

MARINEreview: Intertidal Ecology

Your most important resources are www.sciencrush.net and PowerSchools. Use them! I am available every day before school, after school, and during lunch for extra help. Let me know if there is anything I can add to this review to help you.

Marine Organisms of the Day

- 1. Northern Pipefish aka Common Pipefish (*Syngnathus fuscus*):** Pipefish are closely related to seahorses, but have a long slender shape. They are common in estuaries, where they blend in with aquatic grasses.
<https://www.youtube.com/watch?v=eo-a25phR8E> (2:00-3:40)
- 2. Freshwater Electric Eel (*Electrophorus electricus*):** Electric eels are more closely related to catfish than other eel species. It generates electricity in a way similar to a battery, where there are stacked plates that produce an electric potential difference. Their shocks are very unlikely to cause death in an adult human because the discharge time is so short.
<https://www.youtube.com/watch?v=a3sviTa8hZw> (2:13)
- 3. (Nigel) Brown Pelican (*Pelecanus occidentalis*):** These birds have been persecuted because people see them as competition for recreational and commercial fishing. Their populations have plummeted due to habitat destruction, environmental pollution, and disturbance of nesting sites.
<https://www.youtube.com/watch?v=YLN32hiMoFc> (1:55)
- 4. Sea Otter (*Enhydra lutris*):** Sea Otters, the largest of the weasel family, thrive in North Pacific coastal environments. They are considered a keystone species due to their importance to the kelp forest ecosystem, where they help to keep sea urchin populations in check.
<https://www.youtube.com/watch?v=o0OyhHeelyo> (3:09)
- 5. Bull Shark (*Carcharhinus leucas*):** While not being a freshwater shark (of which there are only three species), Bull Sharks are able to survive in marine, estuarine and freshwater environments. They frequent coastal regions and are one of the three species of shark responsible for the majority of human shark bites (the other two are the Tiger Shark and the Great White Shark).
<https://www.youtube.com/watch?v=jzZmJ536s0M> (2:57)
- 6. Southern Flounder (*Paralichthys lethostigma*):** One of the most common flounders in North Carolina waters is the Southern Flounder, which is a left-eye flounder. Flounders are identified as left-eye or right-eye depending on which eye migrates as the flounder metamorphosis's from larval to juvenile form.
<https://www.youtube.com/watch?v=TzXgWdmeUQA> (1:35)
- 7. Laughing Gull (*Leucophaeus atricilla*):** The Laughing Gull is a common gull in North Carolina that gets its name from its loud call which sounds like "ha...ha...ha". They can be found all over the coast, primarily along beaches and marshes but sometimes far inland.
http://video.nationalgeographic.com/video/seagulls_eating_snails (0:55)
- 8. Saltwater Crocodile (*Crocodylus porosus*):** The Saltwater Crocodile is the largest living reptile, reaching lengths of over 20 feet. They have the highest recorded bite strength of any animal at almost 3,700 pounds per square inch.
<https://www.youtube.com/watch?v=dcAYb-w5oVY> (1:48)
- 9. Giant Freshwater Stingray (*Himantura chaophraya*):** Stingrays aren't typically fatal to humans, but one of the most famous deaths was Steve Irwin, when a stingray pierced his thoracic cavity. The species that killed him is unknown, but suspected to be a Bull Ray. The largest stingray is the Giant Freshwater Stingray, which can grow to over six feet across.
<https://www.youtube.com/watch?v=rpD8HMhibeA> (3:58)
- 10. Algae Octopus (*Abdopus aculeatus*):** The algae octopus is found in intertidal environments of the south Pacific. They are one of the few octopus species that display bipedal locomotion.
<https://www.youtube.com/watch?v=23qzi88k3aM> (4:35)

Top 10 Terms for This Exam

Estuary Types	Stenohaline
Halophyte	Euryhaline
Barrier Island	Intertidal Zone
Wetlands	Long Shore Current
Beaches	NC Coast

The Gimme Questions for This Exam

1. Estuaries are sometimes referred to as “nutrient traps”. This is because
 - a. rivers bring leached nutrients from the terrestrial environment
 - b. the estuarine sediments absorb nutrients
 - c. the submerged aquatic vegetation and benthic infauna are a large reservoir of organic material
 - d. all of these answers

2. Although the salinity of the water column of an estuary may fluctuate significantly, the salinity of the interstitial water of the sediments may show less variability. This is because
 - a. the “salt wedge” protects the sediment from changes in salinity
 - b. the sediments trap salt that can be used to buffer the water column
 - c. there is a slow exchange of water between the water column and the sediments
 - d. the freshwater outflow stays near the surface because of its lower density

3. One of the most striking features of the rocky intertidal area is the pattern of zonation seen in the distribution of organisms. Which of the following features explains zonation?
 - a. the amplitude of the tidal cycle
 - b. the tolerance of individual species to submergence
 - c. the degree of exposure to wave action
 - d. a complex interaction of physical and biological factors

4. Sand and muddy shores are different points of a continuum that reflects the influence of
 - a. temperature
 - b. latitude
 - c. wave action
 - d. organic content

Finding Nemo Clips for This Exam

13 – Fish Impressions 22 – Sydney Harbor 24 – Pelicans