

Final Narrative Report***Woodlands & Waters: Three Tiers of Stakeholder Engagement in the Heart of the Great Lakes*****Background/Overview**

1. As outlined in the original proposal, Huron Pines will build on existing partnerships to promote stewardship of land and water through nature-based experiential learning in the heart of Michigan's northern lower peninsula. By taking a three-tiered approach to empower K-12 students, adult citizens and Michigan leaders in understanding and protecting natural resources, this project will strengthen the NEMI GLSI network and result in healthy Great Lakes natural communities connected to caring, engaged human communities. The primary goal of this project will be to increase exposure to and knowledge of conservation ideas, actions and place-based stewardship education in areas where people have limited access to learning in the context of natural resources. K-12 students will be reached through Huron Pines and NEMI GLSI partners focused on the interior counties of our region. Adult citizens, in particular recreation-based audiences, will be reached at fun, active public events that promote the use of citizen science tools. Michigan leaders will be invited to participate in engaging tours and hands-on learning opportunities that equip them with an understanding of ecosystem restoration, the value of natural resources and the importance of continued investment in the health of the Great Lakes
2. This project was completed as originally intended with several elements elevated beyond the original intention. K-12 students, adult citizens and Michigan leaders were reached through experiences that introduced them to natural resources in their local community and how they can take part in the conservation of those resources. These experiences included both one-time events and longer-term engagement with multiple contact points, the interaction of the three-tiers, and introduction to how the participants could take part in conservation dialogue and action beyond the experience. The original expectations of reaching people in each of the three tiers to increase conservation knowledge and actions were overall realistic. Factors that helped project progress included the ability to hire a full-time environmental education staff person, existing interest and momentum from all three-tiers to engage in conservation, and the ability to leverage this funding for additional project funds. Factors that hindered progress included time availability of teachers for planning/implementing stewardship projects, schedule conflicts with adults and leaders, and the ability to safely have participants on project sites.

Outcomes

3. Outcome 1 was associated with reaching at least 150 K-12 students in six (6) schools in underserved counties through place-based stewardship education. Through this project, over 300 students were reached in the following ways:
 - Vanderbilt Area School (80 K-12 students, 4 teachers), alongside Huron Pines, the Department of Natural Resources and the Otsego County Community Foundation participated in a variety of stewardship projects including Earth Day Bag Project aimed at reducing single-use plastics and efforts related to stewardship of their

school forest including forest health monitoring, biodiversity monitoring and trail/outdoor classroom establishment.

- Grayling Elementary School (41 2nd/3rd students, 2 teachers), alongside Huron Pines, Munson Healthcare and Huron Pines AmeriCorps, planted a native pollinator garden on hospital property.
- Ogemaw Heights High School (30 9-12th students, 1 teacher), alongside Huron Pines and the Rifle River Prosperity Network, installed a rain garden as part of a larger water quality effort in their community.
- Au-Gres Sims Elementary School (90 4th students, 2 teachers), alongside Huron Pines, Michigan Sea Grant, U.S. Fish and Wildlife Service and other partners, participated in an on-going phragmites and pitcher's thistle monitoring effort on Big Charity Island.
- Tawas Middle School (60 6th students, 3 teachers), alongside Huron Pines, the Iosco Conservation District and St. Joseph's Hospital, began an invasive species monitoring and outreach project focused on phragmites and forest invasive species.
- Oscoda High School (30 9th-12th students, 2 teachers), alongside Huron Pines, Consumers Energy and the U.S. Forest Service removed over 2,000 pounds of garlic mustard across the project period to protect forest habitat along the Au Sable River.

In order to implement these stewardship projects, planning meetings with teachers and other community partners were facilitated and the necessary in-classroom learning took place. Each of these schools was provided with teacher support through planning meetings and the opportunity for professional development and several have plans in place to ensure project sustainability beyond the grant period. Deliverables for this outcome included at least three (3) K-12 case studies highlighting project results and the development of an outcomes-based evaluation model. The case studies focused on stewardship projects with Vanderbilt Area School (through the use of evaluation), Au-Gres Sims School, and West Branch High School; they are attached as part of this report. Huron Pines worked with Civic Research Services, Inc. to develop the evaluation model which was then implemented with Vanderbilt Area School to evaluate changes as a result of the project; the evaluation report is attached as part of this report.

Outcome 2 was associated with reaching adult citizens through public events and the promotion of citizen science with a focus on recreation-based audiences. Deliverables for this outcome included (1-3) Stewardship Stories (attached as part of this report), the identification of at least (10) new people who are highly interested in Great Lakes conservation, and building relationships centered around a Great Lakes conservation ethic with at least (5) recreational groups.

This outcome has been met through the following activities:

- Northern Michigan BioBlitz (100+ community members over the grant period): As part of this project, Huron Pines has taken a leadership role with the Northern

Michigan BioBlitz which increases awareness around biodiversity and empower adults to participate in data collection through the use of the citizen science platform iNaturalist. Through this annual event, Huron Pines has built relationships with community members who are interested in conservation. For example, several connections with educators have been established and Huron Pines has been able to provide support in the form of sharing resources, lesson plans and processes with those teachers.

- Cheboygan Watershed Greenbelt Project (10+ landowners): This project is an effort to educate shoreline property owners on the importance of buffer plants and provide opportunity for participating in a cost share program to install green belts. Through this project, Huron Pines has been able to build relationships with lake association/property owner groups who focus heavily on the ability to recreate on their lakes while maintaining the resource for years to come.
- M&M Excavating (25+ employees): Huron Pines reached out to a local excavation company to partner with them on local projects that affect their work and ours. M&M Excavating volunteered their time at the May 2016 Jack Pine Planting Day and learned about the importance of Jack Pine ecosystems to our area. An equipment decontamination training was held with M&M employees to educate them on the importance of cleaning equipment to prevent the spread of invasive species. M&M donated employee time and equipment to help establish a trail in the school forest at Vanderbilt Area School. Through this project, M&M Excavating has increased their corporate actions towards supporting conservation as well as provided opportunity for their employees to increase their knowledge and participate at a personal level in conservation actions. These personal actions are connected directly to recreation activities as most employees spend time outdoors camping, hunting, fishing or hiking. For example, one employee (and their family) have continued volunteering at Huron Pines events since they first participated in the 2016 Jack Pine Planting Day. This employee has noted that they were glad to connect with a conservation organization because of her children's interest in the outdoors coupled with their need for volunteer hours.
- Michigan Statewide Outdoor Recreation Recreation Plan (21 community members): In partnership with the Michigan Department of Natural Resources, Huron Pines facilitated a public input session on an update of the Statewide Comprehensive Outdoor Recreation Plan. Huron Pines was about to gather feedback, input and suggestions on strategies from community members representing several recreation groups, small businesses, economic and tourism development entities and education organizations.
- Cheboygan Earthweek Plus Adventure (11 community members): As part of a larger land acquisition and community engagement effort, Huron Pines hosted an educational session about Duncan Bay and opportunities to support nature areas

through volunteerism and actions on personal property. The attendees included birders, kayakers, hikers and community members concerned about water quality.

Outcome 3 was associated with reaching local and state level leaders by coordinating experiential learning opportunities and tours and providing links between Michigan leaders, adult citizens and students. Deliverables for this outcome included (1-3) Stewardship Stories (attached as part of this report), at least (10) elected officials engaged and two-way learning with students or recreational groups. This outcome has been met through the following activities:

- AmeriCorps Signature Service Project: In May 2016, Huron Pines hosted a leadership tour for (13) local and state decision makers in the Pigeon River Country State Forest and facilitated a discussion on the value of natural resource conservation.
- Kirtland's Warbler Festival: In 2017, Huron Pines hosted a leadership tour for (14) local decision makers to discuss the management of the species and how the species impacts the economy and communities. The Kirtland's Warbler Alliance, under the direction of Huron Pines, has reached community leaders and decision makers through events such as Jack Pine Planting Day and education days.
- Vanderbilt Area School Forest Showcase: In May 2018, Huron Pines, students and teachers hosted a school forest showcase for (10) local leaders to highlight stewardship project accomplishments. Members of the school board, township council and other local organizations attended a presentation by four high school students and then participated in a tour of the forest which included student perspective in the form of videos.
- Presque Isle Community Conversation (16): Huron Pines led a stakeholders meeting in Presque Isle County to discuss the connection between natural resource conservation and quality of life; several action items came out of that meeting including a commitment to continue the conversation at Team Rogers City meetings. Team Rogers City is a locally organized group of community business leaders, natural resource professionals and elected officials who have agreed to meet once/week to share information on projects and ideas so as to identify opportunities for their communities early. Their purpose is to brainstorm good things for their community in a positive manner and move forward ready, enthusiastic connections/partnerships. Additional outcomes from the meeting include researching opportunities for two high profile/high quality permanent land protection and recreation area preservation, further integrating and promoting the Safe Harbors Designation in quality of life projects and promotion, and increasing community/municipal learning and treatment opportunities on invasive species.
- Rifle River Prosperity Network (14): Huron Pines recruited a "Design Team" comprised of local, state, federal economic development and conservation leaders to guide development of goals, vision and activities of the program. Their purpose was think about how to integrate conservation and economic development messaging and programs to elevate the connection between

natural resource stewardship and vibrant communities in communities of the Rifle River Watershed. Through their work, \$10,000 was invested through a community mini-grants program to encourage grassroots projects to advance that economic, community, natural resources connection. This included funding the rain garden project with West Branch High School. The leaders of this group have come together to make meaningful changes in their community. Students and these leaders learned and worked alongside each other to design and install the rain garden.

- Leadership Otsego County: Huron Pines began leading the Environment Module for the Leadership Otsego County program hosted by the Gaylord Chamber of Commerce. Over a day long workshop, (7) business, government and nonprofit leaders learned from and participated in activities with natural resource based agencies and organizations.
4. The three target audiences for this project were K-12 students, adult citizens and Michigan leaders. All of these audiences were reached at least once by Huron Pines through hands-on stewardship projects, tours, or events. Participating students had multiple contact points with Huron Pines and other community partners. These contact points include in-class learning, project planning and project implementation. Students were appreciative of Huron Pines and other partners time spent with them as it was a different voice than their classroom teacher and as a whole, participating students value/utilize natural resources but had not had the opportunity to connect that value to a conservation action prior to the project. Adult citizens and Michigan leaders were able to engage in conversation and learning about conservation for at least a couple hours and were challenged to stay involved beyond the tour or event. These audiences expressed having learned something new or making a connection to their professional role or personal life as a result of participation.
 5. Building on the existing relationship between Huron Pines and the NEMI GLSI network, this project strengthened Huron Pines' understanding of implementing place-based stewardship education efforts and allowed Huron Pines to fill gaps in the network's geographic reach. Huron Pines now serves on the leadership and administrative teams of the network in order to provide connections to efforts that have been started or revitalized as part of this project. Relationships with educators across the northeast lower peninsula were developed through Huron Pines' increased staff capacity and ability to facilitate professional development opportunities that were a result of this funding. These relationships have allowed Huron Pines to begin planning for stewardship projects with students that will begin or continue to be implemented beyond this grant period. Additionally, the opportunity and need for a NEMI GLSI networking meeting that reaches interior educators and partners was met through this work and included (18) educators and (26) community partners. Relationships with elected officials at the local and state level were developed and strengthened through this work and will benefit future restoration efforts across the region. The opportunity for interaction and learning among community leaders and between students and leaders was strengthened as Huron Pines integrated planning for this into all project development aspects.

6. An evaluation of the place-based stewardship education at Vanderbilt Area School was included as part of this project and is attached as part of this report. Changes in knowledge, intended behavior and comfort with implementing place-based stewardship projects were evaluated for both students and teachers. Key findings for students include increases in knowledge about natural systems and human's impact on them and an increase in skills related to implementing stewardship actions including working in teams and working with community experts. Key findings for teachers include an overall increase in comfort with implementing a place-based stewardship effort but the need for further training on both the pedagogy of place-based stewardship education and conservation related content.
7. Two of the most important outcomes of this work related to place-based stewardship education are the case study of efforts with Vanderbilt Area School and the increase in Huron Pines' capacity and understanding to continue this work beyond the grant period. The work with Vanderbilt Area School has launched stewardship efforts that can be scaled out to schools across the state including the increased use and stewardship of their school forest and connecting existing curriculum programs to stewardship actions on public lands near the school. The processes developed and lessons learned as part of Vanderbilt's stewardship projects are enabling Huron Pines and other community partners to support other schools across the northeast region in the same way. The students' work in the school forest with partners such as M&M Excavating, Kids Outdoor Otsego and the Otsego County Community Foundation in particular highlights the connections that can be made between students, adults and Michigan leaders in ways that enhance student learning and benefit the community. The increase in Huron Pines' capacity and understanding around implementing place-based stewardship education was a result of the stronger relationship with the NEMI GLSI network and experience with a variety of different school districts. The benefits from this increase were realized during the project period and will continue beyond the end of the project.

Related Efforts

8. This project was a part of a broader effort to reach the three tiers of stakeholders. The work was a part of Huron Pines' ongoing work to connect on-the-ground restoration and community engagement. It also was a part of the effort to bolster NEMI GLSI's work in reaching students, teachers and community partners. This includes Huron Pines' role in the pilot inland network meeting that took place in Gaylord as a way to better connect with teachers outside of the Alpena/Lake Huron coast area. The work with Vanderbilt Area School's forest complements the Department of Natural Resources efforts in have more forest land under active stewardship plans. Matching funding for work with all three tiers was provided by the Otsego County Community Foundation, Project Learning Tree, the Michigan Department of Natural Resources, the U.S. Forest Service, Consumers Energy, Herbert and Grace A. Dow Foundation, the Healthy Watershed Consortium, and Saginaw Bay Watershed Initiative Network.
9. The work with Vanderbilt Area School, particularly the school forest focus, will be scaled out to other schools across the region over the next several years. Huron Pines and other partners are working to fully develop a school forest program with the goal of

student-driven stewardship occurring in every Michigan school forest and for school districts to prioritize integrating this stewardship and educational goals to sustain efforts. Tawas Middle School intends to continue invasive species place-based stewardship education and has worked with Huron Pines and NEMI GLSI to write a plan for doing this. The garlic mustard removal effort with Oscoda High School has been successful at the current location and the teachers, Huron Pines and Consumers Energy are in the process of developing next steps for continuing this type of effort at a new location. Au-Gres Sims' work on Big Charity Island is planned to continue and Huron Pines is working with the high school to connect stormwater issues and stewardship actions in the city to the work the 4th graders do on the island. The relationship developed with M&M Excavating over the course of this grant period is expected to continue through mutual support of project implementation, opportunities for volunteering on stewardship projects and learning about natural resources. Huron Pines is committed to facilitating the Environment Module for Leadership Otsego County beyond the grant period to continue reaching this key group of stakeholders.

Communications/Dissemination

10. As part of this project, the following forms of formal dissemination took place:
 - Vanderbilt Area School Family Reading Night and School Forest Showcase: At both of these events, Huron Pines staff presented to parents, family members and community members about the place-based stewardship education happening at the school.
 - Student stewardship efforts at Au Gres-Sims and Oscoda were shared with the community via newspaper articles.
 - NEMI GLSI Fall Network Meeting, Gaylord: Huron Pines staff presented to teachers and community partners about making connections across the three tiers of stakeholders and best practices learned from this project.
 - In partnership with Heart of the Lakes, three case studies were produced to highlight the importance of protecting natural resources and ways that each of the three tiers are active in that protection. These case studies focused on the geographical areas of Au Gres, West Branch/Rose City, and Duncan Bay. Each piece will be disseminated to project partners, stakeholders and other interested parties in the next year.
 - Huron Pines eNews and Blog: Stories about several activities mentioned above were included in the bimonthly e-newsletter distributed to approximately 3,000 Huron Pines partners, donors and supporters. Many of these stories were featured a full length blog posts and can be found at huronpines.org/blog-posts.
11. Communications with teachers and community partners throughout the project period allowed Huron Pines to distribute and encourage the use of materials and participation in learning opportunities. Lessons and project plans that were developed for the K-12 efforts are being used and will continue to be used as examples for other teachers to implement similar projects. The case studies that have been developed will be used by Huron Pines

staff beyond the grant period to encourage the use of the processes that each project went through during the grant period.

Reflections

12. One challenge was the school buy in of the PBSE programs; they are excited to have someone come in and do “one and done” programming for the students but the integration of programs into the school culture has not come easily in some cases. This speaks to the challenge of teacher time and was addressed with some schools through discussions and aligning of priorities with the administration. The biggest lesson learned with K-12 students is that in order to have students deeply engaged in stewardship activities, the majority of the time and financial investment from partners is working with the teachers and providing professional development and planning support. By building teachers capacity, stewardship activities and projects are more likely to be sustainable. A leadership tour as part of the 2017 AmeriCorps Signature Service Project was planned but due to many scheduling conflicts was cancelled. Several leaders were unable to attend due to the budget discussions happening at all levels of government at the time. In general, when leadership events happen, we have found that leaders come out for the meeting and have productive discussions but when it comes to making an action plan it is difficult to move forward on specific details/action items. These meetings and events are worthwhile though because when a leader or community is ready to take an action, they have gained the knowledge and connections required to do that.
13. When working with schools on PBSE efforts, it is important to recognize that the onset of the project will be very time intensive. Stewardship learning and projects are out of many educators comfort zone and while they may be very interested or excited, the foundation for a sustainable project needs to be laid with support from a partner. This investment in the beginning does show benefits within 1-2 school years though as teachers integrate project plans into their curriculum and increase their comfort to implement projects independently. When working with leaders, school administration and adults, it is important to be cognizant that many of them, especially those in northern Michigan, already value healthy natural resources and would like to do more to protect them but often have conflicting needs from their constituents, staff or families. This conflict of needs can often be addressed through cross-sector collaboration such as addressing community health concerns through increase outdoor time which in turn may increase stewardship behaviors.

Attachments

14. The following attachments are included as part of this report with the connected outcome indicated:
 - 18 Stewardship Stories - Outcome 2 and 3
 - Vanderbilt Area School Evaluation Report - Outcome 1
 - Case Studies - Outcome 1