

FLORIDA-FRIENDLY
BEST MANAGEMENT PRACTICES
FOR PROTECTION OF WATER RESOURCES
BY THE GREEN INDUSTRIES



GREEN INDUSTRIES BEST MANAGEMENT PRACTICES (GI-BMP)

MODULE 4: IRRIGATION

6/2016



TRAINING OBJECTIVES

At the end of this module you will be able to:

1. Explain how Florida laws regarding irrigation systems affect landscape professionals.
2. Describe the components of an irrigation system.
3. Explain irrigation effects on fertilizing practices.
4. Identify irrigation equipment maintenance needs.
5. Review irrigation BMPs to avoid nonpoint source pollution.





WATER USE IN FLORIDA

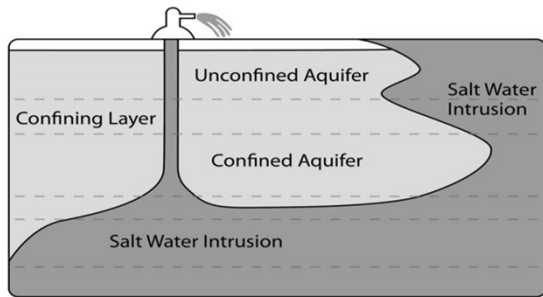
- Between 1950 and 2005, the population increased by 15.1 million (550%)
- Continued growth in population, tourism, and agriculture will place increased demands on these water supplies.
- Water withdrawals:
 - 62 % freshwater (ground)
 - 38 % surface water



Marella, R.L., 2009



SALT WATER INTRUSION





RESPONSIBLE IRRIGATION MANAGEMENT

- Saves water
- Improves plant health and water quality
- Reduces need for fertilizers and/or chemical treatments
- Protects your client's investment





IRRIGATION MANAGEMENT BMPS

Irrigation Managers should:

- Be familiar with the system
- Know the water needs of plants
- Recognize irrigation problems
- Act to correct problems





LANDSCAPE IRRIGATION LAW

Florida law 373.62

Automatic systems:

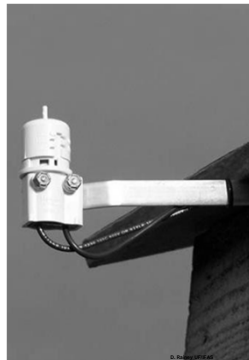
- Must test for the correct operation of each inhibiting or interrupting device or switch on automatic operating systems.
- Must install new ones or repair the existing ones.
- Confirm proper operating condition.





LAW: FUNCTIONING RAIN SHUTOFF DEVICE

Rain Sensor Switches or other devices, regardless of the age of the system, are required by law to be maintained and operational.



 IRRIGATION SYSTEM

Main Components:

1. Water supply
2. Water conveyance
3. Distribution device



 SYSTEM DESIGN IRRIGATION BMPS

- Design operating pressure must not exceed the source pressure.
- Use devices designed for optimum uniform coverage
- Should not irrigate non-targeted areas



 WATER SUPPLY

- Potable water
- Groundwater
- Reclaimed water
- Surface water



 RECLAIMED WATER SUPPLY

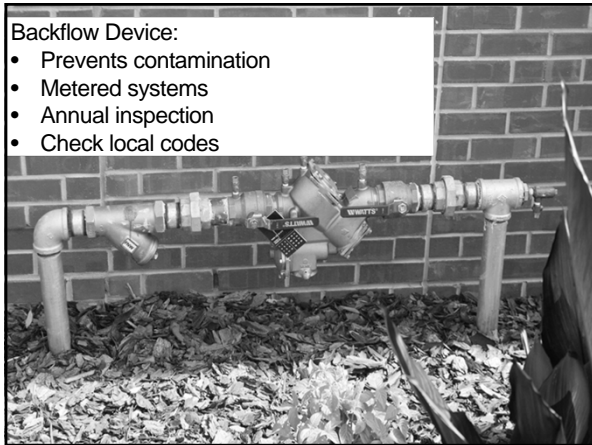
Purple pipes
"Do Not Drink This Water"

- Monitor nutrient content
- Avoid over-irrigation
- Monitor salinity
- Maintain filtration
- Cross-connections and backflow devices



Backflow Device:

- Prevents contamination
- Metered systems
- Annual inspection
- Check local codes



 ELECTRIC VALVES





DISTRIBUTION DEVICES:

How many can you identify?





MICROIRRIGATION EMITTERS

- Drip tubing
- Ideal when precision is desired or for narrow plantings
- Minimal lateral water movement
- Clogging or leaks may not be apparent
- Check filters if inadequate watering is suspected





IRRIGATION SCHEDULING

When to irrigate & how much to irrigate.

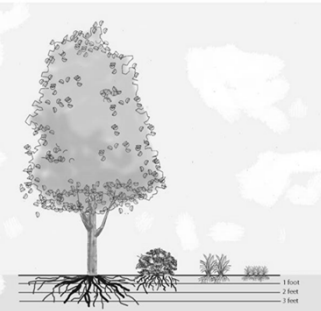


IRRIGATION SCHEDULING

- Plant water requirements
- Root zone depth
- Recent rainfall
- Recent temperature extremes
- Soil moisture



PLANT WATER REQUIREMENTS



1/2 - 3/4 inch per irrigation event

Clare Lewis

Effective Rainfall

- Total rainfall minus runoff, evaporation, and deep percolation
- Contact with the plant roots

Native Florida Soils

- Low water holding capacity
- 1 inch of rainfall or irrigation applied wets approximately 12 inches of sandy soil.

VISUAL IRRIGATION INDICATORS

When should water be applied?

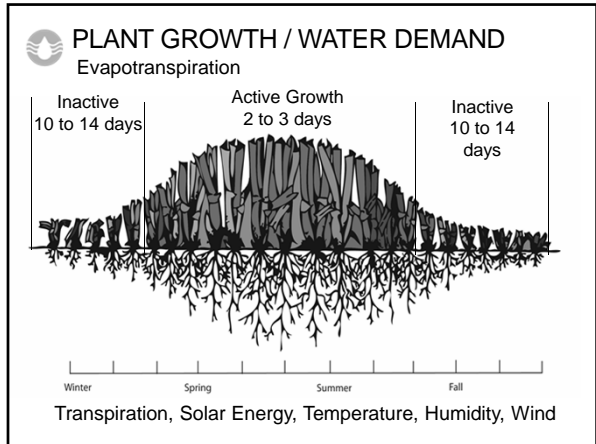
Turfgrass

- The grass has a dull, bluish-gray color
- Foot tracks remain in the grass
- Leaf blades are folded in half

Landscape

- Soil samples from the root zone are dry and crumbly.
- Indicator landscape plants have wilting leaves.

Established drought-tolerant plants may require little or no irrigation.



WHEN CAN I WATER?

Scheduling Criteria

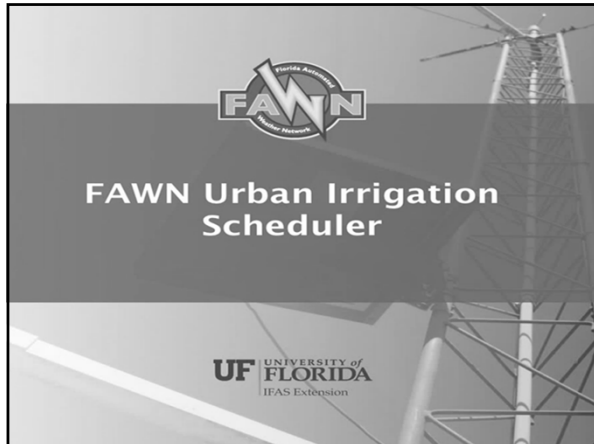
- Water source
- Location* – WMD, water purveyor
- House number
- Time of day
- Conservation Measures
- Water morning hours.

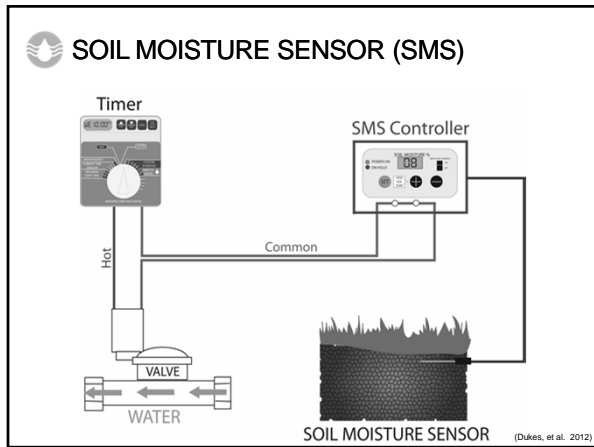
*Some areas of the state differ

Statewide:

10 a.m. to 4 p.m.



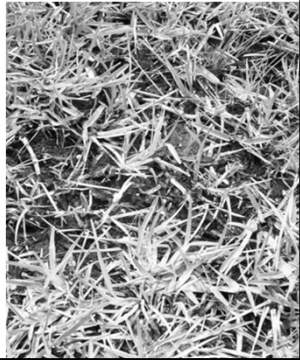


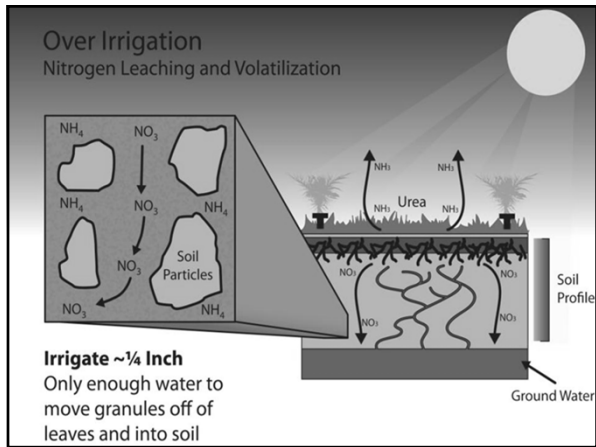


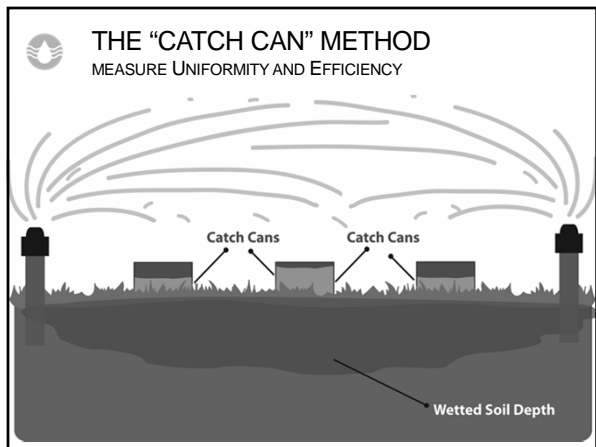


 OVER IRRIGATION

- Increased plant disease
- Higher population of plant pests
- Weak and shallow roots
- Nutrient leaching and/or runoff
- Wasted water









EFFICIENCY AND UNIFORMITY

What is the big deal?

- Large volumes of wasted water
- Increased water bills
- Increased demand on the resource
- Increased runoff and leaching
- Water supply is limited





TROUBLESHOOTING VIDEO



REVIEW

1. Explain how Florida laws regarding irrigation systems affect landscape professionals.
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THANK YOU!

UF IFAS Extension
UNIVERSITY OF FLORIDA



Florida-Friendly
Landscaping GI BMP PROGRAM
