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## **Understanding Fish Health**

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Fish are everywhere in Florida from the surrounding ocean to the neighborhood pond or lake. There are over 225 different freshwater fish species present within the state. These fish add money into the economy through recreational and commercial fisheries and bring pleasure to people who enjoy watching them. Due to these and other reasons, people usually become concerned when a fish kill happens. Fish kills may bring thoughts of toxic chemical spills in the water, but a majority of them occur naturally because of a number of factors.

### **Fish need to breathe**

Fish need oxygen just like we do, but their oxygen is dissolved in the water, which is known as dissolved oxygen (DO). The amount of DO fluctuates due to the time of day, the weather, temperature, sunlight, and the number of plants and algae in the water body. There is a decrease in DO at night or on a cloudy day because there is no sunlight for aquatic plants and algae to use for photosynthesis, which produces oxygen in addition to making the plant's food. Warm water holds less oxygen than cool water. So, a combination of high water temperatures and a cloudy day can result in disastrous consequences for fish. Although aquatic plants are beneficial to a water body, too many may be harmful. When plants and algae die, microbes use DO to decompose the material. Too many dead plants and algae may result in a decrease in DO because the microbes are consuming oxygen faster than it can be replaced to decompose the material. Fish give you clues that the DO is becoming low in the water when small fish are at the surface gulping for air.

## **Fish get sick**

Viruses, bacteria, fungi, and parasites coexist with fish in the water. Normally healthy fish can fend off these diseases and parasites, but fish that are weak from poor water quality conditions, spawning, or defending offspring are more susceptible. Infected fish are recognized by behaving abnormally (erratic or weak swimming, rubbing against objects, or twitching), having sores or growths on their body, missing scales, or lack of the protective body slim.

## **Fish get cold**

Due to Florida's warm environment, its waters are able to support many non-native fish species that are from tropical regions and are thus intolerant of cold. When the weather turns cold for a long period of time, the water temperature subsequently drops and these species of fish begin to die. For example, blue tilapia are native to Africa and are present in Florida's waterbodies. When the temperature of the water falls to 60 degrees Fahrenheit, tilapia stop feeding. The fish die when the temperature falls to 45 degrees Fahrenheit.

## **What to do about a fish kill**

If you observe a fish kill in your community pond or lake, the first response is to collect fish and water samples within hours of the deaths occurring. Your local county extension service can inform you of proper sampling procedures. When timely sampling cannot be done, gather the following information and report it to the Florida Fish and Wildlife Conservation Commission Fish Kill Hotline to aid officials in their investigation: **1-800-636-0511**

- Date and time you first saw the fish kill.
- Weather observations, such as temperature, amount of rain, amount of cloud cover, and wind, from the past four days.
- The type or species of dead fish and the number of each (actual or estimate).
- Appearance of dead fish, such as size, discolorations, lesions, growths, condition of eyes and bodies.
- Talk to people within the community to find out if they have noticed anything unusual about the waterbody. This may include fish gulping for air at the water surface, odors, or films on the surface.

Fish kills are unpleasant events that may be baffling, but you can be an important piece of the puzzle with some knowledge and know how.