

INTRODUCTION TO
COASTAL MARINE ECOLOGY OF THE FLORIDA KEYS
A Marine Resources Development Foundation
Teacher Workshop

CONTACT HOURS: 40

GENERAL OBJECTIVE:

To increase science teachers' knowledge of subtropical/tropical coastal marine ecology through a course exploring the abiotic parameters which define each habitat (illustrated in the Florida Keys) and the community diversity of each habitat.

SPECIFIC OBJECTIVES:

Upon completion of this component, participants will:

1. Derive a definition for the term "ecology."
2. Identify and explain the climactic transition influencing the Keys' ecosystems.
3. Describe four edges or ecotones found in the Florida Keys and the mutual influences among these neighboring habitats.
4. Understand the concept of "abiotic factor" and
 - a. estimate realistic values for five marine aquatic parameters
 - b. define, explain the abiotic prerequisites for three different habitats
5. Understand the geography and geology of the Florida Keys.
6. Describe the life cycle of a marine organism and identify culturing techniques which are crucial to the successful completion of this cycle in an artificial environment.
7. Illustrate the concept of metamorphosis with five examples from the marine environment.
8. Identify six representative autotrophs and six representative heterotrophs characteristic of each of six different coastal communities.
9. Understand the concepts of diversity and abundance of population and predict their response to stress vs. stability.
10. Explain six benefits to the human population of the Keys that are contributed by healthy coastal habitats.
11. Participate in a plankton tow and identify phytoplankton, zooplankton, meroplankton and holoplankton with the aid of a dissecting microscope.
12. Differentiate and cite two examples each of meroplankton and holoplankton.

13. Demonstrate an understanding of limiting factors that affect populations in coastal habitats.
14. List characteristics which define each of the six major invertebrate phyla.
15. Understand the techniques used for evaluating water quality and demonstrate the operation of instruments for these measurements.
16. Explain, and rank order by effectiveness, characteristics utilized for the field identification of coral reef fishes.
17. Make a firsthand exploration of five different coastal habitats in the Florida Keys.
18. Explain the mutualistic relationship that allows corals to develop in an oligotrophic environment.
19. List five relationships between two organisms that are characteristic of the Florida Keys coastal environment.

DESCRIPTION/ACTIVITIES:

Participants will complete the following activities:

1. Participate in laboratory activities and biological field studies.
2. Review available journals and resource books.
3. Attend lecture/discussion sessions.

EVALUATION:

Participant grade will be determined based on score of a written final and participation in all scheduled workshop activities.