Lakes vs. Ponds
All of the "lakes" at the Venetian are actually stormwater retention ponds. This stormwater management system was designed during the planning stages of the Venetian Golf & River Club and permitted by the Southwest Florida Water Management District (SWFWMD). These ponds play a unique role in managing our surface water quantity and quality. Stormwater retention ponds are designed and constructed to reduce flooding during high water periods and they play an important role by trapping sediments and other large solids carried by run-off from roads, parking lots and lawns. In addition to sediments, Stormwater ponds also collect a number of other pollutants such as bacteria, oils, fertilizers, heavy metals and organic contaminants such as animal waste, pesticides and herbicides. The water allows heavier contaminants such as solids or metals, to sink to the bottom of the pond and eventually become bottom layer sediments. The retained water naturally filters the contaminants and returns clean water to nearby streams and wetlands. We, at the Venetian, of course are fortunate enough to have our community built well above historical flood levels.

Effects of Stormwater Run-off
The nutrients from fertilizers that seep into the water can provide food for unwanted plants such as algae. Many different aquatic species in the pond use algae as food. A little bit of algae is not harmful and can be beneficial as it is the base of the food chain. It also helps to uptake the nutrients in the pond; however, too much algae may cause problems. Excess nutrients in the water combined with warm, sunny weather will cause algae to grow very rapidly. This can lead to what is called an algae bloom. When algae covers the surface of the pond, it reduces not only the amount of light that can get to other plants that live in the water or on the bottom of the pond, but also reduces the viability of the pond.

Another nuisance is submerged vegetation. These are various aquatic plants that grow below the water’s surface. While these plants help filter out pollutants and provide a habitat for aquatic life, non-native or nuisance weeds need to be controlled in order to prevent invasive species from taking over. In addition, when submerged vegetation is allowed to reach the surface, mats of algae will develop in these areas.

Several options are used to help control algae blooms and submerged vegetation. Sometimes it is necessary to use chemicals, such as aquatic herbicides, to treat these.

Littoral Shelves
By design, many of the ponds in the Venetian contain littoral shelves, which are shallow areas within the ponds. Regulatory agencies such as SWFWMD require that littoral shelves be vegetated to a minimum of 65% with no more than 15% invasive species. These areas are usually about 1-2 feet in depth. Littoral shelves provide emergent aquatic vegetation the appropriate water depth necessary to thrive. This vegetation competes with algae for space, light and nutrients and helps to filter out pollutants such as heavy metals, oils and fertilizers. If managed properly, ponds and littoral shelves can proved an aesthetically pleasing and healthy habitat for a wide variety of wildlife, including insects, fish, birds and reptiles.

Dead Fish
A few dead fish floating on the surface is not necessarily cause for alarm. The majority of fish kills that occur are due to a variety of natural causes. Fish can die of starvation, injury, stress, disease, parasites, lack of dissolved oxygen in the water, changes in the pH and even rapid fluctuations in temperature. Low dissolved oxygen levels are the most common cause of fish kills. The amount of oxygen in a body of water will vary with water temperature, aquatic plant densities and amount of sunlight. During rainy seasons, stormwater run-off can lead to fish kills. Heavy rains wash organic material, nutrients and fertilizers into the ponds, accelerating plant growth which can lead to depleted oxygen levels. These same rain events also carry herbicides, pesticides and pet waste into the stormwater ponds. Ammonia, which comes from animal waste, is highly toxic to fish. Needless to say, when you observe dead fish in or around your pond always contact your Venetian CDD Field Manager.
Shoreline Plants
Many ponds within the Venetian have beneficial shoreline plants. Much of what some people consider to be weeds are actually beneficial plants. It is the policy of the Venetian CDD not to remove any beneficial shoreline plants. The proper plants will help prevent shoreline soil erosion. In addition, they only grow in the shallower areas of the ponds. Furthermore, aquatic plants pump oxygen into the water and create habitats by providing cover and nurseries for fish and other organisms. More importantly, vegetated shorelines improve the water quality by filtering polluted run-off and trapping sediments. Additionally, it assists to control the growth of nuisance vegetation and ultimately helps make the pond visually pleasing.

Concrete Structures
The concrete structures you see in the ponds are mainly control structures or weirs. The control structures or weirs help regulate the level of the water in the ponds. These structures have either windows or weirs that allow the water to discharge over the windows or weirs during a heavy rainfall event. The normal water level is typically below the window or weir elevations, which allows the pond to serve as a retention facility for a normal rainfall event.

Water Levels
Ponds are not refilled if the water level is low. While everyone wants their pond to look aesthetically pleasing, these ponds were designed as part of a storm water system by managing the run-off from rainfall. A stormwater pond is specifically designed to help prevent flooding and remove pollutants from the water. Adding water to a pond or otherwise altering the water level, can cause flooding by interfering with the pond’s design and ability to hold stormwater run-off.

Wetlands
Wetlands are some of the most productive ecosystems in the world. A wetland may be filled with trees, grasses, shrubs, wildflowers, etc. To be called a wetland, an area must be filled or soaked with water at least part of the year. Some wetlands are actually dry at certain times of the year! Wetlands have important beneficial functions. They provide a habitat for a wide variety and number of wildlife and plants. They filter, clean and store water - in other words, acting like kidneys for other ecosystems! Wetlands also act like sponges by holding flood waters and keeping rivers at normal levels. Wetlands filter and purify water as it flows through the wetland system. Plants found in wetlands help control water erosion.

The wetlands at the Venetian are environmentally protected areas and fall under the jurisdiction of SWFWMD which has very strict rules and regulations about their maintenance. Only invasive vegetation may be removed to keep it from taking over all other vegetation. Dead vegetation may not be removed but must be left to decay in place. Only a certified technician may remove undesirable vegetation from a wetland, vertically trim vegetation, or spray herbicides along the edge of a wetland to keep unwanted vegetation from encroaching on homeowner property.

Maintenance
A certified pond and wetland maintenance company has been contracted by the Venetian CDD to service and maintain the CDD owned wetlands and ponds within the Venetian. All ponds are inspected and, if necessary, treated once a month. All wetlands are inspected on a quarterly basis.

Contacts
If you have questions or concerns, please contact Kareen Richard, Field Manager for the VCDD at 941-485-8500 or email her at krichard@vcdd.org.

Additional information on Florida Friendly Landscaping, Stormwater ponds and wetlands is available at the University of Florida’s website, www.ifas.ufl.edu or SWFWMD’s website, www.swfwmd.state.fl.us