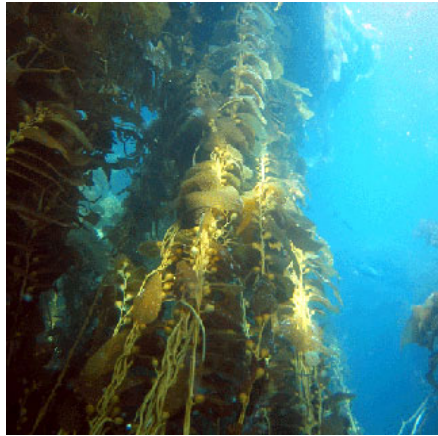
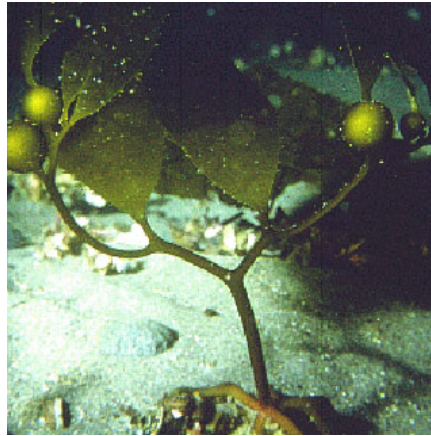


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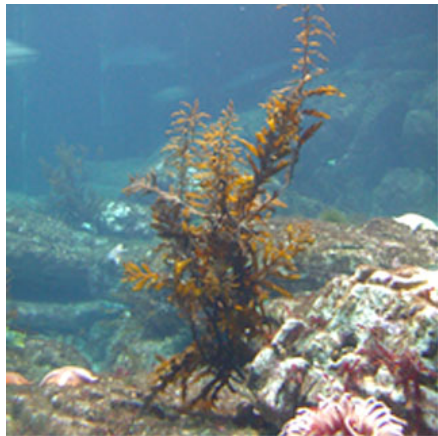
Giant Kelp Adult
Macrocystis pyrifera
brown alga attached by holdfast
size: up to 30 m (100 ft)



Giant Kelp Sub-Adult
Macrocystis pyrifera
visible split at base of blade
size: plants up to 1 m (3 ft)



Juvenile Kelp
various species of brown algae
no visible split in blade
size: up to ~10 cm (4 in)



Bladder Chain Algae
Cystoseira sp.
"chains" of pneumatocysts
in upper part, flattened blades
in lower part
size: up to 8 m (26 ft)

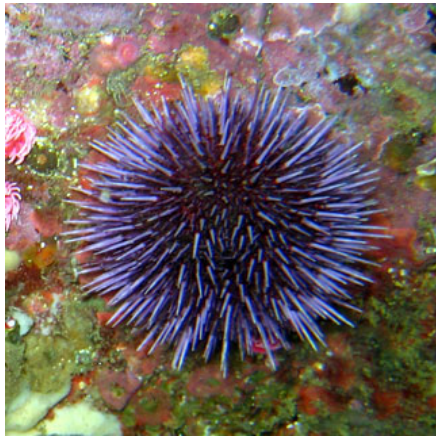


California Sea Palm
Pterygophora californica
woody unbranched stipe,
small branched holdfast
size: up to 2.3 meters (7.5 feet)

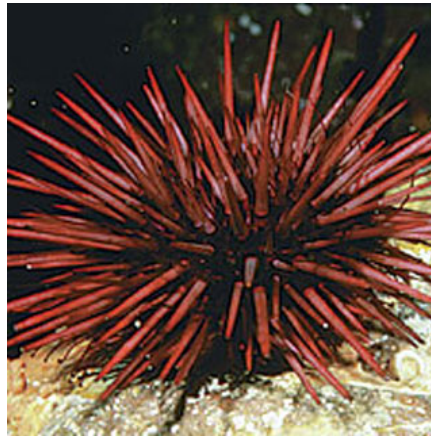


Turkish Towel
Girgartina exasperata
Girgartina corymbifera
broad dark purplish-red
blades covered with bumps
size: blades up to 1 m (3 ft)

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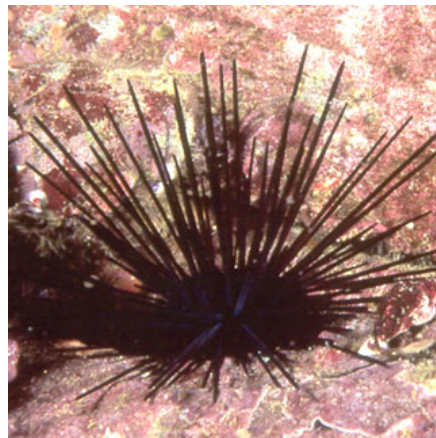
Purple Sea Urchin
Strongylocentrotus purpuratus
purple spines and test (shell),
juveniles may look greenish
size: up to 7 cm (3 in)



Red Sea Urchin
Strongylocentrotus franciscanus
red spines (dark maroon to light
reddish-pink)
size: test size up to 18 cm (7 in)



White Sea Urchin
Lytechinus anamesus
white spines, white with some
green/gray on test (shell)
size: test size up to 4 cm (1.5 in)



Black Crowned Sea Urchin
Centrostephanus coronatus
black ridged spines are three
times as long as the test (shell)
size: test size up to 6 cm (2.5 in),
spines up to 18 cm (7.5 in)



Bat Star
Asterina miniata
Webbed 5-arm shape, solid or
mottled colors (red, orange,
yellow, brown, green, purple)
size: up to 20 cm (8 in)



Giant Spined Star
Pisaster giganteus
5-arm shape, covered with
white spines with blue
bumps
size: up to 50 cm (20 in)

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Abalone
Haliotis sp.
holes on edge of shell, cryptic,
can be covered with algae
size: up to 30 cm (12 in)



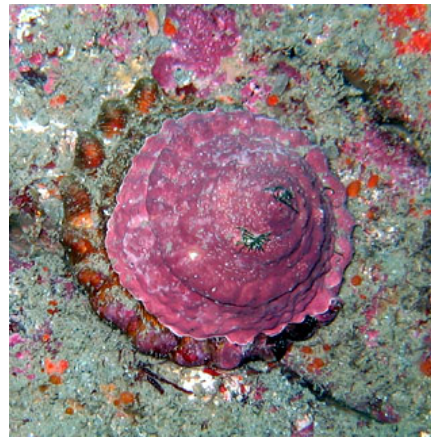
Kellet's Whelk
Kelletia kelletii
spiral whorls on robust shell, check
for hermit crabs in empty shells
size: up to 18 cm (7 in)



Blue-banded Goby
Lythrypnus dalli
Small fish with orange and blue
stripes
size: up to 7 cm (2.5 in)



Wavy Top Snail
Lithopoma undosum
spiral shell often covered with
algae, very cryptic
size: up to 13 cm (5 in)

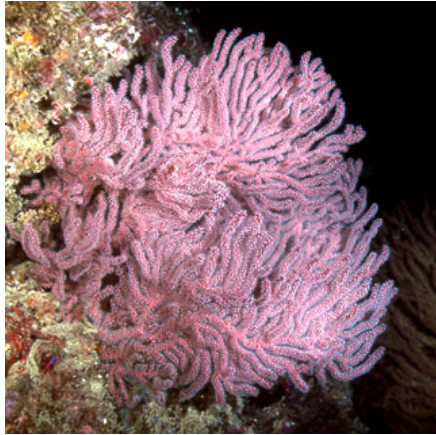


Wavy Top Snail
Lithopoma undosum
spiral shell often covered
with algae, very cryptic
size: up to 13 cm (5 in)



Warty Sea Cucumber
Parastichopus parvimensis
soft cylindrical orange-brown body
with pointy projections
size: up to 25 cm (10 in)

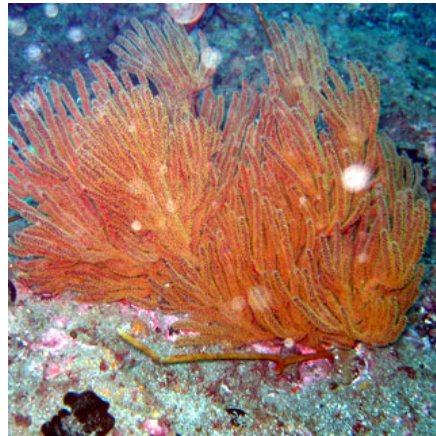
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Brown Gorgonian
Muricea Fruticosa
look closely for **white** polyps
on “sea fan” branches
size: up to 1 m (3 ft)



Brown Gorgonian
Muricea Fruticosa
look closely for **white** polyps
on “sea fan” branches
size: up to 1 m (3 ft)



Golden Gorgonian
Muricea californica
look closely for **yellow** polyps
on “sea fan” branches
size: up to 1 m (3 ft)



Golden Gorgonian
Muricea californica
look closely for **yellow** polyps
on “sea fan” branches
size: up to 1 m (3 ft)

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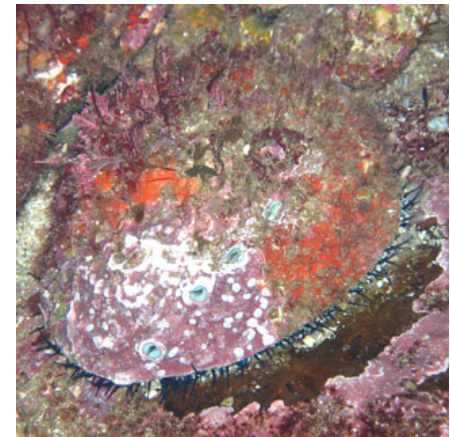
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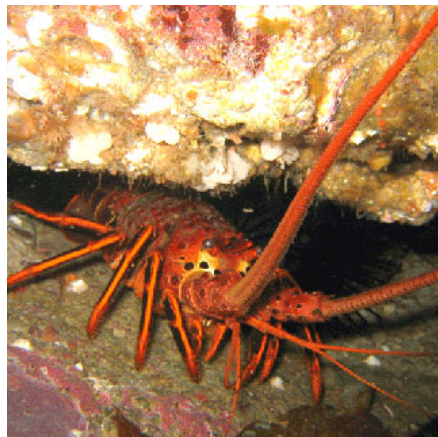
Rock Scallop
Crassedoma giganteum
look for slit with orange or gray body and small tentacles
size: up to 20 cm (8 in)



Sheep Crab
Loxorhynchus grandis
large, slow moving crab with long legs
size: carapace up to 15 cm (6 in),
leg span up to 45 cm (18 in)



Abalone
Haliotis sp.
holes on edge of shell, cryptic,
can be covered with algae
size: up to 30 cm (12 in)



California Spiny Lobster
Panulirus interruptus
look for long antennae sticking out
of crevices
size: up to 60 cm (2 ft)



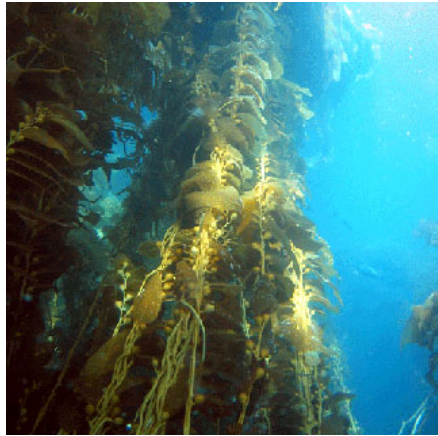
Giant Keyhole Limpet
Megthura crenulata
shell can be covered by soft body
(mantle), "keyhole" on top of shell
size: up to 13 cm (5 in)



Bat Star
Asterina miniata
Webbed 5-arm shape, solid or
mottled colors (red, orange,
yellow, brown, green, purple)
size: up to 20 cm (8 in)

**B
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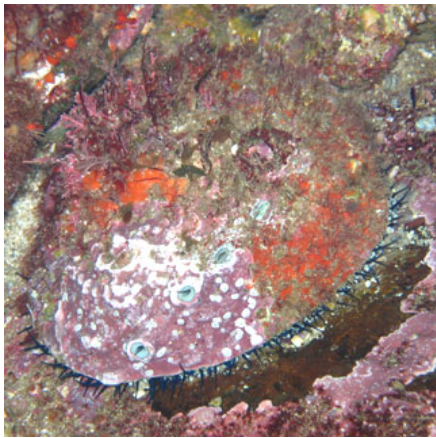
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I N V A S I V E S



Caulerpa taxifolia

Brilliant green flat, leafy (fern-like) fronds



Undaria pinnatifida

Brown alga with wide, brown to yellow-tan blades

- Mature plants have a divided blade with conspicuous midrib, holdfast, stipe (stem)
- Young plants have holdfast, stipe, undivided blade, and initially no midrib

size: Grows rapidly to 3-9 ft (1-3 m) long



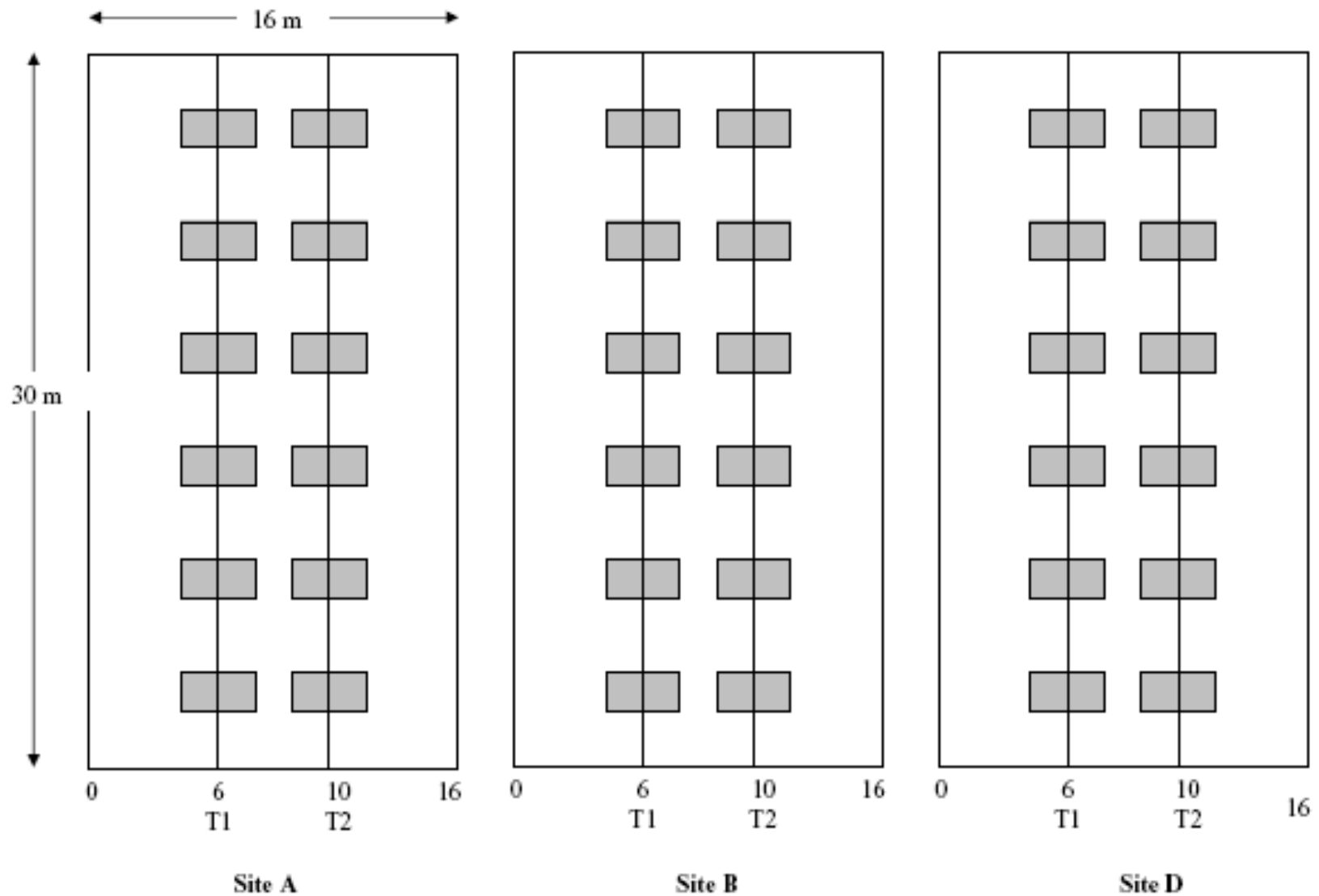
Sargassum muticum

Young plants have flat, symmetrical (fern-like) fronds with a notched tip. Older specimens are 1+ m tall and loosely branched, with small oval bladders and long, finger-like receptacles.

Look for the zigzag shape of the frond – it is unique to this species.

Quadrat sampling: Each site contains two 30-meter transects (T1 and T2). Six 1x2 meter quadrats are spaced 5 meters apart. Species are sampled in 1x1 meter quadrat on both sides of the transect lines.

Restoration Area with 3 Sites (A, B, D)



Band transect sampling: Each site contains two 30-meter transects (T1 and T2). Species are sampled in five 6x1 meter swaths on both sides of the transect lines.

