Sea Otter Researcher

Tim Tinker, Ph.D.
Research Wildlife Biologist, U.S. Geological Survey
Adjunct Professor, University of California, Santa Cruz

What do you do?
I conduct field-based research on sea otters in California and Alaska. This research includes conducting population surveys, capturing and radio-tagging wild sea otters and then monitoring these individual animals (both visually and remotely using radio telemetry) to collect data on their movements, survival and reproduction, diet and behavior. I then combine my data with information collected by other scientists on a range of related subjects (such as contaminants, genetics, disease pathology and oceanography) and analyze it in order to better understand the relationships between sea otters and their environment. Finally, I summarize the results in research papers and presentations.

What education and skills do you need?
I have a Bachelor degree in zoology, a Masters degree in biology (for which I studied grey seals in Canada) and a PhD in ecology and evolution.

My work requires a solid foundation in math and science: from general biology to biochemistry to marine community ecology to population genetics. Much of the analytical research I do on population dynamics (e.g. predicting how fast sea otter populations will recover in particular areas) requires math-based skills, including matrix algebra and calculus.

Concise, clear writing skills are also very important for the effective presentation of research to other scientists, and public speaking skills are needed to pass on our findings to the general public.

What personal skills are needed for your job?
On the other hand, while conducting field research in remote locations (such as the Aleutian Islands in Alaska) the most valuable skills are often less academic and more practical: boat handling, wilderness survival, physical endurance and tolerance of unpleasant conditions (WET AND WINDY) and, perhaps most importantly, the patience to be a good naturalist and observer of nature.

What do you enjoy the most about your job?
The best part of my job is probably the opportunity to work with fascinating animals in beautiful and often remote locations, and to do this in the company of some really fantastic, dedicated people.

What do you like least about your job?
The part of my job I like least would probably be going to meetings and writing (and editing) endless reports. However, I am given to understand that these are important and necessary activities.

Tell us a funny sea otter story.
When we capture sea otters for tagging, we give them an injection of anesthetic to put them to sleep before handling them to collect measurements and apply tags, etc. Very rarely the needle does not quite get where it needs to be (the muscle), and the anesthetic ends up in the fur… but this is usually obvious though because the sea otter remains very active. One time in Alaska this happened but we did not realize it because the sea otter had apparently gone to sleep, so we opened the capture box to lift it out… WHOOSH, a large male sea otter shot out of the box and took off across the tundra. Four of us then played a lively game of tag with the otter: when I finally cornered him I did not actually have a net in hand (someone had gone to find one) and suddenly I found myself face to face with a cornered, angry, 90lb snarling sea otter, who quickly decided his best bet was to chase me! Luckily someone arrived with a net at that point and we were able to re-capture him.

Tell us a personally rewarding sea otter story.
Watching an individual sea otter mother over the course of 2-3 years, it is always rewarding to watch her have a new pup, rear that pup over the next 6 months of patient feeding, grooming and nursing, and then finally wean a healthy juvenile. Sea otters are very impressive mothers.

How did you decide to work with sea otters?
I actually did not make a conscious decision to work with sea otters; serendipity played the deciding role. My only intentional decision was to study ecology, specifically the interactions between individual species and their environments, and the dynamics of single populations and whole biological communities. Through a series of chance encounters I found myself in Nova Scotia studying grey seals (for my Masters degree) and then in Alaska studying sea otters, and now I can't seem to stop studying otters.

Why is your job important?
The impact of human populations on almost all ecosystems continues to increase, which means that the need for good conservation policies is more important than ever. In the case of sea otters and other endangered animals, plants or habitats, field research is vital in order to provide the information and knowledge needed for effective conservation. On a more philosophical level, I think that one of the best things that we do as people is to learn about how nature works, and at its core that is all we are doing as scientists.

What can someone do right now if they are interested in your profession or to get involved?
The best thing you can do if you are interested in biology is to get a notebook, a field guide, some binoculars and maybe a magnifying glass and go out into nature, explore a forest or a tide-pool. The more you actually investigate nature and get your hands dirty, the more you will be driven to learn. One practical way to get involved is to join a naturalist organization or volunteer at a local park or aquarium.

Do you have any favorite web links to visit to learn more about sea otters?

Seymour Marine Discovery Center
http://www2.ucsc.edu/seymourcenter/

Monterey Bay Aquarium
http://www.mbayaq.org/

Western Ecological Research Center, US Geologic Survey
http://www.werc.usgs.gov/otters/

Field Study of Southern Sea Otters
http://brd1.ucsc.edu/Tinker/index.htm

Defenders of Wildlife
http://www.defenders.org/wildlife/new/seaotters.html