

Lake Superior Stewardship Initiative (LSSI) Mini-Grant Application

School: C.J. Sullivan Elementary

School Phone: 906-524-7365

School Address: 201 N. Fourth Street, L'Anse, Michigan 49946

LSSI Project Advisor: (choose one): Lloyd Wescoat at 906-487-3341 or lwescoat@mtu.edu

	Name	Subject/Grades Taught	Email
Lead Teacher	Helen Stenvig	5 th grade (science +)	hestenvig@laschools.k12.mi.us
	Michelle Seppanen	1st grade (all)	miseppane@laschools.k12.mi.us
	Stacey Erskine	Kdg. (all)	sterskine@laschools.k12.mi.us
	Emily Gasperich	2 nd grade (all)	emgasperi@laschools.k12.mi.us
	Anne Schumer	3 rd grade (all)	apschume@laschools.k12.mi.us
Partner Teachers	Janel Summers	4 th grade (science +)	jasummers@laschools.k12.mi.us
	Randy Cadeau	6 th grade (science +)	racadeau@laschools.k12.mi.us
	Janet Gerzetich	Title 1	jagerzeti@laschools.k12.mi.us
	Kathy Gobert	Sp. Education	kagobert@laschools.k12.mi.us

Number of students participating in the implementation of the project: 351

For a student to be considering participating in the implementation of the project, they must participate in a majority of the activities outlined in project proposal.

Description of Project, please address the questions below:

- **What stewardship need does the project address in your community as it relates to environmental threats to the Great Lakes Watershed? How was this need determined?**

Project title: OUR SPECIAL PLACE AT SCHOOL

Description:

Our school will continue the construction and use of a 1.7 mile Nature Trail at the L'Anse School forest adjacent to the school, which will be used as an educational tool for teaching Michigan GLCEs in Grades Kdg.-6. The nature trail will help CJ Sullivan Elementary students, families, and the community of L'Anse develop a 'sense of place' by enhancing their appreciation and understanding of the maple hardwood forest ecosystem, which surround the school and are an important part of the Lake Superior watershed where we live. Emphasis will be placed on stewardship to maintain healthy ecosystems. This trail will tie into another school trail that is currently under construction and supported by a DNR grant which our school superintendent was successful in obtaining.

The two trails will support each other, with the elementary trail serving mainly as a place to educate the public.

Each grade will continue to develop interpretive signs for a portion of the trail focusing on the GLCE(s) that their grade will address as part of the project. This year we are adding two new grade levels to our project: 6th grade and Kindergarten. We will need to get posts and signs up for their part of the trail. We also hope to work on making it easier for all ages to access our trail by adding more boardwalks over rough and/or wet areas.

In addition, each grade will partner with a community organization that will allow students to learn about a specific issue/environmental threat related to our area, and to compare a different ecosystem to the maple hardwood forest ecosystem at the school forest. Each grade will also plan a stewardship project that meets the goals of both the community partner and grade level studies. Field trip and community partner connections are listed below.

- Baraga Plains (Jack Pine Forest, USFS) – Grade 5 students will conduct plot studies in both the school forest and jack pine forest, with emphasis on monitoring for invasive species. *Threat: invasive species*

- Lightfoot Bay (Great Lakes Coastal Wetlands, Keweenaw Land Trust) – Grade 1 students will compare our forest with Lightfoot Bay, a Great Lakes Coastal Wetland. Grade 4 students will conduct a wetland survey there as well and compare it to an inland wetland at Mt. Arvon. (*Threat: wetlands*)
- Hardwood forest (Plum Creek Timber) –Grade 2 students will identify proper forest management activities and learn about careers in forestry. They will also follow the path that water takes in a forest. Grade 3 students will identify trees and plant seedlings. (*Threat: pollution*)
- Native species greenhouse and restoration project (Keweenaw Bay Indian Community Natural Resources) 6th grade will learn about local native/invasive species and visit a native species greenhouse and native species restoration project. (*Threat: invasives and disappearing native species*)
- Linden Creek---Grade 5 will conduct a macro-invertebrate study. (*Threat: pollution*)
- School Forest---Kindergarten will complete an insect study, to include beneficial insects. (*Threat: pollution*)

What need does this project address in your community? How was this need determined? Initially, a group of local citizens joined together to express interest in the needs of our community. Through their meetings, it was determined that recreational opportunities within the community needed to be further explored. They met with the Village of L’Anse, who owns property adjacent to our school forest, and developed a recreational plan for our village in partnership with the school. A large sports complex was planned, with a nature trail that could be used for walking, hiking, running, and snowshoeing being a part of the plan. Currently, there is no hiking trail within the community of L’Anse.

Students in our school were surveyed by their teachers for their input on what our community needed. Common needs and wants voiced included a place to observe and identify plants and animals, a place to go when outside, and a place to show their parents when not at school.

With those ideas in mind, our elementary team began this project of developing a nature trail in our school forest. It would give everyone in the community a place to identify, connect, and create an awareness of healthy ecosystems. It would serve as an educational tool for the school community, **and** serve as an educational experience for the surrounding community. Additionally, since there is no hiking trail within the community of L’Anse, it would serve as a recreational opportunity for all families and community members.

Our trail was mapped and flagged. Each grade level has since adopted a portion of the trail. They have used the forest for lessons and displayed interpretive signs regarding what they have learned with their studies. (Over the past several years, discoveries of invasive species in our forest have led to new educational opportunities and plans.) Funds were used to construct a few boardwalks on portions of the trail where access was difficult. We need to continue our efforts in making our trail easy to access for all ages. We wish to create a pamphlet/map that people could use to guide them through our trail. We want to continue our efforts in ridding not only our forest, but community, of invasive species while encouraging the planting of native species. We want to have a healthy ecosystem where all native species can flourish.

Meanwhile, our superintendent was successful in obtaining a substantial grant from the DNR for a sports complex/nature trail. This nature trail is also going to go through our school forest, but will skirt around the outer edges. I have met with the landscape architect for their project, and walked him through our project. The two projects are separate, yet will enhance each other. Our elementary trails will be connected to the big school trail, so that people can easily step from that trail onto our elementary trail and learn from our students by reading their signs and viewing their projects and work.

- **What are specific outcomes of the project related to student learning?**

Kindergarten will create an insect station. Students will learn the characteristics of insects and spiders, begin the study of the process of metamorphosis, sort insects based on their observations, and identify insects native to our area and specific to our forest soil. They will learn what native plants these insects need and depend upon. They will create signs and display boxes to share what they have learned.

1st grade will create a weather station. They will create signs to share data with the community as well as use weather tools. First graders will study animal needs as well as the importance of the sun in the growth of plants. First graders will compare our forest with Lightfoot Bay, a Great Lakes Coastal Wetland. They will learn what each system needs to remain a healthy system.

2nd grader will create a plant needs station, which will have students identify plants and their life needs (soil, water, sunlight, carbon dioxide), as well as life cycles. Second graders will identify the flow of water, describe the properties of water as a liquid and a solid, learn how rain collects, and identify Lake Superior. They will discuss how pollution can affect life cycles and Lake Superior. Second grade will travel to Plum Creek forest land to see a working forest and active harvest operation and learn about the life cycles of big plants – trees! Students will learn the importance of trees in producing oxygen for humans, and for its roots in holding the soil to prevent erosion and sediment from reaching streams and Lake Superior where it could harm fish and other living things.

3rd graders will create a tree identification station for which the students will create signs for the community about the types of trees in the school forest. They will visit Plum Creek land to learn how to identify trees, and to learn about the job of a forester. In addition, 3rd graders will participate in the Journey North Tulip Project. Funds will be used to create a tulip garden in the school yard which students will monitor to track growth. Students will submit gathered data to the Journey North website and observe the progression of spring across the United States, recognizing the effect of the Great Lakes on spring's arrival. Students will learn how foresters and other people care for and manage our resources and work to prevent pollution in their roles so that we will have healthy ecosystems.

4th graders will create animal identification and track collection stations where they will identify the animals seen in our forest by habitat and tracks and make interpretive signs to inform the community. The 4th grade class will place and maintain litter collection bins at school and post signs to remind students to pick up litter, and to reuse or recycle paper and other materials. 4th graders will conduct a wetland comparison at Lightfoot Bay with Keweenaw Land Trust, after visiting the inland wetland at Mt. Arvon. Lastly, students will discuss the pros and cons of public versus private land ownership and take a position regarding the ownership, land, and water stewardship of Lightfoot Bay.

5th graders will design and conduct plot studies to compare the plant and animal biodiversity in our school forest to the diversity in the jack pine forest of the Ottawa National Forest. They will learn about invasive species, and participate in the eradication of the invasive specie, Japanese barberry, and other species, from our school forest. Students will also discover and learn about the behavioral and physical characteristics of specific plant and animal species in these ecosystems that help them to survive here, particularly in the winter. In the spring, students will conduct a macro-invertebrate study on the Linden Creek to determine if it is a healthy ecosystem or troubled with pollution. 5th graders will create signs for a biodiversity station in the school forest, and explain how humans can increase and protect the diversity in our special place.

6th grade will make a community grid and locate points of concern regarding invasive plants, after visiting a native species greenhouse, gardens, and restoration project. They will continue their learning and identification about invasive plants along with native plants and the habitats of those identified. They will learn about and inform others in the community of the need to remove invasive and replace with native species. In addition, this project will help students understand human interaction in the ecosystem and other ecosystem concerns such as organism overpopulation, resource depletion, ecosystem balance, and species extinction.

- **What are specific outcomes of the project for your community and the Lake Superior Watershed?**

Students will communicate in verbal and written form a deeper understanding of stewardship issues of the Lake Superior Watershed.

Students will demonstrate a commitment and involvement in stewardship projects within their community (students increasingly play an active role in designing projects, assume decision making roles in class projects, and actively participate in stewardship activities within and outside of school). For example, fifth grade has learned about the invasive plant “Japanese barberry”. They wrote an article in the local paper informing others about the concern. They create pamphlet on barberry that can be distributed to the community. Now that two other invasive species were found in our school forest, they will learn and plan on how to get rid of it, and educate the community. 6th grade, new to the project, may map our trail and make these available to the community. The community will benefit from having students that are more knowledgeable about the place where they live, and who will choose actions that will help to protect Lake Superior.

The community will have a 1.7 mile Nature Trail with a portion developed with interpretive signs at the L’Anse School Forest open to families and other members of the public to enjoy, recreate in, and learn from. The interpretive signs will inform trail hikers about how the diversity and health of the forest ecosystem contributes to a healthy watershed, and ways

to keep the watershed healthy that will benefit the local economy and quality of life that people enjoy. This benefits our partners, because part of their job is education. If students are educated, and can demonstrate and share what they have learned, they are, in a sense, carrying on the work of our community partners.

Our nature trail is not only in the Great Lakes watershed, but has the Linden Creek within it which is a direct outlet into Lake Superior. All people participating will have knowledge of their place and the uniqueness of Lake Superior. All students will have an awareness of being a part of the Lake Superior watershed and the responsibility we have as members of this community to care for it. Students will be able to describe helpful and harmful effects of humans on the natural environment.

Participants will understand the need for children, our future leaders, to be exposed to and immersed in nature.

- **What Grade Level Content Expectations or High School Content Expectations are addressed by the project? (write out the content expectations with their code and sort by subject)**

Kindergarten: Insect and spider investigation

Science:

- L.OL.00.11 Identify that living things have basic needs.
- L.OL.00.12 Identify and compare living and nonliving things.
- S.IP.00.11 Make purposeful observation of living and nonliving things using the appropriate senses.
- S.IP.00.12 Generate questions about living things based on observations.
- S.IP.00.13 Plan and conduct simple investigations into basic needs of living things.
- S.IP.00.14 Manipulate simple tools (hand lens, balances) that aid observation and data collection.
- S.IP.00.16 Construct simple charts from data and observation of living things.
- S.IA.00.12 Share ideas about the needs of living things through purposeful observations.
- S.IA.00.13 Communicate and present findings of observations of living things.
- S.IA.00.14 Develop strategies for information gathering (ask an expert, use a book, make observations, conduct simple investigations, and watch a video).
- S.RS.00.11 Demonstration science concepts about the needs of living things through illustrations, performances, exhibits, and activities.

First Grade: Setting up weather station to monitor sun and plant growth

Science:

- L.HE.01.11 Identify characteristics such as beak shape, number of legs, body parts that are passed on from parents to young.
- L.OL.01.13 Identify the needs of animals such as air, water, food, and space.
- E.ES.01.21 Describe the life cycle of animals.
- E.ES.01.11 Identify the sun as the most important source of heat, which warms the land, air, and water of the earth.
- E.ES.01.12 Demonstrate the importance of sunlight and warmth in plant growth.
- E.ES.01.31, E.ES.01.32 Identify the tools, observe, and collect data of weather conditions over a period of time.
- 1.G2.0.1 Distinguish between physical (clouds, trees, weather) and human (buildings, playgrounds, sidewalks) characteristics of places.
- 1.G5.0.1 Describe ways in which people modify and adapt to the environment.

Second Grade: Plant Needs station

Science:

- L.OL.02.14 Identify the needs of plants.
- L.OL.02.22 Describe the life cycle of familiar flowering plants including the following stages: Seed, plant, flower, fruit.
- E.FE.02.13 Identify characteristics of plants that are passed from parents to young.
- E.FE.02.14 Identify waters, properties of water as a liquid and solid.
- E.FE.02.21 Describe how rain collects on the surface of the Earth and flows downhill into bodies of water or into the ground.
- E.FE.02.22 Describe the major bodies of water on the Earth's surface.

Social Studies:

- 2 – G4.0.1 Describe land use in the community.

- 2 – G5.0.1 Suggest ways people can responsibly interact with the environment in the local community.
- 2 – C5.0.3 Design and participate in community improvement projects that help or inform others.
- 2 – E1.0.4 Describe the natural, human, and capital resources needed for production of a good or service in a community.

Third Grade: Tree identification station

Science:

- L.OL.03.31 Describe the function of the following plant parts: flower, stem, root and leaf.
- L.OL.03.41 Classify plants on the basis of observable physical characteristics (roots, leaves, stems, and flowers).
- E.ES.03.52 Describe helpful and harmful effects of humans on the environment.
- E.ES.03.51 Describe ways humans are dependent on the natural environment.
- E.ES.03.51 Describe the effect humans and other organisms have on the balance of the natural world.
- E.ES.03.44 Describe ways humans are protecting, extending, and restoring resources.
- S.IP.03.11 Make purposeful observation of the natural world using the appropriate senses.
- S.IP.03.12 Generate questions based on observations.
- S.IP. 03.16 Construct simple charts and graphs from data and observations.
- S.IA. 03.12 Share ideas about science through purposeful conversations in collaborative groups.
- S.IA.03.15 Compare and contrast sets of data from multiple trials of a science investigation to explain reasons and differences (Journey North Tulip Project).

Fourth Grade: Animal Identification

Science:

- L.EC.04.11 Identify organisms as part of a food chain or web.
- L.EV.04.21 Identify individual difference in organisms of the same kind.
- L.EC.04.21 Explain how environmental changes can produce a change in the food web.
- S.RS.04.14 Use data samples as evidence to separate fact from opinion.
- L.EC.04.21 Describe the effect humans and other organisms have on the balance of the natural world.
- L.OL.04.15 Determine that animals require air, water and a source of energy for growth and repair.
- L.EC.04.21 Assess the positive and negative effects of human activities on the physical environment.

Social Studies:

- S.RS.04.15 Participate in projects to help or inform others.
- G5.0.1 Identify public issues in the United States that influence the daily lives of citizens.

Fifth Grade: Biodiversity investigations

Science:

- S.IP.05.11 Generate questions based on observations, investigations, and research
- S.IP.05.12 Design and conduct an investigation
- S.IP.05.13 Use appropriate tools to conduct the investigation
- S.IP.05.15 Construct charts and graphs from data and observations
- S.IA.05.11 Analyze information from the data to answer our question
- S.IA.05.13 Communicate and defend findings of observations and investigation using evidence
- S.RS.05.12 Describe limitations in personal and scientific knowledge
- S.RS.05.13 Identify the need for evidence in making scientific decisions.
- S.RS.05.15 Demonstrate science concepts through various illustrations, performances, models, exhibits, and activities.
- S.RS.05.17 Describe the effect humans and other organisms have on the balance in the natural world.
- L.EV.05.11 Explain how behavioral characteristics of animals help them to survive in their environment.
- L.EV.05.12 Describe the physical characteristics (traits) of organisms that help them survive in their environment.
- L.EV.05.14 Analyze the relationship of environmental change and catastrophic events to species extinction.

Social Studies:

- P4.2.2 Participate in projects to help or inform others.
- P4.2.1 Develop and implement an action plan and know how, when, and where to address or inform others about a public issue.

Writing:

- W.PR.05.01 Set a purpose, consider audience, and replicate authors' styles and patterns when writing a narrative or information piece

Sixth Grade: Community invasive species investigations

Science:

- L.EC.06.41 Describe how humans are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance in ecosystems.
 - L.EC.06.42 Predict possible consequences of overpopulation of organisms, including humans (for example: organism overpopulation, resource depletion, ecosystem balances, climate change, pollution, species extinction, etc..)
 - L.EC.06.21 Describe common patterns of relationships between and among populations (competition, parasitism, predator/prey)
 - L.EC.06.23 Predict how changes in one population might affect other populations based upon their relationships in the food web
 - L.EC.06.32 Identify the factors in an ecosystem that influence changes in population size
- **What school improvements goals are addressed by the project?**

One of our goals relates to writing. Students will be writing across the curriculum as they make their interpretive signs, and will provide sufficient details that connect to and answer a question. A second goal relates to science. Students will be able to apply knowledge that they have learned, and will have a clear understanding of what they are studying and why.

- **How will your community partner(s) participate in the planning and implementation of the project?**

Mark Sherman from Plum Creek came to help us identify the boundaries of our school forest and learn about the forest community types in the school forest. He and Andy Solka, also from Plum Creek, came out to determine if a culvert that needs replacing needed to be permitted. It didn't. Plum Creek is donated the culvert. The Village of L'Anse removed the old culvert and installed the new one. Plum Creek will continue to set up and conduct the field trips with second grade and third grade.

We have continued meeting and working with Steve Kickert, Educational Coordinator from the U.S.F.S. (Ottawa National Forest) to set up and complete our plot studies. Jeff Mell, U.S.F.S., participated in our School Forest Trail Night open house. We are also in contact with U.S.F.S. botanist, Ian Shackelford, for help in eradicating the invasive specie in our school forest. Ian and his crew spent one day last summer spraying this specie in our forest. He wants our 5th graders to help by digging up the smaller plants, and educating the public. We continue to toss ideas back and forth as we think of them.

We met with Evan McDonald, Executive Director, Keweenaw Land Trust, to plan a visit to the Lightfoot Bay sanctuary during dinner and dialogues (2/08 and 5/08). Since then Pat Toczydlowski has been in contact with teachers to set up and conduct the field trips and will continue to do so.

- **How will you assess whether the student learning outcomes have been accomplished?**

Teachers will assess students to determine if specific learning outcomes are met by responses to directed questions in the classroom, large and small group discussions, and journal responses and entries. They will analyze students' collection of data and their analysis of it, project work, and test questions relating to their study. Students will also be able to demonstrate their learning when they create signage and give presentations at our community event. Students generating new ideas and questions, and their willing involvement in projects will also demonstrate that they are becoming active learners and stewards committed to the care of our local natural resources.

Community Partners

Name of Organization	Contact Person	Contact Information	How will they benefit?
Plum Creek Timber	Mark Sherman	524-2040; Mark.Sherman@plumcreek.com	By having knowledgeable students who can use that knowledge in a positive way and share their knowledge with others.
Keweenaw Land Trust	Pat Toczydlowski	t-11@pasty.net info@keweenawlandtrust.org	By having knowledgeable students who can use that knowledge in a positive way and share their knowledge with others in the community.
Keweenaw Bay Indian	Evelyn	eravindran@kbic-nsn.gov	By having knowledgeable students who can use that knowledge in a positive way and share

Community Tara Bal, MTU Forest Resources & Env. Sciences	Ravindran Tara Bal	(list as resource people only) tibal@mtu.edu 906-281-6241 (list as a resource person only)	their knowledge with others. By having knowledgeable students who can use that knowledge in a positive way and share their knowledge with others in the community.
Ottawa National Forest, USFS	Steve Kickert, Environmental Education Coordinator Ian Shackleford, Botanist	Steve Kickert 906-358-4018 stevekickert@fs.fed.us Ian Shackleford, Botanist 906-932-1300 ext.331 ishackleford@fs.fed.us	USFS benefits as students share what they have learned during our school trail night, and students participate in removal of our invasive species (with the help of USFS) and communicate with the public about our efforts. Education is very important to the USFS.

All community partners will benefit when students share their knowledge at our community event. Education, and sharing what you learn, is important to all of our partners/resource people. Additionally, this whole project gives students positive direct experience in the out-of-doors, which, research shows, contributes to individuals choosing to take action to benefit the environment as adults. These experiences, with the potential outcomes, would be important for our partners and everyone. These students will increase awareness and understanding of the ecology of Lake Superior so they can become active stewards.

Proposed Time Line: Provide a timeline for project activities including classroom sessions and related field trips that will prepare students for involvement in the project. (give approximate dates and locations)

- September/October 11– lessons in our forest and grade level field trips (using carry over funds)
- January/February 12– lessons in our forest
- April/May 12– lessons in our forest and grade level field trips
- Oct. 12 or May 13 - Family Forest Night event - students, families, and community members
- September/October 12- lessons in our forest and grade level field trips
- January/February 13- lessons in our forest

Communication Plan: *Create a plan for how your team will communicate the success of your project and the stewardship goals it addressed to your school board and your community. Include plans for a community event to communicate the success of your project in addressing your team's stewardship goals and to educate the public concerning the need for stewardship of Great Lakes as it pertains to the environmental threats to the Great Lakes.*

- Feb. June, Nov. 12 school board meeting – update on LSSI project
- April 13—school board meeting, update on LSSI project
- Jan-12-May12 & Sept.12-May 13 - monthly additions to the school newsletter about activities and sharing of knowledge about projects
- Article/picture from each grade level sharing work and what they have learned on the nature trail and field trip with community partners submitted to the L'Anse Sentinel for a news article
- Community event in either Oct. '12 or May '13-flyers sent home with students and invitations given/sent to the Board of Education, L'Anse Sentinel, Daily Mining Gazette, and local TV stations. Our community event will be an open house on our trail, where students will be present near their signs which tell what they have learned. Students will also give an oral presentation on what they have learned regarding stewardship of the Great Lakes (Lake Superior) as it relates to invasive species, native species, wetlands, and pollution.
- Information posted on the school website

Projected Budget for Project: (please include your time as the school match)

Budget Items	LSSI Grant	School Match (listed on the school's MoP)	Brief Description of Expenses
Staff Time	XXXXXXXXXX		
Student Activities and Field Trips	\$2,700.00	\$1,300.00	Field trips (1 or 2 per grade level) + two assemblies (\$900.00)
Sub Costs- for project planning	\$ 400.00		To work on paperwork or prepare for our comm.. event
Teacher Professional Development	\$ 600.00		To attend workshops offered by LSSI (\$97/day/sub)
Supplies	\$ 400.00		Kdg. insect resources; tulip bulbs
Community Event	\$ 500.00		Refreshments + outdoor related consumables
Other—trail	\$ 900.00	\$600.00 (anticipated – U.S.F.S. return to finish spraying barberry; based on costs of last year.)	Lumber to make a flower bed; more signs and posts; boardwalks over rough areas; housing over signs; an information center/rack (doing as much as we can with what we have!)
TOTAL COSTS	\$5,500.00	\$1,900.00	

School Memorandum of Partnership (MoP) - the school must submit a completed Memorandum of Partnership with this application. *(Use attached Memorandum of Partnership Form)*

Community Memorandum of Partnership (MoP) - Applicants should include MoP's for any new community partners recruited for the new funding cycle.

Grant applications should be typed and address each component of the grant application. Grant Applications are reviewed on a regular basis during the LSSI Advisory Board Meetings. Applicants will have an opportunity to re-submit proposals as necessary to address any deficiencies identified in the review process.

Submission dates: Thursday, September 1, 2011 by 5pm
 Friday, October 14, 2011 by 5pm
 Sunday, November 6, 2011 by 5pm
 January and February 2012 dates to be determined

Please email your completed application form as a Word document to: Shawn Oppliger at shawn@copperisd.org

Applicants may contact your project team advisor for assistance in developing your proposal.
 Joan Chadde at 906-487-3341 or jchadde@mtu.edu
 Lloyd Wescoat at 906-487-3341 or lwescoat@mtu.edu