

Rodriguez Key Field Trip with Diversity Indexing

Grade Level: High School or Above (**Must have participated in our Diversity Indexing Lab**)

Summary: The transitional ecotone habitats within the Florida Keys often harbor diverse communities. *Neogoniolithon strictum* (“Gonio”) is a branching crustose coralline algae that creates a microhabitat for a diverse array of invertebrates. Students will snorkel the unique Gonio ecotone habitat and participate in a lab on the boat to observe the invertebrate community that lives within the Gonio. Students will then use the tools and knowledge gained during Diversity Indexing Lab to compute the diversity index for the area.

Objectives:

After completion, students will be able to

- Identify *Neogoniolithon* algae and five species of invertebrates that live within *Neogoniolithon*
- Students will be able to use concepts taught during their stay to explain the difference of diversity indices computed in different habitats

Concepts Covered:

- The algal shoal habitat (food, shelter, substrate)
- Zonation of the various habitats within the Florida Keys waters
- Diversity in different zones and ecotones
- Importance of *Neogoniolithon* algae as a habitat
- Diversity index

Vocabulary: ecotone, zonation, calcareous, coralline algae, Simpson’s diversity index

Procedures: The field trip will begin at the dock with a brief discussion on ecotones, the specific shoal habitat the group will be snorkeling with an explanation of *Neogoniolithon* (“Gonio”) algae, and examples of some of the organisms they can expect to see while snorkeling. Students will board the boat and snorkel the shoal. During the snorkel, MarineLab staff will collect the coralline algae. Once on the boat, students will break apart the algae to discover an array of invertebrates. Invertebrates will be identified and discussed. Using the data they have collected and the knowledge learned during the Diversity Indexing Lab, students will compute Simpsons’ diversity index for the area and compare this number to index found for Largo Sound during their previous lab. Data will be discussed. Dependent on time and weather, students will be taken to a second snorkel site (North side of the island at the plane wreck or a patch reef.)



Standards Addressed:

Next Generation Sunshine State Standards

SC.6.L.15.1: Analyze and describe how and why organisms are classified according to shared characteristics with emphasis on the Linnaean system combined with the concept of Domains.

SC.912.L.17.6: Compare and contrast the relationships among organisms, including predation, parasitism, competition, commensalism, and mutualism.

Ocean Literacy Principles

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

d. Ocean biology provides many unique examples of life cycles, adaptations and important relationships among organisms (symbiosis, predator-prey dynamics, and energy transfer) that do not occur on land.

e. The ocean provides a vast living space with diverse and unique ecosystems from the surface through the water column and down to, and below, the seafloor. Most of the living space on Earth is in the ocean.



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A Marine Resources Development Foundation Program
PO Box 787 Key Largo, FL 33037
(800) 741-1139 Fax (305) 451-3909
www.marinelab.org
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