

DDT contaminants in marine mammals may threaten California condor recovery

July 12 2019, by Bradley J. Fikes



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The California condor's dramatic recovery from near-extinction was aided by removal of toxic substances from the land, which accumulated in animals whose carrion they ate.

But that recovery may be threatened in coastal condors by DDT-related contaminants in marine mammals, according to a preliminary study led by a San Diego State University researcher.

Coastal-dwelling condors have more of these compounds than those living inland, the study found. These are presumably absorbed from [marine mammal](#) carcasses, said study leader Maggie Stack. This might explain why coastal condors have thinner eggshells than those inland.

The preliminary findings were reported Wednesday by a team led by Stack, a California Sea Grant trainee and a graduate student at San Diego State University. Because the study has not been peer-reviewed, it requires further validation before it can be published, Stack said.

If the link is confirmed, reintroduced condors can be given a better chance of survival by choosing locations with a lower level of these contaminants, Stack said.

Condor populations have recovered from a low of 22 wild birds in 1986 to about 300 living in the wild today. The [conservation work](#) is assisted by the San Diego Zoo, which nurtures chicks from captive birds at the San Diego Zoo Safari Park.

Stack and colleagues analyzed the blood of coastal and inland condors, looking for halogenated compounds, a class to which DDT belongs. These are considered to be endocrine disruptors, which lower reproductive success, Stack said.

The work mainly concerned tris (4-chlorophenyl) methane (TCPM), a chemical related to DDT. While effective against diseases such as malaria, the insecticide's harm to wildlife has led to its use being greatly restricted.

TCPM appears to be an impurity from the manufacture of DDT, Stack said. Other DDT-related compounds have been found in coastal condors, and these also represent a risk, Stack said.

Previous research has indicated the potential for harm. DDT-related compounds are accumulating in Southern California bottlenose dolphins, according to a study from Scripps Institution of Oceanography. It was published in 2016 in *Environmental Science & Technology*.

Contaminants such as lead and antifreeze have long been known to poison condors. The California Condor Recovery Program of the U.S. Fish and Wildlife Service, targeted these contaminants for removal, as well as promoting [conservation programs](#). Under a state law that went into effect July 1, lead ammunition is banned for wildlife hunting.

Stack's research recently won first place in the interdisciplinary category at the California State University's 33rd Annual Research Competition, along with the best graduate student presentation at the Society for Toxicology and Environmental Chemistry meeting.

Others in the study include Jennifer Cossaboon of UC Davis; SDSU researchers including Stack's graduate advisor Eunha Hoh, Nathan Dodder and Jade Johnson; along with Christopher Tubbs, Ignacio Vilchis, and Rachel Felton, all with San Diego Zoo Global.

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