

Stormwater Ponds

Need Your Help!

Many stormwater ponds, which were built in the 1980s to remove pollution under Florida law (**Florida Administrative Code, Chapter 62-25**) are showing their age. These systems were designed with clean outs planned for every 10-20 years (**Reckner et al., n.d.**).

Over the past several decades, however, pond management often has been reduced to monthly chemical applications to kill undesirable aquatic plants and algae. Very few ponds, if any, have been cleaned out. This reliance on pesticides, and a lack of clean-out dredging, has left stormwater ponds out of balance.

Unbalanced ponds create problems, which include the loss of land due to pond erosion, frequent algal blooms, and the loss of once-abundant wildlife (Figure 1). While some residents understand the source of these problems, others correlate pond health with plant-free waters and insist that managers remove native vegetation. However, removing from a food web even a single component, such as native plants, damages the entire system and leads to a greater imbalance. Furthermore, beyond supporting wildlife habitat, a certain level of native plant coverage might be necessary under stormwater system requirements.

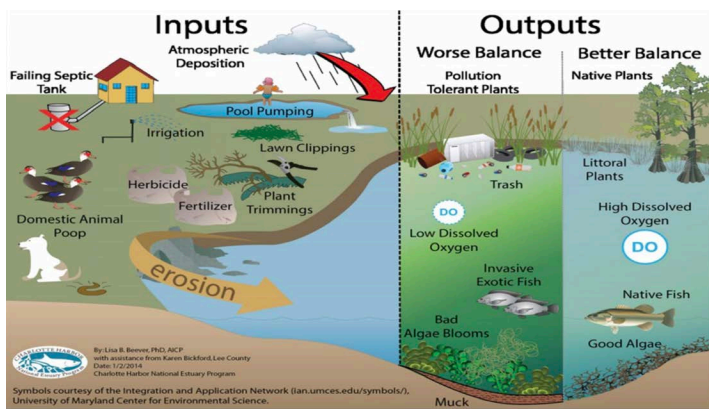


Figure 1. Stormwater pond inputs and outputs. CREDIT: Charlotte Harbor National Estuary Program.

Background

Stormwater is the biggest contributor to water pollution in Florida, and wet detention ponds are the most common method for stormwater management.

Wet detention ponds are designed to hold and treat water before it flows downstream. As part of the stormwater

management system, ponds are required to be designed so that they do not adversely affect the quality of downstream waters to the point that state water quality standards are violated (**Florida Administrative Code, Chapter 62-330**). Yet, many of the receiving waters in Sarasota County do not meet state water quality standards despite the 4,000-plus wet detention ponds that have been built (Figure 2).

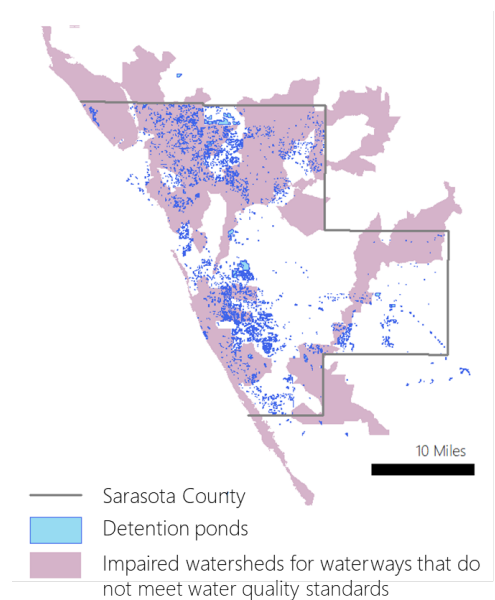


Figure 2. Sarasota County impaired waters map with detention ponds highlighted in blue.

History

Stormwater ponds designed to reduce pollution downstream first gained use as early as the 1980s (**Reckner et al., n.d.**). They were used to mimic wetlands that once dotted the landscape and provided natural rainwater storage and filtration. Stormwater management in Florida became mandated under Chapter 62-25 of the Florida Administrative Code in February 1982. Chapter 62 regulated stormwater discharge and delineated the design, maintenance, and construction of stormwater discharge facilities.

Stormwater management was (and is) intended to replicate pre-construction water flow in order to reduce pollution, sedimentation, flooding, and maintain salinity regimes in estuaries needed to support wildlife (**Florida Administrative Code, Chapter 62-40, 431**). Standard practice has been so predominant that there are now more than 76,000

stormwater ponds in Florida (Bean et al., 2016 unpublished), which is nearly 10 times the number of naturally occurring lakes throughout the state.

Unfortunately, the increased number of water bodies that do not meet water quality standards provides evidence that these systems are not functioning as intended and that there has been a breakdown between design, implementation and long-term management.

Sarasota County Stormwater Ponds

Since 1989, Sarasota County has required developments to incorporate littoral zones into stormwater systems to improve and protect water quality. Vegetated littoral zones are shallow water areas that support and sustain aquatic vegetation. While the main purpose of these vegetated areas is to improve water quality in the pond before water is discharged downstream, there are many secondary benefits, as well. Secondary benefits include beautifying the urban landscape and providing habitat for Florida wildlife. Littoral zones are designed by engineers and implemented during the permitting phase of development.

The permitting and regulation of stormwater systems falls under the Southwest Florida Water Management District and Sarasota County's Environmental Protection Department (EPD). The responsibility to obtain permits for and maintain the health and functionality of the stormwater system, including pond littoral zones, falls under the owner or homeowners or neighborhood association. In Sarasota County, stormwater ponds are regulated by the **Unified Development Code (UDC), Article 9, Section 124-178**

The current **Environmental Technical Manual** under the UDC requires:

- littoral zones that cover at least 30 percent of the surface area,
- plantings consisting of three native herbaceous plants,

- no single species representing more than 50 percent of the vegetative cover,
- native vegetation that covers at least 65 percent of the littoral zone, and
- invasive species coverage controlled at 15 percent or less of the littoral zone area.

What can you do?

You can help improve your stormwater pond. Start by considering whether a littoral zone is required as part of your stormwater system, and whether your littoral zones meet County regulations. Other actions you can take include:

- Reduce your inputs to build up your pond's natural defenses (Figure 1).
- Work with your pond manager to adopt an **integrated approach to aquatic weed management**.
- Reduce fertilizer use.
- Keep lawn clippings and tree debris out of your stormwater pipes and ponds.
- Create or enhance the pond's littoral zone with native wetland plants to restore the natural food web.
- Add a low-maintenance buffer around the perimeter of your pond to secure bank sediments and allow for additional removal of nutrients and other non-point source pollution.
- Conduct a **Stormwater Pond Habitat Assessment** to rate the overall ability of your pond(s) to provide habitat to invertebrates, fish, and birds.
- Use County resources to help you achieve any and all of the above. Call the Neighborhood Environmental Stewardship Team (NEST) or University of Florida IFAS Extension at 941-861-5000.
- **Abide by Sarasota County's Water Pollution Control and Fertilizer and Landscape Management Codes** and reporting any violations to the EPD at 941-861-5000.

Stormwater Pond Habitat Assessment Tool

Stormwater systems provide an opportunity to enhance Florida habitat. Citizens can be proactive in improving these systems using a newly created **stormwater pond habitat assessment tool**. The assessment tool calculates for users an overall rating of the pond's physical habitat for aquatic wildlife, which depend on these water bodies for their food, refuge, and reproductive success. The tool also offers a rank of various pond conditions, allowing owners and managers to prioritize enhancement efforts.

The Stormwater Pond Habitat Assessment is available online at <https://tinyurl.com/StormwaterPondAssessment>.

For questions or more information, **contact UF/IFAS Extension Sarasota County at 941-861-5000 or sarasota@ifas.ufl.edu**.

