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The Codevelopment of Community Engagement Certificate Programs for State Wildlife Agency Professionals: Impact of a University–State Agency Partnership

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Abstract

State wildlife agency professionals are realizing they need new mindsets and practices for collaboration with diverse stakeholders and community partners to achieve policy, management, science, and education goals. This realization led to a partnership between a state agency, a land-grant university's outreach and engagement office, and University Extension to codesign professional development certificate programs about community engagement. The authors describe the codevelopment process of both basic and advanced community engagement certificate programs, including goals, descriptions, curricula, and evaluation outcomes. Three years of programming resulted in lessons learned about moving community engagement concepts from theory to practice, the value of participant-generated case studies, and the importance of opportunities for adult learners to practice new ideas in their own professional contexts. In addition to participant impacts, the authors share how this codevelopment process and partnership has improved practices and influenced culture change in the state agency, university, and Extension.

Keywords: professional development, community engagement competencies, community-engaged practitioners, adult learning theory, university-state agency partnerships

Wildlife conservation and management increasingly face profound threats, such as climate change, invasive species, and zoonotic diseases. Addressing these challenges successfully hinges on changes in human understanding and behavior (Corner et al., 2014; Selinske et al., 2020). As a result, wildlife managers must engage with the public to work toward solving such complex, and often global, challenges. In the United States, wildlife are managed as a public trust resource, meaning these resources are held in trust by the government for the benefit of current and future generations (Blumm & Paulsen, 2013; Horner, 2000; Sax, 1970). As managers of this public trust, state wildlife agency (SWA) professionals must understand public needs, interests, and concerns regarding wildlife to ensure management strategies satisfy as broad an array of people as possible (Decker et al., 2016, 2019; Forstchen & Smith, 2014; Hare et al., 2017; Pomeranz et al., 2021; Smith et al., 2011). One way for SWAs to understand public desires is through public engagement in setting wildlife management goals and objectives (Forstchen & Smith, 2014; Pomeranz et al., 2021). Effective public engagement has many benefits, including improved decision-making; increased legitimacy, procedural fairness, and credibility; shared ownership of issues; improved trust in the state agency; and increased support and compliance with regulations (Association of Fish and Wildlife Agencies & the Wildlife Management Institute, 2019; Besley, 2010; Chase et al., 2004; Hunt & Haider, 2001; Lauber & Knuth, 1999; Riley

et al., 2018; Smith & McDonough, 2001). Maintaining SWA relevancy is a particularly important concern because the focus of management has traditionally been on hunting, trapping, and fishing (i.e., consumption of wildlife resources). With participation declines in those activities, SWAs need to find ways to broaden connections to members of the public who hold more diverse and often nonconsumptive values toward wildlife (AFWA, 2019; Jacobson et al., 2010; Manfredo et al., 2018, 2020). Because SWAs have less familiarity and history with the nonconsumptive segments of the public, relationship-building and effective engagement with new stakeholders and partners are critical in maintaining and strengthening the solicited; however, such public input is not always considered or acted upon SWAs' future (AFWA, 2019).

Historically, SWAs have engaged regularly with some stakeholders for regulation setting and for addressing landowner and agricultural interests over the past 30 years (Chase et al., 2000; Decker & Chase, 1997; Fleegle et al., 2013; Leong et al., 2009; Pelstring et al., 1999). These efforts, however, are largely focused on traditional stakeholders (e.g., deer or waterfowl hunters). SWAs have performed less public engagement with unfamiliar, nonconsumptive stakeholders or partners, such as wildlife photographers or birdwatchers. In addition, wildlife managers typically receive little education and training in facilitation, community engagement, or public conflict management. As a result, collaboration with broader stakeholders and partners tends to be focused on information gathering (e.g., stakeholder surveys) or public comment efforts (e.g., open meetings, comments collected online), because these approaches are often easier to implement, especially for those with little knowledge or experience in engaging the public more deeply. In addition, because some wildlife management decisions have the potential to be contentious (e.g., wolf hunting regulations), wildlife managers have to exercise caution with public engagement to avoid the process being co-opted by national and international special interest groups that complicate or even prevent locally informed management decisions (Nie, 2004). Without education and training in public outreach and engagement and in facilitating engagement in contentious and conflictual situations, SWAs and their wildlife managers are limited in effective implementation of public engagement.

Currently, the education and training of wildlife professionals is shifting to include options for learning about human–wildlife interactions as an acknowledgment of the need for a more active role for the public in wildlife management recommendations and a recognition that addressing complex problems will require changes in human understanding and behavior. The important role the public can play in wildlife management decisions is known as *human dimensions* (Bennett et al., 2017; Decker et al., 2012). At universities, 97% of fisheries and wildlife undergraduate programs now offer at least some human dimensions content in their required courses; 66% offer standalone human dimensions courses, in contrast with 40% of programs 20 years ago (Dayer & Mengak, 2020; Robertson & Butler, 2001). Yet undergraduate programs still often lack human dimensions concentrations, majors, or minors (Dayer & Mengak, 2020; Morales et al., 2021; Robertson & Butler, 2001). Of the human dimensions–type courses, only 5% focus on environmental communication and education, where one might expect to see some engagement skill-building addressed (Dayer & Mengak, 2020). Finally, only 20 state agencies have full-time conservation social sciences or human dimensions positions in-house, and all but four of those positions are single positions, which might focus on engagement or might be entirely research-focused, depending on the nature of the role (Morales et al., 2021). Needless to say, engagement capacity is limited for most SWAs. Even if calls to reform wildlife education to better prepare students to tackle complex, global wildlife problems (Kroll, 2007) yield results, any such educational reforms would impact only future professionals. Current wildlife professionals' preparation makes meeting their emerging job expectations to engage with the public challenging.

Despite the emerging importance of public outreach and engagement, wildlife professionals have limited opportunities for community-engagement professional development within their professional organizations. Professional development programs that meet some needs related to human dimensions are either disciplinarily relevant but do not cover engagement comprehensively, or they focus on community engagement in general but are not specific to the wildlife management context. For example,

the U.S. Fish and Wildlife Service offers some human dimensions training on one specific approach to public decision-making, the structured decision-making process. The Wildlife Society offers training on another aspect of community engagement: conflict management. Other wildlife professional organizations offer one-off trainings and workshops. These short-term, piecemeal trainings require the wildlife professional to connect various engagement concepts to the bigger picture and then to integrate the new knowledge into their professional practice on their own.

Alternatively, other organizations focus on engagement across all contexts, with no content specific to wildlife management. For example, the International Association for Public Participation (IAP2) offers a foundations course and special topics courses, including one on managing public outrage. University Extension offers a variety of leadership development courses for state agency employees that address facilitation, leadership, conflict management, and diversity. However, these broad community engagement and leadership trainings are not tailored to the wildlife management context, leaving SWA participants to figure out how to apply the ideas and make them relevant to their own work. As a result, this gap between available trainings and the educational need of wildlife professionals creates an opportunity to develop tailored community engagement curricula for wildlife management professionals working in SWAs.

In this article, the authors, who include members from all three partner organizations, describe our university–state agency partnership initiated to address this professional development gap. Our codevelopment process meant all three organizational partners collaborated equally on program planning, implementation, and evaluation. First, we detail the history of this partnership and the process of codeveloping the curricula and logistics for both a basic and advanced community engagement certificate. Next, we present evaluation data of the certificate programs' impact on participants and describe the partnership impacts on both the state agency and university collaborators. Finally, we conclude with lessons learned from our collaboration and from the process of codeveloping and implementing community engagement certificates.

History of the University–State Agency Partnership

In 2016, a waterfowl and wetland specialist at the Michigan Department of Natural Resources, Wildlife Division (MDNR-WLD), who was also a PhD student at Michigan State University (MSU), attended a one-week summer intensive on community-engaged scholarship organized by MSU's University Outreach and Engagement (UOE) office. After the summer intensive, she recognized the need for MDNR-WLD professionals to learn such techniques for more deliberate, thoughtful, and effective stakeholder and community engagement. She shared the resource materials with MDNR-WLD leaders, who responded positively and supported the development of a similar, but modified, workshop specifically designed for the MDNR-WLD. A conversation about collaboration between MDNR-WLD, UOE, and MSU Extension (MSUE) ensued, with a commitment by all to codevelop and cohost a week-long community engagement workshop for the state agency professionals the following summer in 2017. Support from MDNR-WLD, UOE, and MSUE's leaders was essential for the collaboration to move forward.

With support for the idea secured, a planning committee was formed, with members including the doctoral student from MDNR-WLD, others from MDNR-WLD including field staff, UOE's professional development person, a representative from Extension, and others. The planning committee decided on a program certificate to recognize and institutionalize this level of professional development. The basic community engagement certificate would be a course offered through MDNR-WLD's training program, and UOE would issue an official certificate of completion to participants. MSUE would provide input on the curriculum development and offer specific workshops. Costs associated with the certificate program (e.g., venue, food and beverages, participant and guest speaker travel, materials) would be paid by MDNR-WLD through professional development budget allocations. UOE would contribute staff time, travel, and materials as in-kind support.

At the conclusion of the 2017 basic certificate program, participants and planning committee members identified the need to develop an advanced certificate program, with a more in-depth focus on practical

applications. With similar arrangements for financial and staff contributions, the advanced certificate was developed as a 2-day course through MDNR-WLD's training program and offered for the first time in 2018.

Planning Committee: Codeveloping the Certificates

The planning committee's role was pivotal in codeveloping logistics and curricula for both basic and advanced certificates. With an eight-person planning committee, the responsibilities and tasks were shared across multiple people, thereby reducing the workload for each individual. In the first year, the planning committee was consultative, ad hoc, and composed of MSUE staff, UOE staff, MDNR-WLD professionals, and one member of the statewide Natural Resources Commission. In the 2nd year, participants who had completed the basic engagement certificate were invited onto the new, more formally organized planning committee, whose membership was intentionally composed with geographic distribution across the state and gender, job position, and career stage diversity in mind. One UOE and one MSUE staff member continued with the planning committee, with occasional consultations with university staff on specific workshop formats and content. This variety of perspectives was essential to identify successful examples of community engagement already taking place in the agency and examples where community engagement activities were challenging for MDNR-WLD professionals. That grounded perspective informed the committee as it made final decisions about tailoring the curricula for both certificates.

Community Engagement Competencies

The planning committee liaised with the MDNR-WLD's events planner on logistics; solicited and reviewed applications; considered previous evaluation data; identified and refined the curricula's points of emphasis; and led various sessions in both basic and advanced certificates. Meeting every 2 to 3 weeks in person and by phone to accommodate field staff located throughout the state, the planning committee identified learning priorities through iterative conversations about what participants wanted to learn (from their applications), what could be improved upon (from evaluations and reflection), and what is known about community engagement competencies (from published scholarship). The basic and advanced certificates followed established community engagement curricula (Blanchard et al., 2009; DeLugan et al., 2014; Doberneck et al., 2017; Jordan et al., 2012; Katz Jameson et al., 2012; Salsberg et al., 2012) and included professional and practitioner-focused community engagement competencies as well (Atiles, 2019; Berkey et al., 2018; Dostilio, 2017; Dostilio & Welch, 2019; Harding & Loving, 2015; Suvedi & Kaplowitz, 2016). The planning committee also consulted the limited literature on professional development about outreach and engagement for professionals in wildlife conservation (Latimore et al., 2014; U.S. Fish and Wildlife Service, 2014).

One major planning committee role was to consider the established competencies and to modify the more general community engagement curricula to match the specific needs of MDNR-WLD professionals. Table 1 summarizes those decisions.

After careful consideration, the planning committee decided to drop some topics, combine some topics, add new topics, expand existing topics for more depth, and customize all content for the MDNR-WLD audience (Warwick et al., 2021). For example, initiating and sustaining partnerships were combined and expanded to include a focus on underrepresented and nontraditional stakeholders, including tribal communities, urban communities, youth, and others. Added topics included developing a community and stakeholder engagement plan and managing conflict among stakeholders. Expanded topics included techniques for community collaboration and engaging with diverse communities. The history of engagement topic was customized to emphasize the public trust doctrine, the legacy of federal requirements for public input, and the implications of both for stakeholder engagement. The community-engaged service and practice topic was refocused on engaged policy and management in wildlife, reflecting the specific ways service and practice are enacted by wildlife professionals. Evaluating community partnerships was customized to focus on evaluating the effectiveness of the public engagement processes. More academically focused topics (e.g., academic variations, institutional review boards for research, peer-reviewed publishing) were dropped because they were not viewed as having practical applications for MDNR-WLD professionals. These customizations

Table 1. Codeveloped, Modified Curricula for Both Basic and Advanced Certificates

Community engagement topic identified in the literature and refined by the planning committee	Planning team codevelopment decision	Number of sessions in 4-day Basic Certificate	Number of sessions in 2-day Advanced Certificate
Foundations			
History of community-engaged scholarship	Customized	2	
Variations of community-engaged scholarship	Dropped		
Community partnership building			
Initiating partnerships	Combined & expanded	2	1
Sustaining partnerships	Combined		
Developing stakeholder & community engagement plans	Added		2
Techniques for community collaboration	Expanded	4	4
Managing conflict among stakeholders	Added	2	2
Criticality in community engagement			
Engaging with diverse communities	Expanded	3	4
Critical reflection & critical thinking	Dropped		
Ethics in community-engaged scholarship & practice, including institutional review boards	Dropped		
Community-engaged scholarship and practice			
Community-engaged research & creative activities	Dropped		
Community-engaged teaching & learning	Dropped		
Community-engaged service & practice	Customized	throughout	
Approaches and perspectives			
Asset-based community engagement	Kept as example		
Capacity building for sustained change	Dropped		
Systems approaches to community change	Dropped		
Evaluation and assessment			
Evaluating community partnerships	Customized	2	
Peer review of community-engaged scholarship	Dropped		

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Table 1. Continued

Community engagement topic identified in the literature and refined by the planning committee	Planning team codevelopment decision	Number of sessions in 4-day Basic Certificate	Number of sessions in 2-day Advanced Certificate
Communications and scholarly skills			
Communicating with public audiences, including general public, practitioners, and policymakers	Kept	2	
Communicating with academic audience	Dropped		
Grant writing for community engagement	Dropped		
Successful community engagement careers			
Documenting & communicating accomplishments	Dropped		
Community engagement across the career span	Dropped		

and refinements occurred through an ongoing series of planning committee meetings with dialogue, reflection, and respect for the perspectives all partners brought to the codevelopment process. Both the basic and advanced curricula were adjusted between Year 1 and Year 2, based on evaluation findings, as well.

Adult Learning Theory

In addition to the abovementioned community engagement competencies, the planning committee used adult learning strategies to organize the logistics and curricula for both basic and advanced certificates (Cross, 1981; Knowles, 1980, 1984; Mezirow, 2000). Professionals working in MDNR-WLD embody the attributes of adult learners: They have significant experience from the field, interest in making connections between new topics and their own practice, and a responsiveness to active learning strategies. The planning committee, composed of past and potential participants, made important decisions about what would and would not resonate with learners in both basic and advanced certificates. Table 2 explains how adult learning theory concepts were put into practice in planning the logistics and implementing the curricula.

Consistent Definitions

Because there is a lack of clarity about what engagement means, the planning committee discussed the importance of using clear and consistent vocabulary in both basic and advanced certificates. The planning committee developed a vocabulary sheet for participants as a reference. The term *outreach* refers to activities where the majority of the decisions are made by MDNR-WLD, with information flowing from the state agency to members of the public; decisions are made by MDNR-WLD. In contrast, the term *engagement* describes activities with more collaboration between MDNR-WLD and members of the public and where information flows back and forth between both partners; decisions are made with significantly more public input (Saltmarsh & Hartley, 2011). We also introduced the concept of a *continuum of engagement*, with outreach on one end and engagement on the other. Where an activity is placed on the continuum is related to the degree of collaboration, locus of decision-making authority, reciprocity, and mutual benefit (Decker & Chase, 1997; IAP2, 2018). Additionally, the planning committee clarified the difference between stakeholders and community partners. The term *stakeholders* refers to anyone with an interest in a topic and includes people who

- live, work, play, or worship in or near the ecosystem
- are interested in the resources, their users, their use, or their nonusers
- are interested in the process used to make decisions

Table 2. Adult Learning Theory Concepts in Practice in Both Basic and Advanced Logistics and Curricula

Adult learning theory concept	Application in basic and advanced logistics and curricula
Adult learners are motivated by internal, not external, factors.	All participants volunteered to attend the basic or advanced certificates. No participants were required to attend, though state agency supervisors approved the individual's participation.
Adult learners are more successful when learning objectives are based on their specific needs and interests.	Participants completed applications, where they noted their learning needs and interests related to community engagement in their job roles. The planning committee used that information to customize learning activities and identify case studies relevant to the participants in each certificate program.
Adult learners learn better when new material is connected to their existing knowledge and experience.	Planning committee asked participants precertificate reflection questions to prompt thinking about their prior and anticipated experiences with community engagement. During introductions, participants shared these prereflections with the group.
Adult learners prefer problem-focused learning, with opportunities to apply ideas immediately.	Key topics in the curriculum were immediately followed by practice sessions with active learning activities.
Adult learners learn better when new material is tied directly to their roles.	The planning committee organized lectures, learning activities, and case studies with specific examples and scenarios familiar to MDNR-WLD professionals. The final session for both basic and advanced certificates included time for participants to write specific plans for incorporating new ideas into their own work.
Adult learners are more successful when the curriculum's activities are scaffolded, building on each session in increasingly complex ways over time.	The curriculum was organized with basic concepts earlier in the multiday workshop and more complex examples and synthesis on later days.
Adult learners learn more when they are engaged in identifying learning materials and resources.	Some current and past participants were invited to share case studies of their own community engagement practices. The case study templates deemphasized basic information (who, what, where) to focus more on lessons learned (e.g., what happened, why, to what effect, what improvements could be made).
Organizers of adult education should both evaluate the quality of the learning and assess future learning needs.	Planning committee used multiple evaluation strategies: formative evaluation cards throughout the certificate programs, end-of-program evaluations, 6-month postevaluations, and evaluative questions on the advanced application form.

- provide funding
- represent citizens or are legally responsible for public resources (Meffe et al., 2002, pp. 222–223).

The phrase *community partners* refers to nongovernmental organizations, government agencies, health-care systems, K-12 education, business and industry, and other entities in collaborative, medium- or long-term relationships with MDNR-WLD. Community partners have common or overlapping goals with MDNR-WLD, share resources, and coordinate efforts. All community partners are stakeholders, but not all stakeholders are community partners. Participants receive a glossary of these key concepts as well as foundational readings in engagement and facilitation in a resource binder for both the basic and advanced certificates (see Appendix).

Basic Certificate Goals, Description, and Curriculum

The basic certificate program ran from Monday noon through Thursday noon in July during 2017 and 2018, with half days on the first and last day to accommodate participants' travel from various regions in the state. The goals were to

1. explain the importance of stakeholder and community engagement in meeting public trust responsibilities
2. underscore the importance of partnership building
3. understand a spectrum of participation, including distinctions between outreach and engagement
4. become familiar with facilitation techniques to meet a range of engagement purposes
5. consider how diversity, equity, and inclusion intersect with engagement and the public trust doctrine
6. develop practices for managing disruptive behaviors in public meetings
7. evaluate stakeholder engagement
8. learn when and how to engage during crisis communication

Individual certificate sessions varied in length from 45 to 90 minutes and included lectures, case studies, and practice sessions. Presenters represented the MDNR-WLD, UOE, MSUE, MSU's Department of Fisheries and Wildlife, and a few community partners. Sessions held immediately following lunch included highly interactive activities to keep participants engaged through the typical postlunch slump. When possible, the afternoon workshops included small group activities held outside since the MDNR-WLD professionals preferred outdoor settings for their work. Participants received workshop binders with the schedule, materials for each session, and daily reflection prompts to encourage participants to connect workshop materials to their own stakeholder and community engagement practice. Formative evaluation cards were collected throughout, and summative, in-person, anonymous paper evaluations were collected during the final session of both certificates. To give participants time to regroup and relax, optional group dinners were held off-site, with no evening workshops or homework. In keeping with adult learning theory, this unscheduled time allowed MDNR-WLD professionals to catch up on email, exercise, address family concerns, and reflect on the day's main points.

The basic certificate curriculum focused on introducing participants to key topics about stakeholder and community partner engagement. The planning committee identified potential case studies, aligned them with key topics, and invited case study speakers to use a template to prepare their presentations, ensuring that the case study details focused specifically on the key topic. Case study speakers were MDNR-WLD professionals and, when possible, the community partners associated with the case study. At least one case study was focused on an engagement example that did not work well and included reflection on what should have happened differently in the preplanning stages and how that case study's engagement activities could be improved in the future. Practice sessions used a variety of active learning strategies (e.g., think-pair-share, scenarios, roleplaying) coupled with specific MDNR-WLD scenarios that enabled participants to put the key topics into practice in small groups. Small groups then shared their practice examples with the larger group, addressing focused reflection questions on when this practice would or would not be applicable to their professional work.

Use of Triplets

In 2017, a planning committee member suggested the use of triplets as a way of more intentionally aligning the basic certificate's overall goals with individual workshop sessions. For each key engagement topic, a lecture session on the topic would be followed by a case study and a practice session. These three pieces of the curriculum (or triplets)—key topic lecture, case study, and practice session—mutually reinforced the learning goals and embodied adult learning theory principles.

As an example of a triplet, a member of UOE presented a session on techniques for community collaboration, which gave an overview of a wide range of possible techniques and emphasized the importance of matching each technique to the purpose of the participation (Doberneck & Dann, 2019; IAP2, 2018; NOAA, 2015; State of Victoria Department of Environment and Primary Industries, 2014). In this key topic session, four dif-

ferent people gave examples of specific techniques in lightning rounds, including gathering the givens, neighborhood gatherings, ground rules, and asset mapping. In the case study session, a MDNR-WLD professional and her community partner talked about multiple engagement techniques used at various stages of a partnership focused on managing swimmer's itch related to waterfowl on northern Michigan inland lakes. The MDNR-WLD and community partners together discussed their rationale for choosing specific techniques at different stages of the partnership. In the practice session, participants were divided into small groups, given a shared scenario, and assigned different techniques to use for that scenario. Performed in two rounds of activities, this practice session familiarized the participants with both divergent techniques (i.e., mind mapping, brainwriting, rotating flipcharts, affinity diagrams) and convergent techniques (i.e., paired comparison, levels of agreement, on the fence prioritizing, and rank voting/multivoting; Bens, 2005, 2012; Kaner, 2014; State of Victoria Department of Environment and Primary Industries, 2014; Vandenberg et al., 2015; Wates, 2015). The strength of the triplets as a curricular design approach is the tightly coupled blending of key topics lecture (including active learning strategies), relevant case studies presented by peers, and opportunities to practice a key topic immediately following the lecture and case study. See Table 3 for program planning and evaluation details for the basic certificate.

Basic Certificate Participant Demographics

For the 2017 and 2018 basic certificates, participants self-identified as 17 women and 26 men. They held a variety of positions within the MDNR-WLD, including 21 field staff, 13 supervisors and field operations managers, six specialists and resource analysts, and three from public outreach and education. Participants were from various parts of the state, including five from the Southwest region, 18 from the central office, seven from Southeast region, seven from Northern Lower Peninsula, five from the Upper Peninsula, and one from a partner organization.

Basic Certificate Evaluation Data

MSU's Institutional Review Board (IRB) determined that evaluation of the certificate programs did not meet the definition of research and therefore did not require formal review or IRB approval. The planning committee developed an end-of-event written evaluation form that included both quantitative and qualitative questions to understand the participants' views on the certificate's organization and content. In 2017, 19 of the 27 participants (70% response rate) completed the survey. In 2018, all 16 participants completed the survey. Both years participants were asked how they rated the overall workshop on a 5-point scale. The average rating increased from 4.22 in 2017 to 4.69 in 2018. For the basic certificate, the curriculum's key community engagement topics were subdivided into community engagement competencies that constituted the majority of the quantitative data collection. Participants were asked to rate their competency level on a scale from 1 (lowest) to 5 (highest) using the retrospective pretest and postevaluation strategy commonly used for participants to self-report changes from educational programs. Implementing a retrospective pretest can prevent participants from overreporting ratings during the pretest portion and therefore deliver more accurate measurements of program impact (Nimon et al., 2011). Table 4 reports evaluation data from 2017 and 2018, the two years the basic certificate was offered. It shows how the community engagement key topics were subdivided into competencies, the combined retrospective pretest ratings, posttest ratings, and change in mean ratings for each competency. The number of responses varies because some questions were asked in both 2017 and 2018, and other questions were asked in only one year. Some respondents skipped some questions as well. All 20 competency areas showed positive changes.

The community engagement topics that showed the most change, on average, from retrospective pre-to-posttest were in the techniques for community collaboration category. The competencies with the most change were *differentiate between divergent and convergent stages in group decision-making* (increased by 2.2), *know where to turn to for additional ideas about collaboration and engagement techniques* (increased by 1.92), and *employ different community engagement techniques to achieve different goals* (increased by 1.69). *Understand how to organize and prepare for meetings* (increase of 1.48) and *consider a spectrum of public participation to achieve different purposes and goals* (increase of 1.21) also showed positive changes.

Table 3. Basic Certificate's Engagement Topic, Lead Presenter, Session, Description, and Evaluation Strategy

Engagement topic	Lead presenter	Session	Description	Evaluation strategy
Why and how to engage stakeholders and community partners	MDNR-WLD MSU	Welcome and introductions	Opening comments, learning objectives, and program overview	
	MDNR-WLD	Lecture	Public trust responsibilities and stakeholder engagement	Retrospective pre & post
	UOE	Lecture	Understanding the spectrum of participation	Retrospective pre & post
	MDNR-WLD	Case study	Activity: Common Merganser policy process abacus	
Partnership building	UOE	Lecture	Principles of partnerships Activity: benefits and challenges or partnerships brainstorm	Retrospective pre & post
	MDNR-WLD	Case study	Northern Lake Michigan Islands Collaborative (building a collaborative governance model for island management strategies with diverse groups)	Post only
Techniques for community collaboration	MDNR-WLD MSUE	Lecture	Facilitating public meetings	Retrospective pre & post
	UOE	Lecture	Techniques for community collaboration	Retrospective pre & post
	MDNR-WLD Community Partner UOE		Activity: lightning talks • gathering the givens • neighborhood gatherings • establishing ground rules • asset mapping	
	MDNR-WLD Community partner	Case study	Merganser stakeholder process (multiple techniques used in different stages in codevelopment of waterfowl control policy to minimize swimmer's itch)	Post only
	UOE	Practice	Overview of collaboration techniques activity Activity 1: diverging techniques • mindmapping • brainwriting • rotating flipcharts • affinity diagrams Activity 2: converging techniques • paired comparisons • levels of agreement • on the fence prioritizing • rank voting/multivoting	Retrospective pre & post

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Table 3. Continued

Engagement topic	Lead presenter	Session	Description	Evaluation strategy
Engaging diverse stakeholders	Community partner	Lecture Practice	Engaging diverse stakeholders Activity: identity pillar, identity toss	Retrospective pre & post
	UOE Community partner	Practice	Broadening participation beyond the usual suspects Activity: rainbow diagram, easy-to-hard to engagement continuum, stakeholder by category tool	Retrospective pre & post
	MDNR-WLD	Case study	Engaging nontraditional stakeholders: MI Birds (developing a statewide network of new partners)	Post only
Determining and evaluating engagement success	MDNR-WLD	Lecture Practice	Evaluating stakeholder engagement Activity: evaluation in your engagement context	Retrospective pre & post
	MDNR-WLD	Case study	Competing definitions of engagement success: Deer Management Assistance Program Pilot Study (involving stakeholders early in planning process and downside of not including key groups)	Post only
Managing conflict among stakeholders	UOE MSUE	Lecture Practice	Managing disruptive behaviors in public meetings Activity: Roleplay	Retrospective pre & post
	MDNR-WLD	Case study	Managing conflict: Allegan State Game Area equestrian trail (developing mindsets and strategies for addressing conflicts among use groups)	Post only
Communicating with stakeholders	MDNR-WLD	Case study	Strategic communications: chronic wasting disease (CWD; fictional scenario about providing public information about a disease outbreak)	Post only
	MDNR-WLD	Lecture Practice	Crisis communications within the engagement process and beyond Activity: Two fictional scenarios • Harsens Island Recreational Plan • Hunter harvested deer positive for CWD in Upper Peninsula	Retrospective pre & post
	MDNR-WLD UOE	Wrap up	Time to work on individual engagement action plans; group reflection; individual evaluations	

Table 4. Basic Community Engagement Certificate's Participant Self-Rating Data From 2017 and 2018

Community engagement topic	Competency	Pretest		Posttest		Avg. change*
		N	Avg.	*N*	Avg.	
Why and how to engage stakeholders and community partners	Recognize special considerations for wildlife planning, policy, research, and management	33	3.15	32	4.11	0.96
	Know how public trust responsibilities related to stakeholder engagement	35	3.37	35	4.21	0.84
	Recognize how community partner perspectives differ from agency perspectives on shared projects	18	3.72	18	4.28	0.56
	Understand variations and choices in how much and to what extent to engage stakeholders and partners	18	3.00	18	4.27	1.27
	Understand how a facilitative, participatory mindset differs from an expertise mindset	13	2.85	11	3.73	0.88
Partnership building	Employ specific strategies to strengthen stakeholder engagement and community partnerships in my MDNR-WLD work	32	2.67	30	4.13	1.46
	Recognize partnerships require different attention during initial and sustaining phases	33	3.24	33	4.33	1.09
	Value the importance of pre-engagement steps with stakeholders and community partners	15	3.13	15	4.33	1.21
Techniques for community collaboration	Know where to turn to for additional ideas about collaboration and engagement techniques	32	2.50	31	4.42	1.92
	Employ different community engagement techniques to achieve different goals	33	2.55	33	4.23	1.69
	Differentiate between divergent and convergent stages in group decision-making	15	2.00	15	4.20	2.20
	Understand how to organize and prepare for public meetings	15	2.47	15	3.95	1.48
	Consider a spectrum of public participation to achieve different purposes and goals	14	3.14	14	4.36	1.21

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Table 4. Continued

Community engagement topic	Competency	Pretest		Posttest		Avg. change*
		N	Avg.	*N*	Avg.	
Engaging diverse stakeholders	Recognize how cross-cultural differences may influence stakeholder engagement and community partnerships	33	2.91	33	3.88	0.97
	Identify diverse stakeholders who are traditionally underrepresented in my MDNR-WLD work	33	2.94	33	3.79	0.85
Determining and evaluating engagement success	Evaluate the process aspects of partnerships related to my MDNR-WLD work	18	2.44	18	4.00	1.56
	Evaluate the outcomes related to my MDNR-WLD work	18	2.56	18	3.78	1.22
	Evaluate the effectiveness of my engagement with stakeholders and community partners	15	2.53	15	3.73	1.20
Managing conflict among stakeholders	Manage the emotional aspects of challenging stakeholder engagement situations	33	2.94	32	4.02	1.08
Communicating with stakeholders	Develop communications messages and strategies that reach audiences effectively during high stakes or crisis situations	32	2.34	30	3.82	1.47

Note. Basic community engagement certificate evaluation ratings for 2017 and 2018 were on a scale from 1 (low) to 5 (high). Average change was calculated as the difference between posttest average and retrospective pretest average. Statistical significance of change was not calculated due to small participant number.
*Average change figures may not reflect difference of average figures shown due to rounding.

The community engagement topic that showed the second-greatest change, on average, was partnership building. The competencies with the most change were *employ specific strategies to strengthen stakeholder engagement and community partnerships in my MDNR-WLD work* (1.46), *value the importance of pre-engagement steps with stakeholders and community partners* (1.21), and *recognize partnerships require different attention during initial and sustaining phases* (1.09).

Three other competencies showed gains as well: *develop communications messages and strategies that reach audiences effectively during high stakes or crisis situations* (increased by 1.47), *evaluate the process aspects of partnerships related to my MDNR-WLD work* (increased by 1.56), *understand variations and choices in how much and to what extent to engage stakeholders and partners* (increased by 1.27), and *evaluate the outcomes related to my MDNR-WLD work* (increased by 1.22).

The lowest average change was for *recognize how community partner perspectives differ from agency perspectives on shared projects* (0.56), which was the competency with the highest pretest score (3.72) and therefore had the least potential for change. The six lowest rated competencies that showed a change pretest to posttest (all under 1.0) were all within two community engagement topics: *why and how to engage stakeholders and community partners* and *engaging diverse stakeholders*. In addition, for 90% of the competencies at least one participant self-rated as 5 on the pretest, thus no gains could be made for their pre to post. The competency most often rated 5 on the pretest (five participants) was *know how public trust responsibilities related to stakeholder engagement*. No one rated themselves 5 on the pretest for *value the importance of pre-engagement steps with stakeholders and community partners* and *understand how to organize and prepare for public meetings*.

Follow-up Feedback From Basic Certificate Participants

In lieu of a 6-month follow-up survey of basic certificate participants, we used the 2019 advanced certificate application to gather information about what basic certificate techniques or skills the participants had implemented since the training and what challenges they had encountered. From the 15 advanced applications, we learned that 11 basic certificate participants implemented specific techniques (e.g., brainwriting, sticky dots, rank voting, affinity diagrams, parking lot, speed dating). The second most commonly cited new practice was related to preparing to engage (e.g., clarifying goals and objectives in advance, identifying a facilitator, defining roles among facilitation team members). Third, basic certificate participants noted they thought about their work in new ways (e.g., bringing the right people to the table; considering the spectrum of participation; incorporating diversity, equity, and inclusion). The challenges they identified included engaging with participants who prefer top-down, less collaborative approaches, countering negative attitudes toward the state agency, communicating the places on the engagement spectrum in clearly understood ways, and phrasing engagement activity instructions in sufficient detail.

Advanced Certificate Goals, Description, and Curriculum

The advanced certificate program was a 2-day program held in July 2018 and July 2019, with the following goals:

1. develop community engagement plans and strategies
2. identify key stakeholders and community partnership
3. understand how to evaluate public engagement
4. choose appropriate collaboration tools for different kinds of community engagement situations
5. practice developing a community engagement plan
6. practice using different collaboration and engagement techniques

The program began midmorning and ended midafternoon the following day, to accommodate participants' travel from various regions in the state. Sessions varied in length between 45 and 75 minutes, and included lectures with activities, practice sessions, and reflection time to plan how to apply the workshop ideas to their own work. Presenters were from the MDNR-WLD, MSUE, UOE, and some community partners. Participants received program binders, name tents with rules for dialogue printed on the back, and a summative, in-person, anonymous paper evaluation. Like the basic certificate schedule, postlunch sessions included highly interactive activities with other afternoon sessions held in small groups outside when possible. Participants were given time off in the evening, and could choose to participate in a group dinner or to spend time on their own.

The advanced certificate curriculum focused on putting community engagement concepts into practice in each participant's specific work context. Advanced program participants were assigned these preevent reflection questions:

> In your work at MDNR Wildlife, what project are you currently working on or anticipate working on in the next year that will require stakeholder or community partner engagement? What is the purpose of that public engagement? What challenges do you anticipate, so that we might work through them during this program?

During program introductions, participants shared their responses so that the entire group was aware of collective learning interests.

The program started with three overview sessions: developing stakeholder engagement plans, identifying stakeholders and community partners (Chevalier & Buckles, 2008; Meffe et al., 2002; Reed, 2006; Reed et al., 2009), and choosing the right engagement approach for the situation (IAP2, 2018; NOAA, 2015; Snowden & Boone, 2007). These overview sessions established the groundwork for the rest of the program's practice sessions. Choosing the right engagement approach was followed up with three practice sessions: techniques for open/scoping meetings; techniques for a regular group of stakeholders; and techniques for a complex mix of stakeholders. In 2018, the session on managing disruptive behaviors was immediately followed by a practice ses-

sion that included roleplay opportunities to manage disruptive behaviors in public, open meetings.

In 2019, a team challenge was developed to help anchor the curriculum's learning goals and to push participants to think through all stages from preengagement, purpose of engagement, stakeholder identification, choice of engagement techniques, and evaluation. The participants were divided into two groups, with the same scenario to work through. One group pitched their engagement plan to the other group, who provided constructive criticism. Then the groups reversed roles. The team challenge ended with overall reflection on what was learned by working as a group to think through the entire engagement process. The final session focused on synthesizing ideas from all program sessions to develop a stakeholder engagement plan relevant to each participant's context. Participants then reported out on their plans in a way that paralleled their reporting out of the introductory question. For the advanced certificate, the organizers used duets—overview lectures coupled with practice sessions—to reinforce connections between concepts and implementation. See Table 5 for the program planning and evaluation details for the advanced certificate.

Advanced Certificate Participant Demographics

For the 2018 and 2019 advanced certificates, participants self-identified as 15 women and 13 men. They held a variety of positions within the MDNR-WLD, including 13 field staff, five supervisors and field operations managers, four specialists and resource analysts, two from public outreach and education, and four with missing data for position. Participants came from different regions throughout the state, including two from the Southwest region, 15 from the central office, two from the Southeast region, three from the Northern Lower Peninsula, three from the Upper Peninsula, and three with missing data for location.

Advanced Certificate Evaluation Data

Similar to the basic evaluation, the planning committee developed an end-of-event written evaluation form that included both quantitative and qualitative questions to understand the participants' views on the certificate's organization and content. In 2018, 12 of the 13 participants completed the surveys (92% response rate), with all 15 participants and 6 facilitators completing the survey in 2019. Both years, advanced participants were asked how they rated the workshop overall on a scale of 1 (lowest) to 5 (highest). The average overall rating was 4.83 in 2018 and increased to 4.89 in 2019. The five advanced community engagement topics were subdivided into 32 different competencies across both advanced certificate program cohorts (Table 6). Participants

Table 5. Advanced Certificate's Engagement Topic, Lead Presenter, Session, Description, and Evaluation Strategy

Engagement topic	Lead presenter	Session	Description	Evaluation strategy
	MDNR-WLD UOE MSUE	Welcome and introductions	Opening comments, individual learning goals for workshop; workshop learning objectives and schedule overview	
Why and how to engage stakeholders and community partners	MDNR-WLD	Lecture	Issues, framing, and impacts—big picture of stakeholder engagement	Retrospective pre & post
Partnership building	MDNR-WLD	Lecture	Identifying community partners and stakeholders	Retrospective pre & post
Determining and evaluating engagement success	MDNR-WLD UOE MSUE	Lecture	Evaluating your public engagement	Retrospective pre & post

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Table 5. Continued

Engagement topic	Lead presenter	Session	Description	Evaluation strategy
Techniques for community collaboration	UOE	Lecture	Choosing the right engagement approach for the situation	Retrospective pre & post
	UOE	Practice	Techniques for open/scoping meetings	Retrospective pre & post
	UOE	Practice	Techniques for regular group for stakeholders	Retrospective pre & post
	UOE	Practice	Techniques for complex mix of stakeholders	Retrospective pre & post
Developing stakeholder engagement plans	MDNR-WLD	Lecture	Developing stakeholder engagement plans	Retrospective pre & post
		Practice as a group	Team challenge: With your team, develop a stakeholder engagement plan that addresses the given scenario. Be sure to specify • Purpose • Stakeholders & community partners • Strategies for underrepresented and nontraditional partners • Technique(s) for community collaboration • Evaluation plan Pitch it to the other team for comments.	Post only
	UOE	Practice individually	Developing your own engagement action plan	Retrospective pre & post
	MDNR-WLD UOE	Wrap up	Group reflection; individual evaluations	

again rated their competency level on a scale from 1 (lowest) to 5 (highest) using a retrospective pretest and posttest. All 32 advanced competency areas showed positive changes.

The community engagement topic that showed the most change, on average, from retrospective pre- to posttest was *managing conflict among stakeholders*. All four competencies showed increases, including *strategies for structuring meetings to minimize disruptive behavior* (increased by 1.42), *knowledge of strategies to manage disruptive behaviors during public engagement* (increased by 1.38), *ways to prepare yourself for contentious public meetings* (increased by 1.25), and *confidence in addressing disruptive behaviors during public meetings* (increased by 1.21).

The community engagement topic that showed the second most change, on average, was *developing stakeholder engagement plans*. Six of the seven competencies had average increases of more than 1.0. The three competencies that showed the greatest increases in participant self-ratings were *match engagement approaches to situations* (increased by 1.72), *apply public engagement planning tools to my own projects* (increased by 1.59), and *integrate public facilitation approaches into my own work at MDNR-WLD* (increased by 1.46).

The *techniques for community collaboration* community engagement topic included 18 competencies. Although all 18 competencies had positive self-rated changes in average scores, five competencies had retrospective pre to post changes greater than 1.5 on a scale of 5. Those highly impactful topics included *know where to turn for additional ideas about collaboration and engagement techniques* (increased by 1.66), *familiarity with facilita-*

tion techniques for a complex situation (increased by 1.59), *frame a purpose statement for a complex mix of stakeholders in a longer-term engagement* (increased by 1.57), *confidence in working with a facilitator for complex situations* (increased by 1.54), and *differentiate between divergent and convergent stages in group decision-making* (increased by 1.52).

The highest average pre competency score was for *determine which stakeholders to engage with* (3.42) and highest average post competency was *know where to turn for additional ideas about collaboration and engagement techniques* (4.52). Lowest average score was *confidence in facilitating complex engagement techniques* for pre (1.94) and post (3.38). The four highest in average change were *match engagement approaches to situations* (increased by 1.72), *know where to turn for additional ideas about collaboration and engagement techniques* (1.66), *familiarity with facilitation techniques for a complex situation* (1.59), and *apply public engagement planning tools to my own projects* (1.59). The lowest average change was for *make use of feedback from evaluation to shape future engagement efforts* (0.82). About 60% of the competencies had at least one participant (at most three) who responded with a 5 (highest score) on the retrospective pretest, thereby precluding any measured positive changes in those community engagement competencies.

Follow-up of Advanced Participants' Survey

Six months after the 2019 advanced certificate, we surveyed participants to gauge program impact. Thirteen participants completed the open-ended questions (87% of the original program participants). When asked "What concepts, skills or ideas have you used since the training?", the most common responses were facilitator's agenda/annotated notes (n = 3), determining diverging versus converging methods (n = 3), identifying stakeholders and community partners (n = 2), and choosing the right engagement approach for the situation (n = 2). When asked "Were there any techniques or skills that you would like to implement but do not feel confident implementing?", 62% responded "yes" and named *complex engagement techniques*, *selecting an engagement technique*, *structuring decision-making*,

Table 6. Advanced Community Engagement Certificate's Participant Self-Rating Data From 2018 and 2019

Community engagement topic	Competency	Pretest		Posttest		Avg. change*
		N	Avg.	*N*	Avg.	
Why and how to engage stakeholders and community partners	Identify different purposes for public engagement	12	2.83	12	4.08	1.25
Developing stakeholder engagement plans	Determine clear engagement goals and objectives	30	2.98	30	4.12	1.13
	Determine which stakeholders to engage with	12	3.42	12	4.33	0.90
	Match engagement approaches to situations	29	2.31	29	4.03	1.72
	Integrate public facilitation approaches into my own work at MDNR-WLD	12	2.88	12	4.33	1.46
	Apply public engagement planning tools to my own projects	29	2.74	29	4.33	1.59
	Identify an appropriate range of stakeholders to engage	18	2.83	18	3.89	1.06
	Prepare myself to be more facilitative (rather than directive)	18	2.94	18	3.94	1.00

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Table 6. Continued

Community engagement topic	Competency	Pretest		Posttest		Avg. change*
		N	Avg.	*N*	Avg.	
	Know where to turn for additional ideas about collaboration and engagement techniques	29	2.86	29	4.52	1.66
	Differentiate between divergent and convergent stages in group decision-making	29	2.76	29	4.28	1.52
	Frame a purpose statement for an open/scoping meeting	12	2.75	12	4.13	1.38
	Familiarity with facilitation techniques for open/scoping meetings	12	2.92	12	4.08	1.17
	Confidence in facilitating an open/scoping meeting	12	2.92	12	3.96	1.04
	Frame a purpose statement for a regular group of stakeholders	12	2.79	12	4.08	1.29
	Familiarity with facilitation techniques for small group decision making	12	2.75	12	4.21	1.46
	Confidence in facilitating decisions with a regular group of stakeholders	12	2.75	12	4.04	1.29
Techniques for community collaboration	Frame a purpose statement for a complex mix of stakeholders in a longer-term engagement	29	2.22	29	3.79	1.57
	Familiarity with facilitation techniques for a complex situation	29	2.14	29	3.72	1.59
	Confidence in working with a facilitator for complex situations	12	2.42	12	3.96	1.54
	Confidence in facilitating complex engagement techniques	17	1.94	16	3.38	1.43
	Frame a purpose statement for a divergent stakeholder activity	17	2.82	17	3.88	1.06
	Familiarity with facilitation techniques for divergent engagement situations	17	2.76	17	4.06	1.29
	Confidence in facilitating divergent engagement techniques	17	2.59	17	3.76	1.18
	Frame a purpose statement for a convergent stakeholder activity	17	2.71	17	4.00	1.29
	Familiarity with facilitation techniques for convergent engagement situations	17	2.65	17	4.06	1.41
	Confidence in facilitating convergent engagement techniques	17	2.65	17	3.82	1.18

Table continued on next page

Table 6. Continued

Community engagement topic	Competency	Pretest		Posttest		Avg. change*
		N	Avg.	*N*	Avg.	
Determining and evaluating engagement success	Evaluate the effectiveness of engagement with my stakeholders or community partners	30	2.60	30	3.76	1.16
	Make use of feedback from evaluation to shape future engagement efforts	17	2.82	17	3.65	0.82
Managing conflict among stakeholders	Knowledge of strategies to manage disruptive behaviors during public engagement	12	2.50	12	3.88	1.38
	Strategies for structuring meetings to minimize disruptive behavior	12	2.58	12	4.00	1.42
	Ways to prepare yourself for contentious public meetings	12	2.75	12	4.00	1.25
	Confidence in addressing disruptive behaviors during public meetings	12	2.63	12	3.83	1.21

Note. Advanced community engagement certificate evaluation ratings for 2018 and 2019 were on a scale of 1 (low) to 5 (high). Average change was calculated as the difference between posttest average and retrospective pretest average. Statistical significance of change was not calculated due to small participant number.
* Average change figures may not reflect difference of average figures shown due to rounding.

and *evaluation* as topics they wished they had more confidence applying. When asked "What additional information, materials, or expertise would be helpful?", the participants mentioned *opportunities to practice*, *having a mentor to choose the technique*, *advice on deciding when to inform versus consult*, *knowing who within the organization is willing to help*, and *a standard method or framework for tracking and measuring success*. Community-engaged certificate planners will take this feedback into consideration as they plan the next advanced certificate program.

Diversity, Equity, and Inclusion Half-Day Program Goals, Description, and Curriculum

In 2019, an additional half-day program focused on diversity, equity, and inclusion (DEI), public engagement, and conservation was offered to 2018 and 2019 participants. This program was offered on a separate day from the advanced certificate so that participants from 2018 could attend the DEI program without having to attend the entire advanced certificate a second time. Two 2018 participants and the MDNR DEI officer attended the DEI workshop only.

DEI workshop goals were to

1. understand the connections between inclusivity and conservation goals
2. share successful examples of how nontraditional and underrepresented groups have been included in DNR Wildlife work
3. become familiar with strategies for becoming more inclusive of diverse stakeholders

The program started with a presentation about why diversity, equity, and inclusion are important to meet conservation goals and meet state agencies' public trust responsibilities (Bonta et al., 2015; Jurin et al., 2010; Texas Parks and Wildlife Department, 2017). Facilitators then asked participants six questions about their views on DEI through an online polling system that allowed their reactions to be shared in a safe, anonymous way. These data revealed the group's range of thoughts and feelings about DEI and demonstrated an anonymous group participation technique.

Following the poll, facilitators introduced the principles of dialogue (Holman et al., 2007) and led an activity to practice "yes and" ways of dialoguing with one another (Pace, 2016). Sideboards (parameters about

what was acceptable and not acceptable to discuss during the workshop) were posted on the wall at the front of the room and later in the small group dialogue breakout rooms. The planning team developed sideboards to focus participants' attention on specific aspects of DEI that were related to community engagement (e.g., broadening participation) and to direct conversation away from important DEI issues that were to be taken up by the state agency's broader task force on DEI (e.g., hiring and retention; equity in pay).

Facilitators preassigned participants to small dialogue groups that included a mixture of participants by gender, job position, and geographic regions. Each small group had a convener who led the dialogue and recorded responses to these three questions: (1) What opportunities does engaging diverse stakeholders and communities bring? (2) What are the challenges/barriers in engaging diverse stakeholders and communities? and (3) What are specific strategies for overcoming those identified barriers/challenges? Small groups reported out to the larger group. An overall observer dropped in and out of the small dialogue groups to note themes from across the small group discussions. Together, as the full group, we discussed both the content of the dialogues and dialogue as an approach to engagement

MDNR-WLD professionals then presented two case studies specifically chosen to highlight underrepresented groups (i.e., individuals from groups who participate less given their proportion in the population overall: women, minoritized groups, veterans, disabled persons, etc.) and nontraditional stakeholders (e.g., outdoor recreationists who do not hunt, fish, or trap), respectively. The final session focused on making a DEI plan of action for personal growth and professional practice. See Table 7 for a summary of the DEI program's curriculum and evaluation strategy.

DEI Workshop Evaluation Data

Twenty out of 21 participants completed the DEI evaluation, which consisted of five Likert-type scale questions where participants rated how much they disagreed or agreed with statements on a 5-point scale (1 was lowest rating, 5 was highest rating; See Table 8).

Open-ended evaluation comments included remarks such as "Excellent job creating and maintaining an atmosphere where participants can share, make mistakes, and learn. Good flow through topics and activities over three days" and

> This was a great opportunity, and I would love to have further follow-up to expand and continue this. Did this group leave and use the tools? Do they use the booklet? I would be *so* interested in more DEI training as well.

For basic, advanced, and DEI programs, participants learned about community engagement topics, listened to theory to practice case studies from their state agency peers, and practiced applying the ideas in scenarios written specifically for each year's cohort of participants. Organized by triplets (basic certificate) or duets (advanced certificate), the curricula emphasized connecting prior knowledge to the new materials, employed active learning strategies, and prompted preevent, daily, and overall reflection to connect the new ideas and practices to each participant's work context. Evaluation data revealed important impacts on participants' learning. In addition to participant changes, members of the planning committee observed impacts in their own organizations.

University–State Agency Partnership Impacts

From the state agency perspective, this partnership has sparked new community engagement activities, peer-to-peer learning opportunities, and resource identification of supports for community engagement culture change. For example, certificate alumni pursued complex stakeholder engagement strategies to address specific management issues in their regions (i.e., bovine tuberculosis, chronic wasting disease education). These certificate alumni received approval, funding, and support to partner with National Consensus Building Institute and National Charrette Institute for deeper community engagement with regionally focused stakeholders on specific wildlife management issues.

In 2019, the planning committee transitioned into a formal MDNR-WLD Stakeholder Engagement Workgroup, which meets regularly to address community engagement needs within the state agency. This workgroup has initiated multiple peer-to-peer learning opportunities based

Table 7. Diversity, Equity, and Inclusion (DEI) Program's Engagement Topic, Lead Presenter, Session, Description, and Evaluation Strategy

Engagement topic	Lead presenter	Session	Description	Evaluation strategy
Diversity, equity, inclusion	MDNR-WLD MSUE	Lecture	DEI, conservation, and the public trust doctrine Activity: Anonymous polling of participant DEI attitudes	Post only
Dialogue	MDNR-WLD MSUE	Lecture	Dialogue as a way of engaging Activity: "Yes and" dialogue practice	Post only
	MDNR-WLD	Practice	Small group dialogue focused on DEI opportunities, challenges, strategies	
Underrepresented groups	MDNR-WLD	Case study on engaging underrepresented groups	Tribal involvement in the Elk Management Plan (history of collaboration with tribal resource managers)	Post only
Nontraditional groups	MDNR-WLD	Case study on engaging nontraditional groups	SEMI-WILD: Creating an effective network of stakeholders to meet natural resources needs of Metro Detroit	Post only
	MDNR-WLD UOE	Wrap up	Group reflection; individual DEI plans	Post only

on brainstormed suggestions during the certificate programs. To strengthen peer-to-peer learning, the work team developed an internal engagement request form for agency colleagues to request assistance from them on the planning or implementation of community engagement projects. This request form allows MDNR-WLD professionals, especially those who have not yet participated in the certificates, to connect with certificate alumni for assistance in thinking through community engagement details or facilitating engagement activities on projects.

The work team initiated an engagement shadowing program, where those interested in seeing the implementation of a particular community engagement process can attend an event to observe and then debrief with the leader of that event on how the engagement process worked. A community engagement tracking database was also developed to document agency-wide efforts for involving community partners and stakeholders. Lists of partners, engagement processes used, and artifacts, including agendas and facilitator's guides, are documented in this database to support peer-to-peer learning. The engagement work team also hosted virtual workshops during summer 2020 and a four-part virtual lunchtime series in fall 2021 so that MDNR-WLD professionals could learn the basics of engagement, especially if they had not yet had an opportunity to attend the certificate programs due to pandemic restrictions on in-person meetings.

Finally, the engagement workgroup has developed multiple internal resources to support community engagement agency-wide. Together, they authored an engagement guidebook, which details how to plan stakeholder and community engagement in the context of their own agency work. Lists of internal and external facilitators with specific training in community engagement techniques (e.g., facilitative leadership, charrettes) and a statewide inventory of facilities available for engagement activities inform the agency professionals of people and places they can tap into for their community work. The case study list developed for the certificate programs has been made available to anyone within the agency to use in idea generation and internal networking. Combined, these capacity-building efforts, peer-to-peer learning, and resource identification and development are

Table 8. Diversity, Equity, and Inclusion Program's Participant Self-Rating Data From 2019

The DEI session on Day Three . . .	Average postevent rating
Created an opportunity for me to listen and/or contribute to a dialogue about diversity, equity, and inclusion and our stewardship goals	4.70
Addressed diversity, equity, and inclusivity related to stakeholder engagement and community engagement	4.35
Provided me with ideas for engaging with nontraditional stakeholders	3.85
Provided me with ideas for engaging with stakeholders from traditionally underrepresented groups	3.75
Gave me the opportunity to reflect on what diversity, equity, and inclusion means in my own work at the DNR	4.50

the result of the continuing leadership of the engagement workgroup, as they work to shift agency culture to be more supportive of community engagement as standard agency practice.

From the MSUE perspective, this partnership has furthered their long-standing relationship with the MDNR. MDNR-WLD professionals regularly participate in professional development programs offered by MSUE on topics like managing conflict in natural resource settings, leadership, and facilitation. None of those professional development programs, however, connected the public trust doctrine to stakeholder and community partner engagement specifically. Nor do they include case studies, activities, and examples wildlife professionals encounter in their everyday work lives. Therefore, this partnership was a unique opportunity to codevelop a program with MDNR-WLD and UOE staff and could be used as an example for future collaborative program development in Extension.

From the UOE perspective, this partnership deepened understanding of community engagement in conservation contexts and generated innovations in professional development for community engagement. Unlike other topical areas of community engagement practice (e.g., early childhood literacy, health disparities), for conservation, professionals are federally mandated to solicit public input during certain stages of some policymaking. This mandate is often fulfilled through a publicly advertised meeting where open comments (or online comments) are solicited; however, such public input is not always considered or acted upon by the agency. The open meeting checks the box for the federal mandate, yet public participation does not necessarily shape policy, management, or education decisions. Conservation professionals and community stakeholders have sometimes become frustrated by this type of public engagement because of its limited impact on the policymaking process.

A decades-long legacy of this inauthentic engagement has shaped expectations for both professionals and stakeholders about the potential and promise of community engagement. Professional development organizers, as a result, need to confront that historical legacy and reframe the potential of medium and high levels of authentic engagement to improve conservation outcomes for both professionals and stakeholders.

Another insight from this partnership is the role of conflict among community and stakeholder groups. In many other topical areas of community engagement there are low levels of conflict among stakeholders. For example, there are no well-funded nonprofit organizations lobbying against early childhood literacy or health disparities reduction—in contrast to the many well-funded national and international organizations that influence hunting regulations one way or the other (e.g., sportsmen groups, animal welfare advocacy organizations). In the conservation context, long-standing disagreements between stakeholders and

the state agency and among stakeholder groups themselves mean that wildlife professionals need additional training on managing disruptive behaviors during engagement activities, on bringing together rival stakeholder groups in engagement sessions specifically designed to minimize conflict, and on using self-management techniques to keep from being drawn into conflict during public meetings with stakeholders (Manfredo et al., 2017; Nie, 2004). These community engagement practices, rarely listed in the general community engagement competencies, are essential for conservation professionals, especially those working at state agencies.

The partnership also improved professional development for community engagement offered by UOE. As a direct result, professional development offerings for other audiences now include duets or triplets as a way of organizing key topics in the curricula. Professional development also includes peer-led case studies, with participants invited to contribute their experiences for discussion. In the past, UOE's professional development curricula focused on topics in education, social sciences, and health. Because of this partnership, new examples of community engagement in conservation settings regularly appear in workshops, making the content relevant to a wider range of learners.

Lessons Learned

In our experience codeveloping community engagement certificates, we learned the following lessons that may be helpful to others considering the codevelopment of community engagement certificates for working professionals in state agencies. Our lessons focused on the same areas Welch and Plaxton-Moore noted in *The Craft of Community-Engaged Teaching and Learning* (2019), namely that excellent community-engaged learning blueprints include partnerships, objectives, engagement, reflection, and assessment.

- *Convene a diverse planning committee for your partnership*. First, get the support of leadership, but then involve midlevel leaders, potential participants (and, later, program alumni), and others with significant experience with professional development in the specific context in the planning. Make the planning team large enough that sharing the work is easy for everyone.
- *Refine existing learning objectives*. Customize existing professional development frameworks for community engagement to the specific audience. Through information gathered on applications, strategic conversations, planning committee input, and eventually through evaluations, work to define and then refine the learning objectives and the curriculum.
- *Draw upon adult learning theory in how you organize the logistics and the curriculum*. Keep specific preferences of the participants in mind as you finalize logistical decisions (e.g., sessions outside, easily drivable location from all parts of the state, evenings off). Provide examples that are specific to the participants' professional practice.
- *Invite participant case studies, and then support their development, so that peer-to-peer learning remains focused and relevant*. Celebrate current community engagement successes and provide space to discuss case studies where improvements could be made to achieve better outcomes.
- *Use practical and relevant teaching strategies to ensure key topics are understood both in theory and in practice*. In the basic certificate, we implemented triplets (content–case study–practice) and, in the advanced certificate, duets (content–practice) to great effect.
- *Draw in community partners in the planning process as copresenters of case studies, and/or panelists*. Community partner voices are important in any type of community engagement professional development, as other measures often fall short of conveying the lived experience and perspectives of the partners.
- *Plan to reflect, evaluate, and assess your program from the start*. Make sure you are embedding formative and both short-term and medium-term summative evaluations. These practices improve the programming, identify new areas of learning, and model excellent evaluation practices for the participants.

- *Be open to new and evolving learning interests and needs*. When we started, we did not envision an advanced certificate, virtual workshops, or a brown bag series. We also did not envision a diversity, equity, and inclusion workshop as a separate, special focus. These have all become important components of MDNR-WLD professional development programming, especially with sustained organizational culture change in the state agency as a priority.

Conclusions

University–state agency partnerships may play an important role in strengthening outreach and engagement practices on a broader, statewide scale. Listening to an intentionally diverse and representative planning committee to tailor the curriculum for state agency professionals ensured translation of general community engagement ideas into the professionals' specific context. Using adult learning theory to guide logistical and curricular choices ensured more effective learning programs for working professionals. Participant-authored case studies contributed relevant examples and fostered peer-to-peer learning and networking. Cycles of reflection and evaluation identified important improvements to make each time the curriculum was offered. Cocreating community engagement certificates with state agencies has the potential to impact program participants, the state agency, Extension, the university's outreach and engagement office, and, ultimately, the lives of residents of the state through improved community engagement practice.

Acknowledgments or Notes

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Appendix. Selected Readings for Basic and Advanced Community Engagement Certificate Programs

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