

Stormwater Reader

Fish Kills

Fish die as a result of a wide variety of natural and unnatural causes. Fish may die of old age, starvation, bodily injury, stress, suffocation, water pollution, diseases, parasites, predation, toxic algae, severe weather, and other reasons. A few dead fish floating on the surface of a pond or lake is not necessarily cause for alarm. We expect some fish to die. However, when large numbers of fish are found dead and dying, it is necessary to investigate and determine the cause as soon as possible.

A fish kill investigation begins as soon as Environmental Services is notified of the issue. A team member will go out to the site and look for any obvious signs of an illicit discharge, noting any strong odors or odd colors in the water. If the discharge has a clear source and is still ongoing, the first priority is to stop the discharge as soon as possible. The water will be tested for parameters such as dissolved oxygen, pH, turbidity, conductivity, ammonia nitrogen, and detergent at multiple locations throughout the investigation site. Then, photos and notes will be taken of every fish mortality, identifying species and size. All of this information is immediately reported to state entities Texas Commission for Environmental Quality and Texas Parks and Wildlife. A formal report regarding the findings of the investigation is filed within 5 business days. The state agencies can then issue fines for fish kills caused by illegal dumping and discharges.



WHAT GOES IN
HERE



ENDS UP
HERE



Many, but not all, fish kills in the summer result from low concentrations of dissolved oxygen in the water. Fish, like all other complex life forms, need oxygen to survive. They get theirs in the form of oxygen gas dissolved in the water. Warm water holds less dissolved oxygen than cold water, so summer is the time when fish can have a hard time getting enough oxygen. Other organisms use oxygen too, including the algae that grow in the summer and bacteria that degrade organic matter. During the day, the algae produce oxygen through photosynthesis, but at night, when photosynthesis stops, they and other organisms keep respiring, using up oxygen. On warm summer nights when plants and algae are abundant in waterways, the dissolved oxygen concentration sometimes drops too low for the fish, and a die-off can occur. This can occur as a result of purely natural conditions or because of human activity that results in adding nutrients - nitrogen and phosphorous - to waterways. Nutrients come from many sources: fertilizers, grass clippings, automobiles, sewage, manure, and others. An excess of nutrients tends to speed up the growth of algae and diminish the availability of dissolved oxygen. Low dissolved oxygen can result from other factors, too, such as poor flushing or circulation, dredging, or a sudden rain after a dry spell.

Symptoms of oxygen depletion may include an abnormal distribution of fish gulping at the water surface or at the pond inlet or edges. Large fish may die first, but all sizes of fish are usually affected. The color and clarity of pond water may change and a foul odor may be released. Fish kills from pesticides, chlorine, gasoline, fuel oil, ammonia fertilizer, acids, and other toxic chemicals are not as common in private ponds, but can occur. Fish kills also can occur as a result of toxic compounds released into a body of water.

If you see dead fish in any waterway in Carrollton, please immediately contact Environmental Services or notify your supervisor and they can contact us. Always contact Environmental Services at 972-466-5727 if you observe or think you observe an illicit discharge or spill! We will gladly go out and investigate all concerns.