Animals in aquatic facilities

Public health risks and mitigation strategies

Contents

VICTORIA State Government | Department of Health

Background

Outdoor public aquatic facilities can attract a wide range of animals.

Animals may pose a risk to public health and safety if they gain access or inhabit aquatic facilities because they can contaminate pool water with pathogens or cause injury to patrons and aquatic facility operators.

Public aquatic facility owners and operators must ensure that water quality is maintained to Victorian regulatory standards. Their *Water Quality Risk Management Plans* should include procedures for preventing animals from entering aquatic facilities and mitigating subsequent risks.

Public health risks of animals to aquatic facilities

Adequate treatment and monitoring of water quality is essential to protect the health of swimmers. Wild and domestic animals can enter and/or swim in pool water and contaminate it by introducing sediments, oils, fur/feathers, and faecal matter into aquatic facilities.

These contaminants can build up over time and affect the filtration, free chlorine levels and ability of other disinfection systems from working at optimal levels.

Birds, such as waterfowl (ducks, swans and geese), are a common problem due to their attraction to water bodies and their ability to fly over artificial barriers.

Waterfowl can carry harmful microbes that can contaminate the water and create potential health risks for bathers and pool staff.

Ducks may try to nest around aquatic facilities during mating season. In Victoria, this occurs between June and November. During this time, ducks can behave aggressively to protect their nests and could injury patrons or staff.

If animals (whether birds, rats, or others) nest on the grounds of outdoor aquatic facilities, this may attract other wildlife that prey on them. In Victoria, the *Wildlife Act 1975* states that it is illegal to disturb or destroy wildlife without an appropriate authorisation, license or exemption.

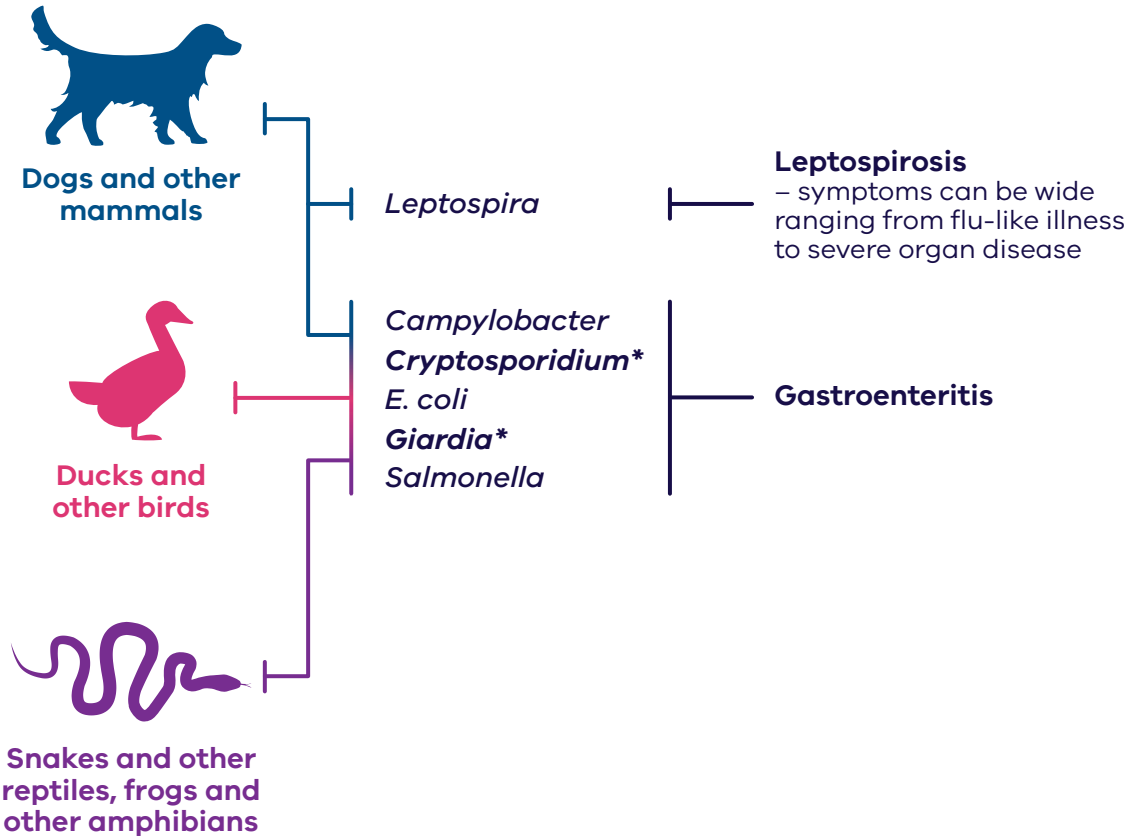
This means aquatic facility owners and operators need to use an approach that won't harm or kill protected wildlife in order to keep animals out of their facilities, including following all relevant legislation.

The best method to ensure animals don't introduce any risks to a public aquatic facility is to prevent all wild animals' from accessing facility's grounds and controlling their feeding and nesting behaviours.

Note: guide dogs are allowed to enter aquatic facility premises. However, they must not enter the water.

Common pathogens

Figure 1: Common human pathogens carried by animals[1]



*** Pathogens that are the highest risk to public aquatic facilities.**

This list represents pathogens that may infect swimmers through the faecal–oral route. Where free-chlorine levels in an aquatic facility meet regulatory standards, the pathogens in Figure 1 are likely to be rapidly inactivated, except for Cryptosporidium, which can survive for long periods of time in chlorinated water.

Category 1 and category 2 aquatic facilities in Victoria are legally required to maintain key water quality parameters.[2] These parameters are available in the *Water quality guidelines for public aquatic facilities: managing public health risks 2020*[3] (the guidelines). The guidelines provide a free-chlorine target range that readily inactivates most pathogenic bacteria and viruses that pose a public health risk if they enter aquatic facility water.

Cryptosporidium is a highly infectious pathogen and causes gastrointestinal illness cryptosporidiosis. Many animals may carry *Cryptosporidium* and only small amounts of infected faecal matter are needed to transmit disease. Cryptosporidium is a chlorine-resistant parasite (Cullinan et al., 2020) that can persist for more than seven days in chlorinated pool water. This is due to its ability to form environmentally resistant oocyst cells, which are shed by infected individuals.

1. Adapted from Zoonotic Disease Fact Sheet | Pool and Hot Tub Alliance (PHTA) (March 2020) Accessed 23 January 2023, and the *Water quality guidelines for public aquatic facilities – managing public health risks*, Table 1 (Victorian Department of Health (2020)).
2. Refer to Division 3 of Part 5 of the Public Health and Wellbeing Regulations 2019.
3. Water quality guidelines for public aquatic facilities – managing public health risks | Victorian Department of Health (2020) v. 2.0, Appendix 2. <https://www.health.vic.gov.au/water/water-quality-guidelines-for-public-aquatic-facilities>

Giardia can cause gastro-like illness in humans. Some animals can introduce it into aquatic facility water (refer to Figure 1). *Giardia* is moderately resistant to chlorine, but less so than *Cryptosporidium* (refer to Figure 2). You may need to take additional disinfection steps if you think your aquatic facility is contaminated with Giardia from animals.

Mammals are the most common sources of *Cryptosporidium* and *Giardia*. Birds carry them sometimes, and reptiles rarely. (Ryan et al., 2021). Consider using a hyperchlorination procedure if animals, faeces or remains contaminate the aquatic facility water.

Figure 2: Disinfection time for selected disease-causing microorganisms in pools[4]

For more information on cryptosporidiosis gastroenteritis refer to the Better Health Channel <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/gastroenteritis-cryptosporidiosis>.

The department's website <https://www.health.vic.gov.au/water/aquatic-facilities> has more information about *Cryptosporidium* risk management and incident response in public aquatic facilities.

Snakes

Victoria has a number of venomous snakes such as the red-bellied black, copperhead, tiger and brown snakes. It is important to understand what types of snakes live around your area so you can be aware of them and their behaviours.

Keep outdoor facilities clear of rubbish and organic litter. Snakes – and the frogs and mice they feed on – hide in piles of leaves, sticks and other dark, enclosed areas. Covering water bodies will also help to reduce the likelihood of snakes being present in the grounds and in the pool.

Snakes are more likely to bite if you attempt to capture or harm them.[5] To prevent snake bites, never approach a snake. If you encounter one, contact a licenced snake removalist. Never attempt to move a snake yourself. Keep patrons and staff away until the snake is removed.

A bite from a venomous snake can cause serious illness or death. Symptoms may not be obvious for an hour or more after being bitten. If you think someone has been bitten by a snake, call Triple Zero (000) and ask for an ambulance.

The Better Health Channel has more information about first aid for bites and stings <https://www.betterhealth.vic.gov.au/health/healthyliving/bites-and-stings-first-aid#snake-bites>.

4. Adapted from the *Water quality guidelines for public aquatic facilities – managing public health risks*, Table 3 (Victorian Department of Health (2020))
5. Information on how to handle snakes can be found from the Living with Snakes – Our wildlife factsheet <https://www.wildlife.vic.gov.au/__data/assets/pdf_file/0034/549178/Living-with-snakes-fact-sheet.pdf>

Preventing animals from entering aquatic facilities

Animals enter aquatic facilities to scavenge for food, cool down or to escape predation or bushfires.

Here are some tips to stop animals from getting into your aquatic facility:

- Do not allow animals to forage or be fed around the aquatic facility. Remove any fruiting trees or tall grasses around pools to reduce the likelihood that animals will enter pool grounds to graze out of hours.
- Stop patrons from feeding birds or leaving behind food waste.
- Cover the surface of pools and spas with a solar tarp or pool cover when not in use. This helps to stop birds from landing and defecating in outdoor aquatic facilities. It also ensures that other animals cannot fall in and drown or attempt to drink the water.
- Install deterrents recommended by licenced wildlife controllers. Motion-activated sprinklers, large inflatable pool toys, owl scarecrows and lane flags create uncomfortable environments for animals. Effective deterrents should move, make noise and look like the predator species of the animal you are trying to deter.
- Never permit pets (such as dogs) and livestock to access or enter aquatic facilities as this could introduce harmful microbes to the water and pose a public health risk. Guide dogs may enter an aquatic facility premises, but they must not enter the water and should be kept away from the pool if possible.
- Be aware of the risks involved in relocating animals from aquatic facilities. Talk to a licenced wildlife controller if animals are an ongoing issue. Wildlife controllers have appropriate licences and expertise to facilitate the removal and relocation of animals.

Preventing animals from entering interactive water features

Interactive water features (IWFs) such as splash pads, spray parks and water play areas usually have open designs and can become contaminated from the surrounding environment.

The department recommends not to use recirculating water systems in IWFs. These systems are more susceptible to contamination from the surrounding environment. If IWFs have recirculating water systems, increased maintenance and site specific risk management plans are needed to reduce the risks to public health from water contamination.

Accumulation of leaf litter/debris, soil and contact with animals should be controlled and minimised – these factors increase the risk of pathogen introduction into the water.

For IWFs with a high bather load, consider having additional staff onsite to monitor the use of the IWF. This will allow a rapid response to any issues.

Here are some things you can do to reduce the risk of animals entering IWFs:

- Install fences and signs stating that animals are not permitted to enter IWFs. Install waste bins if lots of dogs and other animals use the area around the IWF, for example if it is near a park. Design the IWF so there is no water available to animals outside operating hours.
- Prohibit food and drink in the area around the IWF. Ensure animals cannot access waste bins. Limit proximity to grassed areas and gardens as these areas naturally attract wildlife.

Cleaning procedures to remove animal faeces from aquatic facilities

Cleaning animal faeces from aquatic facilities is the same as removing human faeces. Refer to the Aquatic facility incident response procedures <https://www.health.vic.gov.au/water/aquatic-facility-incident-response-procedures>.

These procedures are for:

- contamination of surfaces
- formed stool and vomit contamination
- diarrhoeal incidents.

Procedures for responding to drowned animals

Animals sometimes fall into the water and drown in aquatic facilities. They can decompose over a period of time. How you respond will depend on factors such as whether the animal is still alive, the length of time the dead animal has been in the aquatic facility, whether there is decomposition or faecal contamination, and the overall size/state of the animal.

To reduce potential public health risks, quickly remove and dispose of the animal's remains. Regularly test for free-chlorine and pH levels during the removal process. Hyperchlorination may be required.

If water quality deteriorates, this is likely due to contamination from the drowned animal. Make sure water quality parameters are within regulatory limits before allowing swimmers back into the aquatic facility.

If the animal is in an advanced state of decomposition or there is evidence of faecal matter contamination, hyperchlorination will be necessary. This will help to manage public health risks, such as from the pathogen Cryptosporidium. For more information on hyperchlorination, refer to Aquatic facility incident response procedures <https://www.health.vic.gov.au/water/aquatic-facility-incident-response-procedures>.

Where to get help

Get more information from:

- your local council Environmental Health Officer
- your aquatic facility technical specialist
- aquatic facility industry bodies
- search online for a licenced wildlife controller to assist with legally deterring or relocating native animals.

Further Information

1. Victorian Department of Health 2021, Aquatic facility incident response procedures <https://www.health.vic.gov.au/water/aquatic-facility-incident-response-procedures>.
2. Victorian Department of Health 2020, Water quality guidelines for public aquatic facilities – managing public health risks, v. 2.0 <https://www.health.vic.gov.au/water/water-quality-guidelines-for-public-aquatic-facilities>.
3. Centers for Disease Control and Prevention 2022, Birds and pools <https://www.cdc.gov/healthywater/swimming/residential/animals/birds-and-pools.html>.
4. Centers for Disease Control and Prevention 2022, Finding a dead animal in the pool <https://www.cdc.gov/healthywater/swimming/residential/animals/dead-animals-and-pools.html>.
5. Centers for Disease Control and Prevention 2021, Health Promotion Materials <https://www.cdc.gov/parasites/crypto/materials.html>.

References

1. Cullinan L, McLean S and Dunn L 2020, 'Preventing and controlling *Cryptosporidium spp.* in aquatic facilities: Environmental Health Practitioner's experiences in Victoria, Australia', *Australian and New Zealand Journal of Public Health*, vol. 44, no. 3, pp. 233–239.
2. Ryan U, Zahedi A, Feng Y and Xiao L 2021, 'An update on zoonotic *Cryptosporidium* species and genotypes in humans', Animals, vol. 11, no. 11, 3307. https://doi.org/10.3390/ani11113307.

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Authorised and published by the Victorian Government, 1 Treasury Place, Melbourne.

ISBN 978-1-76131-414-8 (pdf/online/MS word).