

HOMEOWNER'S GUIDE TO WETLANDS

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TABLE OF CONTENTS

Introduction to Florida Wetlands.....	4	Application Process.....	22
What is a Wetland?.....	5	Review of Project Impacts.....	26
Wetland Boundaries.....	6	Compliance and Enforcement.....	27
Florida Wetland Delineation Methodology.....	7	Tips on Avoiding Problems.....	28
Federal Wetland Delineation Methodology.....	8	Best Management Practices (BMPs).....	29
Wetland Values.....	8	General Construction Projects (Homes, Driveways)...	29
Ecological Value.....	8	Post-Construction Landscaping	
Economic Value.....	10	and Land Maintenance.....	31
Aesthetic Value.....	12	Septic Tank Installation and Maintenance.....	32
A Paradox.....	13	Mangrove Trimming.....	33
Threats to Wetlands.....	14	Boat Ramps.....	34
Exotic/Nuisance Plant Infestation.....	14	Docks and Piers.....	34
Pollution.....	15	Shoreline Stabilization.....	36
Construction in or Adjacent to Wetlands.....	16	Coastal Construction.....	38
History of Wetland Regulation in Florida.....	17	APPENDIX.....	39
Today's Wetland Protection Programs.....	18	Rule and Statute Citations.....	39
State.....	19	Informational Websites.....	40
Federal.....	21	Additional Reading.....	40
Local.....	22	Guidebooks, Brochures, Websites,	
		and Other Educational Materials.....	41
		DEP and WMD Contact Info and Maps.....	46

Introduction to Florida Wetlands...

Because of the many benefits - environmental, economic and aesthetic - that wetlands provide, they rank among our most important natural resources. Floridians are becoming increasingly aware of the importance of and the need to protect wetlands. The notion that wetlands were useless and even dangerous breeding grounds for vermin led to the destruction of about half of the wetlands that existed in Florida at the time of Statehood on March 3, 1845. Indeed, there was a period in Florida's history when vast areas of wetlands were all but given away to those who would drain and develop them.



This booklet explains why wetlands are important, how people affect their wetland environment and how to protect them. It also outlines permitting steps and recommended practices that should be followed by those constructing in or near wetlands. Finally, it suggests how each person can help protect wetlands, and provides sources of additional information on wetlands and Best Management Practices

What is a Wetland?

Generally speaking, a wetland is an area that is neither dry land nor open water. All wetlands are formed and sustained by the influence of water on land. However, the depth of the water and the length of time it is visible on the surface vary in different types of wetlands. In some wetlands, the water is at ground level and the soil is saturated most of the time; when a soil is saturated, it is possible to physically squeeze water from the soil. In other wetlands the water level stays above ground for long periods, creating wetland systems that range in depth from shallow to deep. The water level in some wetlands fluctuates dramatically; many are dry for long periods but at other times may contain several feet of water. An example of this is a cypress dome wetland. The State of Florida defines wetlands as follows:

'Wetlands'...means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and [that] under normal circumstances do support, a prevalence of

vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or possess characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, river swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto... (Chapter 373, Florida Statutes)

Wetland Boundaries

For regulatory purposes the boundaries of wetlands and other surface waters must be determined. This process is referred to as wetland delineation, and is based on finding indicators that show the influence of water. The indicators include specific types of vegetation, wetland soils and hydrologic evidence of the presence of water. Certain plants thrive in an environment that is generally or occasionally wet. Similarly, soils develop certain characteristics in response to periodic and sustained saturation. Other physical clues such as water stains or special plant adaptations also help in identifying specific wetlands.



Applicants should be aware that there are two slightly different wetland delineation methods used in Florida, as discussed below.

All state and local agencies in Florida use the same method for determining wetland boundaries, see Chapter 62-340 of the Florida Administrative Code (F.A.C.). Federal agencies such as the U.S. Army Corps of Engineers (Corps) use a slightly different definition of wetlands.

In many instances, the line between uplands and wetlands is the same using either methodology. However, due to differences in the two methodologies, some Florida habitats may have different wetland boundaries than would be determined using the federal methodology. However, because both state and federal permits may be required to alter a wetland or other surface water, it is necessary to delineate wetlands using both the state and federal methodologies. Therefore, the applicant is encouraged to contact the regional Florida Department of Environmental Protection (DEP) and Corps offices for assistance with individual project sites.

Florida Wetland Delineation Methodology

The state delineation methodology (see *The Florida Wetlands Delineation Manual*, FDEP et al. 1995 for details) is used by all political subdivisions of Florida (i.e., DEP, water management districts, cities and counties) to identify and delineate wetlands and waters of the state. The tools and skills used in the delineation of wetlands are very specific and require considerable professional experience to use properly. Agency staff and other professionals rely on the following tools to delineate a wetland:

- **Vegetative Index** - This is a list of most plant species that can be found in Florida wetlands. The book *Florida Wetland Plants, An Identification Manual* (FDEP 1998) is an excellent reference for identifying wetland plant species. The vegetative index list classifies plant species based on water tolerance: wetland plants, upland plants and plants that may be found in either area. The degree of water tolerance is referred to as indicator status.

- **Hydric Soil Indicators** - Hydric soil indicators refer to certain soil conditions that are commonly encountered in wetlands, e.g., mucky texture. These indicators are listed in *Soil and Water Relationships of Florida's Ecological Communities* (Florida Soil Conservation ed. Staff 1992). Some soil types are classified as *very wet* soils and by themselves can be used to identify wetland areas.
- **Hydrologic Indicators** - Hydrologic indicators refer to things that are indicative of water movement. Commonly encountered indicators include water lines, algal mats and evidence of aquatic fauna. Some of the important factors to consider when utilizing hydrologic indicators include the following: current and past moisture conditions, vegetation present, hydrologic alterations (e.g., ditches), landscape position (elevation of site), local knowledge and climatic conditions.

Federal Wetland Delineation Methodology

The federal methodology outlined in the Corps *Wetlands Delineation Manual*, Technical Report 4-87-1, states: “The presence of hydric soils and wetland hydrology indicators in addition to vegetation indicators will provide a logical, easily defensible, and technical basis for the presence of wetlands. The combined use of indicators for all three parameters will enhance the technical accuracy, consistency, and credibility of wetland determinations.

Therefore, all three parameters were used in developing the technical guideline for wetlands and all approaches for applying the technical guideline embody the multi-parameter concept.”

It is important to note that the federal 1987 manual cautions those intending to apply the federal delineation methodology that one must be familiar with wetlands of the area and use his/her training, experience and good judgement in making wetland determinations. The primary area of difference between the state and federal methodologies is in the indicator status of certain plants and soil conditions.

Wetland Values

Putting a price tag on the value of wetlands is not easy, but they do provide society with many important ecological, economic and aesthetic benefits.

Ecological Value

Wetlands are vital to the health of our environment.

They perform the same function for our ecosystem that kidneys do for our bodies - they filter and remove pollutants. As water passes through a wetland, much of the pollution that is dissolved or suspended in the water is trapped and taken up by wetland plants and soils. Many pollutants, which would otherwise degrade surface waters, are converted into food material for aquatic plants and animals. The capability to filter rainfall and runoff helps to keep our surface waters fit for swimming, fishing, and in many areas, a source of drinking water.

Even in stormwater ponds, where polluted stormwater runoff is collected and held before it is allowed to reenter the natural system, water quality is improved by the filtering ability of wetland vegetation growing around the shorelines.

The regular flow of water, sediments and nutrients into wetlands makes them highly productive. Vegetation grows quickly, producing a great deal of food for plant-eating animals and, in some wetlands, timber for our own use. Plant material that is not directly eaten dies, then breaks down into rich organic soil and a material referred to as detritus. Detritus is the main item on the menu of many small aquatic animals. These in turn, provide food for a variety of larger animals (the beginning of the aquatic food chain). Most of our commercial and sport fish depend on food and habitat provided by wetlands. Wetlands are also nursery grounds for many important fish, shellfish and wildlife and are essential to the survival of some endangered and threatened species, such as the wood stork and the Florida panther.

Wetlands are also important because of the amount of water that they can hold and store. Our ground water supplies are recharged from water that collects in wetlands and then filters into the ground. Wetlands collect and store the runoff during storms and shortly afterwards. By providing this temporary storage for surplus water, wetlands slow down the rate at which the waters rise in streams and rivers and reduce the severity of floods, including damage to adjacent upland development. Wetland vegetation also absorbs much of the energy from waves and fast-flowing waters, protecting shorelines from erosion. Through the years, property losses from flooding have been directly related to the continuing loss of wetlands.

Economic Value

Many of the ecological functions of wetlands have an economic value, although this value is not always acknowledged and it is often difficult to assign a dollar value to an ecological function. For example, how much is flood and erosion control worth? Though difficult to estimate, this economic value can be substantial. Destruction of wetlands along the Kissimmee River in the 1960s caused problems that are still costing us millions of dollars to correct today. Floridians depend on healthy and diverse populations of fish and wildlife - - not only because of the recreational opportunities they provide, but also because they support our commercial fishing, tourism and recreational industries.



Another way to determine the value of wetlands is to look at their contribution to a local economy in terms of the marketable products they produce. At a minimum, a wetland is as valuable as those goods. For example, the commercial fishing industry brought in more than 5 million pounds of fish and shellfish worth almost \$13.5 million to Franklin County in 1994. Many of these valuable fish and shrimp are dependent on these wetland areas around Apalachicola Bay, especially for spawning and feeding. The famous Apalachicola oysters thrive on a steady supply of detritus provided by wetlands in the Apalachicola River watershed. The economic value of wetlands includes much more than the dockside value of the wetland-dependent fish and shellfish. It also includes the income earned by seafood dealers and truckers who distribute it; the markets that sell it to customers; the restaurants that serve it to diners; the suppliers of the fishing gear; harbor and marina operators; and others who provide services to the fishing industry.

Similar comparisons can be made for recreational fishing, hunting and tourism. All revenues generated by people who camp, hunt, fish, canoe, sail, photograph nature, watch birds or hike in and near wetlands should be included when figuring the economic benefits of wetlands. This includes motels, meals at restaurants, and purchases of film, gasoline and outdoor gear. A 1992 Sea Grant study estimated that marine anglers (both tourists and residents) spent \$2.6 billion statewide in 1991, representing more than 50,000 jobs—and wages totaling more than \$600 million.

Wetlands also help protect the value of waterfront property, particularly with flood protection, since they provide extra storage to hold floodwaters. Without wetlands to buffer the effects of floods, uplands along the shoreline would flood more frequently costing property owners, and those affected by flood losses, higher insurance premiums. Wetlands also protect the waterfront from erosion. Erosion by waves and flowing water is much more dramatic along shorelines that are not protected by wetlands than shorelines with fringing

wetlands. For example, in estuaries, the loss of mangroves can open shorelines to the destructive effects of boat wakes or storm surge. Artificial shoreline stabilization, such as a sea wall, is expensive and may increase erosion on adjacent property. Maintaining a wetland buffer between open water and the uplands is an economical way to protect property from erosion.



Aesthetic Value

Without wetlands to reduce water pollution, the safety of some of our drinking water would be threatened, the health of our swimming waters would be reduced, and the smell of polluted waters would make waterfront property less attractive. These three factors affect property values and the costs of health care. Given the popularity of waterfront property in Florida and the ability of wetlands to maintain the security and desirability of this property, the economic value of wetlands to property owners is extremely high.

Finally, wetlands have significant aesthetic value. Wetlands offer a sense of beauty and comfort to those who spend time in the natural areas through sounds, sights and even smells. Income derived from the sale of wetland paintings, audiotapes or photographs is another economic benefit derived from the aesthetic value of wetlands.

A Paradox

Why, if wetlands are so valuable in their natural state, are they being eliminated so rapidly? The answer to this paradox is that although wetlands serve society in multiple ways, the nature of wetland benefits are such that the *owners* of wetlands usually cannot receive a monetary gain from the use or sale of them. Flood protection benefits accrue to others who live downstream. The fish and wildlife that breed and inhabit wetlands migrate and are captured or enjoyed by others. It is difficult for an owner to exploit the water conservation, pollution control or sediment trapping benefits of the wetlands on his property. For the owner of a wetland to benefit from it, he often has to alter it, convert it and develop it. That is why, despite their value, wetlands are being eliminated. Since the vast majority (74%) of the remaining wetlands in the lower 48 states are privately owned, the impact of private actions on wetlands has the potential of causing the greatest loss of these wetland functions.

It is known that wetlands are more sensitive than once believed. Small changes in water levels or the influx of pollutants have significant effects on the functions of wetlands. To maintain a healthy environment, wetlands must be protected from destruction and abuse. Given all the benefits of wetlands, it is important to recognize the kinds of activities that threaten these important areas, and ultimately, all Floridians.



Threats to Wetlands

Exotic/Nuisance Plant Infestation

One of the primary threats to wetlands is infestation by exotic/nuisance plants. Typically, these plants consist of introduced, non-native species that proliferate in Florida's wetlands due to favorable climatic conditions. According to the Florida Exotic Pest Plant Council (FEPPC), exotic plants are typically introduced accidentally through shipping materials or deliberately for ornamental or commercial purposes. Prime examples include Brazilian pepper (also known as Florida holly), melaleuca (paper bark tree), Australian pine and Chinese tallow (popcorn tree). In aquatic systems hydrilla, water hyacinth and water lettuce are a few of the more common exotic/nuisance species. Wetland function and native bio-diversity are severely affected by the proliferation of these species. Invasive exotic pest plants destroy more natural habitat every year than development (FEPPC 1999).

The Identification and Biology of Non-Native Plants in Florida's Natural Areas is an excellent source for identifying and controlling the proliferation of nuisance or exotic plants.



*Chinese tallow
(popcorn tree)*



*Melaleuca
(paper bark tree)*



*Brazilian pepper
(Florida holly)*

Pollution

Although wetlands are good at filtering and reducing pollutants, there are limits. If these natural systems are overloaded, not only will pollutants reach open waterbodies, but the pollutants could further damage the wetlands, reducing their filtering capacity and other functions. Major sources of water pollution include sewage, industrial waste and stormwater runoff. Stormwater runoff, the major source of water pollution in Florida today, contains oils, greases and heavy metals (from roads and parking lots), fertilizers and pesticides (from lawns and farm land), and nutrient-rich animal waste (from dairies and feedlots).

Some of these discharges are toxic to wildlife and people, while others contain materials that rob wetlands and surface waters of essential dissolved oxygen. Nutrient-laden runoff promotes the growth of nuisance vegetation, such as hydrilla and blue-green algae. These plants can choke

open waters, block sunlight needed by other plants and animals, and prevent recreational uses, such as fishing, boating and swimming. When these plants die and decay, they remove dissolved oxygen from the water, which can lead to fish kills.



Construction In or Adjacent to Wetlands

Dredging, filling and other construction activities can degrade and destroy wetlands and other surface waters.

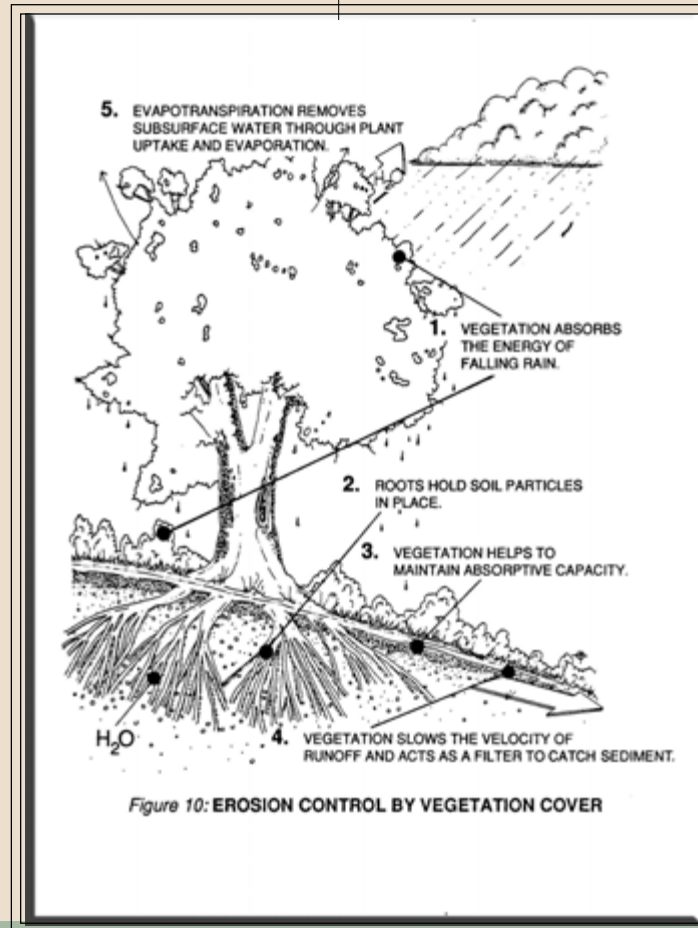
Examples of such activities include the construction of piers,

docks, retaining walls, jetties, fill

(for houses, other buildings and roads), channels and canals. These activities eliminate habitat used by fish and wildlife, reduce the ability of the wetlands to remove pollutants and reduce flood storage capacity.

Docks and piers in some locations can eliminate submerged vegetation by reducing the penetration of light. Wood preservatives in pilings contain toxic materials that can leach into the water. Erosion control structures used to stabilize the shoreline of one property may increase erosion offshore and on nearby shorelines.

Clearing and grading of land adjacent to wetlands and other surface waters removes vegetation that stabilizes the soil and reduces harmful erosion (Figure 10). Construction activities in the water can also cause suspension of sediments that may result in a number of water quality problems, including decreasing the amount of dissolved oxygen that is essential to all aquatic life. In order to address these concerns, regulatory programs were established to determine where and under what circumstance construction activities can take place in wetlands. These regulatory programs are implemented by the local, state and federal permitting processes.



History of Wetland Regulation in Florida

When Florida became a state in 1845, all lands lying below navigable waterbodies were deeded to the state. Under the Public Trust Doctrine, these sovereignty submerged lands and associated resources were set aside as a trust for the benefit of all Floridians. In 1850, under the Swamp and Overflowed Lands Act, an additional 20.5 million acres of swamps and marshes were transferred to the state for drainage and reclamation. The state conveyed most of these lands to railroad companies and other entrepreneurs to drain for development and flood protection. It was only much later that the importance and value of wetlands to the health and abundance of fish, birds, and other wildlife, as well as to man, was realized.

The first major step in state wetland protection took place in 1967 with the passage of the Florida Air and Water Pollution Control Act. The Act consolidated pollution control authority in the Florida Air and Water Pollution Control Commission. The law strengthened state dredge

and fill regulations, which, up to that time, were limited to activities on sovereignty submerged lands. In 1975, the Department of Environmental Regulation (DER) was created to centralize many of the wetland regulatory functions. This action moved the water management responsibilities of the Department of Natural Resources (DNR) and the Department of Pollution Control to DER. DER was also given general supervisory authority over the activities of the five new water management districts, which were responsible for surface water permitting to address water quantity issues. At the federal level the U.S. Army Corps of Engineers began to implement the federal Section 404 dredge and fill (wetland) program in July 1977.

In 1984, the Warren S. Henderson Wetland Protection Act clarified DER's wetland jurisdiction by adding criteria to address intermittent waterbodies, such as lakes that periodically go dry, and strengthening the criteria for evaluating dredge and fill permit applications.

History of Wetland Regulation in Florida - Continued

In 1993 DER and DNR were merged into the Department of Environmental Protection (DEP). At that time, DEP and the water management districts were directed to:

- develop a statewide wetland delineation methodology;
- to merge the Wetland Resource Permit program (dredge and fill) and the Management and Storage of Surface Waters permit program (MSSW) into a single Environmental Resource Permit (ERP) program; and
- to link processing the ERP with processing requests to use sovereignty submerged lands.

The new wetland delineation methodology was ratified by the Legislature in 1994 and the ERP program took effect in October 1995, except in Northwest Florida and for certain “grandfathered” projects.

Today's Wetland Protection Programs

The state's responsibility for regulating activity in Florida's wetlands is shared by the Department of Environmental Protection and the water management districts, while some local governments operate their own programs. In addition, the Corps implements a federal wetland regulatory program. This task is accomplished mainly through permitting, however voluntary land stewardship programs are also available and the options for their use have become more abundant in recent years. A brief outline of these programs is provided on the following pages.



State

Outside of the Panhandle, the ERP program is administered by the DEP and four of the water management districts. The authority for this program is contained in Part IV of Chapter 373, Florida Statutes (F.S.). The ERP program provides a number of benefits including:

- Promoting the conservation, development and proper utilization of ground water and surface water resources;
- Managing storm water to prevent flood damage, excessive drainage and soil erosion;
- Providing for management of water quantity, and protecting water quality; and
- Protecting wetland habitat, fish and wildlife.

Under the ERP program, work in uplands is also regulated to control potential impacts from upland stormwater runoff and to protect the habitat that uplands provide to certain aquatic and wetland-dependent animals.

A set of operating agreements between DEP and the water management districts outlines which of the agencies will process any given application. In general, DEP reviews and takes agency action on the following types of applications:

- docking facilities, boardwalks, shore protection structures and piers, including the adjacent docking and boating-related development and navigational dredging. Docking facilities that are proposed as part of a larger residential or commercial development are reviewed by the water management districts;
- private single-family residences, duplexes, triplexes and quadruplexes that are not part of a larger plan of development proposed by the applicant;
- projects in water that are not part of a larger development plan, such as boat ramps, ski jumps, navigation channels, mooring buoys and artificial reefs;
- linear projects other than roads, such as electric distribution lines and natural gas pipelines; and
- projects that require another type of DEP permit.

The water management districts review and take agency action on most other ERP applications. Both the DEP and the water management districts also delineate the boundaries of wetlands and other surface waters for those types of projects for which they have regulatory responsibility.

In the Panhandle (within the limits of the Northwest Florida Water Management District) and for certain activities that are grandfathered under Subsections 373.414(II)-(I6), F.S., DEP administers a more limited ERP program consisting of the old wetland resource (a.k.a. dredge and fill) and stormwater permit programs (Chapters 62-312 and 62-25, F.A.C., respectively). These programs regulate dredging and filling in waters and wetlands that are connected, either naturally or artificially, to “named waters,” and stormwater quality issues associated with construction. Named waters include the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, rivers, streams and natural lakes that are not wholly owned by one person other than the state.

As a result, dredge and fill activities in “isolated” wetlands and stormwater quantity (a.k.a. flooding) are not regulated by the state in the Panhandle.

The Northwest Florida Water Management District also administers a limited “surface water” program dealing with agricultural activities and dam safety. Under Section 373.4145, F.S., the full ERP program is currently scheduled to take effect in the Panhandle on July 1, 2003.

DEP and four of the water management districts also act as the staff to the Board of Trustees (Governor and Cabinet) in the review of all proposed uses of sovereignty submerged lands, which includes many “open” water areas. If your project is located on sovereignty submerged lands it must meet both the ERP and sovereignty submerged lands criteria. However, as outlined below this does not necessarily require a separate application or review process. Authority for the sovereignty submerged lands program is based on the state Constitution and Chapters 253 and 258, Florida Statutes.

The following are examples of types of activities that may be located on sovereignty submerged lands and require authorization:

- private, single-family docks;
- bulkheads, seawalls and other shoreline protection;
- multi-slip docks for condominiums, townhomes and yacht clubs;
- commercial marinas and all other income-related activities;
- roadways, bridges, and utility (water, sewer, power, etc.) lines.

Federal

The U.S. Army Corps of Engineers has the responsibility for administering programs that protect waters of the United States including federally delineated wetlands and navigable waters. It is the Corps' responsibility to evaluate environmental impacts from navigation and flood control projects and any project involving the discharge of dredge and fill materials to areas under the Corps' jurisdiction.

Authority for the federal program is contained in Section 404 of the Clean Water Act of 1972 (dredge and fill) and Section 10 of the Rivers and Harbors Act of 1899 (impacts to navigation). In Florida, the state's ERP application form serves as a joint application, which is reviewed by both state and federal agencies, thus eliminating the need to file separate state and federal applications.

In some cases the Corps has authorized the state to issue the federal permit in conjunction with the state's ERP permit. Authority for this is provided under a State Programmatic General Permit (SPGP).

The State Programmatic General Permit covers minor projects located in waters of the United States, including navigable waters. Such projects include the following: shoreline stabilization (riprap, seawalls); boat ramps and boat launch areas and structures associated with such ramps or launch areas; all docks, piers, marinas and associated facilities; maintenance dredging of canals and channels; and activities that qualify for certain DEP exemptions and Noticed General Permits.

If your project qualifies for authorization under the SPGP, then the permit you receive from the state will clearly indicate that it also provides the necessary federal approvals under the SPGP and may include special federal conditions in addition to the applicable state permit conditions.

Local

Most local governments have their own regulations addressing general construction activities such as building permits, septic tanks, tree ordinances, etc. A few local governments also have wetland regulations and policies in addition to typical building regulations. State law provides that local governments must use the same wetland identification methods as other state agencies; however, local wetland regulation may require permits in addition to those in the table above. Prior to any type of construction, consult with the local city and county governments for details concerning their permitting requirements.

Application Process

The ERP program applies to any dredging, filling or construction in wetlands or other surface waters and construction activities in uplands as described in “Today’s Wetland Programs.” A specific project, depending on its exact nature, location and size, may require a general or individual permit or it may qualify for an exemption from the requirement to obtain a formal permit. Activities that qualify for an exemption generally do not require that an application be submitted; however, it is prudent to contact a DEP or WMD office to determine if a specific project is exempt. This is particularly true since recent changes to Florida law has imposed “notice” provisions on certain exemptions. Applicants for general or individual permits should follow the process outlined on the following pages.

The following table lists some projects that may be undertaken by a homeowner or small landowner, the authorizations that may need to be obtained for each type of project, and the agency where applicants should submit the joint state/federal application.

TYPE OF PROJECT	TYPE(S) OF PERMIT/AUTHORIZATION THAT MAY BE REQUIRED	AGENCY WHERE APPLICATION IS TO BE SUBMITTED
Single-family dock	<ul style="list-style-type: none"> • ERP / SSL • Federal Permit 	<ul style="list-style-type: none"> • DEP
Multi-family docking facility	ERP/SSL Federal Permit	DEP, except WMD if part of a larger development outside of NW Florida
Marinas	ERP / SSL Federal Permit	DEP
Shoreline Protection / Seawall	ERP / SSL Federal Permit	DEP
Single Family Residence in Uplands	None	NA
Single-Family Residence in Isolated Wetlands -within the limits of the NFWMD -peninsular Florida	None ERP Federal Permit (in some cases)	NA DEP
Other residential projects involving dredging, filling or construction in wetlands and other surface waters	ERP / SSL Federal Permit	DEP, except WMD if part of a larger development outside of NW Florida
Projects waterward of the CCCL that extend into sovereign submerged lands	JCP / SSL - for projects that have a material physical affect on coastal processes (i.e., beach nourishment, groins, jetties, breakwaters, and ocean fishing piers) CCCL permit / ERP / SSL - for projects that DON'T have a material physical affect on coastal processes (i.e., activities that don't affect the movement of sand along a shoreline) Federal Permit	DEP - OBCS DEP - District for ERP / SSL
Projects waterward of the CCCL and landward of the MHW or ECL	CCCL permit ERP for projects exceeding ERP thresholds (i.e., condos and hotels)	<ul style="list-style-type: none"> • DEP - OBCS for CCCL permit DEP - District Office for ERP

Please note that applications for state and federal authorizations use the same form, which should be submitted to DEP or the appropriate WMD. The DEP/WMD will forward a copy of the application to the U.S. Army Corps of Engineers, if necessary. Prior to applying for a project though, it is suggested that you contact the appropriate DEP or water management district to discuss your project and the specific authorization requirements. Additional information may be obtained from the DEP website at <http://www.dep.state.fl.us> under the Permitting Information topic.

ERP = Environmental Resource Permit
 SSL = Sovereignty Submerged Lands
 CCCL = Coastal Construction Control Line
 JCP = Joint Coastal Permit
 DEP = Department of Environmental Protection
 DEP-BBWR = DEP, Bureau of Beaches and Wetland Resources

WMD = Water Management District
 COE = U.S. Army Corps of Engineers
 MHW = Mean High Water
 ECL = Erosion Control Line
 NA = Not Applicable

The steps below outline the basic process that should be followed when applying for a general or individual permit, although the exact details and time-frames may vary depending on the type of permit required for a specific project.

- 1. Call, write or visit the appropriate DEP District office or water management district office to obtain the ERP guidelines or the Wetland Resource Permit form (NFWFMD) and application package. Check with the permitting staff to determine if you qualify for an exemption, or to determine the type of permit your project will require.**
- 2. Set up a pre-application conference with staff at the appropriate office to discuss issues that may affect your proposal. This is not required, but it is recommended and can significantly speed up the review process.**
- 3. Based on the feedback from your meeting, fill out the applicable application form. Call the permitting staff if you have questions. Staff may make a request to schedule a site inspection.**
- 4. Submit the application with all the required documentation, drawings and applicable processing fees for review. Application fees for typical homeowner projects range from \$100 to \$500 depending on the project size and type.**
- 5. Upon receipt of an application, staff will review it to determine if any information is missing or needs further explanation, in which case, a letter will be mailed within 30 days requesting additional information. This initial review also includes determining if the proposed activity will involve sovereignty submerged land use, unless a title check has already been obtained.**

If the project involves sovereignty submerged lands, the authorization to use those lands will be processed along with the permit application. Depending on the applicant's response to the request, additional information may be requested. Upon receipt of ALL the necessary information, the application becomes complete and final review begins.

6. Staff must decide whether the project is permissible and, if on sovereignty submerged lands, whether it can be authorized within 90 (30 days for general permits) days of receipt of a complete application (as initially received or following the response to the last request for additional information). During this review, staff will coordinate with other resource agencies, such as the State Historic Preservation Office (for archaeological resource impacts) and the Fish and Wildlife Conservation Commission (to determine potential impacts to threatened and endangered species, such as manatees), for their input.

7. If the project is found to have adverse unpermittable impacts, staff must first discuss ways to avoid and minimize these impacts (see below).
8. After appropriate avoidance and minimization, staff must again consider whether the activity will have adverse unpermittable impacts. If it does, the agencies can consider possible mitigation. Mitigation is a method of offsetting the loss of wetland function from the permitted activity. There are many forms of mitigation including creation of new wetlands, restoration of historic wetlands, enhancement of existing wetlands, and preservation of existing wetlands. Projects that typically involve mitigation include those that involve wetland filling or excavation. The mitigation success criteria are included as a special condition of the permit.

If the proposed project meets all the requirements for obtaining a permit and, if required, the sovereignty submerged lands authorization, then final approval documents will be issued. Permits are issued for a specific purpose and for a limited duration in regard to construction, usually five years. The permit will contain a number of conditions that should be read carefully and understood by the permit holder, as those conditions must be followed closely. Permit holders are responsible for implementing the conditions and filing whatever reports may be necessary, including such items as monitoring reports and as-built certifications.

Projects on sovereignty submerged lands may be authorized under a simple letter of consent or they may require a more formal easement or lease. Both the applicant and the agent for the Board of Trustees must sign the lease document before work may begin. The sovereignty submerged lands documents will also contain conditions that must be followed, and those conditions may differ from the conditions in the permit.

Review of Project Impacts

When designing a project, it is important to avoid as many wetland impacts as possible. Questions may be asked during the permitting process about what design scenarios were investigated before deciding on the submitted design. Avoiding wetlands and minimizing impacts up front will normally speed up the permitting process. Ways to avoid or minimize impacts may include making your project smaller in size, repositioning the angle which a building sits, making an access road as narrow as possible while still maintaining its function, reducing the size of a terminal platform at the end of a dock, designing the project so the wetland impacts occur in previously altered wetlands rather than in healthy wetlands, or other dock construction tips which can be obtained from the DEP District and Branch offices. The pre-application stage of permitting is a good time to review options for avoidance and minimization of wetland impacts.

When designing a project it is important to consider direct impacts, secondary impacts and cumulative impacts.

- Direct impacts are those that directly fill or excavate wetlands. Examples of these include filling wetlands for a house pad or an access road and excavating a pond in wetlands.
- Secondary impacts are those that affect a wetland indirectly, such as a ditch that drains the water level of an adjacent wetland, or a road that affects the availability of the wetland for use by wildlife. Construction of docks may cause many secondary impacts through shading of seagrasses, release of oils, greases, and other pollutants from boats moored at the dock, and the potential that boats using the dock may kill or injure manatees.
- Cumulative impacts involve a consideration of how other past, present, and future projects similar to that proposed may, when considered together, cause larger impacts than would result from considering the one project by itself.

Examples of this include a consideration of how the loss of 0.2 acre of wetlands around a lake for a new home will affect the quality of the lake when compared with the loss of 3 acres of wetlands around the lake from previous construction of homes, and the potential for the loss of an additional 2 acres of wetlands if similar future homes are built around the lake.

Compliance and Enforcement

The goal of the compliance program is to ensure compliance with conditions in the permit and sovereignty submerged land authorization through the use of compliance monitoring. Monitoring can be as simple as a review of a particular file to check for compliance with reporting requirements or may involve a more detailed evaluation, such as an on-site inspection where samples are collected and analyzed to determine the extent of compliance or deviation from permit conditions.

Compliance and Enforcement - Continued

The enforcement program resolves activities undertaken without the proper permit or sovereignty submerged land authorization. In many cases, routine inspections and citizen complaints result in the discovery of environmental violations. Regulatory agencies have been authorized to respond to violations of environmental laws with a broad array of options, ranging from agency correspondence outlining the issues to criminal actions required in cases involving intentional wrongdoing. The selection of a particular response depends largely on the type and severity of the violation. Penalties for performing activities in wetlands without permits may range up to \$10,000 per day per offense.

Tips on Avoiding Problems

- Make sure to follow permit conditions and if questions arise, contact the agency that issued the permit to clarify the situation.
- Contact the agency that issued the permit or sovereignty submerged land authorization if the project design

changes during construction, to determine if a permit/SSL authorization modification is necessary to the permit/SSL authorization.

- Control runoff during construction through implementation of erosion control devices such as silt fence, hay bales or turbidity curtains (see “General Construction Projects”).
- Obtain appropriate permits for septic tanks from agencies such as Department of Health and DEP (if located within wetlands).
- Don’t trim or cut down mangrove trees without consulting the regulations or talking to a Department representative.
- Don’t rely on neighbors, contractors, or rumors when it comes to environmental law. When in doubt of wetland laws, contact a representative from either DEP or one of the water management districts.
- Don’t improve a shoreline by removing “weeds” before checking with the Bureau of Invasive Plant Management (within DEP).

Best Management Practices (BMPs)

Careful project design, consideration of the topography and natural resources in the construction area, and proper operation after construction can go a long way in protecting water quality and ensuring the long-term health and productivity of Florida's wetlands and surface waters. The following sections provide some suggests for the homeowner and small builder to consider when building and maintaining their property. These practices are not a substitute for obtaining any required permits and abiding by permit conditions. However, following these suggestions may simplify obtaining permits and, if your project is exempt from the requirement to obtain a permit, will help ensure a healthy Florida environment for future generations.



General Construction Projects (Homes, Driveways)

Construction activities inevitably involve disturbing the natural landscape cover and topography and can result in serious impacts to wetlands and other surface waters due to erosion and stormwater runoff. Erosion not only removes valuable topsoil, but it also transports sediment into water bodies and increased stormwater runoff can carry pollution into adjacent waterbodies and cause flooding. Actions that can reduce erosion and stormwater runoff include:

- Mulching or planting ground cover over exposed soil in high traffic areas, flower beds and shaded areas.
- Instead of piling, raking or blowing leaves or grass clippings into the streets where they wash into streams or lakes or directly into such waterbodies, create a compost pile. Natural materials can be returned to the soil through this method of recycling of vegetation.

- Leave a strip of upland in its natural state as a buffer between the wetland and lawn or garden. This serves at least two purposes. First, the buffer can provide the upland habitat that is required by many aquatic or wetland dependant animals. Secondly, the undisturbed soil and vegetation in these areas helps to stabilize the wetland habitat and filter the runoff.
- During construction of new facilities, runoff can be reduced by properly installing and maintaining erosion control devices such as silt fences, hay bales or turbidity curtains between the construction zone and wetlands or water bodies.



Turbid water resulting from runoff from a disturbed site



Example of improperly installed erosion control devices and resulting erosion

Additional techniques for dealing with erosion and stormwater runoff are provided in various documents referenced in the Appendix.

Post-Construction Landscaping and Land Maintenance

While the permitting process plays an important role in protecting wetlands, many day-to-day activities that impact wetlands are not addressed in that process. Citizens who simply live next to wetlands, enjoying the benefits that these systems provide, can do a lot to help protect wetlands by following some simple guidelines. For example, yard care, landscaping and gardening are activities not normally associated with pollution problems. However, studies have shown that the average household uses 10 times more chemical fertilizers and pesticides per acre than the typical farmer uses on agricultural fields. If applied and/or stored improperly, these chemicals, often thought of as relatively harmless, can threaten human health and the quality of the environment.

The quality of Florida's streams, lakes, estuaries, and drinking water is largely dependent on how homeowners, builders and land managers maintain their property. Debris

from lawns and from maintenance or repairs (pruned branches, bags of leaves, discarded lumber and paint cans) should not be deposited in wetlands, and should be appropriately disposed of or recycled. Stormwater that runs off of yards, roads, parking lots and other development carries with it the excess fertilizer, pesticides, eroded soil and other substances that are used every day in and around our homes. Once introduced into a natural water body, these pollutants can cause serious imbalances that can lead to algae blooms, fish kills and changes in aquatic plant and animal life.

The simple act of learning more about the land and how it fits into Florida's environment can help reduce stormwater pollution and protect Florida's wetlands and waterbodies. A list of documents containing useful procedures for protecting Florida's wetlands and waterbodies through management practices is provided in the Appendix.

Septic Tank Installation and Maintenance

Local government permits are required for installation of septic tank systems. In addition, an ERP will be required if the septic tank is to be installed in an area delineated as a wetland (see the discussion of wetland boundaries). Since septic systems treat waste “on-site”, maintaining the system in good repair is critical to avoiding discharging inadequately treated water to adjacent wetlands or surface waters. The following practices will help insure a properly installed and functioning septic system:

- Avoid installing septic tanks and drainfields in or immediately adjacent to wetlands, if possible.
- Be sure that routine maintenance of your septic tank system is conducted in a timely manner. Generally, septic tanks should be inspected annually with pumping of surface scum and sludge about every three years.

- Controlling what is disposed in a septic tank system goes a long way in keeping the system in good working condition. Never dispose of household or other chemicals (such as photographic or garden chemicals) in a septic tank. Fats, greases, and other solids that are sent through garbage disposals can also clog the pipes leading to septic tanks. Other items that should never enter septic tanks include: facial tissue, paper towels, hygiene products, disposable diapers, condoms, dental floss, coffee grounds, grease and cat litter.
- The area encompassed by the septic tank and associated drainfield should be kept clear of trees and large shrubbery. Roots will also clog the drainfield.
- Avoid paving over the drainfield or driving vehicles or heavy equipment in the area.

Mangrove Trimming

In 1996, the Legislature adopted the Mangrove Trimming and Preservation Act in an effort to protect and preserve mangrove resources from unregulated removal, defoliation and destruction. Mangroves play an important ecological role as habitat for various species of marine and estuarine vertebrates, invertebrates and other wildlife, including mammals, birds and reptiles. They also stabilize the shoreline and offer protection during storms. Mangroves are important in water quality protection and maintenance, and in providing nursery grounds for fish, thus enhancing both the sport and commercial fishing industries important to many coastal communities.

Anyone who lives on the coast and is fortunate enough to have mangroves at the waters' edge should follow the guidelines within the Mangrove Trimming and Preservation Act for proper care and maintenance of these very important plants. In most cases, it is best from an environmental standpoint to let the mangroves grow naturally, without any

human interference. However, in some instances, homeowners desire to trim the mangroves. Prior to trimming, contact the local DEP office to determine if a permit is required. Some trimming operations are exempt, while others qualify for a general permit. The DEP staff can assist with determining the best course of action for the particular situation. More detailed information is available in the *Mangrove Trimming Guidelines for Homeowners* (FDEP 2002). Please contact your local DEP district or branch office to obtain a copy.



Boat Ramps

Construction of boat ramps may require a permit from DEP. Prior to construction, contact the local DEP office to determine if a permit is needed or if a project qualifies for an exemption based on size and location. Utilizing the following design criteria and construction methods when planning a boat ramp may facilitate permit processing.

- Filling of wetlands or other surface waters should be avoided except the minimum necessary for the actual boat ramp surface or pilings for associated accessory docks. Incidental filling necessary for recontouring the land under the ramp to create a smooth grade is acceptable.
- Restrict boat ramps to a width of 35 feet, including the side slopes.
- Avoid impeding navigation in the area.
- Limit construction of the above-water portions of the ramp to areas landward of the high water line.
- Limit dredging to the amount necessary to construct the boat ramp surface with a maximum limit of 100 cubic yards.

- Deposit spoil material in an upland spoil site that has been designed and located to prevent migration of spoil material into wetlands or other surface waters to prevent water quality violations.
- Limit accessory dock construction to 500 square feet or less over wetlands or other surface waters.
- Avoid dredging or filling of submerged grassbeds or coral communities.
- Avoid building the accessory dock over submerged grassbeds or coral communities.
- Install turbidity (muddy water) controls during construction to avoid water quality violations.

Docks and Piers

Construction of docks and piers may require a DEP permit. Prior to construction, consult the DEP district office for this determination. Construct the facility to accommodate the mooring of vessels in areas with as few natural resources as possible, and also design in consideration of the following:

- Limit the total dock and mooring area to the minimum size necessary to accommodate your vessel(s). Generally a dock structure should be 1,000 square feet or less with a terminal platform of 160 square feet or less.
- Areas designed for boat mooring and navigational access should have a minimum depth of three feet below normal low water levels or, for deeper draft vessels, a minimum of one foot of clearance between the bottom of the vessel and resources such as submerged grassbeds or the seabed.
- Access walkways and areas not designed for mooring or accessing vessels should be elevated, particularly in areas of inadequate depth or dense natural resources, to a minimum height of five feet above normal high water levels and surrounded with handrails. “No mooring” signs could be placed at deck level.
- Structures such as boat houses, boat shelters, boat lifts, terminal platforms or boat moorings should not be constructed over submerged grassbeds, coral communities or wetlands. The access walkway may be constructed over these resources if it is elevated as noted above and limited to a width of four feet.
- Living quarters and other enclosed areas such as wet bars, restrooms, showers, etc., should not be constructed on a dock or pier.
- Avoid impeding navigation in the area.
- Avoid infringing on your neighbor’s riparian right of access to the waterbody by limiting construction and use of your facility to areas immediately in front of your property.
- Limit dredging and filling to that required for installation of the pilings for the pier, boat lift, boat shelter or terminal platform.
- Fish cleaning, boat repair, or fueling facilities should not be located on the dock or pier. Additionally, do not discharge trash, human or animal waste, or fuel from any structures into the waterbody.
- Limit the number of docks or piers to one per parcel of land or individual lot.
- Dry storage is good for your boat and the environment, therefore, consider adding a boat hoist to the dock.

Shoreline Stabilization

DEP regulates construction of seawalls, riprap and other shoreline stabilization structures in order to protect Florida's fragile waterways, the beach and dune system, and upland property along the shoreline. As with docks, determine if the project requires a permit prior to construction. Construction procedures recommended for riprap installation include the following:

- Use only natural boulders or clean concrete rubble one to three feet in diameter.
- Keep the slope of the riprap no steeper than two horizontal to one vertical foot and the horizontal distance from the toe of the seawall to no more than eight feet.
- Avoid the use of concrete rubble that includes reinforcing rods or other similar protrusions. Keep rubble or boulders free of attached sediments.
- Avoid impeding navigation in the area.
- Limit the dredging and filling to only that necessary to install the riprap material.

- Avoid installing riprap in submerged grassbeds or coral communities.
- Use filter fabric to stabilize the soil behind a seawall or to stabilize the substrate underneath the riprap.



Seawalls are also considered as shoreline stabilization, but may not always be the best option.

Alternatives to vertical seawalls include the following:

- Retaining walls—identical to seawalls, but constructed entirely in uplands. A retaining wall may be built without a permit from DEP if all activities (dredging, filling, slope grading or equipment access) are restricted to uplands and the wall is located landward of the coastal construction control line (CCCL).
- Vegetation—a natural and less expensive way to stabilize the shoreline. It can be used alone or in combination with other methods. Vegetation that can be planted directly into the soil or with a fiber mat (for added stability) includes bullrush, arrowhead, blackrush or cordgrass.
- Riprap—consisting of loose boulders, rocks or clean concrete rubble that can be placed along the water's edge to stabilize the shoreline and disperse the wave energy. A permit and authorization to use sovereignty submerged land may be required for riprap installation.

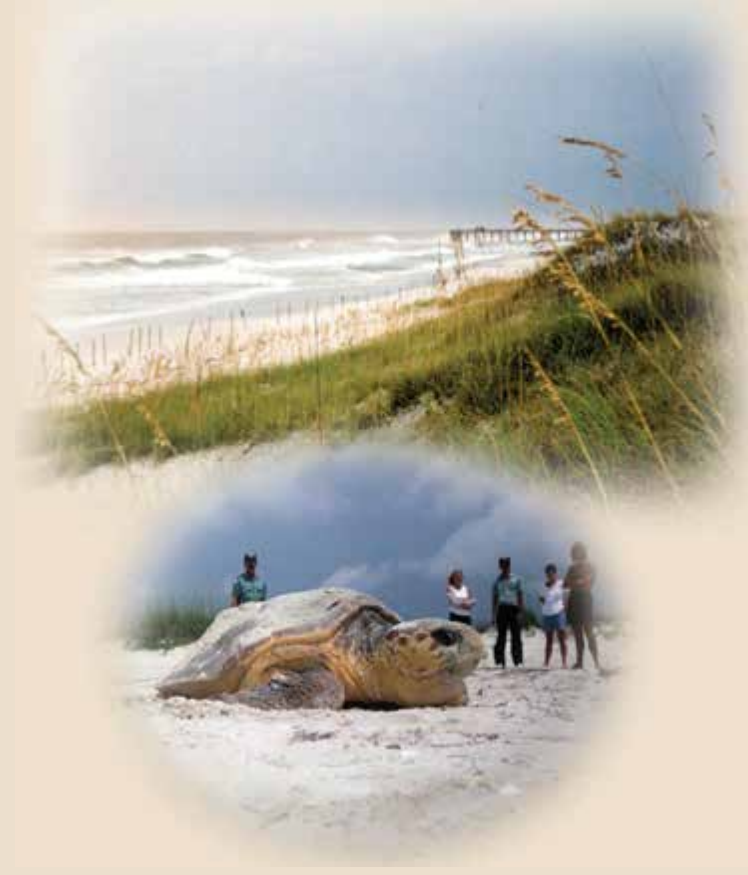


Coastal Construction

The boundary between land and sea is a constantly changing place and requires special consideration to balance the needs of protecting the natural resources in this area and to build structures that can coexist with the moving boundary between land and water. This is particularly true of structures that are exposed to such forces of nature as hurricanes and other coastal storms. For this reason, specific regulatory guidelines have been established for construction activity along Florida's sandy coastal shores under Chapter 161, Florida Statutes. Major structures such as houses, mobile homes, apartment buildings, motels and other construction having the potential for substantial impact on coastal zones are regulated under this statute. Minor structures such as beach access ramps, dune walkovers and privacy fences are also regulated under this statute and may be permitted as long as specific construction criteria are met. Projects located on the sandy coastal shore are reviewed for impacts to the dynamic coastal system, impacts to species that depend on this area such as

marine turtles, and to insure that structures are built to resist the impact of coastal storms and erosion.

Discussion of best management practices for coastal construction is beyond the scope of this document.



APPENDIX

Rule and Statute Citations

Department of Environmental Protection:

- Coastal construction-Chapter 161, F.S., and Chapter 62B-33, F.A.C.
- Sovereignty Submerged Lands-Chapter 253, F.S., and Chapter 18-21, F.A.C.
- Aquatic Preserves-Part II, Chapter 258, F.S., and Chapters 18-18 and 18-20, F.A.C.
- Environmental Resource Permits-Part IV, Chapter 373, F.S. and:
 - Surface water quality standards-Chapter 62-4 & 62-302, F.A.C.
 - Dredge and fill (Northwest Florida)-Chapter 62-312, F.A.C.
 - Wetland delineation-Chapter 62-340, F.A.C.
 - ERP general permits-Chapter 62-341, F.A.C.
 - ERP permit procedures-Chapter 62-343, F.A.C.
- General Environmental Regulation (includes certain ERP exemptions in section 403.813)-Chapter 403, F.S.

Protection of Marine Resources-Chapter 370, F.S.

***To obtain copies of these rules, please contact the nearest DEP office (information below) or visit <http://www.dep.state.fl.us> and look under RULES*

Water Management District ERP Rules:

- Suwannee River Water Management District-Chapter 40B-4, 40B-400, & Applicant's Handbook, F.A.C.
- St. Johns River Water Management District-Chapter 40C-4, 40C-40, 40C-41, 40C-42, 40C-400 & Applicant's Handbook, F.A.C.
- Southwest Florida Water Management District-Chapter 40D-4, 40D-40, 40D-400 & Basis of Review, F.A.C.
- South Florida Water Management District-Chapter 40E-4, 40E-40, 40E-400 & Basis of Review, F.A.C.

****To obtain copies of these rules, please contact the nearest WMD office (information below) or visit <http://www.dep.state.fl.us> and look under RULES*

Federal:

- Clean Water Act - Title 33 United States Code Part 403
- Rivers and Harbors Appropriation Act of 1899

****To obtain copies of these rules, please contact the nearest Army Corps of Engineers office or visit <http://www.saj.usace.army.mil/permit/regulations.htm>*

(F.S. = Florida Statutes and F.A.C. = Florida Administrative Code)

Informational Websites

- Florida Department of Environmental Protection - <http://www.dep.state.fl.us>
- Florida Exotic Pest Plant Council - <http://www.fleppc.org>
- Florida Fish and Wildlife Conservation Commission <http://floridaconservation.org/>
- Northwest Florida Water Management District - <http://www.state.fl.us/nfwmd>
- Suwannee River Water Management District - <http://www.srwm.d.state.fl.us>
- St. Johns River Water Management District - <http://sjr.state.fl.us>
- Southwest Florida Water Management District - <http://www.swfwmd.state.fl.us>
- South Florida Water Management District - <http://www.sfwmd.gov>
- United States Army Corps of Engineers - <http://www.saj.usace.army.mil/permit/>
- United States Environmental Protection Agency - <http://www.epa.gov>

Additional Reading

- Katherine M. Gilbert, Richard W. Cantrell, Maynard E. Sweeley, and James R. Cooper, DEP. 1995. *The Florida Wetlands Delineation Manual*.
- Florida Department of Agriculture and Consumer Services. 1993. *Silviculture Best Management Practices*. 98 pp.
- DEP. *Florida State of the Environment, Stormwater Management*. 16 pp.
- DEP. *Florida State of the Environment, Wetlands*. 22 pp.
- DEP. *The Florida Development Manual. A Guide to Sound Land and Water Management*.
- Deweist, Daniel R. and Eric H. Livingston, DEP. *The Florida Stormwater, Erosion, and Sedimentation Control Inspector's Manual*.
- Livingston, Eric H. and Ellen McCarron, DEP. *Stormwater Management, A Guide for Floridians*. 72 pp.
- Myers, Ronald L. and John J. Ewel. 1990. *Ecosystems of Florida*. 765 pp.
- Tobe, John D., Kathy Craddock Burks, Richard W. Cantrell, Mark A. Garland, Maynard E. Sweeley, Dr. David W. Hall, Pete Wallace, Guy Anglin, Gil Nelson, Dr. James R. Cooper, David Bickner, Katherine Gilbert, Neil Aymond, Ken Greenwood, Nina Raymond, DEP. 1998. *Florida Wetland Plants, An Identification Manual*
- University of Florida, Institute of Food and Agricultural Sciences. *A Guide to Environmentally Friendly Landscaping, Florida Yards and Neighborhoods Handbook*. 56 pp.
- Florida Soil Conservation. 1992. *Soil and Water Relationships of Florida's Ecological Communities*.
- ACOE. 1987. *Wetlands Delineation Manual, Technical Rpt.*
- Katherine Gilbert and Douglas Fry, DEP. 2002. *Mangrove Trimming Guidelines for Homeowners*

Guidebooks, Brochures, Websites, Other Educational Materials *(materials available to the public)*

- * *This Old Pond* Video (approximately 5,000 copies distributed), available from the Southwest Florida Water Management District at: <http://swfwmd.state.fl.us>.
- * NPDES Stormwater Construction Permitting brochures (approximately 800 distributed, with 800 more brochures ordered), available from the Southwest Florida Water Management District at: <http://swfwmd.state.fl.us>.
- * One Stop Permitting – Permitting Information – available at www.watermatters.org – (* denotes brochures available in pdf*):
 - Getting A Permit: The Steps
 - *AGSWM Process
 - *ERP Permitting
 - *Tips about Agricultural Permitting
 - How to Operate & Maintain Your Stormwater Management System
- * Publications of the Northwest Florida Water Management District (NFWFMD) can be accessed by clicking on “Publications” from the district’s home page at <http://sun6.dms.state.fl.us/nwfwmd/>. The NFWFMD also offers the publication “Waterways- Exploring NW Florida’s Water Resources,” and has additional brochures on specific waterways within the district.
- * Publications of the St. Johns River Water Management District (SJRWMD) can be accessed from the district’s home page at <http://sjr.state.fl.us/> by selecting “Publications” under “Quick Clicks” at the top of the page.
- * Publications of the Southwest Florida Water Management District (SWFWMD) can be viewed at: <http://www.swfwmd.state.fl.us/>. At the bottom of the district website is some outreach information, including websites for children. From the home site, one can click on Publications, Plans & Reports to go to the following site where resource information is listed and may be accessed: <http://www.swfwmd.state.fl.us/ppr/pubplnrpt.htm>.
- * Publications and reports of the South Florida Water Management District SFWMD, including a link to educational sites can be accessed at: http://www.sfwmd.gov/newsr/2_publication.html. Additional information from the SFWMD also is available at <http://www.sfwmd.gov/> and click on “site map.”
- * Publications from the St. Johns River Water Management District (SJRWMD) may be accessed at <http://sjr.state.fl.us/programs/index.html> - click on publications. Additional available material from the SJRWMD includes: Legacy Program - *Summary: Water Resource Education. Legacy Program Site Index • Welcome • Governing Board • Programs & Projects • What’s New • Search. What it is* The Legacy Environmental Education program is a cooperative educational venture between the St. Johns River Water Management District and high schools in the District’s 19-county service area. The program enlists educators and their students to help the District’s staff make public lands more accessible.

The Department of Environmental Protection's Office of Environmental Education provides a listing of many of the Department's publications at (note— DEP: For the following publications, audience designations are provided as G for general, and E, M, and H for elementary, middle and high school, respectively):

- * <http://www.dep.state.fl.us/secretary/education/default.htm>. A listing of the publications pertinent to wetland education from the Department education site also is available below. For specific information on the wetland and surface water programs, please refer to the specific web sites provided for each of the programs below:
- * **Stormwater & Non-Point Source Management Program**—<http://www.dep.state.fl.us/water/stormwater/index.htm>. Scroll down to **Publications and Reports**. The publications and reports site also provides information on the implementation of “best management practices” (BMPs).
- * **NPDES Stormwater Program**—http://www.dep.state.fl.us/water/stormwater/npdes/guidance_links.htm. This site provides links to many EPA and DEP NPDES publications and guidance.
- * **Bioassessment of Florida's Aquatic Ecosystems**—<http://www.dep.state.fl.us/water/bioassess/index.htm>. This site describes biological approaches to measure and evaluate the consequences of human actions on biological systems. Posters also can be obtained at <http://www.dep.state.fl.us/water/bioassess/posters.htm>.
- * **Mine Reclamation Program**—<http://www.dep.state.fl.us/water/mines/index.htm> This site provides links to the following aspects of the program: Environmental Resources; Management Plan for the Integrated Habitat Network - Lease Nos. 3963 and 3995; Dam Safety; Mandatory Non-Phosphate; Mandatory Phosphate; Nonmandatory Reimbursement; Mine Safety, Phosphogypsum Management; Technical Section, and Mine Reclamation Rules. For more information, contact: FDEP - Mine Reclamation, Collins Building, 2051 E. Dirac Drive, Tallahassee, FL 32310-3760, Phone (850) 487-3894, Fax (850) 488-1254.
- * **Wetland Resource Program (often referred to as the Environmental Resource Program)**—<http://www.dep.state.fl.us/water/wetlands/index.htm>. This site includes information inclusive of the Wetland Resource Permitting program, the Environmental Resource Permitting program, and the Sovereign Submerged Lands Program applicable throughout the state. The program's training and education site is at <http://www.dep.state.fl.us/water/wetlands/erp/edutrain.htm>. This site contains access to publications developed for the program.
- * **Sovereign Submerged Lands Program**—<http://www.dep.state.fl.us/water/wetlands/erp/ssl.htm>.
- * **Apalachicola National Estuary Research Reserve—850-653-8063**
 - * Educational Opportunities - Outline of available education programs at the ANERR - E-H
 - * The Oyster Catcher - Quarterly newsletter by the ANERR - G
 - * Project Estuary Reserve - Middle/High school curriculum, available for checkout from NERR library - M-H
 - * Estuarine Pathways - Elementary curriculum available for checkout from the ANERR library - E

- * Coastal Connections - Educational field trip opportunities from ANERR - G
- * Florida Keys National Marine Sanctuary—305-743-2437
 - * Florida Keys Environmental Education Resource Directory - 1997 edition-Provides information on resources for environmental educators in Monroe County - E-M
 - * Keeping Your Bottom off the Bottom - A grounding prevention brochure - G
 - * Protecting Paradise-Florida Keys Safe Boating Tips - An eight-minute video on grounding prevention tips - G
 - * Florida's Coral Reef Ecosystem - A poster depicting the coral reef ecosystem of the Florida Keys - G-E
 - * FKNMS site Brochure - An overview of the FKNMS includes regulations - G
 - * FKNMS Upper Region Site Brochure - Provides Information about mooring buoys, tips for divers and snorkelers, and Sanctuary regulations - G
 - * FKNMS Lower Region Site Brochure - Provides Information about mooring buoys, tips for divers and snorkelers, and Sanctuary regulations - G
 - * Sounding Line - Quarterly newsletter about the FKNMS - G
 - * Summary of What You Need To Know to protect Sanctuary Resources - Brochure that summarizes all of the FKNMS regulations - G
- * Rookery Bay Reseach Reserve—941-775-8845
 - * Rookery Bay Field Guide - Book on plants and animals found in RBNERR. Costs \$10 - G
 - * Marine Science Curriculum - Manual includes field, lab and classroom activities for high school students - H
 - * KEEP IT CLEAN - A Citizen's Guide to Protecting Our Estuary - Describes actions citizens can do to avoid contributing to non-point source pollution - G
 - * Rookery Bay Boater's Guide - A boater's guide to the Bay - G
 - * Rookery Bay Poster - Clyde Butcher black and white art poster - G
- * Southwest Florida Aquatic and Buffer Preserves—941-575-5861
 - * Aquatic Preserves of Southwest Florida - Brochure on the aquatic preserves of the region - G
 - * Pine Island Sound Aquatic Preserve - Brochure on the aquatic preserves - G
 - * Introduction to Aquatic Preserves in The Charlotte Harbor Estuary - "Do You Know Where Your Aquatic Preserves Are?"-G
 - * Aquatic & Buffer Preserves of Southwest Florida - Summary Table - G
 - * Charlotte Harbor Estuaries Volunteer Water Quality Monitoring Network -Background information for interested volunteers-G

* **WATER—850-487-1855**

- * Florida State of the Environment: Ground Water, Reuse of Reclaimed Water, Stormwater Management - 3 booklets that describe the program areas of stormwater management, ground water and reuse of reclaimed water in Florida - G-H
- * Florida Water Quality Assessment - Section 305 (b) Report 1998 for the State of Florida - G
- * Florida Ground Water Guidance - Brochure providing numeric screening levels for assessing the ground water concentrations minimum criteria standards believed to affect human health - G
- * Pointless Personal Pollution - Brochure on nonpoint sources of pollution and what we can do to reduce nonpoint sources - G
- * Save the Swales - Brochure on runoff, purpose and importance of swales and what you can do to reduce runoff - G
- * Eastman and Laird's "Teenage Ninja Turtles Storm Drain Savers" - Activity books on purpose of storm drains and how we can keep them clean - E-M-H
- * The Waterfront Property Owner's Guide - 58-page brochure describes homeowner tips on how to protect waterbodies and how to maintain your water front property - G
- * How to Judge Environmental Planning for Subdivisions - 45-page Citizens guide to help individuals not professionally trained to be able to evaluate land development plans - G
- * EnviroScape Training Aid - LOAN ONLY - portable kit with landscape allows hands-on demonstrations of nonpoint and point sources of water pollution and ways to prevent pollution - E-M-H-G

* **Mine Reclamation—850-488-8217**

- * Ongoing Projects & Programs Which are Interrelated With the Implementation of the Integrated Habitat Network Coordinated Development Area - Information for participants in the State Phosphate Mine Reclamation Program - G
- * A Regional Conceptual Reclamation Plan for the South. Phosphate District of Florida - An analysis of environmental, economic & political factors within a 9 county region of central Florida. Includes maps - G

* **Wetland Resource Permitting—850-488-0130**

- * Florida State of the Environment Wetlands Resource Permitting - Describes wetland types, why we should protect our wetlands, and the rules and regulations for permitting - G-H
- * Single-Family Dredge and Fill and the DEP, Single-Family Dock Construction and the DEP, Shoreline Stabilization and the DEP - Three brochures that describe single-family dredge & fill, dock construction and shoreline stabilization activities - G
- * Take It Back - Video(5 min) on stewardship of the earth - Upper elementary to adult.
- * Wetlands Delineation Manual - 98-page manual discussing Wetlands Delineation Methodology followed by examples of practical application of Methodology at nineteen reference sites located throughout the state - G
- * Florida Wetland Plants: An Identification Manual - 588-page manual that reveals Florida's wetlands with over 800 colored photographs. Provides description of plants, their habitat and associates plant communities - G

* **Environmental Education—850-488-9334**

- * Florida-State of the Environment Series - 7 booklet series describes the regulatory programs -Air Quality, Ground Water, Reuse of Reclaimed Water, Solid Waste Management, Stormwater Management, Wastewater Management, and Wetlands-G-H
- * Classroom and Field Experiments for Florida's Environmental Resources - Booklet describes 14 laboratory and field experiments for middle and high school environmental and science classes - M
- * Environmental Education Leaflets #1 through #10 - #1 Wetlands in Florida, #2 Ground Water in Florida, #3 The Automobile and the Environment, #4 Solid Waste and Recycling, #5 The Water You Drink, #6 Mercury in Florida's Environment, #7 Invading Exotic Species in Florida, #8 Global Climate Change & Florida, #9 Making Recycling Work, #10 Watershed and River Basin - M-G
- * Your Environment - Booklet aimed at upper elementary/middle school children with information and activities describes Florida's environment and how you can help to protect it - E-M
- * Color the Coast With Pelican Pete & Molly Manatee - Activity book for K-3 grades describes beach and coastal environmental problems - E
- * Florida's Beaches and Shores - Activity book for 3—5 grades describes the beach and coastal areas - E
- * The Indian River-An Exceptional Lagoon - Teacher supplemental guides to developing an understanding of the lagoon and the interdependence of its plants and animals - T
- * Estuarine Habitats-Elementary Teaching Activities Series - A set of seven Supplemental Teaching Activities for Estuarine Habitats - T
- * People, Growth, and Endangered Ecosystems: Exercise in Biodiversity, Grades 6-10 - Lesson guide for 6-10 grades describing activities to help students understand ecosystems - M-H
- * Surveying Ecosystem - An exercise for 9-12 grades familiarizing students with an ecosystem - H
- * Studying A Piece of an Ecosystem - A class exercise for 9-12 grades familiarizing students with ecosystems - H
- * Resort or Resource...Either... Or Both? An Environmental Citizenship Activity for Grades 9-II - Activity book for 9-II grades -describes environmental citizenships and wetlands - H

Florida's Five Water Management Districts

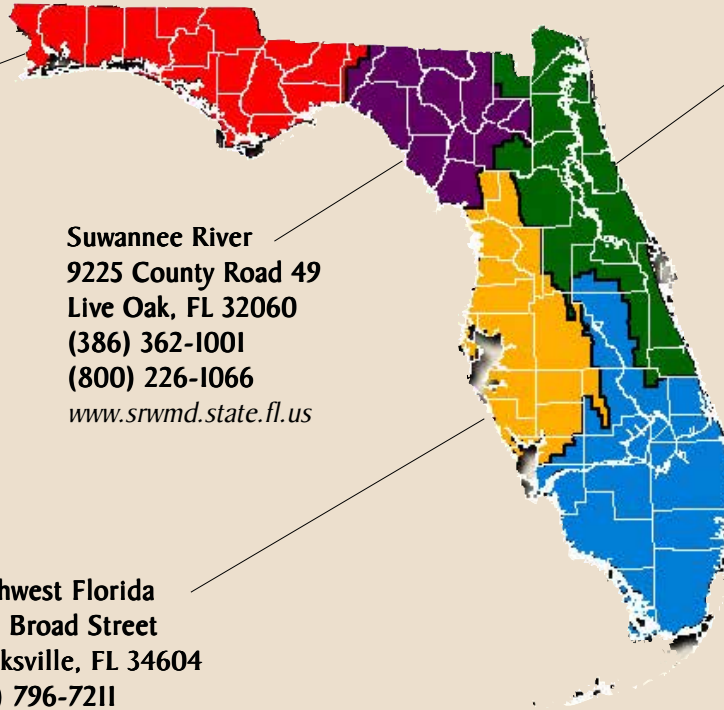
Northwest Florida
81 Water Management Dr
Havana, FL 32333
(850) 539-5999
www.state.fl.us/nwfwmd

Suwannee River
9225 County Road 49
Live Oak, FL 32060
(386) 362-1001
(800) 226-1066
www.srwmd.state.fl.us

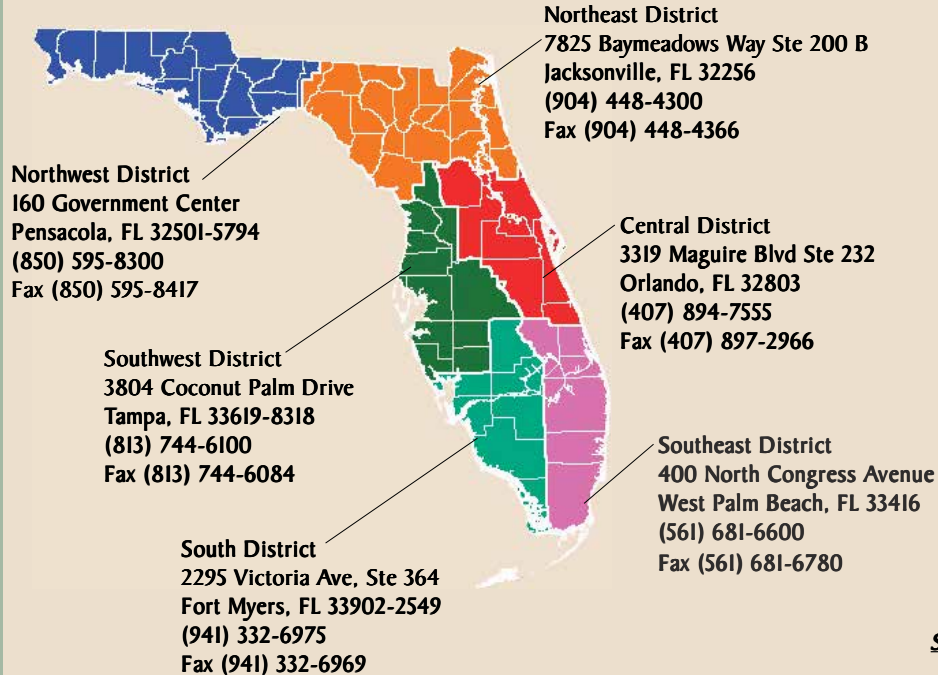
Southwest Florida
2379 Broad Street
Brooksville, FL 34604
(352) 796-7211
(800) 423-1476
www.swfwmd.state.fl.us

St. Johns River
4049 Reid Street
Palatka, FL 32177
(386) 329-4500
(800) 451-7106
sjr.state.fl.us

South Florida
3301 Gun Club Road
West Palm Beach, FL 33406
(561) 686-8800
(800) 432-2045
www.sfwmd.gov



Florida Department of Environmental Protection District Offices



Department of Environmental Protection Branch Offices

Northwest District Branch Offices:

Panama City Branch Office
2353 Jenks Avenue
Panama City, FL 32405
(850) 872-4375
Fax (850) 872-7790

Tallahassee Branch Office
2815 Remington Green Cir, Ste A
Tallahassee, FL 32308-1513
(850) 488-3704
Fax (850) 922-3620

South District Branch Offices:

Punta Gorda Branch Office
7451 Golf Course Boulevard
Punta Gorda, FL 33982
(941) 575-5814
Fax (941) 575-5812

Marathon Branch Office
2796 Overseas Highway, Ste 221
Marathon, FL 33050
(305) 289-2310
Fax (305) 289-2314

Southeast District Branch Office:

Port St. Lucie Branch Office
1801 Southeast Hillmoor Drive Ste C204
Port St. Lucie, FL 34952
(561) 398-2806
Fax (561) 398-2815

Northeast District Branch Office

Gainesville Branch Office
101 NW 75th Street, Ste 3
Gainesville, FL 32608-1609
(352) 333-2850
Fax (352) 333-2856



**Protecting the Wetlands of Florida
for Future Generations...**

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If you are thinking 1 year ahead, sow seed.
If you are thinking 10 years ahead, plant a tree.
If you are thinking 100 years ahead, educate the people.

- Chinese proverb

