



CONSERVATION PRACTICES CONSIDERATION FOR SMALL RUMINANT PRODUCERS

Francisco Rivera

friveramelendez@ufl.edu

Phone (813)-744-5519

Objective

Participants will learn about conservation practices to apply in their small ruminant operation.

EMERGING CHALLENGES FOR FOOD PRODUCTION IN FLORIDA

1) Reduction in available agricultural land.



2) The average age of farmers (58+).



3) Increase in the number of beginner and small farmers who need assistance in developing agrarian skills.

Experience.....?





Short videos about each of these practices are available on the Iowa NRCS YouTube channel at: www.youtube.com/user/IowaNRCS.

Illustration by Doug Adamson, RDG Planning & Design

- | | | | |
|----|-------------------------------|----|------------------------------------|
| 1 | Brush Management | 17 | No-Till/Strip-Till |
| 2 | Conservation Cover | 18 | Nutrient Management |
| 3 | Contour Buffer Strip | 19 | Pest Management |
| 4 | Contour Farming | 20 | Pond |
| 5 | Cover Crop | 21 | Prescribed Burning |
| 6 | Crop Rotation | 22 | Prescribed Grazing |
| 7 | Denitrifying Bioreactor | 23 | Riparian Forest Buffer |
| 8 | Farmstead Energy | 24 | Stream Crossing |
| 9 | Fence | 25 | Stream Bank Protection |
| 10 | Field Border | 26 | Terrace |
| 11 | Filter Strip | 27 | Tree/Shrub Establishment |
| 12 | Forage and Biomass Planting | 28 | Upland Wildlife Habitat Management |
| 13 | Grade Stabilization Structure | 29 | Water and Sediment Control Basin |
| 14 | Grassed Waterway | 30 | Watering Facility |
| 15 | High Tunnel System | 31 | Wetland |
| 16 | Manure Storage | 32 | Windbreak/Shelterbelt |

Conservation Practices

1. Brush Management
2. Conservation Cover
3. Farmstead Energy
4. Fence
5. Forage and Biomass Planting
6. Grade Stabilization Structure
7. Grassed Waterway
8. Manure Storage (Waste Storage Facility)
9. Nutrient Management
10. Pest Management
11. Pond
12. Prescribed Burning
13. Prescribed Grazing
14. Riparian Forest Buffer
15. Stream Crossing
16. Stream Bank Protection
17. Tree/Shrub Establishment
18. Water and Sediment Control Basin
19. Watering Facility
20. Windbreak/Shelterbelt

Agroforestry Defined

- is the intentional growing of trees and shrubs in combination with crops or forage.
- includes tree and shrub plantings on the farm or ranch that improve habitat value or access by humans and wildlife, or that provide woody plant products in addition to agricultural crops or forage.
- distinguished from traditional forestry by having the additional aspect of a closely associated agricultural or forage crop.

Diverse Purposes of Agroforestry Systems

Properly designed agroforestry systems protect crops and forage, increase their production, protect soil and water resources, conserve energy, improve ecosystem "richness", create additional wildlife habitat, and increase landscape diversity. They also provide additional farm or ranch products: timber, pulpwood, firewood, posts, fruit, nuts, and fodder to name a few. Agroforestry represents a collection of multipurpose practices that are enduring and help achieve a sustainable agriculture. These practices can form the major part of a "Resource Management System" for a particular field or treatment unit. This [matrix](#) provides some examples of how practices might be combined into agroforestry systems in cropland and pasture/hay settings.

Potential Agriculture Problems				
Wind impacts (erosion, crop loss, inefficient water use)	Water erosion	Degraded or unbuffered stream/riparian areas	Limited crop diversity (lack of tree/wood products integrated with agricultural crops)	Fragmented wildlife habitat or low biodiversity of perennial plants
Sustainable Agroforestry Systems (A + B + C)				
A. Principal Tree/Shrub Practices:				
Windbreak/ Shelterbelt establishment	Contour Buffer Strips (woody species)	Riparian Forest Buffer	Alley Cropping	Tree/Shrub Establishment
		Filter Strip (woody species)	Multi-story Cropping	
	Tree/Shrub Establishment			
B. Principal Agronomic Practices - Cropland Settings				
Conservation Crop Rotation	Conservation Crop Rotation	Streambank and Shoreline Protection	Conservation Crop Rotation	Conservation Crop Rotation
Residue Management			Residue Management	Residue Management
Herbaceous Wind Barrier	Stripcropping, Contour	Critical Area Planting		Access Control
	Contour Farming	Access Control		
Irrigation Water Management	Residue Management	Nutrient and Waste Management		
	Terrace			
C. Principal Grazing Management Practices - Pasture/Hay Settings				
Irrigation Water Management	Pasture and Hay Planting	Prescribed Grazing	Pasture and Hay Planting	Pasture and Hay Planting
Prescribed Grazing		Fencing	Prescribed Grazing	Prescribed Grazing
	Prescribed Grazing	Pasture and Hay Planting	Fencing	Fencing
Fencing	Fencing	Nutrient/Waste Management		

Conservation Practices

Helps

- reduce soil erosion and sediment run-off.
- improve soil health by adding organic matter.
- improve water quality.
- The practice helps increase profits by reducing farm expenses, improving yield or both.
- The practice improve energy efficiency on the farm.
- The practice helps improve air quality by reducing odor and other problems.

Conservation Practices

- Land Conservation
- Energy Conservation
- Water

An orange rectangular box with a thin orange border, containing the text "Plan Ahead" in a bold, dark red font.

Plan
Ahead

Steps

1. Review and organize your Business IDEAS
2. Call Extension Services (Help in different ways)
3. Register your Farm with the Farm Service Agency
4. Natural Resource Conservation Services
5. BP
6. Design
7. Implement
8. Review
9. Fix and keep going

Small Ruminant Eating Behavior



Island Spirit LLC. (3.3)



Farmstead Energy (Infrastructure)

Finding ways to conserve energy on farmsteads.

Practices could include improving lighting systems, planting windbreaks, reducing tillage or implementing any number of dairy system improvements.

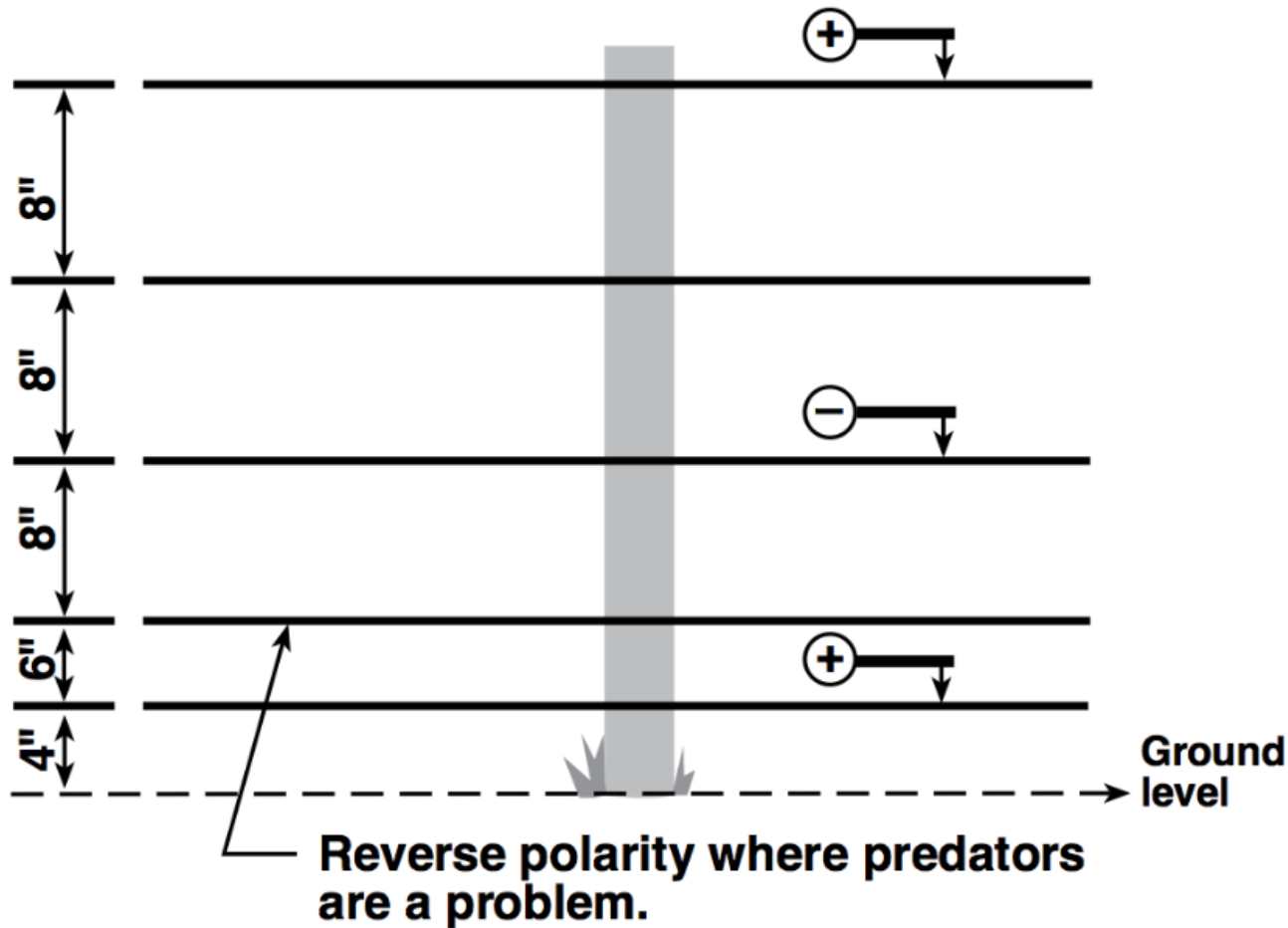


Fence (Grazing and Protect Areas)

A permanent, portable or temporary constructed barrier to animals or people.



Fence (Grazing and protect Areas)



Watering facility

A permanent or portable tank or trough to provide an adequate amount and quality of drinking water for livestock and or wildlife.



Goats (110 lbs)

1-3 gallons of water/day

Lactating Goats require an additional 1 quart of water/pint of milk produced



Manure Storage

A waste storage facility that protects downstream water courses from manure runoff by storing manure until conditions are appropriate for field application.

Protects

- water quality
- Cuts fertilizer costs
- reduces nutrient losses.



Nutrient Management (Soil Test SL395)

Nutrient management means managing the amount (rate), source, placement (method of application), and timing of plant nutrients and soil amendments.

<https://edis.ifas.ufl.edu/pdf/files/SS/SS59700.pdf>



Revised December 2019 SL395

Mailing Address (please print)

Name _____ Date _____

Address _____

_____ FL, Zip _____ Phone _____

Email* _____

*Please provide an email address to receive your results faster.

Signature _____

(signature only required for UF personnel for approval of chartfield charges)

UF/IFAS Analytical Services Laboratories Extension Soil Testing Laboratory

2390 Mowry Road/PO Box 110740/Wallace Building 631
Gainesville, FL 32611-0740

Email: soilslab@ifas.ufl.edu Website: <http://soilslab.ifas.ufl.edu>

Nutrient Testing Form for Bahia Pastures

Note: This lab only tests samples from Florida.

Direct any questions about this test or the interpretation of the results to your local UF/IFAS Extension agent.

Fill in all requested information, using one line per sample. Use additional forms for more than 5 samples.

Lab Use Only	County	Test(s) Requested (see below)	Crop Codes* (see below)	Circle ONE N-option** (see below)				Estimated Acreage*** (see below)	Sample ID for Soil	Sample ID for Leaf Tissue	Cost
				L	M	H	Hay				
				L	M	H	Hay				
				L	M	H	Hay				
				L	M	H	Hay				
				L	M	H	Hay				

* Crop Code: 35—Bahia grass, establishment of new plantings; Test 15—Standard Soil Fertility Test (for soil samples only).

36—Bahia grass, established. Select Low (L), Medium (M), High (H) or Hay N option first. Choose Hay option if any cuts of hay are planned. SAMPLES WILL NOT BE ANALYZED WITHOUT AN N-OPTION SELECTED; Test B15—Standard Soil and Tissue Test (soil and tissue samples required) or Test 15—Standard Soil Fertility Test (for soil samples only).

** Please check next page for details on each of the tests.

Windbreak Shelterbelt

Single or multiple rows of trees and shrubs in linear configurations that protect areas from wind.



Wind breaks plant species

FOUNDATION SPECIES - Some of these species can be used by themselves or in conjunction with other species.

Eastern Red Cedar

Southern Red Cedar

Slash pine

Sand pine

Silk oak

Longleaf pine

Eucalyptus

Bamboo 'Buddha's Belly' (*Bambusa ventricosa*)

Bamboo 'Oldham' (*Bambusa oldhamii*)

Bambusa multiplex

Bamboo 'Maling' (*Bambusa malingensis*)

FOUNDATION SPECIES

Eastern Red cedar (*Juniperus virginiana*)

Height: 40 to 50 feet.

Spread: 20 to 30 feet.



FOUNDATION SPECIES

Southern Red Cedar (*Juniperus silicicola*)

Height: 30 to 45 feet.

Spread: 10 to 20 feet.

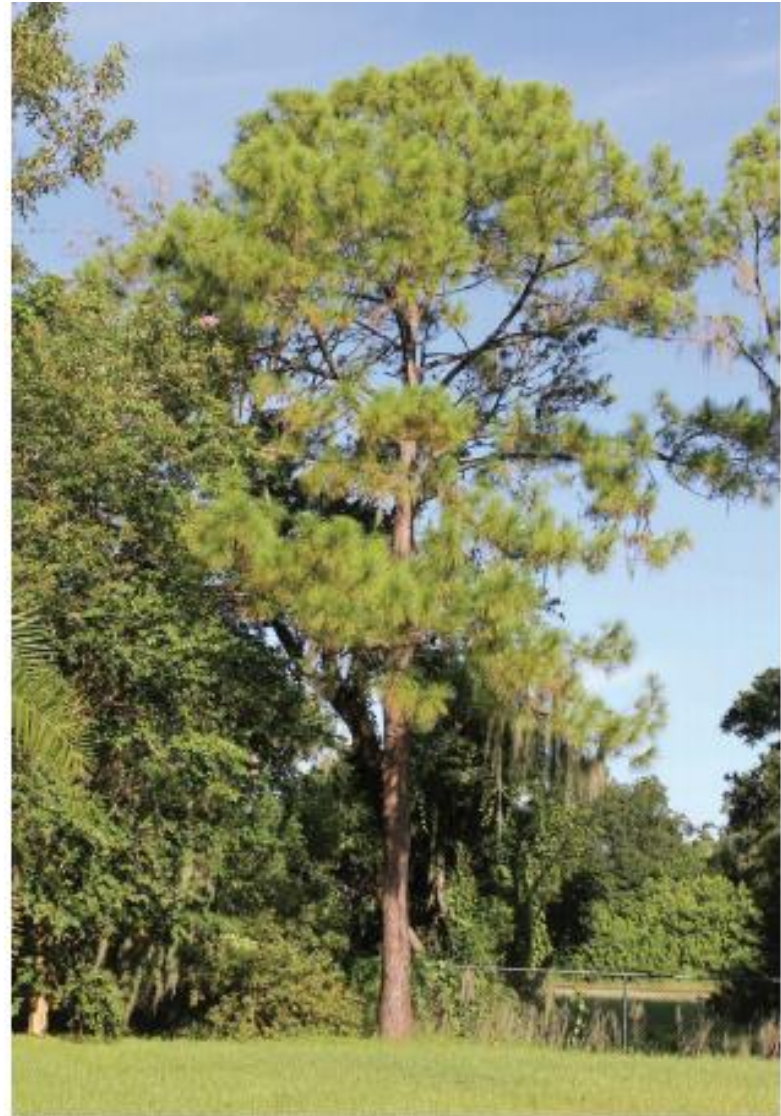


FOUNDATION SPECIES

Slash pine (*Pinus elliottii*)

Height: 75 to 100 feet.

Spread: 35 to 50 feet.



FOUNDATION SPECIES

Sand pine (*Pinus clausa*)

Height: 25 to 40 feet.

Spread: 15 to 25 feet.



FOUNDATION SPECIES

Silk oak (*Grevillea robusta*)

Height: 40 to 75 feet.
Spread: 25 to 30 feet.



FOUNDATION SPECIES

Longleaf pine (*Pinus palustris*)

Height: 60 to 125 feet.

Spread: 30 to 40 feet.



FOUNDATION SPECIES

Eucalyptus E. grandis

Height: 600 feet.



FOUNDATION SPECIES

Bamboo Buddha's Belly
(*Bambusa oldhamii*)



FOUNDATION PARTNERS

The usefulness of these plant species in windbreaks is unknown, but they have potential as lower story species in conjunction with Foundation Species.

1. Walter's viburnum (*Viburnum obovatum*)
2. Sweet viburnum (*Viburnum odoratissimum*)
3. Saw palmetto (*Serenoa repens*)
4. Crape myrtle (*Lagerstroemia indica*)
5. Wax myrtle (*Myrica cerífera*)
6. Simpson's stopper (*Myrcianthes fragrans*)

FOUNDATION SPECIES

Walter's Viburnum (*Virburnum obovatum*)

Height: 6 to 27 feet.
Spread: 6 to 10 feet.



Flowers + Full Form - *Virburnum obovatum* - <http://www.ck12.org>

FOUNDATION SPECIES

Sweet viburnum (*Viburnum odoratissimum*)

Height: 8 to 25 feet.
Spread: 6 to 10 feet.



FOUNDATION SPECIES

Saw palmetto (*Serenoa repens*)

Height: 5 to 10 feet.

Spread: 4 to 10 feet.



FOUNDATION SPECIES

Crape myrtle (*Lagerstroemia indica*)

Height: 10 to 30 feet.
Spread: 15 to 25 feet.



FOUNDATION SPECIES

Waxmyrtle (*Morella cerifera*)

Height: 15 to 25 feet.

Spread: 20 to 25 feet.



FOUNDATION SPECIES

Simpson's Stopper (*Myrcianthes fragans*)

Height: 20 to 30 feet.
Spread: 1 to 20 feet.



OTHER

Most of these plant species have unknown potential for use in windbreaks and represent a higher risk than the FOUNDATION PARTNERS.

1. Loblolly pine *Pinus taeda*
2. Black cherry *Prunus serotina*
3. East Palatka holly *Ilex x attenuata*
4. Dahoon holly *Ilex cassine*
5. Redbay *Persea borbonia*
6. Sugar cane *Saccharum officinarum*
7. Winged elm *Ulmus alata*
8. Magnolia 'D D Blanchard' *Magnolia grandiflora*
9. Southern Magnolia *Magnolia grandiflora*

FOUNDATION SPECIES

Loblolly pine (*Pinus taeda*)

Height: 50 to 80 feet.
Spread: 30 to 35 feet



FOUNDATION SPECIES

Black cherry (*Prunus serotina*)

Height: 30 to 45 feet.
Spread: 10 to 15 feet



FOUNDATION SPECIES

Dahoon Holly (*Ilex cassine*)

Height: 20 to 30 feet.
Spread: 8 to 12 feet



FOUNDATION SPECIES

Redbay (*Persea borbonia*)

Height: 30 to 50 feet.
Spread: 30 to 50 feet



FOUNDATION SPECIES

Southern Magnolia (Magnolia grandiflora)

Height: 60 to 80 feet
Spread: 30 to 40 feet



Brush Management

- The removal, reduction or manipulation of woody trees and shrubs.
- Restore desired vegetative cover to protect soil from erosion, reduce sediment, improve water quality
- Improve grazing conditions (better quantity and quality)
- Protect property from wildfires.

Conservation Cover

- Establishing and maintaining permanent vegetative cover of either introduced or native grasses, legumes and forbs for nesting cover, winter cover, brood cover, pollinator habitat, and food for wildlife.
 - Reduces soil erosion and sedimentation.
 - Improves water and air quality.
 - Enhances plant diversity.
 - Increases soil organic matter.
 - Improves soil health.
 - Manages plant pests.

Forage and Biomass

Planting grass and legumes – suitable for pasture, hay, or biomass production – to reduce soil erosion and improve production.

- Improves or maintains livestock nutrition and health.
- Provides forage supplies during periods of low forage production.
- Reduces soil erosion.
- Improves soil health and water quality.
- As plants recycle and roots die, organic matter in the soil is improved.

Pest Management

Pest management means evaluating and using a tailored system to reduce crop and environmental damages from insects, weeds and diseases.

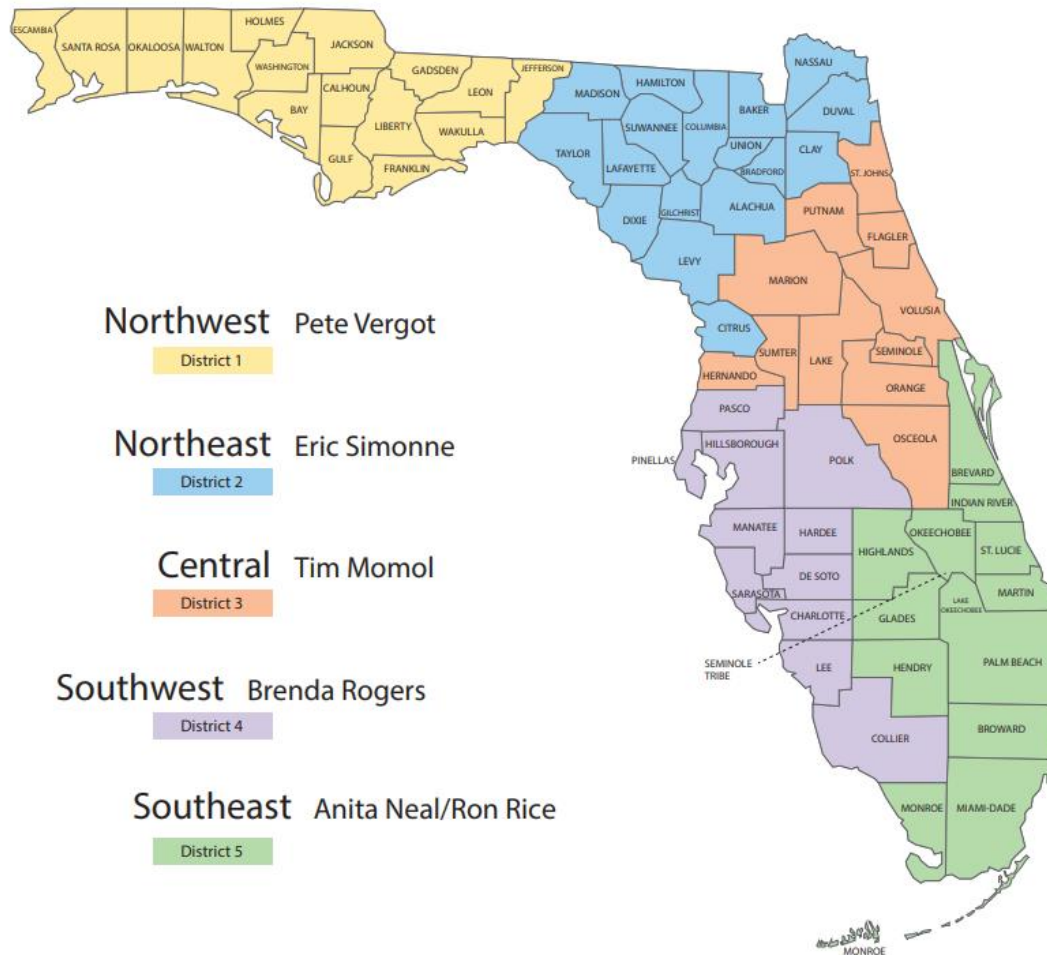
Pond

A farm pond is a pool of water formed by a dam or pit. There are two types of ponds - embankment ponds, which are water impoundments made by constructing an embankment, and excavated ponds, which are formed by excavating a pit or dugout.



Contact Your Extension Agent

UF/IFAS Extension Administrative Districts



Other allies in Florida

USDA Employee Directory
NRCS Offices
NRCS Headquarters

Florida Water Management Districts: Overview

The five Florida water management districts (FWMDs) play a significant role in the regulation of water use in the state.

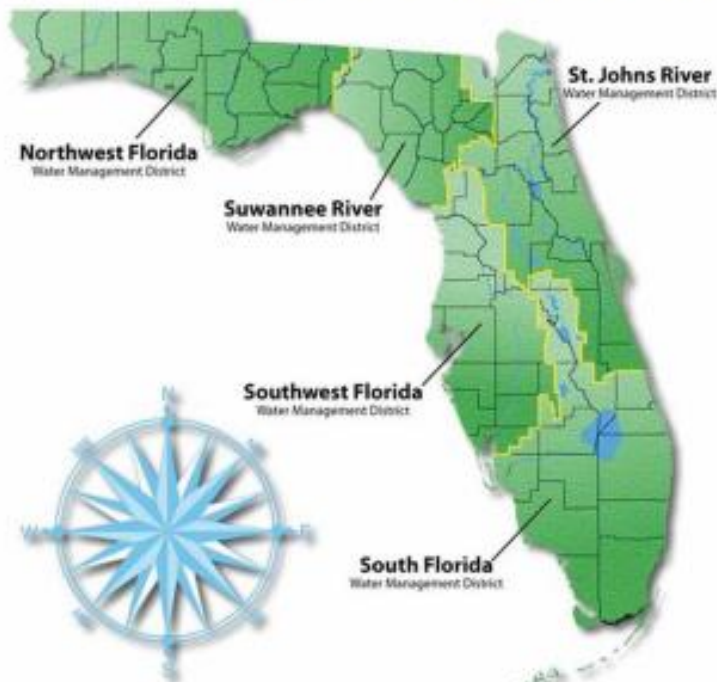
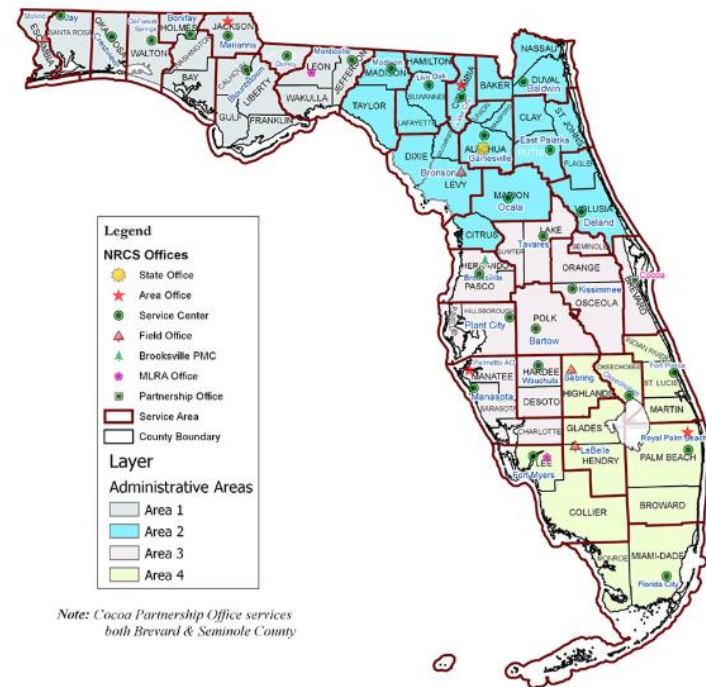


Figure 1. Florida's Five Water Management Districts
Credits: St. Johns River Water Management District (2017), About the District. <http://www.sjrwmd.com/maps.html>

FLORIDA NRCS ADMINISTRATIVE AREAS & SERVICE CENTERS



Note: Cocoa Partnership Office services both Brevard & Seminole County



Printed November 2019
Gainesville, FL

USDA is an equal opportunity provider, employer and lender