

# Ducks and Lagoons

## A Delicate Balance



### What's in a Lagoon?

A lagoon is a complex ecosystem in a delicate state of balance. There is a balance between the microorganisms, plants and animals living in the lagoon. The weather and the characteristics of the water in the lagoon also affect this delicate balance and help make it a functional environment.

Our lagoons and waterways are home to many animals including a wide variety of native and introduced ducks and it is crucial that everything within the ecosystem is in balance.

### What happens when the lagoon ecosystem is unbalanced?

When the delicate balance between people, animals, plants and nutrients are disturbed it can have a major effect on one or all species. One effect can be the sudden increase in the number of duck deaths seen in lagoons and creeks. This occurs

mainly in summer and is likely to be as a result of avian (bird) botulism.

### What is Avian Botulism?

Avian botulism is a form of bacterial poisoning. It is not an infection. It is caused by the chemical toxin produced by the bacteria *Clostridium botulinum* (known as *C. botulinum*). It causes progressive weakness, paralysis and death in birds.

This disease is very common in waterbirds all over the world including USA, Canada, and Russia where outbreaks with over one million waterbird deaths reported. While the number of deaths locally is nowhere near the numbers experienced elsewhere, Northern Beaches Council takes the death of ducks and other animals very seriously.



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## What Causes Avian Botulism?

The naturally occurring bacteria *C. botulinum* causes botulism and is found in the mud/soil of wetlands and lakes around the world. Birds become affected by the disease by eating food (insects, snails, worms etc) which contains the *C. botulinum* bacteria.

## When do cases of avian botulism occur?

The bacteria *C. botulinum* is found in greater numbers during summer when oxygen levels in the water are low, the water is warmer and there is a large amount of decaying organic matter such as decomposing algae, other plants and even fish and other animals.

## How do you prevent avian botulism?

It is difficult to prevent the disease as the botulism-causing bacteria is natural and always present.

High levels of nutrients lead to an increased likelihood of algal blooms, which in turn increases decaying organic materials. Reducing the amount of nutrients entering the lagoons will reduce the risk of avian botulism. However, it is particularly difficult to reduce nutrient load in an urban environment like the Northern Beaches where we have stormwater entering our waterways and bringing nutrients with it.

## Am I at risk?

Human botulism is rare as it is unlikely people would come in contact with *C. botulinum*. However, it is still possible.

If a break in the skin is exposed to potentially contaminated substances, like mud or plant life around the fringe of the lagoon, the wound should be cleaned and antiseptic applied as soon as practicable. At the sign of any medical symptoms report immediately to a doctor or hospital.

## Should I do anything about the ducks?

Please report any sick or injured birds to Northern Beaches Council on 1300 434 434. Do not try to remove the birds as you might place yourself at risk. Also, Council cannot get a clear idea of the potential seriousness of the situation if birds are being removed without our knowledge.

## Where can I find more information?

Read the Australian Wildlife Health Network Fact Sheet about botulism in birds in Australia at [www.wildlifehealthaustralia.com.au/FactSheets.aspx](http://www.wildlifehealthaustralia.com.au/FactSheets.aspx)

Search Avian Botulism on the Victorian Department of Environment website [www.depi.vic.gov.au/agriculture-and-food](http://www.depi.vic.gov.au/agriculture-and-food)



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