

# **Enhancing Well Water Safety through University and Health Department Partnership**

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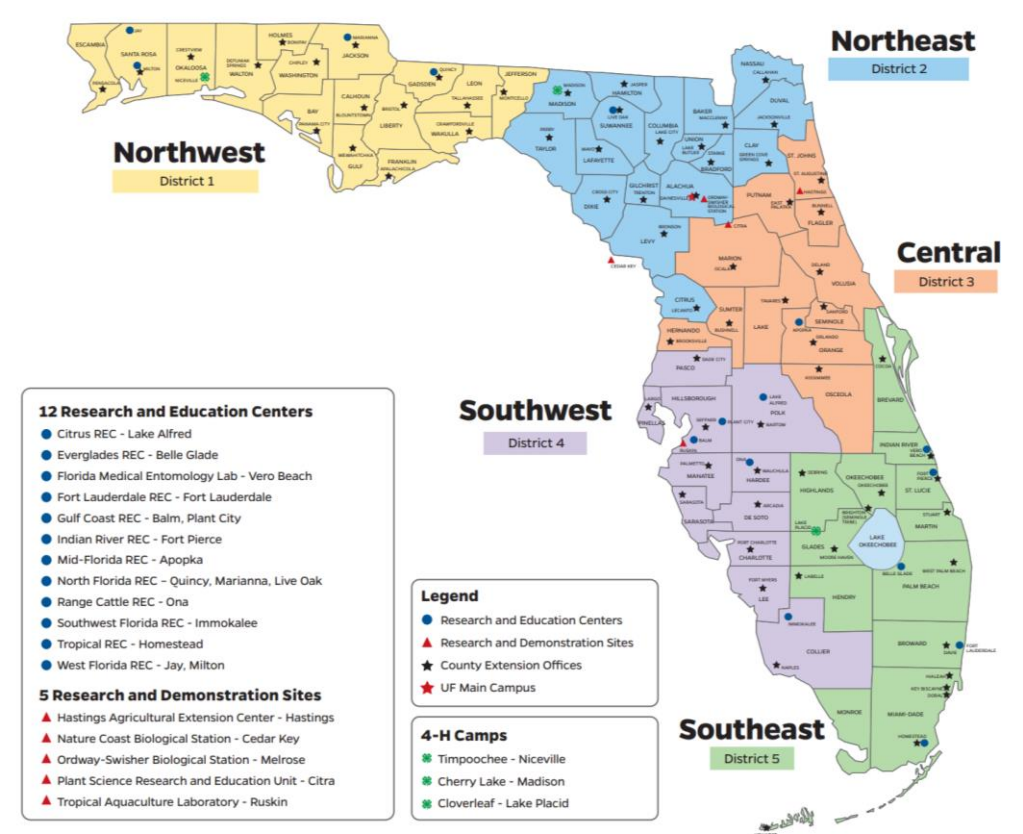
Mid-Florida Research and Education  
Center

University of Florida

# What is Extension?

- A partnership between state, federal, and county governments to provide **scientific knowledge** to the public:
  - Agriculture, natural resources, food safety, money management, lawn care and gardening, 4-H youth development, sustainable living, family issues,
  - Classes, consultations, demonstrations, field days, and more through county Extension offices
  - [sfyl.ifas.ufl.edu](http://sfyl.ifas.ufl.edu)

## UF/IFAS Statewide Facilities



# What will be covered in this presentation?

- Private well situation in Florida
- Statewide emergency well water testing after Hurricane Irma
- A pilot well water quality education program in Central Florida
- Well water quality education during the pandemic
- Challenges and opportunities

# Private Wells In Florida

- An estimated 2.5 million Floridians (approximately 12% of the population) rely on private wells for home consumption.
  - Approximately 800,000 private wells.
- Private well users control the management and protection of their wells.
  - U.S. EPA safe drinking water regulations do not apply to residential private well.

# Private Wells In Florida

- Florida Department of Health (FDOH) provides information to well users.
- FDOH Wells Surveillance Program identifies and monitors areas where contaminated drinking water suspected.
  - 185,000 samples taken from 65,780 wells since 2000.
- Limited public data exist on how many well users regularly test their water or drink from contaminated wells.

# NSF Rapid Response Research Grant

- Were private wells contaminated after Hurricane Irma and what resources did well users want during recovery?



# NSF Rapid Response Research Grant

- Virginia Tech made available 1,200 sampling kits in Texas (Hurricane Harvey) and 500 sampling kits in Florida (Hurricane Irma).
  - Extension agents advertised sampling through press releases.
  - Samples kits picked up and dropped off on specific dates/locations.
  - Shipped to Virginia Tech for analysis.



## UF/IFAS Extension helps Florida homeowners test well water after hurricane



GAINESVILLE, Fla. – The University of Florida IFAS Extension has teamed up with Virginia Tech to offer free bacteria testing for well users affected by Hurricane Irma. So far, five counties—Lee, Pasco, Marion, Sarasota and Clay—are participating.

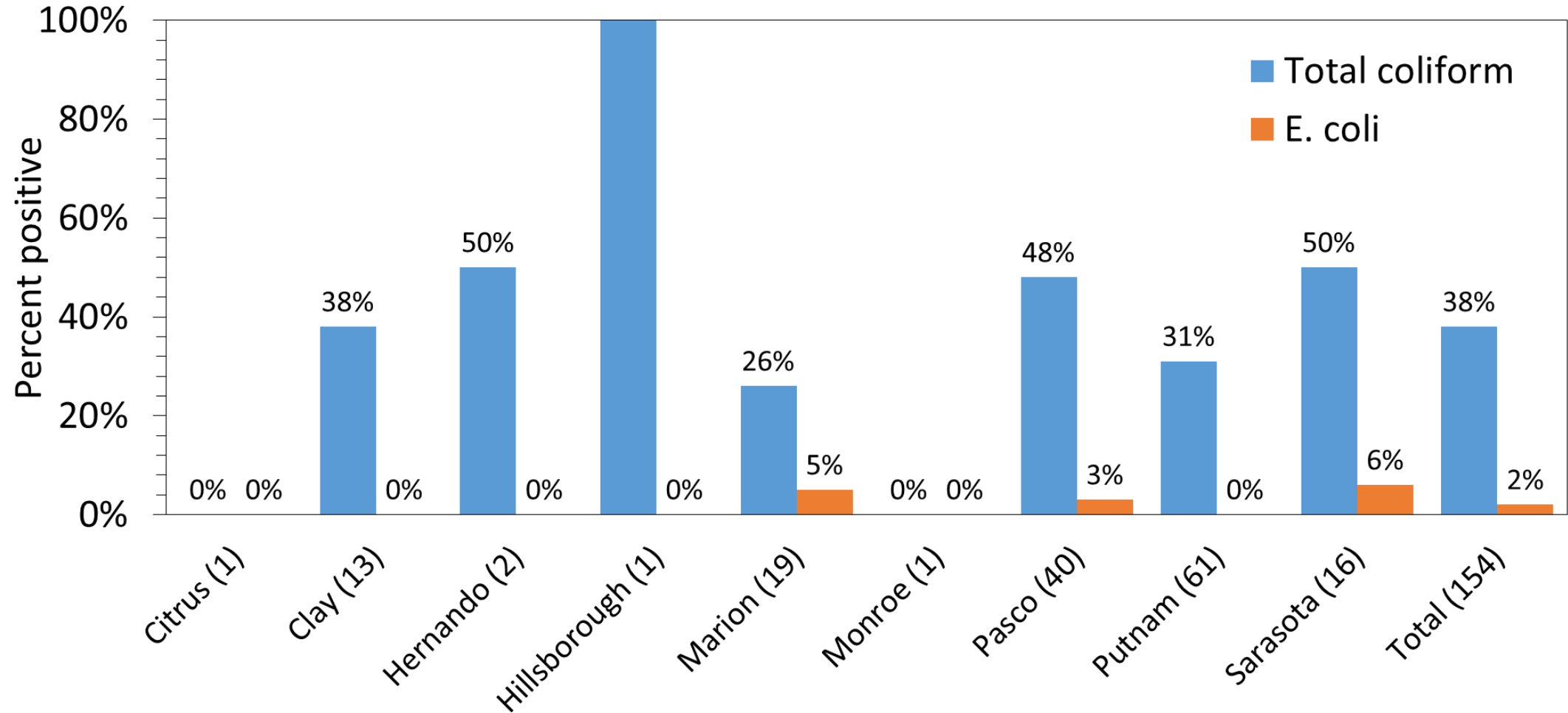
UF/IFAS Extension is targeting communities affected by flooding that occurred during and after Hurricane Irma. "Residents who have private water wells affected by flooding should assume their water is contaminated by bacteria," said Andrea Albertin, UF/IFAS regional water resources agent for the northwest district, who is coordinating the effort in Florida. "And, water from a flooded well should not be used for drinking, cooking, making ice, brushing teeth or even washing areas of the skin that have been cut or injured until it is tested."

# First Statewide Water Sampling Attempt

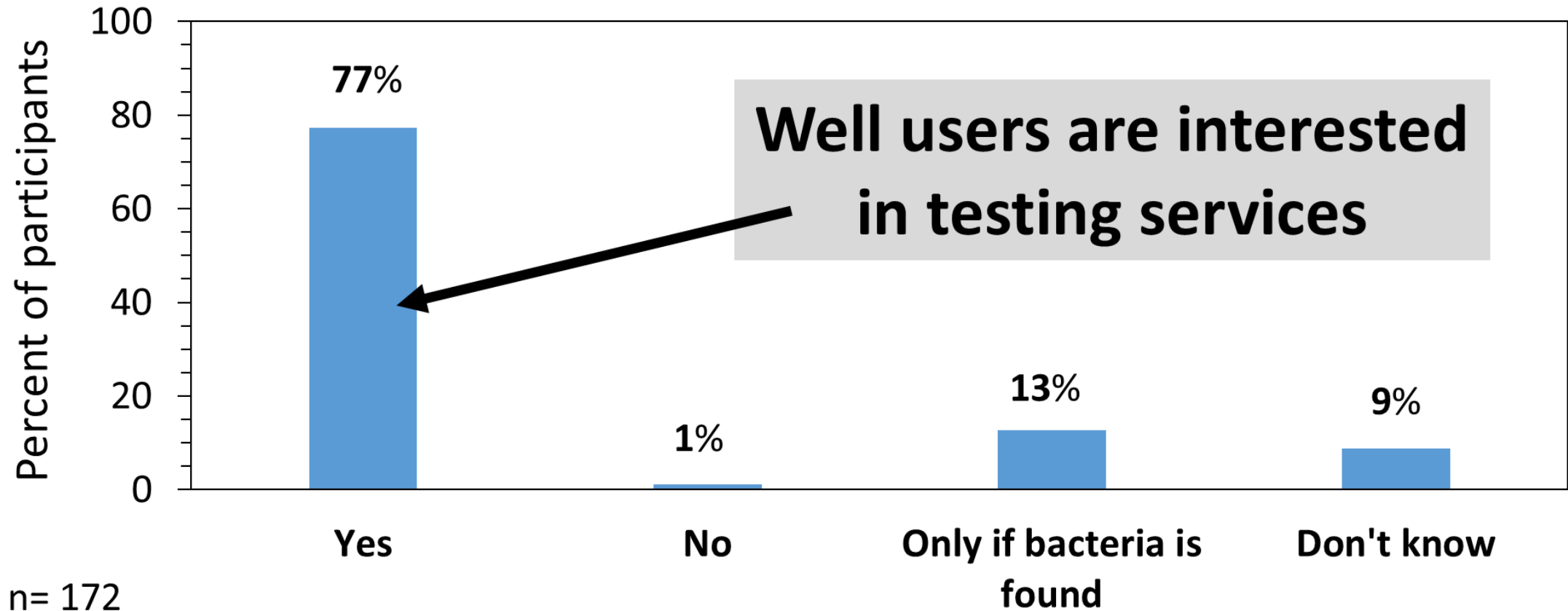
- We collected 179 well water samples.
- Microbial
  - Total coliform and E. coli.
- Inorganic Analytes
  - Nitrate, Lead, Arsenic, Iron, Chloride, Sodium, Manganese, Copper, Fluoride, Sulfate, Calcium, and Magnesium.



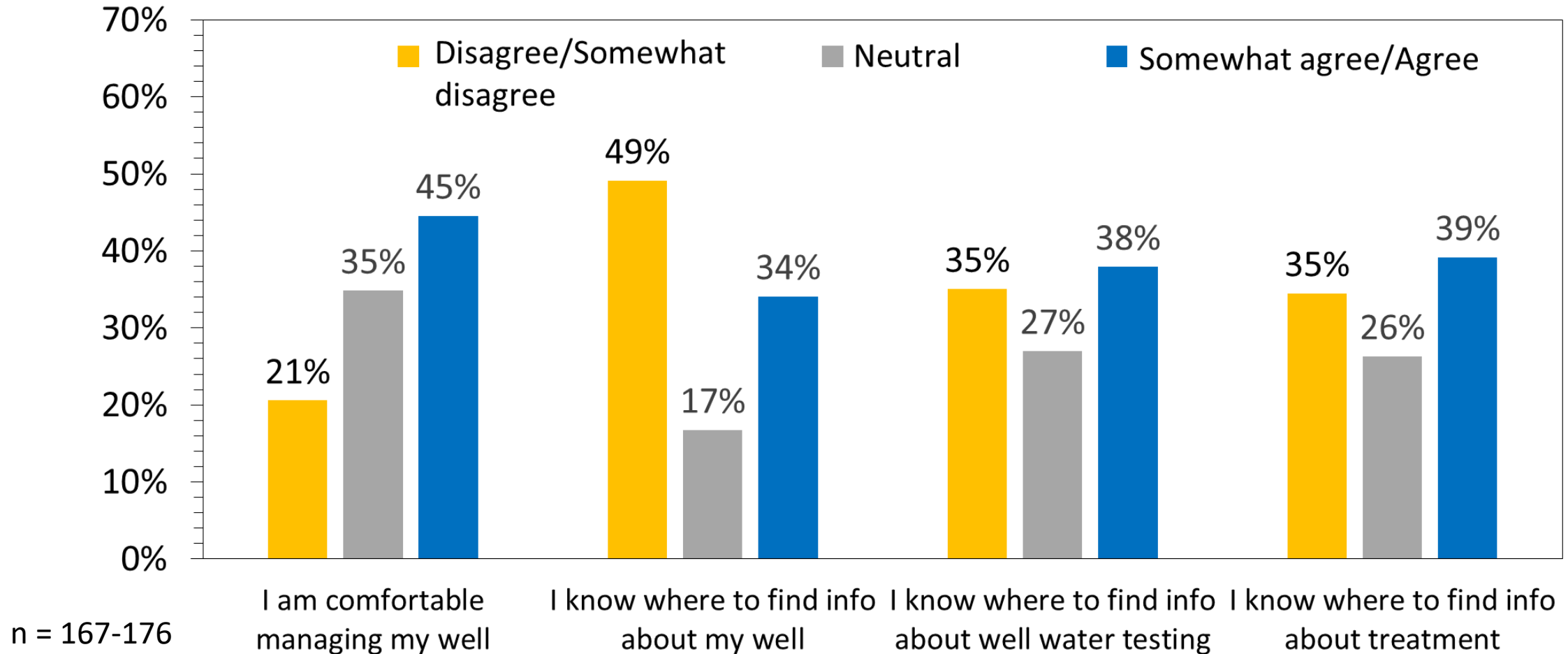
# Microbial Water Quality Results



# Would you participate in well water testing again?



# Comfort With Well Operation and Maintenance

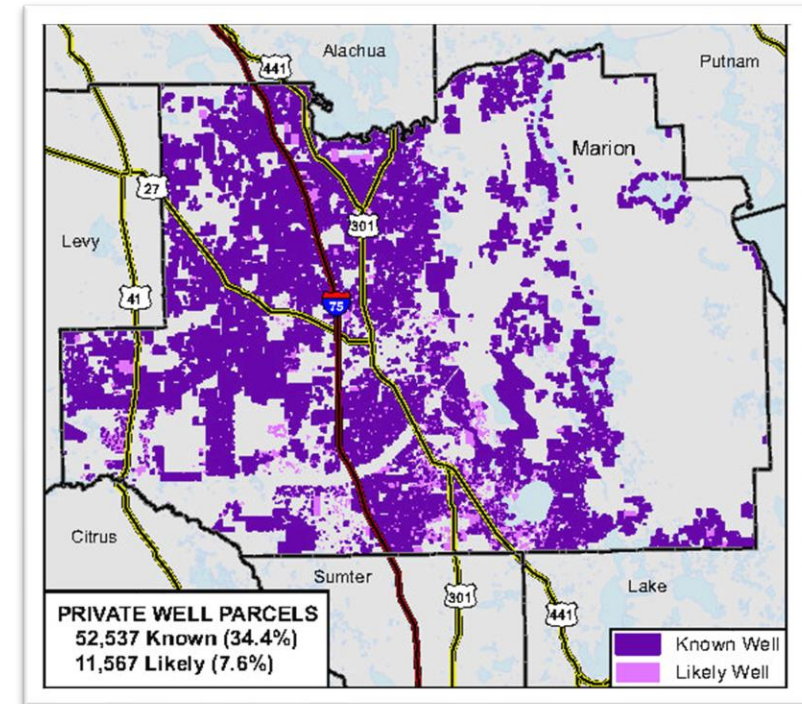


# Florida Well Owner Network (FWON)

- To **educate** residents about well water quality and quantity, and best practices to ensure well maintenance and groundwater protection.
- To **facilitate** access to well water testing and provide information about treatment options if problems are found.
- To **complement** efforts by Florida Department of Health and Florida Department of Environmental Protection to increase awareness among Floridians about best practices regarding wells, septic systems, and drinking water quality.

# FWON in Marion County, Central Florida

- At least one-third residents reply on private wells.
- No baseline well water quality data.
- Emergency well water testing after Hurricane Irma
  - Bacteria rate at 26% (n=19)



Source: Florida Department of Health

# What Did We Do?



Monthly seminar



Free water testing



One-on-one result interpretation

- 2-year pilot project
  - FY 2018-2019 and FY 2019-2020.
- In collaboration with:
  - Florida Department of Health in Marion County
  - State certified water quality testing lab

# Results: Water Sampling

- 371 people participated in this educational program.
- 214 samples collected to test for bacteria.
- 18% samples detected bacterial contamination.
  - All of them took the recommendation to shock chlorinate through their wells and plumbing to kill bacteria.



# Results: Well Information

- 64% don't know their well system information (e.g., type, depth, year the well was constructed).
- 65% well owners have never tested their well water.
- 73% well owners drink the tap water without any treatment.
- 44% have never pumped their septic tanks and 3% only pump the tank when there is a problem.



# FWON During The Pandemic - Virtual

- FWON has switched from in-person workshops to webinars, reaching approximately 500 well users.

## 2021 PRIVATE WELL AND SEPTIC SERIES

Date	Time	Topic
February 9	2:00 - 3:00	Private Wells 101
March 9	2:00 - 3:00	What is Hard Water?
April 6	2:00 - 3:00	Lead in Drinking Water
May 11	2:00 - 3:00	Septic System 101
June 8	2:00 - 3:00	Advanced Septic Systems
July 13	2:00 - 3:00	Private Well Care Before and After A Storm
August 10	2:00 - 3:00	Septic System Care Before and After A Storm
September 21	2:00 - 3:00	Common Home Water Treatment Systems



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# Looking Forward

- Seek more partnerships (funding and testing)
- Conduct hybrid and in-person workshops and sampling events for residents in more counties.
- Create extension materials on private wells and septic systems.
- Develop centralized website to house materials and advertise events.

# Questions and Comments

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