

# ONWASA

Onslow Water & Sewer Authority

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Jacksonville, North Carolina

# Presentation To Environmental Review Commission

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# Uses of Reclaimed Water in NC

## Current or Proposed Uses

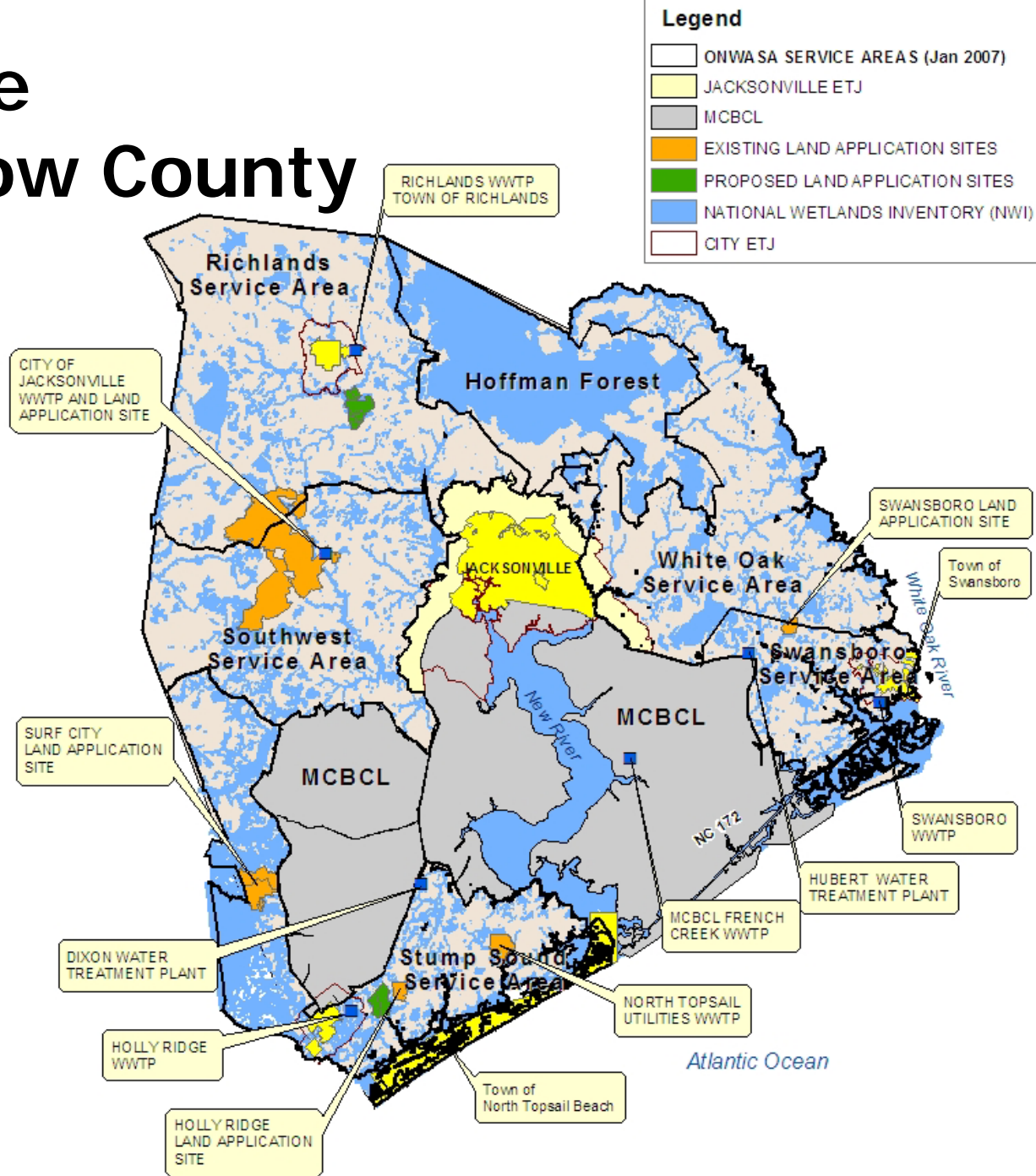
- Spray Irrigation
- Infiltration Ponds
- Irrigation of Crops (Proposed)
- Limited Wetlands Augmentation (Proposed)



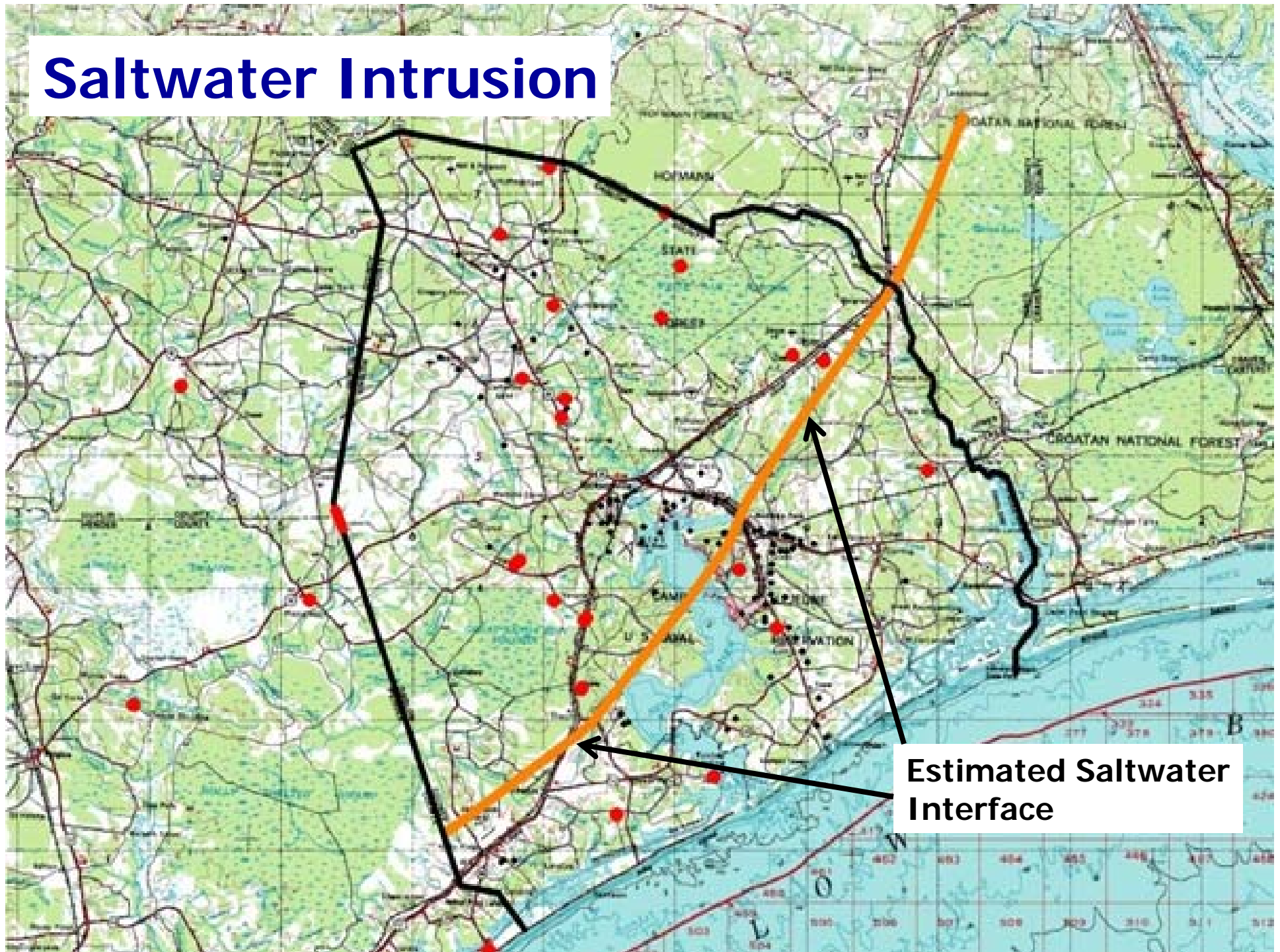
# What's the Problem?

- Limited available land
- Expansion of military bases
- Drought
- Increasing demands
- Falling water tables
- Salt Water Intrusion

# Land Use in Onslow County



# Saltwater Intrusion





# Other Beneficial Uses of Reclaimed Water?

- Expanded Wetlands Augmentation
- Stream Augmentation
- Deep Well Injection
- Ocean Outfall

# Great Swamp Jasper, South Carolina





# Great Swamp Jasper, South Carolina



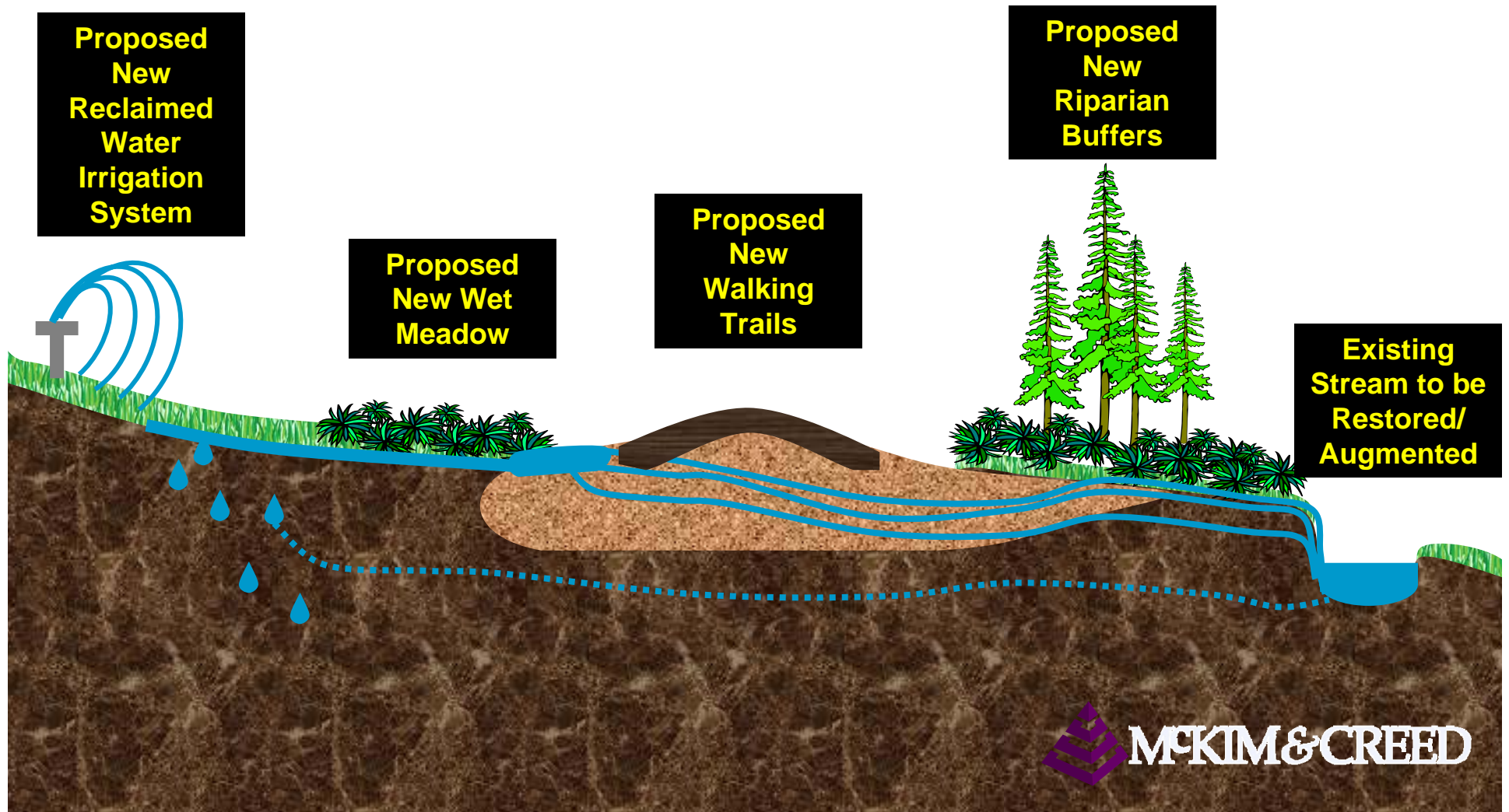
# Wetlands Augmentation

## Why do it?

- Enhances wetlands during drought
- Puts water where it is needed
- Provides for groundwater recharge
- Provides a Beneficial Use

# Reclaimed Water Reuse for Enhancing Natural Systems

## Riparian Habitat Restoration and Stream Augmentation





# Deep Well Injection

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# Deep Well Injection in NC

“Though this method of disposal is used in other states, it is not permitted in North Carolina.”

\*From NCDENR's *Assessments and Recommendations Water Treatment Permitting Report* – 2003.

# What Happened?

- Hercules Chemical, Inc., Wilmington, NC
- 1968 – Constructed an injection well
- 1972 – Wastewater showed up in 1 of 14 monitoring wells
- Wastewater migrated from one aquifer to an upper aquifer.
- Organic waste used in synthetic fiber production.

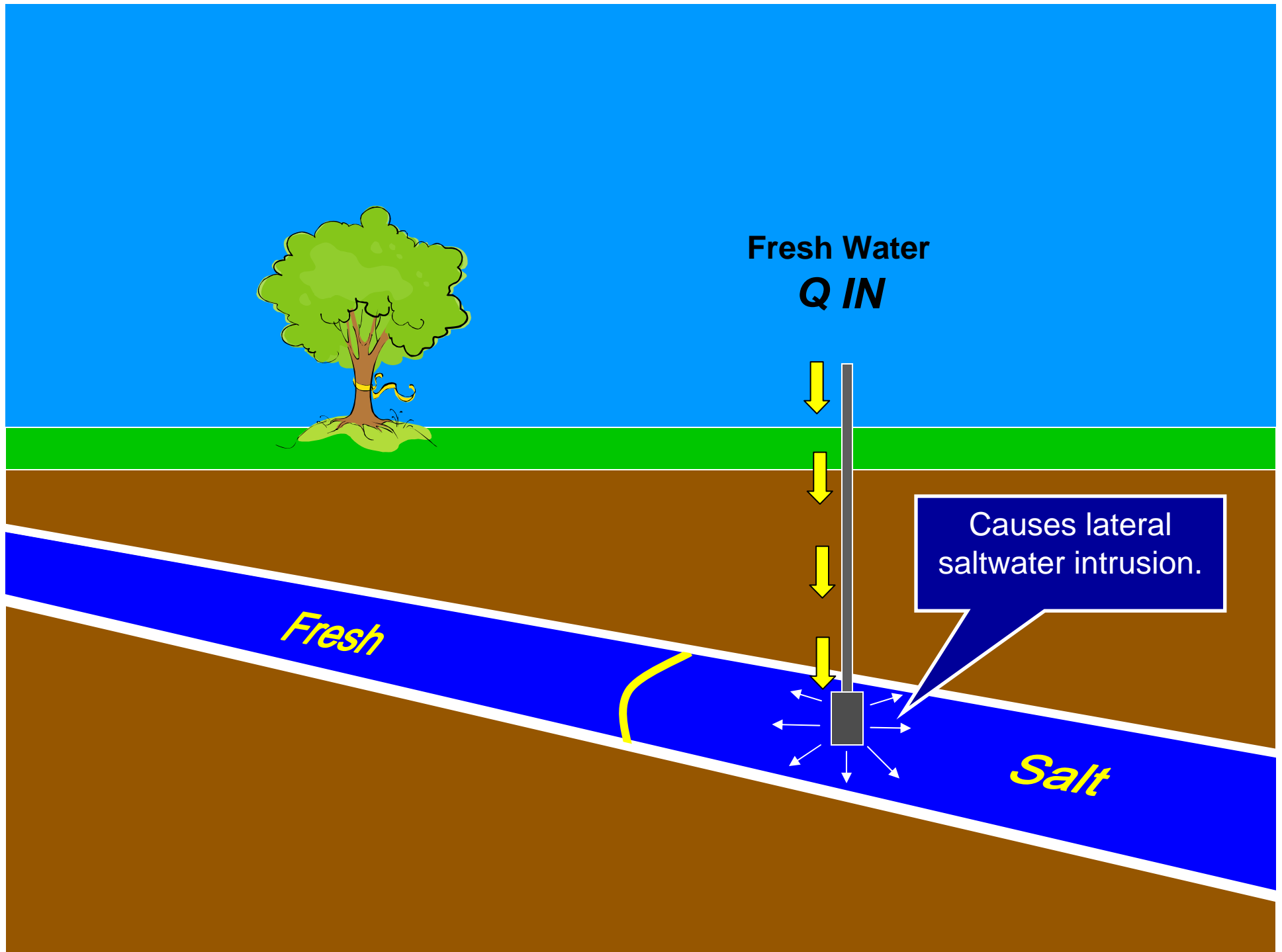


# What Happened in 1972?

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- 1968 – Constructed an injection well
- 1972 – Wastewater showed up in 1 of 14 monitoring wells
- Wastewater migrated from one aquifer to an upper aquifer.
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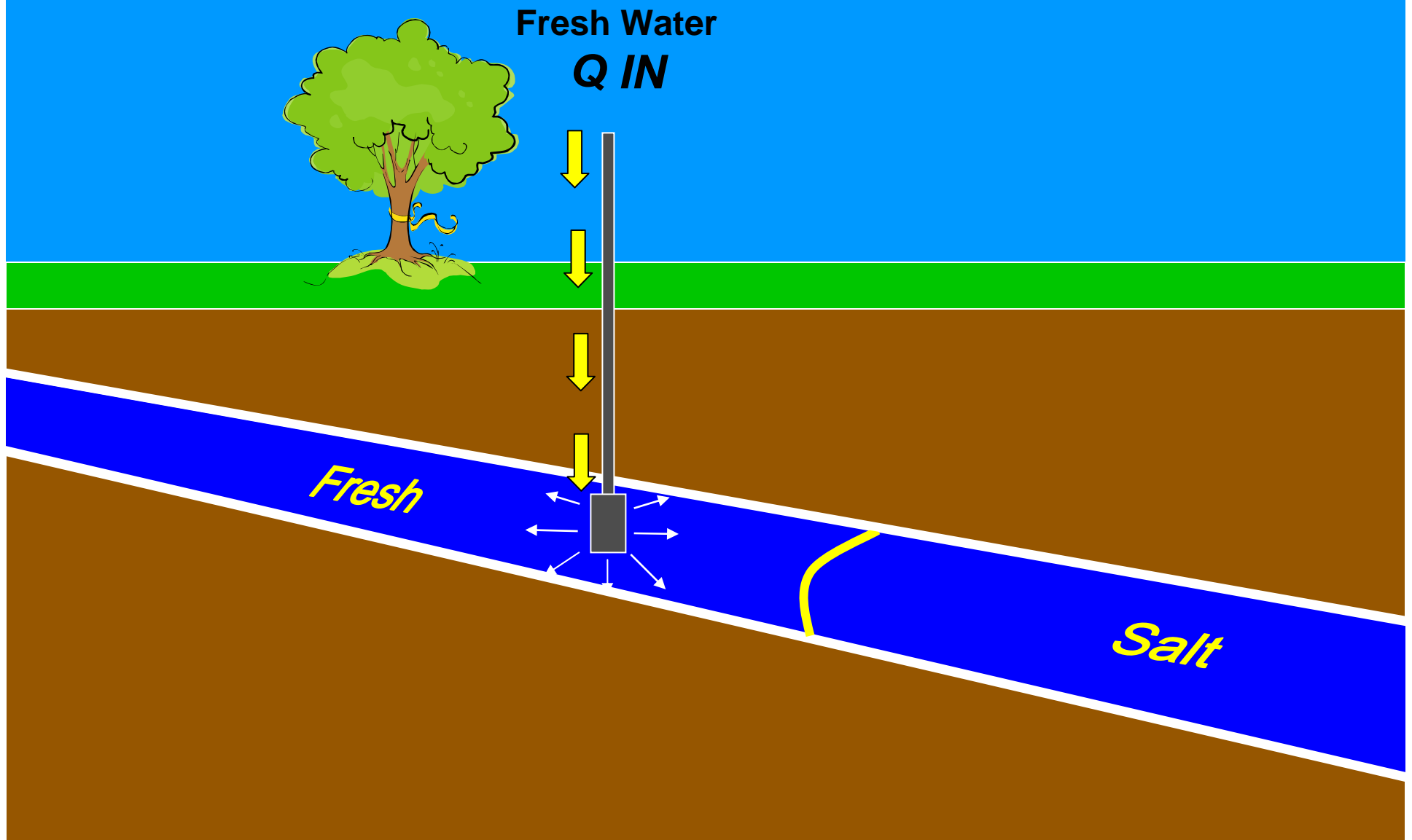
# What could be done?

- Deep Well Injection of reclaimed water
- Inject highest quality water
- Inject into drinking water aquifer
- Salinity Barrier – Beneficial use
- Use ASR Technology
- Test before and monitor during and continuously thereafter

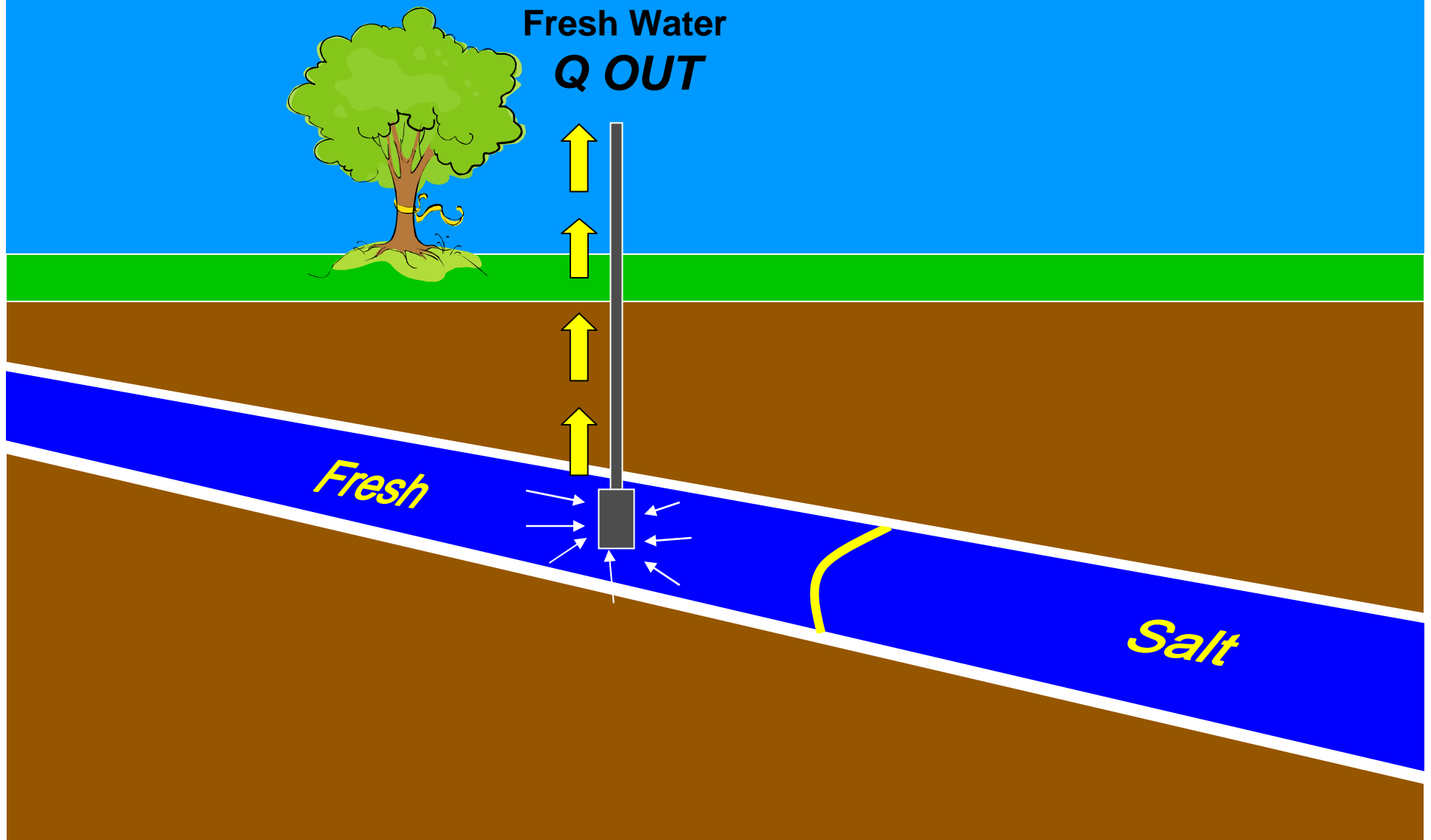




# Aquifer Storage & Recovery (ASR) Well



# Aquifer Storage & Recovery (ASR) Well



# Deep Well Injection

## What can be accomplished?

What can be accomplished?

- Beneficial use of reclaimed water
- Establish salinity barrier
- Protect coastal water resources
- Help to minimize the impact of future droughts



# What are we asking?

Look at other uses of reclaimed water in the rest of the U.S. to see if they apply to North Carolina.

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