

NOAA Marine Science Career - Case Studies

Jeff Drazen - PhD

Associate Professor

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Are you interested in the creatures that live in the deep-sea? Dr. Jeff Drazen is! Jeff Drazen is an Associate Professor at the University of Hawaii and leads the Deep-Sea Fish Ecology Lab. In his lab, Jeff studies the role of fish in deep-sea ecosystems. They are interested in how these fish find food and survive.

Jeff grew up in the Pacific Northwest, and from the age of three, Jeff would visit the beach spending time exploring tide pools and fishing. At a young age, he decided he was going to go to college and study marine biology. Jeff attended the University of San Diego for his undergraduate degree in biology and marine science. While in college Jeff developed an interest in research. Jeff was fascinated by the fact that there are animals that exist that people don't even know about and places people have never been. As a deep-sea ecologist, Jeff gets to collect samples from our ocean floor and discover new things about the creatures that live there.

The process of doing research is ongoing. There are new discoveries all the time, so Jeff spends a lot of his time reading to keep up with all the research going on. He also has colleagues all over the world that often email to share their findings. As a scientific researcher, you have to write proposals to get money for the research you want to conduct. Once you get the funding, you go through the process of completing the research, which involves collecting the data and then analyzing your data in order to figure out what it means. Finally, you have to write and publish a paper about your research, so that you can share your discoveries with the world.



Most of Jeff’s research requires trips out to sea. Jeff will go out on what is called an ‘Oceanographic Cruise’. On these trips, they deploy trawling nets and instruments to collect samples. Most of their time onboard the boat, involves a lot of waiting. It takes the nets about 2 hours to reach the seafloor, then 2 hours of trawling (when the actual fish collection occurs), followed by another 2 hours to get the net back to the boat. Jeff’s team uses several instruments on the seafloor; cameras to photograph organisms, instruments to catch fish, and other instruments to do experiments with the organisms they encounter. When the net finally comes back up from the seafloor everything is very frantic! Scientists identify and count the fish and take tissue samples. These samples or data collected are then taken back to Jeff’s lab for analysis.

During his years of research Jeff has had the opportunity to see some really cool creatures. One of his favorite organisms is the spook fish. He likes the spook fish because it has a special adaptation that helps it to survive in the open ocean; its head has a translucent top. The spook fish lives in the mesopelagic or twilight zone 200-1000 meters below the surface. This habitat contains little to no sunlight. The spook fish has really big eyes that are used for looking up to see shadows of fish against the little bits of sunlight that make it down that deep. Spook fish are only a few inches long, have very small mouths and they like to eat jellyfish. Researchers in California used a remotely operated vehicle or (ROV) to take video of this fish and its behavior (you can find it on youtube.com). It is easy to see why these unique adaptations make the spook fish one of Jeff’s favorites!

Jeff’s interest and curiosity in the creatures of the deep sea has lead to some amazing discoveries. If you are interested in becoming a research scientist Jeff suggests that you work hard in school, spend time in the tide-pools, go to the beach, and go fishing. He says, “You can learn a lot, just by taking a few minutes to sit down and watch what animals do”.

If you want to learn more visit him at <http://www.soest.hawaii.edu/oceanography/faculty/drazen/fishes.htm>