

# Orange County, Florida Lakefront



## A Stewardship Guide for Orange County Lakefront Homeowners

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Welcome! Whether you've recently purchased a new lakefront home, or are a longtime resident, you are part of a community of homeowners dedicated to maintaining the health and water quality of more than 600 named lakes in Orange County. Protection of our lakes and the ecosystems they support is crucial to providing Orange County residents healthy outdoor spaces in which to fish, boat, play and live.

Lakefront properties are uniquely positioned to protect water quality. By slowing and capturing stormwater runoff, unwanted nutrients and pollutants can be kept out of the lake. Nutrient pollutants can reduce water clarity and fuel the growth of exotic and invasive plants and algae. Simple acts such as keeping a healthy stand of shoreline vegetation and reducing water and chemicals used on your lawn can go a long way to keeping your lake healthy, clean and enjoyable year round.

Along with keeping the lake healthy, as a property owner you can also help ensure the safety of others. Acquiring the proper dock construction and shoreline vegetation permits not only protects water quality, but will help your friends, family and neighbors recreate safely.

We hope you will take some time to review the information in this handbook. Orange County depends on lakefront residents like you to make responsible decisions that will keep our lakes safe, clean and healthy for generations to come.





**Orange County**  
**311 non-emergency help & info**

- Online **Requests** • Phone **Calls**
- Smartphone **App** • Web **Chats**

**107 WATER BODIES**  
in Orange County are impaired and don't meet water quality standards.

**YOU CAN MAKE A DIFFERENCE.**

★★★★★★★★

# Stormwater 101

## WHAT IS STORMWATER?

Stormwater is the rain that lands on our yards, streets, parking lots and buildings and then either enters the storm drain system or runs directly into a lake or stream.

### How does stormwater get polluted?

As stormwater flows over our lawns, driveways, and parking lots, it picks up fertilizers, oil, chemicals, grass clippings, litter, pet waste and anything else in its path. A network of storm drains, pipes, ditches, and swales then transport the stormwater along with these pollutants into collection ponds. Pollutants that enter this system may eventually end up in our lakes. In some cases, stormwater systems direct their discharges right into our lakes, streams and rivers.

By the way... Storm drains, also known as inlets, are the openings you see along curbs and in streets and parking lots. *Water that enters storm drains does not go to a wastewater treatment facility, and may flow directly into a lake with no treatment at all.*

### What are some common pollutants and how do they affect water quality?

**Sediment** can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment can also destroy aquatic habitats. Principal sources include construction sites and exposed materials on residential properties (dirt, gravel, grout, cement, etc.).

**Excess nutrients** can cause algal blooms. Algal blooms also block sunlight needed for aquatic plants to grow. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms are negatively impacted by water with low dissolved oxygen levels. Principal sources include the nitrogen and phosphorus in fertilizer, yard debris, pet waste, agricultural runoff and septic systems.

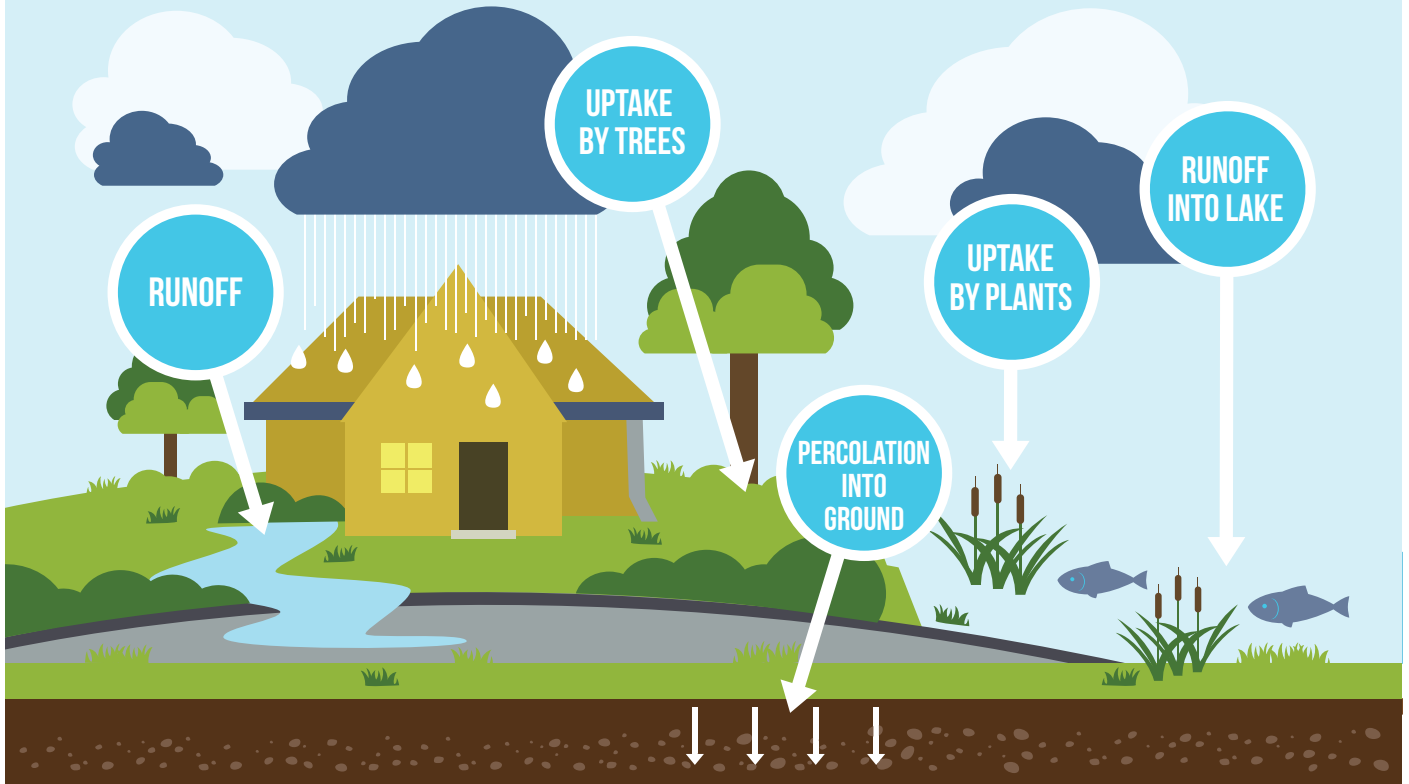
**Bacteria and other pathogens** can wash into swimming areas and create health hazards, often making lake health advisories and boat ramp closures necessary. Principal sources include pet waste and unmaintained septic systems.

**Trash and debris** washed into waterbodies can choke, suffocate or disable aquatic life like birds, fish, turtles and otters. Examples include plastic bags, balloons, bottles and cigarette butts.

**Hazardous waste** like insecticides, pesticides, paint, solvents, used motor oil and other auto fluids can poison aquatic life. Land animals and people can become sick from eating diseased fish or ingesting polluted water. Principal sources include residential, commercial or industrial dumping or runoff, including leaks from automobiles.

*The following pages will help you prevent the above issues and limit negative impacts to water quality.*

# Stormwater Runoff Rundown



## HERE ARE SOME SIMPLE WAYS TO HELP CAPTURE STORMWATER RUNOFF:

- Keep native trees and vegetation and maintain natural drainage patterns.
- Plant native vegetation along the shoreline.
- Install a berm & swale system.
- Replant trees that die or fall down, even if you put them in a better location.
- Use a rain barrel to capture rain and runoff from your roof to use later for irrigation.
- Direct downspouts away from paved surfaces and into the yard where the water can percolate.
- Replace surfaces like concrete and asphalt with more permeable surfaces such as pavers and gravel. Install rain gardens and vegetated strips in the landscape.
- Use Florida-Friendly Landscaping™.

## IT'S NO SECRET:

It rains a lot in Florida! All that rain is great for our subtropical ecosystems and helps keep our state green and beautiful. With so much rain though, especially in summer, it can be hard to prevent all pollutants from leaving your yard and flowing into your lake. While reducing the amount of pollutants on your property is essential for promoting the health of your lake, you can also help *keep your lake clean by capturing as much runoff as you can*. By capturing runoff and allowing it to percolate into the soil rather than flow directly into the lake, you can use the ground to filter pollutants before they have a chance to reach the lake.

# LANDSCAPING PRACTICES FOR WATER QUALITY, WILDLIFE & SHORELINE PROTECTION

## LAKE-FRIENDLY LANDSCAPING

Along with good fertilizer practices, proper landscaping techniques can go a long way to keep your lake clean. Incorporate these tips in your landscaping routine:

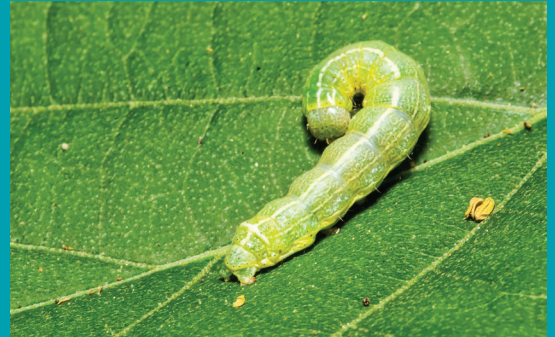
**Reduce Chemicals** Minimize herbicide, pesticide and fertilizer use. Never apply chemicals/fertilizers before heavy rains. Mulch to prevent weeds and erosion. Identify pests before spraying and use the least-toxic pesticide available. Follow label directions for all pesticide, herbicides, and fertilizers.

**Manage Yard Waste** Never blow lawn clippings into streets, lakes, or storm drains. Use leaves and pine needles as mulch. Compost yard waste and kitchen scraps. Pick up trash, litter and pet waste.

**Conserve Water** Plant native or Florida-friendly plants. Turn off irrigation systems during the rainy season (June 1 - Sept. 30) or make sure your rain gauge is working properly. Install a moisture sensor on old irrigation systems, or make sure your sensors are working correctly.

Direct sprinkler heads toward the landscape, away from pavement. Inspect sprinkler heads often and repair when needed.

Have your sprinkler system tuned up after major landscape changes or at least every five years. Visit [www.occonservewater.net](http://www.occonservewater.net) for more tips.



Minimize pesticide use and use the right product for the right bug.



Compost yard waste to make home-grown fertilizer and mulch.

## HELP RESTORE LAKESHORE HABITAT



**DO**

Plant native trees, shrubs and wildflowers.



**DO NOT**

remove native lakeshore vegetation.



**DO**

Replant white-sand beaches with native aquatic vegetation.



**DO NOT**

import artificial "white sand" to create a beach.



Direct sprinkler heads toward plants and away from pavement and concrete.

# LANDSCAPING PRACTICES FOR WATER QUALITY, WILDLIFE & SHORELINE PROTECTION



Shoreline erosion due to wave action.



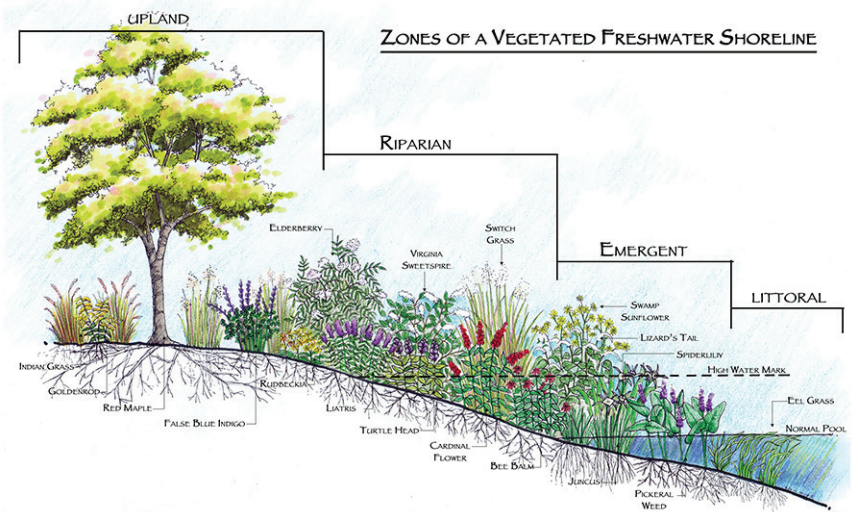
A healthy community of native shoreline vegetation protects the lake and looks pretty too!



## LAKE-FRIENDLY SHORELINE

Planting vegetation along your shoreline is great for slowing runoff, catching sediment, capturing excess nutrients and stabilizing the soil. Plants along the water's edge also provide valuable habitat for fish and wildlife. As an extension of your backyard, your shoreline serves as a last line of defense against introducing excess nutrients such as nitrogen and phosphorus, and other harmful pollutants to your lake. Here are some things to consider:

- Plants can slow water flow, catch runoff, and uptake excess nutrients. As they absorb nutrients, they slow the growth of algae and unwanted exotic plant species.
- Planting native vegetation helps reduce exotic and invasive plant growth. This is better for the lake and reduces your landscape management costs. Increasing biodiversity and saving you money by reducing management costs.
- Native vegetation near the shoreline stabilizes sediment which results in clearer water. Plants also minimize wave action, keeping your property from eroding into the lake.
- Native emergent plants provide nurseries for fish and invertebrate species. Your shoreline can provide hiding spots to help young lake dwellers from becoming a bird's breakfast!



Courtesy of Clemson University

# LANDSCAPING PRACTICES FOR WATER QUALITY, WILDLIFE & SHORELINE PROTECTION

## LAKE-FRIENDLY FERTILIZING

Orange County has a Fertilizer Management Ordinance (Chapter 15, Article XVII) to help residents make good decisions on how and when to fertilize. Following these rules makes it easy for lakefront homeowners to keep a healthy yard while protecting water quality.

- **When it comes to fertilizer, more is not better.** Determine the square footage of your yard that needs fertilizer, and only use the amount directed by the package label. Grass that gets just the right amount — not too little and not too much — produces a dense root and shoot system capable of filtering pollutants from runoff. Limit application to 1 pound total nitrogen per 1,000 square feet (maximum 3 pounds per year).
- **Phosphorus-Free is the Way to Be!** Lawns and landscape plants in Florida typically receive plenty of phosphorus (P) from the native soil. Always choose a P-free fertilizer unless a soil test indicates a deficiency.
- **“N” that’s SLOW is the Way to Go!** Nitrogen (N) in fertilizer must be made of at least 65% slow-release nitrogen. By releasing N slowly, nutrients are available to your lawn and plants for an extended period of time, reducing nutrient leaching and saving you money. Only fertilizer containing nitrogen can be applied from October 1 to May 31, and it must be at least 65% slow-release type.
- **Own Your Zone.** Keep fertilizer at least 25 feet away from any lake, pond, river, canal, shoreline or wetland. Never allow fertilizer to get into the water. Maintain a 10-foot low maintenance zone adjacent to water bodies. This zone is also a fantastic place to establish buffer plantings of flowering aquatic and riparian plants to attract wildlife and further filter runoff water.
- **Direct and Deflect!** Broadcast spreaders must be equipped with a shield to deflect fertilizer from impervious pavement, storm drains and ditches. Always sweep up fertilizer that lands on concrete, pavement or any other hard surface. Never sweep or blow excess fertilizer down a storm drain. By directing fertilizer to the right place, you also save time and money!
- **Nutrients in Summer Can be a Bummer.** In Florida’s rainy season, June 1 to September 30, heavy rains wash excess fertilizers into our lakes and streams. Never apply fertilizer 24 hours before a storm or heavy rain. If you apply fertilizer during the summer, only apply fertilizer with zero nitrogen and zero phosphorus. Better yet, skip the fertilizer during the summer!



Proper lakefront fertilizer and landscaping practices are crucial for protecting water quality and the ecosystem which depends upon a healthy lake. Using a few simple best practices, you can have a healthy

and vibrant landscape as well as protect water quality.

Here in Florida, phosphorus (P) is a top pollutant that can cause water quality issues in our lakes. Along with nitrogen (N), P is a naturally occurring nutrient found in our soils, and it is essential for plant growth. Too much P in the water however, can cause algal blooms and explosive growth of unwanted and exotic plants. This overabundance of algae and plants can lead to murky or green water and cause issues that keep residents from being able to boat, swim, and fish.



## SHORELINE VEGETATION AND PERMITTING

Before beginning any work on your shoreline, it is important to find out if you need a permit. Permits may be required to remove plants, use herbicides or do any work within a wetland. In addition, permits may be required from one or more agencies such as Orange County Environmental Protection Division (EPD), Florida Fish & Wildlife Conservation Commission, and St. Johns River or South Florida Water Management Districts.

### Shoreline Vegetation and Permitting...the fine print.

Vegetated shorelines protect water quality, prevent erosion, offer fish and wildlife habitat, and provide a pleasant place for relaxation and enjoyment. In Orange County, a lakeshore homeowner is entitled to a vegetation-free access corridor of 20% or 30 feet of total linear shoreline, whichever is greater, without a permit. Boat docks are to be placed in the access corridor. If you want to remove vegetation outside of this area, a Lakeshore Protection (LSP) permit is required. This permit will allow you to remove nuisance

and exotic vegetation; however, replanting of beneficial native species may be required to meet 80% coverage of native vegetation. The LSP permit will allow you to maintain the shoreline clear of nuisance and exotic vegetation as long as you sustain 80% native plant coverage. Note that certain trees and endangered plants cannot be removed from the shoreline.

In addition, many lots have wetland areas above the normal high water elevation (NHWE). These areas are protected by state and local ordinances. If your property is in unincorporated Orange County, you will need approval from Orange County EPD

before starting any work in these areas. If you live within a city or town, check with their environmental compliance section before starting any work.

Occasionally, conservation areas may become filled with nuisance and exotic vegetation. The LSP may be used to selectively clear nuisance vegetation within the conservation area, while replanting with beneficial native vegetation. Contact EPD at 407-836-1402 or [WetlandPermitting@ocfl.net](mailto:WetlandPermitting@ocfl.net) for specific permitting requirements.



## ***FAST TRACK*** ONLINE SERVICES

To check the status or search for an environmental permit that may have been issued, visit Orange County **FAST TRACK** [fasttrack.ocfl.net/onlineservices/](http://fasttrack.ocfl.net/onlineservices/)

## DOCKS, RAMPS & SEAWALLS

**You will need a permit** to construct or repair a boat dock, boat ramp or seawall. In unincorporated Orange County, all new boat docks require a permit from EPD and the Orange County Division of Building Safety. The Division of Building Safety will only accept plans that have been approved by EPD. Building Safety Division fees are based on structure specifications.

For information on the fees, visit the Division of Building Safety or call 407-836-5550. Repairs, additions, or other modifications of docks, including the addition of a floating dock or personal water craft platform, generally require a permit. To determine if repairs or modifications require authorization, contact EPD at 407-836-1402.

**Boat ramps** have very specific requirements depending on the size, location and who will be utilizing the boat ramp facility. For example, a public or commercial ramp will have more requirements than a private ramp. Boat ramp permit applications require approval by the Board of County Commissioners at a public hearing. Because of the time required to review, schedule a public hearing and send out notices, these permits take longer to issue.

**Seawalls & Shoreline Stabilization Structures** that stabilize the shoreline, like seawalls and rip rap, require a shoreline alteration permit. Non-vertical methods, such as rip rap combined with native aquatic plants, are preferred over vertical seawalls because they have less environmental impact. If a new seawall is proposed along a shoreline where the adjoining parcels do not have one, a professional engineer (PE) must demonstrate that a vertical seawall is the only method of stabilizing the shoreline. If you want to repair or replace an existing seawall, a permit is required.

Riprap and plantings must be utilized to offset any negative environmental effects of a seawall. A shoreline alteration permit is also needed for dredging, filling, pumping of sand, or other alterations to the shoreline or lake bottom of our lakes or canals.

Contact EPD at 407-836-1402 or [WetlandPermitting@ocfl.net](mailto:WetlandPermitting@ocfl.net) if you need assistance.





## CONSERVATION EASEMENTS, BUFFERS AND BERMS & SWALES

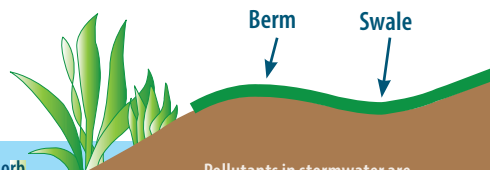
Often installed by the developer as a condition of their building permit, homeowners may be required to maintain a conservation easement, buffer or berm & swale just upland from the normal high water line. These areas are designed to mitigate the impacts of the homes within a subdivision on a lake or wetland, and protect the near-shore ecosystem. You may be restricted from or be required to obtain permits for any activity within these areas. You can contact EPD at 407-836-1402 to find out what is and isn't permitted. Many times, this information gets lost in the shuffle when buying a home, so it is important that homeowners are proactive in determining if their property has a conservation easement, buffer or required berm & swale. This information should be on the property plat and is also available through the Orange County Property Appraiser, [www.ocpafl.org](http://www.ocpafl.org).

### What are Buffers and Conservation Easements?

Buffers and conservation easements are restricted places on a piece of property designed to protect the adjacent natural resource, such as your lake. These areas are intended to be left natural to provide a buffer between the development and the surrounding ecosystem. Buffers and conservation easements may exist between your yard and a lake, stream or wetland.

### What is a Berm & Swale?

A berm and swale is a low hill and associated depression incorporated into the landscape, typically parallel to the shoreline. This area slows and captures runoff and allows water and pollutants to percolate into the ground. This prevents pollutants and excess nutrients from entering the lake from your yard. Homeowners should maintain their berm and swale. Swales should not be filled in or planted with trees, shrubs or other woody plants. Plants and fill material will prevent the swale from functioning as designed.



Shoreline vegetation helps absorb chemicals and nutrients before they can add to the nutrient loading in the lake.

Pollutants in stormwater are trapped here in the swale.

*Preserving and enhancing buffers and berms & swales are great stewardship practices to protect your lake, even when not required for the original development.*

## OTHER THINGS TO CONSIDER

### Pools & Spas

Orange County prohibits the discharge of pool and spa water into storm drains and the stormwater system. Pool chemicals like chlorine can be toxic to fish and other aquatic life. To properly drain your pool or backwash your filter system, do the following:

1. Use a test kit to check that chlorine level is 0.01mg/L or less. If chlorine level is not ZERO, wait at least 48 hours and test again.
2. Check to ensure water is clear and free of debris and algae.
3. Test to be sure pH of discharge water is between 6.5 and 8.0.
4. **KEEP DISCHARGE WATER ON YOUR PROPERTY** by pumping slowly onto your yard. Keep discharges out of neighbors' yards and streets.
5. Rinse filters over yards and **NOT** over driveways or paved areas.
6. Dispose of all filter media such as diatomaceous earth in the trash.



### Saltwater Pools

#### High concentrations of salt can kill vegetation.

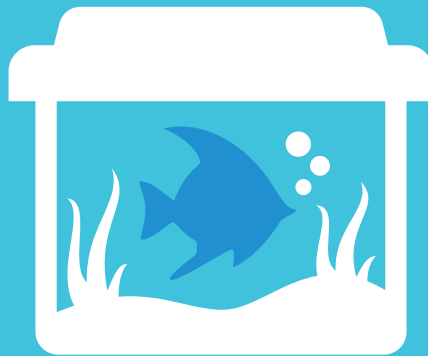
A pump truck may be needed to draw down large amounts of water. Small amounts can likely be diluted and be put on a lawn without killing plants, but never directed to the street or into ditches, stormwater ponds or storm drains.

### Aquariums

Local municipalities and the State of Florida spend billions of dollars each year trying to control exotic and invasive plant and animal species. Once released into the wild, these species can spread disease, outcompete native species, and decimate populations of native plants and animals. They may seem harmless but introduced exotic plants and animals can change entire ecosystems and lead to the loss of native species and habitats.

# STOP

NEVER DUMP PLANTS AND ANIMALS FROM AQUARIUMS INTO YOUR LAKE!



# 1/3

OF THE WORLD'S WORST AQUATIC INVASIVE SPECIES ARRIVE VIA THE AQUARIUM OR ORNAMENTAL SPECIES PATHWAY.

## A STORY ABOUT FLORIDA'S LAKES

You might have noticed that Florida lakes are different than many other lakes around the country. Because of Florida's location in the subtropics, plants really like to grow here. That includes in our lakes. Florida is home to dozens of aquatic plant species, some native, some exotic. These plants are part of a unique story, played out over millennia.

Many of our lakes begin life as sinkholes. These holes eventually fill with water due to ground-water infiltration and rain. As sediment washes into lakes, they get shallower and develop an organic layer that allows plants to grow. As these plants grow and die, the organic material builds up on the bottom, making the lake shallower

over time. Eventually, the lake will fill in, becoming a wetland, and, ultimately dry



land. This process, called succession, may take thousands of years, but the natural course for a lake is for it to stop being a lake.

The plants growing in and around your lake are part of a complex geological and ecological system. Aquatic native plants are a natural part of the ecosystem in healthy Florida lakes and important for maintaining good water quality and providing habitat for fish and wildlife. Attempting to get rid of all your plants is not only bad for the ecosystem, it is nearly impossible!

We have the ability to balance the health of this ecosystem with our desire to boat, swim, fish and live on a lake. Through good stewardship practices, and following Orange County rules and guidelines, our lakes can be both enjoyed and protected.

## Contacts to Know

### Florida Department of Environmental Protection

407-897-4100

[www.floridadep.gov/water-topics](http://www.floridadep.gov/water-topics)

### Florida Fish and Wildlife Conservation Commission

*Office of Invasive Plant Management*

407-858-6170

[www.myfwc.com/wildlifehabitats/invasive-plants](http://www.myfwc.com/wildlifehabitats/invasive-plants)

### Orange County 311 Non-emergency help & info

• Phone Calls • Web Chats

• Online Requests • Smartphone App • Dial: 311

[www.orangecountyfl.net/Home/311Helpinfo](http://www.orangecountyfl.net/Home/311Helpinfo)

### Orange County Environmental Protection Division

407-836-1400 | [epd@ocfl.net](mailto:epd@ocfl.net)

[www.orangecountyfl.net/Environment](http://www.orangecountyfl.net/Environment)

### Orange County Sheriff's Office

Emergency: 911

Non-Emergency: 407-836-4357

[www.ocso.com](http://www.ocso.com)

### South Florida Water Management District

561-686-8800 (West Palm Beach HQ)

407-858-6100 (Orlando Service Center)

[www.sfwmd.gov](http://www.sfwmd.gov)

### St. Johns River Water Management District

386-329-4500 (Palatka HQ)

407-659-4800 (Maitland Service Center)

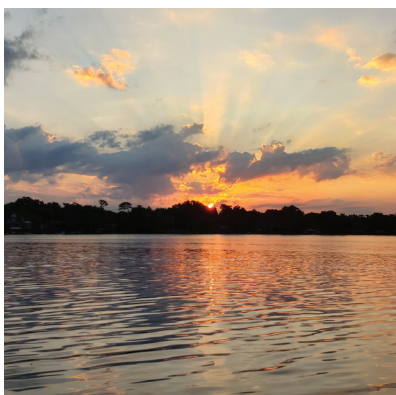
[www.sjrwmd.com](http://www.sjrwmd.com)





3165 McCrory Place, Suite 200  
Orlando, FL 32803

For more information, contact Orange County Environmental Protection Division at 407-836-1400 or visit [www.ocfl.net/epd](http://www.ocfl.net/epd).



## Do you want to:

- Change or maintain your shoreline?
- Do less work to keep your dock and shoreline attractive and functional?
- Protect water quality on your lake?
- Build or repair a boat dock, boat ramp or seawall?

This *Lakefront Homeowner's Handbook* is a comprehensive guide on how to get things done while protecting the fish and other animals that share your lake with you.