

## Santa Barbara Oil Spill: What Will We Learn?

May 22, 2015

Two gray whales moving close to shore off the coast of California. Photograph courtesy Ocean Conservation Society

A month ago, KPPC journalist Sanden Totten joined me on the Ocean Conservation Society boat during one of our regular marine mammal surveys that my research team and I conduct off Southern California. He wanted to discuss and observe first hand the increasing presence of skin lesions and physical deformities that are plaguing common bottlenose dolphins moving along the coastline. He was also curious about some of the reasons causing these lesions and the effects on the animals.

The piece recently aired with the rightfully-disturbing title *"Researchers studying dolphins in the Santa Monica Bay have noticed an alarming trend: More and more are showing signs of skin lesions and even tumors."* In the interview, Sanden mentioned one of our studies, published in 2009 where we discovered that nearly 80 percent of bottlenose dolphins along the Los Angeles coastline show at least one type of lesion. The likely culprit? Pollution.

This past Wednesday, I was driving home when I heard the news about an onshore oil spill near Santa Barbara, in California, not far from my research study area. An underground pipeline ruptured and spilled more than 100,000 gallons of crude on coastal land and at sea.

As I write this post, the slick of crude oil has already stretched more than nine miles along the coastline and ten of thousands of gallons have reached the ocean. To what extent this spill will affect ocean wildlife is still unclear but it *will* affect it. As I heard the news, I thought of the marine mammals that I study. Coastal bottlenose dolphins, for instance, moving back and forth from Baja California to Oregon in search of prey, are one of the prominent species that frequent and forage in this now polluted area.

As I wrote in a recent post for this blog:

*"DOLPHINS ARE TOP PREDATORS, MEANING THEY FEED AT THE TOP OF THE FOOD CHAIN. WHEN CHEMICAL POLLUTANTS SETTLE INTO SEAFLOOR SEDIMENTS, THEY ARE ABSORBED BY A VARIETY OF SMALL ORGANISMS. SOME OF THESE CREATURES END UP IN THE STOMACHS OF BOTTOM FEEDERS, WHICH, IN TURN, ACCUMULATE HIGHER CONCENTRATIONS OF THE SAME CONTAMINANTS IN THEIR BODY TISSUES. EVERY TIME THE CONTAMINANTS MOVE UP THE FOOD CHAIN INTO A NEW PREDATOR, THE CONCENTRATION INTENSIFIES IN A PROCESS CALLED BIO-MAGNIFICATION. BY THE TIME THE CONTAMINANTS REACH THE ADULT DOLPHIN POPULATION AT THE TOP OF THE FOOD CHAIN, THE CONCENTRATIONS ARE SEVERE – SO MUCH SO THAT STRANDED DEAD DOLPHINS ARE REGULARLY HANDLED AND DISPOSED OF AS HAZARDOUS WASTE. POLLUTANTS ALSO PASS FROM ONE GENERATION TO THE NEXT. THROUGH THEIR MILK, DOLPHIN MOTHERS TRANSFER SUB-LETHAL DOSES OF HARMFUL CHEMICALS TO NEWBORNS DURING A LACTATION PERIOD THAT MAY LAST UP TO TWO YEARS."*

Sea lions and harbor seals are also top predators living in these now contaminated waters. As I write, migratory gray whales are traveling along this coastline, often very close to shore, on their way back to the cold and nutrient-rich waters of Alaska. Endangered humpbacks and blue whales are spotted regularly in this region. All of these species, and many others, will be affected by this spill.

As Governor Jerry Brown is declaring a State of Emergency and the Santa Barbara oil spill is worsening dramatically. The cause of the oil spill is still under investigation. The underground oil pipeline was working, according to [Plains All American Pipeline](#) below its maximum capacity of 2,000 barrel an hour. This company has been fined before for safety violations and is one of the worst violators listed by the U.S. Pipeline and Hazardous Materials Administration.

Today this is news, bad news, but the news will be replaced by other news soon and, as many disasters of this type before, this one will be... just another oil spill. It seems to me that soon we will forget about the crude, about the animals affected by it, about the consequences of our actions, and we will continue to make the same mistakes.

I hope I am wrong.

In memory of: *Santa Barbara, 1969. Alaska, 1989. Gulf of Mexico, 2010.*

**Maddalena Bearzi** has studied the ecology and conservation of marine mammals for over twenty-five years. She is president and co-founder of the [Ocean Conservation Society](#), and co-author of [Beautiful Minds: The Parallel Lives of Great Apes and Dolphins](#). She also works as a photo-journalist and blogger for several publications. Her most recent book is [Dolphin Confidential: Confessions of a Field Biologist](#).

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