

“Field notes”

Careful observation of the natural world is fundamental to science. Observations lead us to research questions, which can then be tested through field or laboratory experiments. However, in today’s world of readily accessible digital information and hand-held electronic devices, students are spending less time in nature. As a field biologist, I strongly believe that students learn the most about the natural world by experiencing it firsthand (*i.e.* place-based learning).

Describing the biology of place, whether tracking movements of trout in the Boise foothills or observing the behavior of roseate spoonbills on a Florida mangrove islet, requires a specific tool set. Nearly all biologists would agree that paper and pencil remain paramount. Once students have these most basic of tools, they must be taught the skills to observe and describe nature—including how to maintain a comprehensive and organized record of their observations, thoughts and reflections (*i.e.*, the field journal).

This past winter, I (and my colleague in Biology, Dr. Anna Himler) traveled with 14 students to the Sunshine State where our primary goal was to observe and describe the biotic (living) and abiotic (non-living) components of Florida’s coastal ecosystems. By understanding the parts of each ecosystem, we hoped to learn more about each ecosystem’s function and its response to human-caused stressors. During this 13-day field course, we immersed ourselves in the biology of place. The field journal was our observational account. It served as an important conduit for asking questions, sharing ideas, and even venting frustrations. Finally, the journal will always be part of the historical record, one that students can revisit at any time and easily share with others.

I hope the following excerpts from my field journal will provide you a glimpse of our Florida adventures.

Coastal Marine Ecology Winter 2018- Location Itinerary

January 15: Kings Bay near Crystal River

January 16-19: Seahorse Key Marine Laboratory, Cedar Key National Wildlife Refuge

January 20: University of Florida’s Randell Research Center (Calusa Indian Historical Site)

January 21: Ding Darling National Wildlife Refuge on Sanibel Island

January 22: Corkscrew Swamp Sanctuary and Big Cypress National Preserve

January 23: Everglades National Park

January 24: Looe Key National Marine Sanctuary

January 25: Mote Marine Laboratory and Sea Turtle Hospital

January 26: John James Audubon House, Ernest Hemingway House, historic Key West

January 15: Kings Bay near Crystal River (28°53'4.86"N 82°35'55.98"W)

...Kings Bay is a shallow estuary that receives freshwater from a number of beautiful gin-colored springs. When water temperatures in the Gulf of Mexico drop during Florida's "winter months", large numbers of manatees migrate to Kings Bay to seek refuge from the cold and relax in the near constant 70 degree water....Later that day, we chartered a small boat and donned on wetsuits and snorkeling gear to observe these animals in their natural habitat. After some time, we encountered a 6-ft long 800 lb. resting female manatee. As students gathered in a semi-circle around her, she remained motionless, other than regular ascents to breathe. Her body was covered with small tufts of algae-the result of spending time in clear, shallow water....We had recently read several scientific articles about the behavior and conservation of manatees and so observing these animals in the wild was an amazing experience....Later that evening, a group dinner at a local Thai restaurant followed by food shopping in preparation for our 4 night stay at the University of Florida Marine Laboratory on Seahorse Key.

January 21: Ding Darling National Wildlife Refuge on Sanibel Island (26°27'23.42"N 82° 4'31.81"W)

...Named after cartoonist and wildlife advocate Jay N. Darling, Ding Darling National Wildlife Refuge is home to over 250 species of birds including one of my favorites, the yellow crowned night heron. With their beady eyes, dagger-like beaks and long wispy feathers on their heads, these birds were affectionately called "grumpy old men" by some of the students. The "grumpy old man" was one of many bird species we observed during our 4-hour kayak paddle through the mangrove forests and bays within the refuge....Near the end of our kayak (just before sunset) we came across several small mangrove islands each containing hundreds of herons, pelicans, and egrets. The sounds, sights, and smells of hundreds of birds on one small island was unforgettable. Visiting these bird colonies reminded students of the value in setting aside protected places for wildlife....Thank you Teddy Roosevelt (established the National Wildlife Refuge System) for all your efforts to conserve wildlife and their habitats for future generations!....In the early evening, with arms sore from the long paddle, we headed back to our rental vans and began the drive back to Florida Gulf Coast University's field research station. But first, a quick stop for a group dinner. Note to self (always have ample snacks and strong coffee available when taking students in the field)!

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