

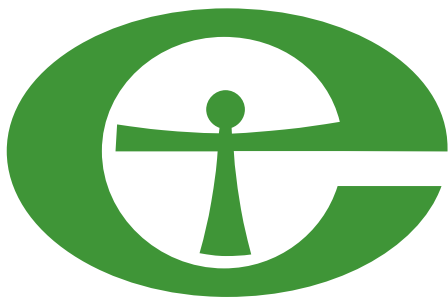
Grant Report  
for  
Noble County Community Foundation



Photo Credit: J. Kane

**Conservation Leadership School**

A program of



**Merry Lea**

*Environmental Learning Center  
of Goshen College*

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*Illustrations courtesy M. Eckelbarger,  
2017 CLS participant*

*“[Conservation Leadership School] is more like a really fun school than a camp. It’s like if school was your favorite subject all day long.”*

*-Participant journal excerpt*

**Organization name:** Merry Lea Environmental Learning Center

**Grant Number:** #20170038

**Primary Name:** Marcos Stoltzfus, Director of Environmental Education Outreach

**Project Title:** Conservation Leadership School

# Executive Summary

Over the week of June 12-16<sup>th</sup>, 2017, Merry Lea successfully ran its inaugural Conservation Leadership School (CLS). By all measures, the week was a success for all involved, including both participants and Merry Lea as an organization.

A total of 11 upcoming juniors and seniors from regional counties participated in the week-long residential program, spending their time on Merry Lea's 1,189 acres of preserved land. CLS's program design allowed students to explore issues related to conservation and sustainability through a variety of immersive, hands-on and engaging activities. Participants spent time bird banding, camping, canoeing, taking research hikes, holding group discussions, and interacting with Merry Lea professionals. Evaluation indicates that the week was successful in meeting the stated goals for participants, which included: an increase in science content knowledge, participating in leadership opportunities, exposure to scientific career options, and experiencing the rejuvenating effects of natural places.

The program also proved valuable for Merry Lea organizationally, as we learned much in our pilot year of the program. Most importantly, this program provided us insight into today's youth (an audience identified as a strategic priority) and their understanding of sustainability-related issues. Additionally, we gained experience with a programming format new to us (week-long residential). We experienced deep learning through the logistical and curricular implications of a program that was multi-day, intentionally limited in size, and targeted at an atypical audience. Valuable insights in each of these areas will certainly inform future offerings of CLS at Merry Lea.

## Statistics:

- 11 total students started the week (one early departure due to a medical concern)
- 8 high schools in 6 counties represented: Allen, Elkhart, Noble, St Joseph, Wabash and Montgomery, OH
- 32 total hours of facilitated activity time
- 9 professionals in sustainability, conservation, or environmental fields directly interacted with participants.
- 97 hours of time elapsed from start to finish of the program

# Evaluation

Program evaluation was central to the CLS program design, and was supported through dedicated time for reflection and processing, and multi-modal instruments (verbally, written, group-based, and individual).

## Evaluation Mechanisms

### Self-reported participant responses (Verbal)

- Participants engaged in daily group reflective discussions throughout the week, with the intention of capturing real-time feedback from students as they experienced various activities, themes, and concepts.
- Staff led a summative reflection at the end of the week. Students synthesized the week's activities to make meaning out of their experiences.

### Self-reported participant responses (Written)

- Students kept journals documenting notes, thoughts, and reactions to activities. Staff counselors provided daily reflective prompts in addition to self-initiated content.
- A summative written reflection tool allowed students to respond to prompts while reviewing other students' responses.

### Staff reflection and feedback

- Staff members regularly consulted each other in the moment to assess effectiveness of a given activity.
- Staff members engaged in written and reflective discussion to identify and record challenges, successes and modifications.

### Staff documentation of activities

- Staff members kept diligent notes regarding changes to lesson plans and schedules to record actual activity times, and unanticipated tweaks to activities.  
This provided an accurate written record of the week, a highly useful tool for comparing against our original planning documents.

The stated goals of the Conservation Leadership School included:

1. Participants will demonstrate increased science content knowledge
2. Participants will participate in leadership opportunities in a scientific context
3. Participants will benefit through exposure to scientific career options
4. Participants will benefit from the rejuvenating effects of exposure to natural places



## Outcome: Increase in Science Content Knowledge

The week's activities were designed to expose students to scientific concepts and issues through immersive experiences. As an example, students explored water quality issues by canoeing on neighboring Bear Lake and taking samples to determine pH, nitrate & nitrite levels, turbidity, dissolved oxygen, and temperature. This experience provided fertile ground for discussion of neighboring communities, landscapes, and the effects of human activities.

Example content areas & activities are below.

### Sample activities and associated content

#### Water Quality

Canoeing, quantitative testing, quantitative observations, sampling aquatic organisms and indicator species.

#### Land Management

Cross-property hike demonstrating projects and practices related to ecosystem-level management. Content included prescribed burn strategies, invasive species, succession, etc.

#### Sustainable Agriculture

Tour of Merry Lea Sustainable Farm and infrastructure. Content included: poly-cultures, soil management, crop rotation, integrated animal/plant systems, etc.

#### Green Building Design

Tour of Rieth Village (a Platinum LEED Certified building project) demonstrating sustainable building practices. Content included: Integrated design, energy conservation, water treatment processes, financial comparative analysis, etc.

#### Additional Topics

Ecosystems, geology, research (avian, botany, and others), aquatic macro-invertebrates.

**Key insights:** Participant reflections provide evidence that these experiences translated into learning. In their journals, students were given the prompt: "What scientific concepts from this week have been new to you (or which concepts have you seen/experienced in a new way)?" Two themes emerged from student responses:

1. Although several topics surfaced on more than one occasion (agroecology, for example), students accrued knowledge from a variety of experiences. Water quality was new for one student, while green building design stood out to another. This indicates that the program's breadth of topics allowed all students to engage in learning regardless of their previous experiences.



2. Not only did students respond to the prompt with specific terms (e.g. polycultures vs. monocultures), their answers revealed higher-level thinking as well. Responses included syntheses of various concepts and an awareness of nuance within conservation issues. They could also identify different values among diverse stakeholders.

Responses below are drawn from daily verbal reflective discussions and excerpts from student journals.

## Sample student responses demonstrating learning

### Written excerpts:

*“I’ve realized that sustainability is complex and has many gray areas between what’s “bad” and what’s “good” in different situations. There’s a give and take...”*

*“I had known some about sustainable agriculture, but today really opened a door for me to see what that is all about.”*

### Verbal responses:

On the first night of reflections students immediately began making connections between their personal actions and how they affect the landscape around them. For example when discussing water quality students began brainstorming about how management actions (fertilizer applications, planting trees) could affect the water quality nearby.

Throughout the week, students consistently applied knowledge from the day’s topic in new ways, or to novel situations, demonstrating comprehension of the concepts.

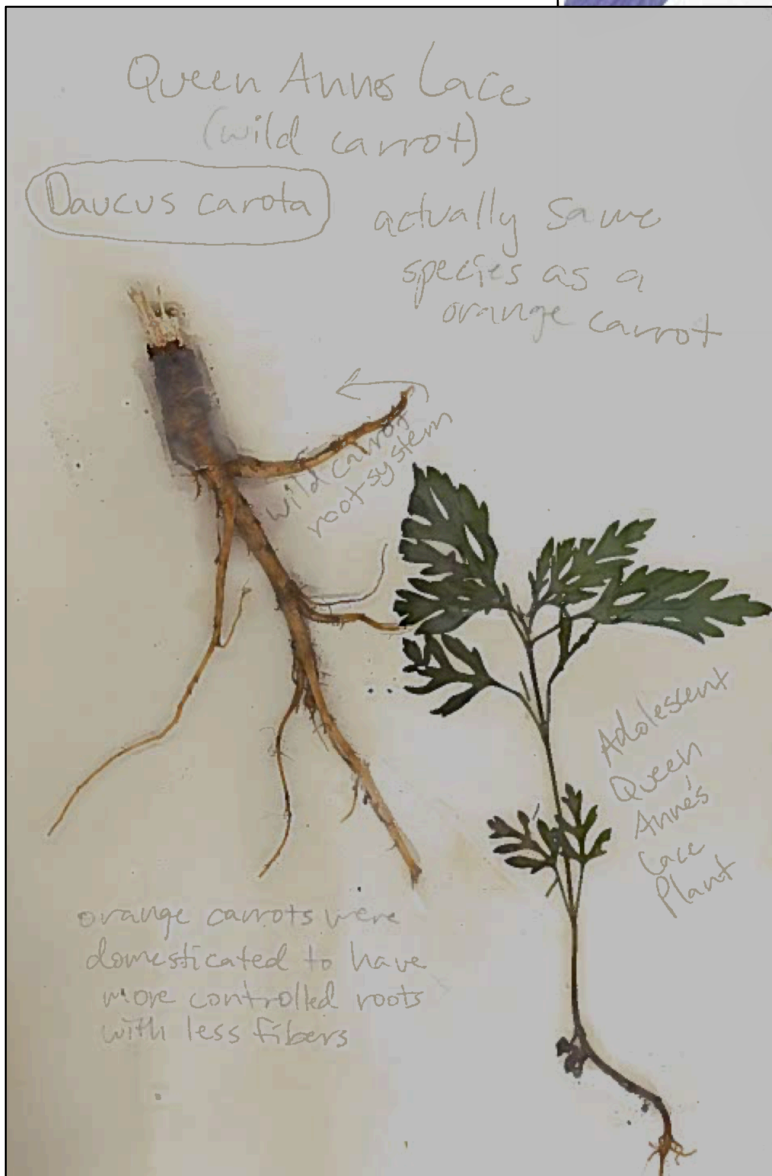


*Students explore ecosystems during a botany hike*





Sample journal pages from botany hike demonstrate student learning





## Outcome: Participation in Leadership Opportunities within an Environmental Context

A main goal of this program was for young people to become better equipped to serve as leaders in environmental settings. Cumulatively, we believe that participants are more prepared to step into a leadership role after the program than they were before. Our program design built in two discrete venues for leadership to occur above and beyond informal day-to-day opportunities. The two venues are described below:

### Identified activities and description

#### Nature Play Day

Nature Play Day (NPD) is a public program of Merry Lea intended for families to visit our site and spend time in the natural world. This program is unique because of its connection through the Indiana Children and Nature network (ours was one of 160 events state-wide).

CLS participants were involved in the 2017 NPD by helping to facilitate two activity stations, a ‘loose-parts’ play area and dipping for aquatic life in vernal pond. Deliverables from their participation include:

- Students interacted with members of the general public, and worked to build rapport with individuals unfamiliar to them.
- CLS students demonstrated leadership by practicing communication skills related to environmental concepts.
- Students were pushed to seek common interests with attendees, model curiosity, pose questions, and generally engage with an external audience.
- Students began learning to judge developmental characteristics of audience members (adults vs. kids; toddlers vs. elementary age children) and make corresponding adjustments to their own interactions.

#### Culminating presentations

Over the course of the week, students prepared a 10-15 minute culminating presentation focused on topics of their choice. Together with 1-2 other participants, students summarized their topic and provided examples from their week’s experience to an audience of approximately 25 people, including peers, parents, guardians, family members, and Merry Lea staff. In preparing for the presentation students were encouraged to consider how to frame their topic, communicate clearly, and work with their co-presenter to ensure an appropriate breadth and depth of their topic.





**Key insights:**

A highlight for students was learning how to frame and approach conversations in ways that are mutually beneficial to all parties... especially when talking with various audiences! Throughout the week, many students returned to this concept, and commented that listening is just as important as speaking (sometimes more so) and that communication is a key element of sustainability.

As the week progressed, we saw students begin to demonstrate these leadership strategies within our group discussions. Behaviors we documented included: Taking deliberate pauses before responding, fully listening to others' responses, and seeking to include everyone in conversations. Although these were small steps, they showed that students were acquiring and implementing key communication (leadership) skills over the course of the week.

An unanticipated outcome of the program was the high degree of bonding that occurred between participants. On multiple occasions students shared their appreciation of interacting with peers with similar interests and maturity. They used language such as "finding a family" to describe this feeling of connection, and expressed deep interest in future programs that would reunite the cohort.

This dynamic posed new questions for us as an organization! Could a program like CLS ultimately result in a regional network of CLS-inspired youth leaders? What role might Merry Lea play in facilitating gatherings of these individuals? How might we expand a weeklong program into a long-term effort supporting past participants in their own leadership? These questions presented intriguing possibilities for us as staff to consider regarding the broader impact of this program!



*A CLS participant helps a member of the public dip for macro invertebrates  
Photo credit: J. Kane*



## Sample student responses around leadership

### Written:

*"Dipping for macro-invertebrates with kids was different because I had never been the one teaching about the organisms, I had been the one learning."*

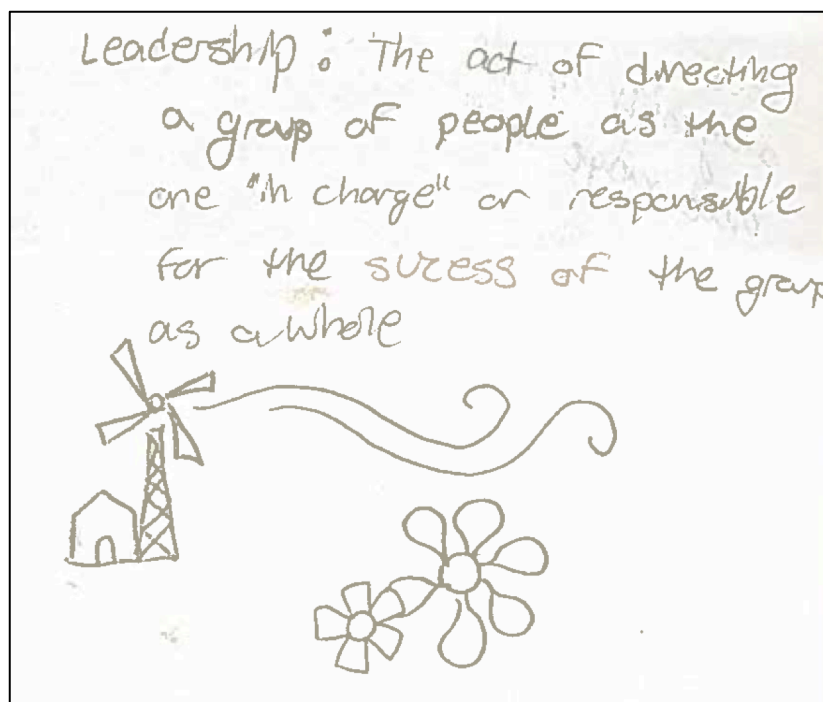
*"I think it is very important to lead by example, showing that it is possible and plausible to live sustainably."*

*"Showing leadership means setting an example for people to follow. It means being the first one to step up and do something about a problem."*

### Verbal:

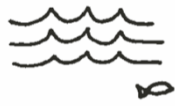
In response to the prompt "What plans do you have that might relate to the concepts we've explored?" a common theme emerged regarding transmission of knowledge and passion. One student envisioned bringing newfound learning to his school's environmental club, while another speculated about starting such a club at her own school. Others were interested in exploring the environmental impact of their personal actions through gardening, vermicomposting, or discussions with family members.

From these remarks, it was evident that students were thinking in terms of the role they might play in influencing their peers, organizing others, or otherwise extending their experiences to their own communities.



*Participant journal excerpt*





## Outcome: Benefit through exposure to scientific career options

Another goal of the CLS program was to provide students with specific examples of career options that they may not have been familiar with before. As an institution, Merry Lea is particularly well positioned for this task, as we maintain a wide variety of work areas with corresponding job positions. Our program design involved Merry Lea staff members as guest speakers and facilitators for activities throughout the week, thereby exposing students to a breadth of career possibilities. Several examples follow.

### Sample careers & fields

#### Informal Science Education

CLS students participated in a Nature Play Day pre-program logistics meeting, observing professional educators coordinate adverse weather plans, set-up coordination, and seeing the realities of program implementation first-hand.

#### Research

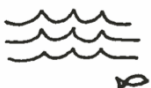
The director of Merry Lea's Research Institute led field time examining plants, invertebrates, and ecosystems. CLS students shadowed the Merry Lea researcher currently leading our 15 year bird-banding study, learned how to participate in citizen science projects like Hoosier River Watch, and actively contributed to a restoration project in a Black Oak Savannah ecosystem. These experiences illustrated the realities of research positions, and demonstrated several fields open to future researchers.

#### Sustainable Agriculture

Students enjoyed personal interaction with our farm director, and were able to tour all aspects of Merry Lea Sustainable Farm. This was paired with an in-depth service learning opportunity in our experimental Woody Perennial Polyculture plot, providing a mini job shadowing experience within the field of alternative agricultural systems.

#### Other

Besides exposure to several other careers (Land Management, Green Building design, etc.) students also were given the opportunity to interact with admission counselors from Goshen College. These individuals provided insights into the process for applying to a college or university, how to best choose a post-secondary institution based on interests, and answered questions CLS students might have about future education options.



## Sample student responses

### Written:

- "I've learned that I'm more interested in water quality, rather than forest and wetlands and birds and bugs. I still know, though, that I care and I want to be active and informed and help people understand why conservation is important."

### Verbal:

After touring and learning about Reith Village and LEED certification, many students expressed that they never knew so many jobs in sustainability were possible. As a specific example, students learned about integrated design teams, which brought multiple stakeholders together to plan out the construction of Reith Village. Students expressed great interest in learning that all roles, from contractors to interior designers, had a role in contributing to sustainability.

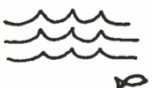
### Key Insights:

It was clear that the interactions with staff members were highly meaningful for students. Almost without exception, each student displayed an exuberant affinity for one of the guest facilitators. It appeared that the value for students was not only in being exposed to a given career, but in observing an *individual*, actively engaged in their career, who was passionate about their work. We speculate that this served to make the position more real for students and allowed them to visualize what such a career would be like.

Another theme that emerged from student journals is that participants developed a more nuanced awareness of specific careers. The excerpt below shows a knowledge progression from a general career category, ('botanist'), to a more specific career, ('weed scientists'). In other words, it appears this experience helped to crystallize student's understanding of career options from abstractions into realities.

<i>Careers</i> <i>Sustainability, Conservation, Science or the environment that...</i>		
<u>I mostly knew about already</u>	<u>I had some familiarity with</u>	<u>Were mostly new to me</u>
Biologist Botanist Ecologist	Sustainable Farmer Biochemist Ecologist Bird bander	Land Manager Environmental Educator Weed scientist Green buildings type person

Participant journal excerpt





## Outcome: Benefits from the rejuvenating effects of natural spaces

Throughout the week, CLS students were surrounded by the 1,189 acres of forests, prairies, wetlands, and other ecosystems of Merry Lea. This not only provided the immersive learning setting for the program, it was also the backdrop for everyday connections to the plant and animal inhabitants of those landscapes.

Studies show that spending time in nature can accrue many benefits. It can strengthen academic performance, foster focus and attention, provide health benefits, and reduce stress<sup>1</sup>. During the week, students were given free-choice time daily for relaxing, going on walks, sitting quietly, or interacting with others outside. This free time, paired with facilitated nature activities, cumulatively provided students with a week-long opportunity for 're-creation' and rejuvenation.



*Participants embarking on their canoe trip*

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<sup>1</sup> Children and Nature Network (2016). Retrieved from:  
<http://www.childrenandnature.org/learn/tools-resources/>



## Sample student responses

### Written:

“What has been the most meaningful part of the week?”

- *Finding a place where everyone cares about nature, and where nature is present.*

“What was the most energizing part of the week?”

- *Hike, swimming, being outside.*
- *The initial hike... was energizing and made me excited for the rest of the week.*

“What was the most relaxing part of the week?”

- *Canoeing through Bear Lake to High Lake.*
- *Seeing all the biodiversity at Merry Lea.*
- *The fields that GLITTERED in the night with all the fireflies and the sky above going all starry and the night felt alive.*

### Verbal:

Participants were asked to reflect on what personal benefits they had experienced from being in nature, and their responses included rejuvenation. Students overwhelmingly identified positive effects, including feelings of relaxation, being at peace, inspired, or even detoxed. Some individuals were surprised to realize how sedentary they were at home (“I forgot how much I used to sit!”), or marveled at how they felt reconnected to nature instead of technology.

### Key insights:

On multiple occasions students expressed their appreciation of the program setting, and the mental and emotional effects they enjoyed from being in a natural place. Students often remarked about the beauty of the surrounding landscapes and their plant and animal inhabitants.

In an attempt to quantify this intangible benefit, students were asked to record ‘moments of wonder’ they experienced. Individuals found meaning in differing moments, however none had difficulty in identifying times when they experienced awe, amazement, or wonder.

- My first moment of wonder was experiencing the different types of ecosystems that can take place in a small patch of land. It was amazing to see a multitude of diversity thriving together so close to each other. It was also wonderful to have the chance, very close to home, to be in those ecosystems and have a knowledgeable guide named Bill.

*Participant journal excerpt*





Dragonfly found by participants while bird banding

thousands of fireflies

- releasing the birds after they were banded

Jun 13 - Seeing the giant cloud of pollen that formed when the wind blew through the cat tails

Participant journal excerpts: moments of wonder



Participants on a research hike



## **Additional comments**

### **What were your overall strengths and successes on this project?**

Overall, we view this program as a huge success! In looking at our region, it seems apparent that we are providing a program that responds to an unmet need. We found no programs with similar goals, and participants likewise identified the uniqueness of the experience.

Secondly, we feel very positive about accomplishing our stated goals in the first year of the program. The logistical considerations alone (transportation, meal planning, etc.) represent an enormous amount of work, much less creating developmentally-appropriate and timed activities. Nevertheless, reactions from the week indicated that we accurately judged topics and activities that would deeply interest students. We feel this reflects our team's strengths in creating accessible and engaging programs for participating audiences.

### **Did you encounter any challenges? Please explain**

Despite our successes, we did encounter challenges, mainly during program implementation. Our biggest area of learning revolved around our staffing model, specifically in finding a balance among team members and allowing enough rest and recuperation time. In the future we will likely seek to dedicate additional staff time or provide more breaks for our counselors, and redirect education team members' time from food prep to activity facilitation. This challenge was partly due to staff illness during the week, which caused re-shuffling at the last minute. While we did not experience any major disruption from this event, it did affect our team's capacity by the end of the week.

We also were disappointed not to receive more interest from local youth, particularly from Noble County. Although our goal was to find 5 youth participants from Noble County, we ended with 2 student participants. (One was unable to complete the full week due to medical reasons.) In part, we believe this is a function of our first year of the program: Because we focused on program development, we allocated less time to cultivating applicants in our target area. This year most of our advertising was through word-of-mouth, particularly using teachers to nominate students for participation. In the future, we anticipate being able to do more robust advertising, including methods that reach students directly, appealing to their interests and prompting participation in the program.



**If it is desirable for the project to continue, provide a plan for its continuation including how it will be funded.**

It is indeed desirable for the project to continue! We expect that future years will require less financial support due to the investment represented by the program development in this inaugural year. While we certainly expect to update our curricula to ensure it remains fresh, current, and interesting, much of the groundwork has now been laid for logistical implementation. Despite this, we anticipate annual fixed expenses as regular costs for the program's operations.

As an organization, Merry Lea is committed to providing organizational support for this program to ensure its continuation. We expect to fund the program in the future through a mix of internal and external support.

**Attachments:**

- Itemized budget, & proposed vs. actual cost comparison
- Publicity generated by the project and demonstrating your relationship with the Foundation