Excerpt from WATER COMMUNICATION CHALLENGES

By Sadie Hundemer

University of Florida, Agricultural Education and Communication

Excerpt presented by Gail Cowie, Albany State University, Water Planning and Policy Center

National Science Foundation

Grant Number: 2021590

United States Department of Agriculture

National Institute of Food and Agriculture

Award Number: 2017-68007-26319

UF IFAS UNIVERSITY of FLORIDA

AGRICULTURAL EDUCATION AND COMMUNICATION

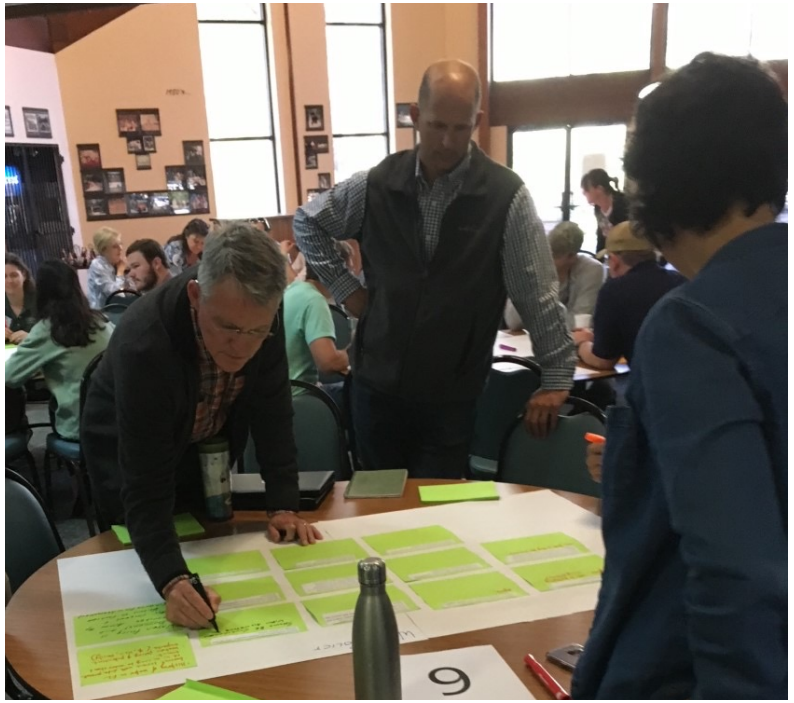
Group 1

The public

What does the public know about water science?

Ordinary water science knowledge (OWSK)

Knowledge needed for an ordinary person to competently participate in water discussion and make citizen-level voting decisions on water topics



Fundamental indicators of the public's ability to understand regional water challenges and participate in water discourse

What is the primary source of drinking water in South Georgia?

- Underground water
- Rainfall collected in cisterns
- Surface water
- Ocean water with the salt removed

Fundamental indicators of the public's ability to understand regional water challenges and participate in water discourse

What is the primary source of drinking water in South Georgia?

- Underground water
- Rainfall collected in cisterns
- Surface water
- Ocean water with the salt removed

59%
correct

Fundamental indicators of the public's ability to understand regional water challenges and participate in water discourse

Which of the following best describes an aquifer?

- An underground layer where space between rocks and sediment is filled with water
- A drainage basin where rain water moves toward a common outlet
- An area where underground water bubbles or flows to Earth's surface

Fundamental indicators of the public's ability to understand regional water challenges and participate in water discourse

Which of the following best describes an aquifer?

- An underground layer where space between rocks and sediment is filled with water
- A drainage basin where rain water moves toward a common outlet
- An area where underground water bubbles or flows to Earth's surface

52%
correct

Fundamental indicators of the public's ability to understand regional water challenges and participate in water discourse

Areas of relatively high knowledge are those they may have encountered in their daily lives or through local media.

urban water challenges, water conservation, climate change, algae

According to water scientists, which of the following steps can cities take to reduce water use? *Select all that apply*.

- ❑ Repair leaks in pipes
- ❑ Provide low-flow water fixtures
- ❑ Encourage residents to increase the amount of turf grass

Areas of relatively high knowledge are those they may have encountered in their daily lives or through local media.

urban water challenges, water conservation, climate change, algae

According to water scientists, which of the following steps can cities take to reduce water use? *Select all that apply*.

- ❑ Repair leaks in pipes
- ❑ Provide low-flow water fixtures
- ❑ Encourage residents to increase the amount of turf grass

approximately **63%** correct on each

Areas of relatively high knowledge are those they may have encountered in their daily lives or through local media.

urban water challenges, water conservation, climate change, algae

Areas of relatively low knowledge could be highly relevant to future water policy proposals in the region.

natural water processes, aquifer recharge, nutrient pollution, current water policy

What is the primary way the amount of water in the Floridan Aquifer increases?

- ❑ Rainwater seeps through the soil
- ❑ Water flows downward through sinkholes and cracks in the ground surface
- ❑ Treated wastewater is pumped underground
- ❑ Water soaks in from lakes and rivers

Areas of relatively low knowledge could be highly relevant to future water policy proposals in the region.

natural water processes, aquifer recharge, nutrient pollution, current water policy

What is the primary way the amount of water in the Floridan Aquifer increases?

- ❑ Rainwater seeps through the soil
- ❑ Water flows downward through sinkholes and cracks in the ground surface
- ❑ Treated wastewater is pumped underground
- ❑ Water soaks in from lakes and rivers

41%
correct

Areas of relatively low knowledge could be highly relevant to future water policy proposals in the region.

natural water processes, aquifer recharge, nutrient pollution, current water policy

According to water scientists, which of the following is one of the two primary nutrients of concern in your state's waters?

- ❑ Phosphorous
- ❑ Arsenic
- ❑ Lead
- ❑ Fluorine

Areas of relatively low knowledge could be highly relevant to future water policy proposals in the region.

natural water processes, aquifer recharge, nutrient pollution, current water policy

According to water scientists, which of the following is one of the two primary nutrients of concern in your state's waters?

- ❑ Phosphorous
- ❑ Arsenic
- ❑ Lead
- ❑ Fluorine

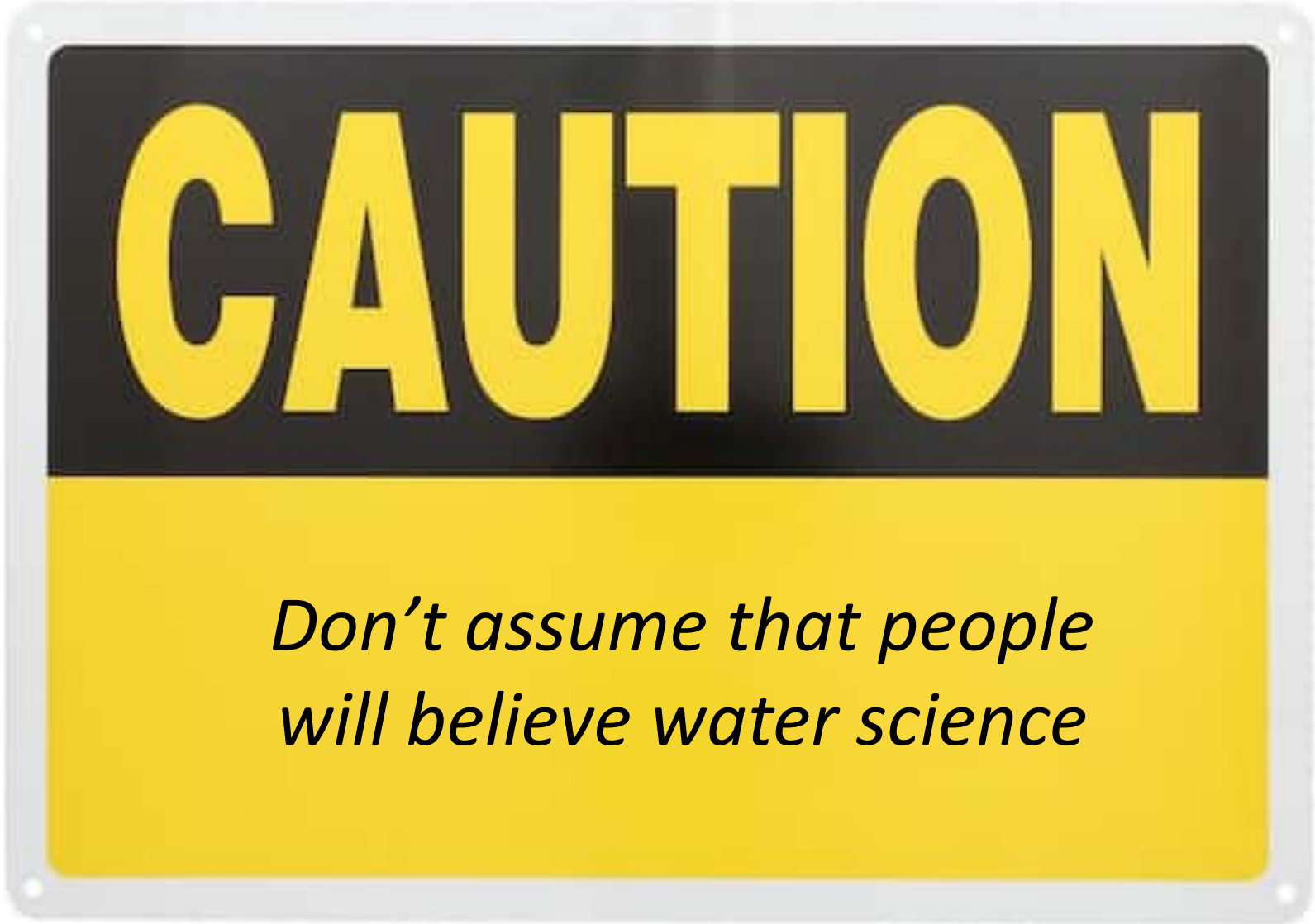
33%
correct

Areas of relatively low knowledge could be highly relevant to future water policy proposals in the region.

natural water processes, aquifer recharge, nutrient pollution, current water policy

How to use this information

- Communicate for understanding
- Educate for democratic participation
- Be aware of the risks of low water science knowledge


CAUTION
Don’t assume that people
will believe water science

Group 2
Highly invested stakeholder groups

How can we reduce stakeholder water conflict?

producers

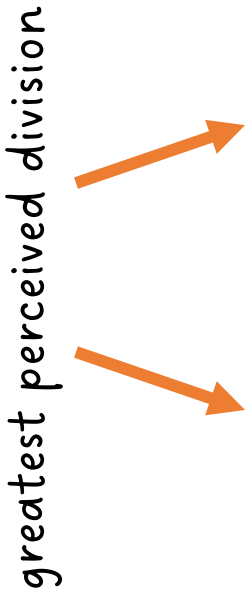
forest landowners

agency staff

environmentalists

community leaders

academics



producers

forest landowners

agency staff

environmentalists

community leaders

academics

Common interests

Perceptions of risk to surface and ground water

Prioritization of water for crops and ecosystems

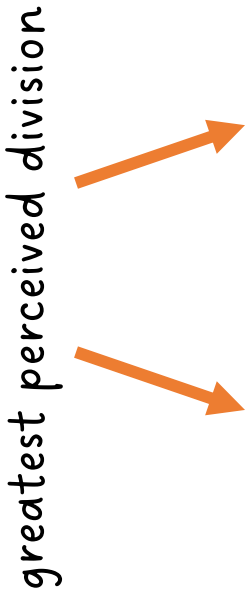
Common interests

Perceptions of risk to surface and ground water

Prioritization of water for crops and ecosystems

Differences

Perceptions of producers' contribution to water issues



producers

forest landowners

agency staff

environmentalists

community leaders

academics

Common interests

Perceptions of risk to surface and ground water

Prioritization of water for crops and ecosystems

Differences

Perceptions of producers' contribution to water issues

How does this fit with your experience?
What do you think can be done to reduce conflict?

How to use this information

- *Work toward shared understandings*

How to use this information

- *Work toward shared understandings*
- *Consider how messages may be received*

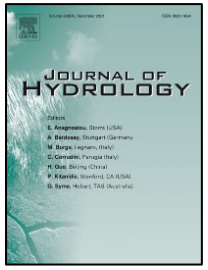
How to use this information

- *Work toward shared understandings*
- *Consider how messages may be received*
- *Attend to perceived conflicts*

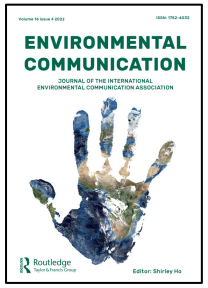
Thank you.

Sadie Hundemer

University of Florida, Agricultural Education and Communication



Hundemer S., Monroe M.C., Kaplan D. 2021. The water science communication problem: Water knowledge and the acceptance or rejection of water science, *Journal of Hydrology*, 604. https://doi.org/10.1016/j.jhydrol.2021.127230.



Hundemer S., Monroe M.C. 2020. A co-orientation analysis of producers' and environmentalists' mental models of water issues: Opportunities for improved communication and collaboration, *Environmental Communication*, 15. https://doi.org/10.1080/17524032.2020.1828128.

National Science Foundation

Grant Number: 2021590

United States Department of Agriculture

National Institute of Food and Agriculture

Award Number: 2017-68007-26319

UF IFAS UNIVERSITY of FLORIDA

AGRICULTURAL EDUCATION AND COMMUNICATION