

**Center for Community and Regional Research
Boulder Lake Environmental Learning Center Final Report
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Project Title

Community Service Initiative: Strengthening Environmental Education, Stewardship, Program Support, and Citizen Science with Master Naturalist Volunteers

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Project Abstract

Boulder Lake Environmental Learning Center enhanced the environmental education, stewardship, program support and citizen science occurring within the Arrowhead region by building the capacity for community learning and service and taking action through community

service. Boulder Lake Environmental Learning Center conducted a Minnesota Master Naturalist Volunteer Training, matched these volunteers with host organizations and collaborative projects, and supported the volunteers once they had completed the training by connecting them with various opportunities to continue their education and to volunteer their services.

Literature Review

Cohort groups of adult learners

“Cohorts must be purposefully formed and structured if they are to succeed as environments that foster learning and development” (Imel, 2002). The presence or organization of a cohort itself does not necessarily indicate the success of the cohort; a cohort must be nurtured, and individuals as well as the collective group must be supported and challenged. Imel (2002) states that initial experiences as a cohort are critical in group development. These assertions provide the cohort organizer with ‘best practices for adult cohort groups’ and offer guidelines for working with this type of adult audience.

Some common positive feelings of cohort members about their experiences include: improved critical thinking skills; individual development; enhanced knowledge base; motivation to learn more; and new perspectives on learning (Chairs et al. 2002; Norris and Barnett 1994; Lawrence 2002; Saltiel and Russo 2001). Negative experiences within a cohort have also been reported, and are related to group dynamics such as passive or dominant group members; lack of commitment to the cohort; members viewing the instructor as the ultimate authority; and individual learning styles that cannot adapt to group environments (Lawrence 2002; Maher 2001; and Norris and Barnett 2004). As Boulder Lake Environmental Learning Center staff planned all cohort meetings, this research allowed staff to consider various aspects of cohort groups and to

accommodate individual and group dynamics. Knowledge of cohort dynamics and optimal learning environments helped structure the learning experiences of this cohort.

Adult target audiences in environmental education

In A GreenPrint for Minnesota (2000), adult audiences are among those audiences given priority as target audiences for environmental education in the state of Minnesota. As an environmental learning center, Boulder Lake ELC strives to support environmental education with its mission and programming, and has a main target audience of adult groups such as private landowners and professionals. As Blair (2008) contends, community education must involve public participation, environmental adult education and environmental communication. Blair's study further indicates that "public participation provides a catalyst for genuine collaborative efforts between different organizations and local communities". Indeed the Master Naturalist Program offers community education structured upon the three principles of community education and strives to connect community members and organizations. Further, Camozzi (1994) supports adult environmental education in that it leads to conservation, social action and environmental citizenship. These align with the underlying goals or anticipated outcomes of the Master Naturalist Program.

Other state Master Naturalist Programs

Many states throughout the U.S. have Master Naturalist Programs. In Florida, "the goal of the Florida Master Naturalist Program training is not simply to educate program participants, but to prepare and motivate them to share information about Florida's environment and conservation issues with others" (Main 2004). Many state Master Naturalist Programs have

similar goals and mission statements. Master Naturalist Programs in Texas, Missouri, and Florida report benefits such as: increased knowledge gain on the part of participants; larger volunteer base for Master Naturalist instructors; pay increase or new job or volunteer positions for participants; promotion of conservation and environmental education; positive behavior changes; and increased program attendance at sites of Master Naturalist instructors (Haggerty 1999; Main 2004). In 2005, a needs assessment was conducted to learn the potential success of a Minnesota Master Naturalist Program. Findings indicated that development of the program should be pursued and that there would be statewide support and interest in this program (Savanick & Blair 2005). A needs assessment indicates the methodological approach to developing this program as opposed to simply deciding to offer it because it has worked in other states. Boulder Lake Environmental Learning Center became a certified instructor for the Minnesota Master Naturalist Program and offered the second pilot program of the Minnesota Master Naturalist Program's "Northwoods, Great Lakes" curriculum in January 2009.

Methodology

Boulder Lake Environmental Learning Center offered the Minnesota Master Naturalist Training after community members contacted University of Minnesota Extension requesting a Master Naturalist training in the Arrowhead region. The proposal was then molded by meetings with all of the collaborative partners listed above.

Boulder Lake Environmental Learning Center enhanced the environmental education, citizen science, program support, and stewardship occurring within the Arrowhead region by training Master Naturalist Volunteers and connecting them with regional organizations. These

objectives were reached by building the capacity for community learning and service and taking action through community service.

Building the Capacity for Community Learning and Service

In January and February 2009, Boulder Lake ELC hosted the “North Woods, Great Lakes” Master Naturalist Volunteer Training. The project began by recruiting 19 individuals from the arrowhead region interested in increasing their knowledge of Minnesota's natural and cultural history, developing their ability to convey that knowledge in a range of educational settings and to a variety of audiences, participating in citizen science efforts, and serving as a steward of the land. Master Naturalist Volunteers committed to 40 contact hours of training in the “North Woods, Great Lakes” curriculum developed by University of Minnesota Extension’s Minnesota Master Naturalist Program.

The mission of the Minnesota Master Naturalist Program is to “promote awareness, understanding, and stewardship of Minnesota's natural environment by developing a corps of well-informed citizens dedicated to conservation education and service within their communities.” During the training period, Master Naturalist Volunteers actively learned about the natural and cultural history of our biome. The training included topics such as: glacial geology and formation of the Lake Superior watershed; winter animal tracking; winter tree and shrub identification; aquatic macroinvertebrate and fish identification; invasive plants and animals; pre-historic human history of the region; and recent logging history. Volunteers also learned basic principles of environmental interpretation and outdoor education so as to build their ability to effectively teach within the community.

In order to transition from training to community service, the Master Naturalist Volunteers were required to complete a capstone project and present their project to the cohort. A range of appropriate citizen science, environmental education, program support, and stewardship projects were presented. These capstone projects served well as a transition from training to community service because they were completed within the structure of the training but were real-world projects that provided service to community organizations.

Taking Action through Community Service

As mentioned, Master Naturalist Volunteers were introduced to projects occurring in regional organizations and had the opportunity to explore potential collaborative efforts. Each of the Master Naturalist Volunteers completed their capstone project prior to graduation. The capstone projects allowed the facilitators of the training to assess the knowledge and abilities of the learning cohort, and helped build teamwork and collaboration skills within the cohort and community. Please refer to the Results section for a description of all capstone projects.

As a Minnesota Master Naturalist Volunteer, each of the participants committed to provide at least 40 hours of annual community service as their post-training responsibilities. The capstone projects themselves exposed the Volunteers to a wide range of projects and organizations in the area. Because these organizations were so pleased with the results of the capstone projects, they offered many other projects that could be completed by Master Naturalist Volunteers to fulfill their 40 hours of post-training community service. Additionally, the Minnesota Master Naturalist Program keeps in contact with all Master Naturalist Volunteers and provides information on advanced training and community service opportunities. Master

Naturalist Volunteers are supported in many ways as they take action to serve their communities through environmental education, program support, citizen science, and stewardship.

Results

Capstone Projects

Brian Lokken and Dave Lake: Great Lakes Aquarium

- Created an interpretive cart to be used by education staff and volunteers educating the public on the carbon footprint and alternative energy options.

Ellen Brown and Chris Loudon: Lake Superior Zoo

- Developed signage to be posted on LSZ property describing the native species at the zoo.

Pat Pearman: Duluth Audubon Society

- Revamped portable bins lent to schools by DAS with educational, hands-on materials for learning about birds.

Steve Coll: Hartley Nature Center

- Helped organize library.

Sharon Herrell: Boulder Lake Environmental Learning Center

- Put together a backpack with educational materials and tools to be used on hiking trail.

Denny Hovde: Hartley Nature Center

- Worked to further develop the alternative energy RV that Hartley plans to use in its environmental education programming.

Leah Nelson: Positive Energy Outdoor (ed)Ventures

- Developed historical interpretive media to support existing educational programming.

Shirley Nordrum: Ojibwe Language Immersion Program, Bug-O-Nay-Ge-Shig School

- Created environmental education lessons for Ojibwe Immersion elementary school.

Larry Sampson: Bayview School Forest

- Made trail map for school forest using GPS and online mapping applications.

Jan Olson: Boulder Lake Environmental Learning Center

- Wrote 500 word article about Boulder Lake ELC to submit to Northern Wilds (local outdoor recreation publication).

Karl Olson: Boulder Lake Environmental Learning Center

- Built wood frames for staff to use during Archaeology Mock Dig (cultural history lesson for schools).

Kathie Hanson: Bird Hill School Forest in Silver Bay

- Improve trail signs for school forest and work with students and faculty to meet needs.

Roxy O'Hearn: Boulder Lake Environmental Learning Center

- Sanded and epoxyed large tree cookies for Boulder Lake ELC to use in educational programming and in display/exhibit areas.

Adrienne Dinnean: Boulder Lake Environmental Learning Center

- Updated and prepared trail signs, skied cross-country ski trails and posted signs for trail information and interpretation, and created recommendations for future signage.

Lisa Kerr and Lisa Clausen: Lake Superior Zoo

- Designed new encased display for Education Department of zoo.

In addition to the capstone projects, another result was the evaluation and refinement of the piloted “North woods, Great Lakes” Master Naturalist Volunteer training program.

Following the success of this training, Boulder Lake Environmental Learning Center is offering another training in August and September of 2009. This training is anticipated to reach at least 15 participants (40 contact hours of training).

Finally, all participating Master Naturalist Volunteers will complete at least 40 hours of annual community service in citizen science, program support, environmental education, or stewardship. These post-training community service hours are built into the Master Naturalist Program and bring the participants full circle from learner to active citizen.

Discussion and Conclusion

The Minnesota Master Naturalist Volunteer Training Program offered at Boulder Lake Environmental Learning Center accomplished engaging adult learners in their local natural environment, empowering them with knowledge and skills to participate in community activities,

and connecting them with local organizations to utilize that knowledge and skills. The program participants made up a cohort of enthusiastic learners who represented a diverse personal and professional background. In completing this training, Boulder Lake Environmental Learning Center has contributed to program support, environmental education, citizen science and stewardship throughout the northeast region of Minnesota. By educating this cohort and sending them out into the community, we have created a group of knowledgeable and active citizens who are motivated to continue learning and supporting their communities.

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