

# Karen Telleen-Lawton: The Straight Scoop on Whale Poop

Research project helps shed light on just how resilient our planet's inhabitants will be as our climate changes



A baby gray whale explores its Baja birthing lagoon. (Karen Telleen-Lawton / Noozhawk photo)

By Karen Telleen-Lawton, Noozhawk Columnist | [Published on 02.27.2012 3:24 p.m.](#)



In the fall of 2001, my husband and I were privileged to spend time on an [Earthwatch](#) project in Costa Rica. We stayed in barracks in the Guanacaste tropical dry forest and spent our days collecting, drying and analyzing frass. That's insect poop, for the uninitiated.

I hadn't thought about that for years until I read about another study being done at that same time on excretions of a different sort: whale poop. Their serendipitous study is adding to the burgeoning literature about the affect of ocean noise on marine life.

Dr. Rosalind Rolland and a group of scientists from the [New England Aquarium](#) began studying North Atlantic right whales in July 2001. By training dogs to sniff out scat (something we know they love to do!), they sampled every six weeks through 2005. The whale poop contains hormone-related chemicals that track changes in stress levels, which was one of their objectives.

The study happened to begin just weeks before the [September 2001 terrorist attacks](#), which stopped all shipping for a period of time. That allowed the scientists to witness a phenomenal reduction in whale stress corresponding precisely to the time shipping traffic was halted. When the analysis was complete, the conclusion of the study was unequivocal: "To our knowledge, there were no other factors affecting the population that could explain this difference, besides the decrease in ship traffic," according to Rolland.

Since the 1960s, international shipping and deep-sea oil development has caused sea traffic to increase tenfold. It's just been the past decade or so that scientists have begun studying the effects of this increase traffic volume on marine life.

The exact causes and effects have been elusive, but indications are that higher-frequency sonar may be harmful to animals nearby, while low-frequency tones emitted by large ships and oil platform construction can travel and affect marine life halfway around the world.

"It's that consistent, ubiquitous exposure that may be the most concerning," said Maria Holt, a marine biologist at the [Northwest Fisheries Science Center](#) in Seattle. And indeed traffic is ubiquitous, except for during disasters.

We are familiar with our own irritation at increased background noise. Noise's effects on humans include altered hormone levels, increased blood pressure and behavioral changes. But what happens to stressed whales?

The precise levels of stress that can be detrimental are not yet known. Over the long term, however, stress results in constant elevations of the hormone, which can lead to stunted growth, a weakened immune system and a compromised ability to reproduce.

Most whale populations are threatened or endangered, so findings such as these are essential to determining what elements need to be present in a recovery plan. By sheer size alone, whales are an important part of our ocean ecosystem. And a functioning ecosystem is vital to a functioning economy.

Studying whales, insects and everything in between is essential to determining just how resilient our planet's inhabitants will be as our climate changes. Humans are pretty flexible — that's how we're currently on the top of the heap. But the effects on other species are only just becoming known. We'll learn more as we continue to gather the straight scoop on poop.

*— Karen Telleen-Lawton's column is a mélange of observations spanning sustainability from the environment to finance, economics and justice issues. She is a fee-only financial advisor ([www.DecisivePath.com](http://www.DecisivePath.com)) and a freelance writer ([www.CanyonVoices.com](http://www.CanyonVoices.com)).*