

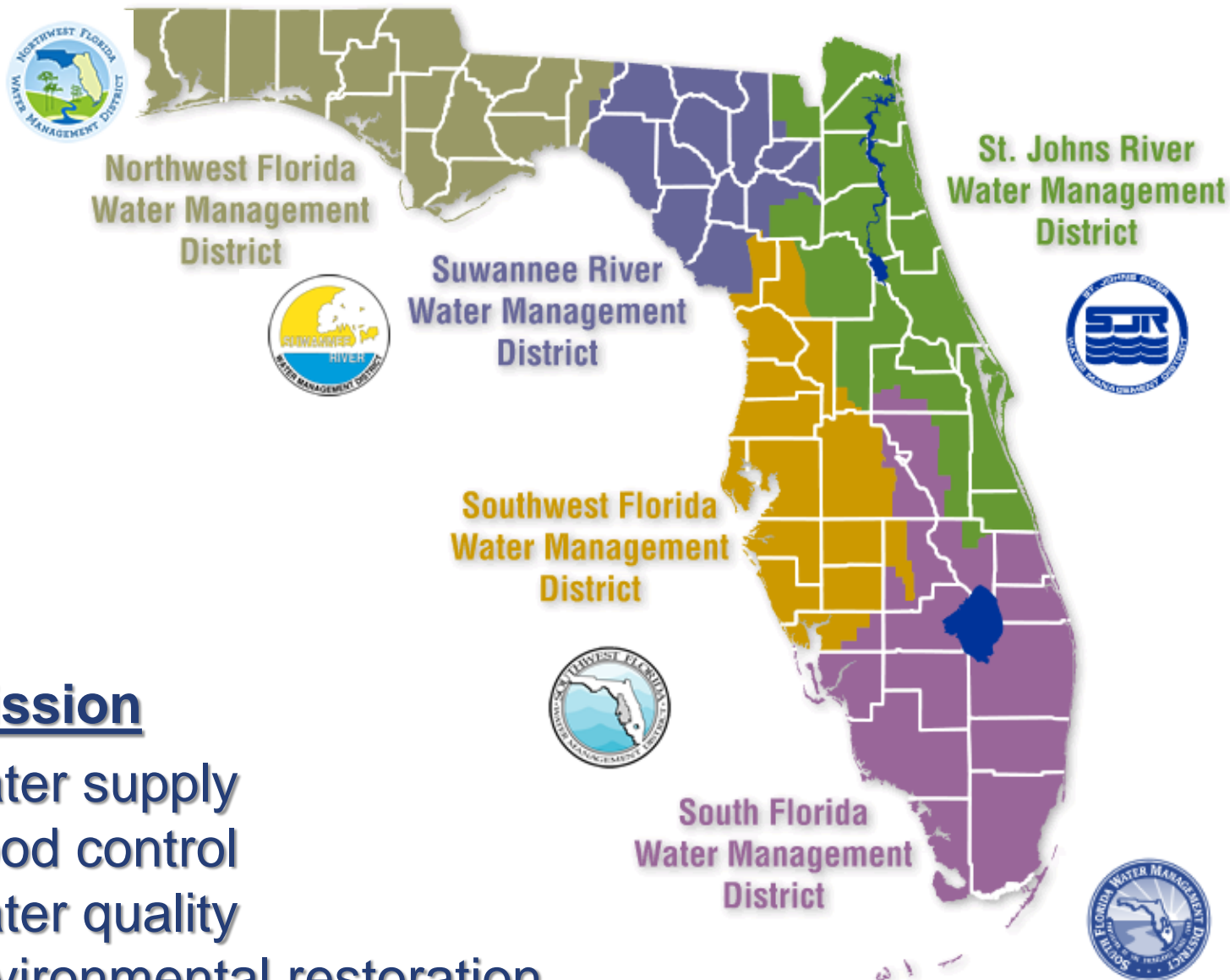
Why Water Conservation Matters

Jim Harmon, P.G.

Water Supply Implementation - Section Leader



Florida's Water Management Districts



Core Mission

1. Water supply
2. Flood control
3. Water quality
4. Environmental restoration

Florida's Water Resources



- 7,700 lakes
- 50,000 miles of rivers and streams
- 700 springs
(Largest concentration in the world)
- Average 54 inches of rain annually

Why worry about water conservation when Florida has a long history of storms & floods...?!



**Hurricane Dora: Live Oak, Florida
September 1964**



**Tropical Storm Fay:
August 2008**



**Hurricane Georges:
Pensacola, Florida - September 1998**

Because... Florida also has a long history of droughts



Lake Okeechobee: 2011



Lake Clare in Clermont: June 11, 2000



Lake Okeechobee: 2007



South Florida is fairly flat and has a humid subtropical to tropical climate with “extremes”



Very Wet



Very Dry

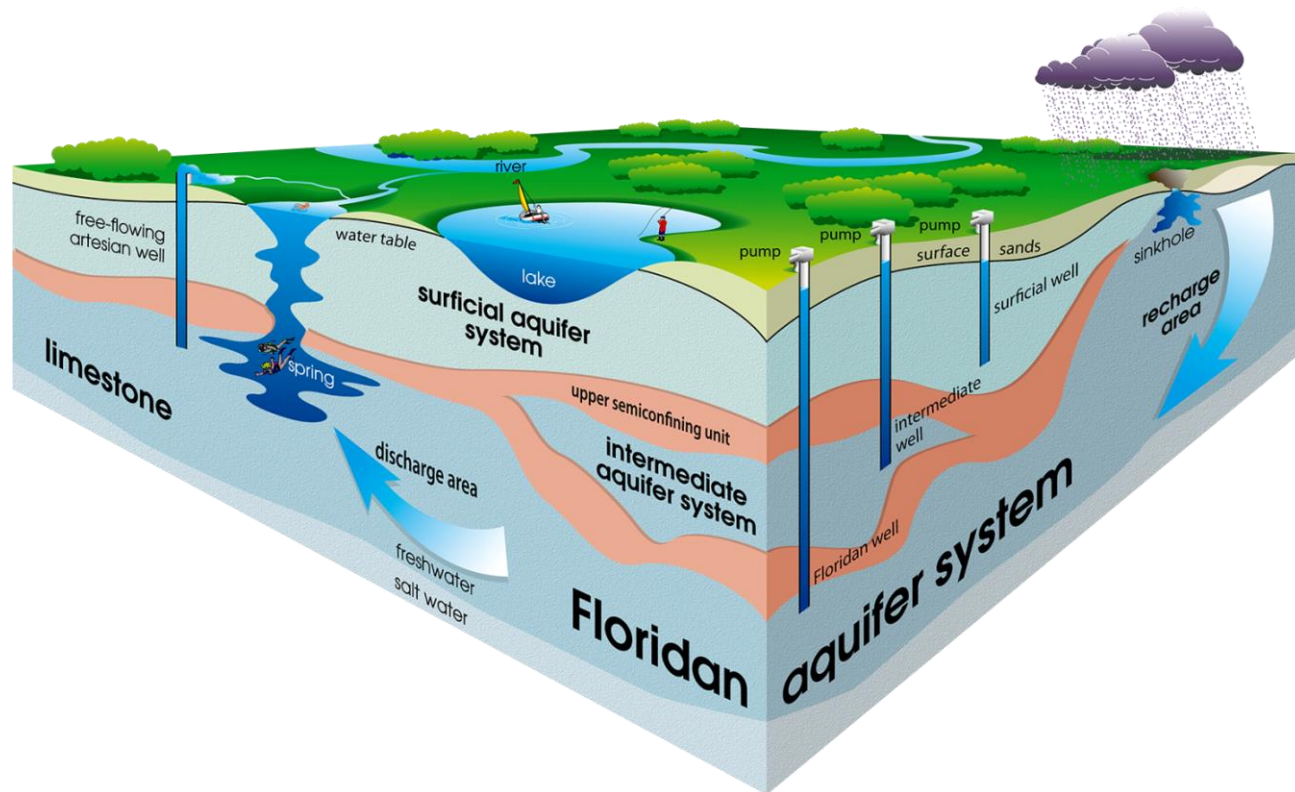
Rain often comes down too fast to hold on to...

- 💧 70% of our annual rainfall occurs during the summer
- 💧 Much of what falls is “lost” to evaporation and transpiration or to runoff (canals → rivers → ocean)
- 💧 Capacity to store that water is very limited



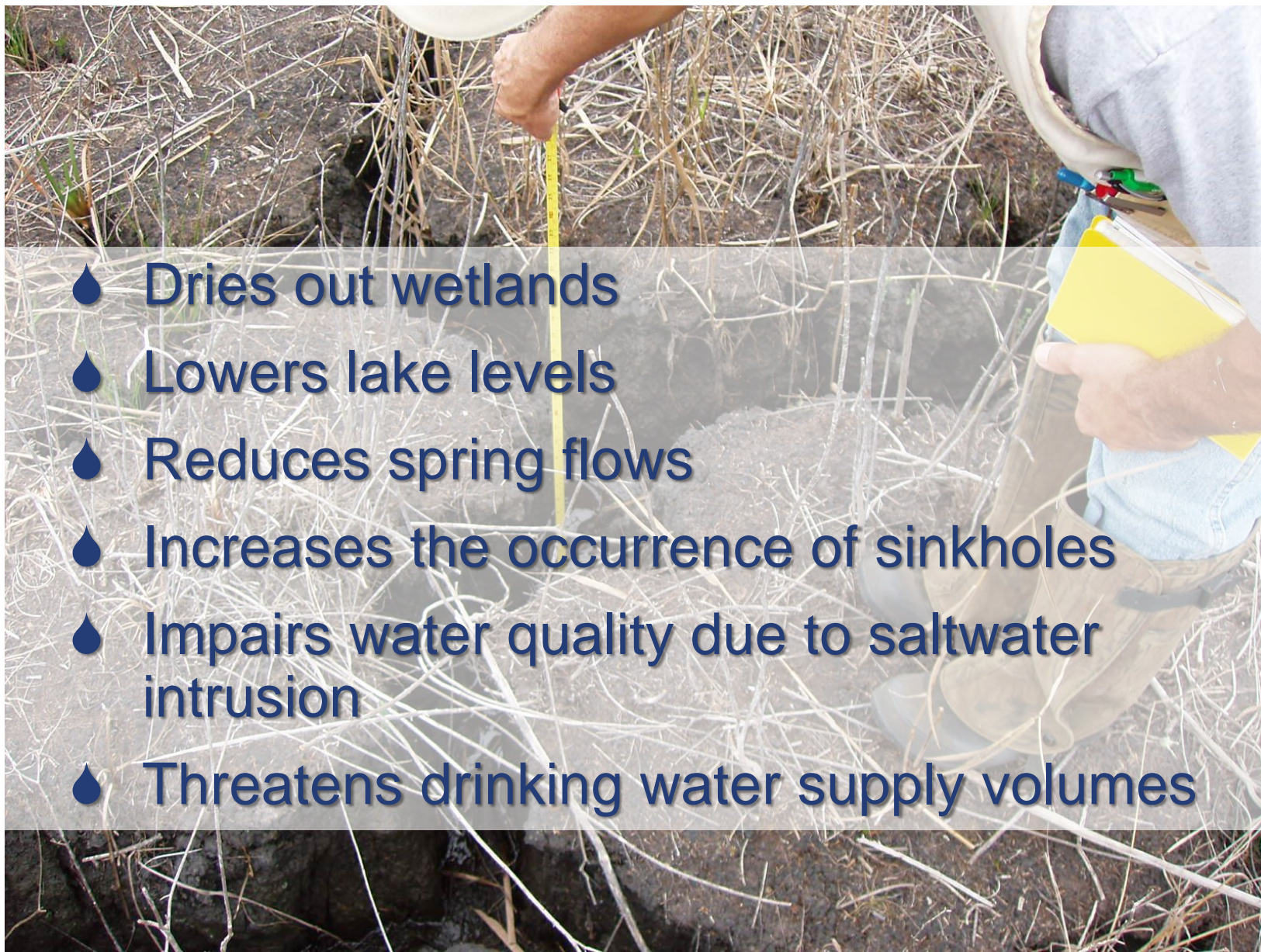
Water Supply

Remaining rainfall volume recharges aquifer



Groundwater is traditional source of most drinking water

What happens when we overconsume?



- 💧 Dries out wetlands
- 💧 Lowers lake levels
- 💧 Reduces spring flows
- 💧 Increases the occurrence of sinkholes
- 💧 Impairs water quality due to saltwater intrusion
- 💧 Threatens drinking water supply volumes

Statewide Totals

Florida population will increase (22%):

2015 – 19.8 million

2030 – 24.1 million



Florida's water demands will also increase (16%):

2015 – 6.4 billion gallons per day

2030 – 7.4 billion gallons per day



Meeting Future Demands

Meeting future water needs can happen only one of two ways:

1. Increasing Supply



Increasing Supply

Traditional Sources

- **Existing aquifer development**

Alternative Water Sources

- **Brackish aquifer development**
- **Ocean water desalination**
- **Aquifer storage and recovery**
- **Reclaim/reuse**



Increasing Supply



\$



\$



Meeting Future Demands

Meeting future water needs can happen only one of two ways:

1. Increasing Supply

2. Decreasing Demand
(Conservation)





What is Conservation?

Water conservation is any action which reduces the demand for water, including those that:

- 💧 Improve the efficiency of necessary uses**
- 💧 Prevent or reduce the amount of water wasted or loss**





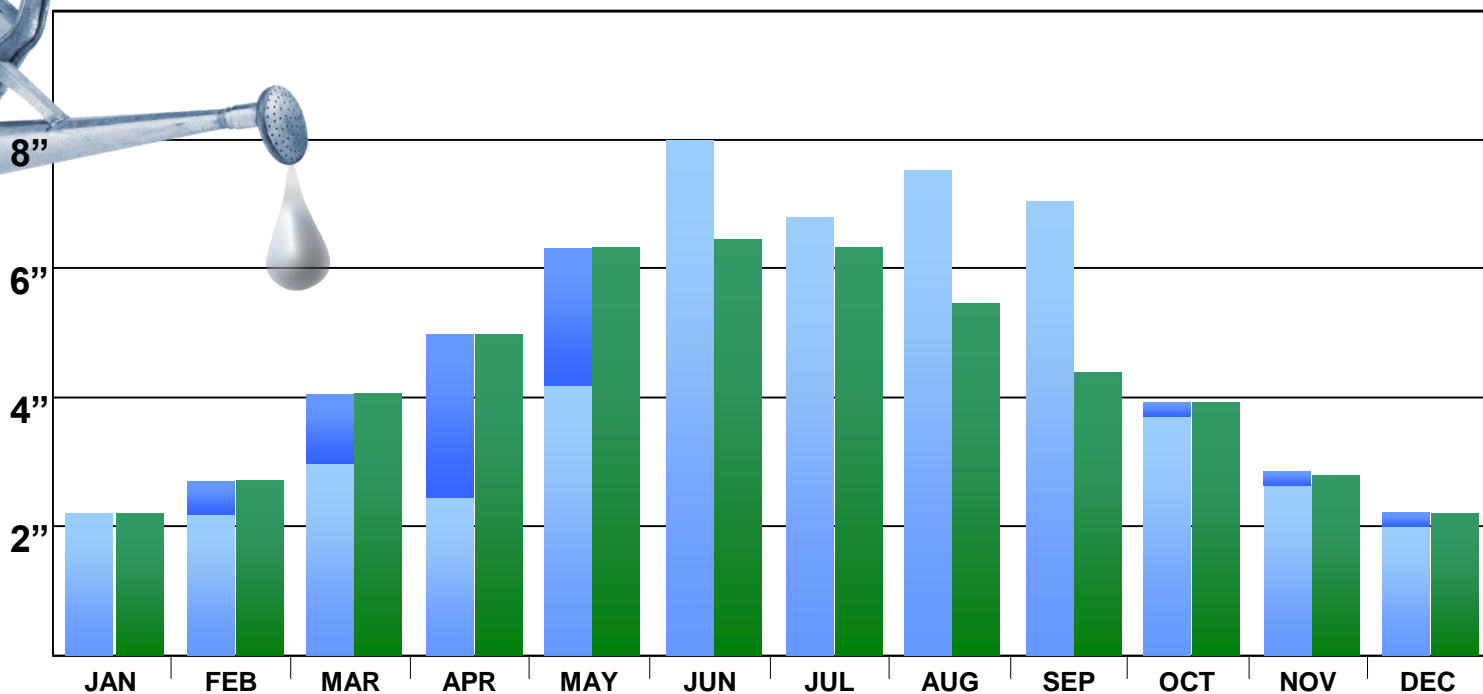
Water Conservation

- ✓ **Can reduce, defer or eliminate the need to develop alternative water supplies**
- ✓ **Less expensive than building more treatment plants, storage areas, desalination**
- ✓ **Reduces stress on natural systems**
- ✓ **Easy to implement**



How Much Irrigation is Really Necessary?

Except during the dry season rainfall typically provides enough water



Plant needs
 Typical rainfall (South Florida)
 Irrigation water needed

Questions?



Jim Harmon

South Florida Water Management District

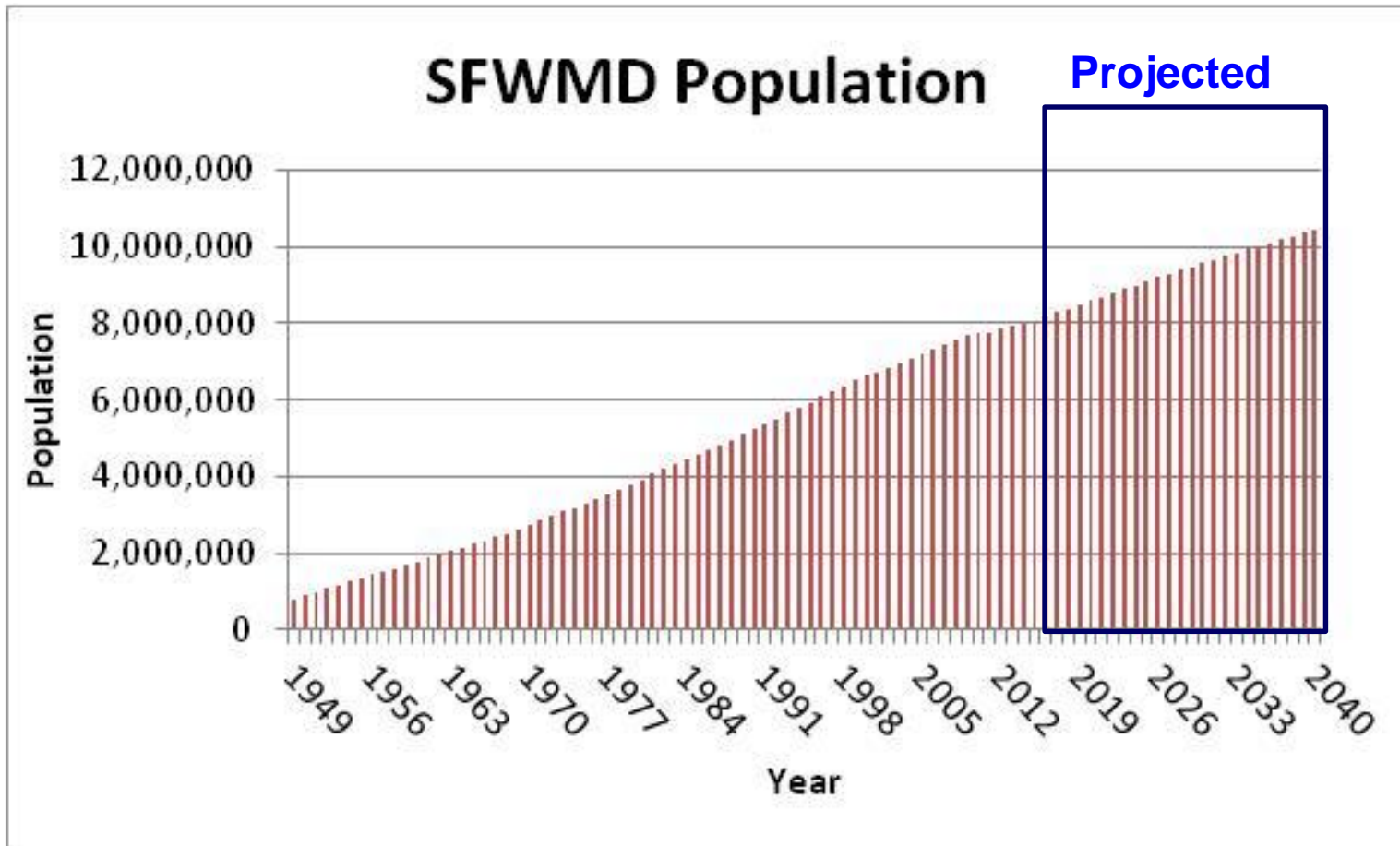
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Outdoor Watering Restrictions

- Residents in SFWMD can water **ONLY** between the hours of **4:00PM and 10:00AM.**
- You may only water **two or three** days per week, depending on your county or city of residence. Watering days are assigned based on street number (even/odd).
- Restrictions apply to private wells and pumps, ground or surface water, and water from public and private utilities
- Hand watering with an auto-off nozzle is allowed any time of the day, any day of the week.
- Newly installed landscaping can be watered more often during the first 90 days.
- Watering with reclaimed water or harvested rainwater is allowed anytime.

South Florida Water Management District Population Growth





FRESHWATER

Aquifer

SALT WATER

What happens when we overuse the aquifer?

- Acts like a sponge, drawing water down from the land surface.
- Draws salt water up into freshwater zones.