
1

## TRAINING OBJECTIVES

UF | IFAS Extension
UNIVERSITY of FLORIDA

**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.**

Florida-Friendly Landscaping™

2

**Irrigation may not be your job, but it can have a big effect on it!**

3

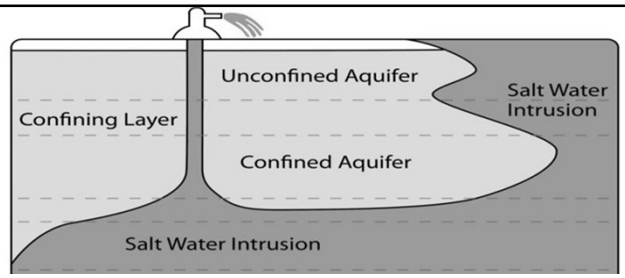
## *WATER USE IN FLORIDA*

Between 1950 and 2022, the population increased by 19.5 million (822%)

Continued growth in population, tourism, and agriculture will place increased demands on these water supplies

Freshwater withdrawals:
63% Freshwater (ground)
37% Surface water

4




SALTWATER INTRUSION

5

## RESPONSIBLE IRRIGATION MANAGEMENT

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

6

## IRRIGATION MANAGEMENT BMPS

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

7

## LANDSCAPE IRRIGATION LAW

**Florida Statute 373.62**

**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.
- Must install new ones or repair the existing ones.
- Confirm proper operating conditions.

8


## IRRIGATION SYSTEM

MAIN COMPONENTS:

1. WATER SUPPLY
2. WATER CONVEYANCE
3. DISTRIBUTION DEVICE

9

## 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

10

## *WATER SUPPLY*

- Potable water
- Groundwater
- Reclaimed water
- Surface water

11

## 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

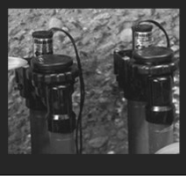

12

## BACKFLOW DEVICE:

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

13





## *ELECTRIC VALVES*

14

DISTRIBUTION DEVICES:

**How many can you identify?**

15

## MICRO IRRIGATION 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

16

**MICROSPRAYS/BUBBLERS**

17

*IRRIGATION SCHEDULING*

WHEN TO IRRIGATE AND HOW MUCH TO IRRIGATE

18

## IRRIGATION SCHEDULING

PLANT WATER REQUIREMENTS

ROOT ZONE DEPTH

RECENT RAINFALL

RECENT TEMPERATURE EXTREMES

SOIL MOISTURE

WATERING RESTRICTIONS

19

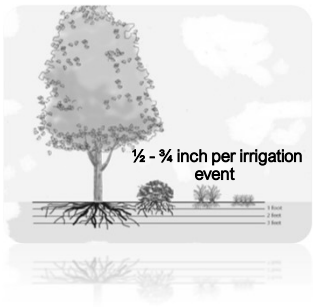
## PLANT WATER REQUIREMENTS

### 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.




20

## VISUAL IRRIGATION INDICATORS

**When should water be applied?**

### TURFGRASS

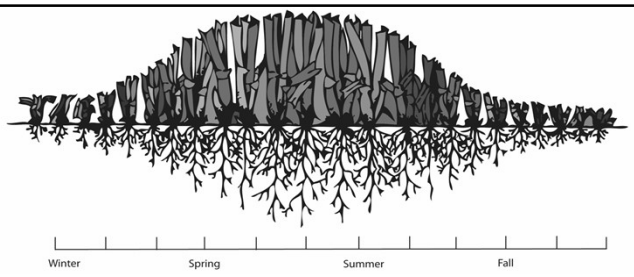
- The grass has a dull, bluish-gray color
- Footprints remain in the grass
- Leaf blades are folded in half

### LANDSCAPE

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

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

21




PLANT GROWTH / WATER DEMAND | **EVAPOTRANSPIRATION**

22

**WHEN CAN I WATER?**

Scheduling Criteria:

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

**Some areas of the state differ*

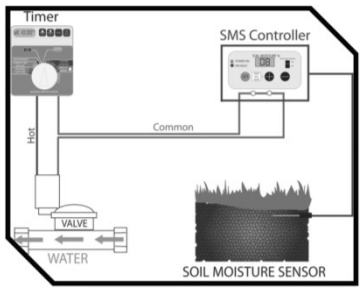
**STATEWIDE:**


**10 am-4 pm**

23

RAIN SENSORS

24




## *SOIL MOISTURE SENSOR (SMS)*

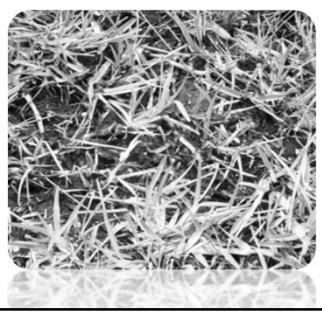
25

## *EVAPOTRANSPIRATION CONTROLLERS*

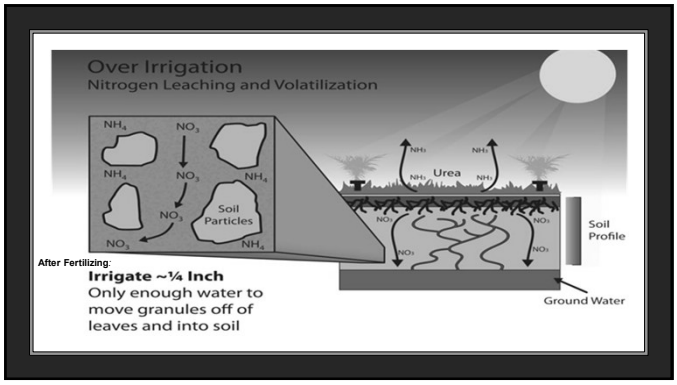
26

OVERIRRIGATION:

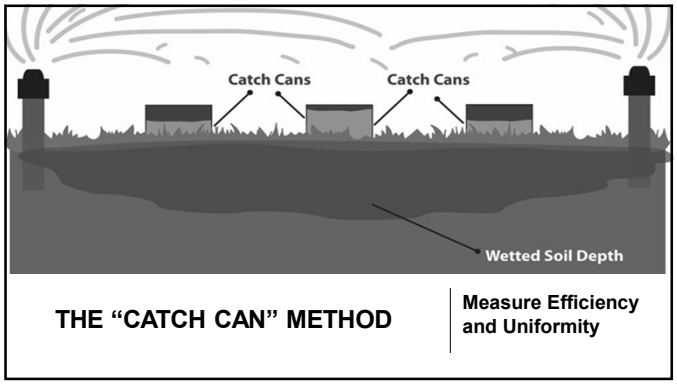
- **Increased plant disease**
- **Higher population of plant pests**
- **Weak and shallow roots**
- **Nutrient leaching and/or runoff**
- **Wasted water**



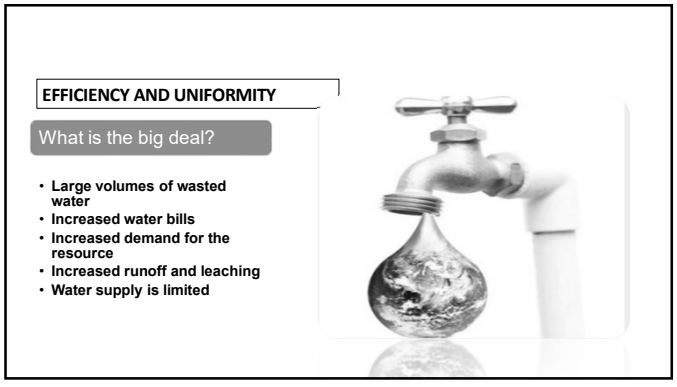
27


Over Irrigation
Nitrogen Leaching and Volatilization
Soil Particles
Urea
Soil Profile
Ground Water
After Fertilizing:
Irrigate ~¼ Inch
Only enough water to move granules off of leaves and into soil

28


Catch Cans
Catch Cans
Wetted Soil Depth
THE "CATCH CAN" METHOD
Measure Efficiency and Uniformity

29


EFFICIENCY AND UNIFORMITY
What is the big deal?
• Large volumes of wasted water
• Increased water bills
• Increased demand for the resource
• Increased runoff and leaching
• Water supply is limited

30

## TROUBLESHOOTING VIDEO

31

## REVIEW TRAINING OBJECTIVES

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32

## Thank You

*This program is funded in part by Florida DEP with a Section 319 Nonpoint Source Management Program Grant from the U.S. Environmental Protection Agency.*

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33