

AMERICAN MUSEUM NATURAL HISTORY

Genetics, Genomics, Genethics

Week 5

Humpback Whale Biology

Rob: Howard Rosenbaum is a researcher at the Wildlife Conservation Society. He works on Humpback whales and has been associated with me over the last eight years as a graduate student and a post-doctorate. His work is extremely important in understanding the biology of these highly endangered marine organisms, humpback whales.

His fieldwork includes wonderful observations of the behavior of these animals. He collects tissue samples from these animals. Then he comes back to the United States to do laboratory work. He stores the tissue samples he collected in our Frozen Tissue Collection and all of the genetic work that he does is done in the American Museum of Natural History molecular laboratories.

Howard has a large number of workers who go to the northern tip of Madagascar with him every summer. They observe the movements of whales. When they want to collect a tissue sample, they shoot a crossbow arrow at a whale that takes out a very, very tiny part of its skin and blubber. The crossbow arrow nicks the whale,

much like you or I getting bitten by a mosquito. The skin and blubber is then gathered up, put into tubes, and sent back to the United States for genetic research.

An important aspect of Howard's research on these whales in the genetic context is understanding the relationships of every whale in the whale group. In order to do this, he needs tissues from every one of these whales and needs to understand their genetic fingerprints to understand their relatedness.

So, in essence, what Howard is trying to do is build a family tree of every whale in the bay in Madagascar. And this is an important step toward understanding how the whales behave, how they breed, and how they move around. The answers to each of these questions are important for their conservation.