



Goldfish Management FAQ

Lacombe Park Lake

Q. What is the goldfish management problem?

A. The release of aquarium or domestic pond water, plants, and/or dead or alive animals into Alberta's waterways or stormwater management facilities is a serious issue, which threatens the health of our waterbodies and operation of stormwater management facilities.

Q. Why must the goldfish management problem be corrected?

A. Common aquarium pond plants and animals, like Asian Goldfish, can become invasive when released into the wild. In addition to outcompeting native species, aquarium pets can also carry diseases and parasites. Goldfish can tolerate fluctuations in water temperature and can exist in water with low oxygen levels. They can prey upon native fish eggs, snails, and plants and increase turbidity through stirring up sediment when feeding. In addition, goldfish are prolific and populations can grow rapidly. The potential for movement or transfer between waterbodies during flood events is relatively high.

Q. What actions have been considered to correct the goldfish management problem?

A. Methods for eradication and control of invasive organisms can be divided into three categories: physical/mechanical, biological or chemical.

A wide array of physical or mechanical methods has been used to control invasive fish populations but have limited potential in eradication. Physical methods include removal of fish by use of nets, traps, electrofishing gear, and management of water levels and flows. These methods have all been implemented for Asian Goldfish with minimal success.

Biological control, while a viable technique for long term management, is not an eradication tool, as there is no guarantee that the predator will eliminate the target species and all its life stages. There is also a high risk of movement of the target species to other waterbodies in the time that it would take for the predator to reduce the target population and afterward.

Chemical control is the only method that is likely to completely eliminate undesirable fish in a body of water. The use of rotenone as a chemical control offers the highest likelihood of success.





Q. Lacombe Park Lake is not a stormwater management facility so why do the goldfish need to be removed?

A. Although Lacombe Park Lake is not a stormwater management facility, there is a high risk that the goldfish will be transferred (by wildlife or other means) to the Riverside stormwater management facility (adjacent to the Mason and Grove condos south of Lacombe Park Lake) which connects to the Sturgeon River.

Q. Why is rotenone the most likely alternative management technique to remove goldfish?

A. Rotenone provides the highest likelihood of success in terms of removing Asian Goldfish from many waterbodies in a time frame that would prevent any potential movement of fish to other waterbodies.

Q. What is rotenone?

A. Rotenone is a naturally occurring compound that is derived from the roots of a tropical plant of the bean family and has been used successfully to eliminate invasive fish. Alberta Environment and Parks use the commercially available rotenone formulation called Prentox Nusyn-Noxfish Fish Toxicant. It is a registered pesticide with the federal Pesticide Management Regulatory Agency (PMRA).

Q. Is Rotenone harmful to humans when used as a goldfish management tool?

A. No. A 132-pound person would have to consume more than 40,000 gallons (approx. 150,000 litres) of rotenone-treated water within a 24-hour period to receive a lethal dose. There is no opportunity for long-term effects since rotenone biodegrades within two to four weeks. The use of rotenone for fish eradication does not present a risk of adverse effects to humans or the environment.

Q. If rotenone is not considered harmful, why are applicators wearing a large amount of personal protective equipment including coveralls, gloves, goggles, and a respirator?

A. Certified applicators are handling concentrated product which poses a larger risk of exposure. When applied, the product is diluted and generally applied below the surface of the water, reducing the risk to the surrounding area and individuals.

Q. How long will the rotenone treatment take?

A. Although project planning could take several months, the rotenone application itself should be completed in no more than one day. Residents will notice signage and barricades/fencing up to 1 week prior to the treatment and 2 weeks following the treatment.





Q. Does rotenone affect all aquatic animals the same?

A. No. Fish are more susceptible. All animals have natural enzymes in the digestive tract that neutralize rotenone. However, fish and some forms of amphibians and aquatic invertebrates are more susceptible because they are gill breathing animals, and thus, the digestive enzymes cannot neutralize rotenone. Although some organisms like aquatic insects are susceptible to rotenone, studies have shown that these organisms can quickly repopulate an area after treatment.

Q. Will wildlife that eat dead fish and drink treated water be affected?

A. For reasons listed above, birds and mammals that eat dead fish and drink treated water will not be affected. A bird weighing one-quarter pound would have to consume 100 quarts (95 Litres) of treated water or more than 40 pounds of fish and invertebrates within a 24-hour period to receive a lethal dose. This same bird would normally consume 0.2 ounces (6ml) of water and 0.32 ounces (9g) of food daily.

Q. Will wildlife species be affected by the loss of their food supply following a rotenone treatment?

A. During treatments, fish-eating birds and mammals can be found foraging on dead goldfish and for several days following a treatment. Following this abundance of dead fish, a temporary reduction in food supplies may result until the fish and invertebrates are restored. However, most of the affected species are mobile and will seek alternate food sources or forage in other areas.

Q. What are some of the impacts of the proposed rotenone treatment?

A. Residents may notice: 1) Partial closure of some areas of the lake for up to one month; 2) Chemical odors for 1 to 2 days; 3) temporary change in water colour; 4) appearance of dead fish for 1 to 2 weeks; and 5) City staff in or around the lake monitoring it for 1 to 4 weeks.

