

Wildlife still exposed to Exxon Valdez oil 20 years after disaster

April 14 2010

Scientists in Alaska have discovered that lingering oil from the 1989 Exxon Valdez spill is still being ingested by some wildlife more than 20 years after the disaster. The research, published in *Environmental Toxicology and Chemistry*, uses biomarkers to reveal long-term exposure to oil in harlequin ducks and demonstrates how consequences of oil spills are measured in decades rather than years.

The Exxon Valdez tanker ran aground on the Prince William Sound on March 24, 1989, spilling 10.8 million gallons of crude [oil](#) into the sea, covering 1,300 square miles. It is still regarded as one of the most devastating human-caused contamination events, and the effects on wildlife populations and communities have been debated by biologists, ecologists, and the oil industry ever since.

Now, using the biomarker CYP1A, which is induced upon exposure to crude oil, an international team led by Daniel Esler, from the Centre for Wildlife Ecology, Simon Fraser University, British Columbia, has measured prolonged exposure to oil in local wildlife populations.

"One of the more remarkable and unanticipated findings of recent research is the length of time over which animals were exposed to residual oil," said Esler. "Our research has shown that oil remaining in the area, particularly in inter-tidal areas, was encountered and ingested by some near-shore animals."

The team focused their research on harlequin ducks as an example of

such a species. Harlequins are [marine birds](#) that live in inter-tidal and shallow sub-tidal areas. Between 1990 and 2005 there were approximately 14,500 ducks in the Prince William Sound area.

"In addition to the higher likelihood of exposure due to their habitat, harlequin ducks have a number of characteristics that makes them particularly sensitive to oil pollution," said Esler. "Their diet consists of invertebrates that live in this area and have a limited ability to metabolize residual oil. Also, harlequin ducks have a life history strategy based on high survival rates, as well as a small body size when compared to other sea ducks."

"We found CYP1A levels were unequivocally higher in areas oiled by the [Exxon Valdez spill](#) than in nearby areas, a conclusion supported by multiple samples and two independent laboratories. We believe this shows harlequin ducks continued to be exposed to residual oil from the spill through at least 2009, twenty years after the event," concluded Esler. "We believe it is important to recognize that the duration of presence of residual oil and its associated effects are not limited to a few years after spills, but for some vulnerable species may occur over decades."

Provided by Wiley

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