Cobalt blue in color.

Size: To 1 m diameter

Occurrence: Uncommon



Encrusting sponge spp.

ES

Identification: Encrusting growth form.

Numerous species that vary widely in color. Species distinguished by spicules. Genera include: *Halichondria*, *Cliona*, *Leucetta*, *Acarus*, *Haliclona*, *Aplysina*, and *Plocamia*.

Size: Commonly cover 30 cm in diameter or more and can be up to 5 cm thick, usually thin 1-3 cm

Occurrence: Widespread and abundant

Phylum Cnidaria



Aglaophenia spp.

Ostrich-Plume Hydroid

AS

Identification: Large feather-like brown plumes consisting of a central stalk with numerous alternating pinnate branches. Local species include *A. latirostris*, *A. struthionides*, *A. epizoica*, and *A. inconspicua*.

Size: To 12 cm in height

Occurrence: Widespread and abundant

Phylum Cnidaria



Abietinaria spp.

Coarse Sea Fir Hydroid

AB

Identification: Large, flask-shaped polyp with pinnate alternate branching. There are over seven known species found locally.

Size: To 5 cm in height

Occurrence: Widespread and common



Obelia spp.

Wine-Glass Hydroid

OBSP

Identification: Long, branching colonies that have polyps with clear sheaths. Often covered in silt, resulting in a brownish appearance. There are over four known species found locally, some of which are believed to be introduced. Species distinguished by branching pattern. Common species are often dichotomously branched.

Size: To 10 cm in height

Occurrence: Uncommon



Plumularia spp.

Plume Hydroid

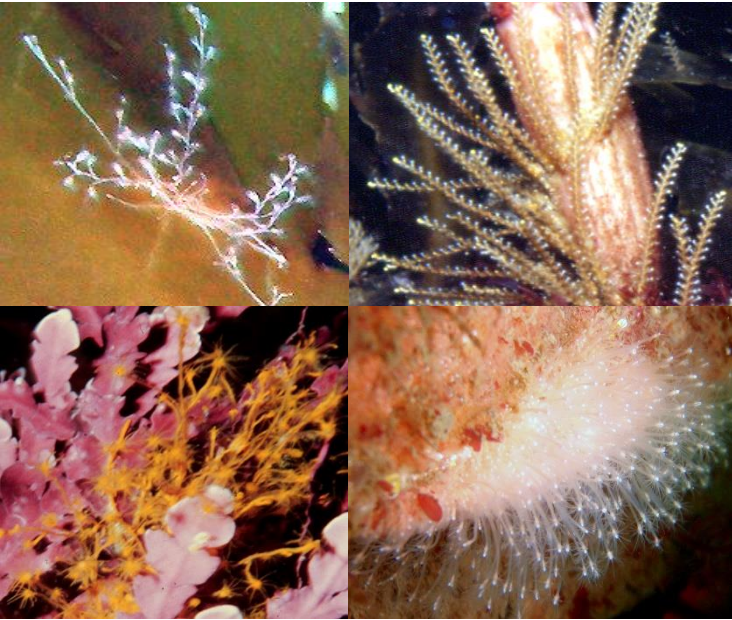
PLUM

Identification: Colony of upright feather-shaped plumes. There are over five known species found locally.

Size: To 2 cm in height

Occurrence: Widespread and abundant

Phylum Cnidaria



Unidentified Hydroid spp. UIH

Identification: Colonial, plant-like animals that can either have a branching sessile structure attached to the substrate or it can have erect fern-like 'fronds' with microscopic polyps arranged along the individual branches. Often epiphytic. Includes *Hydractinia milleri*, *Garveia annulata*, *Tubularia crocea*, *Clava* sp., and *Halecium* sp.

Size: To 15 cm in height, locally 1-5cm

Occurrence: Widespread and Abundant



Pachycerianthus fimbriatus

Tube Dwelling Anemone

PAFI

Identification: Long, slender outer tentacles and shorter inner tentacles. Soft body protected by parchment-like tube. Tentacles may vary in color from tan to orange to purple.

Size: Tube height to 30 cm, diameter to 4 cm

Occurrence: Widespread and common



Metridium senile

Short Plumose Anemone

MISE

Identification: Column and tentacles range from white to brown to orange. Tentacular crown is not lobed. Often completely carpets the bottom in shallow, rocky areas exposed to high current.

Size: Column diameter to 8 cm, height to 10 cm

Occurrence: Locally common

Phylum Cnidaria



Urticina piscivora

Fish Eating Anemone

URPI

Identification: Deep, red column with tentacles that are usually white, but occasionally red.

Size: Crown diameter to 20 cm, locally 2-5 cm

Occurrence: Uncommon at most sites, occasionally seen at Bulito reef.



Urticina lofotensis

White-Spotted Rose Anemone

URLO

Identification: Column is very distinctive red, with white spots. Tentacles are scarlet to crimson.

Size: Crown diameter to 10 cm

Occurrence: Widespread and common



Anthopleura sola

Aggregating Anemone

ANSP

Identification: Longitudinal rows of adhesive tubercles on column, and the tentacles are short and abundant. Striped oral disc. Occur in aggregations or as solitary individuals.

Size: Crown diameter to 10 cm

Occurrence: Widespread and common

Phylum Cnidaria



Anthopleura artemisia

Moonglow Anemone

ANAR

Identification: Many different color variations, white bands on arms, central disk often buried in sand. Tubercles on column.

Size: Crown diameter 2-4 cm locally

Occurrence: Widespread and abundant



Anthopleura spp.

ANSP

Identification: Found in aggregations or as solitary individuals. Covered with abundant adhesive tentacles that are short, conical, and either pointed or blunt. *A. xanthogrammica* featured here. All *Anthopleura* spp. have tubercles on the column.

Size: Crown diameter up to 25 cm

Occurrence: Locally common



Phyllactis spp.

Sand Anemone

PHSP

Identification: Short, slender, clear tapering tentacles that have black stripes. Oral disk level with sand surface and covered with sand particles. Retracts quickly when touched and has smooth column.

Size: Crown diameter 1-3 cm locally

Occurrence: Widespread and abundant

Phylum Cnidaria



Corynactis californica

Club-Tipped Anemone

CY

Identification: Small colonial anemone with bulbous-tipped tentacles. Color of column varies from orange, red, purple, pink, to almost white.

Size: Crown diameter to 2.5 cm

Occurrence: Widespread and abundant



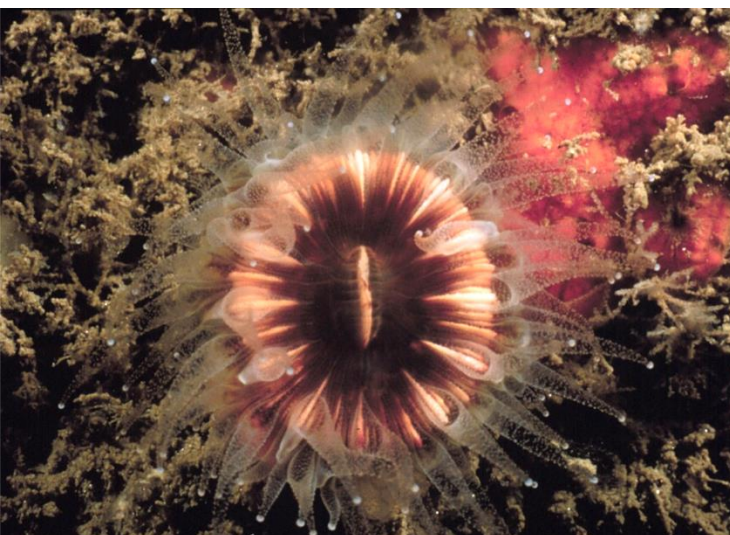
Unidentified Anemone spp.

UNAN

Identification: Color is highly variable among the remaining anemone species. Some are aggregating, while others are solitary. Includes *Epiactus* spp., *Epizoanthus* spp., and *Halcampa* spp.

Size: Crown diameter 1-4 cm

Occurrence: Widespread and common



Paracyathus stearnsi

Brown Cup Coral

PAST

Identification: Large, brown, solitary hard corals with long, semi-transparent tentacles and oval shaped disc.

Size: Crown diameter to 3 cm

Occurrence: Uncommon

Phylum Cnidaria



Astrangia lajollaensis

Aggregating Cup Coral

AL

Identification: Small solitary hard corals forming large colonies. The stony cups are brownish-orange and tentacles are yellowish-orange.

Size: Crown diameter to 1.5 cm

Occurrence: Widespread and common



Balanophyllia elegans

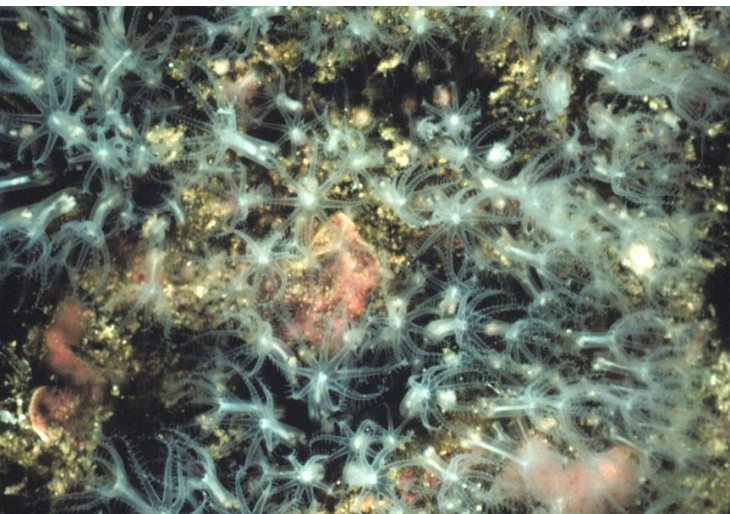
Orange Cup Coral

BAEL

Identification: Solitary orange cup-shaped hard coral with orange tentacles. Each tentacle has wart-like nodules.

Size: Crown diameter to 2.5 cm

Habitat: Widespread and common



Alcyonium rudyi

Octocoral

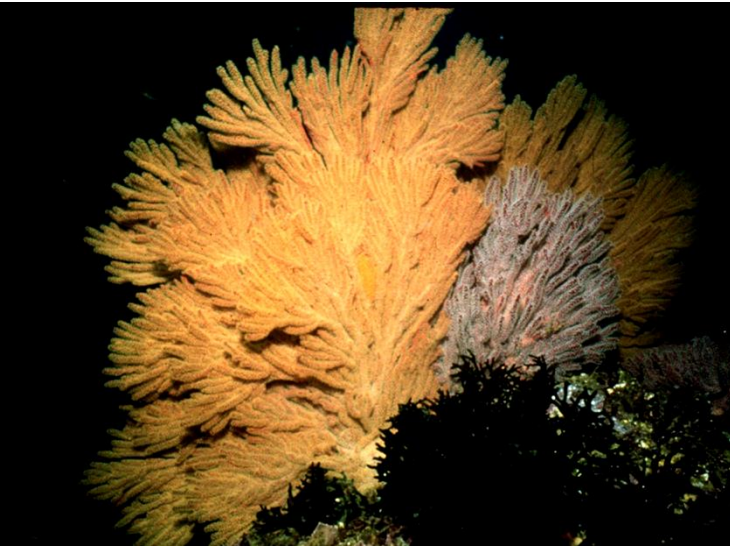
ARUD

Identification: A colonial soft coral that has cream white to pink translucent polyps each with eight branched tentacles.

Size: Polyp height to 2.5 cm, 5-30 cm colony diameter

Occurrence: Uncommon

Phylum Cnidaria



Muricea californica

California Golden Gorgonian

MUCA

Identification: Thick brown branches. Yellow polyps distinguish it from brown gorgonian (the small gorgonian on right side of photo).

Size: To about 1 meter in height

Occurrence: Locally abundant



Muricea fruticosa

Brown Gorgonian

MUFR

Identification: Sea fan with thick brown to brownish-red branches and white polyps, usually in one plane.

Size: To about 1 meter in height

Occurrence: Locally common



Lophogorgia chilensis

Red Gorgonian

LOCH

Identification: Sea fan with red branches and white polyps. Branches are not in a single plane.

Size: To about 1 meter in height

Occurrence: Locally common

Phylum Annelida



Cirriformia luxuriosa

CILU

Identification: Polychaete with long slender tentacles of reddish branchiae and orange-red tentacular filaments (dense cluster on dorsum). Few black spines from sides of body from middle to posterior end.

Size: To 15 cm

Occurrence: Uncommon



Dodecaceria fewkesi

Colonial Tube Worm

DOFE

Identification: Calcareous tubes clustered into colonies with exposed dark brown to black tentacles.

Size: Tube diameter to 5 mm, colony diameter 5-50 cm

Occurrence: Locally common



Phragmatopoma californica

Colonial Sand Tube Worm

PA

Identification: Extensive, reef building colonies. Tubes constructed of cemented sand. Short lavender tentacles. Common in *Macrocystis* holdfasts.

Size: Tube diameter to 1 cm, colony diameter to 2 m

Occurrence: Widespread and abundant

Phylum Annelida



Diopatra ornata

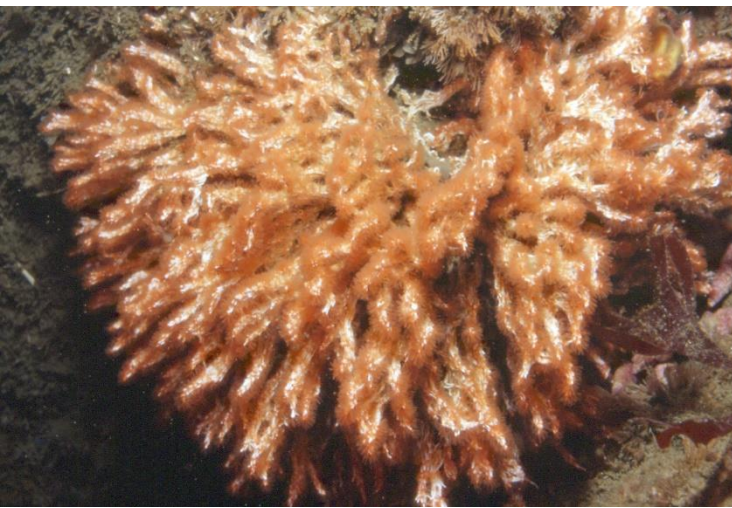
Ornate Tube Worm

DIOR

Identification: Tubes usually completely covered with attached pieces of shell, algae, or other debris. Common in sand or cobble.

Size: To 7 cm tall

Occurrence: Widespread and abundant



Salmacina tribranchiata

Fragile Tube Worm

ST

Identification: Small whitish tubes that form tangled complex masses. Short red-orange tentacles.

Size: Tube diameter < 2 mm, colony diameter to 20 cm

Occurrence: Uncommon



Pista elongata

PIEL

Identification: Solitary tubeworms terminating in a globular shaped, reticulated network of fibers.

Size: To 8 cm tall

Occurrence: Uncommon

Phylum Annelida



Eudistylia polymorpha

Feather Duster Worm

EUPO

Identification: A solitary tube worm identified by its feathery plume of branched gills. Varies in color from tan to orange to purple. Will retract gills into tube rapidly if disturbed.

Size: Plume diameter to 5 cm

Occurrence: Locally abundant



Sabellid spp.

SABW

Identification: Worms in the family Sabellidae. All species will retract into tubes when disturbed. Local species include *Myxicola infundibulum*, *Sabella crassicornis*, *Pseudopotamilla ocellata*, and *Bispira turneri*.

Size: Plume diameter to 3 cm

Occurrence: Widespread and common

Phylum Phoronida



Phoronid spp.

Horseshoe worm

PHOR

Identification: Tubeworm with horseshoe-shaped ring of tentacles projecting above sediment. Colors of tentacles may be pink, green, orange or peach-colored. Tubes that may be buried in sand or intertwined forming compact masses attached to hard substrates.

Size: To 2 cm in body length and 40 mm projecting above sand

Occurrence: Widespread and Uncommon

Phylum Mollusca



Haliotis rufescens

Red Abalone

HARU

Identification: Shell usually brick-red, occasionally with bands of green or white. Three to four of the holes are open. Smooth epipodium, usually black but can have a barred black and cream pattern. Tentacles are black.

Size: To 30 cm

Occurrence: Uncommon



Haliotis assimilis

Formerly *Haliotis kamtschatkana*

Threaded Abalone

HAKA

Identification: Flat oblong shell with four to six open holes that are slightly raised. Bumpy epipodium, mottled pale yellow to dark brown with a frilly edge. Tentacles are yellowish brown.

Size: To 18 cm

Occurrence: Rare



Haliotis corrugata

Pink Abalone

HACO

Identification: Shell is rounded with a scalloped edge and is usually heavily fouled. Two to four raised shell holes remain open. Mottled black and white epipodium with a lacy edge and black tentacles.

Size: To 25 cm

Occurrence: Uncommon

Phylum Mollusca



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: To 25 cm

Occurrence: Widespread and common



Serpulorbis squamigerus

Scaled Worm Snail

SE

Identification: Shell is a partially coiled tube attached to substrates. No operculum. Usually occurs in aggregations.

Size: Up to 12 cm long and 1.5 cm in diameter

Occurrence: Uncommon



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: To 8 cm

Occurrence: Widespread and common

Phylum Mollusca



Lithopoma complex

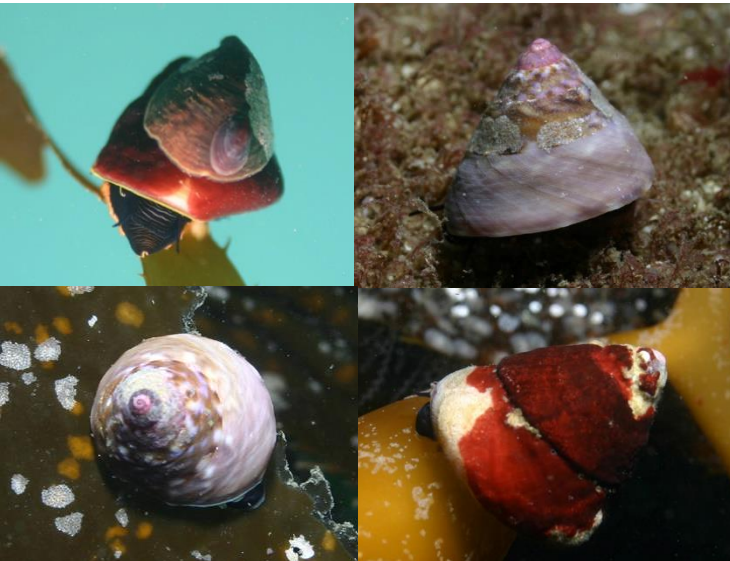
Wavy Turban Snail

LIGL/LIGS

Identification: Heavily sculptured or low, spiral shell that is frequently covered with encrusting coralline algae. Local species include *Lithopoma gibberosum* and *Megastrea undosa* (formerly *Lithopoma undosum*).

Size: LIGL if > 9 cm, LIGS if < 9 cm

Occurrence: Locally abundant



Turban Snails

Formerly *Tegula* spp.

TESP

Identification: Shell is typically a smooth, rounded-conical shape. Shell color varies and is often covered by encrusting organisms. Foot with dark brown or black sides, white or cream color below. Includes species in the genera *Chlorostoma*, *Agathistoma*, and *Promartynia*.

Size: To 3 cm in diameter

Occurrence: Locally common



Pteropurpura trialata

Three-Winged Murex

PTTR

Identification: Three distinctive wing-like processes protrude from the central shell, one on top and one to each side. Brown bands common on shell.

Size: 3-7 cm locally

Occurrence: Uncommon

Phylum Mollusca



Kelletia kelletia

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: To 18 cm

Occurrence: Locally abundant



Small whelk spp.

SKE

Identification: Category for small whelk shaped snails. May include juvenile *Kelletii* or other genera such as *Pteropurpura*.

Size: To 2.5 cm

Habitat: Locally common



Mitra idae

Ida's Miter

MIID

Identification: Dark brown, smooth shell covered with a black periostracum. The foot is white.

Size: To 8 cm in length

Occurrence: Uncommon

Phylum Mollusca



Norrissia norrisi

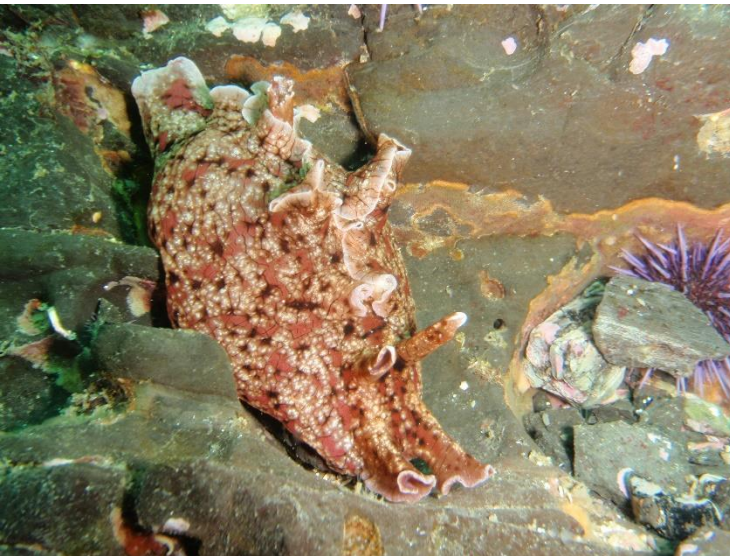
Norris' Top Snail

NONO

Identification: Red-brown flattened spiral shell with a bright red foot.

Size: 2-4 cm locally

Occurrence: Uncommon



Aplysia californica

California Brown Sea Hare

APCA

Identification: Color varies from reddish to brownish, and/or greenish, overlaid with dark lines and spots.

Size: Can exceed 40 cm

Occurrence: Widespread and common



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: To 75 cm

Occurrence: Uncommon

Phylum Mollusca



Conus californicus

California Cone Snail

COCA

Identification: Smooth, light brown shell with a transparent to white foot and a black proboscis.

Size: To 4 cm in length

Occurrence: Widespread and common



Mytilus californianus

California Mussel

MC

Identification: Shell thick, pointed at anterior end, broad at posterior, sculptured with strong radial ridges and irregular growth lines. Surface often eroded or worn. Blue-black in color.

Size: 5-10 cm

Occurrence: Locally abundant



Chaceia ovoidea

Wart-Neck Piddock

CHOV

Identification: Boring clam, with distinct dark brown siphon which usually protrudes from rock 3-5 cm.

Size: ≥ 2.5 cm siphon hole diameter

Occurrence: Widespread and abundant

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 up to 20 cm

Occurrence: Widespread and common



Parapholas californica

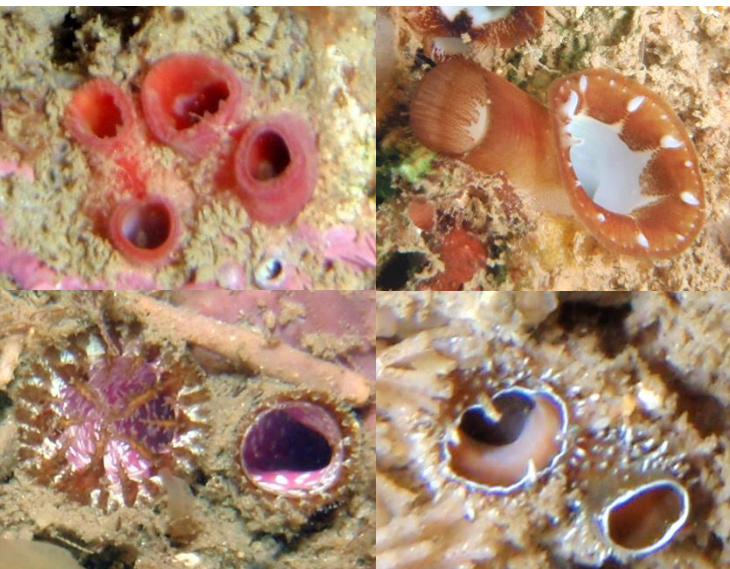
Scaleside Piddock

PACA

Identification: Boring clam, with white siphon that usually has reddish-brown spots and blotches.

Size: Shell length up to 15 cm, siphon diameter 2-4 cm locally

Occurrence: Widespread and abundant



Pholad spp.

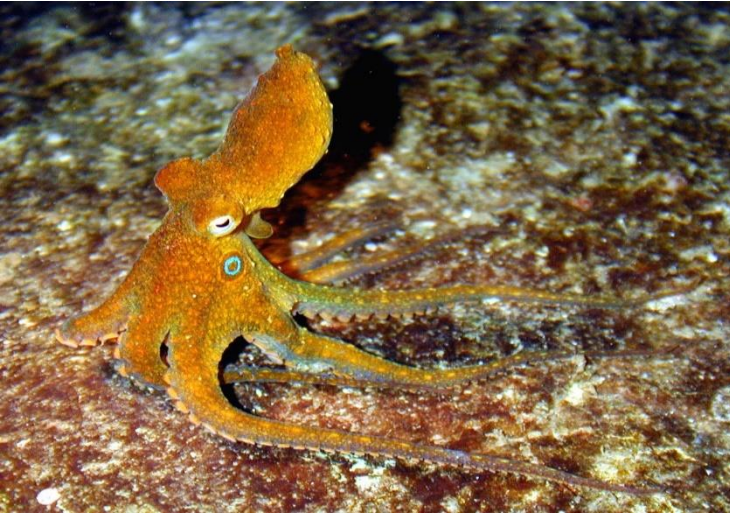
PU

Identification: Only the siphons may be visible. May include juvenile *Parapholas californica*, juvenile *Chaceia ovoidea*, (< 2.5cm) *Penitella* spp., and *Hiatella arctica*.

Size: Siphon hole diameter < 2.5cm

Occurrence: Locally common

Phylum Mollusca



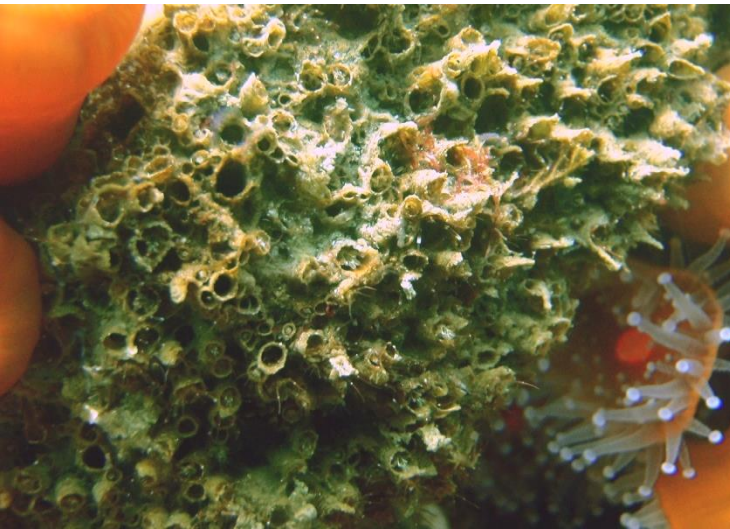
Octopus spp. OCTO

Identification: Arms usually reach 3-5 times the length of the body. Color varies with background and mood. Local species include *O. bimaculoides* (featured here), *O. rubescens*, and *Enteroctopus dofleini*.

Size: Arm span up to 300 cm

Occurrence: Uncommon

Phylum Arthropoda

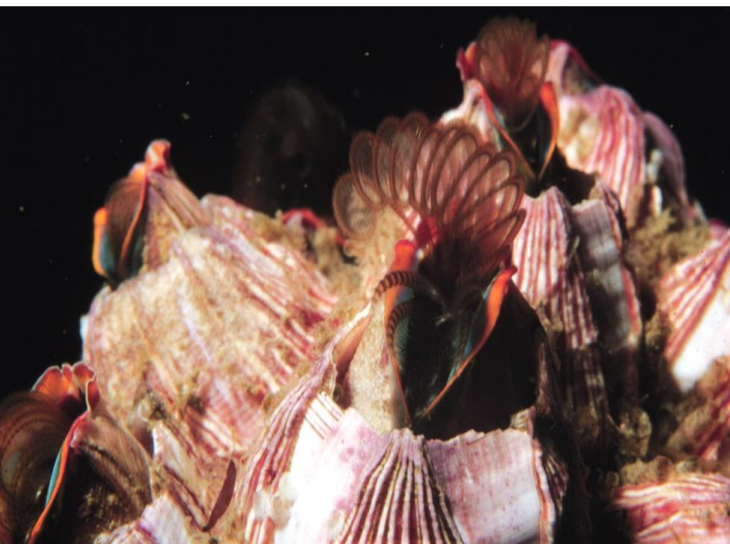


Amphipod Tube Mat ATM

Identification: Colonies of small tube forming amphipods often intermixed with other small invertebrates and algae. Spongy texture. Color is usually dark brown to tan.

Size: To 5 cm in height, variable colony diameter

Occurrence: Locally common



Balanus complex

Barnacles

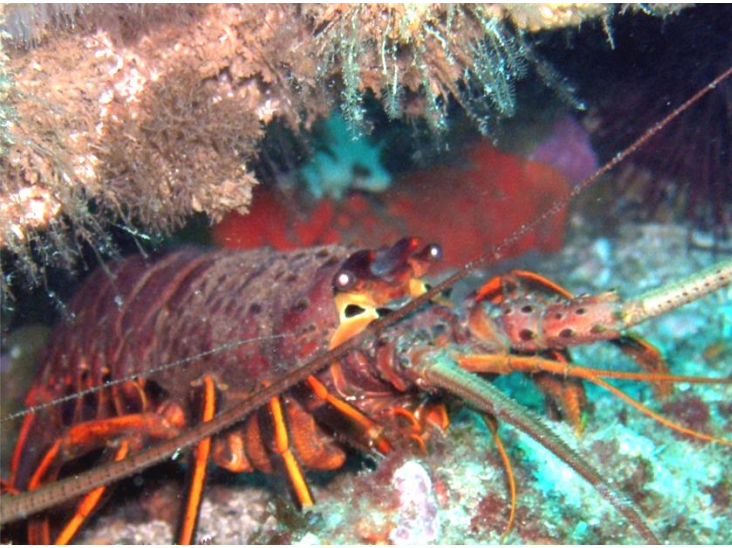
BA

Identification: Assorted barnacle species. Plates or paired beaks cover the opening of the feeding tentacles in live individuals. *Megabalanus californicus* shown here.

Size: Basal diameter from 0.5 to 10 cm depending on species. Height 0.5 to 7.5 cm.

Occurrence: Widespread and common

Phylum Arthropoda



Panulirus interruptus

California Spiny Lobster

PAIN

Identification: Large reddish brown decapod crustacean with long antennae covered with small sharp spines. Anterior portion of the thorax with sharp spines. Large spines on tail. Claws absent.

Size: To 60 cm

Occurrence: Widespread and common



Pugettia producta

Kelp Crab

PUPR

Identification: Smooth carapace with yellowish brown to reddish coloring. Feeds on algae.

Size: Carapace to 9 cm in width

Occurrence: Widespread and common



Cancer spp.

Cancer Crab

CASP

Identification: Oval shaped carapace. Body and legs may be hairy or smooth. Local species include *C. antennarius*, *C. gracilis*, *C. productus*, and *C. anthonyi*.

Size: Carapace to 20 cm in width

Occurrence: Locally common

Phylum Arthropoda



Loxorhynchus grandis

Sheep Crab

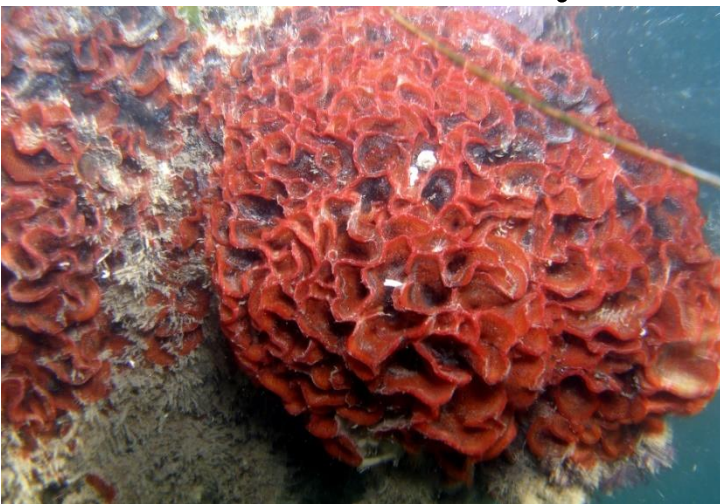
LOGR

Identification: Large spider crab with robust, oval carapace covered with spines and tubercles. Males have larger chelipeds (claws) than females.

Size: Carapace to 25 cm in width, up to 1 m leg span

Occurrence: Widespread and common

Phylum Ectoprocta



Watersipora subtorquata

WASP

Identification: Colonies can be erect and leaf-like, with extensive overlapping calcareous crusts and curled edges. Usually red.

Size: To 25 cm in height

Occurrence: Widespread and uncommon



Phidolopora labiata

Lattice-Work Bryozoan

PLAB

Identification: Upright colonies form a mass of lattice-like structures, usually orange.

Size: Diameter to 20 cm, height to 10 cm, 3-7 cm common locally

Occurrence: Uncommon

Phylum Ectoprocta



Hipporina mexicana

Formerly *Hippodiplosia insculpta*

Southern Fluted Bryozoan

HIP

Identification: Colonies consist of erect, fan-like, curled folds. Color is typically light yellow to orange and tan.

Size: To 10 cm in height but 3-7 cm common locally, to 13 cm in diameter

Occurrence: Uncommon



Bugula californica

Spiral Bryozoan

BCAL

Identification: Colony composed of fronds that have spiral whorls of branches. White to orange in color.

Size: To 8 cm in height, to 50 cm in diameter

Occurrence: Widespread and abundant



Bugula neritina

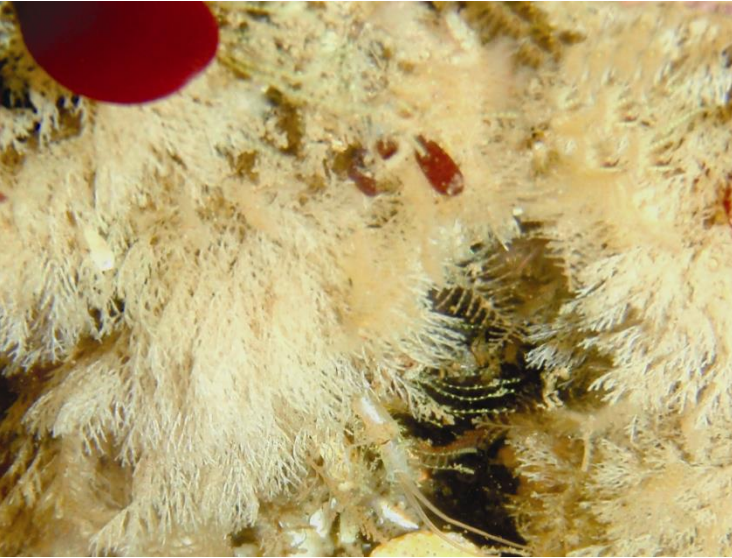
BN

Identification: Bushy colonies of erect branching fronds, reddish brown or purple in color. Branches curve slightly inward toward central axis.

Size: To 15 cm in height, to 20 cm in diameter

Occurrence: Widespread and common

Phylum Ectoprocta



Crisia occidentalis

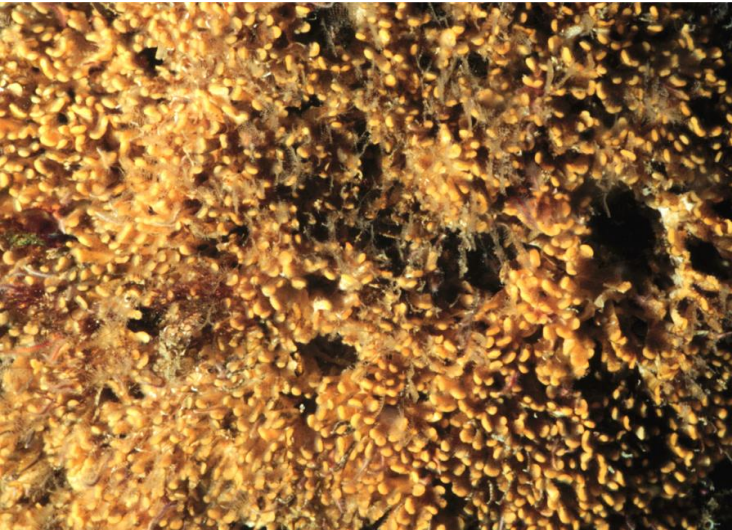
White Tuft Bryozoans

CROC

Identification: White erect fragile colonies with a branching, bushy structure. Tubular zooids with round terminal apertures.

Size: To 3 cm in height

Occurrence: Widespread and abundant



Diaperoforma californica

Formerly *Diaperoecia californica*

Southern Staghorn Bryozoan

DC

Identification: Colonies calcified in coral-like masses, with flattened branches. Color varies from light to dark yellow.

Size: Height to 10 cm, diameter to 30 cm

Occurrence: Widespread and abundant



Heteropora pacifica

Northern Staghorn Bryozoan

HPAC

Identification: Calcified colonies often mistaken for coral because of their superficial resemblance. Cross sections of colony branches are round. Typically light yellow to cream in color.

Size: To 10 cm in height but 3-7 cm common locally, to 15 cm in diameter

Occurrence: Uncommon at mainland sites, common at island sites

Phylum Ectoprocta



Celleporina robertsoniae

Formerly *Costazia robertsoniae*

Orange Bryozoan

COST

Identification: Colonies formed of erect single or forked nodules. Often fuzzy in appearance. Color is typically orange to red-orange. Typically epiphytic.

Size: Height to 5 cm, diameter to 8 cm

Occurrence: Widespread and uncommon



Cellaria spp.

CESP

Identification: Dichotomous 'Y'-shaped branching pattern emphasized at tips. Long circular nodes. Dull white in color with dark joints. Local species include *C. difusa* and *C. madibulata*.

Size: To 8 cm in height, to 30 cm in diameter

Occurrence: Uncommon



Thalamoporella californica

TC

Identification: White to off-white colonies with many dichotomously branched projections and a basal crust.

Size: To 15 cm in height, colony diameter variable to 2 m

Occurrence: Widespread and abundant

Phylum Ectoprocta



Membranipora serrilamella

Encrusting Bryozoan

MT

Identification: Small white zooids forming crustose colonies having a honeycomb appearance. Usually epiphytic. Seen here on *Macrocystis*.

Size: Variable

Occurrence: Widespread and abundant



Encrusting bryozoan spp.

ECB

Identification: Colonies can become one of the dominant species under kelp canopies and in low light areas under ledges and on walls. Color variable, requires a dissecting scope for species identification.

Size: Variable

Occurrence: Widespread and abundant

Phylum Echinodermata



Cucumaria piperata

Salt and Pepper Cucumber

CUPI

Identification: Small cucumber with 10 branched tentacles. Usually white, with brown or black speckles.

Size: To 6 cm in length, 2-4 cm common locally

Occurrence: Widespread and common

Phylum Echinodermata



Cucumaria miniata

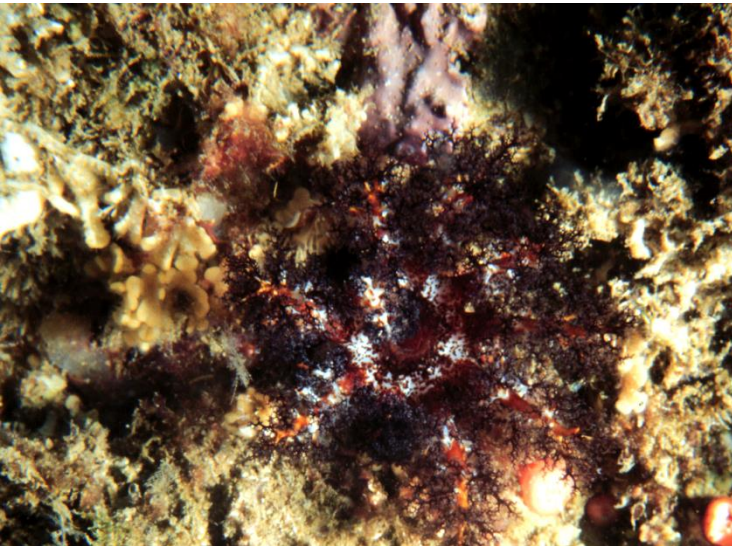
Red Sea Cucumber

CUSP

Identification: Bright orange cucumber with 10 branched tentacles and 5 rows of tube feet.

Size: To 15 cm in length

Occurrence: Uncommon



Cucumaria salma

CUSP

Identification: Body salmon to orange color with 5 rows of tube feet. Tentacles black and goldish yellow, with white banding.

Size: To 15 cm in length

Occurrence: Locally common



Lissothuria nutriens

LINU

Identification: Thick body wall without scales. Dorsal surface is orange to red in color. Flattened ventral side with three rows of tube feet and pale pink in color. Mouth and anus directed upward. 10 clear to pale orange branched tentacles.

Size: To 2 cm in length

Occurrence: Widespread and common

Phylum Echinodermata



Eupentacta quinquesemita

White Sea Cucumber

EUQU

Identification: Small white to cream colored sea cucumber. Cannot completely retract its rows of long tube feet.

Size: To 8 cm in length

Occurrence: Widespread and common



Pachythyone rubra

PRUB

Identification: Small cucumber, with white to brown feeding tentacles. Body color varies, can be brown, white, or orange. Tube feet are scattered over entire body and can retract completely.

Size: To 5 cm in length, 1-3 cm common locally

Occurrence: Locally common



Parastichopus californicus

California Sea Cucumber

CUKE

Identification: Dark red, brown, or yellow sea cucumber has stiff, conical papillae. Tube feet only on ventral surface.

Size: To 40 cm in length

Occurrence: Locally uncommon

Phylum Echinodermata



Parastichopus parvimensis

Warty Sea Cucumber

PAPA

Identification: Brown to orange sea cucumber is covered with small black-tipped papillae or pseudospines. Tube feet located on ventral surface.

Size: To 25 cm in length

Occurrence: Widespread and abundant



Strongylocentrotus purpuratus

Purple Sea Urchin

SPL/SPS

Identification: Medium sized sea urchin with short purple spines. Frequently bores depressions in rocks. Occasionally juveniles less than 2.5 cm have greenish-white spines.

Size: To 8 cm test diameter, **SPL** if > 2.5 cm, **SPS** if \leq 2.5 cm

Occurrence: Widespread and abundant



Strongylocentrotus franciscanus

Red Sea Urchin

SFL/SFS

Identification: Large urchin with sharp, long spines. Color ranges from red to dark reddish-purple to black.

Size: To 25 cm test diameter, **SFL** if > 2.5 cm, **SFS** if \leq 2.5 cm

Occurrence: Widespread and abundant

Phylum Echinodermata



Lytechinus anamesus

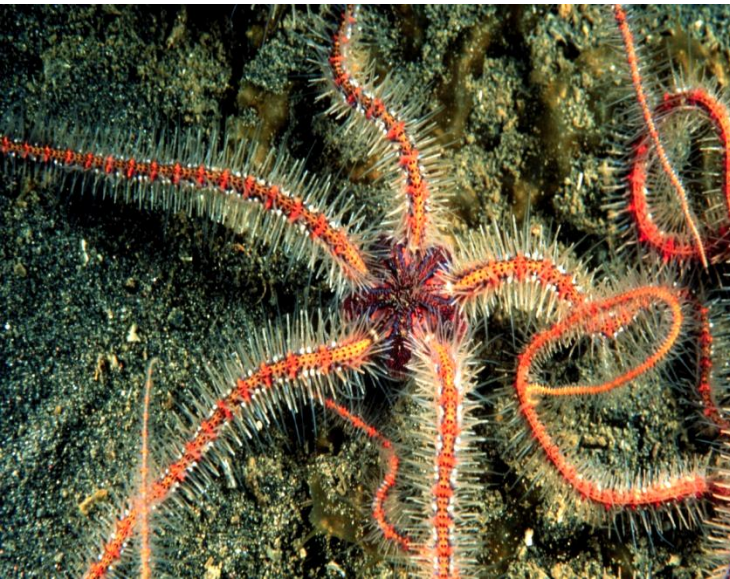
White Sea Urchin

LA

Identification: Small sea urchin with sharp, short white spines. Test is usually white with dark blotches.

Size: To 8 cm in diameter, 2-4 cm common locally

Occurrence: Widespread and uncommon



Ophiothrix spiculata

Spiny Brittle Star

OPSP

Identification: Small brittle star with long, erect spines on the arms and disc. Often aggregates.

Size: To 30 cm in diameter, 10-20 cm common locally

Occurrence: Widespread and abundant



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: To 15 cm in diameter

Occurrence: Widespread and common

Phylum Echinodermata



Pisaster brevispinus

Short Spined Sea Star

PBL/PBS

Identification: Five armed sea star. Pink to white in color. Short aboral spines.

Size: To 60 cm in diameter, **PBL** if > 2.5 cm, **PBS** if < 2.5 cm

Occurrence: Widespread and common prior to 2014 wasting disease



Pisaster giganteus

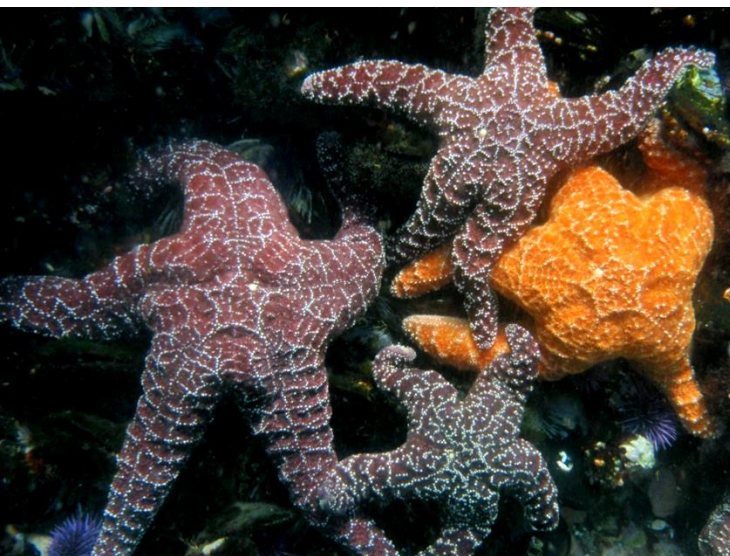
Giant Spined Sea Star

PGL/PGS

Identification: This sea star has long uniformly spaced spines with swollen tips. Each spine is surrounded by a blue circle.

Size: To 60 cm in diameter, **PGL** if > 2.5 cm, **PGS** if < 2.5 cm

Occurrence: Widespread and abundant prior to 2014 wasting disease



Pisaster ochraceus

Ochre Sea Star

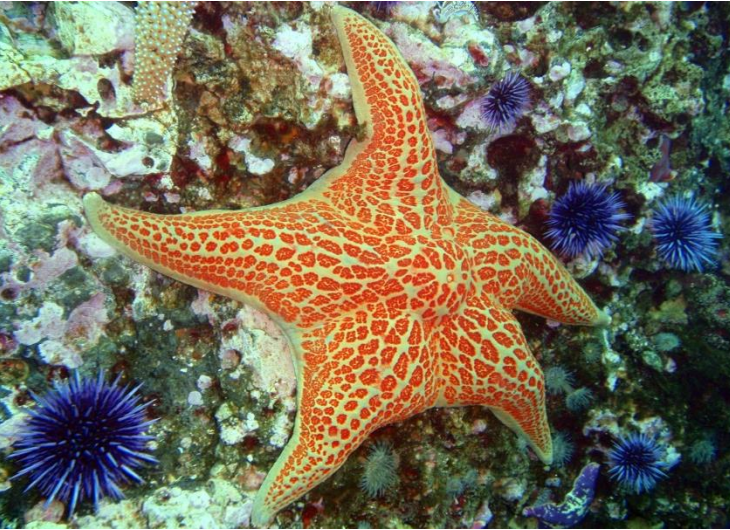
POL/POS

Identification: Thick armed star with numerous small white spines on the aboral surface arranged in a reticular pattern. Color varies.

Size: To 35 cm in diameter, **POL** if > 2.5 cm, **POS** if < 2.5 cm

Occurrence: Widespread and common prior to 2014 wasting disease

Phylum Echinodermata



Dermasterias imbricata

Leather Star

DIL/DIS

Identification: This sea star feels smooth and almost leather-like.

Size: To 25 cm in diameter, **DIL** if > 2.5 cm, **DIS** if < 2.5 cm

Occurrence: Widespread and common prior to 2014 wasting disease



Orthasterias koehleri

Rainbow Sea Star

OKL/OKS

Identification: Vivid color, ranging from pink with gray to bright red with yellow banding. Small disk with 5 slender arms.

Size: To 40 cm in diameter, **OKL** if > 2.5 cm, **OKS** if < 2.5 cm

Occurrence: Uncommon



Patiria miniata

Formerly *Asterina miniata*

Bat Star

AML/AMS

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: To 20 cm in diameter, **AML** if > 2.5 cm, **AMS** if < 2.5 cm

Occurrence: Widespread and abundant prior to 2014 wasting disease

Phylum Echinodermata



Pycnopodia helianthoides

Sunflower Sea Star

PHL/PHS

Identification: Large sea star has 20 to 24 flexible arms. Juveniles have 5 arms. Color varies from purple to orange.

Size: To 90 cm in diameter, **PHL** if > 2.5 cm, **PHS** if < 2.5 cm

Occurrence: Widespread and common prior to 2014 wasting disease

Phylum Chordata



Styela montereyensis

Stalked Tunicate

STMO

Identification: Long stalked, solitary tunicate with longitudinal ridges. Color yellow to dark red-brown.

Size: To 25 cm in height

Occurrence: Widespread and abundant



Chelyosoma productum

Disc-Top Tunicate

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 about 3 cm

Occurrence: Uncommon

Phylum Chordata

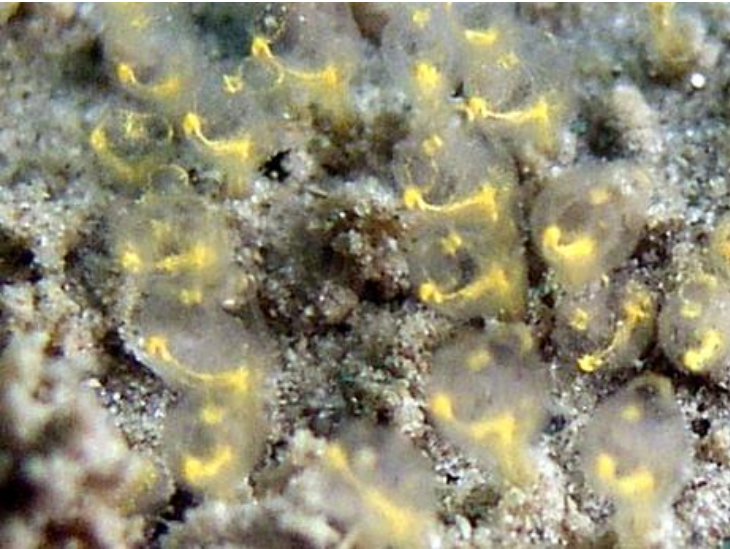


Compound tunicate spp. UT

Identification: Smooth colonies with many small openings and a few larger apertures. Variable in color. Some of the local species that may fall in this category include *Didemnum* spp, *Botrylloides* spp, *Aplidium* spp, and *Cystodytes* spp.

Size: Irregular

Occurrence: Widespread and common



Pycnoclavella stanleyi

Yellow Social Tunicate

PYST

Identification: Branchial baskets of expanded zooids in upright orange or gold striped projections. Pictured at left magnified 2x.

Size: To 1 cm in height, 5-30 cm clumps

Occurrence: Locally uncommon



Euherdmania claviformis

Tunic-Band Compound Tunicate

EUCL

Identification: This tunicate is found in clumps or colonies of elongate, almost transparent lobes. They are often covered in light sand or silt.

Size: Commonly 1-4 cm in height in 5-10 cm clumps

Occurrence: Locally common

Phylum Chordata



Clavelina spp.

Light Bulb Tunicate

CL

Identification: Grows in clusters. Pharynx contains two luminescent pink lines that resemble the glowing filaments of a light bulb.

Size: Locally 1-2 cm in height

Occurrence: Uncommon



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 30 cm

Occurrence: Uncommon except at Bulito where they are abundant



Archidistoma psammion

Sand Tunicate

AR

Identification: Colonies form flat slabs or oval lobes. Zooids arranged in circular systems. Test is firm and leathery. Color varies from dark brown to purple, maroon, gray, or whitish..

Size: Typically 1-2 cm thick, to 20 cm in diameter

Occurrence: Widespread and common

Family Myliobatidae



Myliobatis californica

Bat Ray

BRAY

Identification: Thick bodied with large bulbous head, long pectoral fins, whip-like tail, and long venom injecting barb at base of tail.

Size: To 1.8 m wingspan

Occurrence: Uncommon

Family Squatinidae



Squatina californica

Pacific Angel Shark

SCAL

Identification: Flattened body with blunt head and large pectoral fins. Rear body and base are tubular. Two dorsal fins near base of tail.

Size: To 1.5 m in length

Occurrence: Uncommon

Family Rhinobatidae



Rhinobatos productus

Shovelnose Guitarfish

RPRO

Identification: Brown to gray, sometimes lightly blotched. Distinctive long v-shaped head. Small spines along dorsal ridge and tail.

Size: To 1 m in length

Occurrence: Uncommon

Family Triakidae



Triakis semifasciata

Leopard Shark

TSEM

Identification: Short, rounded snout and dark saddle blotches that run the length of the body.

Size: To 2 m in length

Occurrence: Uncommon

Family Heterodontidae



Heterodontus francisci

Horn Shark

HEFR

Identification: Brown to gray in color with black spots, Both dorsal fins have a spine on the leading edge. Spiral egg casings.

Size: To 1 m in length, 30-50 cm common locally

Occurrence: Locally common

Family Scyliorhinidae



Cephaloscyllium ventriosum

Swell Shark

CVEN

Identification: Dark spotted elongated body with flattened head. Two posterior dorsal fins.

Size: To 1.5 m in length, 40-70 cm common locally

Occurrence: Locally common

Family Paralichthyidae



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: To 1.5 m in length

Occurrence: Widespread but uncommon



Citharichthys stigmaeus

Speckled Sand Dab

CSTI

Identification: Speckles, often small blotches, and ventrally compressed.

Size: To 18 cm, 3-10 cm common locally

Occurrence: Widespread and abundant in sandy areas

Family Scorpaenidae



Scorpaena guttata

California Scorpionfish

SGUT

Identification: Many spines, short barbels and skin flaps on head. Brown spots on head, body and fins.

Size: To 43 cm, locally 10-25 cm

Occurrence: Uncommon

Family Scorpaenidae



Sebastes atrovirens

Kelp Rockfish

SATR

Identification: No distinctive markings. Mottled shades of tan to brown to greenish brown. Can change color and markings with background.

Size: To 42 cm, 5-30 cm common locally

Occurrence: Widespread and abundant



Sebastes auriculatus

Brown Rockfish

SAUR

Identification: Blotched shades of brown to tan. Pectoral and fore-dorsal fins pale coral to tan, distinguished from other mottled rockfish by a solid dark brown blotch or spot at the top rear of the gill cover.

Size: To 45 cm, 5-30 cm common locally

Occurrence: Widespread and common



Sebastes carnatus

Gopher Rockfish

SCAR

Identification: Three pale colored splotches on back that extend into dorsal spines. Two diagonal bands extend from lower eye, and pale blotches on dorsal spines.

Size: To 40 cm, 5-30 cm common locally

Occurrence: Widespread and uncommon

Family Scorpaenidae



Sebastes paucispinis

Bocaccio

SPAU

Identification: Elongated gray body often with spots as seen in juvenile pictured below left. Concave head, large mouth, maxilla extends beyond eye.

Size: To 90 cm, 5-15 cm common locally

Occurrence: Locally uncommon (juvenile) and rare (adult)



Sebastes serranoides

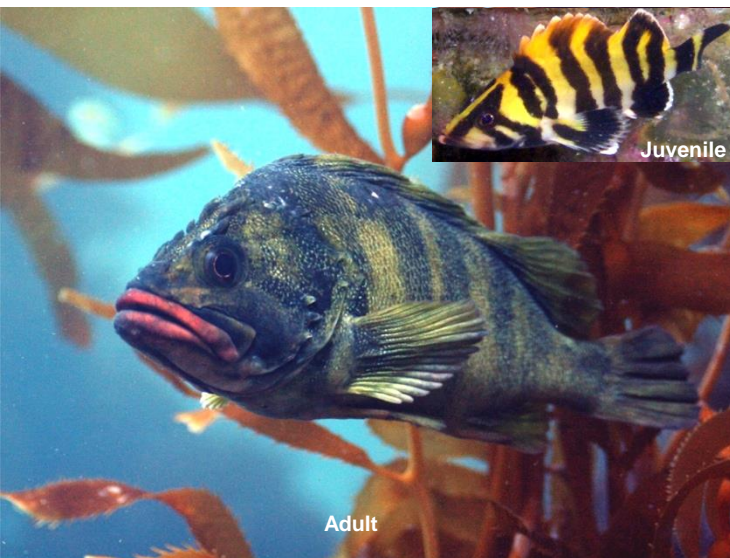
Olive Rockfish

SSER

Identification: Olive green with lighter coloring below lateral line and several pale spots below dorsal fin.

Size: To 60 cm, 5-35 cm common locally

Occurrence: Locally common



Sebastes serriceps

Treefish

STRE

Identification: Yellowish body with 5 to 6 black bars across back and base of tail. Two dark bands from eye to pectoral fin, with pink to red lips. Juveniles often have brighter coloring than adults.

Size: To 40 cm, 5-30 cm common locally

Occurrence: Locally uncommon

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: To 60cm, 20-25 cm common locally

Occurrence: Widespread but uncommon



Sebastes chrysomelas

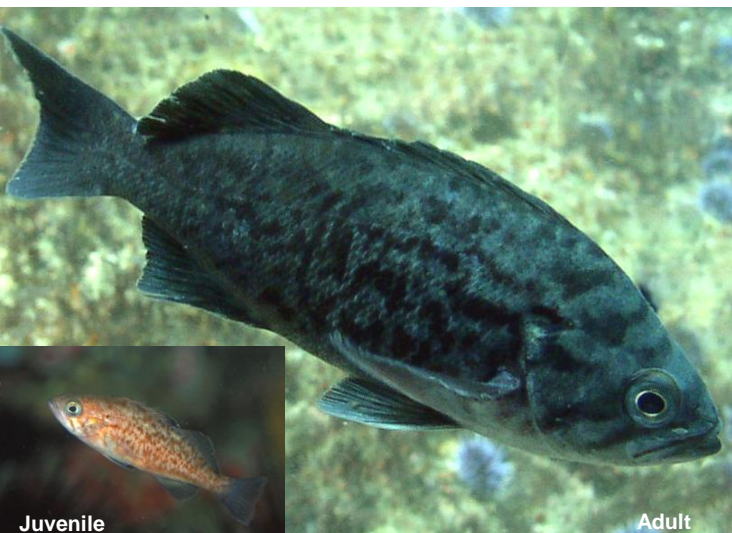
Black and Yellow Rockfish

SCHR

Identification: Two dark diagonal bands extend from lower eye. Bright yellow spots and blotches over dark under-color.

Size: To 40 cm, 5-25 cm common locally

Occurrence: Widespread and abundant



Sebastes mystinus

Blue Rockfish

SMYS

Identification: Mottled blue to gray in color, juveniles with red coloration. Slightly projected jaw that extends to midpoint of eye, 2-4 curved bands around front of head.

Size: To 40 cm, 5-30 cm common locally

Occurrence: Adults common at island sites, juveniles common along the mainland

Family Scorpaenidae



Sebastes miniatus

Vermilion Rockfish

SMIN

Identification: Bright red mottled body coloration on gray skin background. Juveniles mottled and banded color not as bright as adults, speckled head.

Size: To 70 cm, 4-10 cm common locally

Occurrence: Widespread but uncommon (juveniles) to rare (adults)



Sebastes flavidus

Yellowtail Rockfish

SFLA

Identification: One or two areas or streaks of yellow behind eye on gill cover. Several pale spots below dorsal fin. Dark brown to green brown or gray back, often pale below lateral line. Light green to yellow-green, yellow or dusky yellow fins.

Size: To 66 cm, 30-55 cm

Occurrence: Widespread but locally rare



Rockfish spp.

Young of year rockfish

SCSP

Identification: Juvenile rockfish that are difficult to distinguish to species.

Size: To 5 cm

Occurrence: Widespread and common

Family Muraenidae



Gymnothorax mordax

California moray

GYMO

Identification: Light to dark brown green. No pectoral fins. Often mottled. Mouth filled with numerous sharp teeth.

Size: To 1.5 m. 60 cm – 1.2 m

Occurrence: Widespread and abundant

Family Syngnathidae



Syngnathus spp.

Pipefish

SYNG

Identification: Green to brown in color, underside often white. Long trumpet-like snout, small fan-shaped tail. Of the six species that occur in the area, only *S. leptorhynchus* (pictured here) and *S. californiensis* (Kelp Pipefish) are commonly seen.

Size: To 50 cm

Occurrence: Uncommon

Family Malacanthidae



Caulolatilus princeps

Ocean Whitefish

CAPR

Identification: Elongate compressed silver blue body with small terminal mouth. Fins often yellowish and may have bluish stripes.

Size: To 50 cm

Occurrence: Uncommon

Family Hexagrammidae



Hexagrammos decagrammus

Kelp Greenling

HDEC

Identification: Male: (above) Blue irregular spots outlined by small dark spots on head and fore body and a pair of cirri above eyes. Female: (below) Speckled with red-brown to gold over a pale under-color.

Size: To 60 cm, 15-40 cm common locally

Occurrence: Locally uncommon



Ophiodon elongatus

Lingcod

OELO

Identification: Single, whitish lateral line, large mouth and prominent canine teeth. Long, even spinous dorsal fin separated by a notch before soft rear dorsal fin.

Size: To 1.5 m, 20-60 cm common locally

Occurrence: Locally common



Oxylebius pictus

Painted Greenling

OPIC

Identification: Pointed snout with 5-6 dark bands encircling fins and body. Two pairs of cirri, males can be almost black during winter mating season

Size: To 25 cm, 5-20 cm common locally

Occurrence: Widespread and abundant

Family Cottidae



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: To 25 cm

Occurrence: Locally common



Cottid spp.

Sculpin

COTT

Identification: Tapered tubular body, large boney head, obvious scales. Large pectoral fins. Common genera: *Orthonopias* and *Artedius*

Size: To 10 cm

Occurrence: Widespread and abundant



Scorpaenichthys marmoratus

Cabezon

SMAR

Identification: Bulbous head and stout body with prominent fleshy cirrus above each eye.

Size: To 1 m, 5-40 cm common locally

Occurrence: Widespread and common

Family Percichthyidae



Stereolepis gigas

Giant Sea Bass

SGIG

Identification: Large mouth, bulky body, low profile foredorsal fin, tall soft dorsal, and sizable black spots.

Size: To 2.3 m

Occurrence: Rare

Family Serranidae



Paralabrax clathratus

Kelp Bass

PCLA

Identification: Square cut tail, first two spines of fore dorsal fin short, and large, pale blotches on back.

Size: To 72 cm, 10-40 cm common locally

Occurrence: Widespread and abundant



Paralabrax nebulifer

Barred Sand Bass

PNEB

Identification: Square cut tail, dusky bars on side, and third fore dorsal spine distinctly longer.

Size: To 66 cm

Occurrence: Widespread and common

Family Kyphosidae



Girella nigricans

Opaleye

GNIG

Identification: Dull green, thick, body with one to three white spots on back, and bright blue to blue-green eyes.

Size: To 66 cm, 30-45 cm common locally

Occurrence: Widespread and common



Medialuna californiensis

Halfmoon

MCAL

Identification: Silver blue compressed body. Darker coloring on back graduating to pale shades on sides and belly. Dusky spot on upper posterior portion of gill cover.

Size: To 45 cm, 15-25 cm common locally

Occurrence: Locally common

Family Haemulidae



Anisotremus davidsonii

Sargo

ANDA

Identification: Silver with single black vertical bar from base of anterior dorsal fin to level of pectoral fin.

Size: To 50 cm

Occurrence: Locally uncommon

Family Haemulidae



Xenistius californiensis

California Salema

XCAL

Identification: Elongate, compressed; head conical, compressed with large eyes. Chin has 2 pairs of pores, rear pores larger, well separated. Lower jaw projecting. Color silvery with 6-7 orange brown stripes.

Size: To 30 cm

Occurrence: Widespread and common

Family Aulorhynchidae



Aulorhynchus flavidus

Tube-Snout

AUFL

Identification: Elongate body and snout with a forked tail, quick and often aggregated, compared to more solitary, slow moving pipefish which has a rounded caudal fin and body rings.

Size: To 18 cm

Occurrence: Locally common

Family Scianidae



Cheilotrema saturnum

Black Croaker

CSAT

Identification: Silvery dark gray, often have brassy or purplish tints, especially on back; can lighten or darken to blend with surroundings, often light and dark scale rows align to form pinstripe pattern; dark fins. May display white spots or patches.

Size: 15-30 cm

Occurrence: Widespread and common

Family Embiotocidae



Brachyistius frenatus

Kelp Surfperch

BFRE

Identification: Thin body, dark areas on scales that form stripes above mid-lateral line, concave head above eyes, and snout pointed upward due to prominent lower jaw.

Size: To 22 cm, 8-15 cm common locally

Occurrence: Widespread and common in kelp canopy



Cymatogaster aggregata

Shiner Surfperch

CAGG

Identification: Black spots on scales form thin stripes on sides. Usually two or three yellow to yellowish bars on sides.

Size: To 15 cm, 8-10 cm common locally

Occurrence: Locally uncommon



Phanerodon furcatus

White Surfperch

PFUR

Identification: Thin, football-shaped silverish white body with deeply forked tail, and black line at base of dorsal fin.

Size: To 32 cm, 10-20 cm common locally

Occurrence: Widespread and common

Family Embiotocidae



Embiotoca jacksoni

Black Surfperch

EJAC

Identification: Large lips, mustache, blue stripe on anal fin. Compressed body with numerous dusky vertical bars.

Size: To 40 cm, 10-30 cm common locally

Occurrence: Widespread and abundant



Embiotoca lateralis

Striped Surfperch

ELAT

Identification: Thin, football-shaped body and several narrow, iridescent blue lateral stripes separated by wider orange to copper colored stripes.

Size: To 38 cm

Occurrence: Widespread and common



Hypsurus caryi

Rainbow Surfperch

HCAR

Identification: Compressed body with a flat belly and vertical bars shaded orange. Black spot on upper corner of mouth.

Size: To 30 cm, 10-20 cm common locally

Occurrence: Widespread and common

Family Embiotocidae



Rhacochilus vacca

formerly *Damalichthys vacca*

Pile Surfperch

DVAC

Identification: Compressed silver green body, deeply forked tail,, dark vertical bar below anterior portion of soft dorsal fin, and a black spot behind corner of mouth.

Size: To 44 cm, 15-25 cm common locally

Occurrence: Widespread and common



Rhacochilus toxotes

Rubberlip Surfperch

RTOX

Identification: Large, fat lips with white to pink tint. Deep compressed body with dark vertical bar posterior of mid section. Spiny posterior dorsal fin shorter than anterior soft dorsal fin.

Size: To 47 cm, 25-35 cm common locally

Occurrence: Widespread and common



Hyperprosopon argenteum

Walleye Surfperch

HARG

Identification: Large eyes on a deep compressed body with a black edged ventral fin. Occasionally displays dusky barring.

Size: To 25 cm, 10-16 cm common locally

Habitat: Locally uncommon to rare

Family Pomacentridae



Chromis punctipinnis

Blacksmith

CPUN

Identification: Damsel fish with blue bordered caudal, anal and dorsal fins. Black spots on scales scattered from mid-body to tail.

Size: To 30 cm, 8-20 cm common locally

Occurrence: Widespread and abundant



Hypsypops rubicundus

Garibaldi

HRUB

Identification: Compressed oval-shaped damsel fish with deeply notched tail between two rounded lobes. Body, bright orange. Juveniles with blue spots.

Size: To 36 cm

Occurrence: Widespread and common

Family Labridae



Halichoeres semicinctus

Rock Wrasse

HSEM

Identification: Red eye distinguishes this species from *Oxyjulis*. Males with dark bar behind pectoral fin. Females with dark areas on scales. Juveniles with longitudinal white stripes and black spots, orange/gold in color.

Size: To 38 cm

Occurrence: Widespread and common at island reefs uncommon along mainland reefs

Family Labridae



Semicossyphus pulcher

California Sheephead

SPUL

Identification: Juvenile: Red orange body with white lateral stripe. Black spots on posterior dorsal, anal and caudal fins. Adult: Wide compressed body with white chin and protruding teeth. Females smaller than males with more uniform reddish pink coloration. Males with dark head and rear, Bulbous lump on nape with blunt head.

Size: To 90 cm, 20-40 cm common locally

Occurrence: Widespread and abundant



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: To 25 cm, 10-20 cm common locally

Occurrence: Widespread and abundant

Family Clinidae



Heterostichus rostratus

Giant Kelpfish

HROS

Identification: Forked tail and an elongated head with a upturned, pointed snout. Varies color to match habitat.

Size: To 61 cm, 15-30 cm common locally

Occurrence: Widespread and common



Neoclinus blanchardi

Sarcastic Fringehead

NBLA

Identification: Large mouth with jaws extending almost to gill openings, two blue spines with yellow spots on anterior dorsal fin, and cirri above eyes.

Size: To 30 cm

Occurrence: Widespread but uncommon



Alloclinus holderi

Island Kelpfish

AHOL

Identification: Pale spot extending from cheek lower rear quarter of eye, raised rear dorsal fin, pale spots cover body, a row of dark blotches on upper body, and long pectoral fins.

Size: To 10 cm

Occurrence: Widespread and common at island reefs, rare at the mainland reefs

Family Clinidae



Gibbonsia spp.

Crevice Kelpfish

CLIN

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. Local species include: *G. metzi*, *G. elegans*, *G. montereyensis*, and *G. erythra*. They are difficult to distinguish.

Size: To 15 cm

Occurrence: Widespread and common

Family Gobiidae



Rhinogobiops nicholsii

Formerly: *Coryphopterus nicholsii*

Blackeye Goby

CNIC

Identification: Dark to pale tan, black eye, and black edge on anterior dorsal fin.

Size: To 15 cm

Occurrence: Widespread and abundant



Lythrypnus dalli

Bluebanded Goby

LDAL

Identification: Bright red with four to nine bright vertical blue bars and a tall anterior dorsal fin.

Size: To 6 cm

Occurrence: Common at island reefs, rare at mainland reefs

Phylum Chordata



Enhydra lutris

Sea Otter

Identification: Thick fur, dark brown, with head and back of neck a yellow to grayish color, fairly short tail, webbed feet, flipper-like hind feet.

Size: To 1.5 m

Occurrence: Seasonally common at Northern sites



Zalophus californianus

Sea Lion

Identification: External ear flaps, large flippers, males develop sagittal crest on top of skull.

Size: To 2.1 m

Occurrence: Abundant and widespread



Phoca vitulina

Harbor Seal

Identification: Spotted coats from silver-gray to dark brown or black, no external ear flaps, small flippers.

Size: To 1.9 m

Occurrence: Abundant and widespread

Phylum Chordata



Tursiops truncatus

Bottlenose Dolphin

Identification: Dark cape often on head and back, well defined and short beak, transverse groove between forehead and snout, broad-based and falcate dorsal fin near center of back.

Size: To 3.7 m

Occurrence: Common and widespread

<http://swfsc.nmfs.noaa.gov/PRD/>



Delphinus delphis

Common Dolphin

Identification: Fusiform and slender, sides marked with hourglass or crisscross pattern, well defined long beak with white tip, 1+ dark stripes from center of lower jaw to flipper, dorsal fin nearly triangular to falcate.

Size: To 2.6 m

Occurrence: Common offshore of the kelp beds



Eschrichtius robustus

Gray Whale

Identification: Mottled gray, short baleen plates, narrowly triangular head, paired blowholes, 2-5 deep lengthwise throat grooves, low hump 2/3 way down the back followed by serrated ridge, no ventral grooves.

Size: To 14 m

Occurrence: Common seasonally

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