

## **Adam Rosenblatt, Winter Term 2006: Dolphin Behavior**

For my Winter Term 2006 project I studied the behavior of the Hector's dolphin in Akaroa, New Zealand. The Hector's dolphin is the smallest (1.2-1.4 meters) and rarest (only approximately 7000 individuals in existence) marine species of dolphin on the planet. Akaroa, where I was working, is situated in a harbor on Banks Peninsula near Christchurch, where the largest single population of Hector's dolphins resides (about 1200 individuals). I was working with Emmanuelle Martinez, a graduate student at Massey University in New Zealand, whose Ph.D. research is specifically concerned with the dolphins' ecology and safety in regards to the growing pressures of eco-tourism in New Zealand.

In the past decade, many tour-boat businesses have opened in Akaroa with the goal of bringing tourists closer to the dolphins, allowing them to watch dolphins from the boat and even swim with them. Martinez's research aims to study the dolphins' behavior when in the presence of boats and swimmers, to see how they are affected by such interactions, and ultimately to advise the New Zealand Department of Conservation on how best to protect the dolphins and their small population size. My personal goals for this project were to learn about these dolphins (which I had never studied before); to gain valuable marine biology research experience so I can better pursue my interests in academia in the future; and to contribute to this valuable research project, which is trying to protect an endangered species.

We studied the dolphins in two different ways. First, Martinez has set up five land-based observation stations around the harbor so that she can study the entire area. Each month her goal is to spend 12 hours at each station and she does this by splitting up

the day into mornings (6 am – 12 pm) and afternoons (12 pm – 6 pm). This is easier said than done because the New Zealand weather and wind patterns are notoriously variable such that the temperature can swing from 30 degrees Celsius to 17 degrees Celsius in 20 minutes. Also, strong winds would prevent us from being able to do land-based observations because the wind creates whitecaps on the sea and makes it extremely difficult to see the dolphins, who are very small and make whitecaps themselves when they surface.

On ideal days, though, we would go out to the cliffs at either 6 am or 12 pm, depending on what we needed, and stay there for 6 hours at a time if possible. Two people would scan the sea with binoculars and a high-powered telescope looking for dolphins, Martinez would be on the theodolite (surveyor's instrument) which gives exact latitude and longitude coordinates to the observer, and one person would be on the computer, which was connected to the theodolite and could record in real time the coordinates the theodolite was fixed on. Whenever the two people who were scanning the sea saw a pod of dolphins (generally 2 to 5 individuals, but sometimes 20 or more), they would tell Martinez, who would then try to get the pod in the sights of her theodolite so that the person on the computer could get a fix on the dolphins' exact position. We would then track that pod for as long as possible. If any boats or swimmers tried to interact with the pod we would track them as well while noting any behavioral changes in the dolphins every minute.

The second way we studied the dolphins was from the tour boats themselves. One person from the research team would go out on each boat that left the wharf to either watch or swim with the dolphins and we would record what the boats did and what the

dolphins did when in their presence. This could get rather complicated when there were 10 swimmers in the water and a pod of 8 or 9 dolphins interacting with them because the Hector's dolphin is a very curious species and would regularly approach the swimmers and come within one meter of them. Recording everything that was going on was rather difficult at times.

I learned a great deal from this experience about how to conduct a successful research project and all of the coordination and organization that is involved. Overall it was an extremely satisfying and edifying winter term. This project further cemented my interest in marine biology and my belief that it is a very important field in terms of conservation and continuous research. My goal remains to go to graduate school and get a Ph.D. in marine biology, and eventually become a researcher myself.