



# MarineLab

Marine Resources Development Foundation

*Marine Science education in the Florida Keys*

## MarineLab Land Based Field Program Options

*We have many exciting programs that do not entail a boat ride. We have found having land-based options is beneficial for a multitude of reasons including reducing program costs, giving groups more flexibility to include additional labs/classes/free time, providing some time off the seas, etc. Some of these land-based programs were deliberately created to be done from land. Others are adapted versions of programs that originally included a boat trip.*

### Seagrass/Mangrove Ecology

The Land Based Seagrass and Mangrove Ecology program combines two of MarineLab's core curricula and allows the staff to truly use the outdoors as a classroom. Students will review seagrass and algae species before snorkeling in a seagrass bed in Largo Sound. During the snorkel, a MarineLab instructor will be in the water to assist snorkelers, point out marine life, and collect seagrass and algae samples for students to see once back on land. Students will also learn about mangrove ecology during a discussion on a nature walk around the MarineLab campus. The instructor will make multiple stops to point out the three different species of mangroves, examples of mangrove adaptations, and unique habitats created by the mangroves. Students will then snorkel a mangrove habitat and get a hands on lesson with marine invertebrates collected by the instructor.

**Grade Level:** All

**Timing:** 3 hours

### Marine Debris

Marine debris is one of the most widespread pollution problems facing the world's oceans and waterways. This is a half day program that encompasses an interactive discussion, mangrove cleanup and data analysis. During the initial discussion, marine debris is defined and impacts and solutions to the issue are discussed. Students participate in a shoreline cleanup and return to MarineLab to collect and analyze data. All data will be submitted to Ocean First Institute and entered into MarineLab's in house database. Depending on timing of program and group preferences, we can make this a dry program or we can incorporate a snorkel where students collect debris from the water.

**Grade Level:** 7<sup>th</sup> grade and above

**Timing:** 3 hours (flexible)

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## Algae Investigation

Macroalgae as a microhabitat is introduced before students are asked to snorkel and record some observations about the macroalgae and its community that they find fascinating or cause them to wonder. They use these wonders to design testable questions and conduct short investigations. They will work with their buddy to make sense of their results before sharing and reflecting on potential investigation improvements with the boat group. **All students must have already participated in our seagrass and mangrove ecology core programs.**

**Grade Level:** 5<sup>th</sup> – 12<sup>th</sup> (slight variations depending on grade level)

**Timing:** 2 hours (3 hours if boat based)

## Scientist Snorkel

While students are at MarineLab we want them thinking like scientists, whether it is during a discussion, lab, or snorkel excursion. During the scientist snorkel, students take their snorkeling to the next level as they are asked to scientifically observe and wonder while in the water. The snorkel sites for this program are from shore. Water quality will briefly be discussed before the snorkel. Once in the water, instructors will collect life (that can safely and legally be handled) that piques the students interests (e.g. algae, invertebrates, etc.) during the snorkel. Students will then observe these items back on campus using microscopes, etc. to better understand these organisms and give them an opportunity to ask questions about what they are seeing and make sense of their observations.

**Grade Level:** Adaptable for all grade levels

**Timing:** 3 hours (flexible timing)

## Florida Bay Survey

The Florida Bay survey program is a citizen science based program that builds on the snorkeling expertise gained during the seagrass/mangrove ecology core programs. Students will collect water quality data and work in buddy pairs to conduct underwater surveys. Students will record the abundance of seagrass, macroalgae and Florida Bay animals they learned to identify during the seagrass/mangrove ecology programs. Data will be discussed and all data is entered into MarineLab's long term database. **All students must have already participated in our seagrass and mangrove ecology core programs.**

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**Grade Level:** All

**Timing:** 2 hours on land; 2-3 hours if on boat