



Hardbottom Shoal Ecology Field Trip

The hardbottom shoal ecology field trip focuses on coral horizontal zonation. Snorkelers will see firsthand how the biotic and abiotic components change from a hardbottom site to a patch reef (and compare this to what they have seen at the bank reefs during the coral reef ecology program). As the hardbottom habitat provides refuge in a transitional zone where there are few places to hide, the diversity of fish and invertebrates on a single coral head is impressive. Organism sightings at the hardbottom site are often unique and include invertebrates such as basket stars, sea cucumbers and banded coral shrimp and fish such as lionfish, moray eels, tarpon and intermediate phase coral reef fish.

Grade Level: All

Timing: 3 hours

Concepts Covered:

- Harbottom habitat
- Reef zonation: hardbottom→patch reef→bank reef
- Diversity of the hardbottom shoal habitat in comparison to patch and bank reefs
- Effects of environmental conditions on overall diversity of a habitat
- Abiotic preferences of specific coral species
- Intermediate fish phase

Vocabulary: horizontal zonation, hardbottom, patch reef, bank reef, diversity, transitional zone, abiotic, biotic

Standards Addressed:

Next Generation Sunshine State Standards

SC.912.L.17.2: Explain the general distribution of life in aquatic systems as a function of chemistry, geography, light, depth, salinity, and temperature.

Ocean Literacy Principles

Principle 5. The ocean supports a great diversity of life and ecosystems

f. Ocean ecosystems are defined by environmental factors and the community of organisms living there. Ocean life is not evenly distributed through time or space due to differences in abiotic factors such as oxygen, salinity, temperature, pH, light, nutrients, pressure, substrate and circulation. A few



regions of the ocean support the most abundant life on Earth, while most of the ocean does not support much life.

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