

December 20, 2010

## [Yahoo! News - Sperm Whales Show Signs of Toxic Contamination](#)



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skin and blubber of sperm whales from across the Pacific Ocean carry evidence of exposure to a class of toxic pollutants, with whales living around the Galapagos Islands showing the strongest signs of exposure, according to a new study. "This is the first time this kind of pollution study has been done on a whole ocean level using a threatened species as a sentinel species," said Celine Godard-Codding, the lead researcher and an environmental toxicologist at Texas Tech University. Sperm whales can live up to 70 years, feeding on squid, fish and octopus. Males of the species can grow up to 60 feet (18 meters) long. As large, long-lived carnivores, they can accumulate pollutants in their body fat. The team took small tissue samples from 234 sperm whales in five regions in the tropical and subtropical Pacific Ocean and looked for an enzyme that breaks down a class of chemicals called aromatic hydrocarbons. These include harmful pollutants like dioxins, PCBs and a group called polycyclic aromatic hydrocarbons (PAHs). PAHs are produced during the incomplete burning of coal, oil, gas and other organic substances. According to the U.S. Centers for Disease Control and Prevention, PAHs may cause cancer, as well as reproductive, skin and immune system problems. While they detected the enzyme in all the sperm whales, the levels were found to be the highest in whales from the Galapagos. But this doesn't mean there are elevated pollutants near the Galapagos, she cautioned – rather, it is a warning sign. "What we have to keep in mind when we think of ocean health is that contaminants are transported by atmospheric currents and ocean currents all the time," Godard-Codding said. "There is not a pristine area in the world." And because PAHs have many sources – wildfires and volcanoes can also create them – presence of the enzyme does not necessarily mean that the animal has come into contact with man-made pollutants, Godard-Codding cautioned. This makes the implications of the high levels of enzyme activation found in the whales near the Galapagos ambiguous. "The next step is really what does that mean," she said. "It could mean a higher exposure to contaminants elevated (the biomarker), but we don't know that for sure." The researchers collected small samples from the whales using a crossbow, and they extracted as much information as possible from each sample. This included an attempt to directly measure contaminants present in the samples, but given the small amount of tissue available for this analysis, they were not able to

generate enough data to compare the presence of contaminants with the activation of the biomarker, according to Godard-Codding. The study was published online Dec. 6 in the journal Environmental Health Perspectives.



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