The Importance of Capacity-Building in Watershed Groups: Lessons from the Hudson River Watershed, USA

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Abstract

Municipalities face challenges meeting environmental protection and conservation goals due to a lack of resources, capacity, and political will. As a result, grassroots environmental organizations often emerge to help meet these challenges by filling gaps in governmental operation and structure. At the watershed scale, environmental organizations and groups are critical for effective watershed governance, often helping with collaboration as well as providing municipalities with additional support and resources. Despite the vital role environmental organizations and groups can play, they continue to face challenges such as insufficient resources, inconsistent leadership, and lack of organizational structure, thus limiting the contributions they can deliver. In this manuscript, we present case study research on watershed groups exploring their capacity to meet their mission and goals. Drawing from a needs assessment study conducted in the Hudson River watershed in 2019–2021, we found that while watershed groups are generally in need of technical resources, participation, and funding, our research suggests capacity (such as internal structure, strategic planning, and leadership) is most important for successful and sustainable groups. Therefore, we argue that support for capacity is more likely to help sustain groups and their long-term beneficial impact. To make this argument we present qualitative interview and focus group data to articulate watershed group goals, challenges, and needs, with an emphasis on capacity-related themes that emerged around expertise, leadership, structure, and planning. We then conclude with recommendations that can be applied to other watershed groups in the United States, and likely beyond.

Keywords Environmental governance · Watershed groups · Needs assessment · Hudson River

Introduction

It is challenging for municipalities in the United States to meet broad environmental protection and conservation goals (Stahl and Fremier 2023). As a result, grassroots environmental organizations often emerge to help meet these challenges (Lubell 2004; Savan et al. 2004).

Organizations such as these work to fill in gaps in governmental operation and structure by supporting local values and implementing projects (Plummer et al. 2013; Grant and Langpap 2019). Watershed-based goals and projects pose a particular and important example of this, where municipalities can struggle to manage environmental challenges that cross political borders with other authorities who may or may not share the same values and goals (Kim et al. 2015; Epperly et al. 2018; Finewood et al. 2023; McIlwain et al. 2023). This makes watershed-based environmental organizations and groups critical for effective governance, as they can often fill gaps within and between different communities who share the same watershed, helping with collaboration as well as providing municipalities additional support and resources. But despite the vital role these groups play in the implementation of local environmental goals (Villamayor-Tomas and García-López 2017), they continue to face challenges (Floress et al. 2009; Lemos et al. 2020) such as a lack of leadership, financial resources, collaborative relationships, developed internal

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structure, or specialized expertise; thus limiting the contributions they can deliver.

Research on the characteristics of successful watershed-based environmental organizations and groups—that is, those that help meet locally desired environmental outcomes—often point to the importance of effective group operation, especially clearly defined roles and responsibilities (Floress et al. 2011b; Biddle 2017; Mengistu and Assefa 2020) and the number, diversity, motivation, and engagement of volunteers, members, and partners (Koontz and Johnson 2004; Dakins et al. 2005; Bidwell and Ryan 2006; Koehler and Koontz 2008; Lukacs et al. 2016; Thompson and Burnett 2019). It is this 'social' capital that is often attributed to a watershed group's[1] ability to collaborate, facilitate information sharing, or utilize resources (Floress et al. 2011a). Other key factors associated with watershed group success include clearly defined problems (Floress et al. 2009) as well as strong leadership, access to data or technical resources, and sustained funding (Chaffin et al. 2012, 2015). The presence of a watershed group can be correlated with better water quality (e.g., lower dissolved oxygen deficiency and more swimmable and fishable water bodies) (Grant and Langpap 2019) and pollution reduction (Biddle 2017).

While effective collaboration, participation, and resources all play a critical role in watershed group success (Nowlan and Bakker 2010; Floress et al. 2011a), the ability of groups to build organizational capacity, a factor that we argue underlies other reported characteristics of successful watersheds groups, is not as well understood. Likewise, there is limited research on the needs of watershed groups that would help build such organizational capacity. As a concept, capacity is often situated in broader ideas about resilience, whereby resilient systems and institutions *have the capacity to*, "effectively prepare for and respond to future crises" (Choudhury et al. 2021:5; Baird et al. 2021). In this view, groups with this type of capacity have established learning and organizational processes that allow for robust responses to, and anticipation of, future change (Lebel et al. 2006; Pahl-Wostl 2009). Organizational capacity is the steps groups must take to *actually build* capacity and meet their goals. For smaller local organizations, such as watershed groups, organizational capacity is the retention of institutional memory/strengths alongside the potential to learn, adapt, and sustain the organization's ability to achieve their goals (Barthel et al. 2014). To build this capacity, we suggest, watershed groups must prioritize investment in their leadership, internal planning and operations, identity, and communication; areas that are often less supported or deprioritized (Floress et al. 2011a).

In this manuscript we present case study research on watershed groups, drawing from a needs assessment project conducted in the Hudson River watershed in 2019–2021. For the purposes of this manuscript, we define watershed groups as community-based coalitions working to protect local water bodies through a watershed framework. Watersheds themselves are often defined as the area of land from which water drains into a river, stream, or other waterbody. Water flows off the land into a waterbody by way of rivers and streams, and underground through groundwater aquifers. Watersheds are typically defined by geography and rarely match political boundaries (Meierdiercks et al. 2024).

A watershed framework is commonly understood as a governance approach that encompasses the political and ecological systems of a watershed, although the scale of that watershed approach is almost always context-specific (and may necessitate going beyond those borders) (Davidson and de Löe 2014). As an ecosystem, watersheds are typically perceived as the natural unit for water resource management as they best define the physical boundaries of water flows that are impacted by municipal authorities and the stakeholders who live within them (Warner et al. 2008). In the United States, the Environmental Protection Agency advocates for a watershed framework that includes multiple, diverse participants, good science, and engagement; applied across the rural-to-urban gradient (O'Neill 2005). Problematically, despite the logic of organizing governance around hydrology, watersheds do not typically overlap with social and political organization (Kerr 2007). As such, watersheds are also political concepts, empowering some constituents and disempowering others (Molle 2009; Hill et al. 2018) and management decisions can be shaped more by power negotiations than geography (McIlwain et al. 2023).

The themes we present from our Hudson River watershed group needs assessment research project were based on a content analysis of 32 semi-structured interviews with group members and four focus groups comprised of group collaborators. We conducted this research for two reasons: first, as a group of academics and practitioners, we are interested in improving how we help and support watershed groups, and second, we recognized a gap in research specifically about watershed group capacity. Our research and content analysis revealed critical areas of strength and need for watershed groups. We found that—while likely obvious to people who work in the field—needs like technical resources, robust participation, and funding are important to successful groups. However, our interpretation of the data suggests capacity (and a corresponding focus on capacity-building) is the most important need for successful

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[1] Heretofore we refer to all watershed-based environmental groups and organizations as "watershed groups."

Fig. 1 Hudson River Watersheds (Map developed by the New York State Department of Environmental Conservation andthe Hudson River Watershed Alliance)
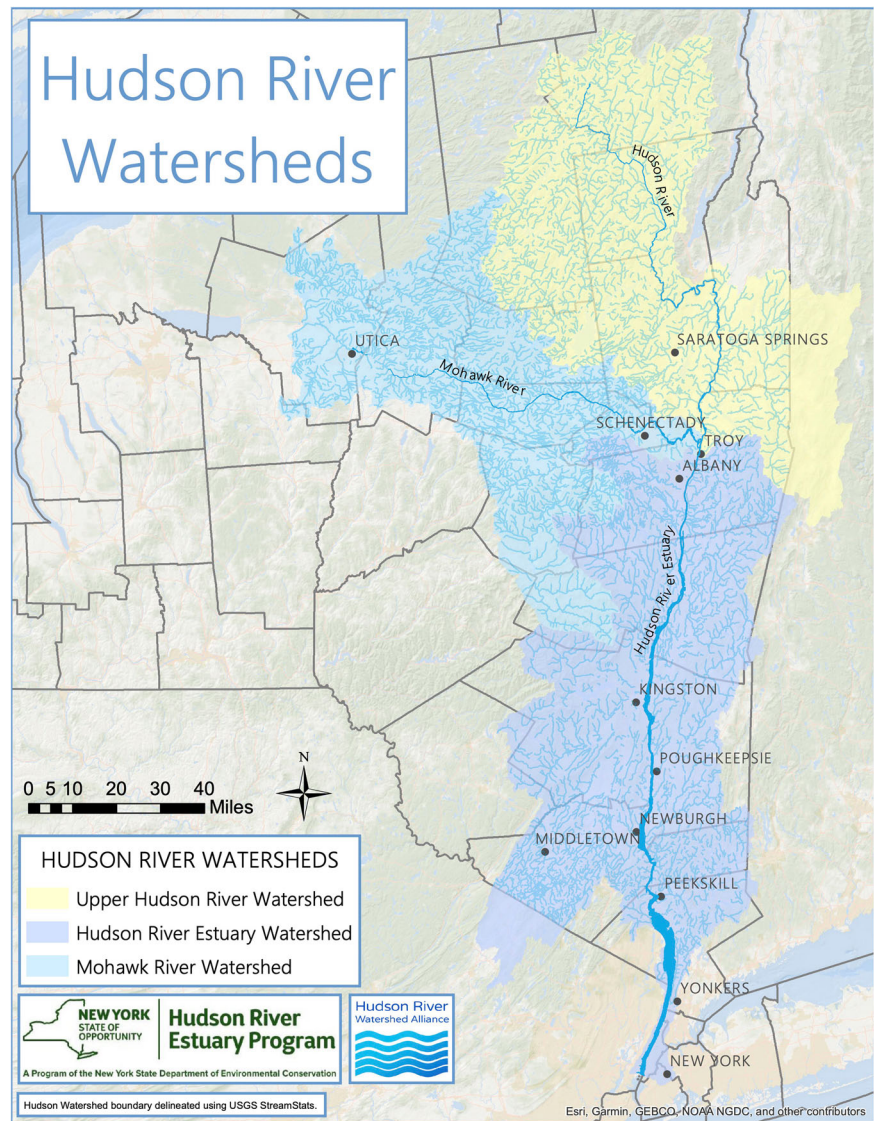
and sustainable groups. Therefore, we argue that support for capacity is more likely to help sustain groups and their long-term beneficial impact.

In the remainder of this manuscript, we explore themes developed from our research and analysis to better articulate key areas of focus that can lead to watershed group sustainability and success. Immediately below we explain the research methods and context. We then outline the key themes that emerged from our content analysis, beginning with expertise and legitimacy as goals, then specific capacity-related needs that support those goals: leadership, identity, structure and planning, and succession planning. We conclude with a discussion of how this paper complements and extends the current understanding of watershed groups, with recommendations on how to effectively move forward.

Context and Methods

This project was designed to help inform and meet the goals of the Hudson River Watershed Alliance,[2] a regional organization that supports watershed groups working towards effective governance of the Hudson River and its tributaries. The researchers for this project were professionals affiliated with the Hudson River Watershed Alliance in a range of roles (consultants, employees, academics, board members). We conducted a needs assessment with the overarching goal of learning more about constituent groups and developing resources to assist them in meeting their goals. As both affiliates and researchers, we acknowledge our position of influence and our interest in applying our research outcomes. We also acknowledge the power

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[2] See, hudsonwatershed.org, last accessed December 14, 2023.

dynamics inherent in our research and its outcomes (Campbell et al. 2006; Finewood et al. 2021). The research methods were approved by the Hudson River Estuary Program of the New York State Department of Environmental Conservation.

Watershed Groups in the Hudson River Watershed

The Hudson River watershed is located in New York, United States (see Fig. 1). It begins at Lake Tear of the Clouds in the Adirondacks and covers 13,400 square miles, including New York City. The watershed is large but also fractured, embodying a diverse array of urban, suburban, exurban, and rural landscapes. However, it is somewhat typical for an eastern watershed in the United States, which are more community and citizen-led (versus western watersheds, which are often agency-led). Thus, there are a variety of interests and uses in the Hudson River watershed, making it challenging to manage issues such as water quality (Schuyler 2018).

At the time of this research, there were 28 active watershed groups who were associated with the Hudson River Watershed Alliance and working in the Hudson River watershed,[3] mostly in local tributaries. In our experience, watershed groups themselves are diverse in terms of structure, goals, etc. For example, they can range from a small group of volunteers to inter-municipal councils with staff or large 501(c)(3) nonprofit organizations. Groups may be focused on single or multiple issues (for example, their singular goal may be to oppose a new development, or they may be more broadly focused on issues such as water quality or expanded greenspace). Importantly, groups can elevate and advocate for environmental issues in ways municipalities cannot, often due to regulatory limitations or a fear of looking biased. Thus these groups regularly engage communities by gathering input and support (or opposition), filling an important collaborative niche monitoring local rivers or streams. Watershed groups are 'boots on the ground' and 'waders in the water.'

Watershed groups are also collaborative. They often help/encourage municipalities prioritize water management and collaboration across political boundaries. They convene stakeholders around common water issues (e.g., degraded water quality or poor legal enforcement), share information, coordinate projects, educate residents, and promote stewardship through projects like tree plantings and stream cleanups. For example, Hudson Valley groups are actively monitoring water quality to understand conditions, partnering on research with academic and municipal institutions, and helping to write and implement watershed management plans. Many regional projects have been successful through partnerships with municipalities, county agencies, Soil and Water Conservation Districts, Cornell Cooperative Extension offices, community organizations, and regional nonprofits like Hudson River Sloop Clearwater, Scenic Hudson, and Riverkeeper.

Methods

For the research design, we took a qualitative social science methodological approach to researching perceptions of watershed group strengths and needs (Valentine 1997; Baxter and Eyles 1999; Kleinberg and Toomey 2023; Roux et al. 2023). Our goal was to better understand strengths and needs to help the Hudson River Watershed Alliance meet its goals of supporting watershed groups (e.g., appropriately targeted webinars and/or collaborations). We specifically utilized a needs assessment methodology, which helps to identify strengths and challenges in order to prioritize for effective interventions, particularly for civic-oriented groups (Donaldson and Franck 2016; Stefaniak 2021; Wu 2021). A needs assessment approach is also useful for orienting research towards action (Sankofa 2021; Bisbal and Eaton 2023).

First, we conducted semi-structured interviews with watershed group leaders or representatives. We interviewed 32 people from 28 different watershed groups across the Upper Hudson River, Mohawk River, and Hudson River estuary watersheds. Interviews took place between November 7, 2019, and March 4, 2020, in-person, except for one interview conducted via phone. Interviews lasted between 35 and 90 min. Interview questions were designed to learn more about the background of the individual and group, the issues facing their watershed, and the strengths, challenges, barriers, needs, and goals of the group overall. Each interview was recorded and transcribed.

Next, we utilized focus groups to ascertain outsider perspectives of watershed groups as well as contextualize what we learned from group member participants, particularly around strengths and needs (Cyr 2019). We invited people from institutions that collaborate with watershed groups to participate in four focus groups. Three focus groups were organized by similar affiliation: municipality staff and partners who work with groups, academic institutions and scientists who provide technical support, and regional collaborators who influence watershed group goals. The final group was comprised of a diverse mix of experts and influencers who have experience working with groups.

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[3] The Hudson River Watershed Alliance collaborates extensively with watershed groups in the Hudson River watershed. To prepare for this project, the Hudson River Watershed Alliance surveyed all affiliated organizations to confirm we provided all active groups the opportunity to participate in the project. While the 28 groups we interviewed may not represent every group in the region, it does represent all active and affiliated groups.

Participants included state and county agency staff, regional nonprofit staff, regional planning board staff, academic institution faculty and staff, and others.

In response to the pandemic, focus group meetings were held via Zoom between March 16, 2021, and April 2, 2021. Each session lasted two hours and included six or seven participants in conversation with each other, with questions prompted by a session leader. Of the 26 people that participated in focus groups, two were also interviewed during the first stage of information-gathering and 10 were also members of watershed groups. Each focus group meeting was recorded and transcribed.

In total, we spoke with 56 people as part of this study. Once interviews and focus groups were completed, we analyzed transcripts in two stages. First, we reviewed transcripts to develop general perspectives, such as common responses or ideas that emerged from the conversations (Charmaz 2006). Then, the research team developed a more focused assessment codebook and conducted a second review of transcripts to determine key themes related specifically to watershed group challenges, barriers, needs, strengths, and accomplishments across the region. We then analyzed these themes together to ensure rigor in our results. We draw on both direct quotes and themes to better understand broad topics (e.g., leadership) as well as details (e.g., leadership succession planning) that can inform watershed group decision-making.[4] Interview quotes and related information are presented below with efforts to mask participants and protect confidentiality. Each quote includes a unique signifying number (e.g., Watershed Group Participant 1) that identifies each participant and their attribution to either a watershed group or focus group.

Analysis and Results

In this manuscript, we argue that capacity is the most important need for successful and sustainable groups. In this section, we utilize quotes from the interviews and focus groups to illuminate key capacity-related themes and concepts that were prominent in our analysis. We begin with the concepts of expertise and legitimacy, which are the broad ambitions of watershed groups and are often attributed to groups with well-developed organizational capacity. We then discuss four capacity-related needs: leadership, identity, structure and planning, and succession planning. We characterize and nuance these needs as articulated by project participants, highlighting the way they connect to our broader conceptualization of capacity. It is important to

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[4] Both the Needs Assessment Report and Appendix are available at hudsonwatershed.org/watershed-needs-assessment, last accessed July 24, 2023.

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note that, while these capacity needs were the most-cited challenge for watershed groups, the broader challenge of limited capacity was evident in a variety of contexts:

"[E]verything is seen through the lens of capacity, too… I organize the meetings, I attend the meetings, I take the notes for the meetings, I do the actions on the meetings… I need hours to work, and I'm constantly called away from different things. And because we're small and we have so many different things going on, my brain is switching gears every hour and it's exhausting…"

- Watershed Group Participant 9

Expertise and Legitimacy

Overall, most watershed groups have 'high order' goals around water quality and community improvement. For example, when first queried about the goals of watershed groups, participants often expressed them quickly and concisely:

"Good water quality, good water quantity, and education are the three that come to mind real quick."

- Watershed Group Participant 5

"A river that we can swim in and eat the fish out of."

- Watershed Group Participant 27

"[M]y ultimate goal… is that people become the strongest advocates for themselves."

- Watershed Group Participant 8

However, through further conversation, it became clear that those goals were highly dependent on a group's expertise and legitimacy. In other words, the ability for watershed groups to meet their goals often depends on the wider community's (i.e., external) perception of their expertise, and because of that perception, their legitimacy. If groups are viewed as both experts and legitimate, they will often be included as collaborative partners on watershed projects.

Expertise is knowledge of local waterways, their conditions, and how to monitor/improve them. When asked if their watershed groups had adequate expertise, about one-third of participants said they did. However, we noted an almost universal ambiguity toward specific expertise amongst groups:

"I'm pretty good about finding the technical expertise that I need, at least in the science realm. In the business realm, less so... I just don't know where to go."

- Watershed Group Participant 4

"No, I feel like we have, with [university] there, we have access to whatever we need, really. But not that we can pay for somebody to do a lot of that. But for answering questions, for some technical assistance with things, we know where to go, anyway."

- Watershed Group Participant 13

Of those who felt their group had adequate expertise, they cited their own scientific knowledge or skill sets, or ready access from a close partner, such as an academic institution, a larger nonprofit organization, or a government-sponsored program. So, while expertise is important to group success, it is almost always readily accessible. In this view, expertise is less about knowledge than it is about establishing an external perception of a group:

"There's a sense of poverty around legitimacy, and that's something that is really, you can sense it very strongly. Who gets to be considered legitimate? Whose concerns are legitimate? Whose actions are legitimate?"

- Watershed Group Participant 6

"As much as they've been alerted to problems, it's more denial and adversarial relationship than trying to work to mutually solve the problems. I see an effort to discount the things we bring up."

- Watershed Group Participant 5

To be perceived as legitimate, watershed group members and collaborators cited many factors that include technical expertise, issue expertise, and other forms of knowledge. Legitimacy is largely understood as being externally perceived as experts who function well, are goal-oriented, and have formal relationships with collaborators, politicians, and other community members. An additional aspect of legitimacy comes from the challenge of communicating who groups are and the watershed-related issues they advocate for (i.e., identity). Many watershed groups are not well known in their communities and have a broad need to increase public awareness, interest, and engagement in order to build support for their goals. Similarly, many watershed groups focus on rivers and streams that may not be well known in their communities, despite their close proximity. To be unknown is a major hurdle for most watershed groups' ability to meet their goals:

"I don't think they even know we exist... [T]hat, to me, is one of the big hurdles. Is public awareness, public outreach, public participation. It's really hard to get people to understand what's going on."

- Watershed Group Participant 16

"But there is definitely a lack of knowledge, the vast majority of people in the watershed don't even know about the river. They only know about it as something that floods... every once in a while, and creates traffic. But when you are riding your bikes or hiking... which is something a lot of people do, you can barely even see the river... A lot of people are not aware of it, and I think it has to do again with the jurisdiction issue, where it kind of falls in between the chairs, right? No one, except for the [watershed group], no one is responsible for this river. No one is [advocating for it]... Except for what we are doing now, but we are like a grassroots initiative, a grassroots group."

- Watershed Group Participant 20

And I guess that's the biggest challenge. Trying to get that communication together and get that message out there, that communities realize that it's in their best interest to be involved. And the [watershed group] can be a source of help and information and worth the time and effort."

- Watershed Group Participant 3

Capacity-Related Needs

In this section, we present quotes that represent the capacity-related themes of leadership, identity, structure and planning, and succession planning. Although expertise and legitimacy stand out as key goals of watershed groups, project participants indicate these are unlikely to be in place if a group does not have well-developed capacity. Effective capacity means a group will have a higher likelihood of success in meeting their goals.

Leadership

Leadership can be defined as the ability to motivate a group of people to act toward achieving a common goal. Participants expressed a strong need for effective leadership amongst watershed groups, often discussing struggles to identify leaders within their groups, including for both executive-type roles or championing specific programs. In this view, leadership is a critical need for successful groups:

"[T]here's not necessarily that new leadership that's stepping up to fill that gap. I would say that is probably our number one challenge right now, just because the future of this group relies on having some form of leadership group, and that's somewhat in question right now."

- Watershed Group Participant 15

Participants expressed the difficulty in developing an organizational structure or specific set of actions without effective leadership, including a lack of, or inability to follow, specific mission, goals, and objectives. This issue can impact meetings, projects, partnerships, and more:

"But we haven't managed to cohesively get together and assign duties... I think part of that is, we don't have a clear-cut leader... We've had nobody step forward and say okay, I'm going to run the group..."

- Watershed Group Participant 16

Leadership often falls on unwelcome or unprepared shoulders. Dynamic people are often tapped for leadership, but they may not have the skills or experience to handle difficult situations, create a structure for sharing leadership, or develop the watershed group's capacity:

"Then becoming chair, because nobody else wanted to do it, so I stepped up. That means I have to spend more time doing it... I'm not very good at it yet. That's because we're in transition. Now, if we were doing the same thing, and we were doing the same things we used to do, then I could do the same thing that everybody else had done. But we're transitioning..."

- Watershed Group Participant 32

"The people who help me with leadership need to step up. And that has been happening, but it needs to increase. I've never, like, done this before. So I am not... I didn't take all those management training classes and neither did they. I mean, I'm really trying to be encouraging, but as the founder, there's like, it can be difficult for people to step up when they see somebody who's been dominating like I have been... The task is hard... I guess I'm not very experienced with things like this. Rules are a little clearer in a business setting... You can't fire someone in a watershed [group]."

- Watershed Group Participant 14

Importantly, leadership is not an innate skill. There is a need for training in leadership and associated tasks, especially to bring groups to consensus around key issues and get their buy-in for future steps:

"I really think [we need] some resources that taught people how to marshal their energy... towards their mission... Leadership is a skill like anything else. Working in community groups is a skill. People don't just show up and know how to do it. So, to teach people how to work as a team, to communicate effectively, to have good leadership. [T]hose are more like... soft skills. I don't really like that, because I think they are so important and 'soft' sort of undermines them. But those are the kind of skills [that are] good almost in any context. So some workshops where people can see and talk about these issues and learn, 'this is what works, this is what doesn't work.' My instinct is almost to say money. But you can throw tons of money at it, but if you don't have good people in place, that are mission-driven,

then when that money runs out, then that's it. And that is what happened… There were good people, but when the money ran out, nobody had a focused goal."

- Watershed Group Participant 9

Focus group participants echoed this need, in that training should be accessible for watershed group leaders:

"…to offer a leadership training opportunity to watershed groups that was something made more accessible to them, you know, go to them, make it something they can participate in in two-hour chunks or not have to take a day or two off of work, kind of thing. I never really thought about that before… and I think that could be really useful for people because it – I mean, some of the things I'm talking about are learning how to pay attention, to listening to other people, giving people that everybody a turn to talk, trying to keep the meetings fun, keep them on time. Move them along, get stuff done, and make people feel like I'm going home, that we got something done and I like these people and I want to come back. If we could just teach people enough to try to focus on those goals and give them some tools to do it, that could go a long way to helping some of these groups be more effective and stay together longer."

- Focus Group Participant, Group 2

Identity

Participants expressed a clear need for groups to develop and be able to articulate their identities and priorities. A well-established identity helps understand who a group is and what it does. This usually includes mission statements and goals, along with sets of tasks to meet those goals. Defining a mission, goals, and tasks, is a challenge for many watershed groups as they often don't know how to do it, or understand its importance. Without this direction, group energy can wane quickly while remaining efforts are spread too thin to be effective. Watershed groups expressed interested in developing their identity, but they need more information and guidance on how best to do this:

"I think understanding our role has been a tricky process. There's a lot of different, I'd say like, organizational mandates and expectations from each of the different [people] involved, and so

understanding what as a [watershed group] we're aiming to do is a pretty tricky thing."

- Watershed Group Participant 13

"The thing for our group in particular, it's just a matter of prioritization. Realistic prioritization… it is just hard to get this group to focus."

- Watershed Group Participant 9

Structure and Planning

Organizational structure and planning can best be understood as things like the establishment of bylaws, tasks, goals, responsibilities, and accountability. Without a robust organizational structure in place, bolstered by short- and long-term planning, groups cannot coordinate tasks to meet their goals. Watershed groups expressed a need for information on how to plan and develop internal processes:

"And I just was thinking if there's some way to provide [organizational structure], and I have no idea how, but an organizational audit or help with setting up a new – because a lot of these groups already exist, but maybe are, you know, not doing so well right now, or really doing well but could take a little bit of a push to be even better, so some sort of way to help those groups kind of self-assess or bring somebody else in, just do a quick, here are the things that your group is doing well and might need."

- Watershed Group Participant 12

Watershed groups articulated several issues that emerged due to a lack of organizational structure and planning, especially internal conflict. For example, conflict often emerges within groups—particularly alongside a lack of leadership—when group mission and goals are unclear. Differing priorities can create factions and dysfunction. Several interview participants spoke of the need for the development of an organizational structure for their watershed groups:

"We still need a lot of time and support to build a framework for our operation that is more stable and can start to bring more people in… I think that the easiest thing to say is, right now, is some level of

formalizing the roles we have been playing. And creating more clear parameters around – OK and this is the amount of time that you can, or expected. You can count on having a certain amount of income so that you can make sure that you are setting aside this time to do this role. So, roles…."

- Watershed Group Participant 6

"[W]e don't have the next level of organizational structure set up. So if we can't do that and figure out a way to bring in some money – yeah."

- Watershed Group Participant 17

"If we're going to get anything or do anything, we can't just be our own little islands anymore. We need to organize. And it's tough to organize, it's tough to organize people. It's tough to become a 501(c)(3). There's a lot of paperwork that goes along with that."

- Watershed Group Participant 23

"…they need some org development side of things. They have the passion, but don't have people who have run nonprofits, or they want to do a big cleanup but then there are insurances and administrations and a bunch of other stuff that needs to be built in that an incorporated volunteer group can't always do. So they need a physical manager or physical funds or another type of org structure."

- Watershed Group Participant 4

Succession Planning

Participants discussed the need for succession planning, and more specifically, planning for leadership transitions. Often, when strong leaders are in place, new leaders may hesitate to take on responsibilities. For this reason, several interview participants that currently play leadership roles expressed concerns around the sustainability of their groups. In some cases, the challenge of limited capacity may be a barrier for new leaders to step up. In others, watershed group leaders

may not have the skills or experience yet to effectively support group needs or facilitate its growth:

"…it worries me, if I were to step down right now, that I don't know how that position would be filled."

- Watershed Group Participant 22

"…how does it maintain, sustain itself and go from year to year? For how long will it be around? I have no clue. Will it be around as long as…? If [the current leader] drops out somehow, will it be able to carry on? I'm not sure. I'm not sure of that."

- Watershed Group Participant 21

"It took a concerted effort to try and get just replacements for our three officers… for vice chair, chair, and a secretary…. I am not running again… And that was true for the other people… who had been doing it for years and years. And just trying to get a commitment from other communities to say, 'Oh yeah, I want to come to meetings, but I don't want to be chairperson.' Or, 'I don't want some of the responsibilities that come with trying to pull all of this together'… And I see that as a problem going forward, because I feel like the whole thing is falling apart, because we don't have enough participation at the meetings. And you send out notices, make phone calls, and you go to people's offices, and… they just don't show up. And there's no leverage you have. Until they have a problem and suddenly, they become interested, but that's unfortunately, in some cases, it acts as a problem that's almost beyond a solution, that so many public officials don't really pay attention to some of the things that is going on… I made phone calls [to get people to step up]. I went to some town meetings and to village meetings as a representative to try to get more encouragement on having them be able to participate."

- Watershed Group Participant 3

Even successful or higher-capacity groups can be at risk if they cannot survive a leadership transition. Focus group participants highlighted the need for effective transitions. This also relates to watershed group structure and ensuring

that groups are organized in a way that is sustainable over time:

> "… I think that [watershed] group is maybe, if not at risk, at least not as strong as it was, and the paid coordinator is not there anymore, and that's a big, big reason."

\- Focus Group Participant, Group 1

> "I think knowledge management… a lot of times a group will sort of revive and be really interested in collecting a bunch of data, only to find out halfway through that this was done 15 years ago and it's sitting somewhere… [O]ne of the strengths is passion, and it's the passion of the individuals and people in watershed groups that often drive things, so it is tied to those people. And what happens when those people move on or move across the country for some reason? So that is a gap, again, that we were thinking that the municipality level could hopefully maintain, but a lot of small nonprofit community groups have this issue with having a strong personality, and how do you have longevity in succession."

\- Focus Group Participant, Group 2

> "…you see that kind of institutional knowledge and the momentum just evaporate, that's a huge set back. And it had me thinking… as far as CACs[5], and typically because CACs have like appointment slots, right? That they kind of have to keep moving, right? Even if they evolve and they kind of shift their focus, as board members come in and out and they have different interest areas. But it would be interesting if there were some way to kind of encourage watershed groups to exist more like that, so that you didn't have that phenomenon, which happens way too often, where they kind of fizzle out or evaporate, and then you don't even know where the documents are, and you know what the next steps are and they've or who has the GIS files."

\- Focus Group Participant, Group 3

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[5] Conservation Advisory Councils (also known as Environmental Advisory Councils) are independent committees that work with municipalities to advise on environmental issues.

> "I think that the sustainability issue and the skill that is needed to keep that organization going despite all of the changes and the people might be the number one issue. We are lucky to have engaged [university extension office], and I think that in times of political change and people change that has been very important. And I think I would love to see the state fund grants that would keep that kind of staying force behind. Over the 14 years I've been involved… I've seen many different forms and ways of existing, and I think that the county can play a big role in that, too."

\- Focus Group Participant, Group 2

Discussion

Hudson Valley Watershed Groups

Our content analysis of interviews and focus groups demonstrated compelling qualitative nuance in what are often generically understood needs and strengths of watershed groups, particularly when considering where limited resources should be directed. It is this nuance that compliments and extends our current knowledge of watershed group needs. It is commonly understood that support for watershed groups typically comes from volunteerism and in the form of grants and programs that provide technical training, funding, or project implementation (Brisbois and de Loe 2016; Hardy 2010). These latter resources come from a range of public, private, and nonprofit institutions (Koontz et al. 2004). However, usually only well-resourced or organizationally strong groups have the capacity to manage funding, projects, or programs (or even members/volunteers, for that matter). Our research suggests that technical resources like these are less critical than other forms of support directed at capacity (Plummer and Armitage 2010; Bremer et al. 2020), such as developing internal structure, strategic thinking, and succession planning. When these capacity-related arenas are strong, other necessary components of successful groups tend to follow, such as consistent funding and participation (Steelman and Carmin 2002). In other words, effective groups are also likely to have a solid structure, clear goals, and the capacity to maintain their own continuation.

In the Hudson Valley, we identified specific areas of capacity-based needs: leadership, identity, structure and planning, and succession planning. Although there is some diversity in the scale and context of watershed groups in the Hudson Valley, we see commonalities among successful groups and shared challenges among less effective groups.

Successful groups have effective leadership coupled with developed planning and organizational structures (Hardy and Koontz 2010). Effective leadership is particularly important (Morton et al. 2010). Watershed group members are often passionate but may also lack direction on what would be most strategic. Good leadership can motivate and help groups meet their mission, often ensuring tasks are completed and maintaining continuity.

Decision-making and follow-through are additional challenges related to leadership, particularly when watershed groups are trying to take on too many tasks. Groups often want to demonstrate success in the short term to bolster their reputations, but if they take on tasks without the capacity to see them through, they will likely fail. These efforts will become even harder with the climate crisis (Taylor and Sonnenfeld 2017), which is already affecting how and what watershed projects are prioritized or undertaken by stakeholders, and what is viewed as success in the face of uncertainty. There is a need for leadership that can create structure and goals that match a group's capacity and achieve their goals in the new normal of rapid environmental change.

Identity also emerged as a critical need for watershed groups. Without a clearly defined identity—built on a mission and tasks that are appropriate for the capabilities of the group—watershed groups run the risk of losing momentum (Floress et al. 2011b). An intentionally developed identity makes groups easy to recognize and associate with relevant issues. Groups who have invested in creating their identity and strategic plans typically have the capacity to take on appropriate projects or weather 'downtimes.' On the other hand, groups who have not established a clear identity often suffer from 'mission drift' and a disinterest from potential collaborators, such as municipalities or water authorities. An identity helps groups prioritize the issues they take on and determine where to best put their limited energy.

Even in the best of circumstances, managing watershed groups is a challenge as they depend largely on volunteers and minimal-to-no staff. Structure helps keep organizations efficiently focused on their mission and goals, while specifically helping with day-to-day tasks such as meeting coordination, administrative work, data management, project and program implementation, etc. (Floress et al. 2009). A clear structure can also help leaders delegate, develop new directions, or handle disruptive people and internal politics.

Watershed Group Capacity

More broadly, this research speaks to an important conversation about capacity. The interviews with multiple groups across a large, diverse watershed point to capacity-building as a key area of need. While capital and social capital are the resources a group needs (Bodin 2017), capacity is specifically understood as the ability of an organization to prepare for and respond to future change (Choudhury et al. 2021). But capacity is also obviously context-specific. The needs of groups in one area will unlikely be the same as groups in other watersheds. Thus, it must be clearly defined within and by communities (Hardy and Koontz 2010). Distinctions should be established between what is understood as capital (e.g., funding), social capital (e.g., access to expertise), and capacity. Researchers and practitioners should focus their attention on these areas of need.

Establishing these areas of need requires a bottom-up type of investment in groups where support for capacity comes before taking on projects or program funding (Matsler et al. 2023). Our focus here on organizational capacity is about the ability to get work done effectively and/or to fulfill a mission. Capacity-building is the time, effort, and resources needed to help groups build (and adhere to) their own processes (Williamson et al. 2020). In other words, groups that have done the 'front-end' work of internal planning, learning, and strategic thinking indicate a likely ability to adapt over time. This can also be seen in groups that have developed their identity, institutional processes, and internal and external communication strategies. The specific types of capacity should be determined through a strong community engagement process (Lebel et al., 2006).

Watershed Group Legitimacy and Expertise

Finally, expertise and legitimacy stand out as key goals of watershed groups that can be extrapolated across different scales and contexts. Expertise is the knowledge or know-how related to regional environmental conditions and challenges (Lidskog and Sundqvist 2018). But while technical expertise is important to group success, it is almost always accessible. So, expertise in this context is less about knowledge than it is about establishing a legitimate external perception of a group. However, translating group expertise to perceived legitimacy was a bigger challenge. Legitimacy in this context means that groups are perceived as a reliable a source of information or dependable collaborator for municipalities, media, and other community members (Plummer et al. 2013). Legitimacy reflects the broadly understood goal to be taken seriously by partners, particularly by regulatory agencies like state environmental departments, municipalities, and funders. This requires science literacy, science communication, knowing the right jargon, the ability to collect and manage data, and building respect within nearby communities.

Understanding the relationship between legitimacy, expertise, and capacity is crucial for understanding group

sustainability. Watershed groups with strong capacity are more likely to be perceived as legitimate and a source of expertise to municipalities, media, and other community members. In other words, groups that have well-developed missions, strategic plans, internal structure, etc, are more likely to have a 'place at the table' in regional governance because they are perceived as legitimate experts (Hardy 2022). The establishment of expertise and legitimacy should be an explicit goal with associated training.

Notably, aspects of legitimacy are also shaped by gender. Three interview participants who identify as women expressed challenges with being taken seriously in their watershed work. They felt this may have been due to communication style, a lack of appreciation from technical experts for lived experience/diverse view of issues, and/or bias, such as sexism. An additional interview participant mentioned they intentionally use simpler language to communicate their watershed work but have nonetheless been judged as not having technical knowledge because of that simpler language style. Anecdotally, our interviews suggest these challenges could easily be expanded beyond sexism to include racism, classism, ageism, etc.

Focus group participants often characterized a lack of legitimacy (and hence, a lack of desire for working with watershed groups) because of internal disorganization rather than a lack of expertise. In other words, rarely did watershed group collaborators discuss legitimacy in terms of specific expertise. Rather, a group was deemed not legitimate if they had frequent changes of leadership, internal disorganization, mission drift, etc. Likewise, several interview participants spoke to the need for organizational skills —including leadership, management and coordination, fundraising, and grant writing—as a barrier to developing a more sustainable watershed group. This compels us to think about not only how group expertise leads to legitimacy, but what needs *actually support* expertise and legitimacy.

Conclusion

Watershed groups are an important component of regional watershed governance. This is clear in the Hudson Valley, where active groups help meet municipal and community water quality and management goals. Successful groups are likely to be perceived as legitimate and sought-after experts while also being able to marshal funds, political will, and volunteers to implement projects. The results and analysis of our needs assessment research indicate that support for capacity-building is a critical need for groups to meet those goals and help improve regional environmental conditions. Our key reflection on the research process is that these areas of need should be prioritized and supported. We argue that capacity is more

likely to help sustain watershed groups and their long-term beneficial impact on community and water resources.

Assessing our work and experience alongside existing research, we suggest some general strategies that can help watershed groups be more sustainable. While future research can and should include a wider range of constituent groups (e.g., landowners), when considering capacity-building strategies for watershed groups specifically, areas of attention should include time and training, leadership, structures and planning, communications, collaborations, and partnerships. While many of the capacity areas we discuss are often assumed to just exist or be innate—such as good communication skills—they are not. These areas should be funded and developed consistently. This effectively means prioritizing and valuing capacity-building. As each group and context will have different specific needs, it is worthwhile noting that these strategies should be adjusted for individual groups. Details for pursuing these strategies are beyond the scope of this paper, so they are succinctly summarized here.

Overall, an appropriate amount of time and resources should be devoted to capacity-building. This might also necessitate rethinking timeframes. Often the time and resources that should go into planning are ignored, particularly over time-dependent tasks like grant proposal deadlines and sponsored events. Groups and their supporters/collaborators should place value and commitment to the ongoing time it takes to properly develop capacity. Likewise, training is critical. It should be repetitive but also reflexive, whereby training is regularly revised based on new knowledge.

Groups should take seriously the importance of leadership and succession planning. Good leadership can keep a group moving forward and meeting its goals. The importance of good leadership is often apparent when someone steps down from a key role and there is not a good succession plan. Groups should ensure there is a plan in place to fill leadership roles. This often takes active engagement and consideration. Related to this, groups should develop internal structures (how the group operates) and plans for the future (e.g., strategic planning). Structures and plans represent the conscious work of groups to remain focused and intact. Good leadership, planning, and structures almost always provide a strong framework for effective communications, collaborations, and partnerships. Communications include internal and external efforts, which must be clear and consistent. Collaboration and partnership success also depends on the strength of capacity-related areas. Again, these are areas that cannot be assumed to just fall in place. They must be developed and maintained over time.

Even with many of these key capacity-related areas in place, watershed groups also need structures to enable resource sharing, including administrative resources. Several project participants suggested that given the size and capacity of watershed groups, they would benefit from

shared access to things like insurance and equipment. While there may be opportunities for groups to work together and share resources, this support should not replace the importance of internal capacity. Groups must conduct programs that are appropriate to their size and capacity. There are certain things we can expect groups to do, but we need broader resources to support them, otherwise this help can risk reducing capacity.

Finally, a more tacitly understood but nonetheless important aspect of this research demonstrates a societal tension between the importance of watershed groups and a lack of capacity or political will to support them. In many cases, we see municipalities or government agencies devolve their responsibility to community groups. Issues such as housing, food insecurity, and environmental protection have to be subsidized by volunteer community groups. In this sense, while building capacity for watershed groups is important, it can hide a broader issue of governance that needs to be addressed.

Data Availability

Data is accessible via hudsonwatershed.org/watershed-needs-assessment.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Consent to Participate Informed consent was obtained from all individual participants included in the study.

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