

Science for Environment Policy

Seabirds suffer long-term impacts of oil spills

Oil spills can affect seabird populations for at least a decade after a major incident, a new study suggests. The authors studied the long-term effects of the *Prestige* oil spill on European shags and found that the numbers of chicks raised by breeding pairs were reduced in the ten years following the disaster.

When the *Prestige* oil tanker [sank northwest of the Iberian Peninsula](#) in November 2002, it spilled 63 000 tonnes of [oil](#) and more than a thousand kilometres of Spanish, French and Portuguese coastline were affected. The European shag (*Phalacrocorax aristotelis*), is a seabird found all over Europe, nesting along the Mediterranean coastline as well as more northerly countries. Because the birds were being monitored before the oil spill, it was possible to carry out a before-and-after study, giving a rare insight into the long-term effects of such incidents.

The authors studied the shag population of the northwest Iberian Peninsula between 1994 and 2012. They focused on reproductive effects, calculating the average number of chicks per pair that survived at least 35 days for each bird colony. As well as comparing the pre- and post-spill population, they also compared areas that were heavily polluted with oil to areas that were less affected.

In areas that were heavily polluted by the spill, the average number of chicks per pair was 1.41 before and 0.87 after the accident. Post-spill comparisons with less affected areas showed that breeding success was 45% lower in heavily polluted areas. The researchers note that pre-spill monitoring data was only available for one breeding colony compared to six or more in post-spill years. However, the colony monitored before the spill was the largest, making up more than half of the population.

The researchers did not explore how the oil caused these effects, but they suggest that a lack of food due to impacts on fish and other species, as well as direct exposure to oil, are to blame. Direct exposure can lead to a variety of non-fatal effects in seabirds, including damage to vital organs like the liver and kidneys. In 2009 the arrival of American mink, which prey on the birds, affected reproductive success in some lesser colonies, but this effect was not significant at the population level.

Birds are widely monitored in the EU and therefore act as useful indicators of environmental change and biodiversity effects. The decline in the shag population following the *Prestige* oil spill may therefore hint at long-term effects on other species. The researchers highlight the need for more long-term monitoring to understand the real environmental impacts of events like oil spills.



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