

Science for Environment Policy

Albatrosses' survival seriously threatened by mercury and pollutants

Mercury and persistent organic pollutants (POPs) reduce albatrosses' chances of successfully breeding, a recent study finds. These pollutants add to the list of environmental pressures, including climate change, disease and fishery bycatch, affecting this highly threatened species.

Seabirds, such as albatrosses, are at risk of consuming high levels of pollutants that accumulate up through the [marine](#) food chain. Albatross populations are already threatened around the world, and, as a result of lab tests showing the toxic effects of heavy metals and POPs, some scientists have suggested that these pollutants may have contributed to the birds' decline. However, little is known about their effects on birds in the wild.

The researchers explored the effects of mercury, cadmium and a range of POPs, including PCBs and DDTs, on an island population of wandering albatross (*Diomedea exulans*) in the Southern Indian Ocean. This population has fallen from around 850 breeding pairs in the 1960s, to 300-400 pairs today.

The blood of 147 adult birds was tested for [contaminants](#), and the researchers combined this information with data gathered over 5 years in an ongoing monitoring programme on the island. The programme regularly checks birds for signs of population change, including: number of eggs laid, chick survival, fledging and adult survival.

Mercury reduced the likelihood of birds breeding and of eggs hatching. The researchers believe this may be because the metal is an 'endocrine disruptor' which could have damaged the birds' reproductive systems. In addition, mother birds may have passed on mercury to their unborn chicks, which could affect embryo development.

POPs also reduced the probability of birds breeding and the chances chicks successfully fledging. Again, the researchers believe that the birds' hormonal system was damaged. Separate research on gulls has indicated that POPs reduce the secretion of prolactin, a hormone involved in parental care.

No impacts of cadmium were observed and there were no signs that any of the pollutants affected adult survival.

The researchers then summed up the overall effects of mercury and POPs on population growth. If there were none of these contaminants in the bloodstream, the albatrosses' population growth rate would be 1.027 (not considering other population threats), i.e. each new generation of albatrosses would be 1.027 times bigger than the previous generation. However, the combined average effect of mercury and POPs reduce the growth rate to 0.991. This means that the population is in decline as each generation is smaller than the previous one.

This study provides an example of how pollution can affect wildlife. The POPs it considers are all banned or restricted under the UN's [Stockholm Convention](#), signed by the EU in 2004. However, they remain in the environment for many years, even after their use has ceased. In line with its [mercury strategy](#), the EU is currently preparing for the ratification of the [Minamata Convention](#) on Mercury, an international agreement signed last year, which is designed to prevent emissions and releases of this toxin on a global scale.



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