

Habitats in the South Coast Study Region

As they relate to MLPA goals and SAT
evaluation

DRAFT

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CA Marine Life Protection Act Goals

1. Protect natural diversity and ecosystem functions.
2. Sustain and restore marine life populations.
3. Improve recreational, educational, and study opportunities.
4. Protect representative and unique habitats.
5. Clear objectives, effective management, adequate enforcement, sound science.
6. Ensure that MPAs are designed and managed as a network.



CA Marine Life Protection Act Goals

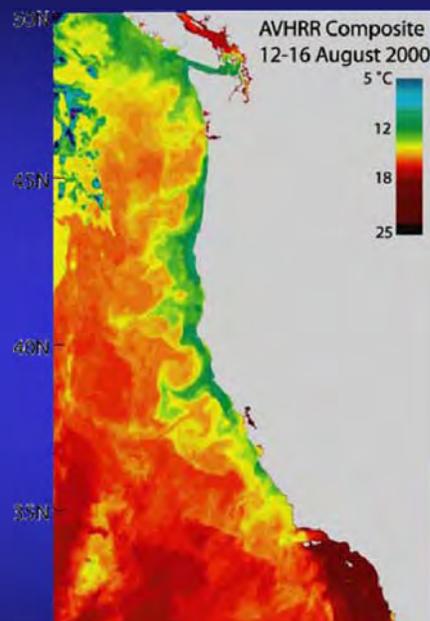
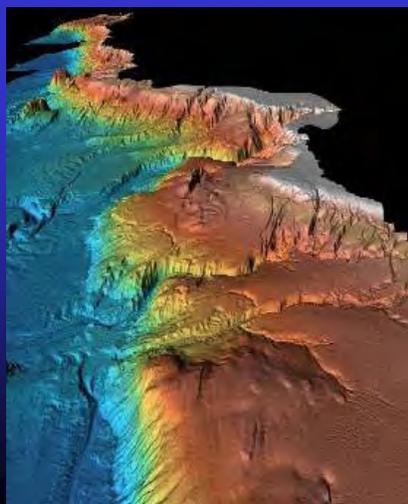
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Habitats and Ecosystems

Identify Key Habitats Using:

- Bottom Type and Depth
- Biogenic habitat
- Oceanographic features



Habitats and Ecosystems

Key Marine Habitats

Seafloor Habitats

- Rocky reefs
- Intertidal zones
- Sandy or soft ocean bottoms
- Underwater pinnacles
- Submarine canyons

Depth Zones

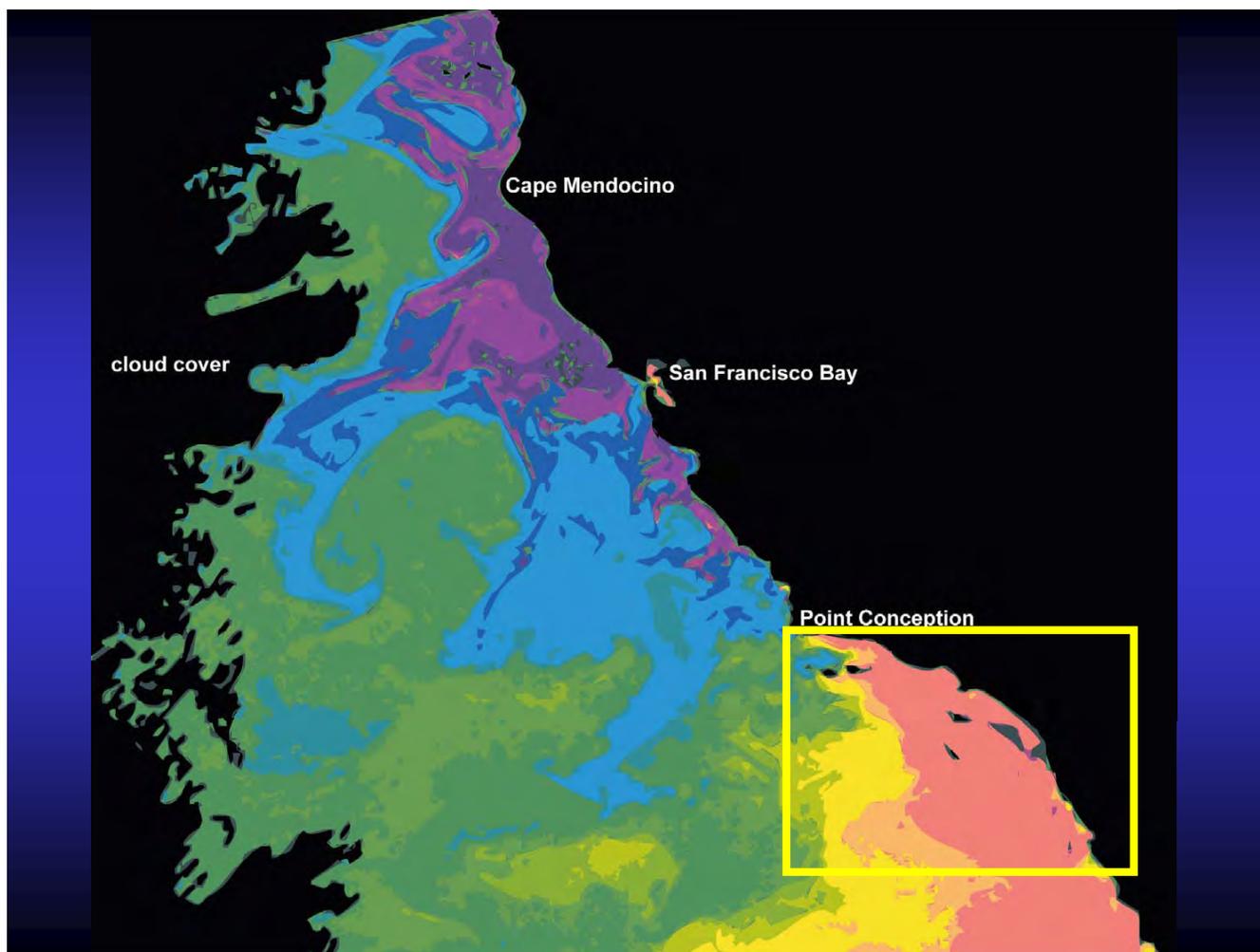
- Intertidal
- Intertidal to 30 m
- 30 to 100 m
- 100 to 200 m
- 200 m and deeper

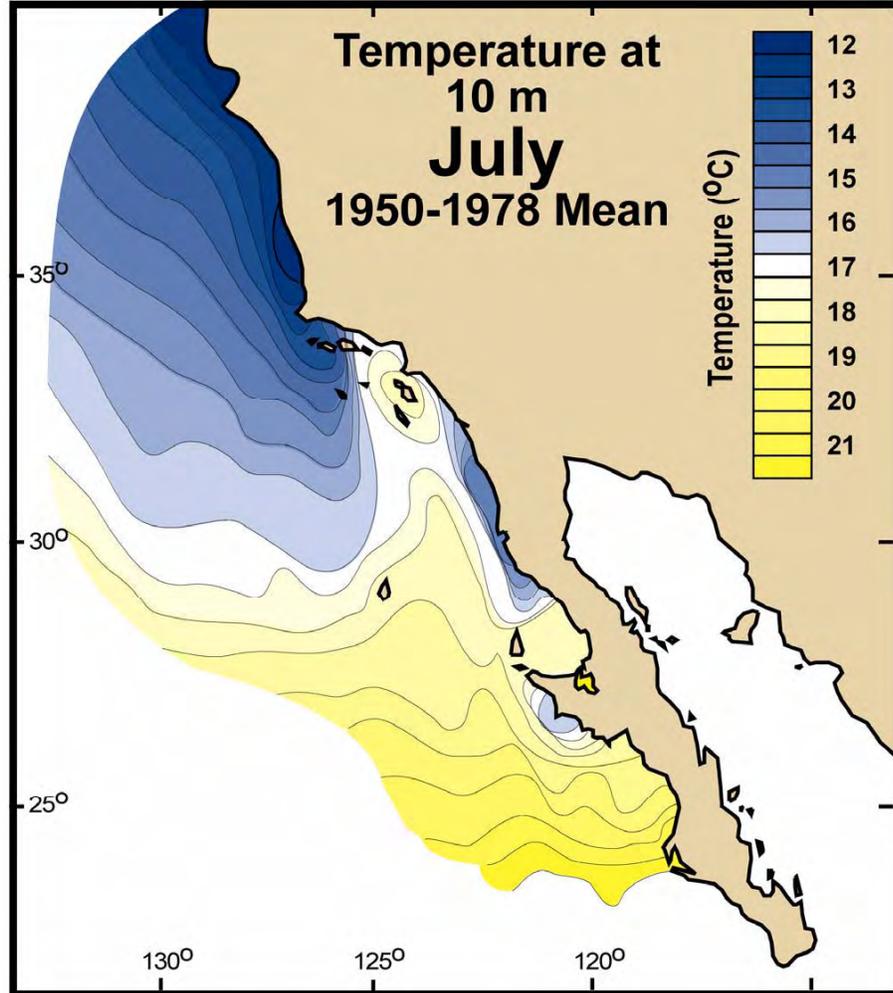
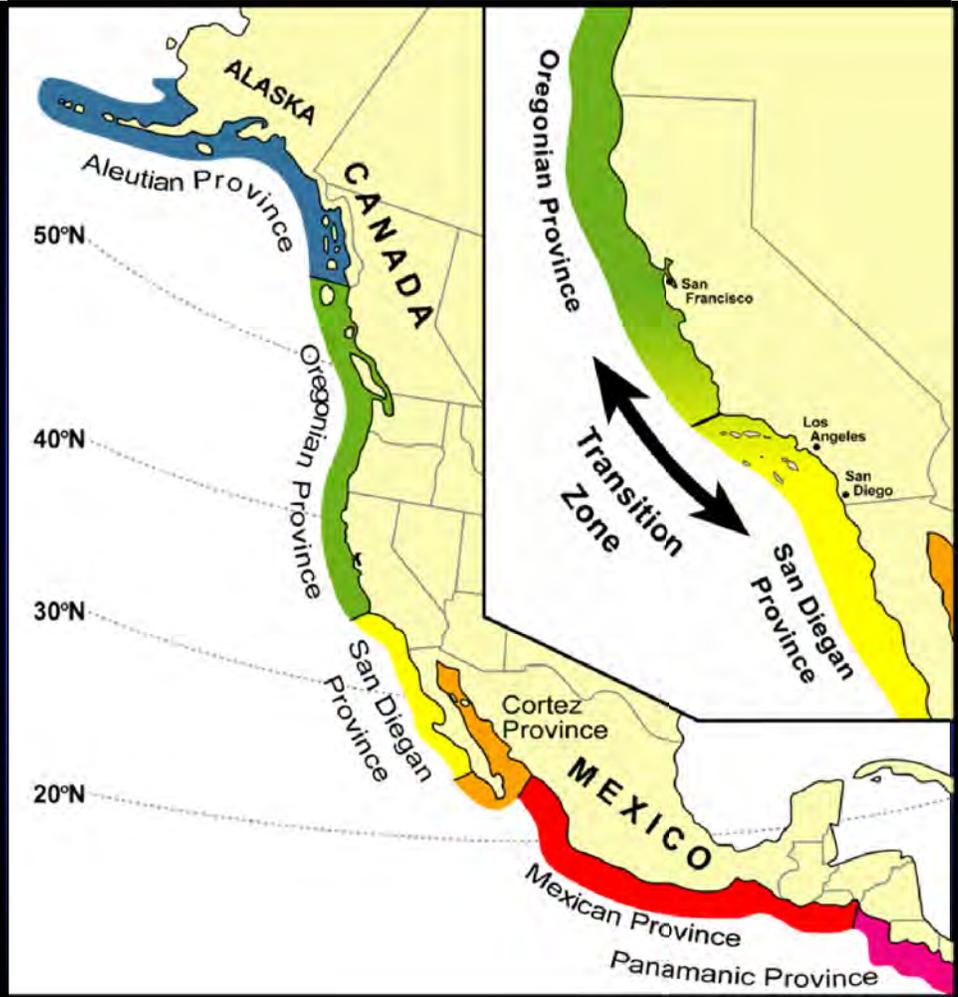
Biogenic Habitats

- Kelp forests
- Seagrass beds

Oceanographic Habitats

- Upwelling areas
- Freshwater plumes
- Retention zones





Study Region Setting

- 2,355 mi² of coastal waters, including offshore islands and rocks
- Depth range from mean high tide to nearly 4,000 ft, but predominately shallow (< 100 m)
- Complex oceanographic conditions- major upwelling center, gyre creates retention zone, and freshwater plumes at river mouths
- High productivity and biodiversity, and diverse habitat types
- Range from sandy beaches and rocky coasts to deep soft and hard bottom habitats.

Hard and Soft Habitats & Canyons

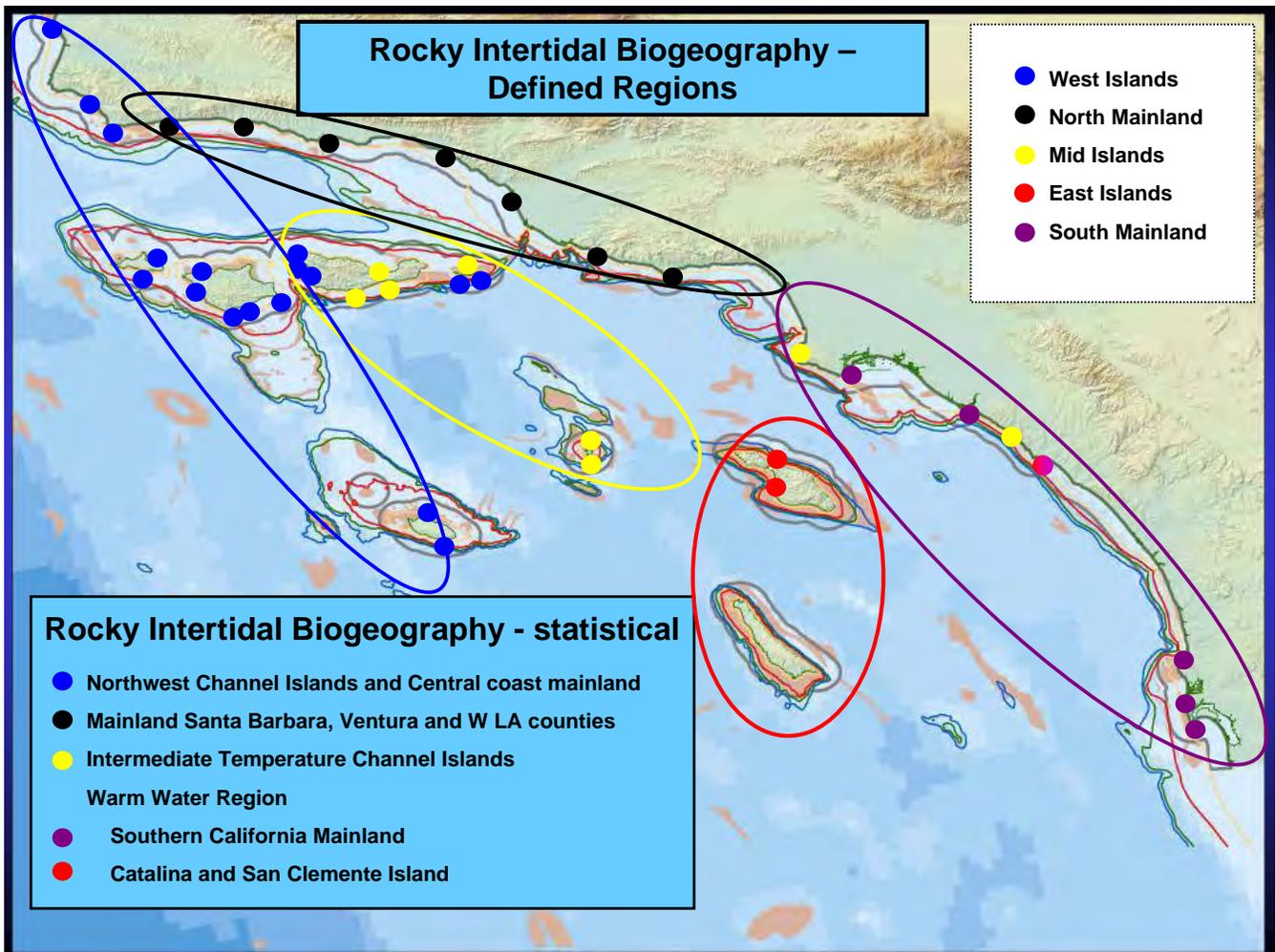
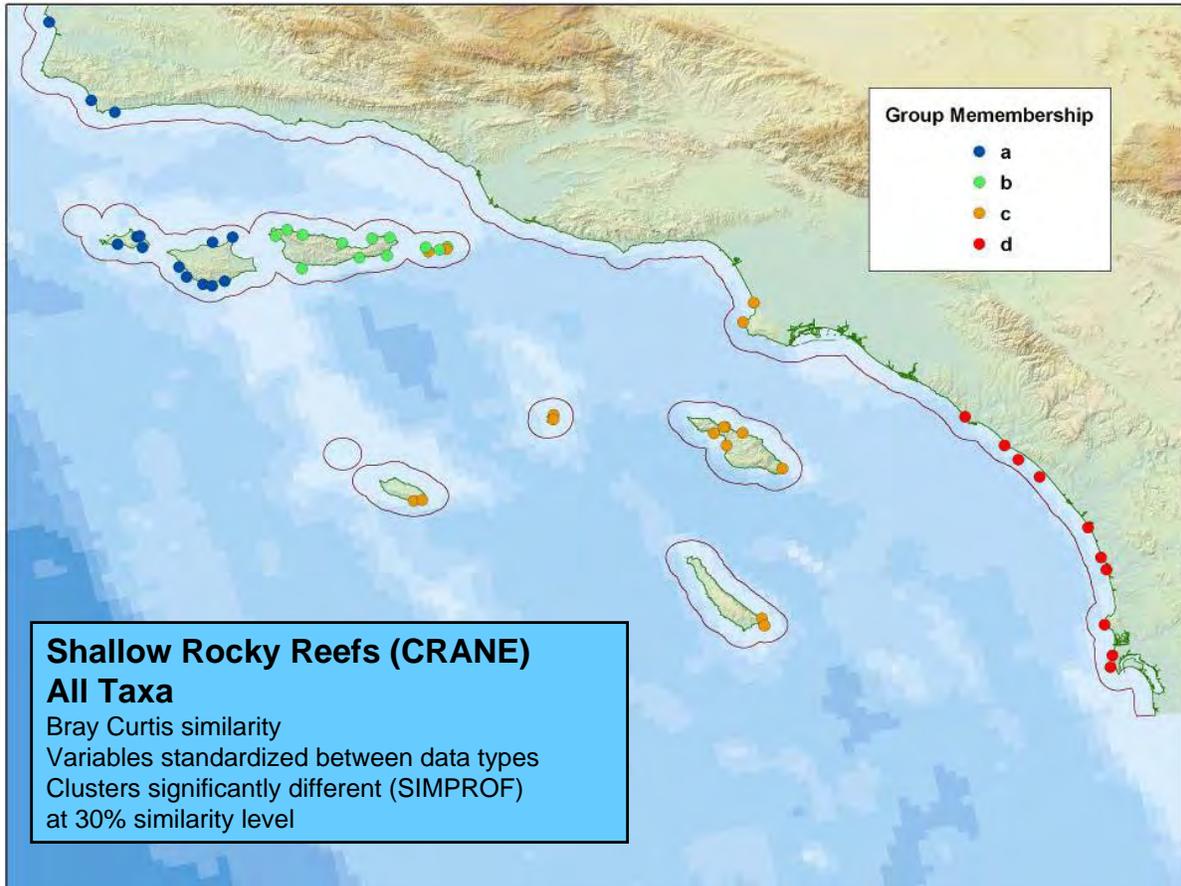
- Nearly 2,300 mi² of the study region
- Soft substrate dominates with almost 75% of study region
- Rocky substrate less common, but has higher diversity (kelp forests, deep coral and sponges)
- Several submerged canyons (e.g. Pt Mugu)
- Underwater pinnacles are found in the SCSR, particularly near the Channel Islands

Shoreline Habitats (Intertidal)

- Transition zone between terrestrial and marine
- Includes rocky shore, sandy beaches, coastal marshes, and tidal flats
- Sandy beaches dominant habitat with more than 35% of study region
- Rocky shores (cliffs, platforms, coves) make up approximately one quarter of study region
- Marshes and tidal flats are important habitats, but are less common

Estuaries and Nearshore Habitats

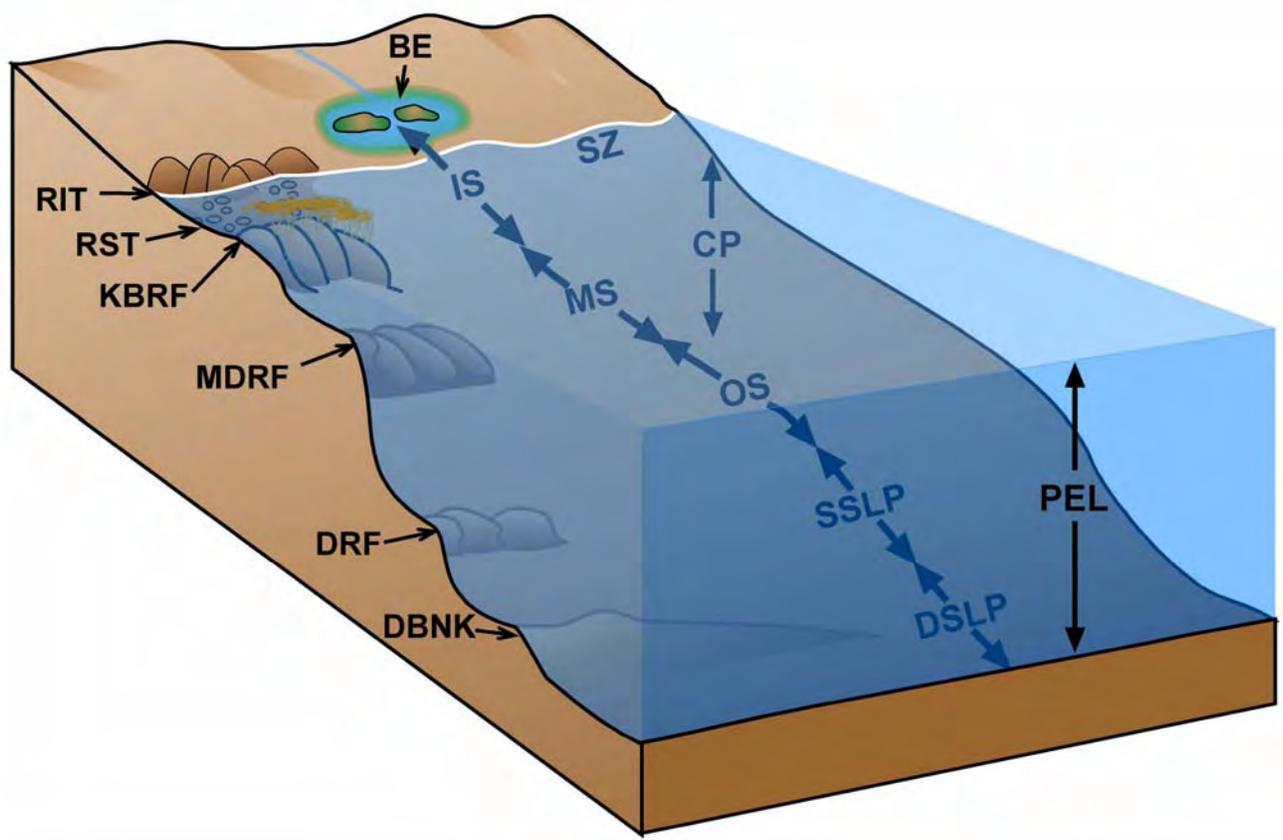
- Include estuaries, kelp, and seagrass
- Nearly 40 estuaries and lagoons- both open to the ocean or seasonally closed (more common)
- Kelp averages nearly 22 mi² or 0.9% and is dominated by giant kelp
- Seagrass is extremely productive
 - Surfgrass (*Phyllospadix sp*) found in open ocean makes up 7.1%
 - Eelgrass (*Zostera sp*) makes up <1% and is found in estuaries and sheltered coves



Are the Assemblages in These Proposed Geographic Regions Different? Intertidal and Shallow Subtidal Rocky Reef Communities

- West Islands
- North Mainland
- Mid Islands
- East Islands
- South Mainland

Proposed Bioregion Groupings
Both shallow rocky reef (CRANE) and intertidal data show significant differences (ANOSIM $P=0.01$) when grouped according to Proposed Bioregion guidelines



COMMON SPECIES CALIFORNIA KELP BED / ROCKY REEF

"NORTHERN"

- blue rockfish
- olive rockfish
- black rockfish
- kelp rockfish
- gopher rockfish
- striped perch
- black & yellow rockfish
- painted greenling
- kelp greenling
- lingcod

"SOUTHERN"

- blacksmith
- senorita
- halfmoon
- salema
- garibaldi
- kelp bass
- black perch
- California sheephead
- treefish
- ocean whitefish
- rock wrasse
- giant sea bass
- barred sand bass
- zebra perch
- opaleye

"BAJA"

- Panamic sergeant major
- scissortail damselfish
- chameleon wrasse
- bullseye puffer

"NORTHERN" KELP BED ROCKY REEFS

- olive rockfish
- silver surfperch
- white surfperch
- black surfperch
- copper rockfish
- blackeye goby
- lingcod
- blue rockfish
- pile surfperch
- china rockfish
- gopher rockfish
- rainbow surfperch
- striped surfperch
- painted greenling
- lavender sculpin
- senorita
- rubberlip surfperch
- kelp greenling
- wolf eel
- tubesnout
- kelp surfperch
- black rockfish
- black and yellow rockfish
- cabezon
- brown rockfish

blue rockfish



olive rockfish



kelp rockfish



rainbow seaperch



striped perch



cabezon



lingcod



gopher rockfish



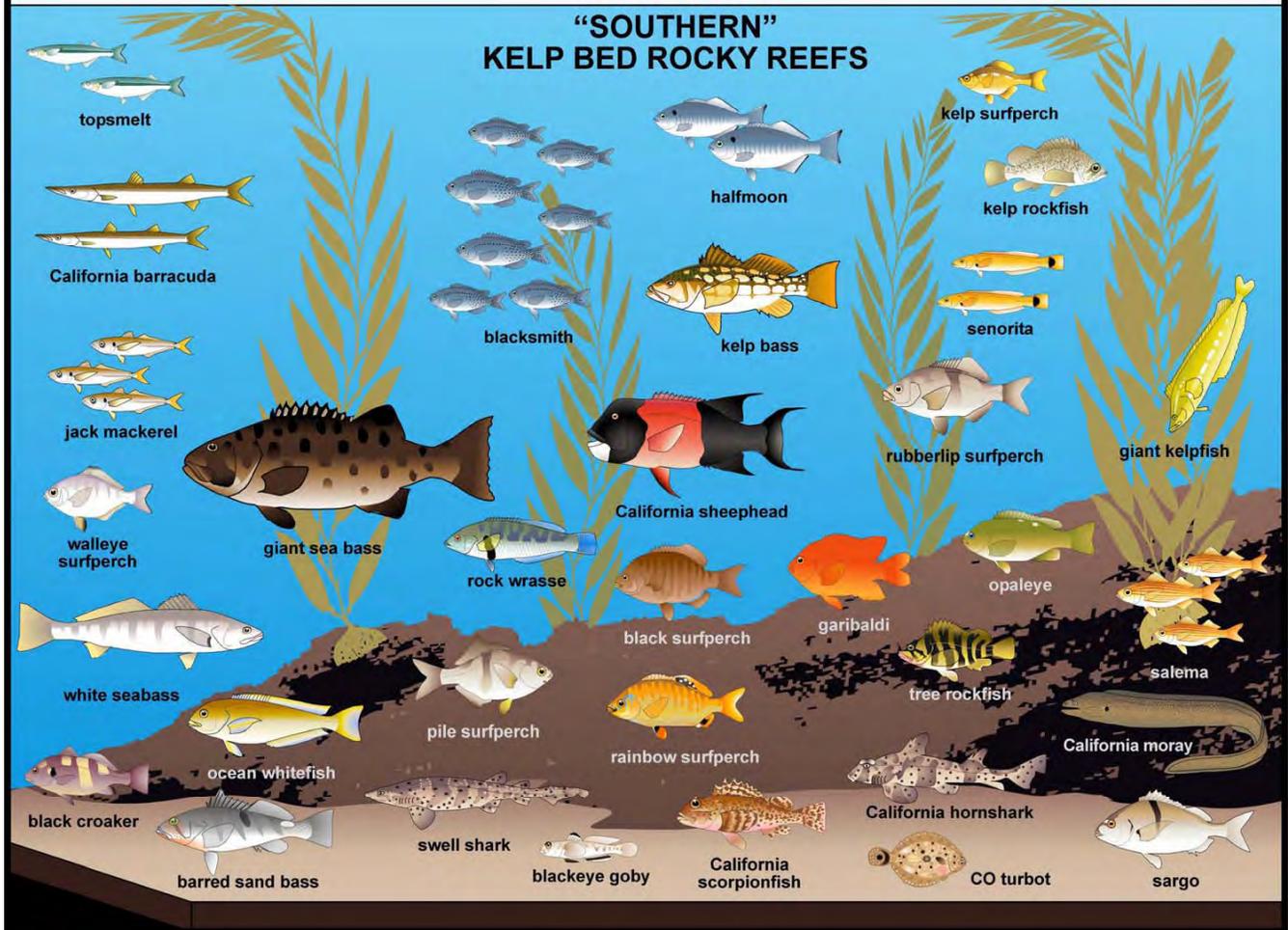
Rockfishes

Surfperches

Sculpins

Greenlings

"SOUTHERN" KELP BED ROCKY REEFS



kelp bass



blacksmith



halfmoon



senorita



black perch



kelp perch



rock wrasse



garibaldi



Spotted scorpionfish



opaleye



California sheephead



Giant (black) sea bass



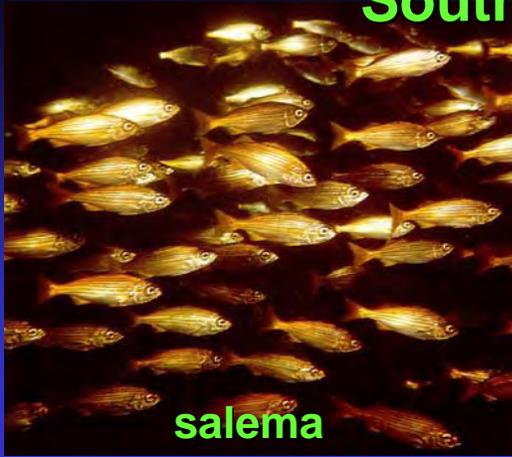
Sea basses

Wrasses

Damselfishes

Sea chubs

Southern elements



salema



grunts

sargo

black croaker

ocean whitefish



Commercial & recreational species

(that can be associated with reefs)



CA barracuda

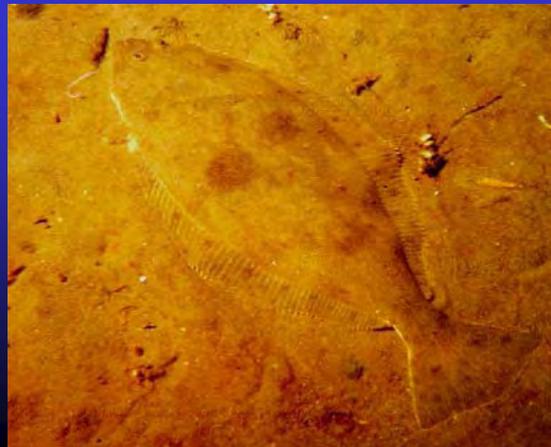
Pacific bonito



yellowtail

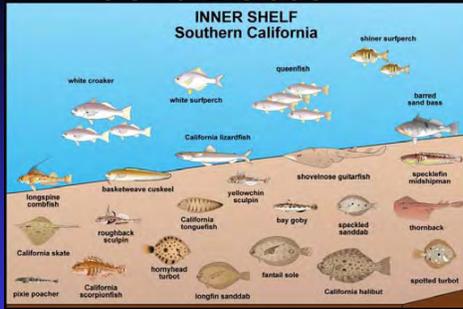
white seabass

California halibut

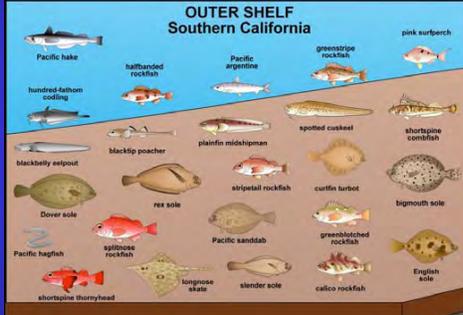


Soft Bottom

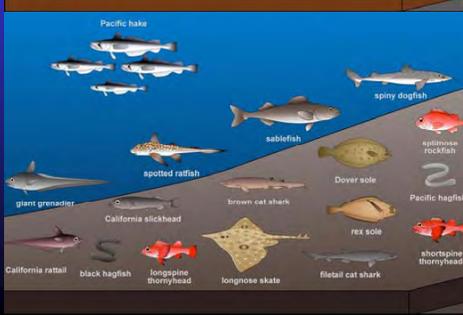
Rocky Bottom



0-30 m

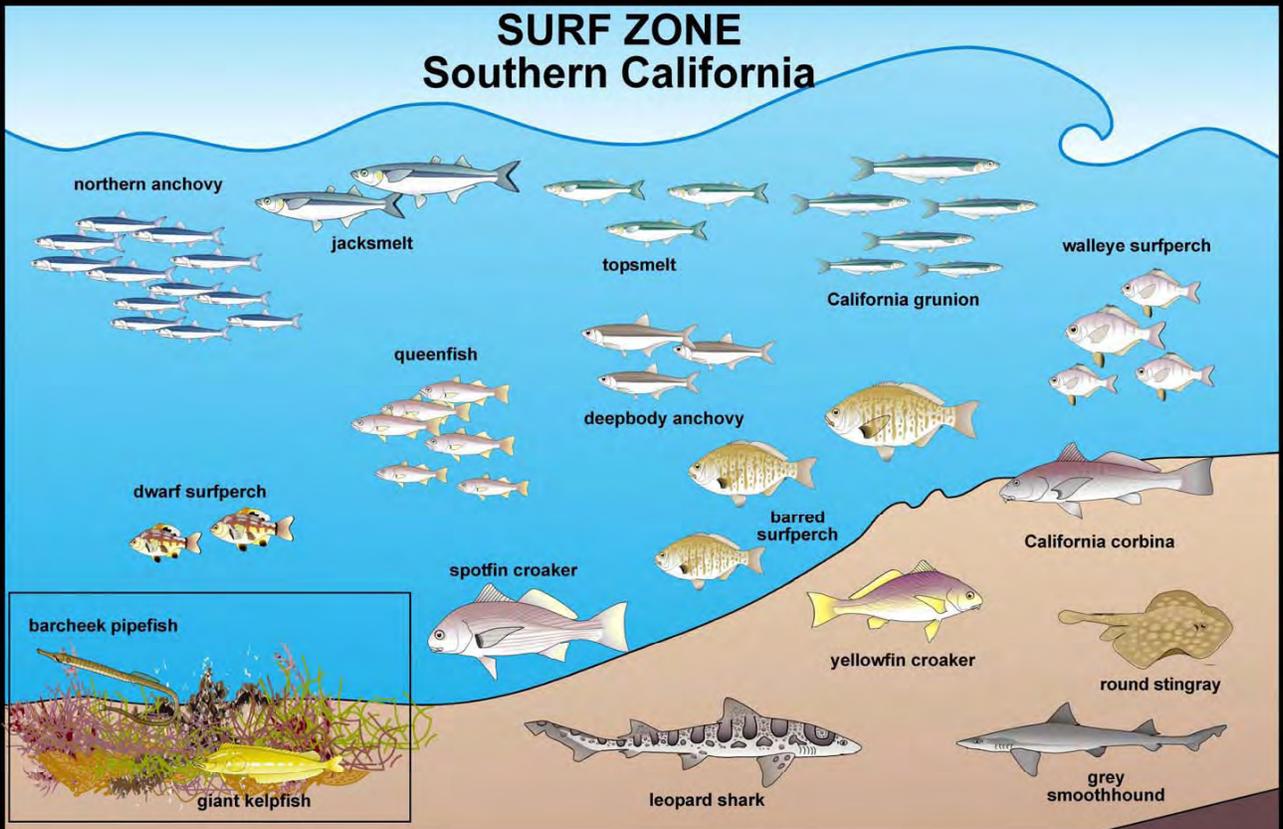
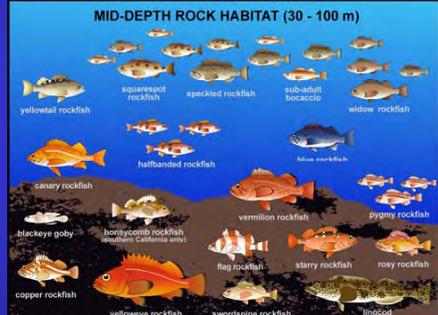
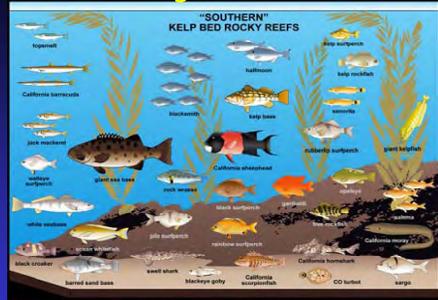


30-100 m

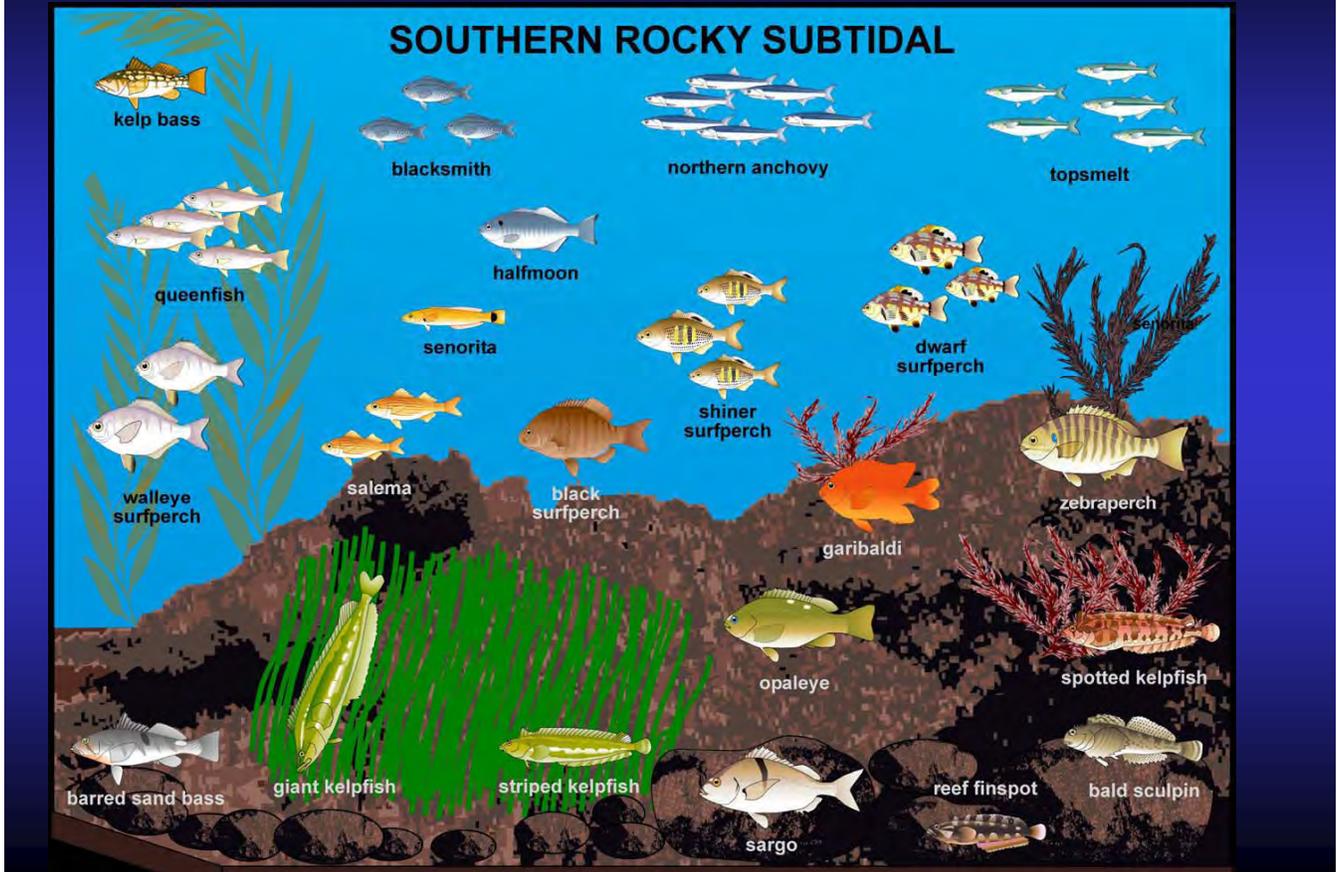


100-200 m

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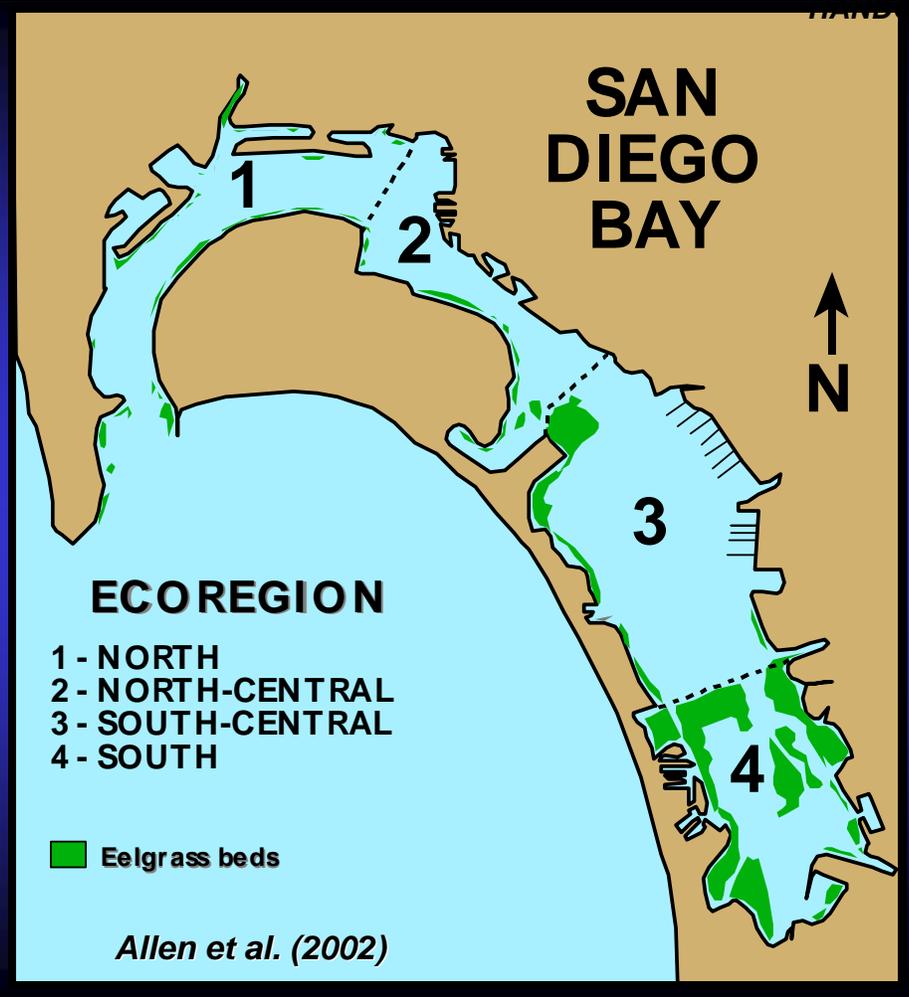
Surfgrass Habitat



SOUTHERN CALIFORNIA BAYS AND ESTUARIES

<p>CATADROMOUS</p> <p>striped mullet</p>	<p>FRESHWATER</p> <p>tidewater goby</p>	<p>CALIFORNIA</p> <p>Baja California</p>														
<p>ESTUARINE RESIDENTS</p> <table border="1"> <tr> <td> slough anchovy</td> <td> deepbody anchovy</td> <td> staghorn sculpin</td> <td> bay pipefish</td> </tr> <tr> <td> shadow goby</td> <td> arrow goby</td> <td> cheekspot goby</td> <td> barred pipefish</td> </tr> <tr> <td> spotted sand bass</td> <td> California killifish</td> <td> longjaw mudsucker</td> <td> bay blenny</td> </tr> </table>			slough anchovy	deepbody anchovy	staghorn sculpin	bay pipefish	shadow goby	arrow goby	cheekspot goby	barred pipefish	spotted sand bass	California killifish	longjaw mudsucker	bay blenny		
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Ecoregions and Distribution of Eelgrass



Eelgrass Habitat

