

The lingering effects of the Exxon Valdez oil Spill

At 12.04 am on 24 March, 1989, the Exxon Valdez oil tanker, carrying 53,945,510 gallons of North Slope crude oil, ran aground on Bligh Reef, in the north east of Prince William Sound (PWS), Alaska. Within five hours, 11.2 million gallons of this oil had leaked into the sea and covered 120 square miles of open water near the tanker. After three days of calm weather, storms dispersed the slick, which went on to cover 500 miles of coastline in the Sound, and 1000 miles of coastline in the Kenai Peninsula-Kodiak region.

Acute mortality in the *immediate* aftermath of the spill was high, with even conservative estimates placing the figures at 1000 – 2900 sea otters, 245 000 birds (an 'unprecedented' number), 302 harbour seals, and mass mortality of macro algae and benthic invertebrates.

Exxon spent \$2.2 billion on cleanup, and immediately following the spill, ExxonMobil's public affairs director stated that "we hope to leave Prince William Sound the way we found it."¹ But even in 1992 it was estimated that 13% (approximately 1.4 million gallons) of the original volume of the spill still remained present in mud, sand and gravel in the Gulf of Alaska and the Sound.

When studies as early as September 1990 established the presence of enzymes in fish populations indicating exposure to oil from the spill, ExxonMobil refuted this, claiming that "all the available data to us indicates that we've got a healthy fish population."²

The company went even further in February 1991 to publish a report that claimed that "fortunately, the evidence suggests that sea otters in the Prince William Sound area are thriving." This runs counter to research that shows sea otters are still suffering exposure *today*, and that in heavily oiled areas have shown little signs of recovery at all.³

In response to further studies carried out from 1990-1994, which produced similar findings to this latest report, Frank Sprow, ExxonMobil's VP Health, Safety and Environment asserted that if oil remained, it was not harmful to wildlife as "oil is a naturally occurring material." By 1999 he was saying, "We see the Sound as essentially recovered."⁴

¹ From Strohmeyer J, 'Extreme Conditions – Big Oil and the Transformation of Alaska', 1993.

² Exxon spokesperson Karsten Rodvik quoted in Reuter News service, 'Study Shows lingering effect of Exxon Spill', 7 September, 1990.

³ Rick Steiner, University of Alaska Marine Scientist, 2004.

⁴ Quoted in 'Sound battles back, but threat lingers', Anchorage Daily News, 13 May 1999.

New research shows the problem persists

The latest scientific research on the spill's effect has supported the view that impact has not been confined to immediate and acute mortality of native wildlife. Rather, wildlife has continued to be affected by exposure to "toxic sub-surface oil" that has remained in the region.

The study, published in SCIENCE magazine⁵ and carried out over a 14-year period, concluded that: "Disagreements exist between Exxon- and government-funded scientists...Nevertheless, these uncertainties do little to diminish the general conclusions: oil persisted beyond a decade in surprising amounts and in toxic forms, was sufficiently bioavailable to induce chronic biological exposures, and had long-term impacts at the population level."

In short, toxic oil has had, and continues to have, a negative impact on native wildlife populations.

The authors argue that contrary to assumptions, the rate of dispersal and degradation of oil reduced over time, so that oil still present post-October 1992, was protected by physical barriers such as gravel and rocks and is still present today. The oil has remained 'persistently toxic' with the presence of polycyclic aromatic hydrocarbons (PAH's) being extremely damaging to fish even at very low levels.

Furthermore, it has been shown that partially weathered oil actually appears to be more toxic than fresh, resulting in long-term impacts in fish, sea otters and sea ducks, which has produced higher mortality rates since 1989 than before the spill.

The survival of sea otters in PWS declined after the spill, and even those born after 1989 experienced higher mortality, one of the indicators that they had experienced chronic exposure to oil. This exposure is likely to have come from their prey and foraging habits, which bring them into contact with sequestered oil.

The presence of a de-toxification enzyme (CYP1A) in Harlequin ducks indicates ongoing exposure, and studies of herring and pink salmon show that eggs laid in areas with sequestered oil, have less chance of survival. If they do survive, the exposed herring and salmon suffer "abnormalities" such as bent spines, lower than average size, and less chance of surviving to reproductive stage.

In total, only 7 out of the 30 injured populations/resources, have been officially listed by the Government as recovered., Some species (seals, orcas, harlequin ducks) are still in decline and others (herring, loons, cormorants etc.) have shown no recovery whatsoever.

Paying for damage to the environment:

ExxonMobil are still liable for up to a \$100million "Reopener for Unknown Injury" – this commits ExxonMobil to pay up to an additional \$100million in the years 2002 – 2006 for natural resource damages that "could not reasonably have been known nor...anticipated" at the time of the original settlement.

Despite this latest scientific evidence, neither the Federal nor State administrations have requested any additional damages. It seems that the Bush and Murkowski administrations are eager to keep the memory of the Valdez in the background, both being anxious to open Alaska to further oil development (eg: the Alaska National Wildlife Refuge).

⁵ SCIENCE Magazine, 19 December 2003, Vol 302, 'Long-term Ecosystem Response to the Exxon Valdez Oil Spill,' C.H.Peterson, S.D.Rice, J.W.Short, D.Esler, J.L.Bodkin, B.E.Ballachey, D.B.Irons.