

# ENCOURAGING BEHAVIOR CHANGE IN COMMERCIAL AND RESIDENTIAL FERTILIZER USERS IN THE WEKIVA BASIN

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# Florida-Friendly Landscaping™ PROGRAM



## 1 Right Plant, Right Place

Plants selected to suit a specific site will require minimal amounts of water, fertilizers, pesticide and maintenance.



## 2 Water Efficiently

Irrigate only when your lawn and landscape need water. Overwatering can waste water, cause pollution and makes plants more prone to disease and pests.



## 3 Fertilize Appropriately

Less is often best. Overuse of fertilizers can be hazardous to your landscape and the environment.



## 4 Mulch

Maintaining a 2"-3" layer of mulch will help retain soil moisture, prevent erosion and suppress weeds.



## 5 Attract Wildlife

Plants in your landscape that provide food, water and shelter will attract Florida's diverse wildlife.



## 6 Manage Yard Pests Responsibly

Unwise use of pesticides can harm people, pets, beneficial organisms and the environment.



## 7 Recycle

Grass clippings, leaves and yard trimmings recycled on-site provide nutrients to the soil and reduce waste disposal when reused on the landscape.



## 8 Reduce Stormwater Runoff

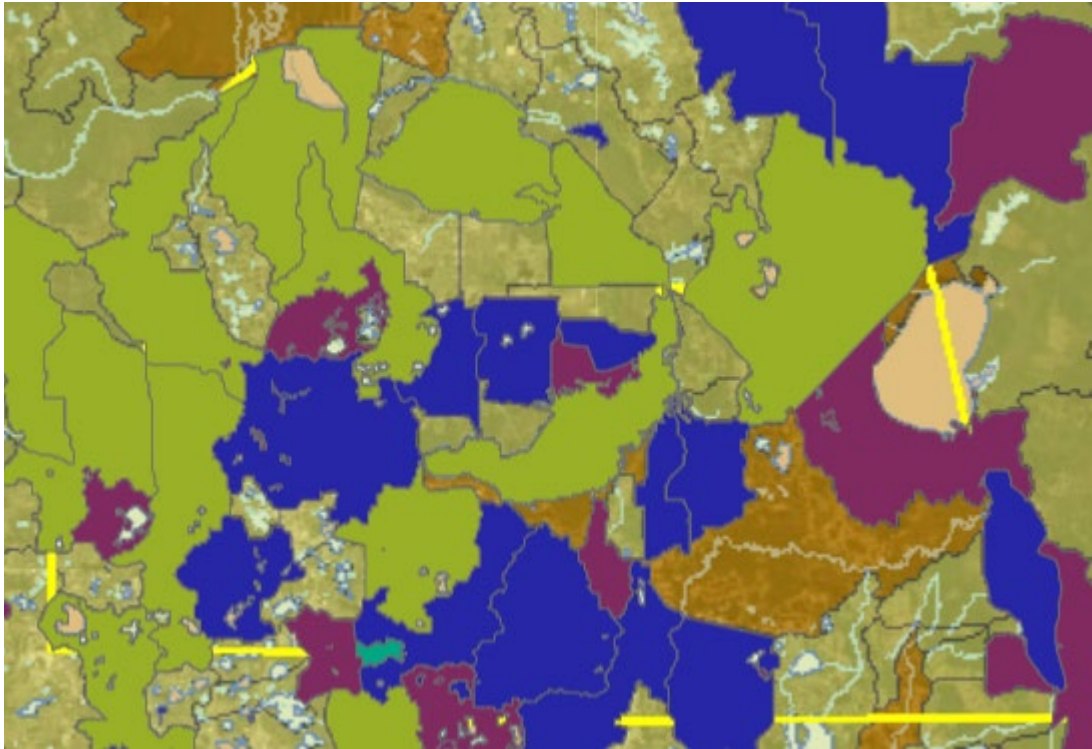
Water running off your landscape can carry pollutants such as soil, debris, fertilizer, gasoline and pesticides that can negatively affect water quality.



## 9 Protect the Waterfront

Waterfront property, whether on a lake, river, stream or pond, is very fragile and should be carefully protected to preserve Florida's waterways, plants and wildlife.

# Water Quality in Seminole County



✓ Waters Not Attaining Standards (WNAS)

- 4a - TMDL Complete
- 4b - Reasonable Assurance
- 4d - Study List
- 4e - Ongoing Restoration Activities
- 5 - Verified List



TMDLs That Apply to this waterbody

[Description of this table](#)

<a href="#">TMDL Document Name</a>	<a href="#">TMDL Date</a>	<a href="#">TMDL Pollutant Description</a>	<a href="#">TMDL Pollutant Source Type</a>	<a href="#">Cause(s) of Impairment Addressed</a>
<a href="#">Tmdl For Nutrients And Unionized Ammoina In Lake Jesup (Wbids 2981 And 2981a), Middle St. Johns Florida</a>	Jan-09-2007	Nitrogen, Total	Point/Nonpoint Source	Nutrients; Ammonia, Un-ionized; Trophic State Index (TSI)
<a href="#">Tmdl For Nutrients And Unionized Ammoina In Lake Jesup (Wbids 2981 And 2981a), Middle St. Johns Florida</a>	Jan-09-2007	Phosphorus, Total	Point/Nonpoint Source	Ammonia, Un-ionized; Nutrients; Trophic State Index (TSI)



**FINAL**

**BASIN MANAGEMENT ACTION PLAN**

**for the Implementation of  
Total Maximum Daily Loads for Nutrients  
by the Florida Department of Environmental Protection  
in the  
Middle St. Johns River Basin  
for Wekiva River, Rock Springs Run, and  
Little Wekiva Canal**

**Adopted by the  
Florida Department of Environmental Protection  
Division of Environmental Assessment and Restoration  
Watershed Restoration Program  
Tallahassee, FL 32399**

# Seminole County Is Home To:

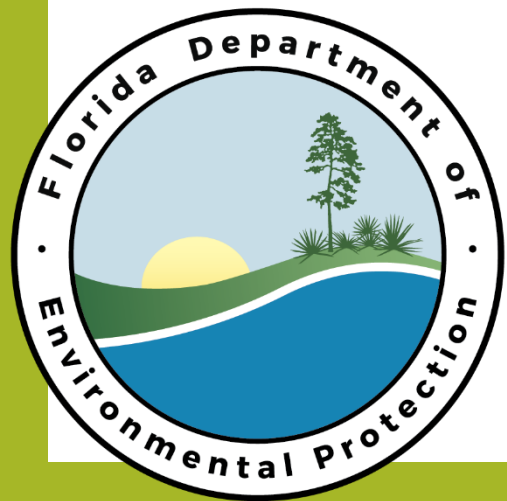
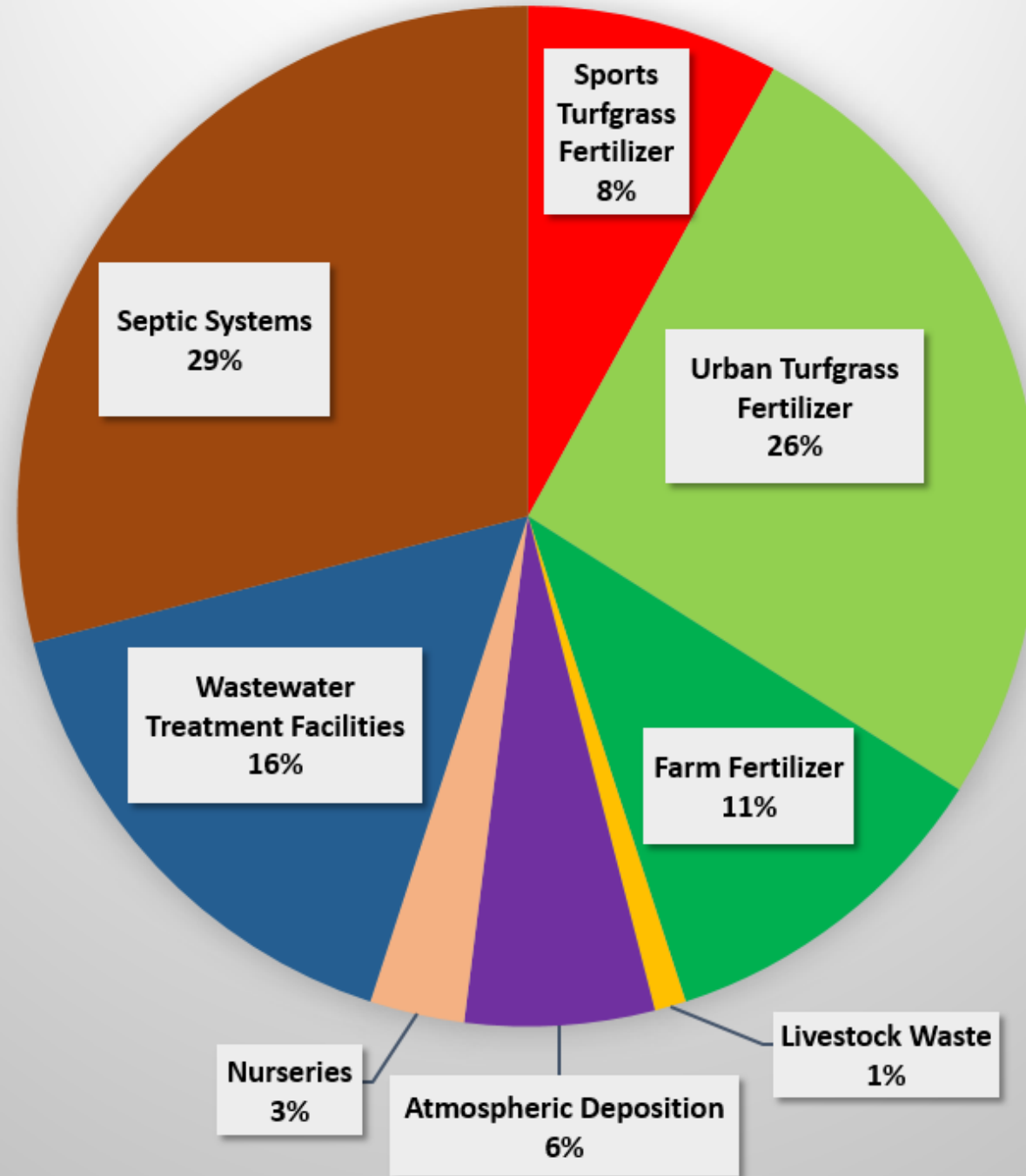
- Wekiva Springs River
  - National Wild & Scenic River
  - Outstanding Florida Waterbody
- St. Johns River
  - oxbow Lakes Harney, Monroe, Jesup
- **Are all impaired by nutrients**



**“Outstanding natural, cultural, and recreational value in a free-flowing condition for the enjoyment of present and future generations”**

**U.S. National Park Service**

# Nitrate Loading to the Wekiva Basin



## Florida Department of Environmental Protection



[About DEP](#)

[How Do I](#) ▼

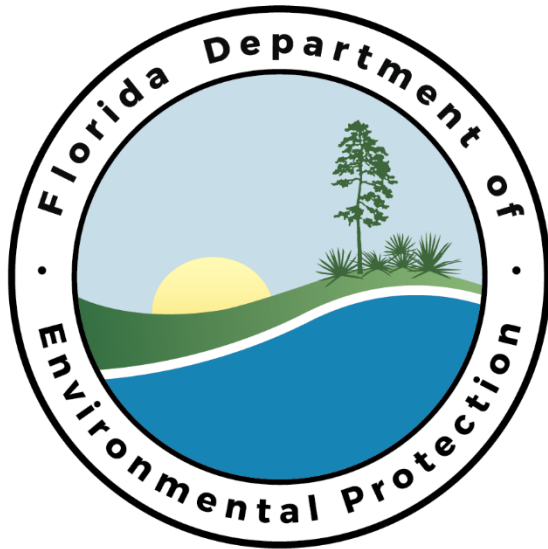
[Divisions](#) ▼

# Nonpoint Source Funds

[Home](#) » [Divisions](#) » [Division of Water Restoration Assistance](#) » Nonpoint Source Funds



# Partnership Makes it Possible



# Educational Style

- Webinars
- Integrative Seminar: PowerPoint, Lecture, etc.
- Experiential: Tours of Demonstration Landscapes
- Reinforcement: EDIS publications, fact sheets, etc.
- Videos
- Personal Consultations and Site Visits

# Marketing\*

- Newsletters & Journals: 45,000+ reached
- Press Releases: 7 this year reaching 567 media outlets
- Mass Media: 17,759,501 reached
- Publications Distributed: 17,700+

\*Sept. 2018 – Sept. 2020

## 2020 Seminole County Fertilizer PSA

Check Out The Facts

# FertilizeFlorida.com



<https://www.youtube.com/watch?v=w6AAUPUao4Q>

Seminole County Summer Blend Fertilizer PSA

Check Out The Facts

FertilizeFlorida.com



<https://www.youtube.com/watch?v=CNHYoams9fU>

2020 Seminole County Fall Fertilizer PSA

Check Out The Facts

**FertilizeFlorida.com**



[https://www.youtube.com/watch?v=LLZ\\_7tLFg\\_Q](https://www.youtube.com/watch?v=LLZ_7tLFg_Q)

# Clientele Reached\*

<b>Number of Educational Materials Developed</b>	<b>69</b>
- <b>Email, Phone &amp; Office consultations</b>	<b>904</b>
- <b>Group Learning Participants</b>	<b>4,513</b>
- <b>Web site visits</b>	<b>8,000</b>
- <b>Social Media*</b>	<b>747,078</b>
- <b>Tabling Outreach</b>	<b>2000</b>

\*Sept. 2018 – Sept. 2020

# Group Learning Participants\*

Instructor	Type of Events	Topics	Number of Events	Number of Participants
<b>Self</b>	Workshops (workshops, garden tours, etc.)	Florida Friendly Landscaping	58	2,390
<b>Self &amp; Prog. Assist.</b>	Workshops	Florida Friendly Landscaping: Fertilizer	24	1,150
<b>Prog. Assist.</b>	Workshop	Florida Friendly Landscaping: Fertilizer	46	992
<b>Totals</b>			128	4,531

\*Sept. 2018 – Sept. 2020



# Objectives & Outcomes: Sept. 2018 - Sept. 2020

## Objective 1

- At least 90% of participants will report an *increase in knowledge* of at least 1 of the 9 FFL principles following a program
- Measured by retrospective pre/post-survey

# of respondents	% attainment
2,219	97.2%



# Education Methods

- *Fertilizing Effectively in Sandy Florida Soils Workshops*
- Workshop target audiences:
  - Homeowners and HOA's
    - offered a free bag of fertilizer
- Professional Landscapers
  - Continuing Education Units (CEUs) for license holders
    - Hundreds of CEUs provided for free virtually
- Best Management Practices (BMP's) for residential landscapes

# Objectives & Outcomes

## Objective 2

- At least 60% of participants will report the *intention to adopt* one FFL related practice following a program activity as
- Measured by retrospective pre/post-survey

# of respondents	% attainment
2,219	96.5%

# Objectives & Outcomes

## Objective 3

- At least 20% of program participants *will report adopting* at least one FFL practice as measured by annual follow-up survey.

# of respondents	% attainment
361	71.5%

# Objectives & Outcomes

## Objective 3

- At least 20% of program participants ***will report adopting*** at least one positive fertilizer practice as measured by annual follow-up survey.

In our *Fertilizing Effectively in Sandy Florida Soils workshops*

- 96.6% (131/138) of respondents left a 15 foot, no-fertilizer zone is maintained around all water bodies
- 99.6% (230/231) Avoided blowing leaves and/or grass clipping down the storm-drain or onto pavement
- 95.9% (70/73) have followed the summer restrictions



# Classes Sept. 2018 – Sept. 2020



Behavior	%Yes	Yes	No%	No	Total
Avoid blowing leaves and/or grass clipping down the storm-drain or onto pavement.	99.41%	169	0.59%	1	170
Follow watering restrictions (Mar.-Nov. 2 times per week, Nov-Mar. 1 time per week).	97.66%	167	2.34%	4	171
Avoided fertilizing June 1st-September 30th 2020	95.89%	70	4.11%	3	73
A 15 foot, no-fertilizer zone is maintained around all water bodies.	95.28%	101	4.72%	5	106
Avoided irrigating the pavement.	89.31%	142	10.69%	17	159
Not fertilize when soils are saturated or rain is in the forecast	88.24%	60	11.76%	8	68
Grass clippings are left on my lawn after mowing.	85.06%	148	14.94%	26	174
test. (For example, a label reads 8(nitrogen)-0(phosphorous)-16(potassium)	84.35%	124	15.65%	23	147
Fertilize lawn with 50% or more slow-release nitrogen	82.89%	126	17.11%	26	152
Water by hand as needed.	82.74%	139	17.26%	29	168
Calibrate the fertilizer spreader prior to applying the fertilizer.	82.19%	120	17.81%	26	146

# Summer Classes June 2019 – Sept 2019

Behavior	%Yes	Yes	No%	No	Total
Avoid blowing leaves and/or grass clipping down the storm-drain or onto pavement.	100.00%	61	0.00%	0	61
Follow watering restrictions (Mar.-Nov. 2 times per week, Nov-Mar. 1 time per week).	98.33%	59	1.67%	1	60
I followed the Seminole Fertilizer ordinance June-Sept. restrictions by not using nitrogen or phosphorous during that period (for example: used summer blend or did not fertilize , etc.)	96.72%	59	3.28%	2	61
A 15 foot, no-fertilizer zone is maintained around all water bodies.	93.75%	30	6.25%	2	32
Avoided irrigating the pavement.	89.66%	52	10.34%	6	58
Grass clippings are left on my lawn after mowing.	88.89%	56	11.11%	7	63
Fertilize lawn with nitrogen during the allowable period (Oct.-May) (For example, a label reads 8: nitrogen,-0:phosphorous,-16:potassium)	84.91%	45	15.09%	8	53
Fertilize lawn with 50% or more slow-release nitrogen	83.02%	44	16.98%	9	53
The irrigation system is calibrated to 1/2 - 3/4 of an inch per application, possibly using the "Catch-Can-Method".	82.61%	38	17.39%	8	46
Calibrate the fertilizer spreader prior to applying the fertilizer.	80.39%	41	19.61%	10	51



# Quantifying Impacts: 50% SRN

- 332 participants followed the IFAS recommended 50% SRN fertilizer
- Assumptions:
  - Average lawn size of 3,000 ft<sup>2</sup> per home
  - Value of \$500 per lb. N removed from the environment
- Reduced annual N leaching by 50.7 (well-vegetated/low leaching) to 595 (bare soil/high leaching) lbs. N per year
- Economic benefit of \$25,364 to \$297,556 annually



# Quantifying Impacts: Summer Restrictions

- Seminole County fertilizer ordinance prohibits N fertilizer from being applied between June 1st and September 31<sup>st</sup>
- Based on the 247 individuals who stated they followed the ordinance during the case study
- Total reduction of leaching 62.2 (well-vegetated/low leaching) to 444.6 pounds
- Monetary value estimated between \$31,122 to \$222,300

# Combination Impacts

- When we combine those individuals that both used a Slow-Release N product and followed the county restricted period, we see that fertilizer workshops
  - **reduced annual N leaching by 112.9 – 1039.6 pounds**
  - **provided an economic benefit of \$56,486 to \$519,856**

# Conclusion

- Educational efforts resulted in significant behavior changes
- Seeks to reduce local levels of nitrogen and phosphorous, pollutants that lead to harmful algae blooms and FDEP impairments
- Participants better understand sources of water contamination resulting from fertilizer misuse
- Have acted to change those behaviors



## QUESTIONS?

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