



National Marine Sanctuaries



America's Underwater Treasures

Scale varies in this perspective.
Adapted from National Geographic maps.



Habitat Characterization

1. What are the species you are looking for?
2. What are the habitats and what do they look like?
3. How do you estimate abundance?



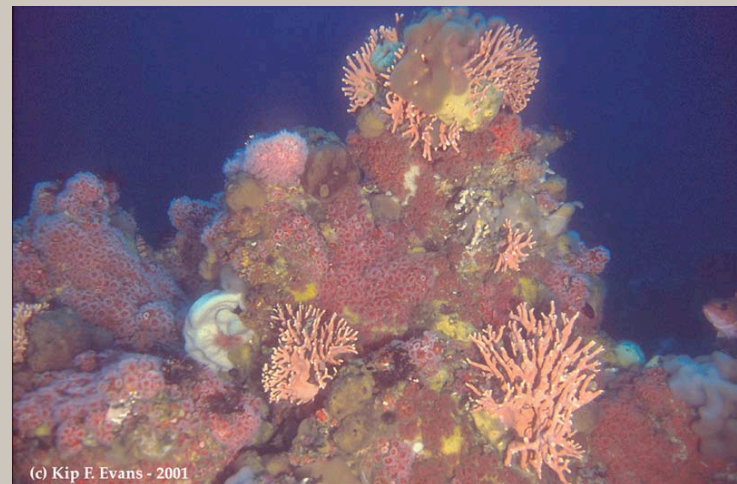
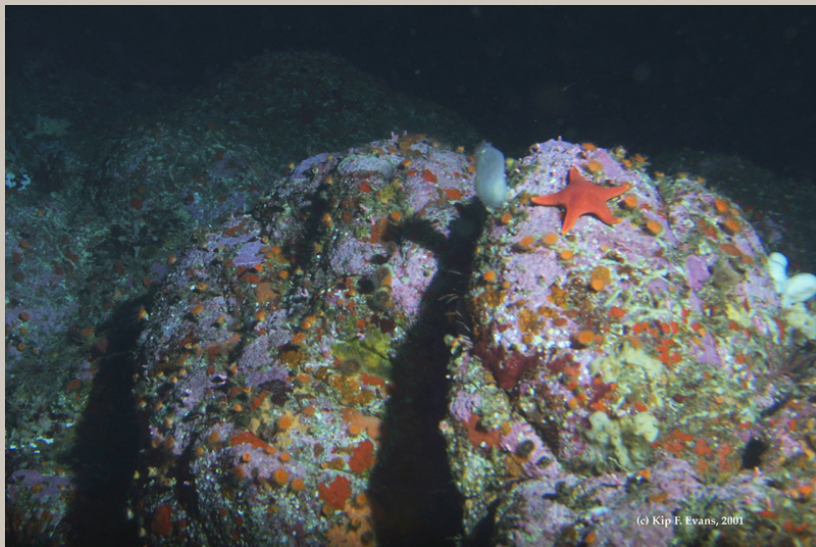


Habitats



Rocky Reef :

**Any area with rocky boulders,
granite, or pinnacles**

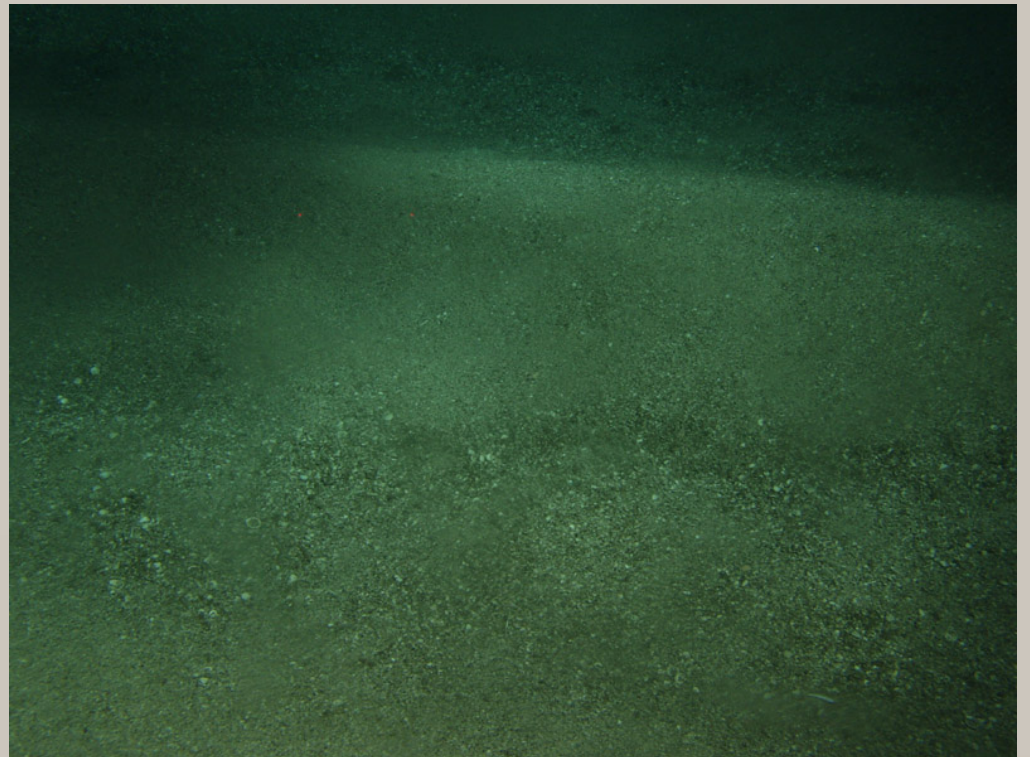




Habitats

Soft Bottom:

Any area that is lacking reef material, and consists of soft, sandy, or muddy substrate



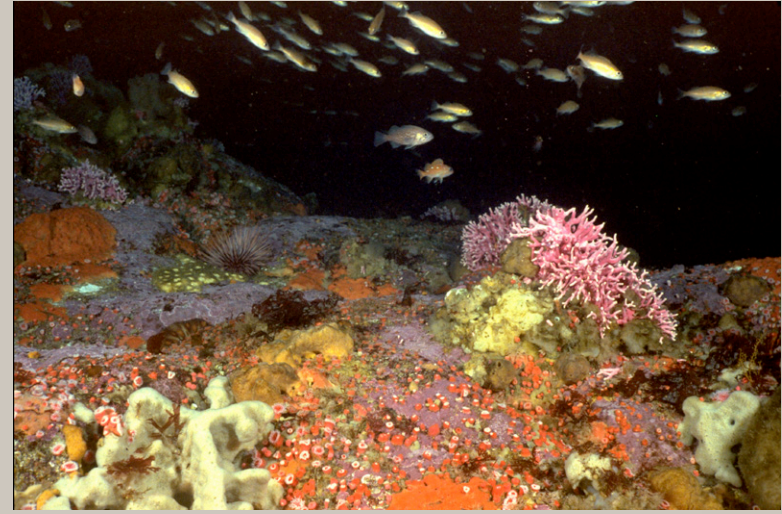


Species Identification



**Characteristics
to look for:**

- o **Body Shape**
- o **Color**
- o **Behavior**
- o **Habitat**





Invertebrates



Sea Cucumber (*Parastichopus californicus*)

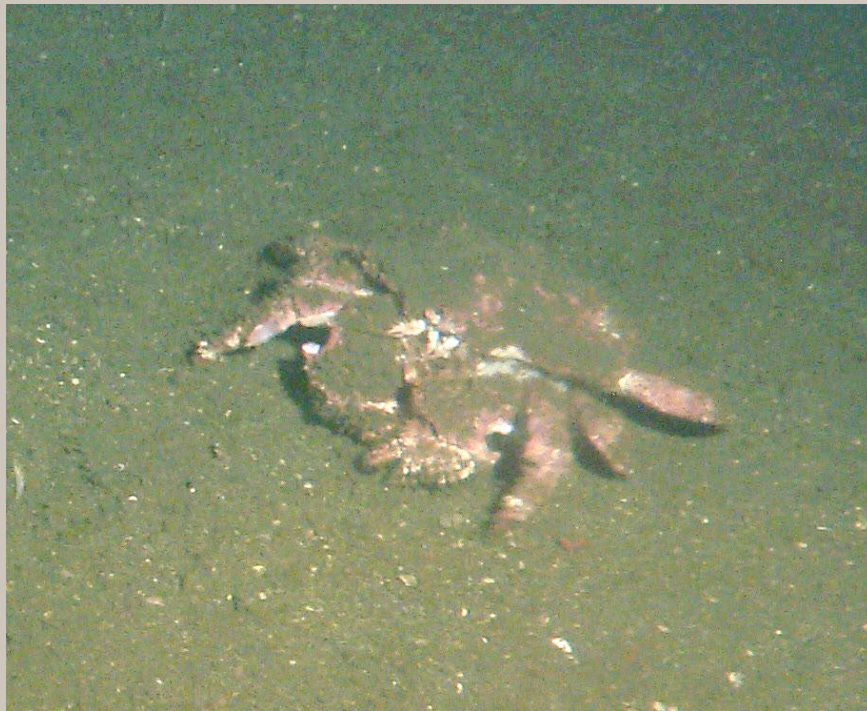




Invertebrates



Box Crab (*Lopholithodes foraminatus*)



- Slow moving
- Usually seen over soft bottom habitat



Fish



Rockfish (*Sebastes sp.*)

spiky dorsal spines



Big eyes

Big lips



Fish



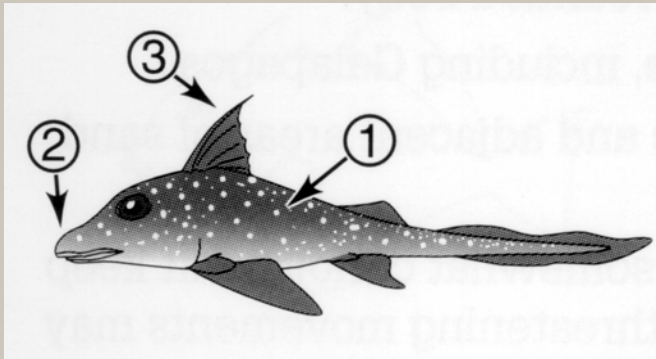
Juvenile rockfish



(c) Kip E. Evans, 2001



Fish



Ratfish (*Hydrolagus colliei*)

- “wing-like” fins
- watch for shadows on the bottom





How to rate the abundance

Single 1

Few 2-10

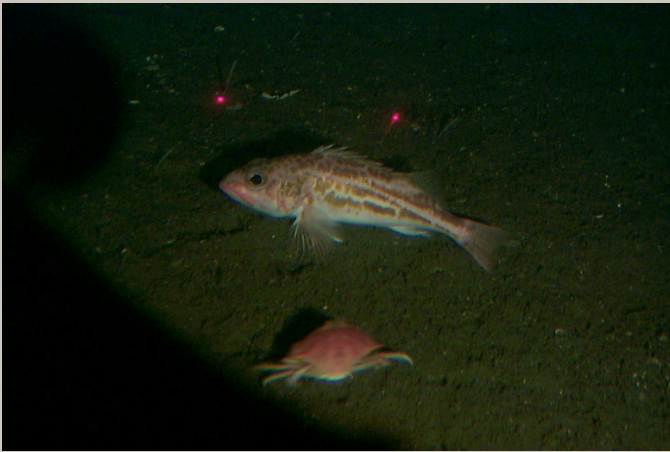
Many 10-500

Abundant 500 and more....



Abundance

Single 1



Many 10-100



Few 2-10



Abundant >500





Lasers= 20 cm apart





What is it?



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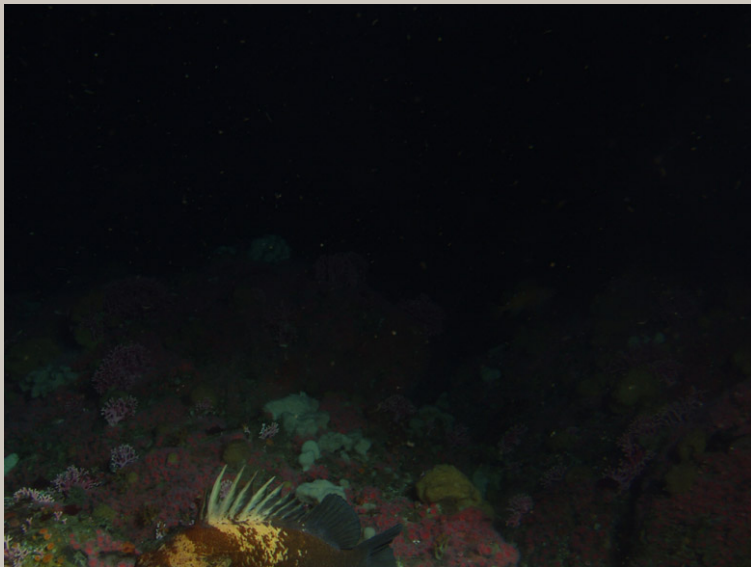


What is it?





What is it?





Characterizing habitat

- Gain information about the ecosystem and its inhabitants



Monitoring

- Tracking changes over time





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