

## The Story of Fish Kills in Our Lakes

In the summer of 2021, we experienced “fish kills” in our lakes around the 14<sup>th</sup> fairway (Lakes #20 and #21) and in the lake along the 10<sup>th</sup> and 11<sup>th</sup> fairway (Lake #16). The result was extremely noxious odors for the residents in the verandas and club homes adjoining these lakes. The cause of the fish kill was a combination of excess nitrogen and lack of oxygen in the water, together suffocating the fish. Nitrogen is transformed into a form that will adhere to the gills. The source of the nitrogen was twofold: (1) Prior to the no mow zone concept being implemented here at Heritage Oaks, cut grass and leaf litter was being blown into the water, each piece of organic matter being composed of 3-5% nitrogen; and (2) influx of reclaimed water from the county had a surge in nitrogen in early July thus introducing a huge slug of nitrogen into a few of our lakes.

The oxygen depletion occurs when organic matter (such as grass clippings, etc.) decompose which uses oxygen and can create an anoxic condition at the lake bottom further compromising the survival of the fish.



The fish that were affected were Tilapia, not indigenous to Florida and unable to withstand traditional Florida summers. Tilapia is an undesirable species that gets very numerous; therefore, we are having the Tilapia harvested as often as we can (see *Communication Brief #12-Tilapia Harvesting*). The fact that these fish underwent excessive stress and resulted in a mass killing triggered us to investigate the health of our lakes. The result was the implementation of the Healthy Lakes Initiative following the guidelines of Sarasota County and enabling us to get a small grant to proceed with our lake restoration efforts. With the removal of reclaimed water in our lakes and reducing the amount of organic matter being blown into the water, we have not experienced a similar event since 2021. Continuing with the Healthy Lakes Initiative will greatly improve the well-being of our aging lakes and reduce the risk of future fish kills.