

Advanced Fish ID: Parrotfish Feeding Surveys

The fish identification program is a part of MarineLab's core curriculum. This advanced version gives students the opportunity to participate in data collection as part of a greater research study. As with our basic Fish ID program, students will learn the best field marks to use to identify a fish, behavioral characteristics of fish families, and how to identify fish species that we commonly see on Key Largo's reefs. For this particular program, students will also be taught the proper protocols for data collection for the study they will be participating in and the reasoning behind the study. The students are then taken out to a reef to put what they learned into practice! During the snorkel, each pair of students will spend 6 minutes recording parrotfish feeding data. All data is submitted to Dr. Deron Burkepile and entered into MarineLab's database.

Grade Level: 9th Grade and Above

Timing: Class is 1 hour, field trip is 3 hours (field trip can be shortened, if necessary)

Concepts Covered:

- Identification of fish by field marks
- Basic external anatomy of a fish
- Associating behaviors and habitats with body shapes
- Distinguishing shape and behavior of common fish families
- Identifying characteristics and adaptations of specific families and/or species
- Value of citizen science
- Specific parrotfish characteristics
- Underwater data collection
- Parrotfish feeding habits and effects on the health of the reef

Vocabulary: macroalgae, algal turf, crustose corraline algae, field mark, caudal fin, dorsal, ventral, operculum, lateral line, anal fin, square/lunate/forked caudal fins, carnivore/omnivore/herbivore, ambush predator, opportunistic feeder, hydrodynamic, territoriality, mimicry, sexual dimorphism

Resources: <https://labs.eemb.ucsb.edu/burkepile/deron/>, <http://www.fishid.com/>, <http://www.fishbase.org/search.php>

Standards Supported:

Next Generation Sunshine State Standards

SC.5.L.17.1: Compare and contrast adaptations displayed by animals and plants that enable them to survive in different environments such as life cycles variations, animal behaviors and physical characteristics.

SC.7.L.17.1: Explain and illustrate the roles of and relationships among producers, consumers, and decomposers in the process of energy transfer in a food web.

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

SC.912.L.17.8: Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.

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.