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Mercury poisoning makes male birds homosexual

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Low levels of mercury in the diet of male white ibises cause the birds to mate with each other rather than with females. As a result many of the females can't breed, and fewer chicks are produced.

It's the first time a pollutant has been found to change an animal's sexual preference. Many chemicals can "[feminise](#)" [males](#) or [reduce fertility](#), but males affected in these ways still prefer females.

Mercury is [extremely toxic](#), particularly in the form of [methylmercury](#), which reduces breeding in wild birds by disrupting their parenting behaviours. To find out if it also affected mating, [Peter Frederick](#) of the University of Florida in Gainesville and Nilmini Jayasena of the [University of Peradeniya](#), Sri Lanka, captured 160 young [white ibises](#) from south Florida. They gave them food laced with methylmercury and monitored them closely.

The birds were split into four groups. One group ate food with 0.3 parts per million methylmercury, which most US states would regard as too high for human consumption. A second group got 0.1 ppm, and the third 0.05 ppm, a low dose that wild birds would be exposed to frequently. The fourth group received none.



Poisoned partners? (Image: Roy Toft/Getty)

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Poisoned

All three dosed groups had significantly more homosexual males than the control group. Male-male pairs courted, built nests together and paired off for several weeks. Higher doses increased the effect, with 55 per cent of males in the 0.3 ppm group affected. Male-male matings were responsible for 81 per cent of unproductive nests in the dosed groups.

Meanwhile the heterosexual pairs courted less and were bad at parenting – patterns of behaviour that were both already known to be caused by methylmercury poisoning. The combined effects of male-male pairing and poor performance by male-female pairs could be severe. "In the worst-case scenario, the production of young would fall by 50 per cent," says Frederick.

Looking for effects on courtship and mating is novel, says [Tony Scheuhammer](#) of Environment Canada's National Wildlife Research Center in Ottawa, Ontario. "People normally study pairs that have already mated to see how good they are at parenting," he says.

Other birds would probably be similarly affected, though both Frederick and Scheuhammer say it's far from clear whether other animal groups would be. In particular, there's no evidence for increased homosexuality in humans resulting from mercury poisoning, despite several [long-term studies](#). "If the effect was as strong in humans as in the ibises, they'd have found it," Frederick says.

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