

Florida Department of Environmental Protection



SLERC Program

Chapter 62-340, F.A.C.

March 2013





62-340.100 Intent

(1) This rule's intent is to provide a **unified** statewide methodology for the delineation of the extent of wetlands and surface waters to satisfy the mandate of Section 373.421, F.S. This delineation methodology is intended to approximate the **combined** landward extent of wetlands as determined by a water management district and the Department immediately before the effective date of this rule. Before implementing the specific provisions of this methodology, the regulating agency shall attempt to identify wetlands according to the **definition** for wetlands in subsection 373.019(17), F.S., and subsection 62-340.200(19), F.A.C., below. The landward extent of wetlands shall be determined by the dominance of plant species, soils and other hydrologic evidence indicative of **regular and periodic inundation or saturation**. In all cases, attempts shall be made to locate the landward extent of wetlands visually by on site inspection, or aerial photointerpretation in combination with **ground truthing**, without quantitative sampling. If this cannot be accomplished, the quantitative methods in paragraph 62-301.400(1)(c), F.A.C., shall be used unless the applicant or petitioner and regulating agency agree, in writing, on an alternative method for quantitatively analyzing the vegetation on site. The methodology shall not be used to delineate areas which are not wetlands as defined in subsection 62-340.200(19), F.A.C., nor to delineate as wetlands or surface waters areas exempted from delineation by statute or agency rule.

62-340.100 continued...



(2) The **Department** shall be responsible for ensuring statewide coordination and consistency in the delineation of surface waters and wetlands pursuant to this rule, by providing training and guidance to the Department, Districts, and local governments in implementing the methodology.

*Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS. History—
New 7-1-94, Formerly 17-340.100.*

62-340.200 Definitions

When used in this chapter, the following terms shall mean:

- (1) “Aquatic plant” means a plant, including the roots, which typically floats on water or requires water for its entire structural support, or which will **desiccate** outside of water.
- (2) “Canopy” means the plant stratum composed of all woody plants and palms with a trunk **four inches** or Greater in diameter at breast height, except vines.
- (3) “Diameter at Breast Height (DBH)” means the diameter of a plant’s trunk or main stem at a height of **4.5 feet** above the ground.
- (4) “Facultative plants” means those plant species listed in subsection 62-340.450(3), F.A.C., of this chapter. For the purposes of this rule, facultative plants are not indicators of **either** wetland or upland conditions.
- (5) “Facultative Wet plants” means those plant species **listed** in subsection 62-340.450(2), F.A.C., of this chapter.
- (6) “Ground Cover” means the plant stratum composed of all plants not found in the canopy **or** subcanopy, except vines and aquatic plants.
- (7) “Ground truthing” means verification on the ground of conditions on a **site**.



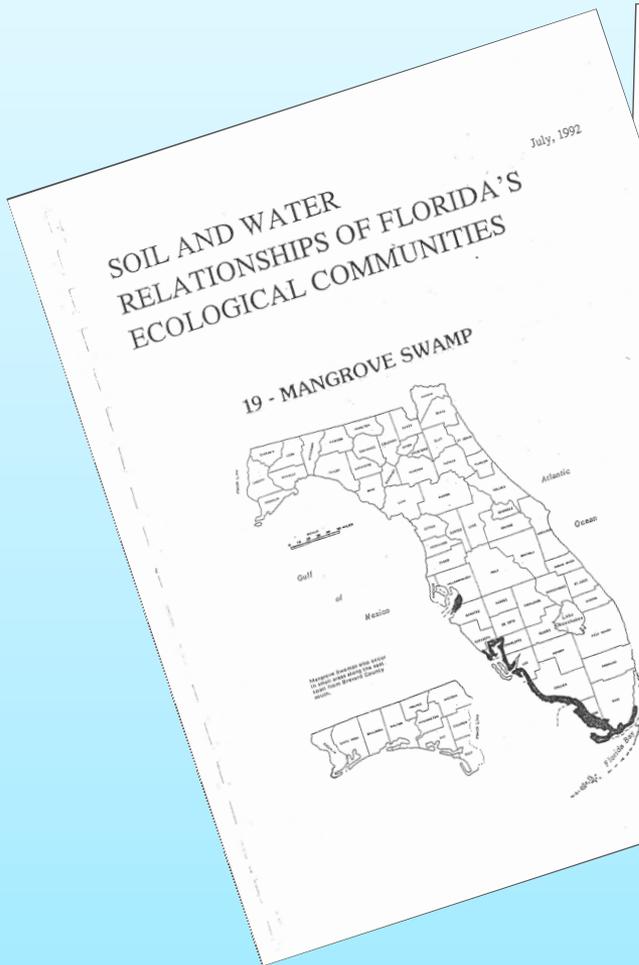
62-340.200 continued...

- (8) “Hydric Soils” means soils that are saturated, flooded, or ponded long enough during the growing season to develop **anaerobic** conditions in the upper part of the soil profile.
- (9) “Hydric Soil Indicators” means those indicators of hydric soil conditions as identified in *Soil and Water Relationships of Florida's Ecological Communities (Florida Soil Conservation ed. Staff 1992)*.
- (10) “Inundation” means a condition in which water from any source regularly and periodically **covers** a land surface.
- (11) “Obligate plants” means those plant species **listed** in subsection 62-340.450(1), F.A.C., of this chapter.
- (12) “Regulating agency” means the Department of Environmental Protection, the water management districts, state or regional agencies, local governments, and **any** other governmental entities.
- (13) “Riverwash” means areas of **unstabilized** sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers or streams so frequently that they may support little or no vegetation.





Soil and Water Relationships of Florida's Ecological Communities



Hydric Soil Indicators: User Notes and Ecological Communities

Introduction

The following user notes are intended to aid users in making correct determinations based on the preceding list of hydric soil indicators. Even with these notes, training in the proper use of hydric soil indicators is necessary. Non soil scientists and soil scientists unfamiliar with hydric soil indicators need training. The dominant ecological communities, as defined in 26 Ecological Communities of Florida, are also identified.

A. Sandy Soils

User Notes: "Sandy soils" refers to soils with a sandy USDA soil texture group (Soil Survey Staff, 1981) and other soils that have a permeability of 6.0 in/hr or more. For example soils with a USDA texture of muck and a high content of sand are to be considered as sandy soils since their permeability would be 6.0 in/hr or more.

Loamy and Clayey Soils

User Notes: "Loamy and clayey soils" refers to those soils that have a loamy or USDA soil texture group (Soil Survey Staff, 1981) and other soils that have a clay content of less than 6.0 in/hr. For example soils with a USDA texture of muck and a clay content of less than 6.0 in/hr. Use either sandy or loamy and clayey indicators based on conditions within the upper 12 inches of the soil except as follows: Where a clayey layer occurs within 6 inches, loamy and clayey indicators should be used.

Muck

Peat, muck, and mucky peat are soil materials (Soil Survey Staff, 1981) that contain at least 12 to 18 percent organic carbon. The amount of organic carbon is dependent upon the clay content of the soil; the higher the clay content, the higher the organic carbon requirement.

A leaf or root mat is a non soil layer that is slightly decomposed to a layer that leaves that can easily be removed from the soil. The presence of a leaf or root mat is not indicative of hydric soils or upland soils. The vegetation produces a large amount of biomass. Soil determinations are made below the leaf or root mat.

Estimating the Seasonal High Water Table

Introduction

A seasonal high water table (SHWT) is the shallowest depth to free water that stands in an unlined borehole or where the soil moisture tension is zero for a significant period (more than a few weeks). The depth to the estimated SHWT is the most used soil interpretation in Florida. This method of estimating SHWT applies only to those areas lacking hydrologic modifications. Hydrologic modifications such as ditches and dikes can make the soil either wetter or drier.

By observing soil features, SHWT predictions can be made for hydric soils as well as other soils with a water table.

Field Identification of SHWT

The procedure for field identification of SHWT is based on the assumption that when soils are wet enough, for a long enough duration, to develop a SHWT they should exhibit certain visible properties that are easily observed in the field. The list of SHWT indicators are field indicators that are to be used for on site SHWT determinations. All SHWT determinations should be based on field observations of moist soils.

Procedure

SHWTs are determined by examining the soil in a freshly dug pit for SHWT indicators. Presence of the shallowest of the indicators listed below indicate the depth to SHWT.

Soils with a hydric soil indicator.

Soils with the following hydric soil indicators have a SHWT at or above the surface:

- Indicator 1. Muck
- Indicator 2. Sulfidic Odor
- Indicator 3. Mucky Texture
- Indicator 7. Gley Colors



62-340.200 continued...

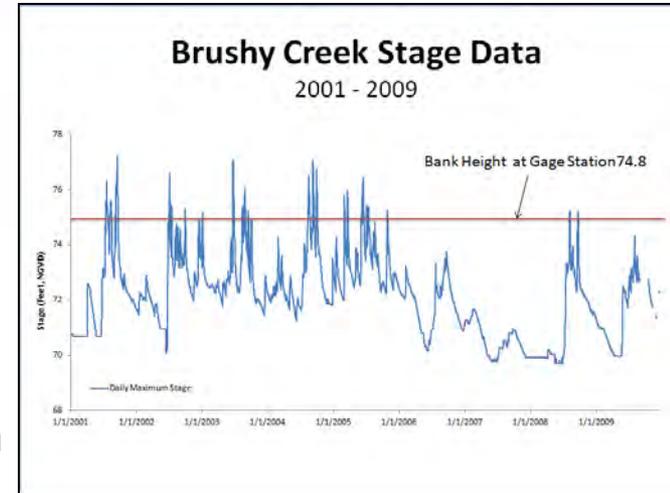
(14) “Saturation” means a water table **six inches** or less from the soil surface for soils with a permeability equal to or greater than six inches per hour in all layers within the upper 12 inches, or a water table **12 inches** or less from the soil surface for soils with a permeability less than six inches per hour in any layer within the upper 12 inches.

(15) “Seasonal High Water” means the elevation to which can be expected to rise due to a **normal** wet season.

(16) “Subcanopy” means the plant stratum composed of all woody plants and palms, exclusive of the canopy, with a trunk or main stem with a DBH between **one and four** inches, except vines.

(17) “Upland plants” means those plant species, **not listed** as Obligate, Facultative Wet, or Facultative by this rule, excluding vines, aquatic plants, and any plant species not introduced into the State of Florida as of the effective date of this rule.

(18) “U.S.D.A.-S.C.S.” means the United States Department of Agriculture, Soil Conservation Service. (note: Today known as the **Natural Resources Conservation Service**)





Florida wetlands

Wet Prairie



Tidal Marsh



Mangrove Swamp





62-340.200 continued...

(19) "Wetlands," as defined in subsection 373.019(17), F.S., means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and 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, riverine 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.

*Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS.
History—New 7-1-94, Formerly 17-340.200.*



Vegetative Communities





62-340.300 Delineation of Wetlands

The landward extent (i.e., the boundary) of wetlands as defined in subsection 62-340.200(19), F.A.C., shall be determined by applying **reasonable scientific judgment** to evaluate the dominance of plant species, soils, and other hydrologic evidence of regular and periodic inundation and saturation as set forth below. In applying reasonable scientific judgment, **all reliable information** shall be evaluated in determining whether the area is a wetland as defined in subsection 62-340.200(19), F.A.C.

(1) Before using the wetland delineation methodology described below, the regulating agency shall attempt to **identify and delineate** the landward extent of wetlands by direct application of the definition of wetlands in subsection 62-340.200(19), F.A.C., with particular attention to the **vegetative communities** which the definition lists as wetlands and non-wetlands. If the boundary cannot be located easily by use of the definition in subsection 62-340.200(19), F.A.C., the provisions of this rule shall be used to locate the landward extent of a wetland. In applying the provisions of this rule, the regulating agency shall attempt to locate the landward extent of wetlands visually by on site inspection, or aerial photointerpretation in combination with **ground truthing**.



To begin the delineation process you must first, identify where the wetland/upland ecotone



Aerial view of depression marsh in a pine flatwood forest, Martin County, Florida

An ECOTONE is any area where two or more plant communities grade into each other. If the wetland/upland ecotone signature is clearly evident, then an aerial determination can be made BUT this is **always** done in combination with ground truthing.

62-340.300 continued...

(2) The landward extent of a wetland as defined in subsection 62-340.200(19), F.A.C., shall include any of the following areas:

(a) Those areas where the aerial extent of **obligate** plants in the appropriate vegetative stratum is **greater than** the areal extent of all **upland** plants in that stratum, as identified using the method in Rule 62-340.400, F.A.C., and either:

1. The substrate is composed of **hydric** soils or riverwash, as identified using standard U.S.D.A.-S.C.S. practices for Florida, including the approved hydric soil indicators, **except** where the hydric soil is disturbed by a nonhydrological mechanical mixing of the upper soil profile and the regulating agency establishes through data or evidence that hydric soil indicators would be present but for the disturbance;
2. The **substrate** is nonsoil, rock outcrop-soil complex, or the substrate is located within an artificially created wetland area; or
3. One or more of the **hydrologic** indicators listed in Rule 62-340.500, F.A.C., are present and reasonable scientific judgment indicates that inundation or saturation is present sufficient to meet the wetland definition of subsection 62-340.200(19), F.A.C.





62-340.300 continued...

(2) continued...

(b) Those areas where the areal extent of **obligate or facultative** wet plants, or combinations thereof, in the appropriate stratum is equal to or greater than **80%** of all the plants in that stratum, excluding facultative plants, and either:

1. The substrate is composed of **hydric soils** or riverwash, as identified using standard U.S.D.A.-S.C.S. practices for Florida, including the approved hydric soil indicators, **except** where the hydric soil is disturbed by a nonhydrologic mechanical mixing of the upper soil profile and the regulating agency establishes through data or evidence that hydric soil indicators would be present but for the disturbance;
2. The **substrate** is nonsoil, rock outcrop-soil complex, or the substrate is located within an artificially created wetland area; or
3. One or more of the **hydrologic** indicators listed in Rule 62-340.500, F.A.C., are present and reasonable scientific judgment indicates that inundation or saturation is present sufficient to meet the wetland definition of subsection 62-340.200(19), F.A.C.



“C” Test

- The “C” test cannot be used in **pine flatwoods**, **improved pastures** and **drained soils**.



62-340.300 continued...

(2) continued...

(c) Those areas, other than pine flatwoods and improved pastures, with undrained hydric soils which meet, **in situ**, at least one of the criteria listed below. A hydric soil is considered undrained unless reasonable scientific judgment indicates permanent artificial alterations to the on site hydrology have resulted in conditions which would not support the formation of hydric soils.

1. Soils **classified** according to United States Department of Agriculture's *Keys to Soil Taxonomy* (4th ed. 1990) as Umbraqualfs, Sulfaquents, Hydraquents, Humaquepts, Histosols (except Folists), Argiaquolls, or Umbraquults.
2. **Saline** sands (salt flats-tidal flats).





62-340.300 continued...

(2) (c) continued...

3. Soil within a hydric **mapping unit** designated by the U.S.D.A.-S.C.S. as **frequently flooded or depressional**, when the hydric nature of the soil has been field verified using the U.S.D.A.-S.C.S. approved hydric soil indicators for Florida. If a permit applicant, or a person petitioning for a formal determination pursuant to subsection 373.421(2), F.S., disputes the boundary of a frequently flooded or depressional mapping unit, the applicant or petitioner may request that the regulating agency, in cooperation with the U.S.D.A.-S.C.S., confirm the boundary. For the purposes of subsection 120.60(2), F.S., a request for a boundary confirmation pursuant to this subparagraph shall have the same effect as a timely request for additional information by the regulating agency. The regulating agency's receipt of the final response provided by the U.S.D.A.-S.C.S. to the request for boundary confirmation shall have the same effect as a receipt of timely requested additional information.



62-340.300 continued...

(2) (c) continued...

4. For the purposes of this paragraph only, “**pine flatwoods**” means a plant community type in Florida occurring on flat terrain with soils which may experience a seasonal high water table near the surface. The canopy species consist of a monotypic or mixed forest of long leaf pine or slash pine. The subcanopy is typically sparse or absent. The ground cover is dominated by saw palmetto with areas of wire grass, gallberry, and other shrubs, grasses, and forbs, **which are not obligate or facultative wet species**. Pine flatwoods do not include those wetland communities as listed in the wetland definition contained in subsection 62-340.200(19), F.A.C., which may occur in the broader landscape setting of pine flatwoods and which may contain slash pine. Also for the purposes of this paragraph only, “**improved pasture**” means areas where the dominant native plant community has been replaced with planted or natural recruitment of herbaceous species **which are not obligate or facultative wet species** and which have been actively maintained for livestock through mechanical means or grazing.



Pine Flatwoods & Improved Pastures



Improved Pasture

Marsh



Marsh

Improved Pasture



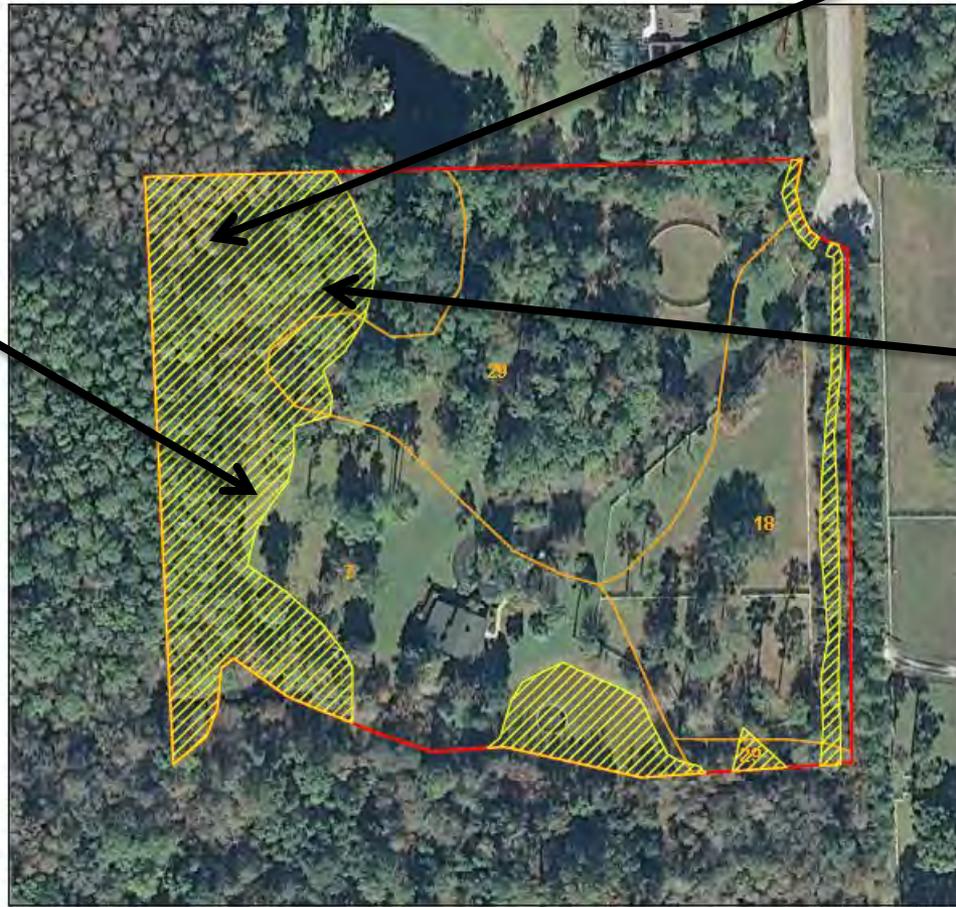
Pine Flatwoods

Wet Prairie

“C” Test



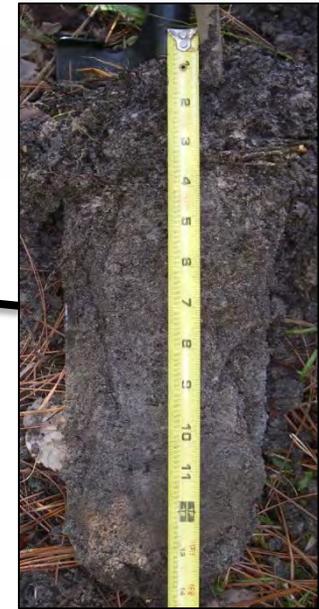
A8 – Muck Presence



Scale bar: 0 10 20 30

Aerial Photograph: 2010 FDEP

| SYMBOL | MAPPED SOIL UNIT | HYDRIC COMPONENT |
|--------|------------------------------------|------------------|
| 29 | POMPANO FINE SAND/DEPRESSIONAL | 80% |
| 18 | MYAKKA FINE SAND | 20% |
| 7 | ASTOR FINE SAND/FREQUENTLY FLOODED | 100% |



S5 – Sandy Redox



62-340.300 continued...

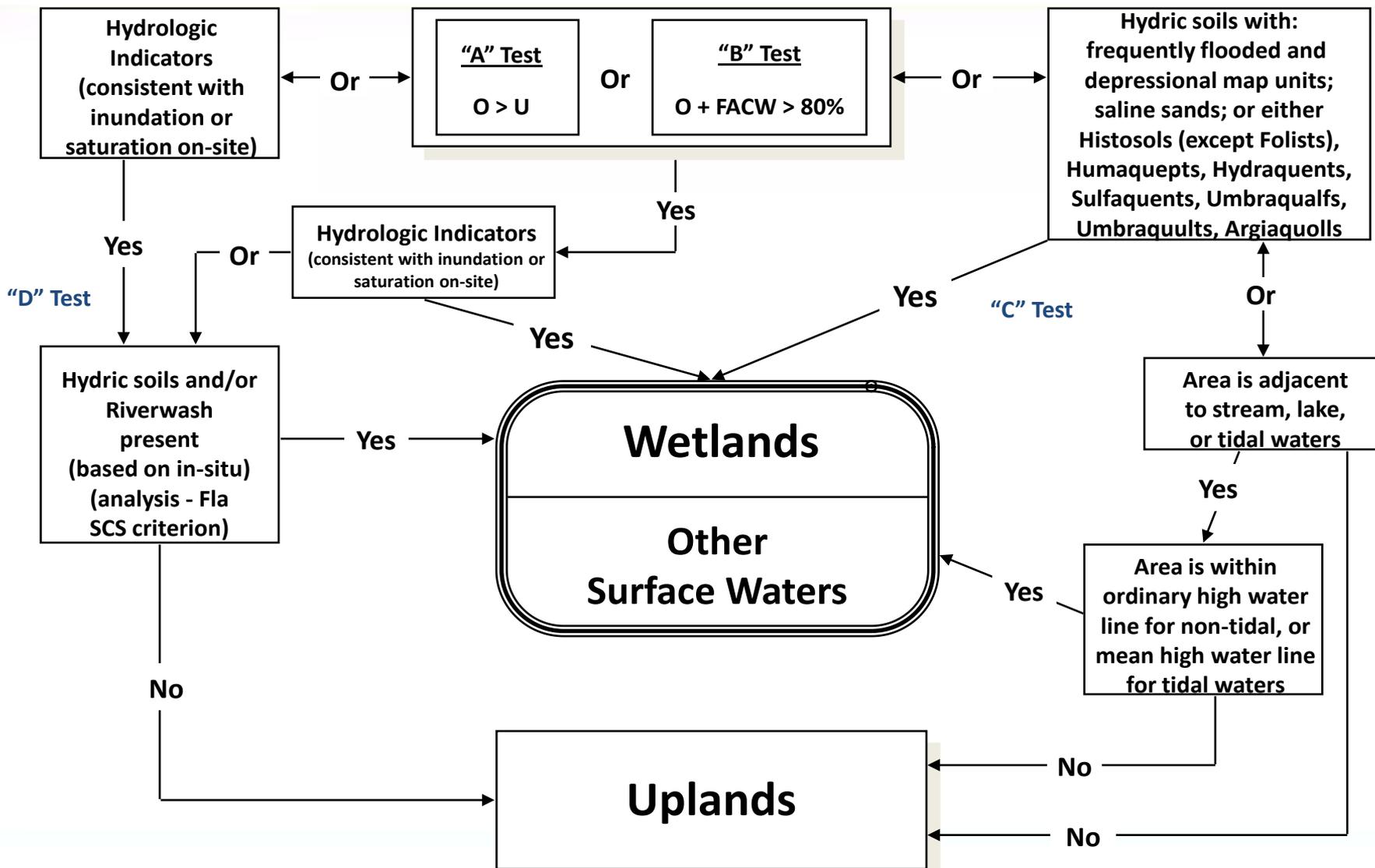
(2) continued...

(d) Those areas where one or more of the [hydrologic indicators](#) listed in Rule 62-340.500, F.A.C., are present, and which have hydric soils, as identified using the U.S.D.A.-S.C.S. approved hydric [soil indicators](#) for Florida, and reasonable scientific judgment indicates that inundation or saturation is present sufficient to meet the wetland definition of subsection 62-340.200(19), F.A.C. These areas shall not extent beyond the seasonal high water elevation.





62-340.300 Wetland and other surface water “normal” determinations “TESTS”





NEW HOLLAND

RH2

7 EH215
ASAP

28/06/2007



Altered Ecological Communities





62-340.300 “Altered Sites”

(3)(a) If the vegetation or soils of an upland or wetland area have been **altered** by **natural** or **man-induced** factors such that the boundary between wetlands and uplands cannot be delineated **reliably** by use of the methodology in subsection 62-340.300(2), F.A.C., as determined by the regulating agency, and the area has hydric soils or riverwash, as identified using standard U.S.D.A.-S.C.S. practices for Florida, including the approved hydric soil indicators, except where the hydric soil is disturbed by a non hydrologic mechanical mixing of the upper soil profile and the regulating agency establishes through data or evidence that hydric soil indicators would be present but for the disturbance, then the **most reliable available information** shall be used with reasonable scientific judgment to determine where the methodology in subsection 62-340.300(2), F.A.C., would have delineated the boundary between wetlands and uplands. Reliable available information may include, but is not limited to, aerial photographs, remaining vegetation, authoritative site-specific documents, or topographical consistencies.



Altered Sites Test



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road, MS 2500
Tallahassee, Florida 32399-2400

Marlene Crist
Governor

Jay Byrnes
Lieutenant Governor

Mark W. Greer
Secretary

GUIDANCE ON WETLAND ALTERED SITES TEST PARAGRAPHS 62-340.300(3)(a-c), F.A.C.

TO: The Department, Water Management Districts, and local governments

THROUGH: Richard Cantrell
Deputy Division Director
Water Resource Management

FROM: Eric Hickman
Program Administrator
Wetland Evaluation and Delineation Section

DATE: July 1, 2008

This memo provides additional guidance to that given in THE FLORIDA WETLANDS DELINEATION MANUAL for application of the rule language within subsection 62-340.300(3), F.A.C. It must be read in concert with THE FLORIDA WETLANDS DELINEATION MANUAL and should not be interpreted as replacing the existing guidance. Rather, the following is to be interpreted as an expansion of the former discussion.

The intent and purpose of the altered sites test is to provide a framework to delineate wetlands, where due to past or present legal alteration(s), the normal interpretation of plant species dominance, soils, and hydrologic evidence within the parameters of paragraphs 62-340.300(2)(a-d), F.A.C. is rendered unreliable. When legal disturbances or alterations have masked the nature of a site so that paragraphs 62-340.300(2)(a-d), F.A.C. cannot be used to obtain reliable results, then the provisions of paragraphs 62-340.300(3)(a)(b), F.A.C. may be applied using reasonable scientific judgment.

Specifically not included in the 62-340.300(3)(a)(b), F.A.C. altered sites concept are alterations caused by illegal activities. Evaluation of such sites may under 62-340.300(3)(c), F.A.C. utilize many of the same methodologies associated with the altered sites test but in a forensic manner. Wetland delineations pertaining to potentially illegal activities do not consider the alterations as they exist but rather what they were immediately before the illegal activities took place.

Fundamental to the 62-340.300(3)(a), F.A.C. altered sites concept is that the area delineated, even with the alteration, is a functioning wetland, all be it with potentially reduced function. Even a wetland with minimal function is still a wetland, either an area meets the wetland criteria or it does not. Pragmatically, this means that over time and without continued alteration, any wetland

Wetland Altered Sites Guidance
Page 1 of 2

The intent and purpose of the altered sites test is to provide a framework to delineate wetlands, where due to past or present legal alteration(s), the normal interpretation of plant species dominance, soils, and hydrologic evidence within the parameters of paragraphs 62-340.300(2)(a-d), F.A.C. is rendered unreliable. When legal disturbances or alterations have masked the nature of a site so that paragraphs 62-340.300(2)(a-d), F.A.C. cannot be used to obtain reliable results, then the provisions of paragraphs 62-340.300(3)(a)(b), F.A.C. may be applied using reasonable scientific judgment.



Altered Sites Test

delineated using the 62-340.300(3)(a), F.A.C. altered sites test would return to a condition easily identifying it as such, using the types of evidence and characteristics contemplated in paragraphs 62-340.300(1)(2)(a-d), F.A.C. In all cases, copious attention should be given to the statutory definition of wetlands and the associated example wetland plant communities when evaluating current site conditions and applying the altered sites test methodology to extant wetland conditions.

Landscapes where historic or ongoing legal activities have altered the hydrology of a site to the extent that wetland functions are no longer present during normal seasonal cycles per 62-340.300(3)(b), F.A.C., are **not wetlands** and therefore are not "altered site" wetlands subject to the provision of subsection 62-340.300(3)(a), F.A.C. However, some wetland sites that have been legally altered to the point of not being wetlands per 62-340.300(3)(b), F.A.C. may return to wetland conditions with the cessation of the legal activities. When this occurs, the site **may** be subject to the altered site provisions **if** residual effects of the disturbance prevent the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C.

The importance of reasonable scientific judgment cannot be overstated when considering the altered sites concept. Each and every altered site will present a unique set of interpretations and conclusions. The term "altered" does not refer to any deviation from Florida's pre-settlement condition but rather to the intensity, extent and degree of alteration as it effects the reliability of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are included in the statutory wetland definition. **Some** of the activities that **may** result in the application of the altered sites provisions are: recent land clearing, impoundment, intensive grazing, soil disturbance, long term suppression of normal fire cycles, herbicide treatments, anthropogenic plant monocultures that change the indicator status of existing vegetative communities, invasive exotic vegetation that eliminates the indicator status of other vegetative strata, recent disturbance by hurricanes, catastrophic fire, soil compaction or recent mowing. None of the listed example activities, in combination or by themselves, mandate the use of the altered sites test. It is necessary to use the altered sites test **only** when these or other alterations prohibit the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are functioning wetlands included in the statutory wetland definition. The burden of proof for utilizing the altered sites test shall rest with the party asserting it was required given the current site conditions.

Please contact Eric Hickman at (850) 245-8496 with any questions or comments.

The importance of reasonable scientific judgment cannot be overstated when considering the altered sites concept. Each and every altered site will present a unique set of interpretations and conclusions. The term "altered" does not refer to any deviation from Florida's pre-settlement condition but rather to the intensity, extent and degree of alteration as it effects the reliability of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are included in the statutory wetland definition. **Some of the activities that may result in the application of the altered sites provisions are: recent land clearing, impoundment, intensive grazing, soil disturbance, long term suppression of normal fire cycles, herbicide treatments, anthropogenic plant monocultures that change the indicator status of existing vegetative communities, invasive exotic vegetation that eliminates the indicator status of other vegetative strata, recent disturbance by hurricanes, catastrophic fire, soil compaction or recent mowing. None of the listed example activities, in combination or by themselves, mandate the use of the altered sites test. It is necessary to use the altered sites test only when these or other alterations prohibit the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are functioning wetlands included in the statutory wetland definition. The burden of proof for utilizing the altered sites test shall rest with the party asserting it was required given the current site conditions.**



Permitted Hydrologic Alteration





62-340.300 continued...

(3) continued...

(b) This subsection shall not apply to any area where regional or site-specific **permitted** activity, or activities which **did not require** a permit, under Sections 253.123 and 253.124, F.S. (1957), as subsequently amended, the provisions of Chapter 403, F.S. (1983), relating to dredging and filling activities, Chapter 84-79, Laws of Florida, and Part IV of Chapter 373, F.S., have altered the **hydrology** of the area to the extent that reasonable scientific **judgment**, or application of the provisions of Section **62-340.550**, F.A.C., indicate that under normal circumstances the area no longer inundates or saturates at a frequency and duration sufficient to meet the wetland definition in subsection 62-340.200(19), F.A.C.

62-340.300 continued...

Unauthorized alteration





62-340.300 continued...

(3) continued...

(c) This subsection shall not be construed to limit the type of evidence which may be used to delineate the landward extent of a wetland under this chapter when an activity **violating** the regulatory requirements of Sections 253.123 and 253.124, F.S. (1957), as subsequently amended, the provisions of Chapter 403, F.S. (1983), relating to dredging and filling activities, Chapter 84-79, Laws of Florida, and Part IV of Chapter 373, F.S., has disturbed the vegetation or soils of an area.



Altered Sites Test



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road, MS 2500
Tallahassee, Florida 32399-2400

Marlene Crist
Governor
Eric Hickman
Deputy Governor
Maura W. S. Cole
Secretary

GUIDANCE ON WETLAND ALTERED SITES TEST PARAGRAPHS 62-340.300(3)(a-c), F.A.C.

TO: The Department, Water Management Districts, and local governments

THROUGH: Richard Cantrell
Deputy Division Director
Water Resource Management

FROM: Eric Hickman
Program Administrator
Wetland Evaluation and Delineation Section

DATE: July 1, 2008

This memo provides additional guidance to that given in THE FLORIDA WETLANDS DELINEATION MANUAL for application of the rule language within subsection 62-340.300(3), F.A.C. It must be read in concert with THE FLORIDA WETLANDS DELINEATION MANUAL and should not be interpreted as replacing the existing guidance. Rather, the following is to be interpreted as an expansion of the former discussion.

The intent and purpose of the altered sites test is to provide a framework to delineate wetlands, where due to past or present legal alteration(s), the normal interpretation of plant species dominance, soils, and hydrologic evidence within the parameters of paragraphs 62-340.300(2)(a-d), F.A.C. is rendered unreliable. When legal disturbances or alterations have masked the nature of a site so that paragraphs 62-340.300(2)(a-d), F.A.C. cannot be used to obtain reliable results, then the provisions of paragraphs 62-340.300(3)(a)(b), F.A.C. may be applied using reasonable scientific judgment.

Specifically not included in the 62-340.300(3)(a)(b), F.A.C. altered sites concept are alterations caused by illegal activities. Evaluation of such sites may under 62-340.300(3)(c), F.A.C. utilize many of the same methodologies associated with the altered sites test but in a forensic manner. Wetland delineations pertaining to potentially illegal activities do not consider the alterations as they exist but rather what they were immediately before the illegal activities took place.

Fundamental to the 62-340.300(3)(a), F.A.C. altered sites concept is that the area delineated, even with the alteration, is a functioning wetland, all be it with potentially reduced function. Even a wetland with minimal function is still a wetland, either an area meets the wetland criteria or it does not. Pragmatically, this means that over time and without continued alteration, any wetland

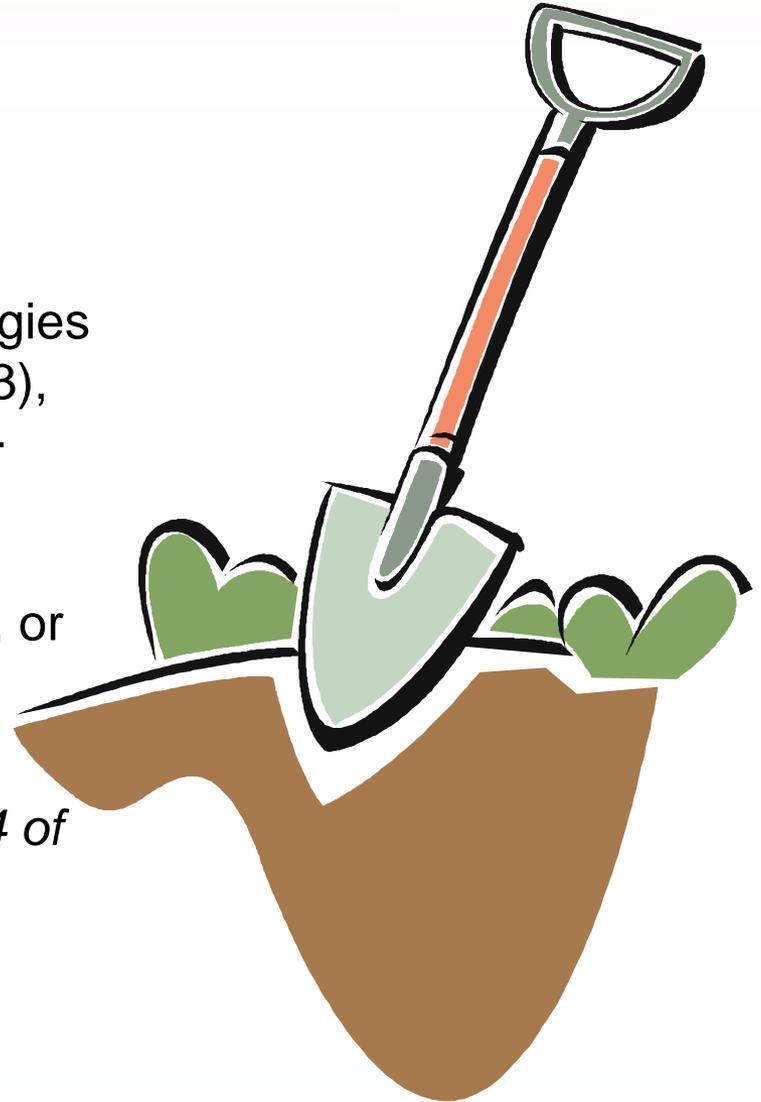
Wetland Altered Sites Guidance
Page 1 of 2

Specifically not included in the 62-340.300(3)(a)(b), F.A.C. altered sites concept are alterations caused by illegal activities. Evaluation of such sites may under 62-340.300(3)(c), F.A.C. utilize many of the same methodologies associated with the altered sites test but in a forensic manner. Wetland delineations pertaining to potentially illegal activities do not consider the alterations as they exist but rather what they were immediately before the illegal activities took place.

62-340.300 continued...

(4) The regulating agency shall maintain sufficient soil scientists on staff to provide evaluation or consultation regarding soil determinations in applying the methodologies set forth in subsection 62-340.300(2) or (3), F.A.C. Services provided by the U.S.D.A.-S.C.S., or other competent soil scientists, under contract or agreement with the regulating agency, may be used in lieu of, or to augment, agency staff.

See also hydric soils, page 3 paragraph 4 of the Florida Wetland Delineation Manual.





62-340.400 Selection of Appropriate Vegetative Stratum

Dominance of plant species, as described in paragraphs 62-340.300(2)(a) and 62-340.300(2)(b), F.A.C., shall be determined in a plant stratum (canopy, subcanopy, or ground cover). The top stratum shall be used to determine dominance unless the top stratum, exclusive of facultative plants, constitutes less than 10 percent areal extent, or unless reasonable scientific judgment establishes that the indicator status of the top stratum is not indicative of the hydrologic conditions on site. In such cases, the stratum most indicative of on site hydrologic conditions, considering the seasonal variability in the amount and distribution of rainfall, shall be used. The evidence concerning the presence or absence of regular and periodic inundation or saturation shall be based on in situ data. All facts and factors relating to the presence or absence of regular and periodic inundation or saturation shall be weighed in deciding whether the evidence supports shifting to a lower stratum. The presence of obligate, facultative wet, or upland plants in a lower stratum does not by itself constitute sufficient evidence to shift strata, but can be considered along with other physical data in establishing the weight of evidence necessary to shift to a lower stratum. The burden of proof shall be with the party asserting that a stratum other than the top stratum should be used to determine dominance. Facultative plants shall not be considered for purposes of determining appropriate strata or dominance.

*Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS.
History—New 7-1-94, Formerly 17-340.400.*



Vegetative Strata:

Measurements in inches; diameter at breast height (d.b.h.)

Canopy
> 4

Subcanopy
1-4

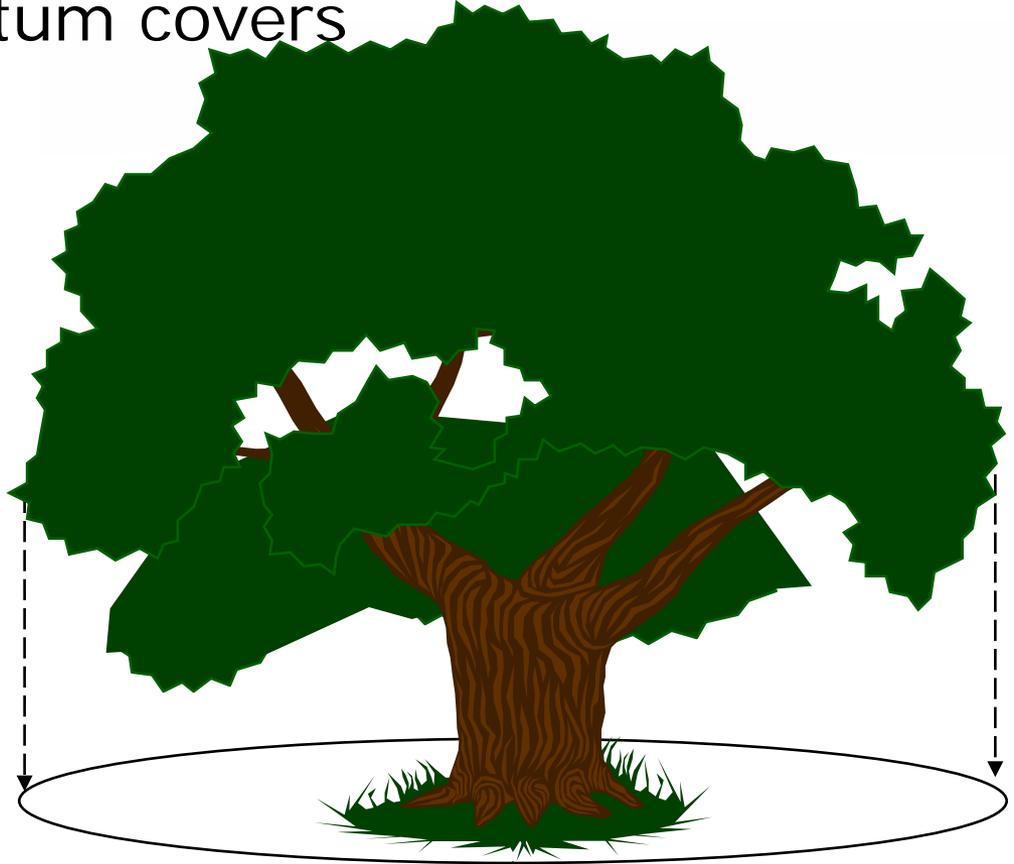
Groundcover
< 1





Determining Aerial Coverage

Aerial extent is that percentage of ground area that a plant or stratum covers



There must be a minimum of **10% areal** coverage for canopy and sub-canopy strata to be considered in the A and B tests.



Dominance: Use One Stratum

Always use the uppermost strata first unless:

- $OBL + FACW + UPL = < 10\%$ aerial coverage
- Reasonable scientific judgment shows that the uppermost stratum does not reflect hydrologic conditions on site

section 62-340.400, F.A.C.





62-340.400 Selection of Appropriate Vegetative Stratum

Dominance of plant species, as described in paragraphs 62-340.300(2)(a) and 62-340.300(2)(b), F.A.C., shall be determined in a plant stratum (canopy, subcanopy, or ground cover). The top stratum shall be used to determine dominance unless the top stratum, exclusive of facultative plants, constitutes less than 10 percent areal extent, or unless reasonable scientific judgment establishes that the indicator status of the top stratum is not indicative of the hydrologic conditions on site. In such cases, the stratum most indicative of on site hydrologic conditions, considering the seasonal variability in the amount and distribution of rainfall, shall be used. The evidence concerning the presence or absence of regular and periodic inundation or saturation shall be based on in situ data. All facts and factors relating to the presence or absence of regular and periodic inundation or saturation shall be weighed in deciding whether the evidence supports shifting to a lower stratum. The presence of obligate, facultative wet, or upland plants in a lower stratum does not by itself constitute sufficient evidence to shift strata, but can be considered along with other physical data in establishing the weight of evidence necessary to shift to a lower stratum. The burden of proof shall be with the party asserting that a stratum other than the top stratum should be used to determine dominance. Facultative plants shall not be considered for purposes of determining appropriate strata or dominance.

*Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS.
History—New 7-1-94, Formerly 17-340.400.*



Wetland slash pine flatwoods with redoxomorphic soil conditions in Gulf County



Pitcher plant bog with slash pine canopy from previous slide



The **burden of proof** for dropping strata falls on the individual(s) making the assertion and they must be able to defend their decision. This burden of proof requires reasonable scientific judgment, evidence, and deduction to support the conclusion.



62-340.450 Vegetative Index

- (1) Obligate Species
- (2) Facultative Wet Species
- (3) Facultative



(1) Obligate Species

Acer saccharinum
Acoelorrhaphe wrightii
Acrostichum spp.
Aeschynomene pratensis
Agalinis linifolia
Agalinis maritima
Alisma subcordatum
Alnus serrulata
Alternanthera philoxeroides
Alternanthera sessilis
Amaranthus australis
Amaranthus cannabinus

*Acrostichum
adanaeifolium*



maple, silver
palm, paurotis
leather fern
joint-vetch, meadow
false-foxglove, flax-leaf
false-foxglove, saltmarsh
water-plantain, subcordate
alder, hazel
alligator-weed
alligator weed, sessile
amaranth, southern
amaranth, tidemarsch



62-340.450 continued...

(4) Nomenclature. Use of plants in this rule is based solely on the scientific names. Common names are included in the above lists for information purposes only. The following references shall be used by the regulating agency to resolve any uncertainty about the nomenclature or taxonomy of any plant listed by a given scientific name in this section: R. Godfrey, *Trees, Shrubs and Woody Vines of Northern Florida and Adjacent Georgia & Alabama* (Univ. Ga. Press, Athens 1988) and D. Lellinger, *Ferns & Fern-Allies of the United States & Canada* (Smithsonian Institution Press, Washington D.C. 1985) for all species covered by these references. For all other listed scientific names the following references will be followed unless the species list in this section designates a different authority next to an individual species name: R. Godfrey & J. Wooten, *Aquatic and Wetland Plants of Southeastern United States: Monocotyledons* (Univ. Ga. Press, Athens 1979); R. Godfrey & J. Wooten, *Aquatic and Wetland Plants of Southeastern United States: Dicotyledons* (Univ. Ga. Press, Athens 1979); D. & H. Correll, *Flora of the Bahama Archipelago* (A.R. Gantner, Germany 1982). When the species list in this section designates a different authority next to an individual species name, the regulating agency shall resolve any ambiguity in nomenclature by using the name identified in D. Hall, *The Grasses of Florida* (Doctoral Dissertation, Univ. of Fla., Gainesville 1978); or C. Campbell, *Systematics of the Andropogon Virginicus Complex (GRAMINEAE)*, 64 *Journal of the Arnold Arboretum* 171-254 (1983).



Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS. History—New 7-1-94, Formerly 17-340.450.



Interlude



62-340.500 Hydrologic Indicators

62-340.500 Hydrologic Indicators. The indicators below may be used as evidence of inundation or saturation when used as provided in Rule [62-340.300](#), F.A.C. Several of the indicators reflect a specific water elevation. These specific water elevation indicators are intended to be evaluated with meteorological information, surrounding topography and reliable hydrologic data or analyses when provided, to ensure that such indicators reflect inundation or saturation of a frequency and duration sufficient to meet the wetland definition in subsection [62-340.200\(19\)](#), F.A.C., and [not rare or aberrant events](#). These specific water elevation indicators are not intended to be extended from the site of the indicator into surrounding areas when reasonable scientific judgment indicates that the surrounding areas are not wetlands as defined in subsection [62-340.200\(19\)](#), F.A.C.



62-340.500 Hydrologic Indicators

1. Algal mats
2. Aquatic mosses or liverworts on trees or substrate
3. Aquatic plants
4. Aufwuchs
5. Drift lines and rafted debris
6. Elevated lichen lines
7. Evidence of aquatic fauna
8. Hydrologic data
9. Morphological plant adaptations
10. Secondary flow channels
11. Sediment deposition
12. Vegetated tussocks or hummocks
13. Water marks



62-340.500(1) Algal mats

(1) Algal mats. The presence or remains of nonvascular plant material which develops during periods of inundation and persists after the surface water has receded.



A newly exposed algal mat will often be green

Older algal are often brown or may be bleached white



62-340.500(2) Aquatic mosses or liverworts on trees or substrate

(2) Aquatic mosses or liverworts on trees or substrates. The presence of those species of mosses or liverworts tolerant of or dependent on surface water inundation.



Aquatic moss
Fontinalis sp.

Floodplain tree with aquatic mosses and liverworts Mosses and liverworts are non-vascular plants, like algae they are generally confined to wet places. Some mosses and liverworts only grow underwater. We use these species to identify landscapes with prolonged, seasonal inundation.



62-340.500(3) Aquatic plants

(3) Aquatic plants. Defined in subsection 62-340.200(1), F.A.C.
“Aquatic plant” means a plant, including the roots, which typically floats on water or requires water for its entire structural support, or which will **desiccate** outside of water.



Water lettuce or Pistia
a floating aquatic plant

See, [Aquatic and Wetland Plants of the Southeastern U.S.](#), by Bob Godfrey, 1979 to aid in aquatic plant identification.



Drying pond edge, note the exposed waterlilies



62-340.500(4) Aufwuchs

(4) Aufwuchs. The presence or remains of the Assemblage of sessile, attached or free-living, nonvascular plants and invertebrate animals (including protozoans) which develop a community on inundated surfaces.



Aufwuchs on emergent vegetation



Dried aufwuchs produce a white crust on this vegetation



62-340.500(5) Drift lines and rafted debris

(5) Drift lines and rafted debris. Vegetation, litter, and other natural or manmade material deposited in discrete lines or locations on the ground or against fixed objects, or entangled above the ground within or on fixed objects in a form and manner which indicates that the material was waterborne. This indicator should be used with caution to ensure that the drift lines or rafted debris represent usual and recurring events typical of inundation or saturation at a frequency and duration sufficient to meet the wetland definition of subsection 62-340.200(19), F.A.C.





62-340.500(6) Elevated lichen lines

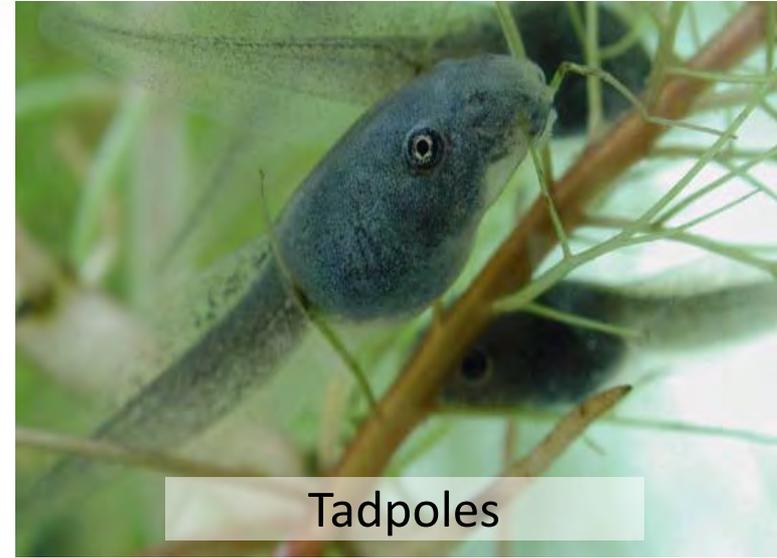
(6) Elevated lichen lines. A distinct line, typically on trees, formed by the water-induced limitation on the growth of lichens.





62-340.500(7) Evidence of aquatic fauna

(7) Evidence of aquatic fauna. The presence or indications of the presence of animals which spend all or portions of their life cycle in water. Only those life stages which depend on being in or on water for daily survival are included in this indicator.

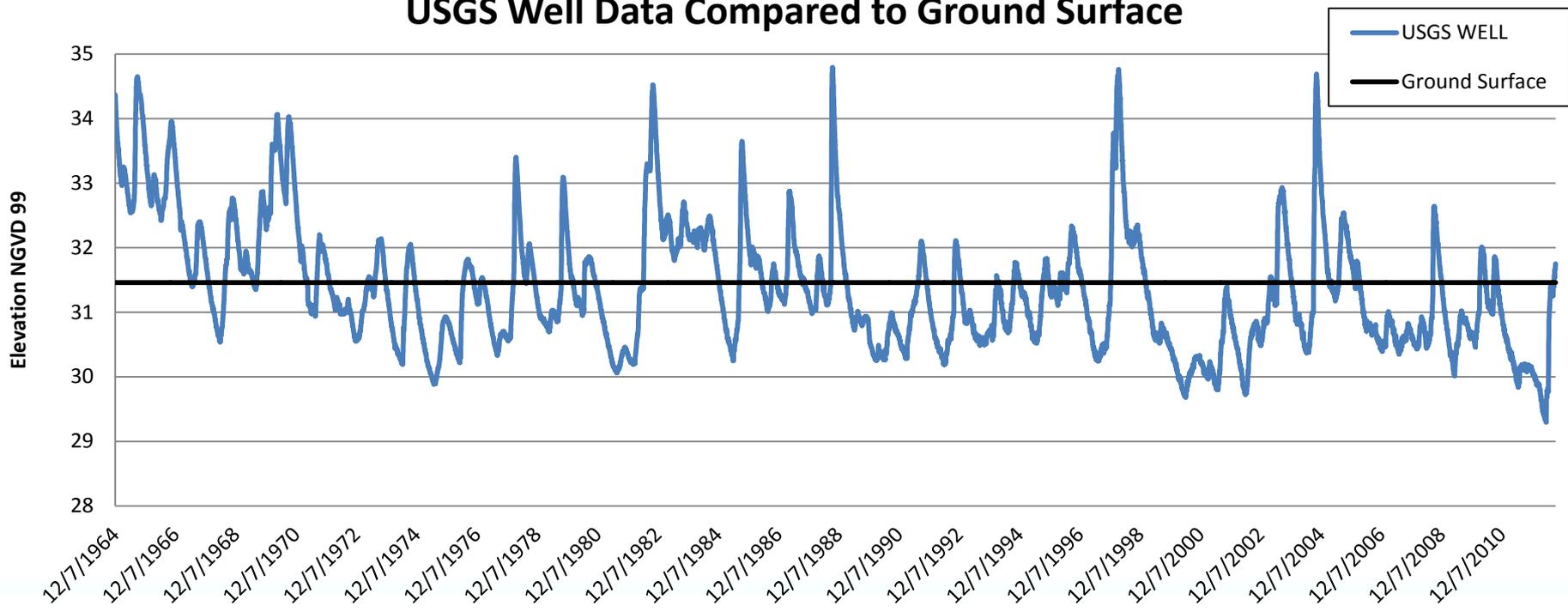




62-340.500(8) Hydrologic data

(8) Hydrologic data. [Reports](#), [measurements](#), or direct observation of inundation or saturation which support the presence of water to an extent consistent with the provisions of the definition of wetlands and the criteria within this rule, including evidence of a seasonal high water table at or above the surface according to methodologies set forth in *Soil and Water Relationships of Florida's Ecological Communities* (Florida Soil Conservation Staff 1992).

USGS Well Data Compared to Ground Surface





62-340.500(8) Hydrologic data

(8) Hydrologic data. Reports, measurements, or direct observation of inundation or saturation which support the presence of water to an extent consistent with the provisions of the definition of wetlands and the criteria within this rule, **including** evidence of a seasonal high water table at or above the surface according to methodologies set forth in *Soil and Water Relationships of Florida's Ecological Communities (Florida Soil Conservation Staff 1992)*.

- hydric soil field indicators having a SHWT **at or above** the soil surface:

Indicator A8. Muck Presence

Indicator A9. 1 cm Muck

Indicator A7. 5 cm Mucky Mineral

Indicator A4. Sulfidic Odor

Indicator F2. Loamy Gleyed Matrix

Indicator S4. Sandy Gleyed Matrix

Indicator A1. Histosol

Indicator A2. Histic Epipedon

Indicator A3. Black Histic



62-340.500(8) Hydrologic data

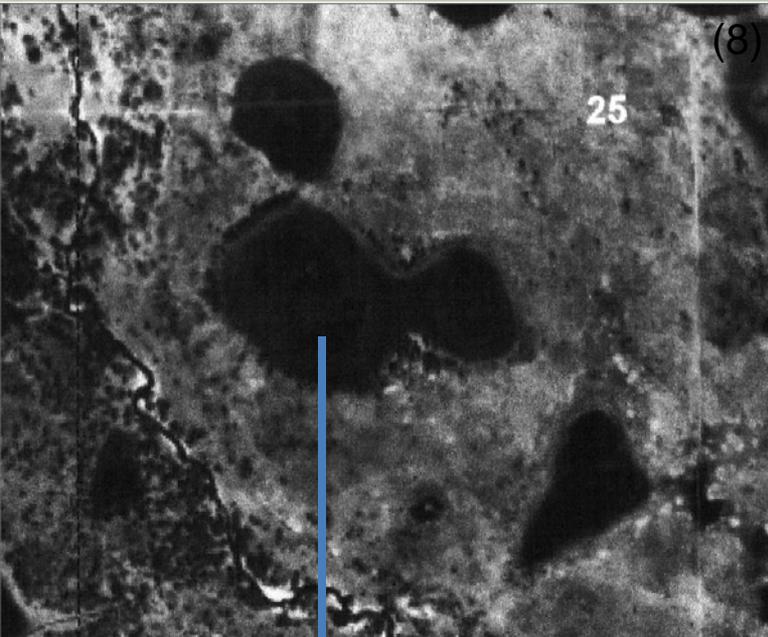
(8) Hydrologic data. Reports, measurements, or direct observation of inundation or saturation which support the presence of water to an extent consistent with the provisions of the definition of wetlands and the criteria within this rule, **including** evidence of a seasonal high water table at or above the surface according to methodologies set forth in *Soil and Water Relationships of Florida's Ecological Communities (Florida Soil Conservation Staff 1992)*.

- Evidence of a SHWT **at** or above the soil surface:





62-340.500(8) Hydrologic data



(8) Hydrologic data. Reports, measurements, or **direct observation** of inundation or saturation which support the presence of water to an extent consistent with the provisions of the definition of wetlands and the criteria within this rule, including evidence of a seasonal high water table at or above the surface according to methodologies set forth in *Soil and Water Relationships of Florida's Ecological Communities* (Florida Soil Conservation Staff 1992).



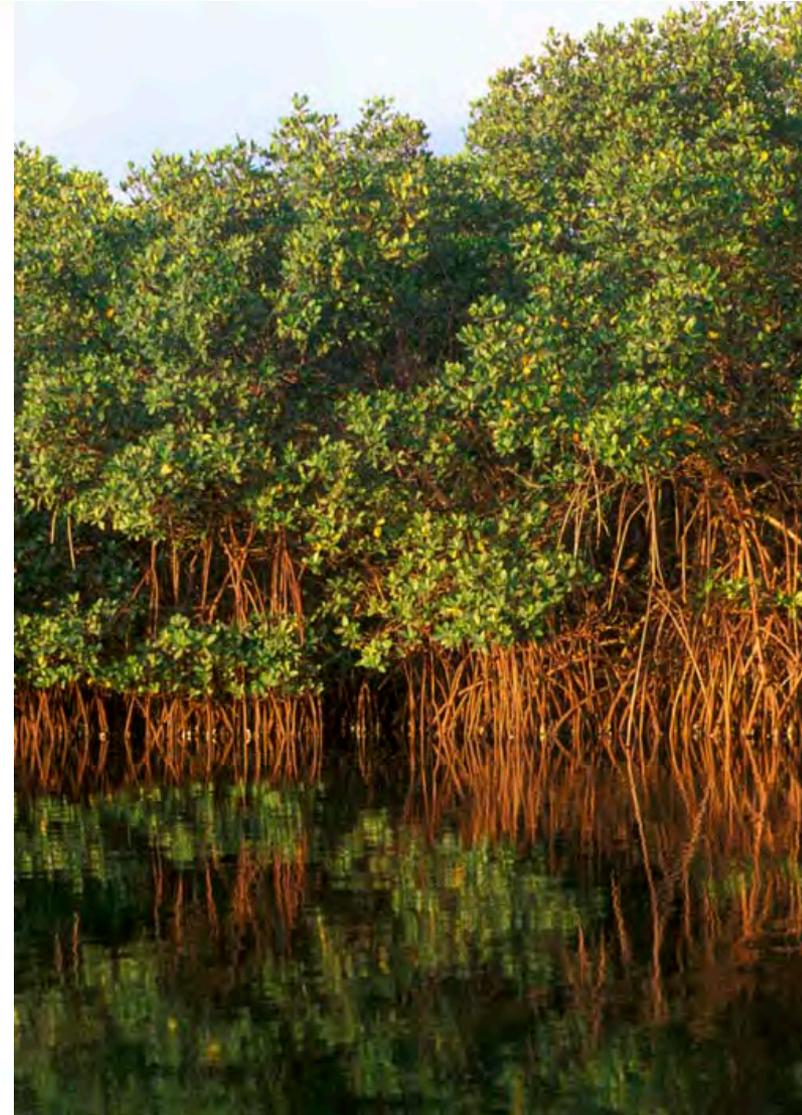
Photos are
"direct
observation"





62-340.500(9) Morphological plant adaptations

(9) Morphological plant adaptations. Specialized structures or tissues produced by certain plants in response to inundation or saturation which normally are not observed when the plant has not been subject to conditions of inundation or saturation.





62-340.500(9) Morphological plant adaptations

(9) Morphological plant adaptations. Specialized structures or tissues produced by certain plants in response to inundation or saturation which normally are not observed when the plant has not been subject to conditions of inundation or saturation.





62-340.500(9) Morphological plant adaptations



(9) Morphological plant adaptations. Specialized structures or tissues produced by certain plants in response to inundation or saturation which normally are not observed when the plant has not been subject to conditions of inundation or saturation.



62-340.500(10) Secondary flow channels

(10) Secondary flow channels. Discrete and obvious natural pathways of water flow landward of the primary bank of a stream watercourse and typically parallel to the main channel.





62-340.500(11) Sediment deposition

(11) Sediment deposition. Mineral or organic matter deposited in or shifted to positions indicating water transport.



Sediment deposited in rings indicating recent high water

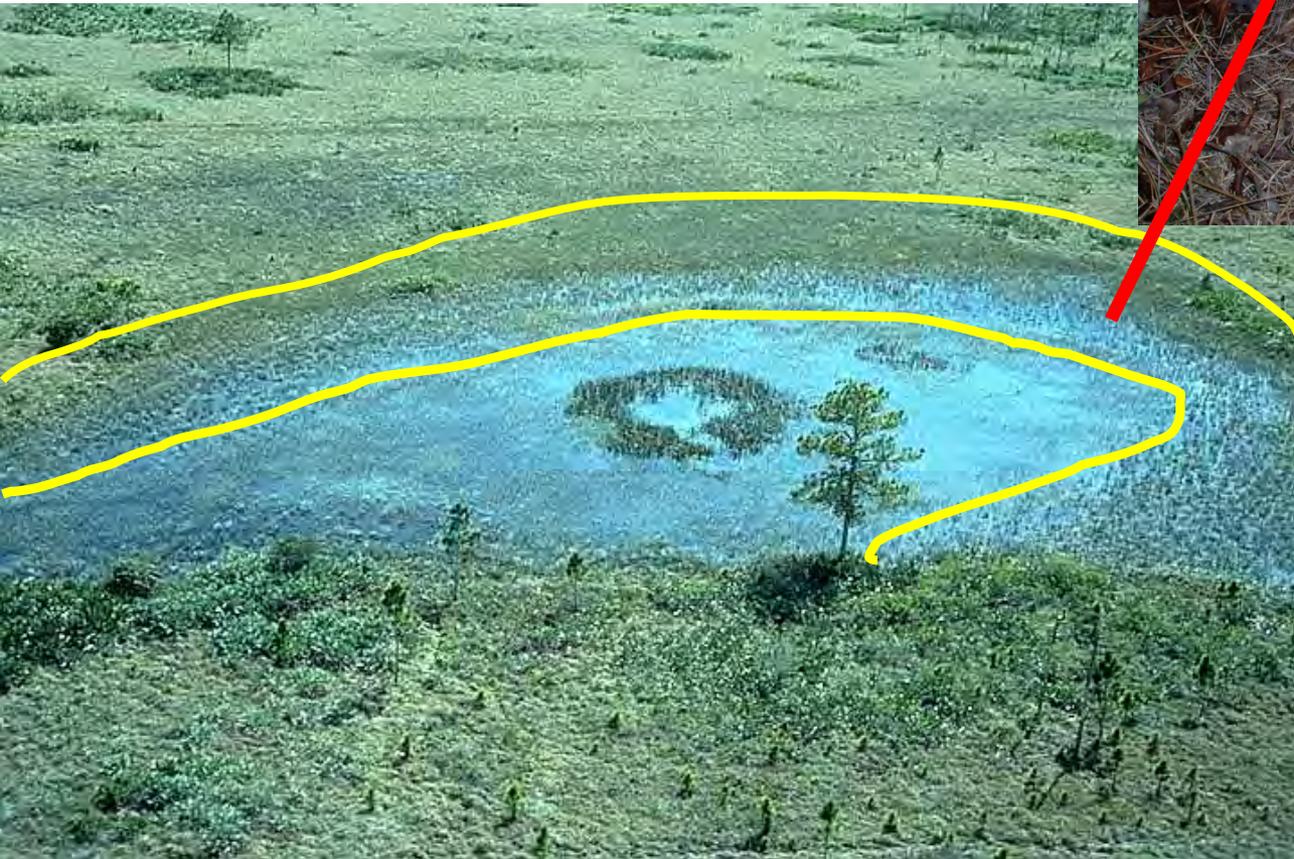


Sediment deposited into a sandbar along the Suwannee River



62-340.500(12) Vegetated tussocks or hummocks

Vegetated tussocks or hummocks



(12) Vegetated tussocks or hummocks. Areas where vegetation is elevated above the natural grade on a mound built up of plant debris, roots, and soils so that the growing vegetation is not subject to the prolonged effects of soil anoxia.



62-340.500(12) Vegetated tussocks or hummocks

Vegetated tussocks or hummocks



(12) Vegetated tussocks or hummocks. Areas where vegetation is elevated above the natural grade on a mound built up of plant debris, roots, and soils so that the growing vegetation is not subject to the prolonged effects of soil anoxia.



62-340.500(12) Vegetated tussocks or hummocks

Vegetated tussocks or hummocks



(12) Vegetated tussocks or hummocks. Areas where vegetation is elevated above the natural grade on a mound built up of plant debris, roots, and soils so that the growing vegetation is not subject to the prolonged effects of soil anoxia.



62-340.500(13) Water marks

(13) Water marks. A distinct line created on fixed objects, including vegetation, by a sustained water elevation.



Water marks are the darker color



62-340.500(13) Water marks



(13) Water marks. A distinct line created on fixed objects, including vegetation, by a sustained water elevation.



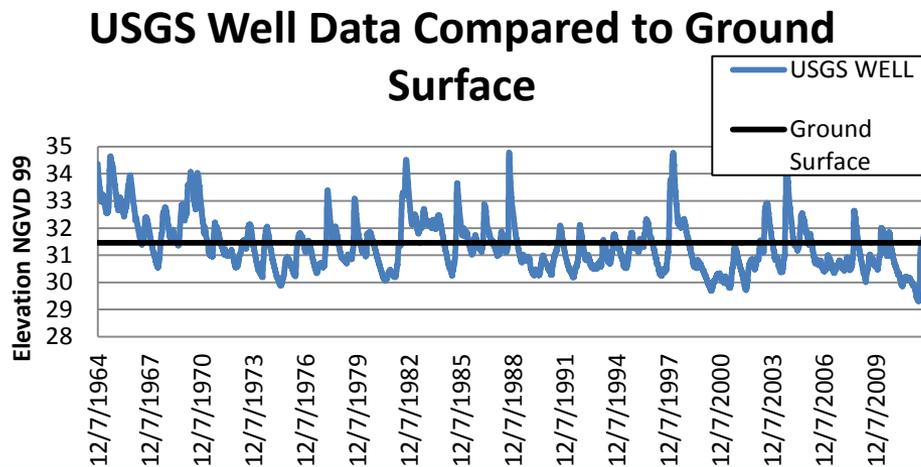
62-340.500(13) Water marks



(13) Water marks. A distinct line created on fixed objects, including vegetation, by a sustained water elevation.

62-340.550 Wetland Hydrology

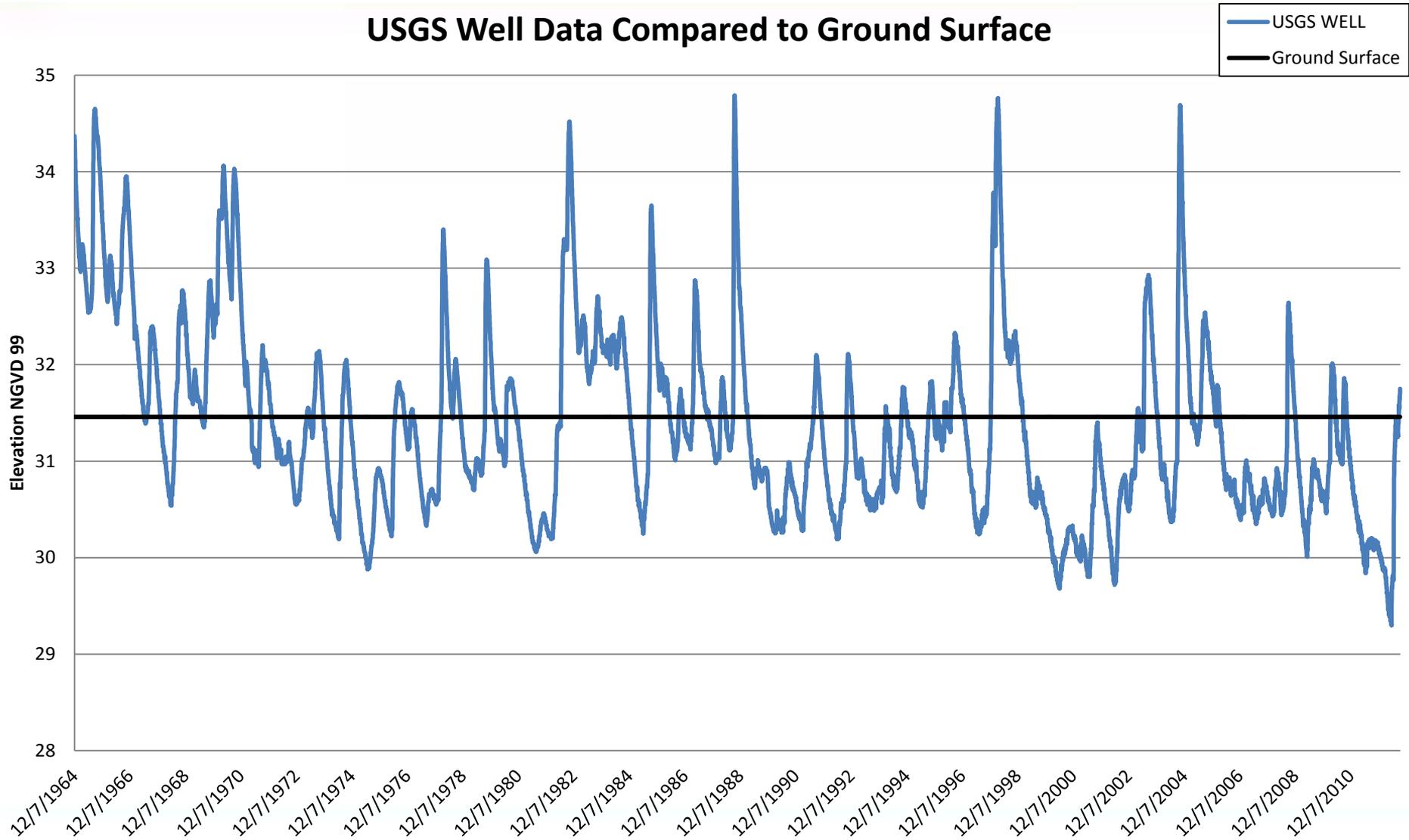
A wetland delineation using the methodology described above, can be **refuted** by **either reliable hydrologic records or site specific hydrologic data** which indicate that neither inundation for at least **seven** consecutive days, nor saturation for at least **twenty** consecutive days, occurs during conditions which **represent long-term hydrologic conditions**. Hydrologic records or site specific hydrologic data must be of such a duration, frequency, and accuracy to demonstrate that the records or data are representative of the long-term hydrologic conditions, including the variability in quantity and seasonality of rainfall.





Site Specific Hydrologic Data

USGS Well Data Compared to Ground Surface

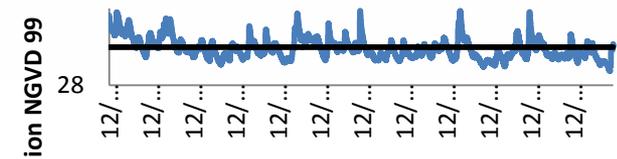


62-340.200 continued...

(14) “Saturation” means a water table six **inches** or less from the soil surface for soils with a permeability equal to or greater than six **inches** per hour in all layers within the upper 12 **inches**, or a water table 12 **inches** or less from the soil surface for soils with a permeability less than six **inches** per hour in any layer within the upper 12 **inches**.

(10) “Inundation” means a condition in which water from any source regularly and periodically **covers** a land surface.

**USGS Well Data
Compared to Ground...**





62-340.550 continued...

When sufficient amounts of either reliable hydrologic records or site specific hydrologic data are not available to prove that the wetland area of concern does not inundate or saturate as described above, a **site-specific field-verified analytic or numerical model** may be used to demonstrate that the wetland area no longer inundates or saturates regularly or periodically under typical long-term hydrologic conditions. **Before initiating** the use of a model to evaluate if a wetland delineation should be refuted based on hydrologic conditions, the applicant or petitioner shall **first meet with the appropriate regulating agency** and reach an agreement on the terms of study, including data collection, the specific model, model development and calibration, and model verification. If the data, analyses, or models are deemed inadequate based on the hydrologic conditions being addressed, the regulating agency shall provide a case-by-case review of the applicability of any data, analyses, or models and shall provide specific reasons, based on **generally accepted scientific and engineering practices**, why they are inadequate.

*Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211 FS.
History—New 7-1-94, Formerly 17-340.550.*



62-340.550 Wetland Hydrology

A wetland delineation using the methodology described above, can be **refuted** by **either reliable hydrologic records or site specific hydrologic data** which indicate that neither inundation for at least **seven** consecutive days, nor saturation for at least **twenty** consecutive days, occurs during conditions which **represent long-term hydrologic conditions**. Hydrologic records or site specific hydrologic data must be of such a duration, frequency, and accuracy to demonstrate that the records or data are representative of the long-term hydrologic conditions, including the variability in quantity and seasonality of **rainfall**.





Altered Sites Test Memo

delineated using the 62-340.300(3)(a), F.A.C. altered sites test would return to a condition easily identifying it as such, using the types of evidence and characteristics contemplated in paragraphs 62-340.300(1)(2)(a-d), F.A.C. In all cases, copious attention should be given to the statutory definition of wetlands and the associated example wetland plant communities when evaluating current site conditions and applying the altered sites test methodology to extant wetland conditions.

Landscapes where historic or ongoing legal activities have altered the hydrology of a site to the extent that wetland functions are no longer present during normal seasonal cycles per 62-340.300(3)(b), F.A.C., are **not wetlands** and therefore are not “altered site” wetlands subject to the provision of subsection 62-340.300(3)(a), F.A.C. However, some wetland sites that have been legally altered to the point of not being wetlands per 62-340.300(3)(b), F.A.C. may return to wetland conditions with the cessation of the legal activities. When this occurs, the site **may** be subject to the altered site provisions **if** residual effects of the disturbance prevent the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C.

The importance of reasonable scientific judgment cannot be overstated when considering the altered sites concept. Each and every altered site will present a unique set of interpretations and conclusions. The term “altered” does not refer to any deviation from Florida’s pre-settlement condition but rather to the intensity, extent and degree of alteration as it effects the reliability of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are included in the statutory wetland definition. **Some** of the activities that **may** result in the application of the altered sites provisions are: recent land clearing, impoundment, intensive grazing, soil disturbance, long term suppression of normal fire cycles, herbicide treatments, anthropogenic plant monocultures that change the indicator status of existing vegetative communities, invasive exotic vegetation that eliminates the indicator status of other vegetative strata, recent disturbance by hurricanes, catastrophic fire, soil compaction or recent mowing. None of the listed example activities, in combination or by themselves, mandate the use of the altered sites test. It is necessary to use the altered sites test **only** when these or other alterations prohibit the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C. in correctly identifying areas that are functioning wetlands included in the statutory wetland definition. The burden of proof for utilizing the altered sites test shall rest with the party asserting it was required given the current site conditions.

Please contact Eric Hickman at (850) 245-8496 with any questions or comments.

Landscapes where historic or ongoing legal activities have altered the hydrology of a site to the extent that wetland functions are no longer present during normal seasonal cycles per 62-340.300(3)(b), F.A.C., are **not wetlands** and therefore are not “altered site” wetlands subject to the provision of subsection 62-340.300(3)(a), F.A.C. However, some wetland sites that have been legally altered to the point of not being wetlands per 62-340.300(3)(b), F.A.C. may return to wetland conditions with the cessation of the legal activities. When this occurs, the site **may** be subject to the altered site provisions **if** residual effects of the disturbance prevent the reliable use of paragraphs 62-340.300(2)(a-d), F.A.C.



Non-wetland surface waters or “other surface waters”





“Other” Surface Waters are Non-Wetland Surface Waters

A non-wetland surface water is any area of the landscape that **fails** to meet the definition/criteria to be a wetland as set forth in Chapter 62-340 F.A.C. but **does** meets the definition of a surface water in section 62-340.600 F.A.C.



Waters in the State

373.019 F.S. Definitions

(20) “Water” or “waters in the state” means any and all water on or beneath the surface of the ground or in the atmosphere, including **natural or artificial** watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.



Surface Waters

373.019 F.S. Definitions

(19) “Surface water” means water upon the surface of the earth, whether contained in **bounds created naturally or artificially** or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth’s surface.



If the features below fail the criteria to be a “wetland” they may still be delineated as “other” Surface Waters

373.019 F.S. Definitions

- (2) **“Canal”** is a manmade trench, the bottom of which is normally covered by water with the upper edges of its sides normally above water.
- (7) **“Drainage ditch”** or **“irrigation ditch”** is a manmade trench dug for the purpose of draining water from the land or for transporting water for use on the land and is not built for navigational purposes.
- (8) **“Impoundment”** means any lake, reservoir, pond, or other containment of surface water occupying a bed or depression in the earth’s surface and having a discernible shoreline.
- (14) **“Other watercourse”** means any canal, ditch, or other artificial watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted.
- (18) **“Stream”** means any river, creek, slough, or natural watercourse in which water usually flows in a defined bed or channel. It is not essential that the flowing be uniform or uninterrupted. The fact that some part of the bed or channel has been dredged or improved does not prevent the watercourse from being a stream.
- (19) **“Surface water”** means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth’s surface.



62-340.600 Surface Waters62-340.600 Surface Waters

- (1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.
- (2) The landward extent of a surface water in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:
 - (a) **Wetlands** as located by Rule 62-340.300, F.A.C., of this chapter;
 - (b) The mean high water line elevation for **tidal water bodies**;
 - (c) The ordinary high water line for **non-tidal natural water bodies**;
 - (d) The top of the bank for **artificial** lakes, borrow pits, canals, ditches and other artificial **water bodies** with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or
 - (e) The seasonal high water line for **artificial** lakes, borrow pits, canals, ditches, and other artificial **water bodies** with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.
- (3) Determinations made pursuant to paragraphs (2)(b) and (2)(c) shall be for regulatory purposes and are **not intended to be a delineation of the boundaries of lands for the purposes of title**.



How are Non Wetland Surface Waters delineated?

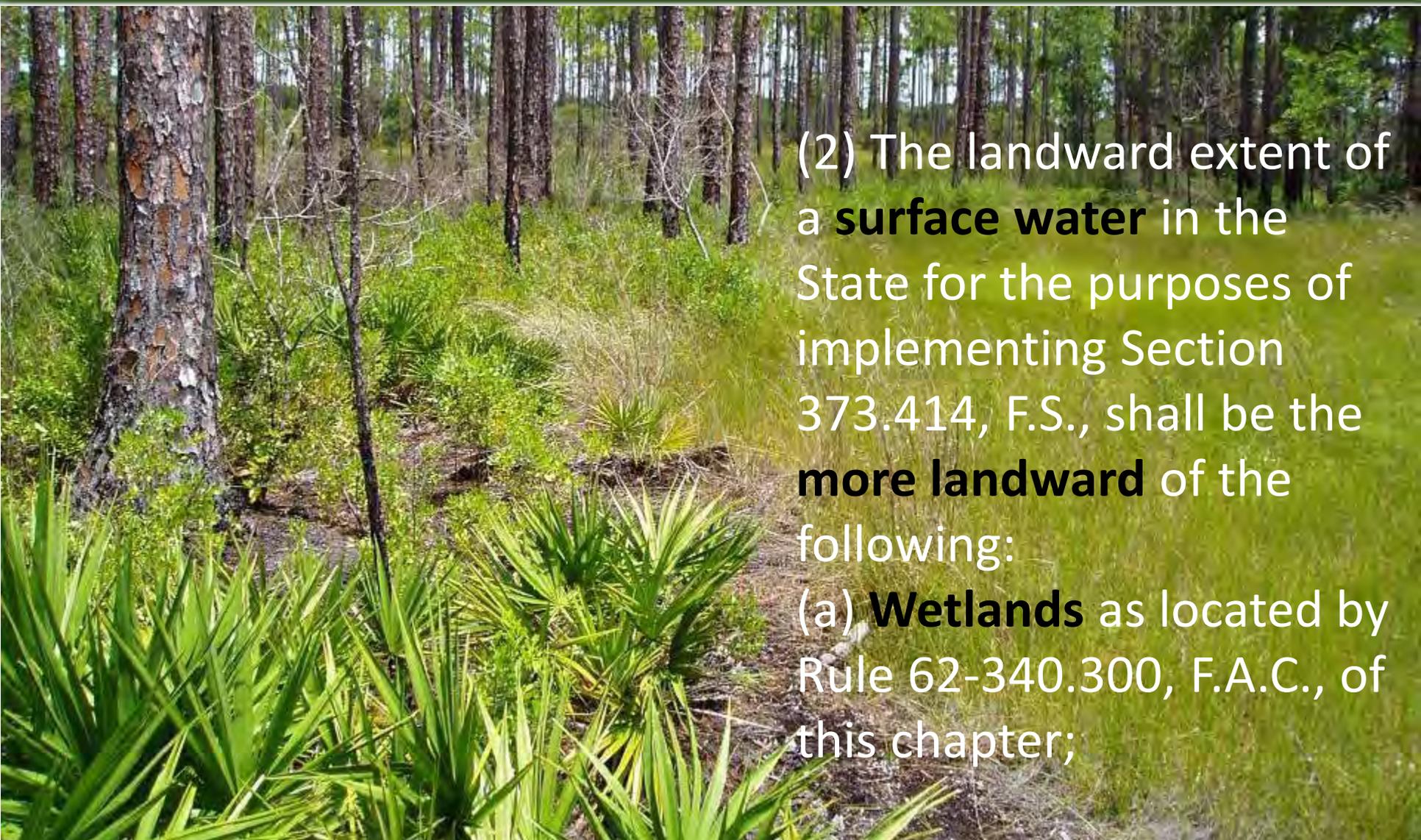
(1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.

(2) The **landward extent of a surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:

- (a) **Wetlands** as located by Rule 62-340.300, F.A.C., of this chapter;
- (b) The **mean high** water line elevation for tidal water bodies;
- (c) The **ordinary high** water line for non-tidal natural water bodies;
- (d) The **top of the bank** for artificial lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or
- (e) The **seasonal high** water line for artificial lakes, borrow pits, canals, ditches, and other artificial water bodies with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.



Wetland boundary



(2) The landward extent of a **surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the **more landward** of the following:

(a) **Wetlands** as located by Rule 62-340.300, F.A.C., of this chapter;



How are Non Wetland Surface Waters delineated?

(1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.

(2) The **landward extent of a surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:

(a) Wetlands as located by Rule 62-340.300, F.A.C., of this chapter;

(b) The mean high water line elevation for tidal water bodies;

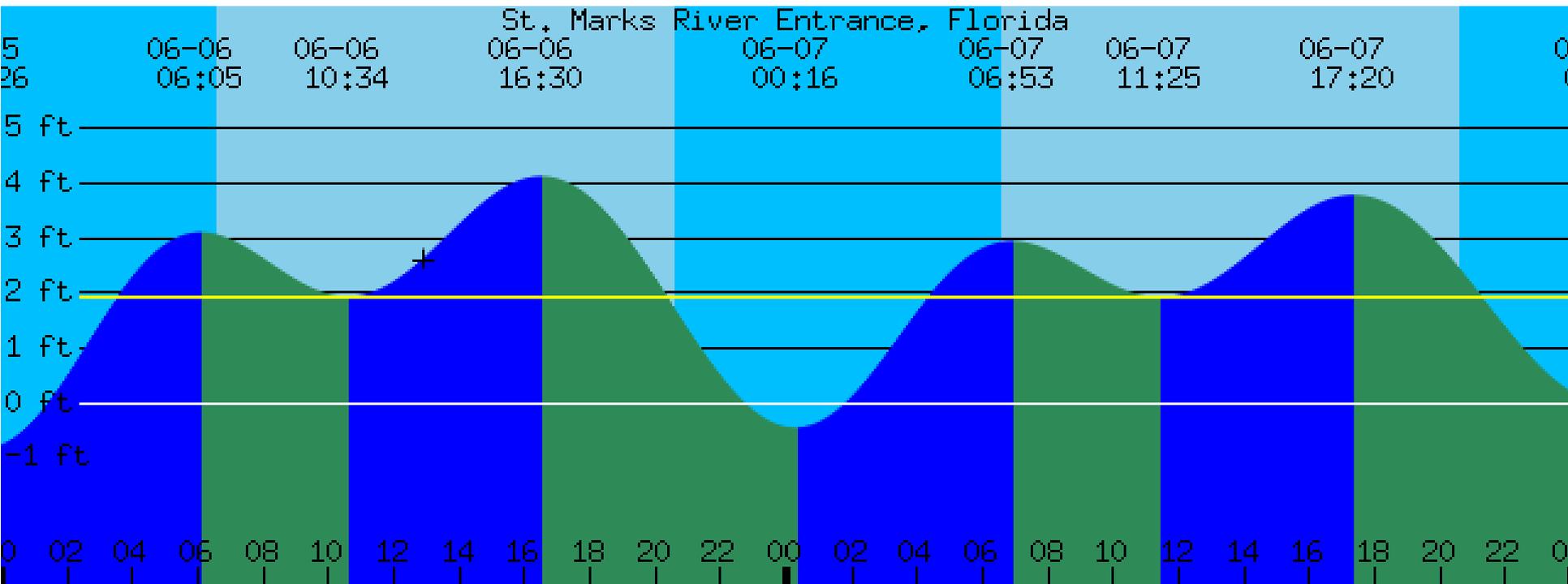
(c) The ordinary high water line for non-tidal natural water bodies;

(d) The top of the bank for artificial lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or

(e) The seasonal high water line for artificial lakes, borrow pits, canals, ditches, and other artificial water bodies with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.



The mean high water line is a calculated elevation based on *long term (19yrs)* tidal data.



Only a Florida licensed surveyor is qualified to determine and map the location of the MHWL. For questions contact State Lands (850) 245-2788.



How are Non Wetland Surface Waters delineated?

(1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.

(2) The **landward extent of a surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:

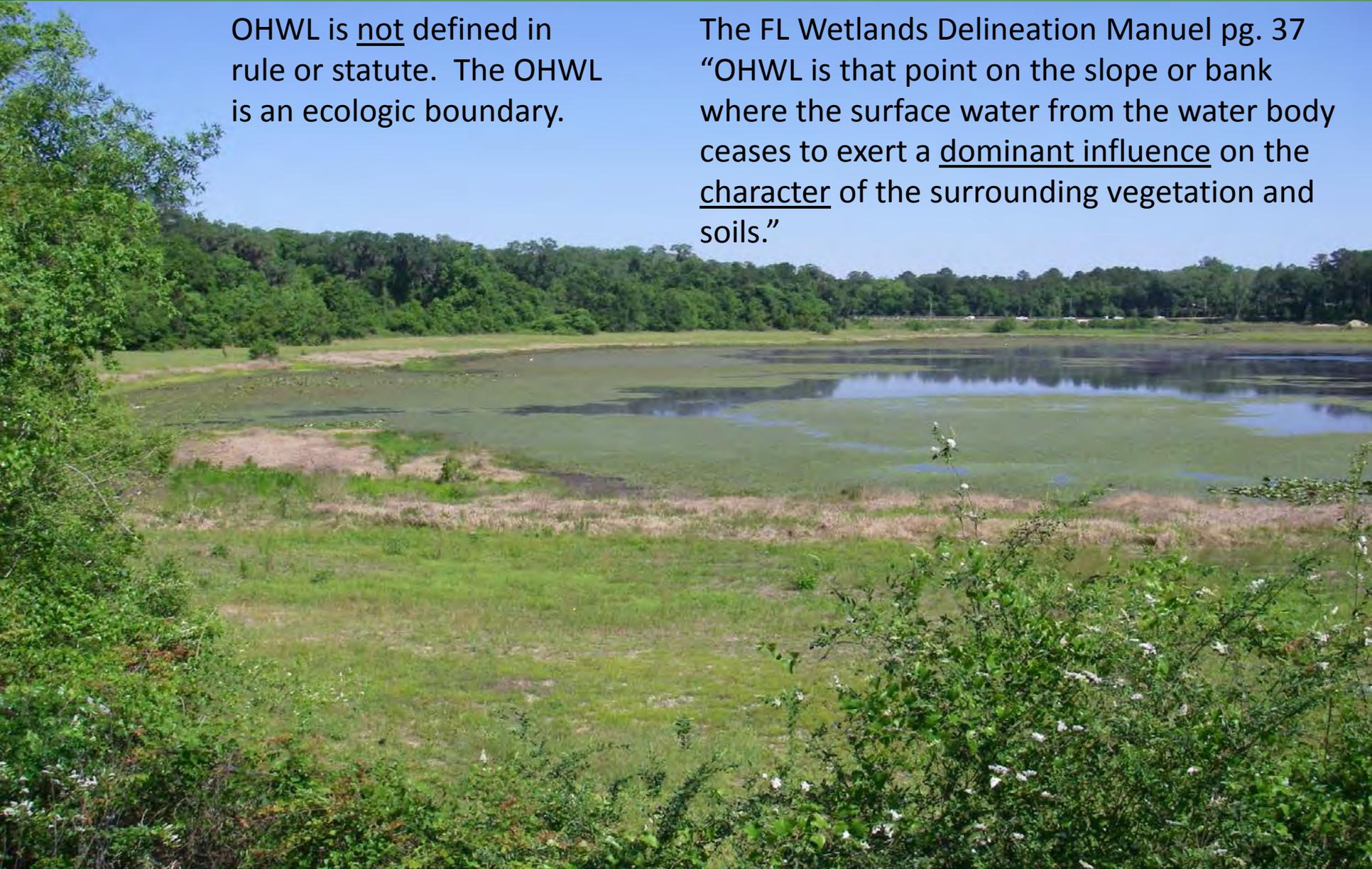
- (a) Wetlands as located by Rule 62-340.300, F.A.C., of this chapter;
- (b) The mean high water line elevation for tidal water bodies;
- (c) The **ordinary high** water line for non-tidal natural water bodies;
- (d) The top of the bank for artificial lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or
- (e) The seasonal high water line for artificial lakes, borrow pits, canals, ditches, and other artificial water bodies with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.



Ordinary High Water Line

OHWL is not defined in rule or statute. The OHWL is an ecologic boundary.

The FL Wetlands Delineation Manual pg. 37 “OHWL is that point on the slope or bank where the surface water from the water body ceases to exert a dominant influence on the character of the surrounding vegetation and soils.”





How are Non Wetland Surface Waters delineated?

(1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.

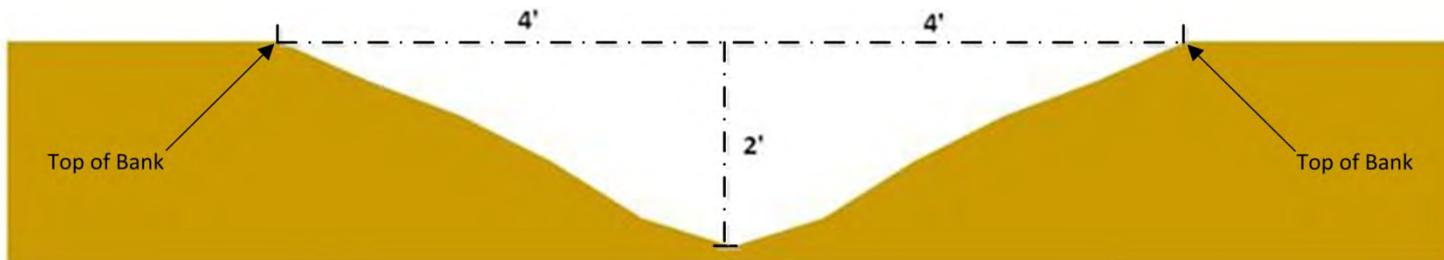
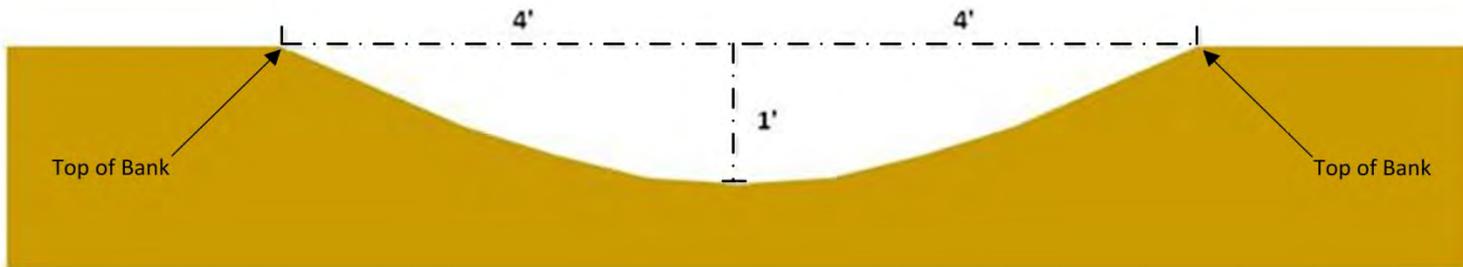
(2) The **landward extent of a surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:

- (a) Wetlands as located by Rule 62-340.300, F.A.C., of this chapter;
- (b) The mean high water line elevation for tidal water bodies;
- (c) The ordinary high water line for non-tidal natural water bodies;
- (d) **The top of the bank for artificial lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or**
- (e) The seasonal high water line for artificial lakes, borrow pits, canals, ditches, and other artificial water bodies with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.



Top of the Bank

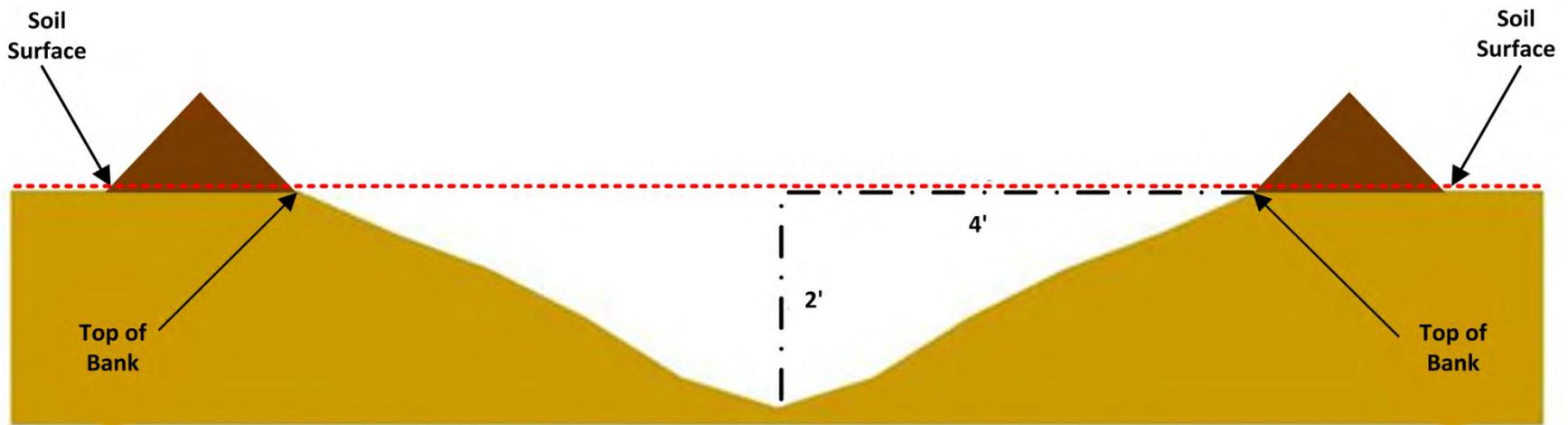
(d) The top of the bank for [artificial](#) lakes, borrow pits, canals, ditches and other artificial water bodies with [side slopes of 1 foot vertical to 4 feet horizontal or steeper](#), excluding spoil banks when the canals and ditches have resulted from excavation into the ground;





Top of the Bank continued...

(d) The top of the bank for [artificial](#) lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, [excluding spoil banks when the canals and ditches have resulted from excavation into the ground](#);





How are Non Wetland Surface Waters delineated?

(1) For the purposes of Section 373.421, F.S., surface waters are waters on the surface of the earth, contained in bounds created naturally or artificially, including, the Atlantic Ocean, the Gulf of Mexico, bays, bayous, sounds, estuaries, lagoons, lakes, ponds, impoundments, rivers, streams, springs, creeks, branches, sloughs, tributaries, and other watercourses. However, state water quality standards apply only to those waters defined in subsection 403.031(13), F.S.

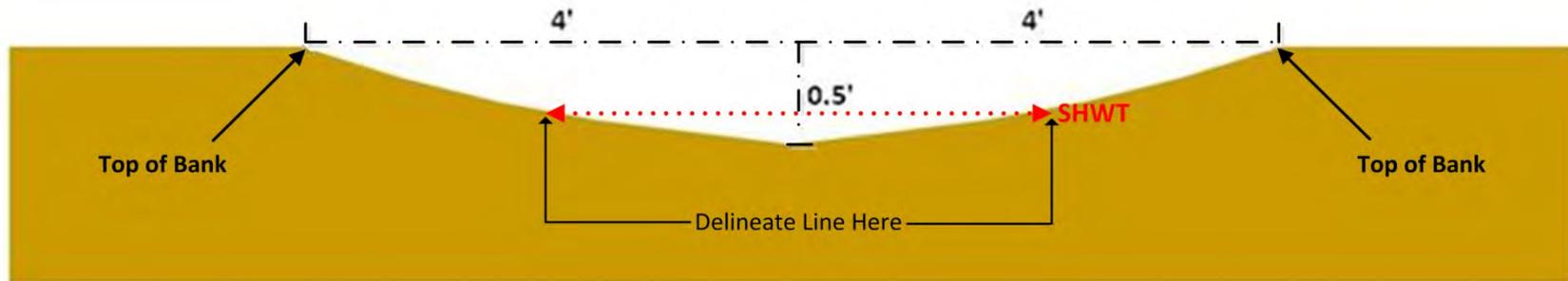
(2) The **landward extent of a surface water** in the State for the purposes of implementing Section 373.414, F.S., shall be the more landward of the following:

- (a) Wetlands as located by Rule 62-340.300, F.A.C., of this chapter;
- (b) The mean high water line elevation for tidal water bodies;
- (c) The ordinary high water line for non-tidal natural water bodies;
- (d) The top of the bank for artificial lakes, borrow pits, canals, ditches and other artificial water bodies with side slopes of 1 foot vertical to 4 feet horizontal or steeper, excluding spoil banks when the canals and ditches have resulted from excavation into the ground; or
- (e) **The seasonal high water line for artificial lakes, borrow pits, canals, ditches, and other artificial water bodies with side slopes flatter than 1 foot vertical to 4 feet horizontal along with any artificial water body created by diking or impoundment above the ground.**



Seasonal High Water Line

(e) The **seasonal high water line** for **artificial** lakes, borrow pits, canals, ditches, and other artificial water bodies with **side slopes flatter than 1 foot vertical to 4 feet horizontal** along with any artificial water body created by diking or impoundment above the ground.



Definition in 62-340.200(15) "Seasonal High Water" means the elevation to which ground and surface water can be expected to rise due to a normal wet season."



62-340.600 continued...

(3) Determinations made pursuant to paragraphs (2)(b) and (2)(c) shall be for regulatory purposes and are not intended to be a delineation of the boundaries of lands for the purposes of title.

Specific Authority 373.421 FS. Law Implemented 373.421, 373.4211, 403.031(13) FS. History—New 7-1-94, Formerly 17-340.600.

Proprietary OHWL

“Ordinary high water line” means the boundary between uplands and submerged lands beneath non-tidal navigable natural water bodies.

Chapter 18-2.017 (40), F.A.C.

Regulatory OHWL

Ordinary high water is that point on the slope or bank where the surface water from the water body ceases to exert a dominant influence on the character of the surrounding vegetation and soils.

The Florida Wetland Delineation Manual
pg. 37



Water Course vs. Swale

see section 403.803(7)&(14) for definitions





403.813(2)(j) Exemptions F.S.

Swale definition

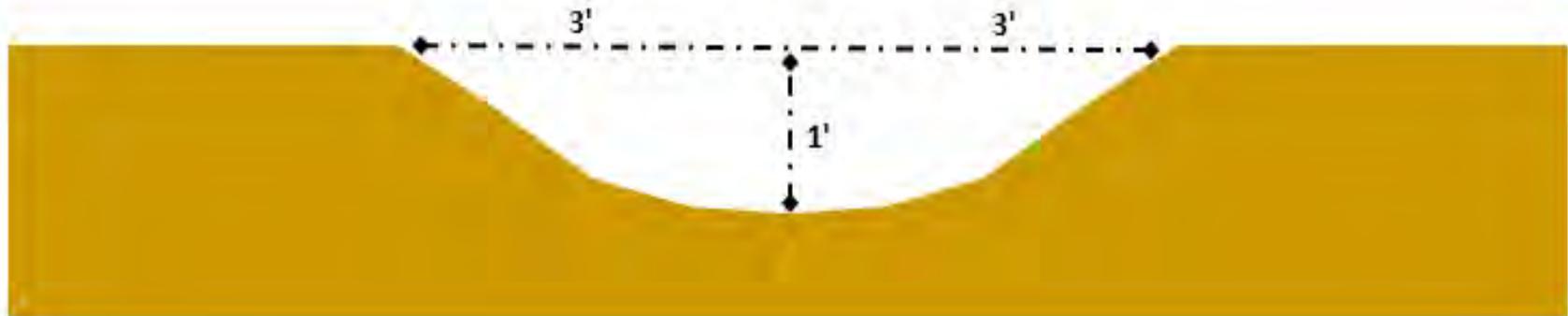
403.803(14) Florida Statutes, “**Swale**” means a manmade trench which:

- (a) Has a **top width-to-depth ratio** of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical;
- (b) Contains contiguous areas of standing or flowing water **only** following a rainfall event;
- (c) Is planted with or has **stabilized** vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and
- (d) Is **designed** to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to **prevent erosion** and reduce pollutant concentration of any discharge.

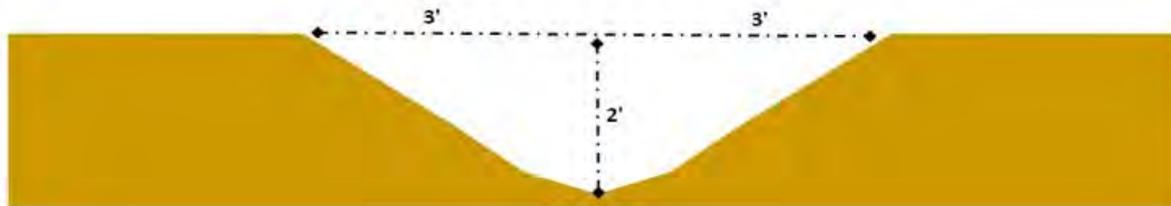
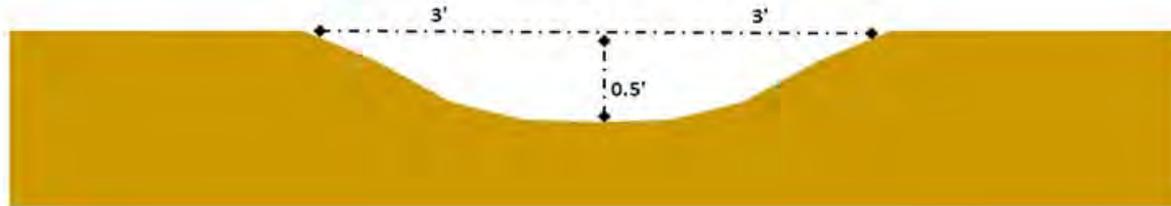
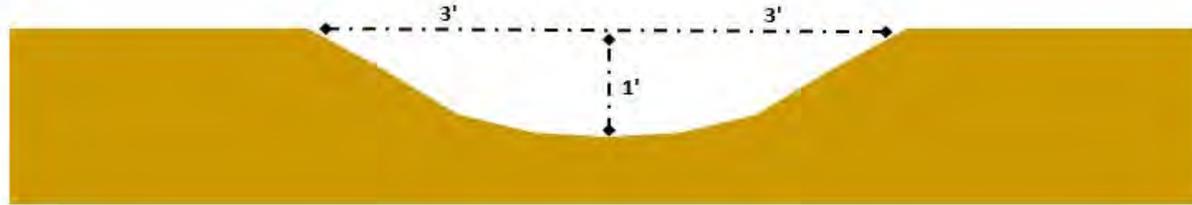
Swale

403.803(14) Florida Statutes, “Swale” means a manmade trench which:

(a) Has a top width-to-depth **ratio** of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical;



Watercourse vs. Swale







PANHANDLE CAPITAL
INN & SUITES

CITY
LIQUORS

Lindy's
Chicken

COMPLIMENTARY
HOT WAFFLE
BREAKFAST

HSIA

CLC



















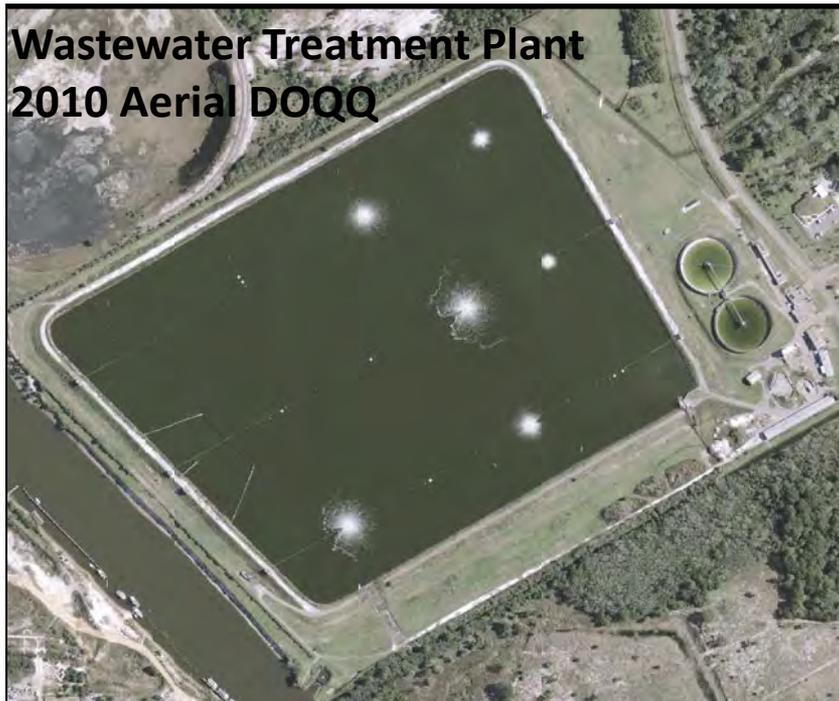






62-340.700 Exemptions for Treatment or Disposal Systems

(1) **Alteration and maintenance** of the following shall be exempt from the rules adopted by the department and the water management districts to implement subsections 373.414(1) through 373.414(6), 373.414(8) and 373.414(10), F.S.; and subsection 373.414(7), F.S., regarding any authority to apply state water quality standards within any works, impoundments, reservoirs, and other watercourses described in this subsection and any authority granted pursuant to Section 373.414, F.S. (1991):





62-340.700 continued...

(1) continued...

(a) Works, impoundments, reservoirs, and other watercourses constructed and operated **solely for wastewater treatment** or disposal in accordance **with a valid** permit reviewed or issued under Rules 62-28.700, 62-302.520, F.A.C., Chapters 62-17, 62-600, 62-610, 62-640, 62-650, 62-660, 62-670, 62-671, 62-673, or 62-701, F.A.C., or Section 403.0885, F.S., or rules implementing Section 403.0885, F.S., **except** for treatment wetlands or receiving wetlands permitted to receive wastewater pursuant to Chapter 62-611, F.A.C., or Section 403.0885, F.S., or its implementing rules;

(b) Works, impoundments, reservoirs, and other watercourses constructed **solely for wastewater treatment** or disposal **before** a construction permit was required under Chapter 403, F.S., and operated solely for wastewater treatment or disposal in accordance with a valid permit reviewed or issued under Rules 62-28.700, 62-302.520, F.A.C., Chapters 62-17, 62-600, 62-610, 62-640, 62-650, 62-660, 62-670, 62-671, 62-673, or 62-701, F.A.C., or Section 403.0885, F.S., or rules implementing Section 403.0885, F.S., **except** for treatment wetlands or receiving wetlands permitted to receive wastewater pursuant to Chapter 62-611, F.A.C., or Section 403.0885, F.S., or its implementing rules;



62-340.700 continued...

(1) continued...

(c) Works, impoundments, reservoirs, and other watercourses of **less than 0.5 acres** in combined area on a project-wide basis, constructed and operated **solely for stormwater treatment** in accordance with a **noticed exemption** under Chapter 62-25, F.A.C., or a **valid permit** issued under Chapters 62-25 (excluding Rule 62-25.042), 62-330, 40B-4, 40C-4, 40C-42 (excluding Rule 40C- 42.0265), 40C-44, 40D-4, 40D-40, 40D-45, or 40E-4, F.A.C., except those permitted as wetland stormwater treatment systems; or

(d) Works, impoundments, reservoirs, and other watercourses of **less than 0.5 acres** in combined area on a project-wide basis, constructed and operated **solely for stormwater treatment** **before** a permit was required under Chapters 62-25, 40B-4, 40C-4, 40C-42, 40C-44, 40D-4, 40D-40, 40D-45, or 40E-4, F.A.C.



62-340.700 continued...

(2) **Alteration and maintenance** of the following shall be exempt from the rules adopted by the department and the water management districts to implement subsections 373.414(1), 373.414(2)(a), 373.414(8), and 373.414(10), F.S.; and subsections 373.414(3) through 373.414(6), F.S.; and subsection 373.414(7), F.S., regarding any authority to apply state water quality standards within any works, impoundments, reservoirs, and other watercourses described in this subsection and any authority granted pursuant to Section 373.414, F.S. (1991), **except** for authority to protect **threatened and endangered species** in isolated **wetlands**:

(a) Works, impoundments, reservoirs, and other watercourses of **0.5 acre or greater** in combined area on a project-wide basis, constructed and operated solely for stormwater treatment in accordance with a **noticed exemption** under Chapter 62-25, F.A.C., or a **valid permit** issued under Chapters 62-25 (excluding Rule 62-25.042), 62-330, 40B-4, 40C-4, 40C-42 (excluding Rule 40C- 42.0265), 40C-44, 40D-4, 40D-40, 40D-45, 40E-4, except those permitted as wetland stormwater treatment systems; or

(b) Works, impoundments, reservoirs, and other watercourses of **0.5 acres or greater** in combined area on a project-wide basis, constructed and operated solely for stormwater treatment **before** a permit was required under Chapters 62-25, 40B-4, 40C-4, 40C-42, 40C-44, 40D-4, 40D-40, 40D-45, or 40E-4, F.A.C.

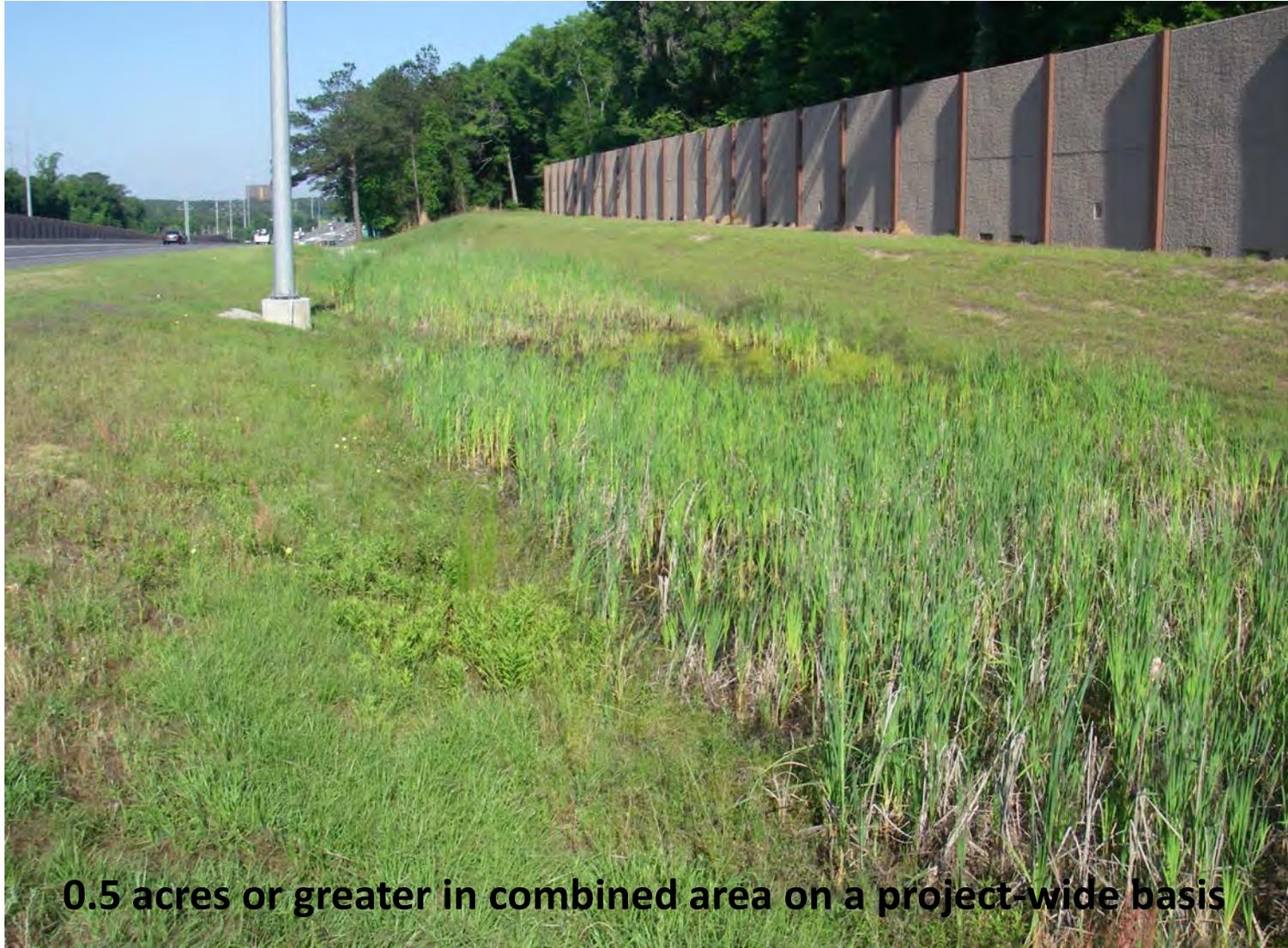
Stormwater Pond



Less than 0.5 acres in combined area on a project-wide basis



Stormwater Treatment System



0.5 acres or greater in combined area on a project-wide basis



Wetland Delineation Manual

To Delineate or Not to Delineate

| | |
|--|---|
| <p>Wastewater Treatment areas except wetlands used for treating effluents under permit.</p> | <p>Not delineated as Wetlands or Surface Waters</p> <p>None of the additional wetland permitting criteria apply</p> |
| <p>Small (less than 0.5 acres of combined area) Stormwater Treatment areas</p> | <p>Not delineated as Wetlands or Surface Waters</p> <p>None of the additional wetland permitting criteria apply</p> |
| <p>Larger (greater than 0.5 acres of combined area) Stormwater Treatment areas</p> | <p>Wetland in these systems are delineated</p> <p>Only the permitting criteria related to Endangered and Threatened Species apply</p> |
| <p>Previously existing wetlands incorporated into Stormwater Treatment areas</p> | <p>Delineated as wetlands</p> <p>Permitting criteria relating to Fish and Wildlife apply</p> |



62-340.700 continued...

(3) The exemptions in subsections 62-340.700(1) and (2) shall not apply to works, impoundments, reservoirs or other watercourses that

(a) Are currently wetlands which existed before construction of the stormwater treatment system and were incorporated in it;

(b) Are proposed to be altered through expansion into wetlands or other surface waters; or

(c) Are wetlands created, enhanced, or restored as mitigation for wetland or surface water impacts under a permit issued by the Department or a water management district.

(4) Alterations and maintenance of works, impoundments, reservoirs, and other watercourses exempt under this subsection shall not be considered in determining whether any wetland permitting threshold is met or exceeded under part IV of Chapter 373, F.S.

(5) Works, impoundments, reservoirs, and other watercourses exempt under this subsection, other than isolated wetlands in systems described in subsection 62-340.700(2), F.A.C., above, shall not be delineated under Section 373.421, F.S.

(6) This exemption shall not affect the application of state water quality standards, including those applicable to Outstanding Florida Waters, at the point of discharge to waters as defined in subsection 403.031(13), F.S.



62-340.700 continued...

(7) As used in this subsection, “solely for” means the reason for which a work, impoundment, reservoir, or other watercourse is constructed and operated; and such construction and operation would not have occurred but for the purposes identified in subsection 62-340.700(1) or 62-340.700(2), F.A.C. Furthermore, the phrase does not refer to a work, impoundment, reservoir, or other watercourse constructed or operated for multiple purposes. Incidental uses, such as occasional recreational uses, will not render the exemption inapplicable, so long as the incidental uses are not part of the original planned purpose of the work, impoundment, reservoir, or other watercourse. However, for those works, impoundments, reservoirs, or other watercourses described in paragraphs 62-340.700(1)(c) and 62-340.700(2)(a), F.A.C., use of the system for flood attenuation, whether originally planned or unplanned, shall be considered an incidental use, so long as the works, impoundments, reservoirs, and other watercourses are no more than 2 acres larger than the minimum area required to comply with the stormwater treatment requirements of the district or department. For the purposes of this subsection, reuse from a work, impoundment, reservoir, or other watercourse is part of treatment or disposal.

Specific Authority 373.414(9) FS. Law Implemented 373.414(9) FS. History—New 7-1-94, Formerly 17-340.700.



62-340.750 Exemption for Surface Waters or Wetlands Created by Mosquito Control Activities

Construction, alteration, operation, maintenance, **removal**, and abandonment of stormwater management systems, dams, impoundments, reservoirs, appurtenant works, or works, in, on or over lands that have **become surface waters or wetlands** solely because of mosquito control activities undertaken as part of a governmental mosquito control program, and which **lands were neither surface waters nor wetlands before such activities**, shall be **exempt** from the rules adopted by the department and water management districts to implement subsections 373.414(1) through 373.414(6), 373.414(8), and 373.414(10), F.S.; and subsection 373.414(7), F.S., regarding any authority granted pursuant to Section 373.414, F.S. (1991).

Activities exempted under this section shall not be considered in determining whether any wetland permitting threshold is met or exceeded under part IV of Chapter 373, F.S. This exemption shall not affect the regulation of impacts on other surface waters or wetlands, or the application of state water quality standards to waters as defined in subsection 403.031(13), F.S., including standards applicable to Outstanding Florida Waters.

*Specific Authority 373.414(9) FS. Law Implemented 373.414(9) FS. History—
New 7-1-94, Formerly 17-340.750.*



Mosquito control exemption see section 62-340.750, F.A.C.

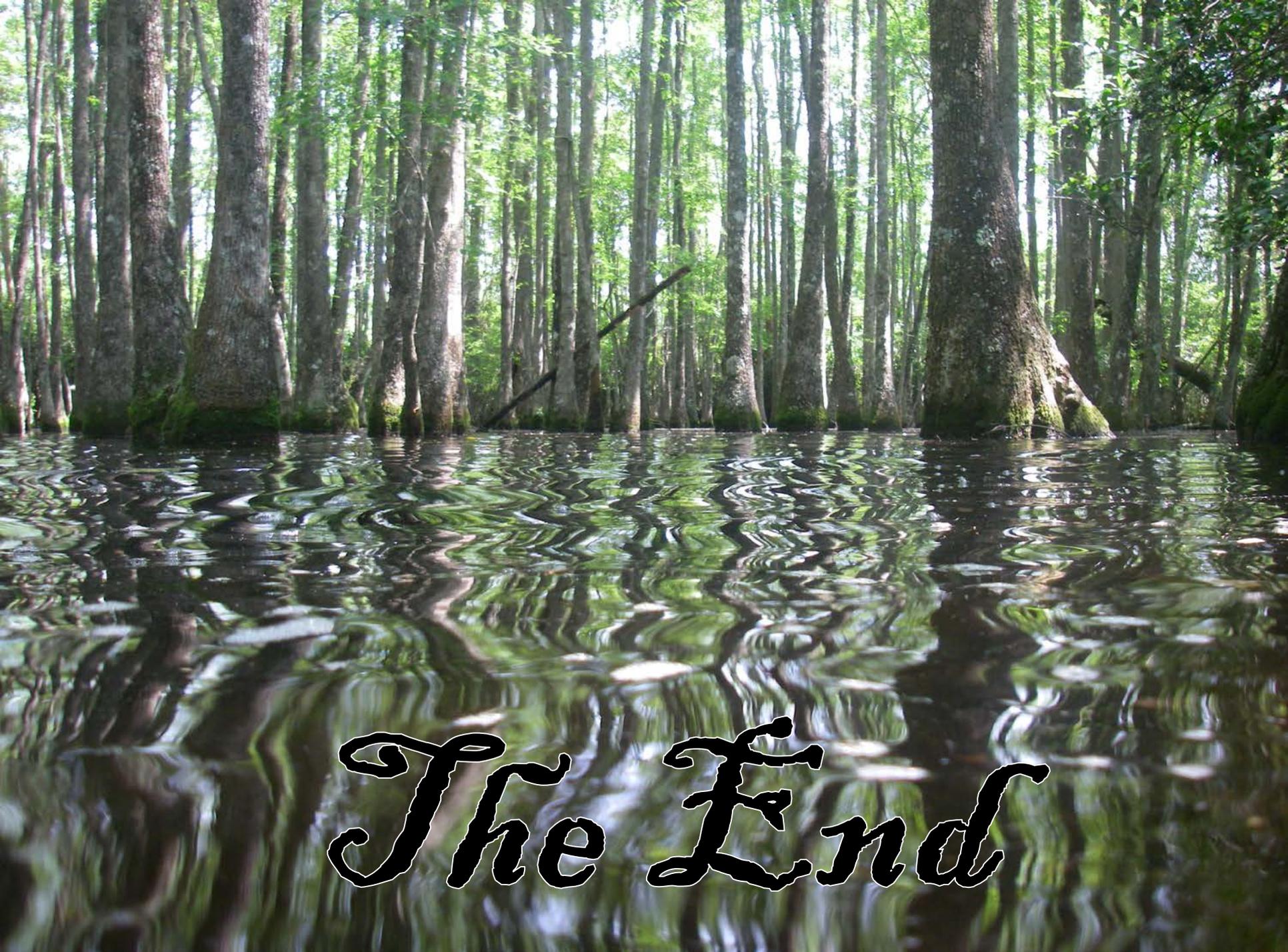
All areas which were **historically upland** and which have become wetland solely because of activities conducted solely for the purpose of mosquito control, and which were performed by a governmental entity, shall not be considered wetlands pursuant to Chapter 62-340, F.A.C. The applicant must provide proof that the activity meets the criteria as stated above.



Mosquito ditch through Big Pine Key, Florida
~ historically wetland

Mosquito ditch through historically upland area



A dense swampy forest with tall, thin trees and water reflecting the scene. The water is dark and rippled, creating a distorted reflection of the trees and sky. The trees are mostly cypress-like, with some having buttresses. The overall atmosphere is serene and somewhat mysterious.

The End