

## Sea otters can get the flu, too

April 8 2014

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A sea otter wraps itself in kelp in Morro Bay, California. Credit: Mike Baird from Morro Bay, USA/via Wikipedia

Northern sea otters living off the coast of Washington state were infected with the same H1N1 flu virus that caused the world-wide pandemic in 2009, according to a new U.S. Geological Survey and Centers for Disease Control and Prevention study.

During an August 2011 health monitoring project, USGS and CDC scientists found evidence that the Washington [sea otters](#) were infected with the pandemic 2009 H1N1 virus, although the exact date and source of exposure could not be determined. The findings suggest that human flu can infect sea otters.

"Our study shows that sea otters may be a newly identified animal host of [influenza viruses](#)," said Hon Ip, a USGS scientist and co-author of the study.

The researchers discovered antibodies for the 2009 H1N1 [flu virus](#) in blood samples from 70 percent of the sea otters studied. None of the otters were visibly sick, but the presence of antibodies means that the otters were previously exposed to influenza. Further tests concluded that the antibodies were specific to the pandemic 2009 H1N1 flu virus, and not from exposure to other human or avian H1N1 viruses.

"We are unsure how these animals became infected," said Zhunan Li, CDC scientist and lead author on the paper. "This population of sea otters lives in a relatively remote environment and rarely comes into contact with humans."

An unrelated 2010 study showed that northern elephant seals sampled off the central California coast had also been infected with the 2009 pandemic H1N1 virus. This elephant seal exposure is the only other known pandemic H1N1 influenza infection in marine mammals, and similar to sea otters, it is unclear how the seals were exposed.

"Our new study identifies sea otters as another marine mammal species that is susceptible to influenza viruses and highlights the complex interspecies transmission of [flu viruses](#) in the marine environment," said USGS scientist LeAnn White.

The 2009 H1N1 virus has spread globally among people since 2009 and was the predominant flu virus in circulation during the 2013-2014 flu season. This study is the first time that evidence of influenza infection has been detected in sea otters, although these viruses have previously been found in many different animals, including ducks, chickens, pigs, whales, horses and the elephant seals.

The study is published in the journal *Emerging Infectious Diseases* and is available at [http://wwwnc.cdc.gov/eid/article/20/5/13-1890\\_article.htm](http://wwwnc.cdc.gov/eid/article/20/5/13-1890_article.htm).

Sea otter sampling was performed by a collaboration of the USGS National Wildlife Health Center, USGS Alaska Science Center, USGS Western Ecological Research Center, Monterey Bay Aquarium and Seattle Aquarium.

Provided by United States Geological Survey

Citation: Sea otters can get the flu, too (2014, April 8) retrieved 22 April 2024 from <https://phys.org/news/2014-04-sea-otters-flu.html>

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