MARINE MAMMAL COMMISSION

AN INDEPENDENT AGENCY OF THE U.S. GOVERNMENT

High Path Avian Influenza (HPAI)
in Marine Mammals

What is High Path Avian Influenza?

High Path Avian Influenza (HPAI) is one type of the many influenza viruses and is causing the current global epizootic of avian influenza (bird flu). The global HPAI epizootic is of concern not only to wild birds, human health and agriculture, but is also a threat to marine mammal health. It has caused severe die-offs of seals and sea lions in South America, smaller epizootics in seals in North America and Europe, and sporadic deaths of dolphins in North America, Europe and South America. The most recent outbreak is in California, at Ano Nuevo State Reserve, where elephant seals, California sea lions, and a sea otter died of the virus in early 2026 (see latest numbers). Due to the severity of the die-offs in poultry and wild birds, and potential impacts on human health, agriculture and biodiversity, the global spread of H5N1 is closely monitored by multiple national and international agencies.

For the latest news on HPAI, see the World Organization for Animal Health website https://www.woah.org/en/disease/avian-influenza/

The Virus

There are three types of influenza viruses, A, B and C, that infect birds, mammals and humans. Avian influenza is a Type A virus that infects mammals and birds and rarely humans, whereas influenza types B and C viruses primarily infect humans. Influenza Type A associated disease in mammals usually results from spill-over of the viruses from birds directly to mammals. Wild bird migrations can spread the viruses over long distances. Mammal to mammal transmission is rare but can occur if the virus mutates to acquire features enhancing such transmission.

Avian influenza viruses (Type A) are broadly categorized based on the combination of two groups of proteins on their surface: hemagglutinin or "H" proteins, and neuraminidase or "N" proteins. There are 16 H types and nine N types, with many different combinations of these proteins possible. Each combination is considered a different subtype of virus, and related viruses within a subtype may be referred to as a lineage. Avian influenza viruses are also classified as either "low pathogenic" or "highly pathogenic" based on their genetic features and the severity of the disease they cause in poultry. Most viruses are of low pathogenicity, meaning they cause no signs or only minor clinical signs in poultry. The current epizootic is caused by a highly pathogenic virus (HPAI) of the clade 2.3.4.4b A(H5N1).

In 2022, the HPAI H5N1 virus reached South America, causing massive die off events in birds and mammals. Since then, deaths of marine mammals associated with HPAI have been reported along the Pacific and Atlantic coasts of South America.

Frequently Asked Questions (FAQs)

What should I do if I find a sick or dead marine mammal?

- Notify the regional National Marine Fisheries Service marine mammal stranding coordinator or local stranding response organization: https://www.fisheries.noaa.gov/report
- Do not touch the animal without wearing gloves, mask and protective eye wear.
- If appropriate, sample. See WOAH guidelines for sampling.
- Keep pets away from the sick animal.

Who tests marine mammals for AI?

- In the U.S. avian influenza diagnosis and response is coordinated by the U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds. Participants include federal and state laboratories.
- Testing of samples from marine mammals can be done locally at State laboratories, at the federal National Wildlife Health Center and USDA National Veterinary Services Laboratory, or at collaborating university laboratories.

Marine Mammal Commission

HPAI in Marine Mammals

HPAI and Marine Mammals:

Influenza A viruses have been detected in marine mammals since 1975 and have caused periodic small die-offs in harbor seals (*Phoca vitulina*). Influenza B virus has also been detected in harbor seals, suggesting this species is relatively susceptible to influenza infection. Low path influenza A strains and antibodies to them have been detected in elephant seals (*Mirounga angustirostris*) and California sea lions (*Zalophus californianus*) along the California, U.S., coast, suggesting spill-over of low path viruses occurs regularly.

In the current outbreak, HPAI was first reported to cause marine mammal deaths in North America in 2021, when it was detected in dead harbor seals in Maine, U.S., and then in harbor and gray seals (*Halichoerus grypus*) in Quebec, Canada and common bottlenose dolphins (*Tursiops truncatus*) in Florida. In 2022, HPAI caused a die off of harbor and gray seals in the Gulf of St Lawrence. In 2023, it was detected on the west coast of the U.S, causing deaths of harbor seals in Washington State, and in 2024, in dead bottlenose dolphins in Florida.

During 2022, the 2.3.4.4b A(H5N1) virus was detected sporadically in cetaceans, including in common dolphins (*Delphinus delphis*) in Peru, Wales, and England; harbor porpoises (*Phocoena phocoena*) in Sweden and England: an Atlantic white-sided dolphin (*Lagenorhynchus acutus*) in Canada; and a bottlenose dolphin in Florida.

In 2022, HPAI reached South America, causing dramatic disease outbreaks. The overall mortality of wildlife in South America between October 2022 and December 2023 included 597,832 birds and 50,785 mammals, with the bulk of the mortality occurring in seabirds and marine mammals in Peru (557,140 seabirds and 10,458 marine mammals) and Chile (29,432 seabirds and 20,179 marine mammals). South American sea lions (*Otaria byronia*) and southern elephant seals (*Mirounga leonina*) were the most affected marine mammals, but smaller epizootics in South American fur seals (*Arctocephalus australis*), otters (*Lontra spp*.) and cetaceans have also been linked to HPAI H5

Clinical signs in seals and sea lions are mainly neurologic, such as tremors, convulsions, and paralysis. The animals also showed respiratory signs such as increased and abnormal breathing, and nasal and buccal secretions. On post mortem examination, there are whitish secretions in the upper respiratory tract, and congestion of the lungs and brain.

In 2023, HPAI caused a die-off of northern fur seals in the Russian Far East, and was isolated from birds on Sakhalin Island. In February 2026, the virus was associated with deaths of thirty individuals of multiple species at Ano Nuevo State Reserve in California.

FAQs Continued

Where do I get sampling supplies from?
Swabs and vials with transport media are available from diagnostic laboratories and regional marine mammal stranding coordinators.

What samples are needed for testing and diagnosis?

- Swabs of brain (collected through the back of the skull without cutting bone), nose, rectum/feces, lung, and/or tonsils placed into vials containing viral transport media for transport to the laboratory. Brain is the most likely to test positive in sick animals.
- Protocols for sampling marine mammals are provided by the World Organization for Animal Health.

Which animals should be tested?
Marine mammals with HPAI are likely to be sick. Prioritize sampling animals showing neurological or respiratory signs.

How are influenza viruses spread?
Influenza viruses are shed in respiratory secretions, saliva, and feces, and usually spread through inhalation of respiratory particles, direct contact with feces, and less commonly through the eyes, mouth, and skin wounds.

For Updates (Cases in mammals in the U.S., see USDA website)**:**

https://www.aphis.usda.gov/livestock-poultry-disease/avian/avian-influenza/hpai-detections

https://www.usgs.gov/centers/nwhc/science/avian-influenza

https://www.cdc.gov/bird-flu/situation-summary/index.html

https://pandemicinsights.ucdavis.edu/h5-marine-outbreak

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