

FACT SHEET

What duck hunters need to know about avian botulism

What is avian botulism?

Avian botulism is one of the three most important disease problems affecting wild migratory birds. Each year, many birds are paralysed or die after exposure to a toxin produced by the botulinum bacterium. Two of the seven toxin types that have been identified commonly cause mortality in wild birds; one of these, type C, is most often associated with die-offs of ducks. Generally, you shouldn't fish or hunt in a wetland during a botulism outbreak or where botulism has occurred in the previous month.

How serious is it?

Across the world, losses vary from year to year and from species to species. A few hundred birds may die one year at a specific location, with tens of thousands dying the following year at the same site. More than a million deaths from avian botulism have been reported in localised outbreaks in a single year. Outbreaks causing losses of 50,000 or more birds are fairly common.

What species are affected?

A wide variety of birds and some species of mammals are susceptible to type C botulism poisoning. Among wild birds, waterfowl (ducks, geese, and swans) and shorebirds are most often affected.

Are humans and pets susceptible?

Botulism can potentially cause illness in gundogs used to retrieve game. Humans are generally considered resistant to type C avian botulism. Type E avian botulism can cause illness in humans, but this is very rare.

How can botulism poisoning be recognised?

Avian botulism affects the nervous system, causing muscle paralysis. Depending on how far the disease has progressed, various levels of paralysis will be observed. An early sign in ducks is the inability to fly. Once the ability to fly is lost and leg muscles become paralysed, ducks suffering from botulism often propel themselves across the water and mud flats with their wings. Paralysis of the inner eyelid and neck muscles follows. These are



the two most easily recognisable signs associated with avian botulism. The inability of the duck to hold its head erect is the reason this disease is called "limber-neck". Frequently, ducks drown once they reach this stage in the disease. Those that do not drown will eventually die from respiratory failure as paralysis spreads. Major die-offs can be recognised by lines of carcasses coinciding with receding water levels around a wetland.

What causes avian botulism epidemics?

Avian botulism is most likely to occur in the presence of high air temperatures, fluctuating water levels, and a suitable medium for bacterial growth, such as vertebrate and invertebrate carcasses near bird concentrations. The botulism bacteria are widely distributed in organic soils. They persist in nature in a spore form that is resistant to adverse environmental conditions such as drying.

The botulism cycle

Favourable environmental conditions occur in the tissues of decaying animals and insect carcasses. The decomposition process uses up all available oxygen in the carcass, creating anaerobic conditions. Bacterial spores ingested during the life of the animal germinate after death. As the bacteria multiply and die, toxin is released.

Outbreaks of avian botulism occur when the toxin is taken in by birds. The die-off may begin as birds feed directly on invertebrate carcasses that contain the toxin, or as a result of feeding on live maggots of flesh-flies and blowflies. Flies lay their eggs on dead vertebrates and the resulting maggots store botulinal toxin in their bodies as they consume the carcass. More than 5,000 maggots can be produced by a single bird carcass; consumption of just two to five toxin-bearing maggots is often enough to kill a duck.

Is it safe to eat ducks?

When hunting, you should only harvest ducks that act and look healthy. Don't take any ducks that show signs of illness, and follow good sanitary practices when preparing them. When preparing ducks, the gut should be immediately removed and care should be taken to not disturb the gut contents.

Will my dog get sick if it eats a dead bird?

Dead ducks and other waterfowl may contain potentially harmful bacteria or toxins. You should prevent your dogs from scavenging affected carcasses. This will help prevent the spread of botulism. In cases where you think your dog may have ingested a contaminated carcass, monitor it for signs of sickness and contact a veterinarian if you suspect it is falling ill.

Guidelines for hunters: the safe and hygienic handling of game ducks

- Do not hunt ducks that are displaying signs of sickness, cannot fly or are dying
- Do not handle ducks that are obviously sick or found dead with no obvious reason
- Keep all harvested ducks cool (below 7.5 degrees Celsius), clean and dry
- Use rubber gloves when cleaning ducks
- Avoid hand to face contact when dressing ducks and prior to washing your hands
- Do not eat, drink or smoke while cleaning ducks
- Wash your hands with soap and water or alcohol wipes after handling or dressing ducks
- Clean all tools and surfaces immediately after dressing ducks; use hot soapy water, then disinfect with a 10% chlorine bleach solution
- Cook ducks thoroughly (achieve an internal temperature of 90 degrees Celsius for 6 minutes) to kill disease and parasites and inactivate any botulism toxins
- For duck hunters using mechanical pluckers, consideration should be given to wearing a facemask to protect against pathogens.

If you see birds that you suspect may have botulism, please contact:

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