



Coastal Training Program Needs Assessment Report

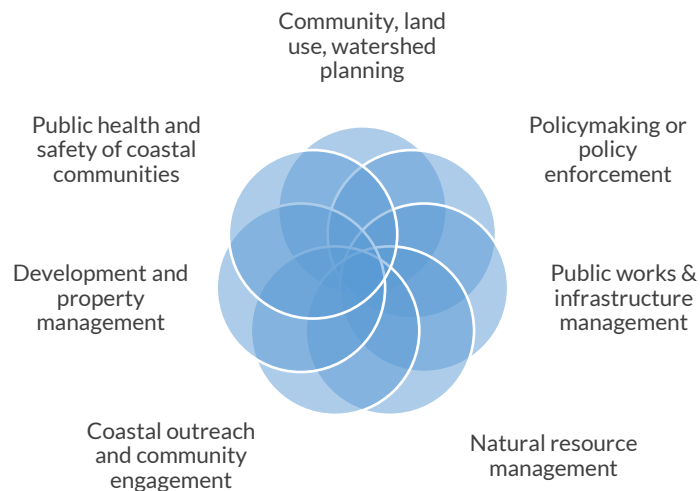


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Introduction

The Lake Superior Reserve Coastal Training Program (CTP) works with local decision-makers, managers, practitioners and leaders in the western Lake Superior Basin. The program aims to provide opportunities for these coastal decision-makers to learn about the factors that influence coastal systems, think critically about their role in coastal management, and cultivate skills and confidence that will allow them to take intentional actions that result in mindful management of Western Lake Superior estuaries, coastal spaces, and coastal communities.



The Lake Superior Reserve Coastal Training Program is currently poised to make strategic, long-term decisions about how to best plan, develop and target future programming. The last formal program needs assessment report was completed in 2012, shortly after the Lake Superior Reserve's designation. That assessment found that training should emphasize coastal science and regulatory compliance and permitting. This included Great Lakes Areas of Concern, invasive species management, wetland mitigation, and stakeholder marketing and communication, to name a few.

The intervening decade has given rise to new coastal challenges and new Reserve program leadership. Over the past decade, Coastal Training Program activity has been agile and opportunistic, which has allowed the program to be responsive to needs as they arise. This needs assessment seeks to broadly understand the landscape of coastal decision-makers themselves, how they orient their roles to coastal issues and where their interests and challenges lie. Understanding this can better position the Coastal Training Program as it strives to provide needed resources and learning opportunities for Western Lake Superior coastal decision-makers now and on into the future.

There are many ways to investigate the needs of the coastal training audience. Partner relationships, training evaluations, and regular advisory committee involvement are all additional input pathways that inform CTP development. Reserve management priorities, NERR system and UW-Madison Extension Natural Resource Institute alignment are also important considerations that shape the program direction. Supplementing these approaches with a formal program needs assessment is an important tool because it can identify cross-cutting patterns at a landscape scale. An updated CTP needs assessment provides one important foundation upon which to build new programmatic ideas and connect intentionally with local audiences.

This report outlines needs assessment findings in three sections:

- Professional characteristics of respondents
- Training interests by topic
- Training delivery preferences

The report concludes with a distillation of the overall impressions that will guide future program directions.



Image: Categories of Coastal Decision Makers

Assessment Development & Timing

Approximately 800 initial recipients received invitations to take the 2020 Coastal Training Program online needs assessment survey. 319 respondents completed the survey. The survey was open for six weeks between August and October 2020. Initial recipients were encouraged to share the survey link with colleagues within their own organization as

appropriate, allowing for some participant-driven snowball distribution to occur.

The survey was pilot tested with the CTP Advisory Committee and adjustments to improve clarity were made based on the Committee's feedback. The UW-Madison Division of Extension Natural Resources Institute Evaluation Unit assisted with the design, deployment, and data analysis for this assessment.

Target Audience

The participant reach for this survey was broad by necessity and included many types of coastal decision-makers, including coastal professionals, local officials, practitioners, and land, water and community planners (see graphic at left). The geographic reach included Superior, Wisconsin and Duluth, Minnesota (together forming the "Twin Ports") and Western Lake Superior counties in both Minnesota and Wisconsin, with an emphasis on the Wisconsin south shore. The initial contact list was built from an inclusive but not exhaustive list of decision-makers from the following categories:

- past program attendees
- local & county government officials
- First Nations leaders and tribal authority officials
- planning professionals
- land and water management specialists
- conservation and restoration practitioners
- state agency regulatory and resource management specialists
- coastal outreach professionals



Image: A map of the St. Louis River estuary, situated between the communities of Duluth and Superior

Professional
characteristics

Who
responded to
this Needs
Assessment?

319

respondents completed the Needs Assessment survey

Roles, Affiliations and Experience of Respondents

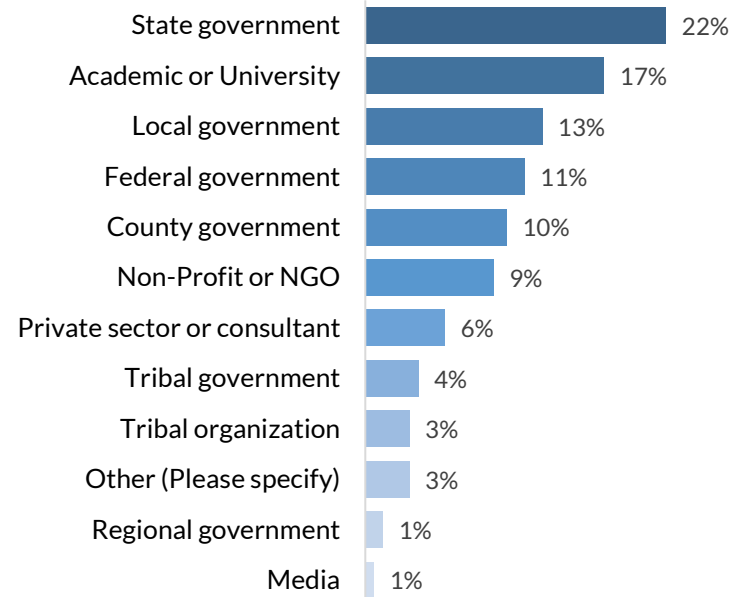
Sixty-one percent (61%) of needs assessment respondents selected government positions at various scales as their primary professional affiliation, with the largest share of participants identifying as state government professionals.

While non-profit sector, private sector and First Nations affiliates each comprise less than ten percent of the respondents in this assessment, these sectors represent important and influential coastal decision-maker audiences in this region and encompass an important segment of the practitioners and communities engaged in coastal projects, innovative problem-solving, and community resilience efforts. It is important to recognize that these sectors may be underrepresented in this needs assessment. As the Coastal Training Program seeks to build audience engagement and training opportunities for decision-makers outside of traditional government sectors, the program coordinator must continue to engage deliberately with these sectors to understand where their needs may be aligned or divergent from the overall needs assessment findings.



Image: Workshop attendees meeting and sharing knowledge.

What is your primary professional affiliation?



Respondents were asked to categorize both their professional affiliation and specific roles. Professional affiliations correspond with who you work for, while professional roles describe what you do in your work. Professional role options were defined as follows:

Resource management: Manage natural or water resources, lead conservation or restoration projects
Local government: Implement or enforce policies, codes and ordinances, community and economic development, planning, public works and engineering, park management
Civic leadership and policy: Serve in an elected or appointed position on a board, commission, or council
Built environment: Design, build, and maintain landscapes or infrastructure
Waterfront places and industries: Operate waterfront or coastal-dependent business or manage public waterfront access points
Community outreach and assistance: Provide technical assistance or funding to communities, media, landowners, agencies or other audiences
Research: Study coastal, estuarine, or watershed ecological systems, or the human dimensions of coastal communities
Communications: Develop communications on coastal-area topics or issues
Other (Please specify)

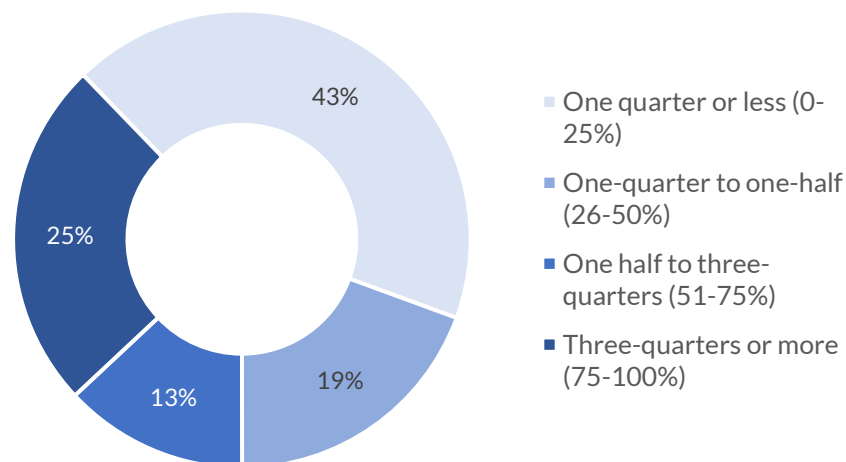
In terms of professional roles, 40 percent of respondents identified as resource management professionals, which is well-aligned with the program’s historic target audience. Professionals who identify in civic leadership and policy roles and waterfront places and industry roles were considerably less represented in this survey. Considering that these are both sectors where the Coastal Training Program could have a high impact, it is important to recognize that this assessment includes a smaller sample size for these audiences and that outreach and training for these sectors will require additional relationship-building and inquiry.

What do you do in your professional role?

Select all that apply.



What percent (%) of your time in your professional role focuses on issues related to Great Lakes coastal areas or resources?



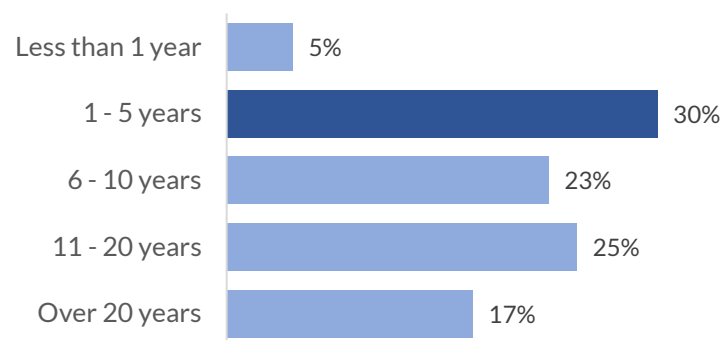
Forty-three percent (43%) of respondents indicated that they spend less than a quarter of their time on coastal issues. However, 25 percent of respondents indicated that coastal issues dominate their professional focus, as they spend from three-fourths to *all* of their time working on coastal issues.

A wide range of potential CTP beneficiaries are represented in this survey, from those who are likely to identify themselves as coastal professionals or coastal decision-makers to those who may not identify with a coastal orientation in their professional role. Nonetheless, those who do not identify

as serving in a coastal decision-making role do have influence in coastal communities, systems and spaces and a desire to learn about coastal issues.

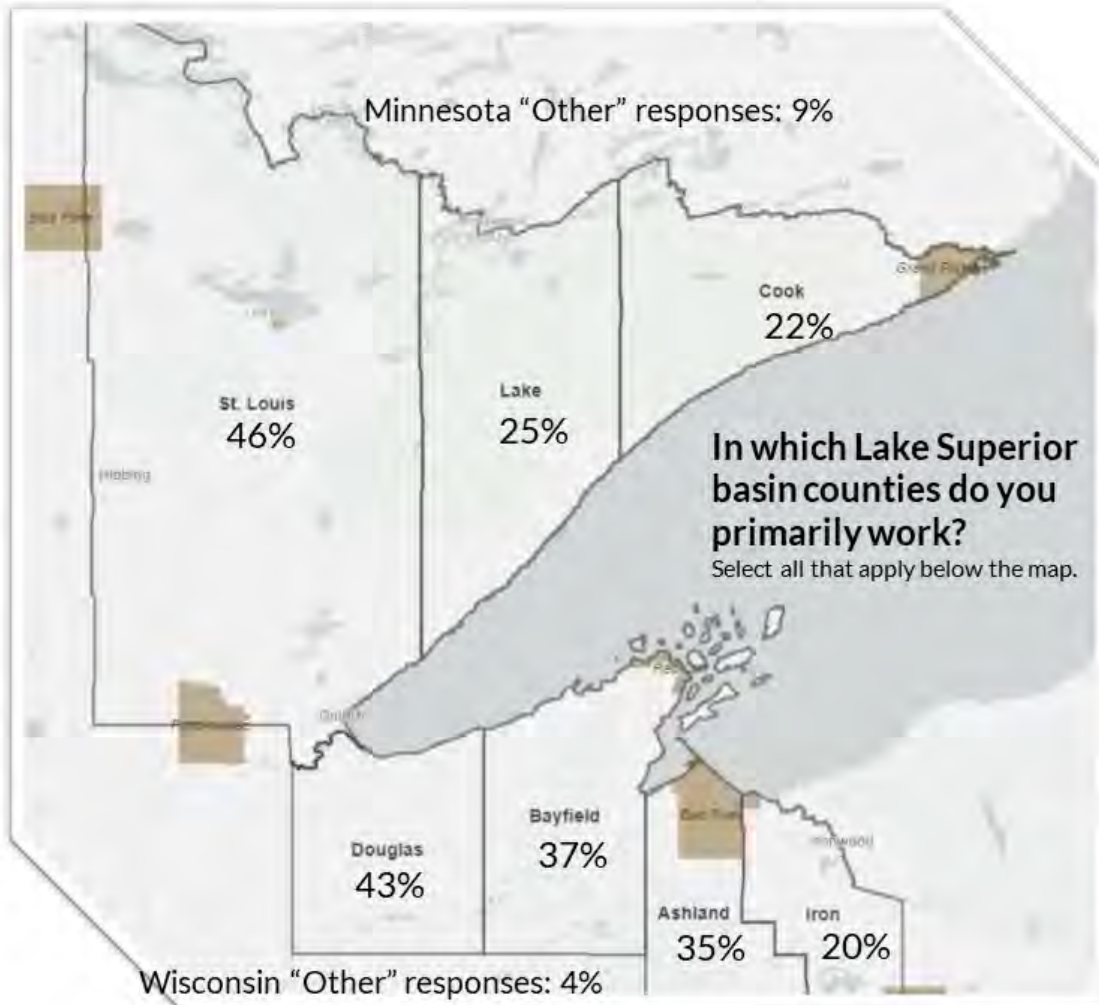
A third of survey respondents have five years or less working on Great Lakes coastal issues. More than 40 percent have spent a decade or more doing Great Lakes professional work.

How long have you worked on Great Lakes coastal issues?



Geographic Distribution of Respondents

The majority of survey-takers primarily work in Douglas County, Wisconsin and St. Louis County, Minnesota, where the Twin Ports are located. However, many professionals do not define their work within a county-level frame, and a large number of respondents shared additional information about the areas and jurisdictions in which they operate in an open-ended response option. Those responses are summarized next to the map graphic on page 8.



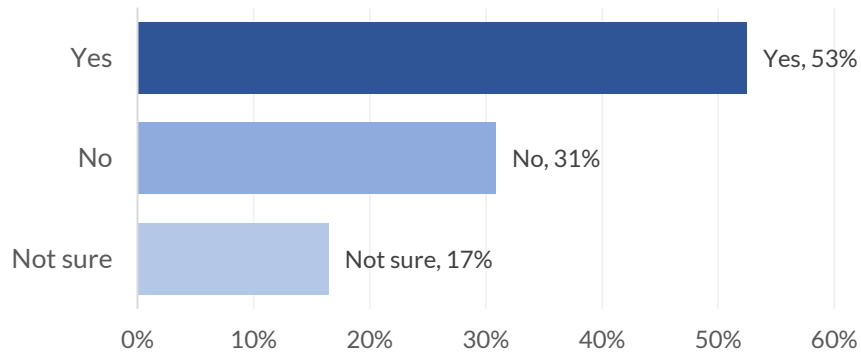
Open ended question: Share additional information that would help us understand the geography of where you work or serve. If your work is focused primarily in certain jurisdictions, communities, or areas, please list those here.

Many respondents shared details about their specific position and scope of work. Here are some of the **additional relevant geographies** that participants specified:

- Lake Superior coastal areas generally (27)
- Specific city (22)
 - Primarily Duluth, Superior, Ashland, Bayfield
- St. Louis River Estuary (16)
- Treaty ceded territories (10)
- Tribal reservations (9)
 - Primarily Fond du Lac, Red Cliff, and Bad River
- State-wide scope (6)
- Great Lakes-wide (9)
- Apostle Islands (3)

Familiarity with the Lake Superior Reserve and Coastal Training Program

Have you participated in any workshops or events put on by the Lake Superior Reserve?



Over half of respondents have participated in Lake Superior Reserve events, and about one third reported participating in at least one Coastal Training Program event in the past. Nineteen percent (19%) are “not sure” whether they have participated in CTP workshops or events. This indicates the program may benefit from new or improved marketing and branding efforts that could increase awareness of Reserve and CTP programs among our target audiences.

Have you participated in any workshops or events put on by the Lake Superior Reserve's Coastal Training Program?

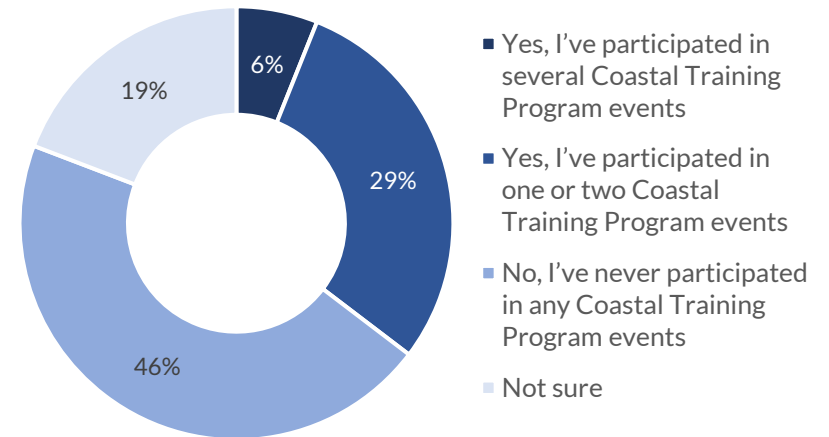
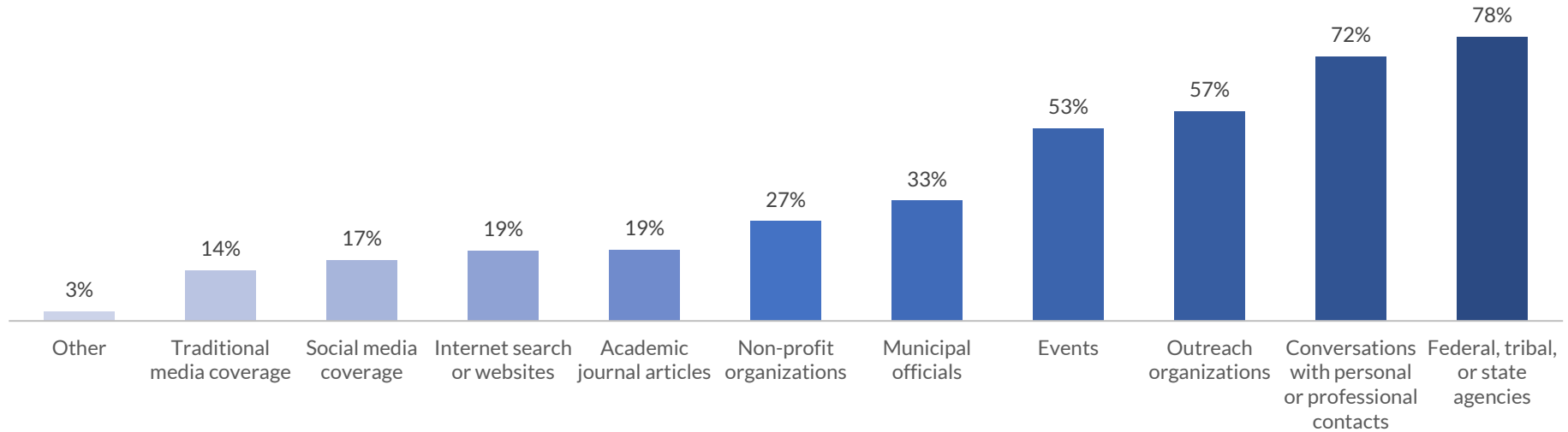


Image: Program attendees learn from a panel of speakers.



Where do you usually get information about coastal issues? Select up to 5.



The coastal decision-makers we surveyed most frequently turn to government agencies for their coastal education. **More than seventy percent (70%) of respondents obtain information about coastal issues from federal, tribal, or state agencies.** Nearly as often as they are turning to agency information sources, this audience is finding fruitful learning value in conversations with personal and professional contacts.

Events and outreach organizations that offer active learning opportunities were also shared as common sources of coastal information among respondents.

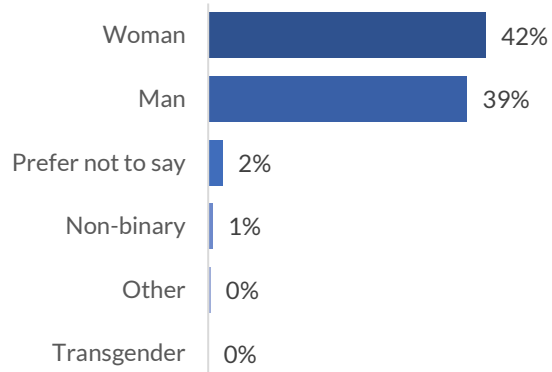
These findings show that more than half of respondents selected events and outreach organizations as a source of coastal information. This is useful information because it justifies the current models of training delivery utilized by the CTP, which include in-person trainings, webinars, and presentations. It also suggests that the CTP is poised to be of continued value to Western Lake Superior CDMs.

Less frequently selected sources of coastal information included more self-directed inquiry—resources like traditional media, internet searches and journal articles. In these instances, coastal issue information must be sought and curated by the user. This is not surprising, given the many responsibilities that many coastal community professionals hold in their roles and the constraints that limit their ability to engage in deep dive inquiry when they are seeking information about coastal issues or challenges.

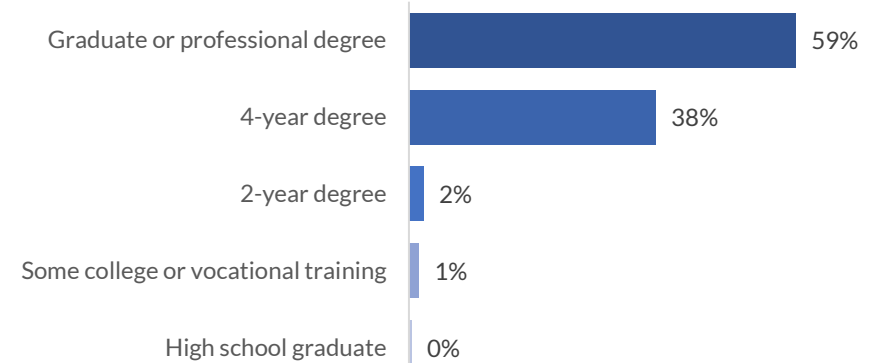
The Coastal Training Program can continue to partner with agencies to provide formal, authoritative sources of information for decision-makers and professionals, while also creating spaces for informal, person-to-person learning to happen in facilitated meetings, lightly structured networking, exploratory and field-based learning and more.

Respondent Demographics

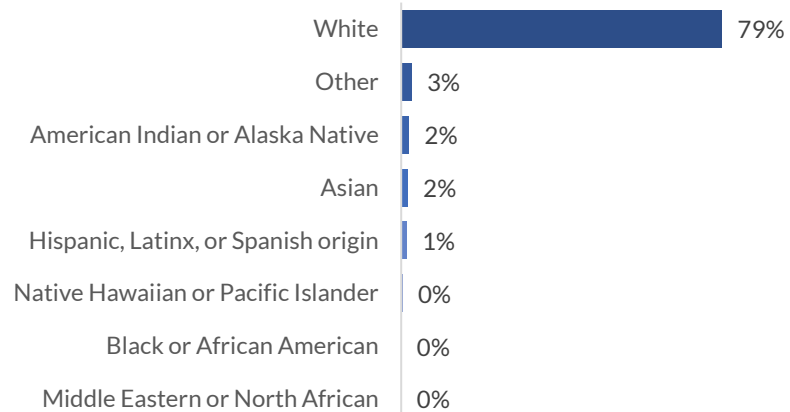
Gender identification



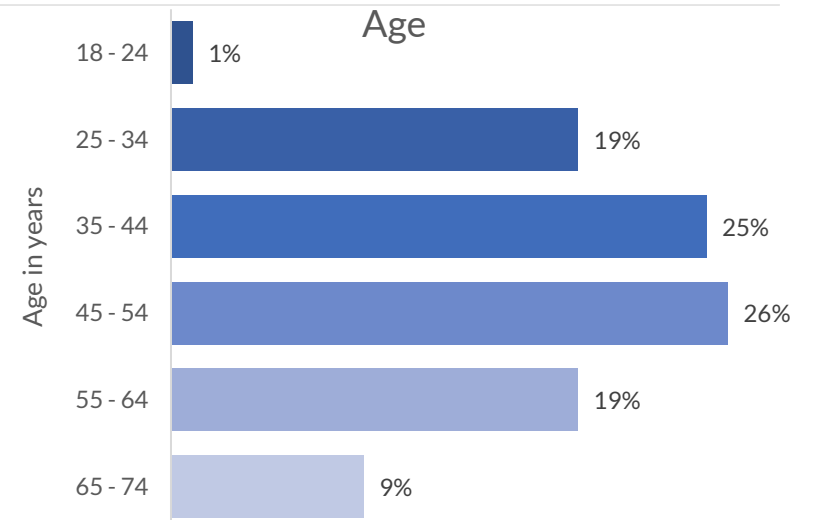
Highest Level of Education



Race identification



Age





Training interests by topic

What do people want to learn?

Top image: A comparison of river water and lake water.

Bottom image: Attendees visit a cyanobacteria “petting zoo”

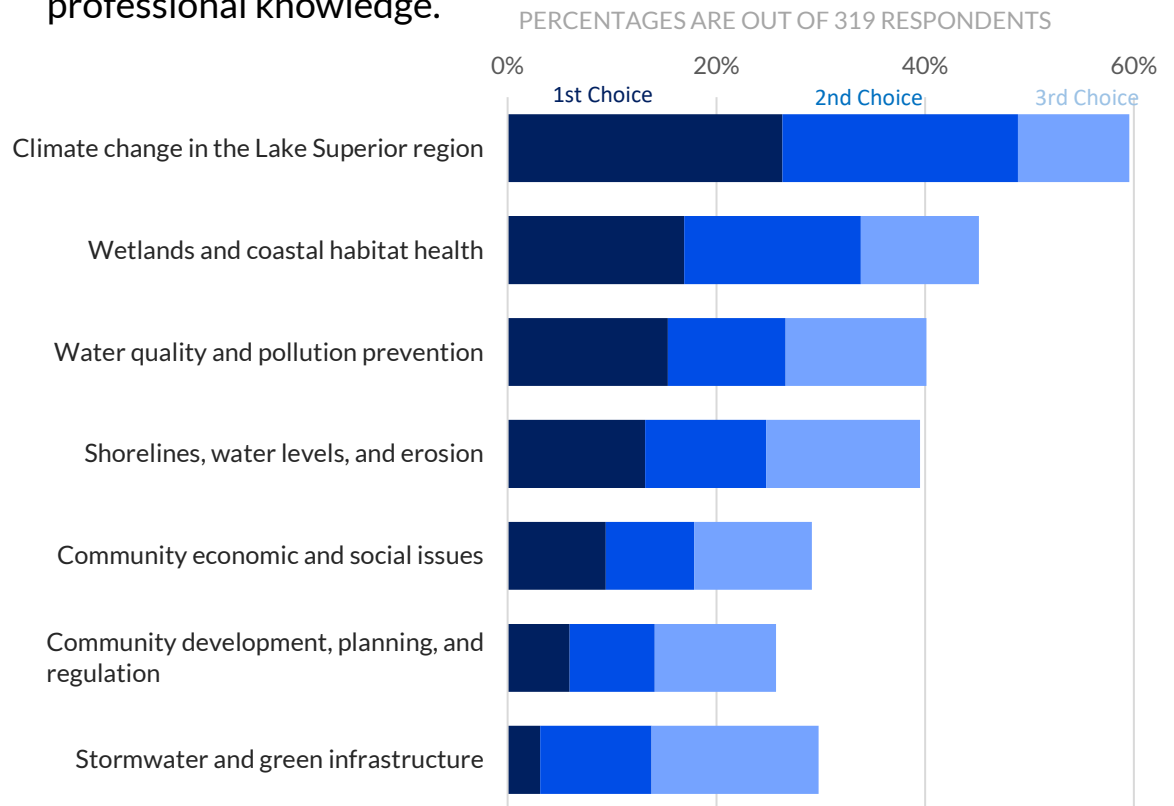
Respondents were given a series of questions relating to interest in training and learning areas, starting with very broad topics and moving toward progressively more detailed learning areas of interest.

At the beginning of this section of survey questions, respondents were asked to rank their priority learning topics from a list of seven broad coastal issue areas, shown below.



Half of the respondents ranked climate change as either their first or second priority topic area, and a third of respondents ranked wetlands and coastal habitat health as their first or second topic choice. Although community and infrastructure topics were not frequently ranked as 1st or 2nd choice options, they were consistently ranked as the third priority topic of interest.

Of the seven topics listed below, please indicate the **top three topic areas** where you are most interested in growing or maintaining your professional knowledge.










After ranking these broader interest areas, respondents were asked to indicate their interest (via checkbox selection) in more specific training and learning subtopics – 43 in total, clustered into seven categories mirroring the broad topics above: 1) Stormwater Management and Green Infrastructure, 2) Shorelines, Erosion or Water Levels, 3) Water Quality, Pollution Prevention, and Waterway Health, 4) Climate Change in the Lake Superior Region, 5) Wetland and Coastal Habitat Health, 6) Coastal Community Development, Planning and Regulation, and 7) Economic and Social Issues. Respondents were also given the chance to indicate whether they were already comfortable with their knowledge in this category and/or whether this category was not applicable to their work.

Shown here are all of the specific training and learning subtopics from the assessment, listed in order of greatest interest to least interest by percentage and number of respondents. The first subtopic, “Make my community more resilient to severe storms and flooding.” was selected by 57 percent (182 out of 319) of respondents. The last subtopic in this list, “Cope with the emotional strain of climate change work.” was selected by 9 percent (28 out of 319) of respondents.

Specific Training and Learning Subtopics	%	N
Make my community more resilient to severe storms and flooding	57%	182
Understand climate change forecasts and impacts on the Lake Superior basin	55%	175
Engage in climate adaptation planning and action in my community	48%	153
Encourage resilient design of waterfront spaces and infrastructure in my community	45%	145
Learn about emerging contaminants (e.g. PFAS and microplastics)	45%	145
Promote wetland preservation and restoration on private lands	44%	141
Help my community plan for fluctuating Lake Superior water levels	42%	135
Understand causes and trends of Lake Superior water levels	40%	127
Increase communication between natural resource scientists and coastal practitioners	39%	126
Measure and monitor success of habitat restoration projects	39%	125
Incorporate more natural features (e.g. vegetation, sills) into shoreline stabilization projects	39%	124
Integrate coastal issues management in comp planning, hazard planning, and/or other planning efforts in my community	39%	123
Encourage stormwater management practices in my community	38%	121
Reduce risks to my community from natural hazards	38%	121
Have access to helpful decision-making tools for resource planning and management	38%	120
Reduce plastics and marine debris in our waterways	37%	118
Build strong relationships with diverse coastal stakeholders	37%	118

Describe the economic impact and value of coastal resources	37%	117
Learn about shoreline erosion management strategies	36%	115
Reduce barriers to green infrastructure implementation in my community	36%	114
Understand how zoning and development regulations impact natural resources in my community	35%	113
Learn about algal blooms, including their causes and potential impacts	35%	112
Measure and monitor success of coastal restoration projects	34%	108
Address inequitable impacts of environmental hazards	32%	102
Reduce winter road salt usage on local properties and roadways	32%	101
Learn about Tribal governance and treaty rights in the Lake Superior basin	32%	101
Assess and value wetlands in my community	29%	93
Learn more about how water quality is regulated and managed in my community	29%	92
Update codes and regulations in my community to encourage more resilient practices	28%	90
Provide equitable access to coastal resources	28%	89
Design impactful green infrastructure systems	25%	81
Better understand wetland policy and regulations	25%	81
Design wetland projects that reduce impacts from flooding	24%	78
Learn about stormwater management project design, installation and maintenance	24%	76
Manage visitor use and safety in coastal spaces	22%	71
Design invasive species control projects and management plans	22%	69
Learn about state and federal water law	22%	69
Promote businesses and industries that depend on the Lake Superior coast	21%	68
Conduct a climate vulnerability assessment in my community	15%	48
Construct wetlands in urban environments and in public spaces	14%	45
Feel confident installing and/or maintaining green infrastructure systems	12%	39
Become familiar with stormwater permitting requirements and regulations	12%	38
Cope with the emotional strain of climate change work	9%	28

The charts that follow show how interest in specific training subtopics aligned with respondents' professional role. Matching program topical efforts to more specific professional audiences will help to target coastal training program delivery and grow the program in strategic ways. Self-identifying professional role options are summarized in the chart below. Each professional role has an associated icon that appears in the results charts in the following pages. An icon key is shown here for orientation.

	Resource management: Manage natural or water resources, lead conservation or restoration projects
	Local government: Implement or enforce policies, codes and ordinances, community and economic development, planning, public works and engineering, park management
	Civic leadership and policy: Serve in an elected or appointed position on a board, commission, or council
	Built environment: Design, build, and maintain landscapes or infrastructure
	Waterfront places and industries: Operate waterfront or coastal-dependent business or manage public waterfront access points
	Community outreach and assistance: Provide technical assistance or funding to communities, media, landowners, agencies or other audiences
	Research: Study coastal, estuarine, or watershed ecological systems, or the human dimensions of coastal communities
	Communications: Develop communications on coastal-area topics or issues
	Other (Please specify)

The following charts also list training subtopics within one of the seven topic categories. Each chart summarizes the percent of respondents that selected each specific training topics and skills subtopic, shown as a percent and separated by professional role. Subtopics that were selected by more than 40 percent of those sharing the same professional role are denoted in **bold** text.

I'm interested in **stormwater management and green infrastructure** because I'd like to...

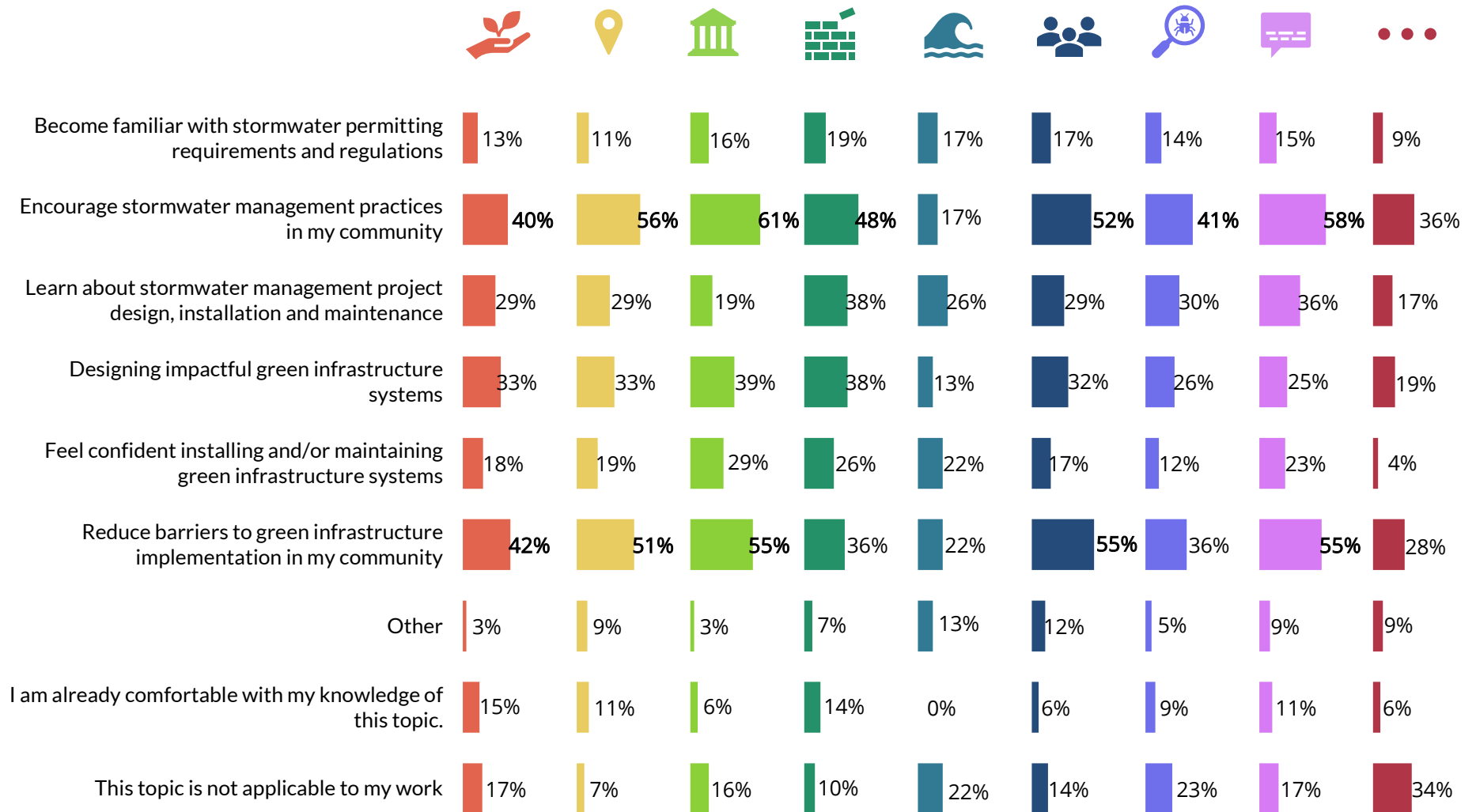




Image: Rainwater runs along a grass-lined pathway.

Stormwater Management and Green Infrastructure

Western Lake Superior CDMs are eager to clear a path to stormwater management in practice. ‘Encourage stormwater management practices in my community’ and ‘Reduce barriers to green infrastructure implementation in my community’ were the topics that drew most interest from across all professional roles. Civic leaders, community outreach and communication professionals are particularly interested in these topics.

Respondents are lukewarm on direct regulatory learning. Fewer than 20 percent of respondents indicated they were interested in becoming familiar with stormwater permitting requirements and regulations. This was consistent across all professional roles.

Nearly 30 percent of civic leaders and more than a quarter of those who identified as built infrastructure professionals indicated interest in installing green infrastructure. However, in comparison to subtopics related to learning about or designing green infrastructure systems, this installation subtopic did not garner the same level of interest.

Of all seven training categories, Stormwater Management and Green Infrastructure garnered some of the highest percentages of respondents saying they were either already comfortable with their knowledge on this topic, or that this topic was not relevant to their work. Respondents showed high interest in encouraging stormwater practice and reducing barriers to green infrastructure, but their tepid interest in other subtopics may indicate they feel less direct responsibility for stormwater system decisions and management.

I'm interested in **shorelines, erosion or water levels** because I'd like to

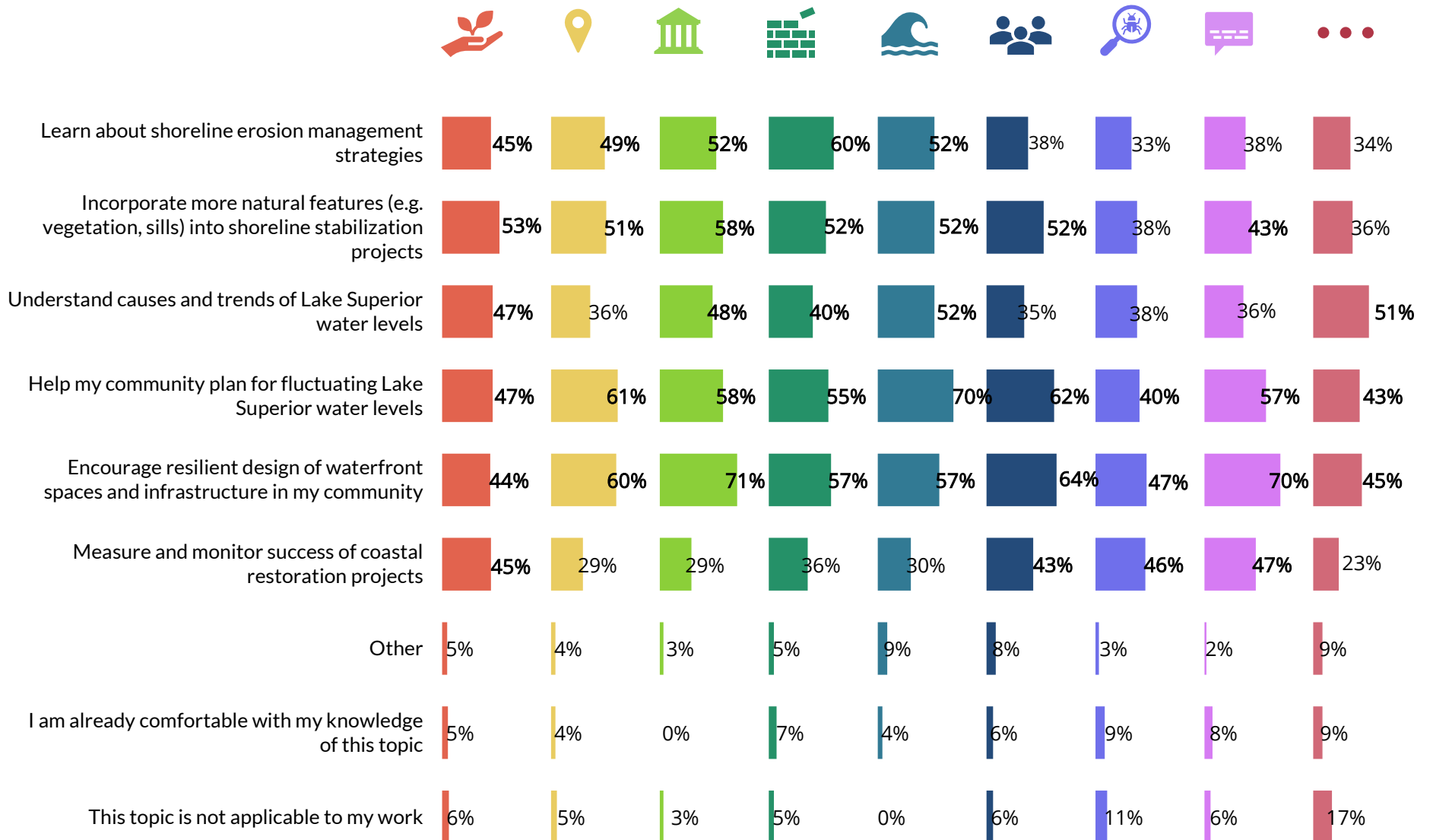




Image: Barricades indicate hazards after storm damage.

Shorelines, Erosion and Water Levels

Over 40 percent of respondents from multiple professional roles selecting all subtopics listed under shorelines, erosion, and water levels. Two subtopics – ‘Help my community plan for fluctuating Lake Superior water levels’ and ‘Encourage resilient design of waterfront spaces and infrastructure in my community’ - garnered high interest from all professional role categories.

Different professional roles expressed specific interests in shoreline, erosion, & water level subtopics. Resource managers are more interested in how to incorporate natural features into shoreline projects than any other subtopic in this category. Seventy percent (70%) of waterfront places and industry professionals are interested in helping communities plan for fluctuating water levels at the community scale, and 70 percent of civic leaders and communication professionals are interested encouraging resilient design of waterfront spaces.

Measuring and monitoring success of coastal restoration generated the least interest of all subtopics. However, research, resource management, outreach and communications professionals are interested in this learning topic.

Nearly all professional roles, and local government staff in particular, are interested in both understanding causes and trends of Lake Superior water levels and helping their community plan for fluctuating Lake Superior water levels. This demonstrates a need to provide action-oriented training opportunities related to water levels.

I'm interested in **water quality, pollution prevention and waterway health** because I'd like to...

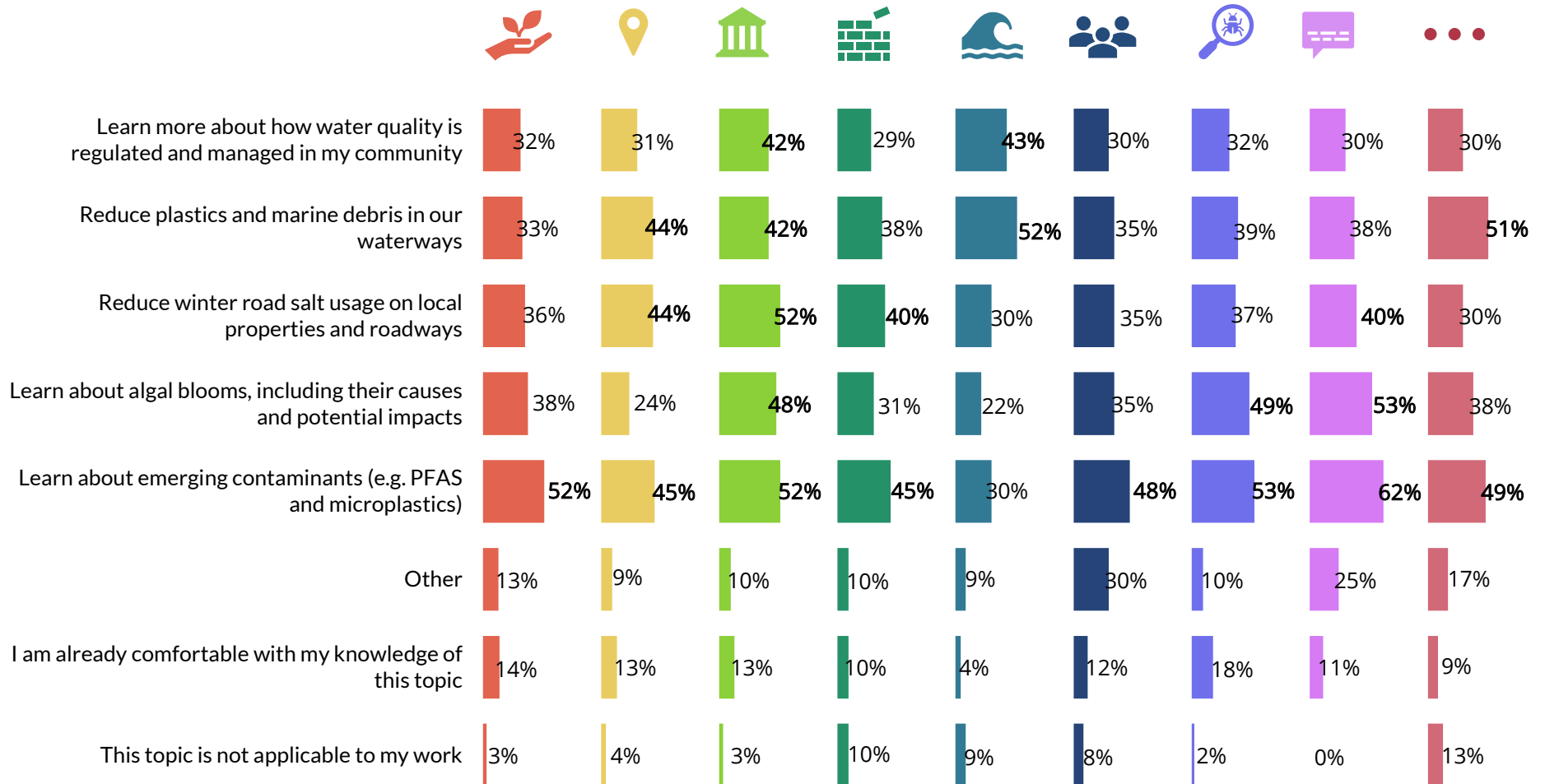




Image: Water monitoring equipment is placed in an estuary bay.

Water Quality, Pollution Prevention, and Waterway Health

Across all professional roles, “Learn about emerging contaminants (e.g. PFAS and microplastics)” is the subtopic of greatest interest in this category. A noteworthy 62 percent of respondents in community outreach and assistance roles expressed an interest in this topic.

Out of all professional roles, civic leaders are most interested in trainings to reduce winter salt usage on local properties and roadways. Aiming future salt reduction trainings for an audience of local government officials and staff is supported by this assessment.

“Reduce plastics and marine debris in our waterways” was the most selected topic of interest by waterfront spaces and industry professionals. Local government and civic leaders also expressed a high level of interest in this topic.

Interest in Lake Superior algal blooms varies widely across professional roles. Local government staff, built environment and waterfront industry professionals are markedly less interested in this topic, but civic leaders, researchers, and in particular *communicators* are motivated by blooms learning.

I'm interested in **climate change in the Lake Superior region** because I'd like to...

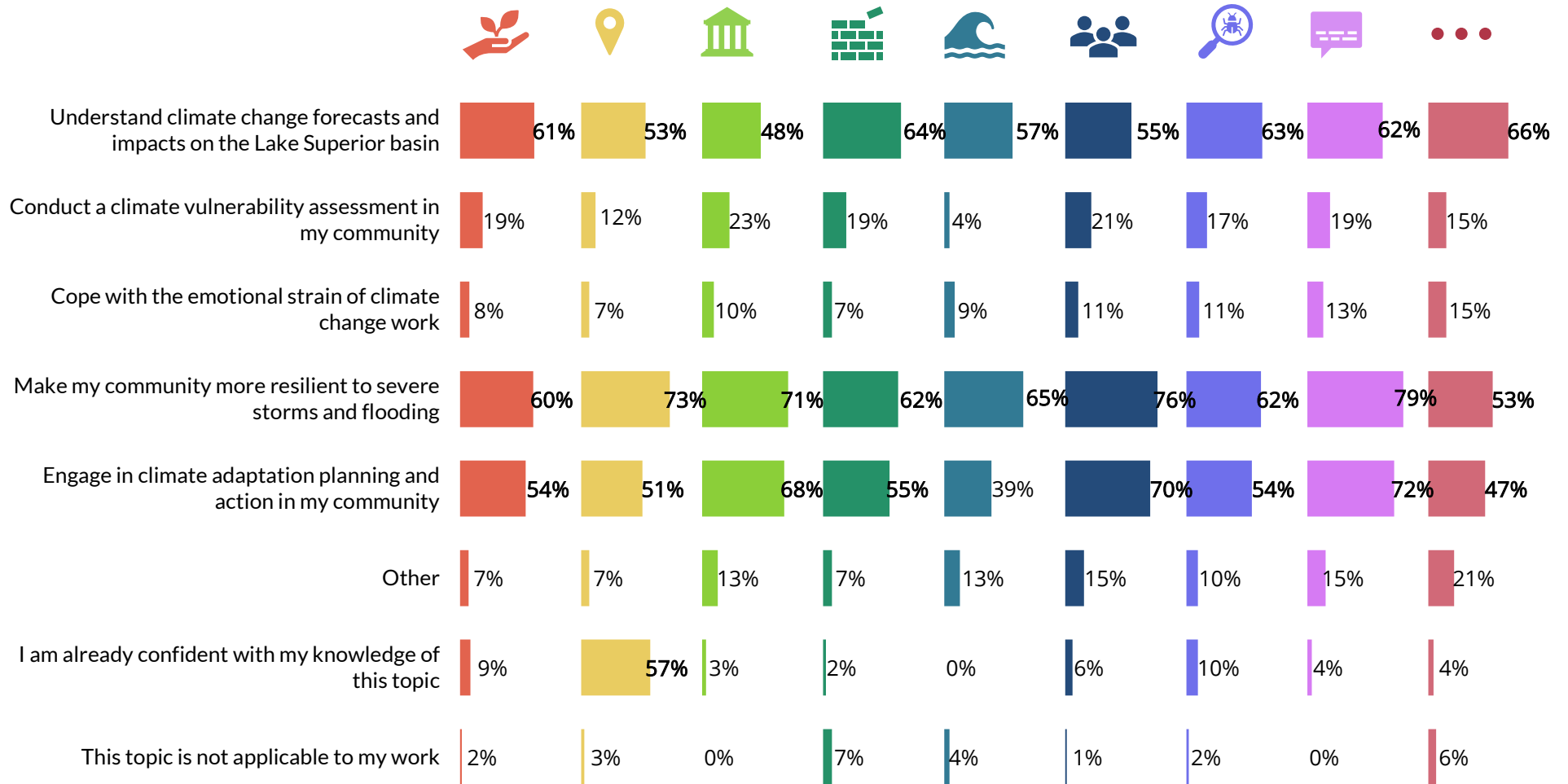




Image: Icy Lake Superior shoreline conditions during the winter season.

Climate Change in the Western Lake Superior Region

Climate change is a topic of great interest among coastal decision makers, and respondents have a wide range of interests in several different climate change subtopics.

Across all professional roles, there is very high interest in making their “community more resilient to severe storms and flooding”. This was expected given the history of repeated intensive storms and associated flooding that has impacted this region.

All professional roles are interested in understanding climate change forecasts and impacts in the Lake Superior basin. Further, all roles (with the exception of those working in waterfront spaces & industry roles) indicated interest in engaging in climate adaptation planning and action.

Respondents expressed lower interest in learning to conduct climate change vulnerability assessments or receiving help to cope with the emotional strain of climate change work. However, 13 percent of those in communication roles expressed an interest in receiving help to cope with the emotional strain of climate change work. Although this is a lower percentage rate, 28 individuals are interested in this topic. This suggests that communicating about climate change may be particularly emotionally straining for professionals in communication roles.

Compared to other professional roles, a strikingly high percentage (57%) of local government professionals selected “I am already confident with my knowledge of this topic.” The next highest percent who selected this responses option was 10 percent of respondents in research roles. Climate change support offered to local government staff should consider there may be a different “starting point” with this audience. Further investigation into how complementary efforts (such as process trainings and capacity-building support for climate change work) could aid this audience is needed.

I'm interested in **wetland and coastal habitat health** because I'd like to ...

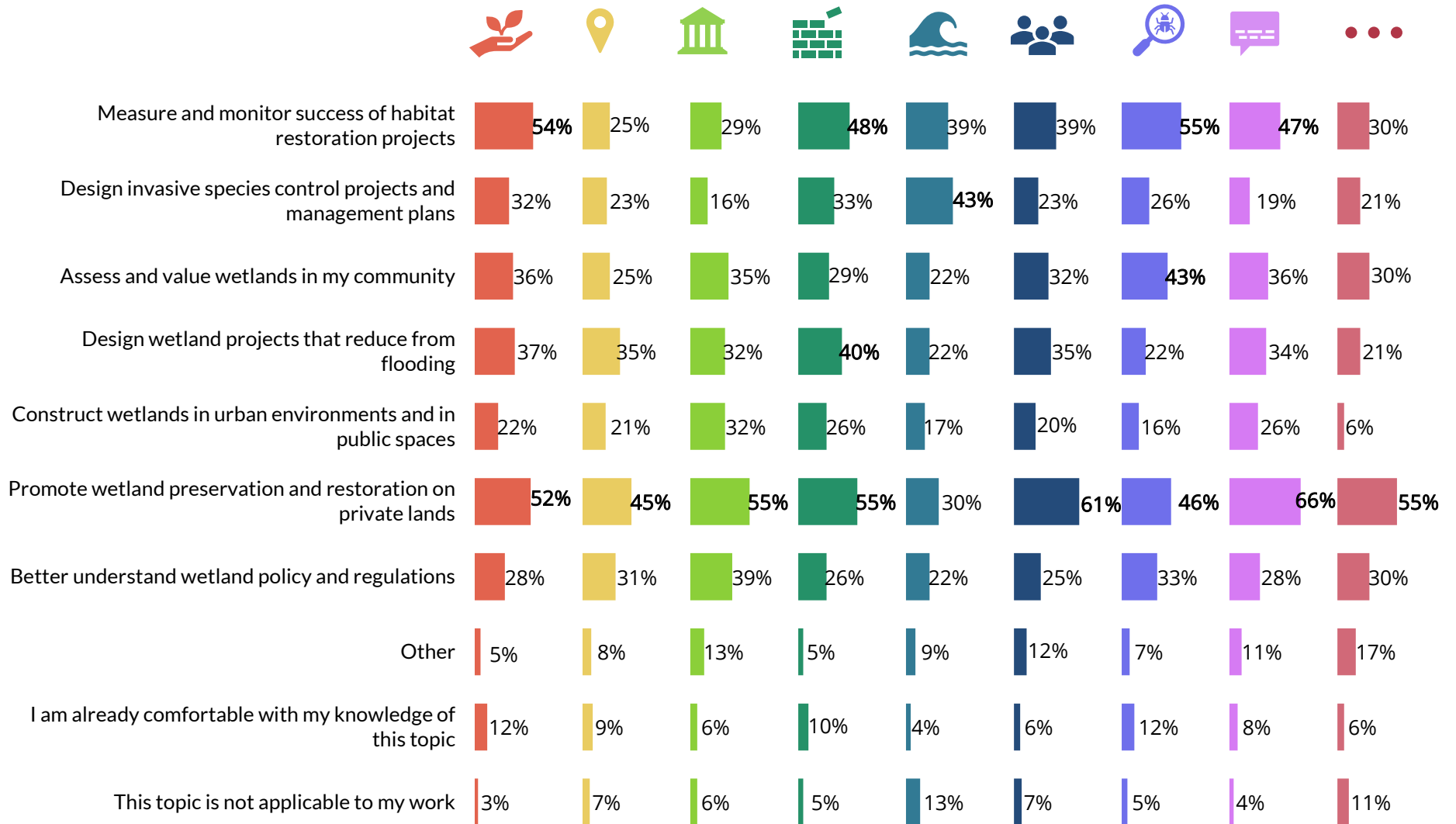




Image: Wetland vegetation above and below the water.

Wetland and Coastal Habitat Health

There is high (>50%) rate of interest in promoting wetland preservation and restoration on private lands across most professional roles. This interest is much higher than the expressed interest in urban and public space wetlands construction.

Researchers and natural resource managers have the highest (>50%) rate of interest in measuring and monitoring coastal wetland project success. Built environment and communications professionals also show significant interest in this topic (>45%).

Waterfront spaces and industry professionals have a high interest in designing invasive species control projects and management plans. Their interest is higher than the other professional roles by a considerable margin.

Civic leaders show a higher interest in understanding wetland regulations and policy than any other professional role. This topic of interest was, within this category, only second to their interest in promoting wetland preservation and restoration on private lands.

I'm interested in **coastal community development, planning, and regulation** because I'd like to...

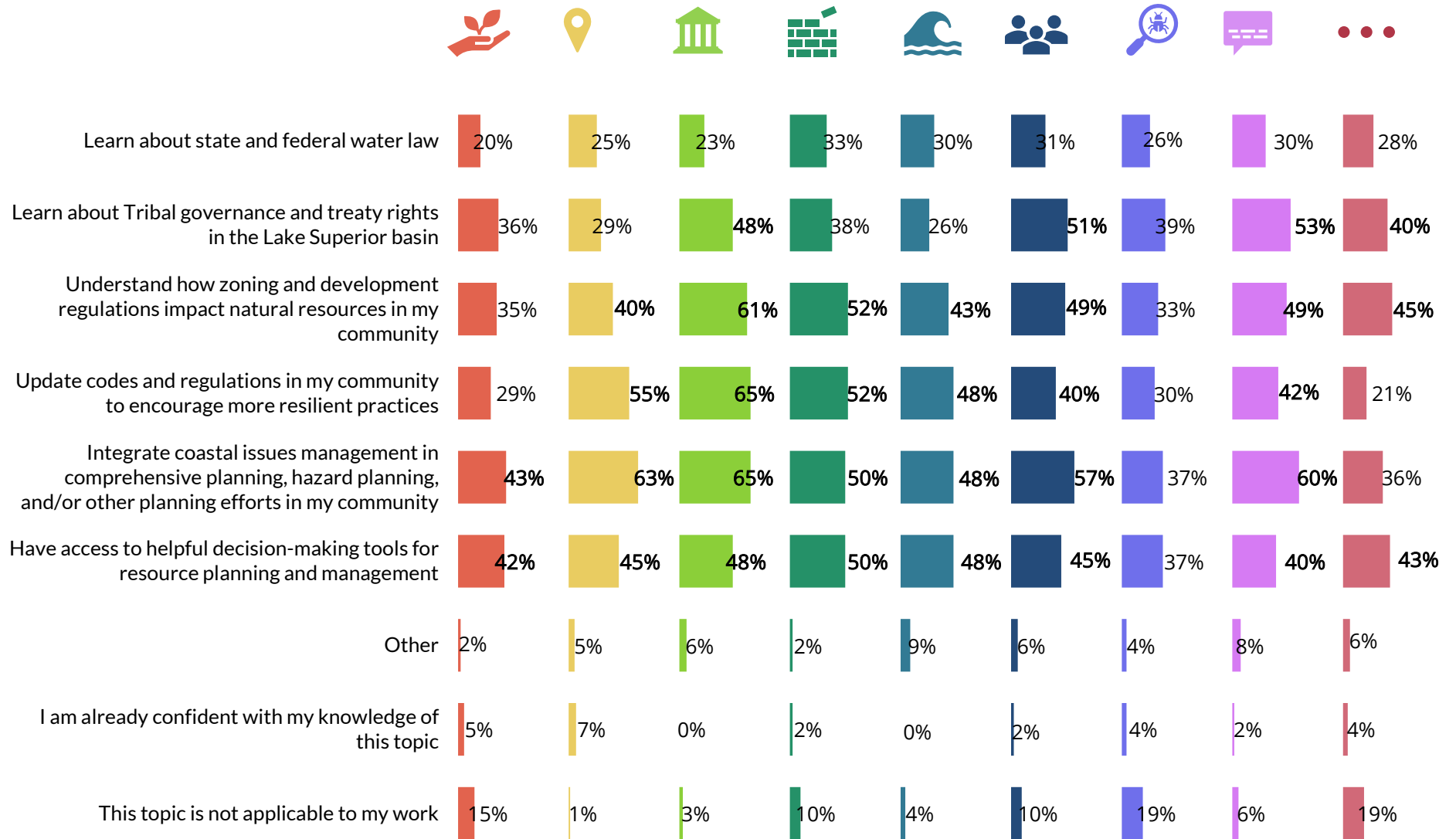




Image: A view from a hillside above the Twin Ports of Duluth and Superior.

Coastal Community Development, Planning and Regulation

All subtopics within the category of coastal community development, planning and regulation were of high interest to respondents, including across almost all professional roles. An exception to this was that **researchers and natural resource managers** generally showed lower interest in this category. This may be because these groups see less application of these topics to their work.

The subtopic “Integrate coastal issues management in comprehensive planning, hazard planning, and/or other planning efforts in my community” generated very high interest, especially among local government professionals, civic leaders, and outreach and communication specialists. These role types are close to or involved in many local planning processes, and thus may be the most likely to see value in planning integration.

Perhaps unsurprisingly, interest in updating “codes and regulations in my community to encourage more resilient practices” is generally high, especially among civic leaders (65%). This group may see avenues for climate resilience through improved regulations and procedures.

Communicators, civic leaders and outreach professionals expressed a high degree of interest in learning about “Tribal governance and treaty rights in the Lake Superior basin”. There are multiple treaty authorities and federally-recognized tribes in the Western Lake Superior basin, and this finding suggests that understanding tribal rights and sovereignty is important to at least a third of coastal decision makers across all professional roles represented in this needs assessment.

I'm interested in coastal community **economic and social issues** because I'd like to...

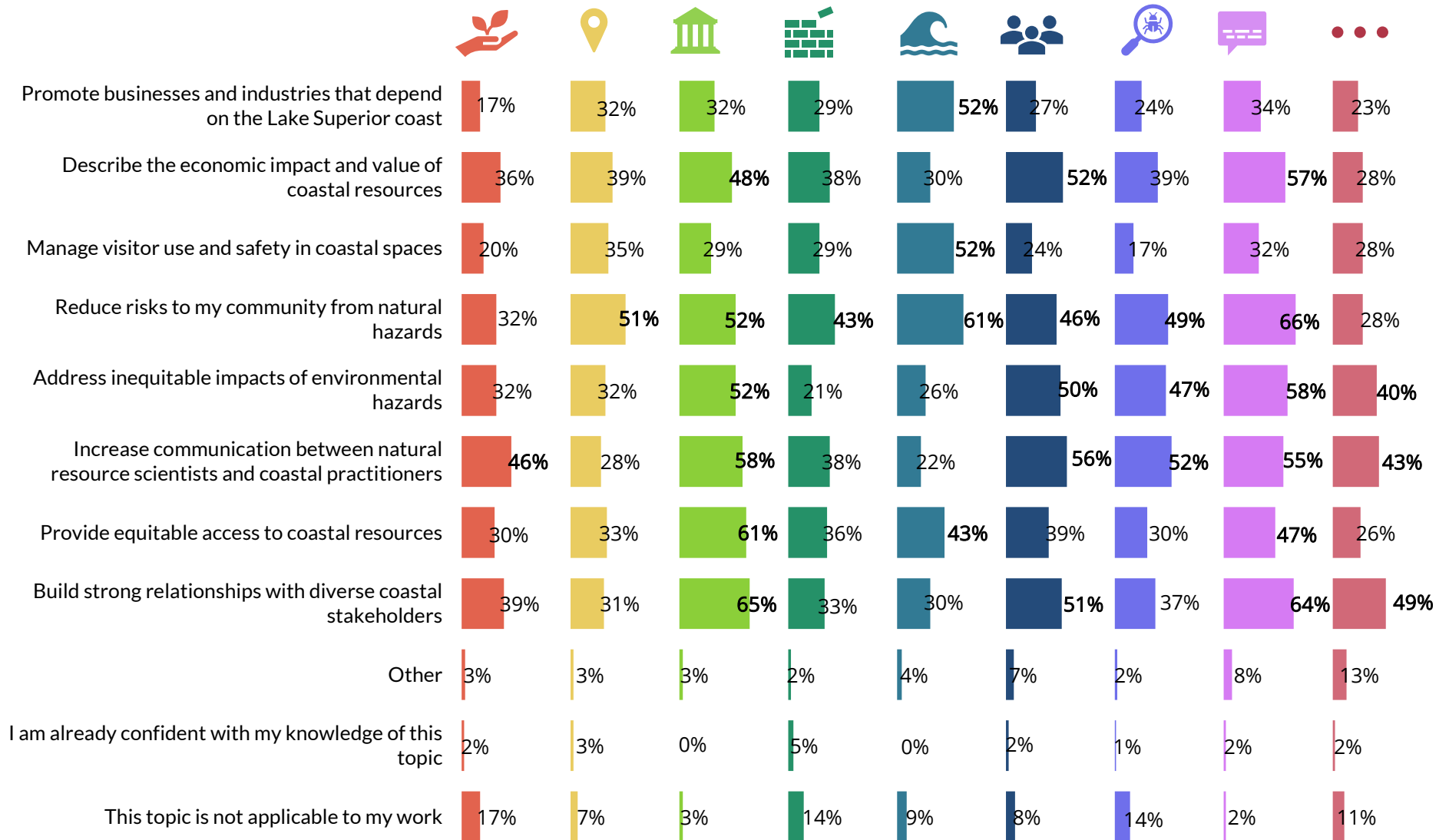




Image: Adults learning on the water in a fleet of canoes.

Economic and Social issues

At least 46 percent of resource managers, researchers, outreach professionals and communicators all expressed a high level of interest in increasing communication between natural resource scientists and coastal practitioners. This suggests that these groups are particularly interested in communications that allow for exchange across professional silos.

Fifty-two percent (52%) of respondents identifying as waterfront places & industry professionals are interested in the subtopic “Promote businesses and industries that depend on the Lake Superior coast”. This stands out compared to the lower levels of interest in this topic expressed by respondents belonging to other professional role types.

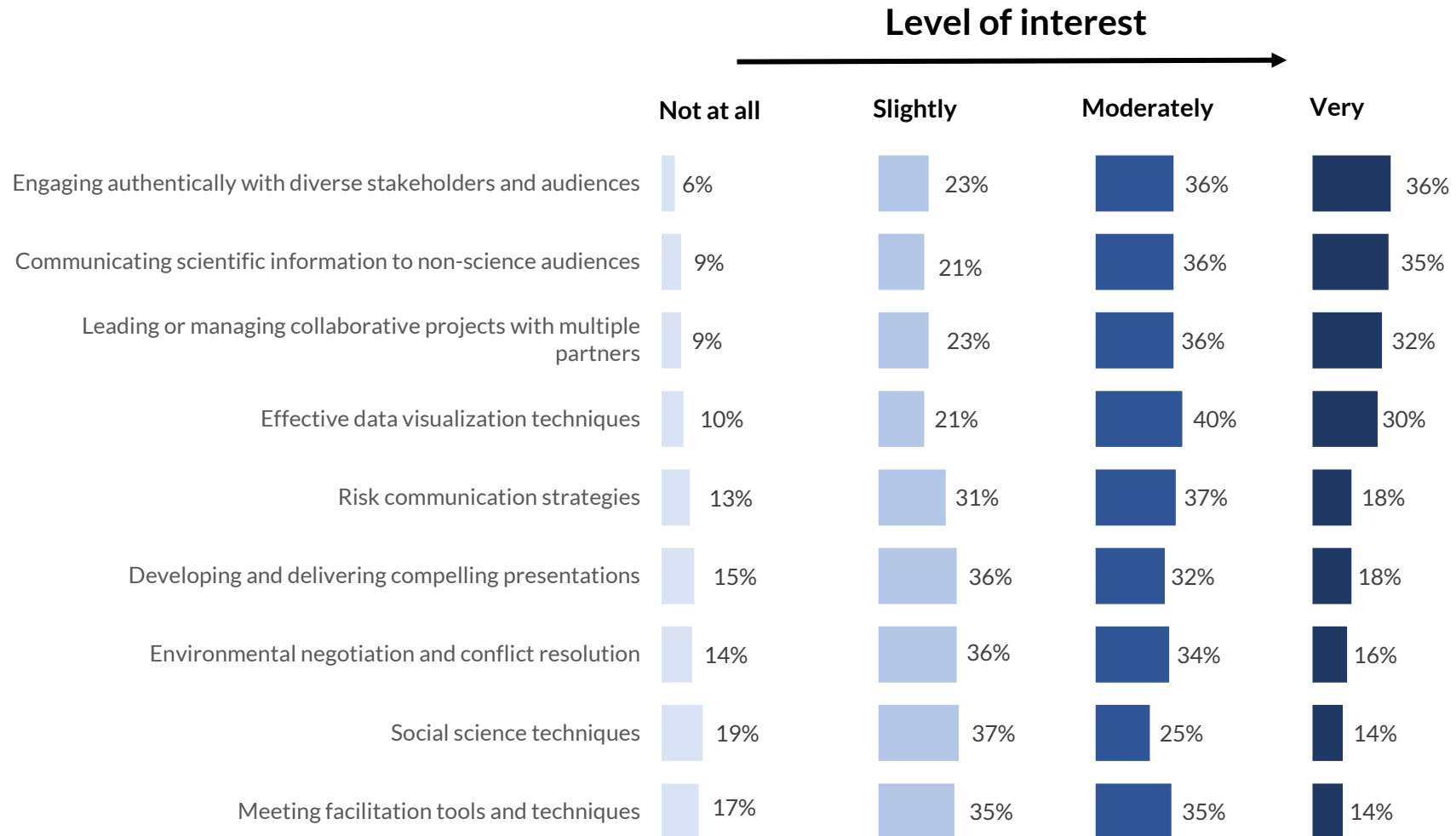
There is a high rate of interest in reducing community risks associated with natural hazards across all professional roles, and especially among those who work in waterfront places and industries or in communications. Natural resource managers are the exception, with only 32 percent of that group selecting this as a subtopic of interest.

Civic leaders are particularly interested in access and equitable engagement. This group showed a very high interest (61%) in the subtopics, “Provide equitable access to coastal resources” and “Build strong relationships with diverse coastal stakeholders”.

Skills-Focused Learning

In addition to gauging interest in broad coastal issues and specific training categories and topics, this assessment asked respondents to rank their level of interest in different professional development skills. The chart below shows where respondents are most interest in growing their communication and leadership abilities.

How interested are you in the following **professional development** skills training topics?



Open ended: Are there any other professional development topics or skills that you would like the Coastal Training Program to offer?

Forty-four survey respondents (approximately 14% of the total 319 respondents) provided answers to the open-ended question, “**Are there any other professional development topics or skills that you would like the Coastal Training Program to offer?**” Of these responses, 4 survey respondents shared some variation of “No” or “Cannot think of additional topics” and these responses have been omitted from the Topic summaries presented below.

The remaining 40 open-ended responses reflected a variety of desired training topics ranging from technical writing assistance to improving cultural understandings of Indigenous perspectives. The section below presents the direct quotes of needs assessment survey respondents compiled by topic. **Six major topics, or themes, that emerged from these open-ended responses include:**

1. Justice, Equity, Diversity and Inclusion
2. Financial Assistance
3. Science/Environmental Communication
4. Planning & Community Engagement Processes
5. Virtual Meetings & Technology Tools
6. Synthesizing the Bigger Picture

Topic 1: Justice, Equity, Diversity and Inclusion

Subtopics related to this broader theme include engaging with communities in ways that improve accessibility and employ a trauma-informed lens. Additional comments reflect a desire to improve understandings of Indigenous cultural and natural resource practices and Indigenous approaches to natural & cultural resource management. One individual also specified that the visibility of persons of color in presentations is important.

1a) Environmental Justice

- *environmental justice - engaging communities of color in regard to their natural resource needs and issues*
- *Need more people of color presenting. As an older, experienced person, I'm looking for opportunities to be a mentor or advisor to the next generation.*

1b) Accessibility & Inclusion

- *How to incorporate diversity and inclusion practices in all presentations. How to address disparities with a trauma-informed lens.*
- *Making public meetings more accessible.*

1c) Cultural Sensitivity & Tribal/Indigenous Perspectives

- *cultural training (esp with regards to interacting with Indigenous communities);*
- *I would suggest incorporating training in cultural resources using both Indigenous approaches and scientific approaches. It is important to realize I think that we are preserving the land-water interface and that wonderfully complex interplay of the two.*
- *Tribal Relations, human diversity in natural resource management*

Topic 2: Financial Assistance

Five respondents mentioned funding or financial need. Their suggestions ranged from general accounting assistance to simply stating the financial limitations of their organizations. Specific training suggestions within this topic area include grant writing and funding resources. One respondent also shared an interest in technical assistance which, while not directly related to financial help, is included in this section.

- *Bookkeeping/accounting/financial management*
- *Grant writing for green infrastructure and coastal hazard mitigation projects*
- *Information about grants, funding resources, and technical assistance for small communities like Bayfield to help them implement effective policies and programs that restore/maintain resilient shoreline and upland habitats.*
- *Need staff and funds to address the issues along our coastal area. Projects, projects, projects need to be completed.*
- *This seems like a great list. Note that I'm interested in the above if they are free, mainly. My institution is pretty strapped for funds.*

Topic 3: Science & Environmental Communication

Six respondents shared training ideas related to a larger topic area of science communication or communication more generally. This included how to communicate information using online tools, effective communication with government staff, decision makers, policy makers, and other non-science audiences, and making connections between watersheds and Lake Superior.

- *Bring trainings on using interactive tools like Story Maps. I saw that increasing communication between scientists and policy makers was a proposed training topic, but it seems that communicating science isn't the issue - it's more about building trust and community, to foster an open-minded environment first, and then communicating the science.*
- *How to better communicate with and influence local governments and decision makers.*
- *In communicating scientific information to non-science audiences I am thinking specifically climate change information*
- *Citizen Science Training to merge with NERR research programs*
- *Helping people understand the connection between the entire watershed and Lake Superior.*
- *Technical writing workshops*

Topic 4: Planning & Community Engagement Processes

Five respondents shared detailed suggestions for their training needs related to future planning, community engagement, and process-driven coastal management practices. Specific training suggestions included public and landowner engagement in both planning and implementing waterfront or shoreline projects, assistance navigating specific tools, technical assistance, and help evaluating community outreach efforts.

- *How to engage residents in collective visioning/planning about waterfront uses and development on ongoing basis (not just when a major planning document such as Comp Plan or Waterfront Development Plan are being updated).*
- *What is the important information to gather from landowners throughout the process of protection shorelines that others have learned to ask landowners at different points along the process, i.e. during the education phase, site assessment phase, project design/implementation phase, completion/maintenance/expectation/mindsets phase. Solutions for shoreline protection are diverse based on naturally conditions but couple these with diverse landowners/mindsets make the navigating to a solution complex.*
- *Maybe Digital Coast's Adaptation Planning for Coastal Communities*
- *With so many visitors and new property owners coming and moving here, it would be great to have resources to the lodging industry and chambers of commerce/visitors centers about how to live with the land and waters up here. [...] HOW are we going to deal with this major migration challenge?? We have few enforceable zoning laws, cheap land, excellent quality of life, low crime rates--we are a go-to zone and we are not ready for what's coming.*
- *How to effectively plan for and ultimately assess and measure whether community outreach programs had real, demonstrable, change(s) in the behavior or lived experience of participants and their communities. This relates to the "social science techniques ... " question above.*

Topic 5: Virtual Meetings & Technology Tools

Five respondents shared that training in virtual meeting tools or other online technologies would be useful to them. Specific tools mentioned included Zoom and StoryMap.

- *Collaborative zoom meetings*
- *Using online and virtual tools effectively to expand my reach.*
- *You have done an excellent job including so many topics pertaining to our coast! Thank you! Personally, I'd like to explore the different platforms to virtually communicate these topics to our audiences.*
- *Training in new and existing technologies and e-platforms that will be applied to enhance outreach programs in a virtual world.*

Topic 6: Synthesizing the Bigger Picture

Four respondents identified that the program can offer some interpretation of the complexity of this landscape at a system or watershed scale.

- *Training on what environmental data sets are being created by the many entities gathering data, which data sets stand up to scrutiny, and what story are they telling (current conditions and status and trends).*
- *Knowing what to monitor to measure success or change or strategic focus in a community. That change may be ecological, social or economic.*
- *More on watershed management, hydrologic management, and landscape scale conservation. The community may benefit from training on how to plan and raise money for landscape scale initiatives.*
- *Greatest Superior watershed threats/challenges*

Other Responses Many (12) submitted comments did not fit neatly into the above topic areas. Several of these suggestions pertain to organizational leadership capacity, construction and engineering best practice, and value assessment training.

- *Stormwater management/ Permitting and erosion control BMPs for contractors working in the Lake Superior Basin.*
- *Improve safeguards for the SLRE from major storm events and potential pollution spills.*
- *Coastal Engineering Techniques and analysis*
- *Ecosystem services quantifying and delivering to community*
- *Leadership training*
- *The nature of power base identification and collaborations across state, federal, and private agencies. Specific intent: identification of decision-makers within organizations for their diverse viewpoints and ability to form effective collaborations.*
- *The working waterfront workshop was incredible. I would like the working waterfront data to be standard for all Wisconsin Commercial Ports.*
- *I'd rather see you out killing Buck thorn and other such things*



Image: A traditional classroom learning environment at the Reserve's Confluence Room.

Training delivery
preferences

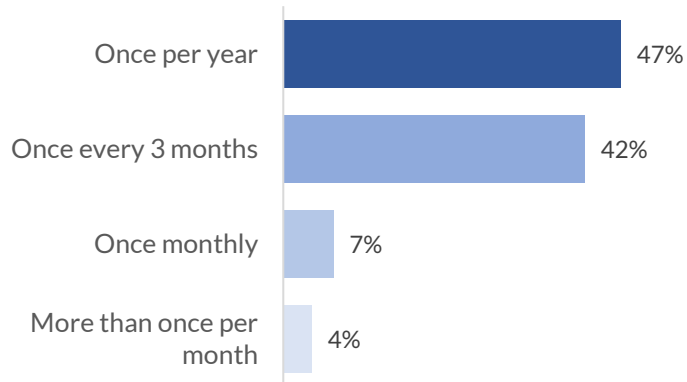
What
motivates
participation?

Training Event Attendance

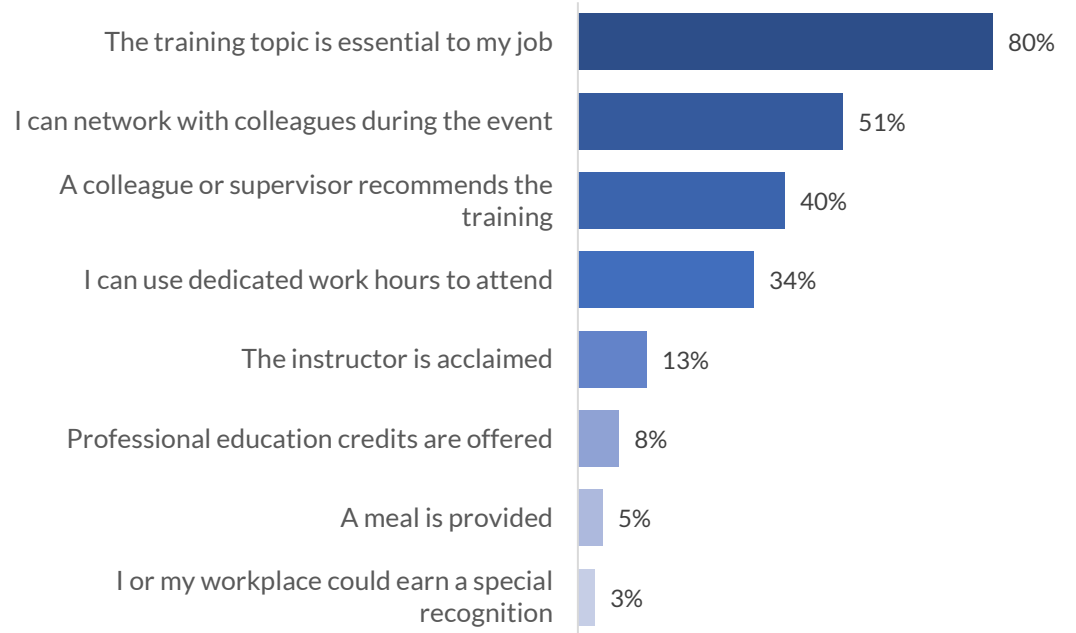
Most respondents attend professional development or training events once every 3 months or less. Monthly or more frequent attendance is rare.

Unsurprisingly, attendance at trainings or workshops is best motivated by a topic's indispensability to the individual's job. Ability to network and recommendations by a colleague or supervisor are also significant factors influencing attendance. Instructor acclaim is not a critical motivating factor for many respondents. The ability to receive professional education credits, a provided meal, and "special recognition" were all selected by fewer than 10 percent of respondents.

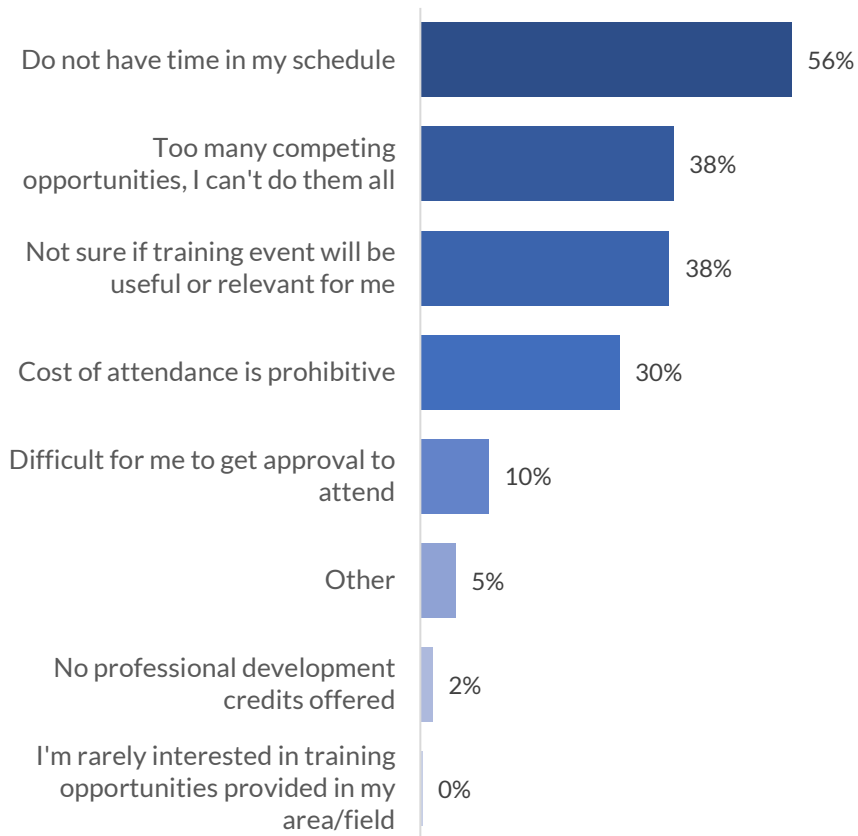
How often do you attend professional development or training events? Select the closest option.



What circumstances influence your decision to attend a training or workshop? Select all that apply.



What prevents or limits you from attending training or professional development events?



Competition for time is the greatest barrier to training and professional development attendance. A saturated supply of opportunities is also a limiting attendance factor, as well as uncertainty about the relevance or usefulness of a training event. The majority of “Other” responses for this question were related to travel distance or limitations on authorized travel.

Only 8% of respondents indicated that the ability to earn professional development credits is a significant factor influencing their decision to attend a workshop or training.

A wide variety of responses characterized this open-ended follow-up question:

What, if any, professional certifications or continuing education credits do you need to maintain for your current position?

Professional certifications

Examples: AICP, Wetland Delineator, Macroinvertebrate Identification, SWPPP Design & Construction Management

Continuing Education Units/Credits

Examples: Professional Engineer (PE) licensure credits, Society of American Forester credits, American Planning Association, National Environmental Health Association, landscape architect state licensure

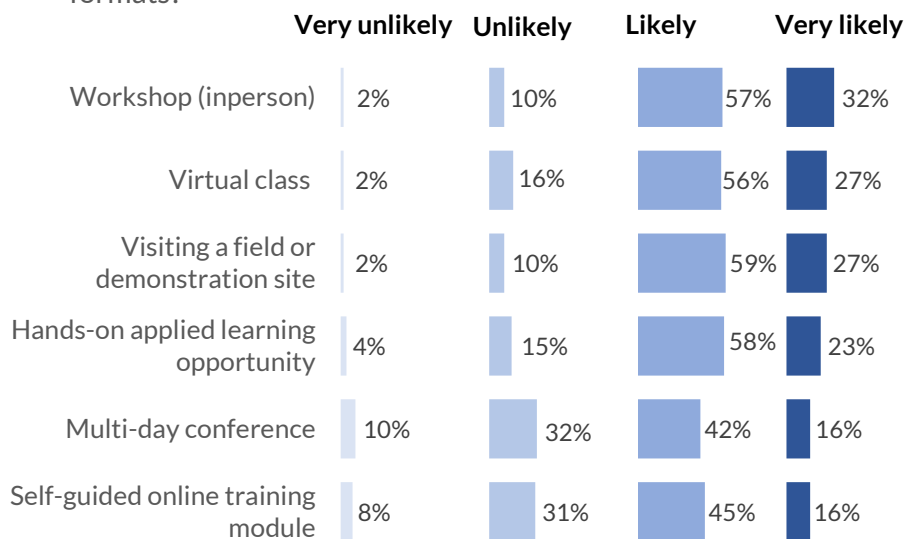
Professional skill or knowledge sets (required certs or licensure unclear from response)

Examples: Professional geologist, soil tester, pesticide applicator

Training format

This survey was issued during a year in which professionals' tolerance for virtual learning was tested in new and unprecedented ways, with the COVID-19 pandemic upending learning norms. **Respondents indicated that when in-person work was again an option, they are almost as likely to attend virtual classes as in-person workshops.** Field visits are likely to draw participants. Respondents indicated a much lower likelihood of attending conferences that are multiple days in length and self-guided online training modules. No training format was universally rejected.

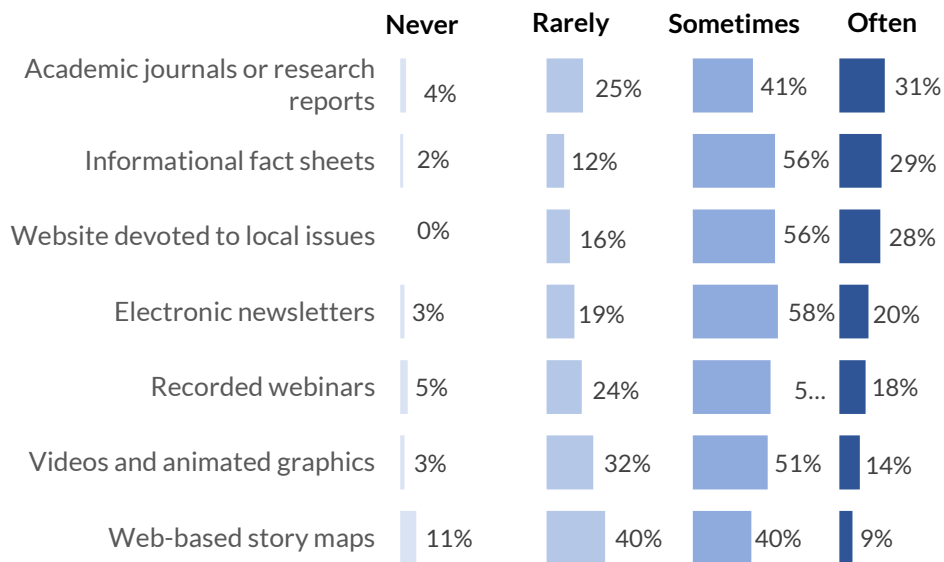
When we are able to conduct in-person work safely, how likely are you to attend a training event held in the following formats?



Information sources

Respondents most often access information from fact sheets, local issues websites, and electronic newsletters. Academic journals are frequently accessed by almost a third of respondents, but also “Rarely” or “Never” accessed by nearly another third. Nearly 75% of participants “Sometimes” or “Often” access recorded webinars, but more than a quarter “Rarely” or “Never” do. Videos and animated graphics are less frequently accessed reliably than most of the other sources. Perhaps the most interesting finding is that story maps, increasingly touted as the standard for online place-based storytelling, are “Rarely” or “Never” accessed by more than half of respondents and fewer than 10 percent indicated they often get information from them

How often do you access information from the following sources?



Overall Impressions

The Lake Superior Reserve Coastal Training Program can incorporate some key insights from this needs assessment into its future program planning.

More respondents selected climate change, resilience, and climate impacts as their priority interests than any other topics in this assessment. Across all professional roles, respondents are concerned about the localized impacts of climate change, particularly with respect to planning for flooding, and are looking for structured opportunities to identify and integrate climate solutions at the community level. Action-oriented resilience topics also garnered high interest from across disciplines. Planning for dynamic water level conditions and more frequent and severe storms are critical and confounding local issues where professionals in all roles and disciplines are looking for support. The Coastal Training Program can feel confident that providing direct or integrated climate change programming will address current concerns of coastal decision-makers in the Western Lake Superior region.

Civic leaders are engaged and broadly interested in coastal issues, particularly where they are best poised to use their influence. Those who serve in local elected or appointed positions in government are motivated to learn and act across a spectrum of coastal issues. Civic leaders (along with local government staff) show especially high rates of interest where training topics are most directly connected to community safety and well-being, such as hazards, storm resilience and authentic engagement, as well as local governmental authority, such as city code barriers and planning. It is encouraging that civic leaders recognize their positions enable them to directly influence coastal issues. Moving forward, the Coastal Training Program can be very intentional to position itself directly as an available resource to civic leaders and local staff working on coastal challenges and

invite opportunities to work together toward positive outcomes for coastal communities.

Resource managers, waterfront industry professionals and researchers tended to show more selective interest in training topic areas. For these roles, higher-interest training topics tend to “pop out” where they stand apart from other professional roles or where they diverge from otherwise muted subtopic interest. Paying intentional attention to these illuminated exceptional topics where they resonate with these specific role types could help to build strong relationships and programming pathways for professionals in these positions, especially where technical assistance needs for these standout topics are not currently being met. Examples of this might include offering invasive species control project design learning to waterfront industry professionals or engaging natural resource managers specifically in explorations of emerging Great Lakes contaminants.

Respondents are seeking opportunities to explore nature-based solutions to water management challenges. Assessment results indicate decision-makers and practitioners would like to incorporate natural or nature-based features on the landscape, including nature-based shoreline design, wetland protection, and reduce barriers to green infrastructure implementation. The Coastal Training Program can support learning focused on nature-based solutions by connecting coastal decision makers with best practice and evidence-based guidance, particularly as these solutions work additively to support resilience within coastal watersheds.

Coastal decision-makers would like to grow their own facilitation capacity and improve communications across fields and with diverse audiences. When asked about interest in skill-based trainings focused on communication challenges (authentic stakeholder engagement, science communication, collaborative project leadership, and building cross-disciplinary and cross-cultural linkages), survey respondents indicated these

are areas of high learning interest. The Coastal Training Program is likely to find a willing audience if it continues to build out process and communication skill-building offerings in the future, although care should be taken to ensure that these offerings are grounded in and informed by cultural context within a regional estuarine or coastal issues lens and tailored to local coastal decision-maker audiences.

Training attendance is largely driven by topical job alignment and opportunities for person-to-person connections. While often touted as important elements of a successful training event, participants here indicated that food and professional credit offerings or recognition programs are not big motivators in their decision to attend a workshop or event. Workshops (in person or virtual) and hands-on experiences are likely learning formats to be attended; multi-day events and self-guided tutorials are less appealing.

Overall, learning needs are broad, and there were relatively few training topics presented in this survey that garnered low or no interest at all. Without a doubt, this assessment illustrates the primacy of the Lake Superior region's grand coastal challenges, including climate change, coastal community resilience, and dynamic water levels. These challenges touch all local coastal decision-maker sectors and can serve to ground Coastal Training Program learning objectives across audiences, training topics, and over the span of time. Importantly, this assessment also reveals that coastal decision-makers in the Lake Superior region are not single-issue focused, but rather are motivated by a variety of coastal issues and challenges. While the Coastal Training Program may not expect to achieve comprehensive coverage of all coastal learning needs for all audiences, there is evidence in this assessment to support provision of a broad suite of topical coverage within the program scope, at least in the near term. A coastal learning academy model, in which the program is structured around an annual course catalog with varied offerings for a professional audience, might be worthy of

exploration as the Coastal Training Program strives to meet the breadth of learning needs, brand the program and build connections to those professionals and local leaders who are invested in mindful coastal management and seeking empowerment through learning opportunities.



Image: Ash trees on an estuary island.