

Connecting Lakes and Communities: Understanding Communication Practices of Volunteer Lake Monitors

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Advisors: Dr. Kris Stepenuck and Dr. Anne Jefferson



Photo by MN CLMP monitor - "Sunset on Variety Lake"

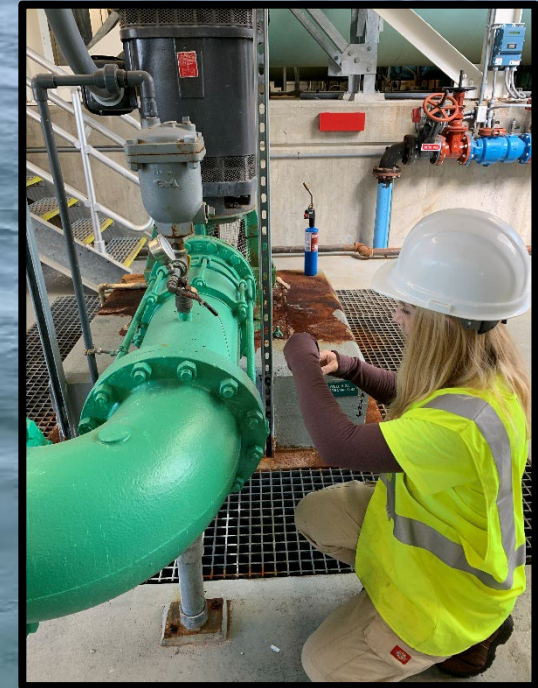
Presentation outline

- 1) Research Background
- 2) Research Questions
- 3) Methods
- 4) Results & Discussion
- 5) Recommendations
- 6) Significance
- 7) Questions?

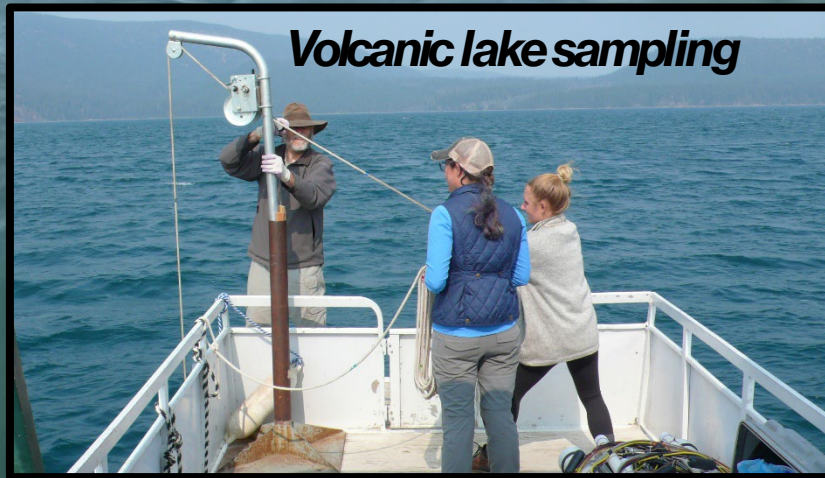
Researcher Background



Mobile water testing laboratory!



Ostracod microfossils



Volcanic lake sampling



Teaching on Lake Champlain

What We Know

Your data are valid and used in research and management

(Albus et al., 2020; Gamble et al., 2026).

You can gain knowledge through volunteer science

(Stepenuck & Green, 2015; Bonney et al., 2016).

Volunteer water monitors communicate with others about their work (Overdevest et al., 2004, Church et al., 2016)

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What We Don't Know

How communications is interpreted by lake monitors

The types of communication LMs engage in

How LMs believe communication and outreach may be better supported in their programs

New York Citizens Statewide Lake Assessment Program

Established by NY DEC and NYSFOLA - 1985

Primary objectives

1. Collect representative data for lakes throughout NYS
2. Identify lake issues and changes in water quality
3. To empower local stakeholders with contextualized water quality data for the protection/restoration of their lake and greater watershed.

What role do volunteer lake monitors play in educating others?

What does outreach and community education look like for lake monitors?

Participating Lake Monitoring Programs

Minnesota Citizens Lake Monitoring Program (MN CLMP)

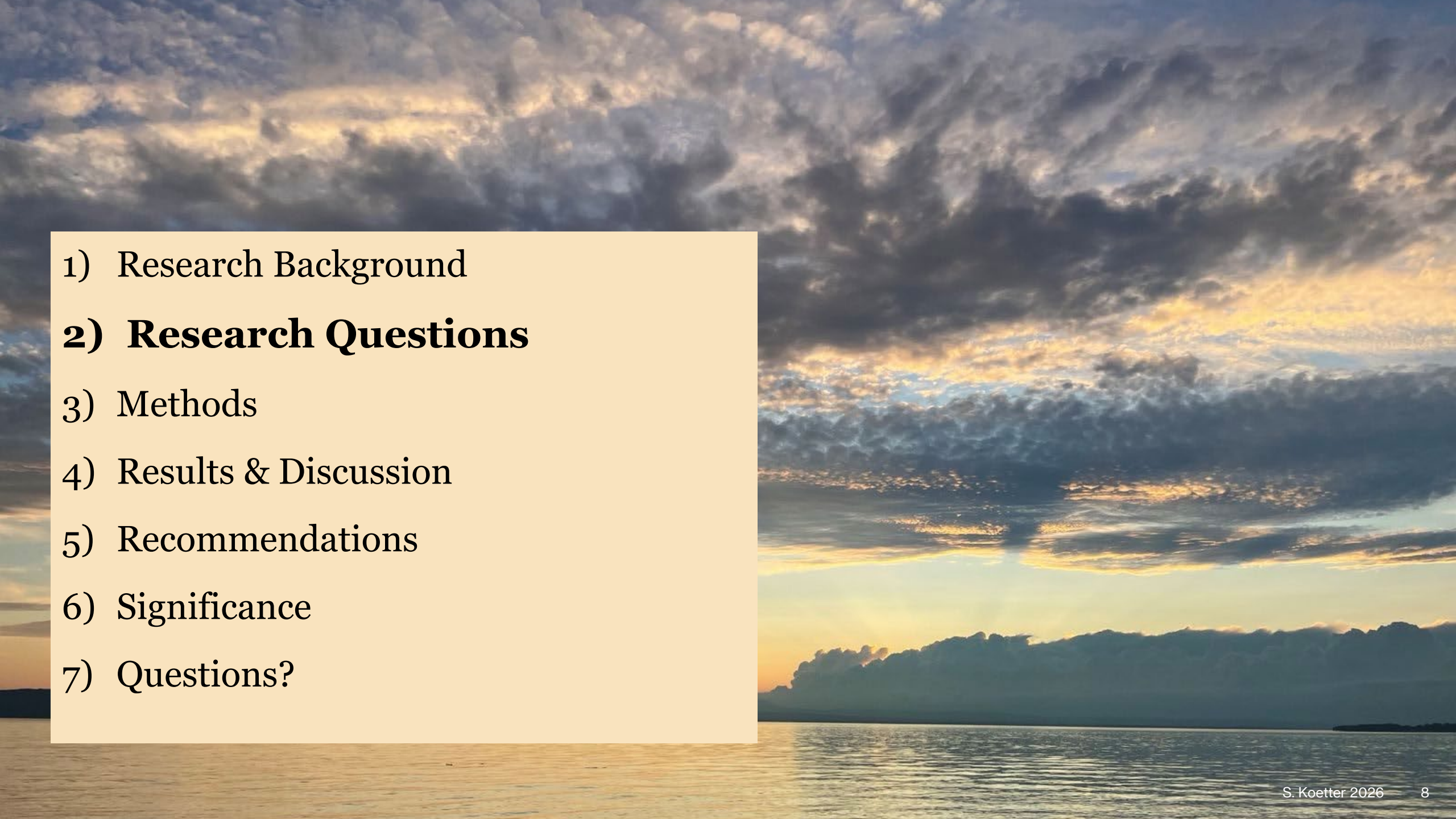
Vermont Lay Monitoring Program (VT LMP)

Lake Stewards of Maine (LSoM)

Wisconsin Citizens Lake Monitoring Network

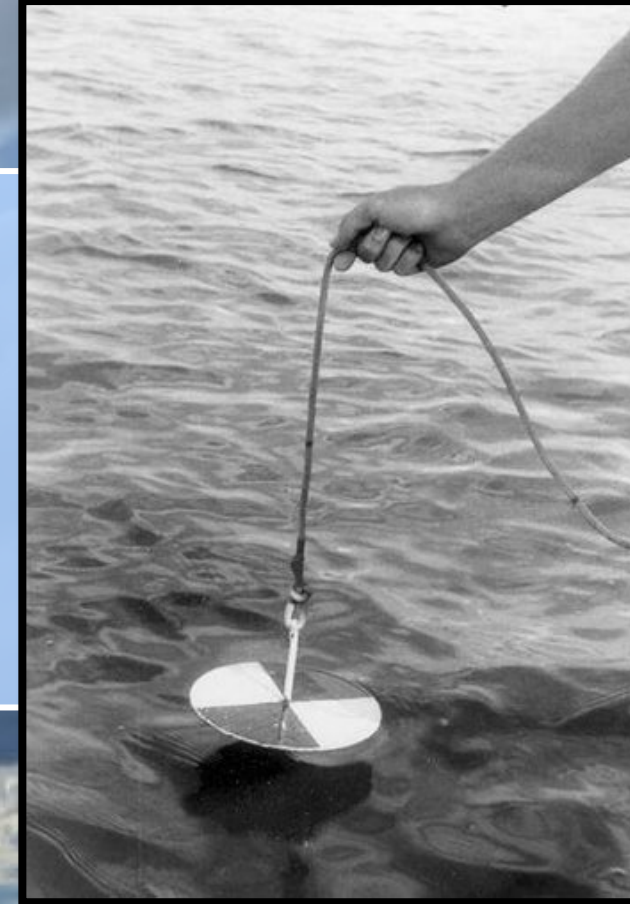
New York Citizens Statewide Lake Assessment Program (NY CSLAP)

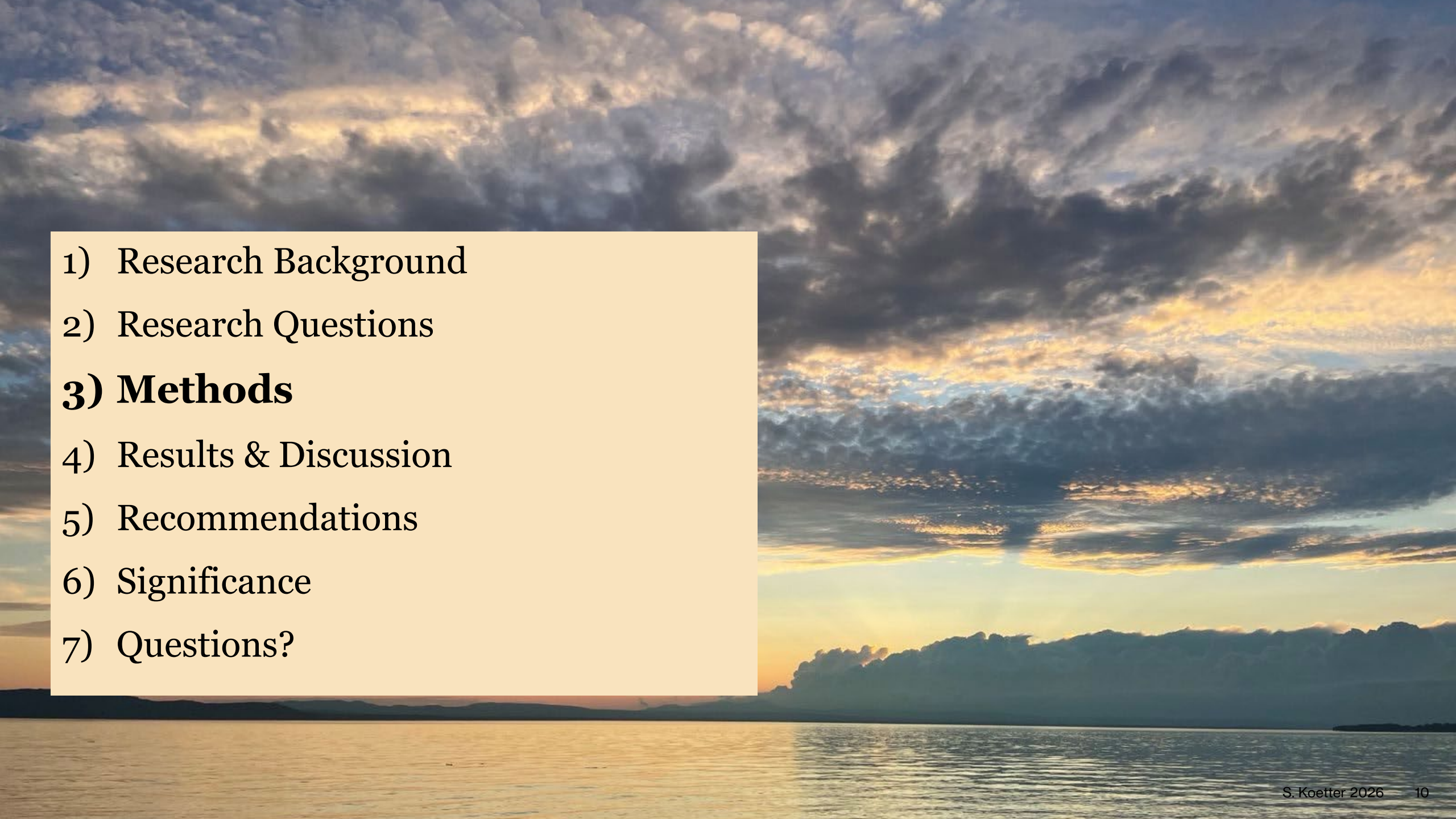


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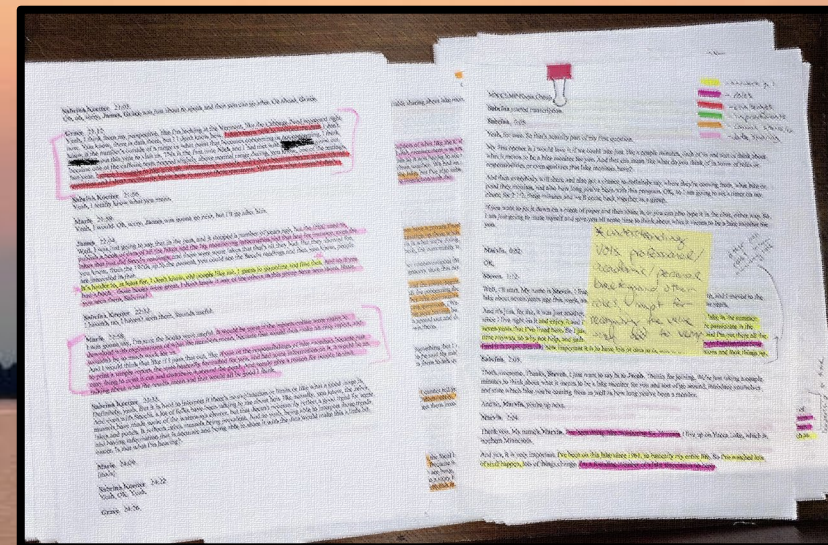
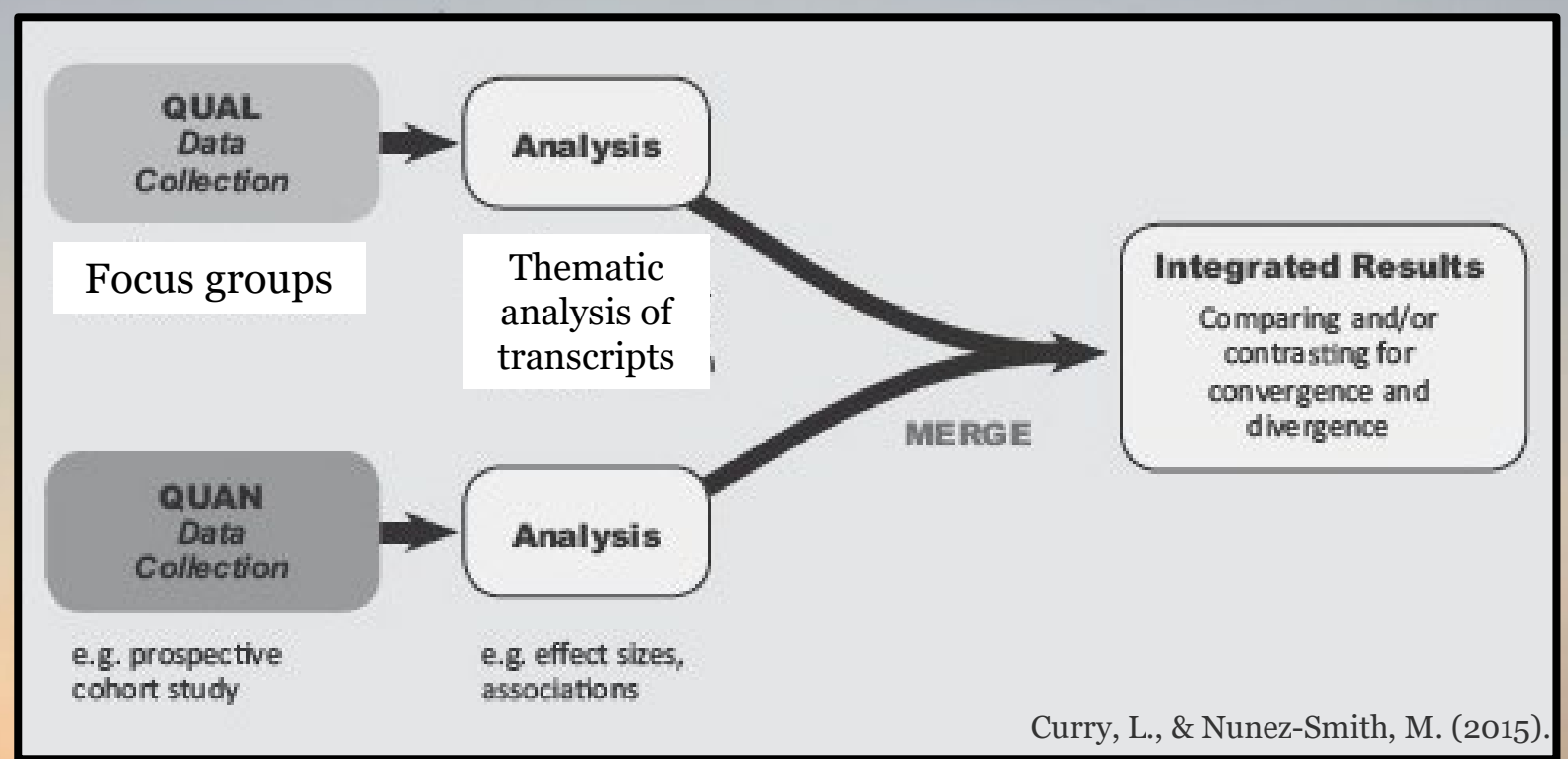
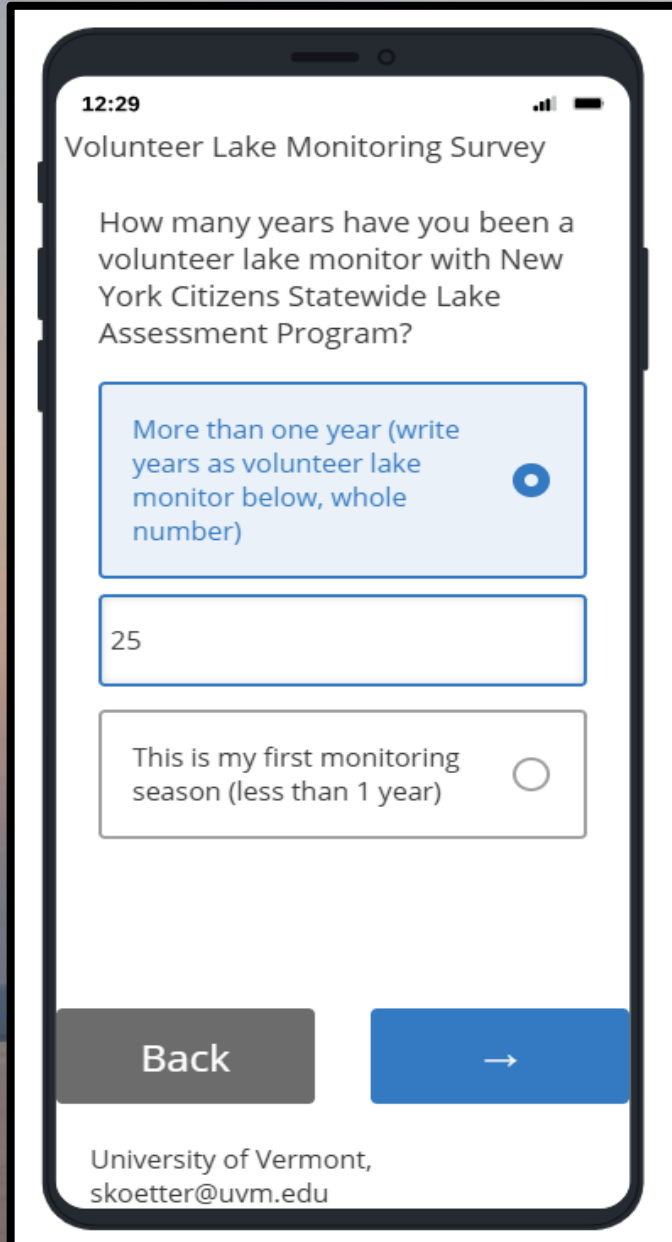
Research questions


1. What are the ways in which volunteer lake monitors communicate about lake monitoring?
2. Is there a relationship between communication and lake association membership?



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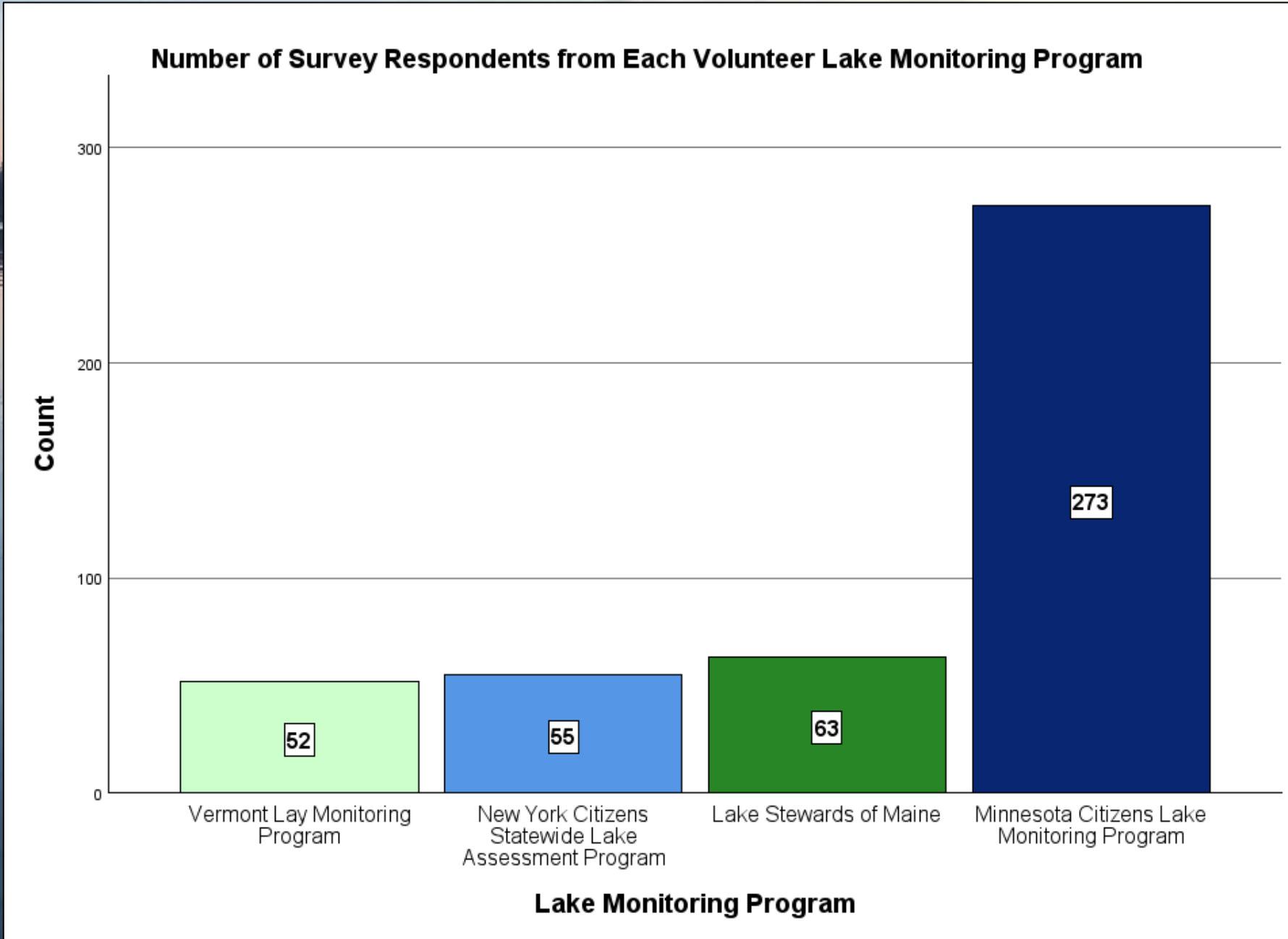
Methods



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Survey Results

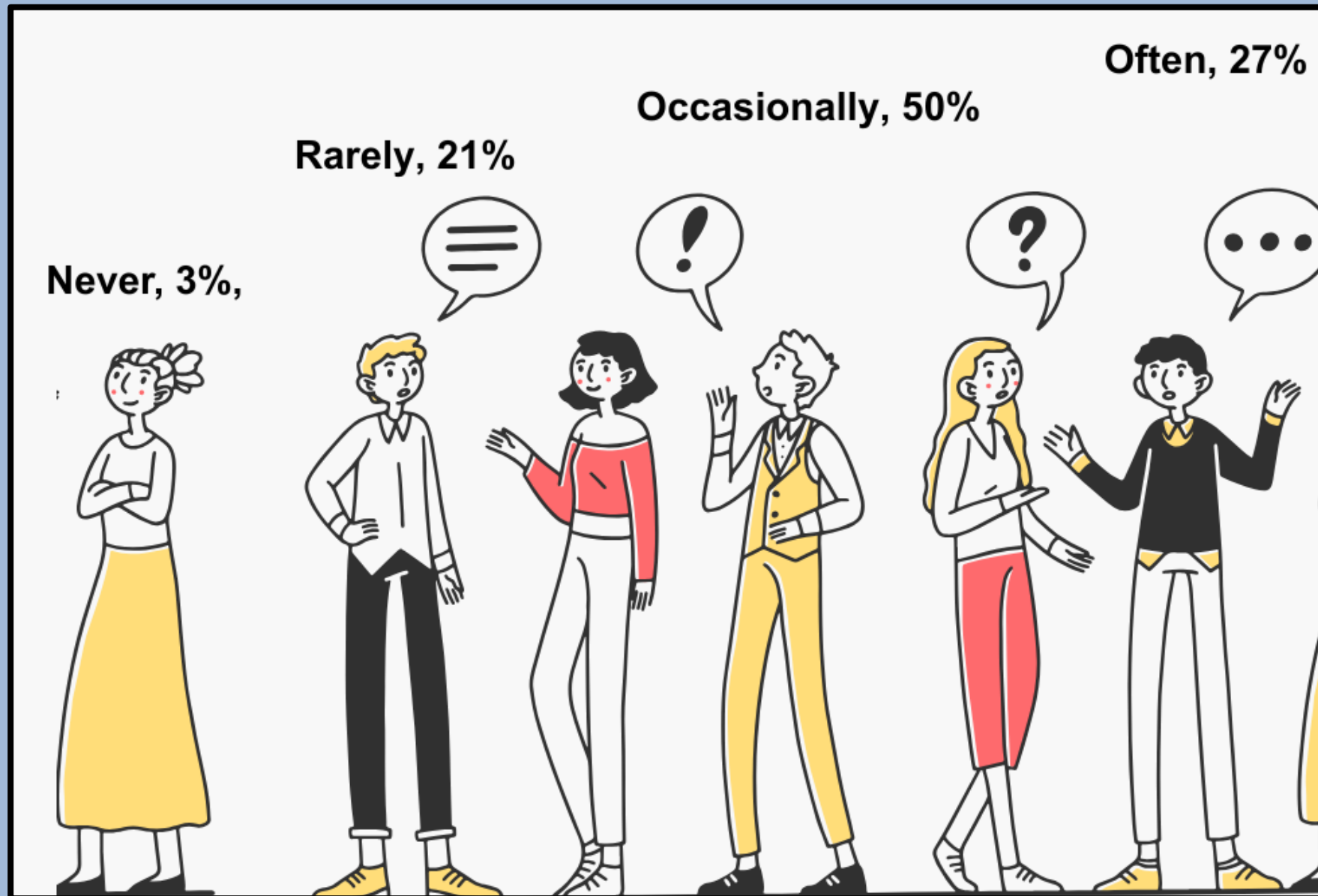
443 responses
Response rate
= 21%



Communication Practices

Survey showed VLMs share water quality data, trends, reports with their family, friends and neighbors informally while monitoring or at the lake.

In the last year, how often did you talk to others about lake monitoring, water quality, or other water-related information?



Top 5 Information Categories



I feel concerned about how new development will impact water quality here.

As a lake monitor, I take Secchi readings and submit my data through an app twice a month..



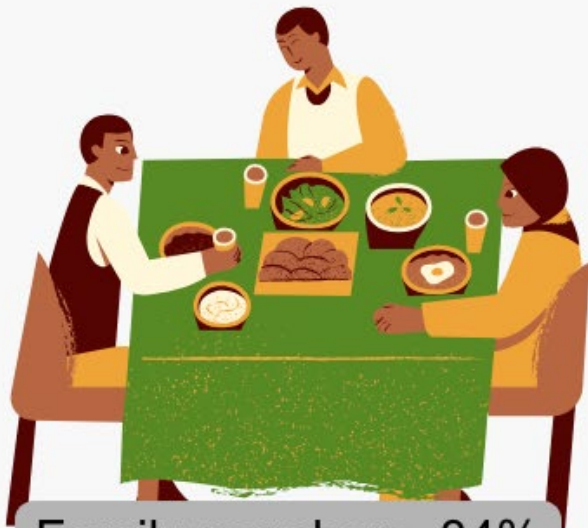
Reflections or concerns about water resources, 52%

The logistics of being part of a monitoring program, 51%



Top 5 Information Categories

Top 5 Audiences

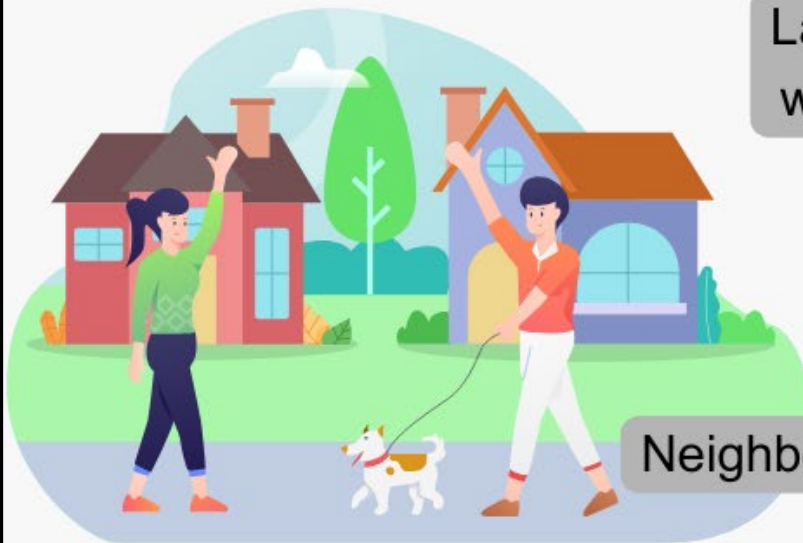


Family members, 84%

Friends, 83%



Land or homeowners within watershed, 40%



Neighbors 71%

Lake association or watershed groups, 40%



Survey results

In the last year, what ways have you shared about lake monitoring, water quality, or water-related information? (Top 5)

Method	Percent of cases
Casual conversations in person while monitoring or at the lake	71.6%
Informal one-on-one conversations (in-person, phone, virtually)	63.2%
Formal gatherings with more than one person (clubs, parties)	28.6%
Community presentations or events	26.3%
Email, newsletters, or listservs	26.3%

Why is sharing data, trends, and reports the most common?

“The graphs are already there, so it's already put together data that can be easily presented, rather than us volunteers having to compile it...you can't just go to your senator and say, ‘*We have a problem,*’ you have to say, ‘*This is where it's happening. These are what the levels are and this is what the effect is.*’

If you don't have the data, you can't get people to do anything.”

– NY CSLAP Monitor

Why is sharing data, trends, and reports the most common?

- 1) Sharing data addresses questions, concerns and keeps others informed
- 2) Data are a tool to influence policy or management
- 3) Data can influence lake residents' behaviors

Data-sharing Challenges

“While the CSLAP reports are very useful, we find it hard to connect that data to what it means. Many of the people involved, the town board, our Lake Association members are not technically-oriented, so **we have to do the translation for them**. And not being lake experts ourselves, we find that difficult to do.”

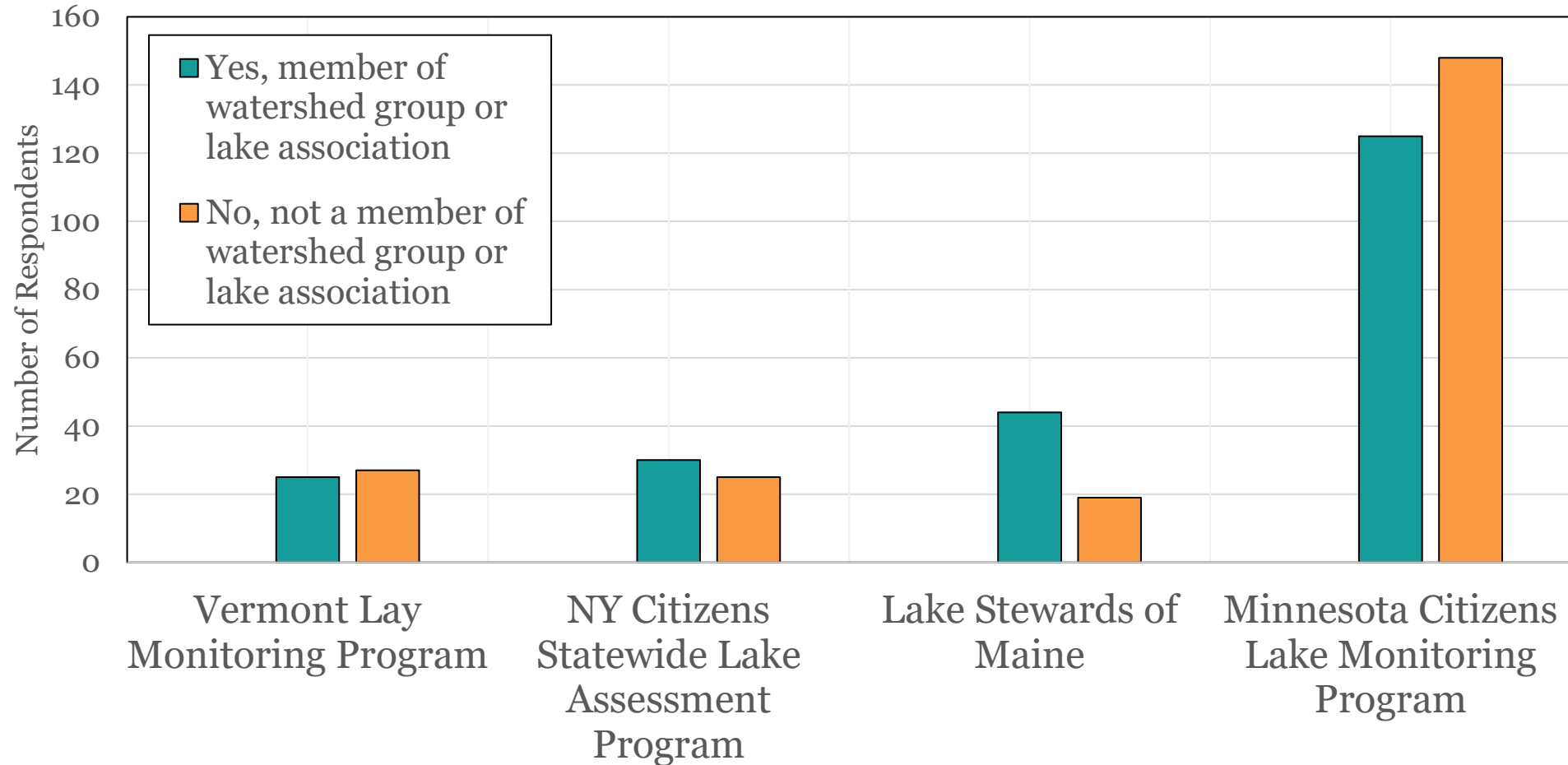
– **NY CSLAP Monitor**

Hypotheses

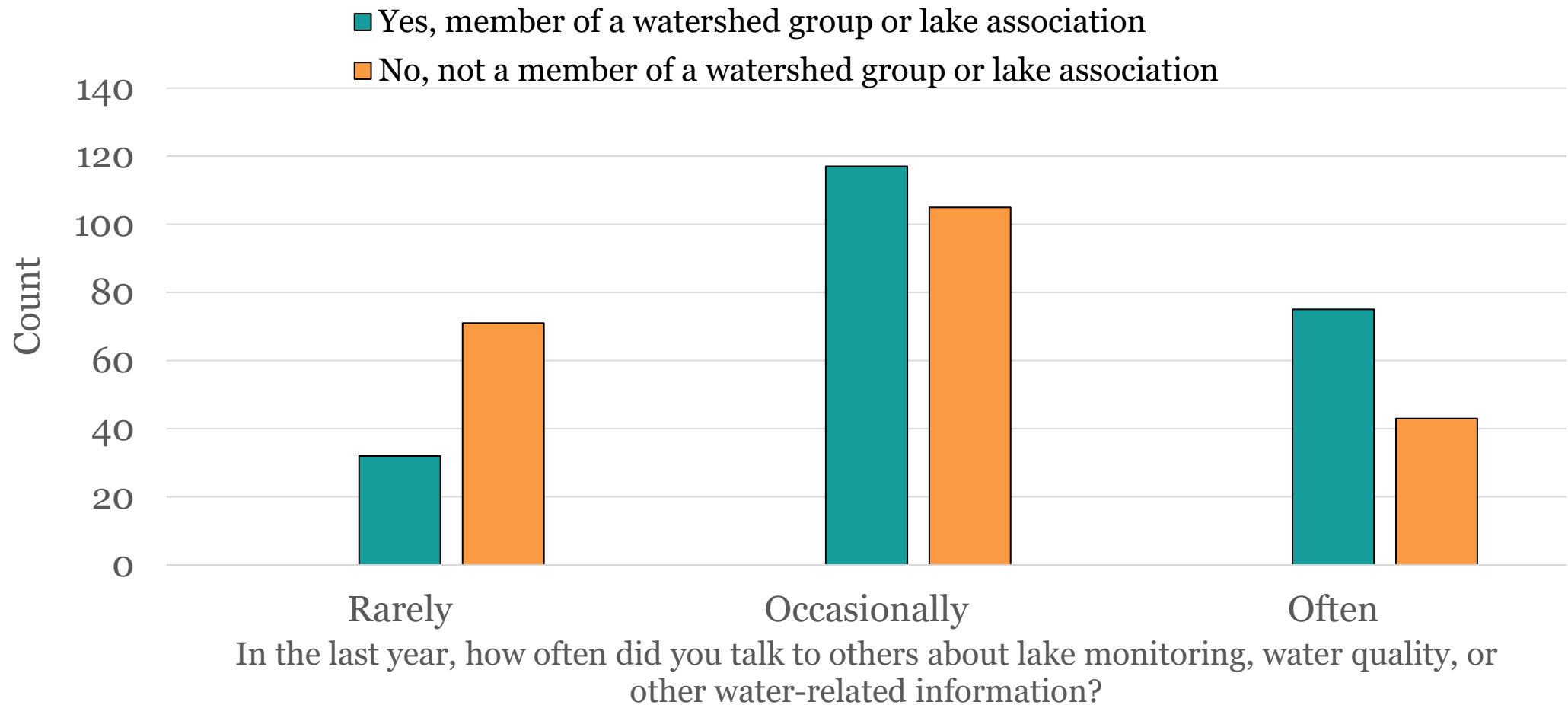
Volunteer lake monitors who are members of watershed groups or lake associations will report 1) **greater communication frequency** and 2) **higher communication competency** than those who are not members.

Survey Results

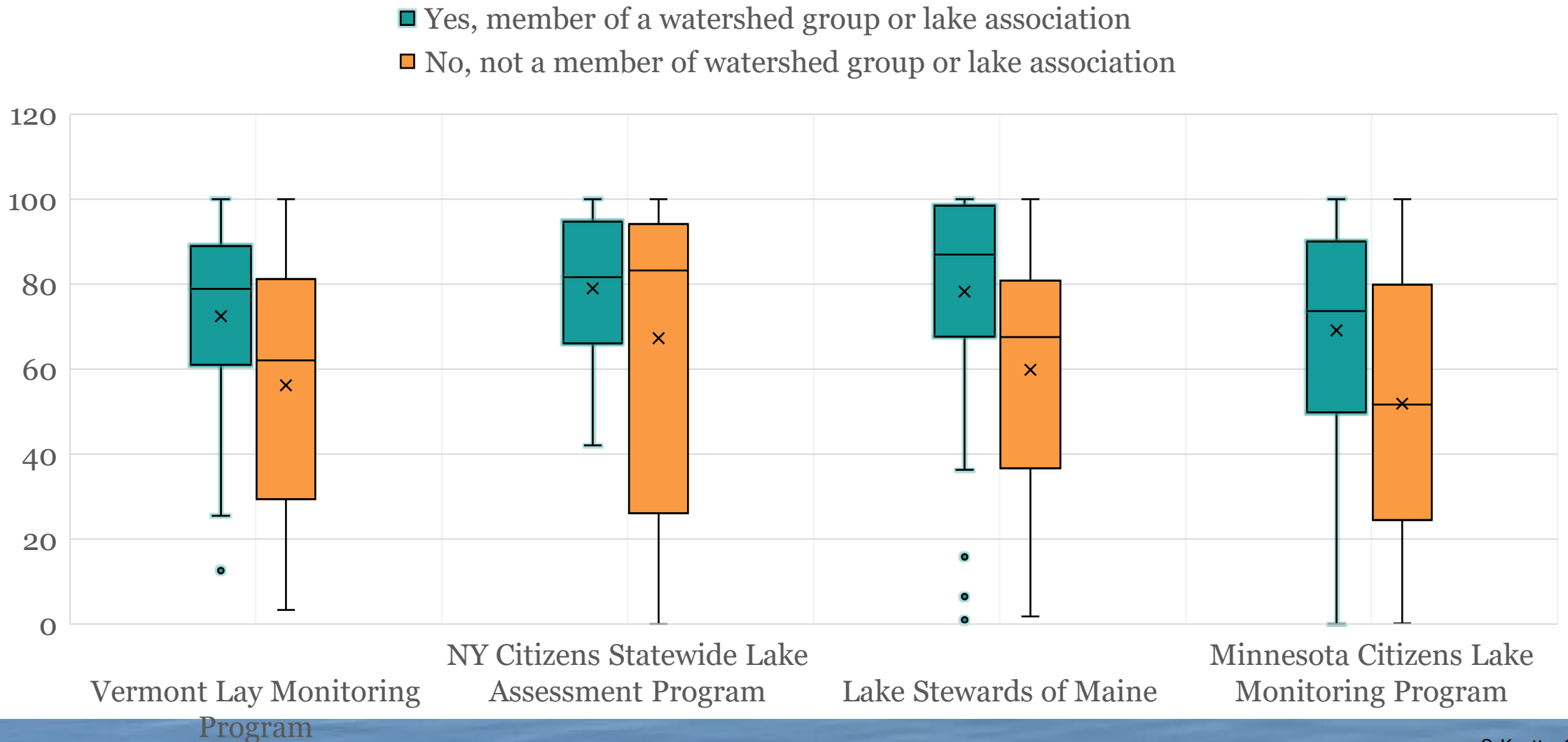
Watershed Group or Lake Association Membership by Monitoring Program




Self-reported communication frequency by membership



Self-reported communication competency scores by monitoring group and membership

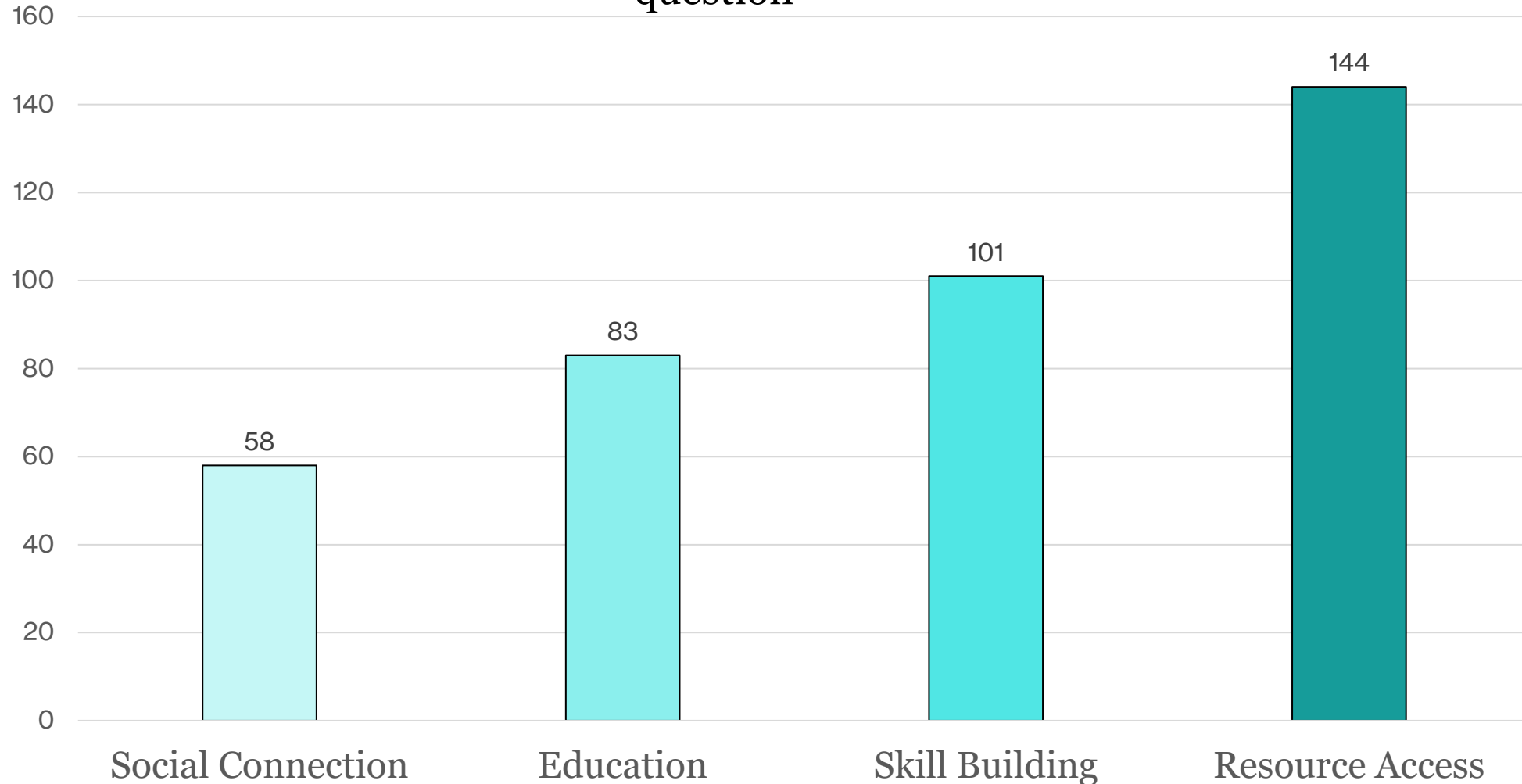


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Recommendations from Lake Monitors

“What would help monitors like you share about lakes, monitoring, water quality?”

Frequency of recommendation themes from open-response question



Recommendations from Lake Monitors

“What would help monitors like you share about lakes, monitoring, water quality?”

Theme	Top two codes	Frequency of responses
Social Connection	Connect with neighbors, lake community members, and personal contacts	19
	Connect with other monitors or lake association members	24

Recommendations from Lake Monitors

“What would help monitors like you share about lakes, monitoring, water quality?”

Theme	Top two codes	Frequency of responses
Education	Volunteer lake monitoring data use	24
	Lakes, water quality, and trends	33

Recommendations from Lake Monitors

“What would help monitors like you share about lakes, monitoring, water quality?”

Theme	Top two codes	Frequency of responses
Skill-building	Presentations	24
	Communication training	35

Recommendations from Lake Monitors

“What would help monitors like you share about lakes, monitoring, water quality?”

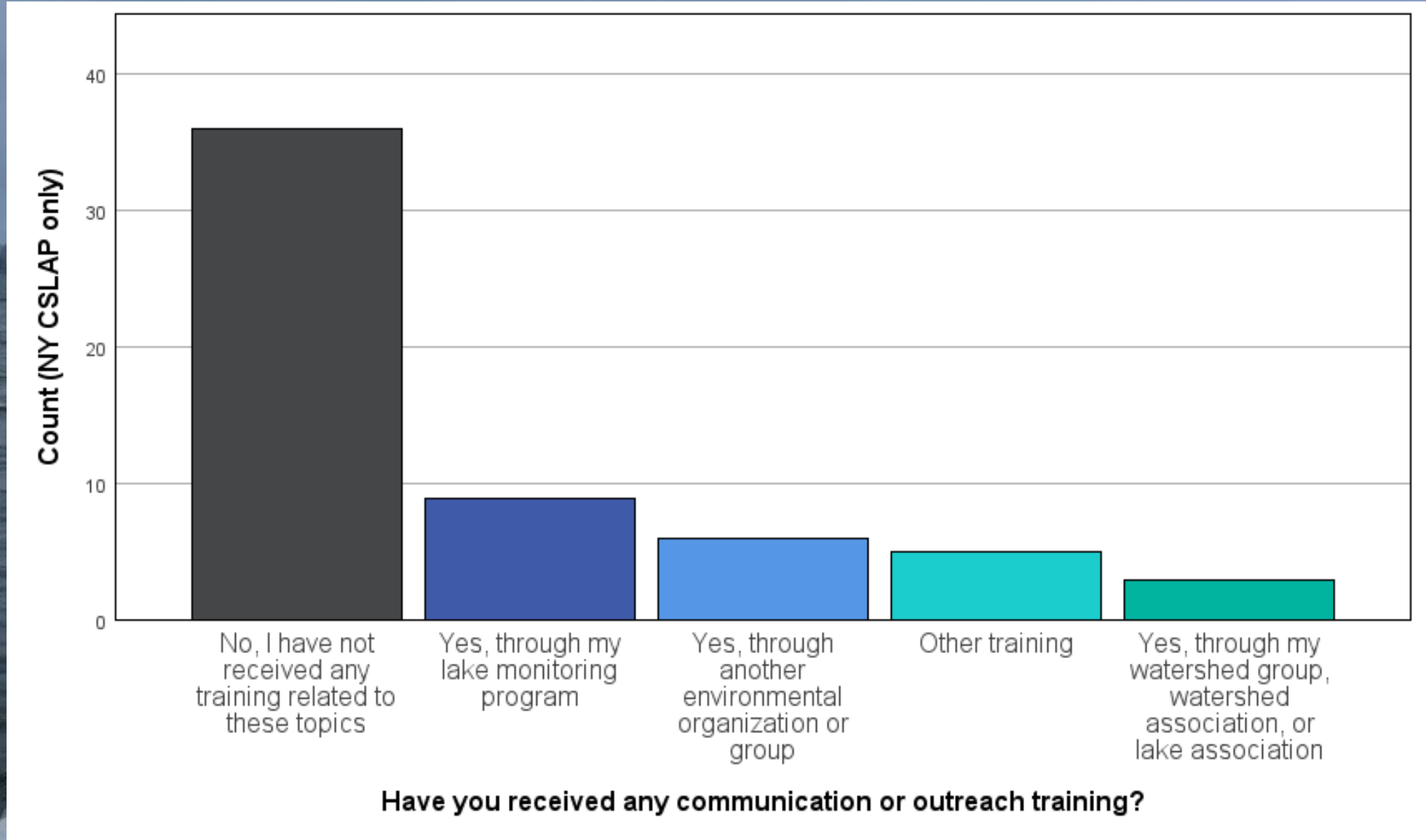
Theme	Top two codes	Frequency of responses
Resource access	Updated data access	27
	Shareable resources	40

Survey results

Have you received any training on how to communicate with others about lake monitoring, water quality, or other water-related information?

Training options	Number of respondents	Percent of cases
No, I have not received any training related to these topics	296	67%
Yes, through my lake monitoring program	64	14.5%
Yes, through another environmental organization or group	46	10.4%
Yes, through my watershed group or lake association	45	10.2%

NY CSLAP Communications or Outreach Training



Recommendations

- Join or form a lake association!
- Attend (or host) a communication-focused workshop or training
- Familiarize yourself with the history and data from your lake
 - What is “normal” for your lake? What is the best way to reach residents on your lake?
- Work with NY CSLAP and your association to update materials based on most recent data
- Attend or request info sessions about how data is (or can be) used

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Key Takeaways about Lake Monitor Communications

- Communicate most to **closest contacts**, at the lake/ while monitoring, about **water quality data, trends, reports**
- Share data because they believe it can **improve understanding, influence policy and lake residents**
- Data could be more **translatable and shareable**
- Monitoring program could provide additional **resources for sharing and opportunities to build communication skills**

Key Takeaways

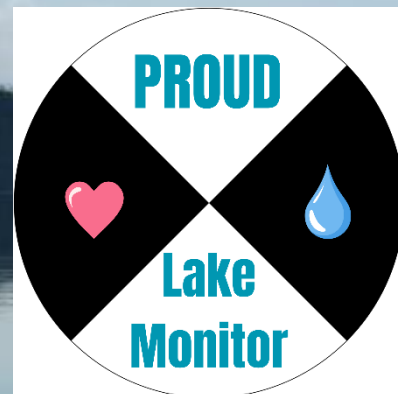
Lake association and/or watershed group membership was associated with both greater communication competency and frequency

Significance

- Highlight volunteer lake monitor communications
- Explore how lake monitoring programs contribute community understanding of lakes
- Assess barriers to communication for lake monitors
- Provide recommendations to monitoring programs and monitors based on volunteer experiences

Want to know more?

- **Virtual thesis defense on August 25 from 9 am – 11 am (invitation link will be emailed!)**
 - See comparable data from three other monitoring programs
 - Additional information about theoretical findings and the lake monitor “role”
- **Let’s chat after!** (I have stickers for you)



Thank you!

Many thanks to the volunteers and coordinators:

VT LMP: Mark Mitchell

NY CSLAP: Alene Onion and Nancy Mueller

MN CLMP: Waverly Reibel and Kirstin Stutzman

LSoM: Alison Cooney and Tristan Taber

WI CLMN: Paul Skawinski

Thanks to NYSFOA
and organizers for
hosting this conference
and the opportunity to
share!

Questions?

