

OTTAWA NATIONAL FOREST

LESSONS FROM THE FOREST

FOREST CONSERVATION EDUCATION PLAN



2012



USDA – FOREST SERVICE

Lessons from the Forest

Conservation Education Plan for the Ottawa National Forest

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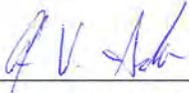
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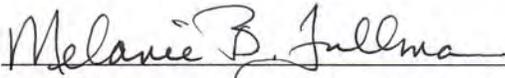
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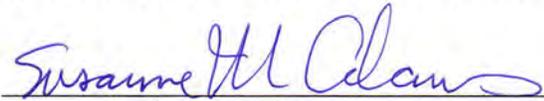
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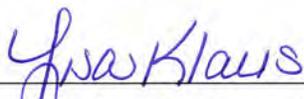
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Lessons from the Forest

Conservation Education Plan for the Ottawa National Forest

EXECUTIVE SUMMARY

The Conservation Education Plan will be used to provide strategic guidance for the conservation education (CE) efforts on the Ottawa National Forest for the next five years. The plan deals exclusively with conservation education and does not address interpretation or community involvement.

Definition

Conservation Education is defined in the plan as:

“A Forest Service education program which carries out environmental education to help ensure the environmental literacy of youth - from pre-kindergarten through 12th grade - and their educators - through formal and non-formal educational means in concert with Forest Service partners. (*From Forest Service’s Conservation Education Strategic Plan to Advance Environmental Literacy; March, 2007*)”

Examples: 1) a school program for 4th graders on the uses of trees; 2) a teacher workshop on ways to incorporate forest management into math classes; 3) a high school field trip to a forest research project.

Need

The plan is needed in order to provide a basis for evaluating CE programs on the Forest; to promote the efficient use of limited resources; to present clear and focused CE messages to appropriate audiences; and to provide guidance in how best to work with partners in CE.

Service Area

The Ottawa National Forest CE program has local, regional and national audiences. Local efforts will focus on communities adjacent to the Forest boundaries. This includes all of the Gogebic and Ontonagon Counties as well as the communities of Baraga and L’Anse in Baraga County and Iron River in Iron County in Michigan. Land O’ Lakes in Vilas County, Wisconsin, is also included in the local service area. Total K-12 enrollment in the communities is approximately 5,500 students.

At the regional level, the Forest will work closely with the Urban Connections Programs in Detroit, Michigan, and Milwaukee, Wisconsin, as well as area colleges and universities in order to present its primary messages to a broad audience. Camp Nesbit, located in Baraga and Iron Counties, offers a unique opportunity to provide an overnight forest experience to urban audiences and will be made available to any national, regional, or local organization wishing to use the facilities for meeting and events related to environmental/conservation education.

At the national level, the Forest will participate in education initiatives such as Watchable Wildlife, Nature Watch, Taking Wing, Leave No Trace and the Pollinator Partnership when the relate to the Forest's primary conservation education messages.

Goals, Objectives and Strategies

The Forest's conservation education objectives and strategies are tiered to the goals established in the Forest Service's *Conservation Education Strategic Plan to Advance Environmental Literacy: 2007-2012*

- Goal 1 - Coordinate the development and delivery of high quality conservation education programs and materials.
- Goal 2 - Provide strong leadership to, and management of, the Forest Conservation Education Program.
- Goal 3 - Maximize partnerships to ensure mission services

The objectives and strategies address how the Ottawa National Forest will work to reach the goals listed above and are outlined in detail in the Conservation Education Goals, Objectives, and Strategies section of the plan.

Primary Messages

In order to provide focus to the Forest's CE programs, this plan establishes eight Primary Conservation Education Messages that reflect Forest CE needs as determined by a forest-wide survey of employees and the recommendations of a "Message Team" consisting of Forest Service employees and teachers. The messages are targeted to specific grades based on the most relevant Michigan Grade Level Content Expectations.

Message - Flowers and pollinators work together to create new plants in the forest.

Audience - Grade 3

Message – Only you can prevent Wildfires

Audience – Grades K – 3 (additional audiences during periods of extreme fire danger)

Message - From furs to copper and logs - the history of the Western Upper Peninsula is tied to its natural resources.

Audience - Grade 4

Message - **Who eats whom on the Ottawa - animal survival is based upon competition and adaptation.**

Audience - Grade 6

Message - **Clean water and healthy watersheds produce more than good fishing.**

Audience - Grade 6

Message - **Invasive Species - what they are, why we should care, and what we can do.**

Audience - Grades 5 and 6

Message - **Climate change is real and will affect the Ottawa National Forest, but there are actions we can take to reduce its impact.**

Audience - Grades 9-12

Message – **When forests are properly managed they provide wood products, recreation, inspiration and ecological services on a sustainable basis.**

Audience - Grades 9-12

Implementation/Funding

While the conservation education can be delivered in ways which require minimum expenditures, the Forest commits to establishing a baseline budget to support implementation of the plan. In order to provide flexibility, the plan does not lay out a specific implementation schedule. However, primary messages will begin to be presented to targeted audiences within one year of the approval of the Plan

GENERAL FOREST INFORMATION

The Ottawa National Forest is a natural resource that provides a multitude of benefits, and will continue to do so, as long as it is used wisely. Established in 1931, the Ottawa National Forest covers nearly 1,000,000 acres in Michigan's western upper-peninsula. It consists of four ranger districts (Bessemer, Kenton, Ontonagon, and Watersmeet-Iron River) and the J.W. Toumey Nursery. The forest includes parts of Baraga, Houghton, Iron, Gogebic, Ontonagon and Marquette Counties.



The Lake Michigan, Lake Superior and Mississippi River watersheds all receive water from streams with headwaters on the National Forest, making watershed protection an important aspect of resource management on the Ottawa. More than 2,000 miles of fishable streams flow through the forest, and more than 500 lakes are scattered within its boundaries. Its bogs and wetlands support strange orchids and carnivorous plants. The Forest's many waterfalls highlight its water resources.

The Ottawa is part of the largest contiguous block of hardwood forests in the Lake States area. There is an active timber program on the forest and many local residents are employed in the forest products industry.

The Forest also provides refuge for a large number of rare or unusual plants and animals including 32 species which are considered endangered or threatened in Michigan and three species that are listed as federally endangered or threatened.



Despite being within a day's drive of Chicago, Detroit, Milwaukee and Minneapolis, the Forest maintains a primitive character. There are three designated wildernesses on the Ottawa. Sylvania Wilderness covers roughly 18,000 acres along Michigan-Wisconsin boundary and is noted for its pristine lakes and old-growth forest. The wilderness receives heavy use from canoeists, anglers and campers during the summer months. The McCormick Wilderness, located southeast of Marquette, is less well known and receives fewer visitors. The Sturgeon River Gorge

Wilderness, 350 feet deep and a mile across, is accessible to only the most-hearty explorers.

Winters on the Ottawa can be challenging with annual snowfalls of over 200 inches and low temperatures dropping to 35 degrees below zero. However, these conditions make the Ottawa a popular destination for winter sports enthusiasts.

DEFINITIONS

Conservation Education - A Forest Service education program which carries out environmental education to help ensure the environmental literacy of youth - from pre-kindergarten through 12th grade - and their educators - through formal and non-formal educational means in concert with Forest Service partners. (*From Forest Service's Conservation Education Strategic Plan to Advance Environmental Literacy; March, 2007*) **Examples:** 1) a school program for 4th graders on the uses of trees; 2) a teacher workshop on ways to incorporate forest management into math classes; 3) a high school field trip to a forest research project.

Interpretation - A communication process that forges intellectual and emotional connections between the interests of the audience and the inherent meanings of the resource. (*From National Association for Interpretation*) **Examples:** 1) A visitor center program on the value of native wildflowers; 2) A live raptor presentation at a campground; 3) Newspaper articles on how the public can connect with nature.

Environmental Education - A process that promotes the analysis and understanding of environmental issues and questions as the basis for effective education, problem solving, policy making and management. Its purpose is to foster the education of skilled individuals who are able to understand environmental problems and possess the expertise to devise effective solutions to these problems. In the broader context, its purpose is to assist in the development of a citizenry conscious of the scope and complexity of current and emerging environmental problems and supportive of solutions and policies that are ecologically sound. (*From North American Association for Environmental Education (NAEE) constitution*)

NEED FOR A PLAN

Conservation education, in one form or another, has been practiced by the Forest Service since its inception. It was understood early on that forest users must be educated about ways in which to benefit from the resource without destroying it. There are several reasons for creating a plan to guide conservation education efforts on the Ottawa National Forest.

1) A plan provides a basis for evaluation of conservation education programs.

By laying out goals, objectives and priorities, a conservation education plan provides a means by which to determine whether or not programs are producing the desired results.

2) A plan promotes efficient use of limited resources.

The Ottawa National Forest has limited resources available to address the unlimited topic of conservation education. These resources include funding, equipment, facilities, time, staff expertise and energy. A conservation education plan facilitates the best use of these resources and ensures that areas of critical concern are addressed.

3) A plan reduces duplication of efforts.

Several government agencies and non-profit groups provide environmental education in the western upper peninsula of Michigan. A conservation education plan compares needed programs and services to those already being offered in order to reduce duplication of efforts. In so doing, it helps establish the Forest's "educational niche" and points out areas where cooperation with partners can be most beneficial.

"Find out in advance what the public will stand for; if it is right and they won't stand for it, postpone it and educate them."

--Gifford Pinchot

4) Focused messages have a greater impact.

Repetition is an important component in the education process. Having a plan allows for the creation of focused messages that are consistently repeated across the Forest, thereby increasing the effectiveness of educational efforts. It also allows the Forest to tier its messages to national efforts which also increases effectiveness.

5) A plan facilitates funding searches.

A plan allows the Forest to match its conservation education programs with funding sources with similar missions, thereby increasing the possibility that applications will be successful.

SCOPE OF THIS PLAN

This plan deals exclusively with **conservation education** on the Ottawa National Forest. The plan establishes the program's goals, objectives and primary messages. The primary messages are those messages which the Forest will proactively take to students and teachers. **They do not preclude other conservation education messages being addressed as needs and opportunities arise.**

Interpretation

The Ottawa National Forest has an active interpretive program, with programs taking place at the Ottawa Visitor Center, Black River Harbor and Lake Ottawa Recreation Area. Although interpretation is not addressed in this plan, it is understood that it is an important tool for connecting the public to their National Forests and that it will continue to be supported at the Forest level.

Service Area

As described earlier, the Ottawa National Forest CE program has local, regional, and national audiences. As such, the Forest will proactively reach out to our local audiences and participate in regional and national conservation education initiatives that help us further disseminate information related to our key messages.

EXISTING CONDITIONS

Forest Service Programming

The Ottawa National Forest provides a variety of programs for the public. In CY 2010, the Forest conducted more than 60 public programs which reached more than 4,500 people excluding fairs and parades (Appendix A). Approximately half of those could be considered conservation education programs.

Most public programs are initiated by interested Forest employees or as the result of a request from the public. The Forest is fortunate to have a large number of employees across several disciplines willing to provide public programs. More than 23 employees presented conservation education or interpretive programs in CY 2010.

While the Forest provides a number of education programs it would benefit from improved oversight and coordination. The recent addition of a full-time conservation education coordinator should lead to improvements in this area.

Camp Nesbit

Camp Nesbit is a residential camp located on the Kenton Ranger District and operated by the Forest Service. The camp is not winterized and is used seasonally from May through the first week of October by school, church and youth groups. Priority is given to groups with an environmental education emphasis. The camp is occupied almost continuously from May through mid-August and again in late September and the first week of October.



User groups have a high level of loyalty to the facility. The average group has been attending the camp for at least 27 years. Sixth grade Students in the Copper Country ISD and Watersmeet, Ewen and Ontonagon schools district spend at least two nights at Camp Nesbit. Some families are now sending their third generation to camp.

Prior to 2011 groups did nearly all of their own programming which tended to focus on outdoor recreation and character development. A survey conducted in 2010

(Appendix B) indicated that only one out of 14 user groups considered environmental education as its primary mission. That same survey asked if groups would make use of environmental education programs if they were made available. Thirteen of the 14 groups said they would take advantage of the programs if offered.

In 2011, the Forest Service, in an effort to increase its presence at the camp, offered users a small sampling of environmental education programs. Eight groups took advantage of the programs which were presented to approximately 750 campers. The response to the programs was positive and it is hoped that word of mouth will lead other groups to take advantage of the programs in the future.

Partnerships

The Forest currently partners with several organizations and agencies to provide conservation education programs. This is an area with great potential for growth. A survey of Forest employees produced a list of 61 organizations/agencies as potential conservation education partners.

Following are some of the organizations/agencies that have partnered with the Forest to provide conservation education activities.

Great Lakes Indian Fish and Wildlife Commission (GLIWFC) - The Forest has partnered with GLIFWC since 2009 to conduct a residential camp for tribal and non-tribal youth at Camp Nesbit. The camp introduces campers to outdoor activities and natural resource careers. The Forest Service provides facilities, program oversight, instructors and counselors. GLIFWC

provides counselors, instructors, food, program oversight, camper recruitment and registration. In 2011, 42 children participated in the camp.

Lake Superior Stewardship Initiative - For the past three years, the Forest has provided a field trip experience to 5th grade students from C.J. Sullivan Elementary School in L'Anse, Michigan. The field trip is funded by a grant from the Lake Superior Stewardship Initiative.

Keweenaw Bay Indian Community (KBIC) - In 2011, the Forest partnered with KBIC and other resource agencies on the KBIC Environmental Fair in Baraga.

Western UP Center for Science, Math and Environmental Education - The Forest provides instructors for the Center's Family Science and Family Forest nights when they are held in Ironwood. The Forest also provides judges for the Science Fair held at Michigan Tech University.

Other conservation education partners include Gogebic County MSU Extension, Ontonagon County MSU Extension, Gogebic County Conservation District and Porcupine Mountain State Park.

Area Environmental Education Providers

A survey conducted as part of this planning process identified seventeen organizations or agencies within a thirty-mile radius of the Ottawa National Forest who provide some type of environmental education programming. Of these groups, three organizations, Trees for Tomorrow; North Lakeland Discovery Center; and the Western UP Center for Science, Math and Environmental Education provide a large percentage of programs in this area. A more complete list of these groups and the programs they offer is located in the appendix (Appendix C).

Trees for Tomorrow and North Lakeland Discovery Center are both located in Northern Wisconsin and focus most their programs toward Wisconsin and Illinois residents. *Trees for Tomorrow* makes frequent use of the Sylvania Wilderness and the Ottawa Visitor Center, but most of its participants are from areas outside of the Forest's local service area.

The Western UP Center for Science, Math and Environmental Education is a major provider of environmental education programs in Gogebic, Houghton, Baraga, Ontonagon, and Keweenaw counties. It is a partnership of Copper Country Intermediate School District (ISD), Gogebic-Ontonagon ISD, and Michigan Technological University's Center for Science and Environmental Outreach. The Center conducts teacher workshops, school field trips, summer teacher institutes, family science nights and administers the Lake Superior Stewardship Initiative which provides mini-grants to support school-community stewardship projects. In 2009-2010 it provided programs to over 11,000 participants.

Underserved Areas

The West Iron County School District, in the southeast corner of the National Forest, is an underserved area in terms of environmental education opportunities. Iron County sits outside the service area for the Western UP Center for Science, Math and Environmental Education as well as the primary service areas for the Lakeland Discovery Center and Trees for Tomorrow. Covenant Point Bible Camp offers environmental education programs but they are not frequently utilized by the West Iron County school district. This may be in part because of the fees charged for programs. Camp Gibbs provides instruction in archery, shooting and trapping, but not environmental education. The Ottawa National Forest's conservation education programs could provide a much needed service to this community.

Forest Facilities Available for Conservation Education

Conservation Education can take place anywhere but is most efficient when conducted in a location where participants can find shelter from the elements yet still have access to the natural resources being studied.

The two facilities most suited to accommodate conservation education programs on the Forest are Camp Nesbit on the Kenton Ranger District and the Ottawa Visitor Center on the Watersmeet-Iron River Ranger District.



Camp Nesbit

Constructed in the 1930's by the CCC's, the camp can accommodate 144 campers. Facilities include a shooting range, archery range, beach, high and low ropes courses, playfield, recreation hall/director's office, kitchen/dining room, shower/toilet facilities, hiking trails, caretaker's cabin nurses station. The camp is located on Nesbit Lake and has approximately two miles of loop trails and a short trail which connects it to Norway Lake Campground. The facility is not winterized.

Ottawa Visitor Center

The Ottawa Visitor Center has exhibits which interpret the Forest's natural and cultural history. An auditorium has moveable seating for 60 people. The gift shop sells interpretive memorabilia and educational items. There is a pollinator garden adjacent to the Visitor Center, and a rain garden with interpretive signage is located nearby. A half-mile paved loop trail with interpretive signs begins at the Visitor Center. A short ATV trail provides access to a nearby creek and beaver pond. The Visitor Center is winterized and open year-round.



Day Use Buildings and Pavilions

Clark Lake, Lake Ottawa and Black River Harbor have day use buildings which accommodate 75 and 30, and 65 people respectively and are available from May through early October. All three are located near lakes and trails. Black River Harbor is next to Lake Superior and has trails leading to waterfalls and overlooks which make it an ideal place to discuss water resources and geology. Lake Ottawa has a fishing pier which would be excellent for taking water samples.

One drawback to these facilities is that conservation education programs may conflict with other groups wishing to use the facilities. The Lake Ottawa day use building is frequently reserved for family gatherings during the summer. Lake Ottawa also has a pavilion which is not enclosed and seats 75 people.



J.W. Toumey Nursery

The Nursery produces tree planting stock for National Forests in the north central and northeastern states. There is a small conference room, greenhouses, and packing building. The nursery provides an excellent opportunity for lessons on stewardship, renewable resources, pollination and timber management. It's proximity to the Ottawa Visitor Center makes it an excellent resource for groups visiting the Center.

Trails

In addition to the above buildings there are a number other locations on the Forest that provide short loop trails that provide opportunities for students and teachers to access natural resources. These include Imp Lake Trail, Deer Marsh Trail, Courtney Lake Trail, Bob Lake Trail, Norwich Trail and Silver Mountain.

A more complete list of potential CE sites is included in Appendix D.

Conservation Education Goals, Objectives and Strategies for the Ottawa

Goals are taken from Forest Service's Conservation Education Strategic Plan to Advance Environmental Literacy; 2007-2012. Objectives and strategies relate directly to the Ottawa National Forest.

Goal 1: Coordinate the development and delivery of high quality conservation education programs and materials.

Objective 1.1

Ensure that CE programs and materials developed and delivered by the Ottawa National Forest are not duplicating those already being offered by other agencies and organizations in the area.

Strategies for achievement:

- Conduct formal and informal surveys of agencies and organizations within the Forest's CE service area to determine what materials and services are already being provided.
- Where other agencies and organizations are providing similar materials or services, seek to augment their work by elaborating on the services, or expanding the audience to which the services and materials are being presented.

"Scientific progress depends upon honest investigation, open discussion, refined understanding, and a firm commitment to evidence."

--USDA Scientific Integrity Policy
August 5, 2011

Objective 1.2

Ensure that information disseminated is scientifically accurate and reflects current thinking.

Strategies for achievement:

- Develop programs and materials in conjunction with Forest resource experts and have them check materials and programs for accuracy.
- When expertise is not available at the Forest level, seek input and review from outside sources considered knowledgeable on the topic being addressed.
- Programs will focus on education, not advocacy.

“Any genuine teaching will result, if successful, in someone’s knowing how to bring about a better condition of things than existed earlier.”

--John Dewey

Objective 1.3

Create programs and materials that meet the needs of the Forest, the agency and the public, and is age appropriate for the targeted audience.

Strategies for achievement:

- Tier the Forest Conservation Education Plan to the National Conservation Education Strategic Plan in order to ensure that it meets agency goals and expectations.
- Survey Forest employees to determine forest management issues which lend themselves to being addressed in the conservation education program.
- Create a panel of Forest employees and local educators to recommend primary CE messages to the Forest leadership team based on employee survey and needs of schools. Target primary CE messages to specific grade levels based on Michigan Grade Level Content Expectations in order to ensure messages meet the needs of the intended audience.

Objective 1.4

Ensure that CE programs and materials are effective.

Strategies for achievement:

- Tie all CE programs and materials to a specific evaluation tool. Include pre/post tests in lesson plans to document quantifiable results. Use other evaluation tools such as comment forms, surveys and direct observation when testing is not possible, or appropriate.
- Send CE staff to professional conferences and training to stay abreast of current trends and effective educational techniques.
- Participate in webinars and conference calls that pertain to conservation education or related resource topics.
- Maintain organizational membership in professional organizations such as the National Association for Interpretation (NAI) and the North American Association for Environmental Education.
- Provide Non-CE Forest staff with an interest in CE programs opportunities to participate, and training on how to effectively present conservation education.

Objective 1.5

Connect youth to the Ottawa National Forest.

Strategies for achievement:

- Whenever possible, conduct programs at strategic locations throughout the Forest.
- Work with local communities to develop creative ways of limiting the cost of transportation to the forest.
- Include information about the Ottawa National Forest at CE programs whether on, or off, the Forest.
- Include the Ottawa National Forest Logo on all CE publications and products.
- Encourage stewardship and service learning opportunities on the Forest so youth understand that their actions can have a positive effect on the resource.

Goal 2: Provide strong leadership to, and management of, the Forest Conservation Education Program

Objective 2.1

Secure the support of the Forest leadership team and forest resource areas for the Forest Conservation Education Program.



Strategies for achievement:

- Offer all employees the opportunity to provide input to the Forest Conservation Education program in order to secure broad support for the program.
- Include members of the Forest leadership team on panels that recommend and review primary conservation education messages.
- Provide the Forest leadership team with information on what conservation education is to ensure they have a clear understanding the program.
- Obtain Forest leadership team approval of the final CE plan.
- Fund the Conservation Education program from multiple resource areas in order to establish diverse support and a broad financial base.

Objective 2.2

Implement the Forest Conservation Education Plan in an effective manner.

Strategies for achievement:

- **Establish a baseline budget for the Conservation Education Program**
- Build on existing Forest programs such as Camp Nesbit, and the Lake Superior Stewardship Initiative.
- Make use of existing agency initiatives such as Nature Watch, Partners in Flight, Pollinator Partnership, National Inquirer and Fish Watch to promote conservation education.
- Employ a Conservation Education Coordinator whose primary function is to oversee CE programs on the Forest.
- When possible, share resources with Chequamenon-Nicolet and Hiawatha National Forests.
- Seek out funding sources that are compatible with the Forest's CE plan rather than creating programs simply because funding is available.
- Implement specific programs and materials as funding becomes available.
- Prioritize use of funds to create a sustainable CE infrastructure instead of financing one-time events.
- Provide opportunities for non-CE Forest staff that have passion for conservation education to become involved in the program.
- Use volunteers and interns to extend the reach of Forest CE programs.
- Employ other agencies and organizations to transfer Forest Service knowledge and products to the public.

Goal 3: Maximize partnerships to ensure mission services.

Objective 3.1

Partner with agencies and organizations which have similar goals.

Strategies for achievement:

- Recognize that any partnership must offer something to both parties. Partnerships related to conservation education should support the goals and objectives of the Forest CE Plan. Both parties should also have a clear understanding of their responsibilities and what they can expect to gain from the relationship.
- Survey area CE providers to determine where we share common goals and objectives that can be met by working together. (Appendix C)
- Create a list of potential partners who may, or may not, currently be providing CE programs.

Objective 3.2

Strengthen existing partnerships with area conservation education providers

Strategies for achievement:

- Continue to work with the Great Lakes Indian Fish and Wildlife Commission to develop Camp Onji-Akiing and to strengthen the program by clarifying its mission and developing a formal agreement.
- Continue working closely with the Western UP Center for Environmental Education, Science and Math. Seek ways in which we can augment each other's programs without duplicating services.



FOREST RESOURCE CONSERVATION CHALLENGES

A conservation education program should serve as a tool which forest managers can use to address resource challenges. Major resource challenges on the Ottawa National Forest include:

1. Travel management rule implementation
2. Wolf/human interactions
3. Non-native invasive species management
4. Continuing to produce forest products and services while maintaining ecosystem integrity
5. Managing for the potential effects of a changing climate
6. Support of the Great Lakes Restoration Initiative

PRIMARY CONSERVATION EDUCATION MESSAGES AND AUDIENCES

In order to create age appropriate programs and materials which meet the needs of the Forest, the Agency and the public (Objective 1.3), this plan identifies seven primary messages and audiences that will form the cornerstone of the Forest's Conservation Education Program. The messages are tied to Michigan Grade Level Expectations (Appendix E)

The Process

The process of determining the primary conservation education messages began with a forest-wide CE survey of all employees. Among other things, respondents were asked to list five topics they felt should be covered in the CE Plan, what their top five program priorities would be, and who they felt the most important audiences were.

Following compilation of the survey results, a team of eight Forest Service employees and local teachers were asked to review the material and recommend primary topics, messages and audiences. (Appendix F)

The team's first step was to determine how many primary messages should be recommended and how many audiences should be targeted. Three options were considered.

1. Present a small number of messages (1-2) to a large number of audiences (all ages).
2. Present several messages (5-8) to a single grade or age group i.e. 4th graders.
3. Present several messages (5-8) to targeted audiences i.e. different messages to different grades or age groups.

"If you chase two rabbits, both will escape."

--Anonymous

The recommendation was to present several (5-8) primary messages to targeted audiences.

In recommending messages and target audiences, the team was asked to consider the following questions.

1. Is this a message the Forest Service feels is important and the audience has indicated a desire to know more about?
2. Is this a message so vitally important that the Forest Service feels the audience needs to be educated on even though it has expressed little interest?
3. Is this a message the audience has expressed a strong interest in and the Forest Service has the resources needed to contribute to their understanding?
4. Does the message set parameters yet offer flexibility?
5. Does the message match the intended audience?
6. Is some other organization or agency already adequately addressing the message?

Recommended Messages and Audiences

Topic - wildflowers and pollinators

Message - **Flowers and pollinators work together to create new plants in the forest.**

Audience - Grade 3

Topic - historic ties of the Ottawa to local communities

Message - **From furs to copper and logs - the history of the Western Upper Peninsula is tied to its natural resources.**

Audience - Grade 4

Topic - predator-prey ecology

Message - **Who eats whom on the Ottawa - animal survival is based upon competition and adaptation.**

Audience - Grade 6

Topic - water, aquatic life, watersheds

Message - **Clean water and healthy watersheds produce more than good fishing.**

Audience - Grade 6

Topic - invasive species

Message - **Invasive Species - what they are, why we should care, and what we can do.**

Audience - Grades 5 - 6

Topic - climate change

Message - **Climate change is real and will affect the Ottawa National Forest, but there are actions we can take to reduce its impact.**

Audience - Grades 9 - 12

Topic - forest ecology and management

Message – **When forests are properly managed they provide wood products, recreation, inspiration and ecological services on a sustainable basis.**

Audience - Grades 9-12

Topic – wildfire

Message – **Only you can prevent wildfire**

Audience – Grades K-3 (additional audiences during periods of extreme fire danger)

“It is not what we have that will make us a great nation; it is the way in which we use it.”

--Theodore Roosevelt

IMPLEMENTATION

It is expected that within one year of the approval of this plan, the Ottawa National Forest will begin delivering its primary conservation education messages to the intended audiences.

How these messages are delivered will depend upon a number of variables. These include:

- Level of Forest Service Funding
- Funding available from other sources, i.e., grants and gifts
- Availability of partners, volunteers and their willingness to collaborate
- Ability of the audience to attend forest programs or make facilities available for classroom presentations
- Availability of Forest facilities and staff



Fortunately, there are many ways of delivering the messages contained in this plan. Elementary school children can learn about pollination by watching a bee on a dandelion in the school yard, or by walking through an expensive exhibit at a visitor center. Both methods have their advantages and disadvantages. The inability to use one, or the other, should not preclude the Forest from presenting its message about the importance of pollination.

Every effort will be made to secure the material, financial resources, and human resources and energy needed to implement this program at the highest level possible, including the establishment of a baseline Conservation Education budget.

Appendix A – Ottawa Public Programs, CY 2010

**Ottawa National Forest
Public Programs
CY 2010**

ACTIVITY	LOCATION OF ACTIVITY (District)	INTERP	CON ED	PUB INFO	PUB REL	# Served	RESOURCE AREA	PRESENTER
4th July Parades*	Iron River, Bessmer, Kenton		x		x	40,000	Fire	Various
Amazing Facts About Earth*	Watersmeet	x				36		Wigand
Around the World Orienteering*	?					55	Recreation	?
Atmosphere*	Watersmeet	x				15	Climate	Guest
Baraga Plains Ecology (Sullivan Elementary LSSI)	Kenton		x			55	Ecology/Soils	Dillman, Pearson, Amman, Pelkola, Bruchman, Kickert
Bats Misunderstood...*	Watersmeet	x				5	Wildlife	Dillman
Bee Keeping*	Watersmeet	x				50	Wildlife	Guest
Birds of Prey*	Watersmeet	x				56	Wildlife	Guest
Camp Onji-Akiing (GLIFWC)*	Kenton(Nesbit)		x			30	Botany, Forestry, Wildlife, Fisheries, Nursery, Archeology	Kickert, Trull, Bogaczyk, Mell, Jennings, Ver Planck, Wigand, Makuck
Classification of Plants, Using Keys**	Bessemer		x			66	Botany	Trull

Conservation Badges for Boy Scouts*****	Bessemer		x				Various	Bogaczyk
Conserve School Northwoods Adaptations*	Watersmeet					40	Ecology	Kickert
Eagle Research Presentation (Black River Harbor)*****	Bessemer	x				30	Wildlife	Guest
Earth Day Programs *****	Ontonagon		x			25	Soils, Botany, Recreation	Ontonagon Staff
Earthworm Invasion*	Watersmeet	x				37	Ecology/Soils	Guest
Edible Plants*	Watersmeet	x				37	Botany	Shackleford
Enhancing Native Brook Trout On Ottawa NF. ***** (for Trout Unlimited)	Bessemer			x		12	Aquatic Resources	Jennings
Family Forest Night**	Bessemer		x			60	Botany	Kickert/Trull
Fire Prevention Talk*****	Ontonagon		x			30	Fire	Young
Fishing Derbies****	Iron River, Bessemer, Ontonagon				x	100	Fisheries	FS Staff
Fishing Opportunities*	Watersmeet			x		2	Fisheries	Jennings
Forestry Badge Program (Cub Scouts)*****	Ontonagon		x			6	Forestry	Steffensen
Forestry Program (Elementary School)*****	Ontonagon		x			20	Forestry	Steffensen

Get Out Doors	Ontonagon		x			12	Aquatic Resources	Mell
Gogebic County Fair (4H Science and Tech. Day)**	Bessemer		x			1,500	Wildlife	Trull
Gogebic County Fair (FS Booth)*	Bessemer				x	?	Multiple	Various
History of Sylvania Wilderness*	Watersmeet	x				49	Wilderness, Recreation	Kickert
In the Woods (News Column)*****	Bessemer	x				?	Multiple	Fullman
Invasive Species	Bessemer		x			25	Multiple	Shackleford
Invasive Species (Norrie Park Day)**	Bessemer		x			70	Multiple	Schollett
Iron River Rodeo Parade	Iron River				x	7,000	Fire	Kickert, Viitala, Pearson, Salonen
Iron River/Watersmeet Open House*****	Watersmeet				x	50	Multiple	Watersmeet/Iron River Staff
Lake Shore Landscaping CWMA Spring Meeting**	?			x	?	32	Aquatic	Shackleford, Rothlisberger, Gingras
Langford Lake Riparian Owners Association (Non-native invasives?)**	Bessemer		x			176	Aquatic	Shackleford
Log Cabin Heritage*	Watersmeet	x				18	History/Archeology	Guest
Naturalist Journal (News Column)*****	Iron River	x					Multi	Kickert

Nature Walk For Scouts**	Bessemer		x			28	Multiple	Lesch
Non-Native Species Presentation Loggers Spring Break-up**	Bessemer?		x	x		150	Multiple	Trull
North Country Trail Association Hike*****	Bessemer			x		40	Recreation	Fullman
Ont. County Commission on Aging Non-native Invasive Plants (boat washer) **	Ontonagon		x	x		100	Aquatic	Trull
Ontonagon Con. Fair (boat washer)**	Ontonagon		x	x	?		Aquatic	Trull
Orienteering*****	Ontonagon		x			19	Recreation	Mell
Bird Photography	Watersmeet	x				19	Wildlife	Guest
Predator Prey Activity Camp Superior**	Bessemer		x			80	Wildlife	Trull, Bogaczyk
Pre-School VC visit*	Watersmeet	x				23		Wigand
Rain Gardens*	Watersmeet	x				20	Botany, Eco.	Trull
Rocken Rocks*	?	x				10	Geology	?
RRIP-IT-UP-Copper Harbor**	Off Forest			x		20	Botany	Manderfield
RRIP-IT-UP-Marquette**	Off Forest			x		40	Botany	Shackleford
Splash In the Park	Ontonagon		x			33	Recreation/Aquatic Resources	Mell

Stream Ecology (Norrie Park Day)**	Bessemer		x			70	Fisheries/Aquatic Resources	Pagel, Jennings
Touch the Future*****	Off Forest			x		125	Careers	Yount, Mell
Trap Hills Plants (Northwood Native Plant Society Hike)**	Ontonagon	x				15	Botany	Shackleford
Tree ID/Aging (Norrie Park Day)**	Bessemer		x			70	Botany	Trull
Trees for Tomorrow (5)*	Watersmeet			x		227	Multiple	Wigand/Kennedy
Trophic Levels (Little Girls Point 6th graders)*****	Bessemer		x			60	Wildlife	Bogaczyk
Vernal Pond Ecology (Bessemer HS)*****	Bessemer		x			25	Aquatic Resources/Wildlife	Bogaczyk
Wild Rice Program(Black River Harbor)*****	Bessemer	x				25	Botany	Lauren Hildabrandt
Wilderness Jeopardy*	Bessemer, Kenton		x			80	Recreation/Wilderness	Various
Wildlife Conservation (cub scout program)**	Bessemer		x			25	Wildlife	Lesch, Soback
Wolf Deer Interactions**	Watersmeet		x			30	Wildlife	Pearson
Wolves**	Watersmeet	x				59	Wildlife	Guest

CE Programs by District

District	Interp	Con Ed	Public Info	PR	Total Programs	Participants *
Bessemer/SO	3	17	3	3	26	1,052
Watersmeet/Iron River	13	3	2	2	20	1,823
Kenton	0	4	0	0	4	125
Ontonagon	1	9	2	1	13	196
Off Forest	0	0	3	0	3	185
Location Not Documented	0	1	1	0	2	92
Total	17	34	11	6	68	3,473
*Does not include parades, fishing derbies, fairs, or activities where attendance was not recorded.						

CE Programs by Resource Area

Resource Area	Number of Programs Presented
Aquatic	8
Botany	10
Careers	1
Climate/Air Quality	1
Ecology	3
Fire	3
Fisheries	4
Forestry/Timber	3
Geology/Soils	3
Multiple Resources	8
Recreation	7
Wilderness	2
Wildlife	13

Appendix B – Camp Nesbit User Survey

Camp Nesbit User Survey

Camp Nesbit User Survey

December 2010

Survey Purpose

The Ottawa National Forest is in the process of developing a Conservation Education Plan. As part of that process the Forest is accessing the current status of its conservation/environmental education activities. This survey was conducted in order to ascertain what activities are being conducted at Camp Nesbit by organizations who rent the facility, and to assess the conservation education preferences of these users. The information obtained will help determine what role Camp Nesbit should play in the Forest's conservation education program.

Scope of Survey

Fourteen organizations were sent surveys requesting information on their mission, past use and perceived conservation education needs. All of the surveys were returned. Camp Onji-Akiing was not included in the survey because it is a cooperative effort between the Forest Service and the Great Lakes Indian Fish and Wildlife Commission, and it was felt the Forest Service already had adequate information on this camp.

Summary of Survey Results

General Information

Users were asked 7 general information questions ranging from how long they have used the facility, to what the primary mission of their camp is.

Years of Use

- Average period of use - 27 years
- Longest period of use - 50 years (estimate by Christian Family Campers)
- Shortest period of use – 5 years (Girls Scouts of Northwestern Great Lakes)

Estimated Average Number of Campers /Session

- Average of all camps – 63
- Lowest number of campers/ session – 25 (Copper Country ISD)
- Highest number campers/session – 95 (Houghton Middle School)

Camper Age

- Schools had an average camper age of 11-14 with the exception of Copper Country ISD which had a range from 13-70.
- Christian Family Campers and Good Hope Family Camp had age ranges from 1-86.
- Girl Scouts ranged in age from 6-17.
- Teaching Family Homes ranged in age from 10–17.

Counselor/Camper Ratios

- Counselor/camper ratios ranged from 1/2 for Copper Country ISD to 1/10 for Houghton Middle School and 1/cabin for Ontonagon/Ewen/Watersmeet Schools.
- Average counselor/camper ratio was 1/7.
- The most common counselor/camper ratio was 1/8.

Length of Stay

- Average length of stay – 4.3 days
- Shortest length of stay – 2.5
- Longest length of stay - 7 days
- Groups holding more than one session - 3 (Washington Middle, Hannahville and Girl Scouts of NW Great Lakes hold conduct two sessions)
- Camps lasting 5, or more, days - 3 (Girl Scouts of NW Great Lakes, Christian Family Campers, Good Hope Family Campers)*

Primary Mission

Most respondents listed more than one primary mission for their camp. Only Baraga Schools listed Environmental Education as its primary mission.

- Outdoor recreation – 7
- Character development - 6
- Environmental education – 5
- Fellowship – 5
- Cultural education - 1
- Leadership - 1

Facility Equipment Use

Groups were given a list of 13 facilities, or pieces of equipment, and asked to mark the ones they used. Following is a list of the breakdown by percentage of groups using the facility.

- 100% - Playfield, campfire circle, recreation hall
- 93% - High ropes, canoes, beach, archery range
- 85% - Low ropes, hiking trails (1 group used Deer Marsh Trail)
- 78% - Baseball field
- 64% - Rifle range
- 57% - Volleyball court
- 28% - Horseshoe pits

*The State of Michigan has licensing requirements for children’s camps lasting 5, or more, days. Currently the only camp subject to these requirements is the Girl Scouts of NW Great Lakes.

Guest Instructors

Guest instructors led 24 different activities. Most groups used at least one guest instructor.

Shooting Instruction

Shooting instructors were the most utilized guest instructors with 7 groups using them. Only 3 groups listed instructors having formal qualifications (2 DNR Hunter Safety Instructors, 1 NRA Certification). Schools tended to use either DNR Hunter Safety Instructors or Sportsmen’s Club members. Good Hope Family Camp used a man with “40 years experience”, and Christian Family Campers used “men who have hunting licenses.”

Environmental Education Activities

3 groups used guest instructors from the Western Upper Peninsula Math and Science Center

Activities/ Curriculum

Respondents listed 50 different activities offered at their camps. Activities ranged from Muzzle Loading to Aroma Therapy. Listed below are the 5 activities offered most often, and the percentage of groups offering the activity

- High ropes – 85%
- Canoeing/kayaking - 71%
- Low ropes – 64%
- Swimming – 64%
- Archery – 64%

Environmental Education Activities Offered

- Aquatic insects - 3 groups
- STEM - 2 groups
- Food webs/chains - 2 groups
- “Science Explorations” – 1 group
- Tree ID - 1 group
- Mushrooms - 1 group
- Wolves – 1 group
- Astronomy – 1 group

Program Evaluation

Only 5 groups conduct formal program evaluations (3 – camper survey; 2 – staff survey). No groups conducted pre/post testing.

Seven groups had at least 1 activity tied to Michigan Grade Level Content Standards.

Preferred Conservation Education Formats

Nesbit users were asked if they would make use of Forest Service led conservation education programs, and what formats they would prefer. Thirteen of the 14 respondents indicated they would use the programs.

Format Preferences

- 1-2 hour programs with small groups (8-12) – 10
- 1-2 hour programs for large groups (25-159) – 7
- ½ day programs for small groups (8-12) – 4
- Full day programs for small groups (8-12) – 0

Michigan Grade Level Content Standards

Six groups indicated they would like programs to be aligned with Michigan Grade Level Content Standards.

Activity Preferences

Groups were given a list of 34 possible program topics and were asked to select 10 that would be most useful to them as they try to achieve their camp's mission. All but three topics (Endangered Species Ecology, Plant and Animal Succession and Cultural Perceptions of Forests) received at least 1 vote. Following are the top 6 requested programs and the percentage of users who requested them.

Preferred Activity Topics

- Water quality/aquatic ecology - 100%
- Map and compass/GPS – 78%
- Plant identification – 71%
- Birding or bird study – 50%
- Insect study - 50%
- Animal tracking – 50%

User Comments

- “Any programs include as much ‘hands on’ activity as possible.” – Washington Middle School
- “Activities for our students would have to be very low level. “ – Copper Country ISD
- “Used to use rifle range but haven’t last couple of years due lack of instructor. Would like to use again, maybe ask representative from sportsmen’s club?” – South Range Chassell
- “Small group programs would need to run all day rotate through 6 cabins.” – Hancock
- “Love idea of FS offering programs. Our use would depend upon cost. Would love to continue being stewards of Deer Marsh Trail.” – Girls Scouts

Conclusions

Camp Nesbit has a very small user base that is extremely loyal. Some groups are now sending their third generation to camp. The primary mission of most groups is Outdoor Recreation and Character Development. Environmental Education plays a secondary role.

Almost all of the camps indicated a willingness to incorporate conservation/environmental education activities into their programs. Still, many of the groups have a strong sense of tradition which will likely influence their willingness to change their primary mission to environmental education, at least in the immediate future. Starting small with a few quality programs may be the best way to introduce Nesbit's users to the value of environmental education.

Another way of gently stating the importance of environmental education would be to dedicate a specific place for that purpose. Currently, even the largest group brings less than the 112 campers the camp can accommodate. Perhaps one, or even two, of the buildings that now contain beds, could be converted to serve as environmental education labs.

Groups are making use of most of the camp's facilities with the exception of the horseshoe pits. Slightly more than half of Nesbit's users utilize the rifle range. This may need to be considered when maintenance decisions are required. In addition, the Forest may want to consider requiring minimum instructor qualifications for use of the rifle range in order to ensure the safety of campers.

Appendix C – Environmental Education Providers Within Local Service Area

Environmental Education Providers Within Local Service Area

Environmental Education Providers Within Thirty Miles of Ottawa National Forest

Providers	Residential	Day Use On Site	Day Use Off Site	Audience	Primary Mission/Messages	Program Examples
Baraga County 4-H - Lanse, MI	x		x	Youth ages 5- 19 in Baraga County	Healthy Lifestyles Science Engineering Citizenship	Conducts 3 day 4-H camp at Ford Forestry Center Forestry and tree ID programs for Lanse and Baraga schools at Camp Nesbit -
Conserve School - Land O Lakes, WI	x			High School Juniors and Seniors who attend for one semester	To inspire young people to environmental stewardship, through academics and engagement with forests, lakes and wildlife of Lowenwood. Foster: Understanding of science of natural resource conservation Commitment to protect the environment Inclination toward careers that help preserve natural world Enjoyment of outdoor activities Love and respect for Nature	Applied ecology Sustainable Systems AP Environmental Science American Literature and the Land History of Wilderness Exploration Outdoor skills, bicycling, backpacking, paddling, snowshoeing, skiing , winter survival skills Algebra II Pre- Calculus AP Calculus AB Spanish Additional Electives and On-Line Courses

DNR Wildlife Biologist - Baraga, MI		x		Hunters clubs Land owners School programs upon request	Wildlife habitat and management	Conduct limited number of programs because of lack of staff. Perhaps 6-7 per year. Most frequently presented programs are on wolves, moose and right now white- nosed bat syndrome
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Ford Center - Alberta MI	x	x		MTU Forestry	Sustainable forestry	Generally no programs for groups
Gogebic County 4-H - Bessemer, MI	x	x	x	Youth ages 5-19 in Gogebic County	<p>Healthy lifestyles</p> <p>Science</p> <p>Engineering</p> <p>Citizenship</p>	<p>Conducts 2-3 day 4-H camp at Little Girls point</p> <p>Sponsors Get Outdoors Clubs in Ironwood, Bessemer, Wakefield schools</p> <p>Helps organize Get Outdoors Day with FS and Natural Resources Conservation District at Sunday Lake in Wakefield</p> <p>Organizes Norrie Park Day where</p>

						<p>Ironwood elementary schools visit several environmental education stations (includes bird watching, tree id, casting, plant id)</p> <p>Has 45 pair of snowshoes available for local schools and groups</p> <p>Purchasing 12 GPS units for use in schools</p> <p>Conducts conservation programs at office on July 4th weekend</p>
Gogebic County Natural Resources Conservation District - Bessemer, MI		x	x	Residents of Gogebic County	<p>Wildlife habitat</p> <p>Reforestation</p> <p>Surface and groundwater conservation</p> <p>Farm conservation</p>	<p>Works with FS and 4-H on Get Outdoors Day at Sunday Lake in Wakefield</p> <p>Does environmental activities at their office on 4th of July weekend</p> <p>Tree farm program at Washington Elementary School with FS Bessemer District ranger</p> <p>Arbor Day tree planting program in Gogebic County Elementary Schools</p> <p>Environmental education activities booth at county fair</p> <p>-</p>
Iron County 4-H - Crystal Falls, MI		x	x	Youth Ages 5-19 in Iron County	<p>Healthy Lifestyles,</p> <p>Engineering</p> <p>Science</p> <p>Citizenship</p>	<p>Partner with 4-H extension in Florence WI on forestry program of 10th and 11th graders. Includes 2 half-day sessions where participants learn to read plat books, learn about careers in forest industry, and how to identify species of wood and trees. Then go on field trip to forest to see how trees are harvested,</p>

						followed by trip to a local manufacture to see how wood is turned into a product. Doesn't do this program with West Iron High School. Would be interested in Partnering with FS on similar program for West Iron River.
North Lakeland Discovery Center - Manitowish Waters, WI	x	x	x	Members (700) Local schools including Norrie Elementary, Hurley and Mercer HS Residential groups from WI and IL No outreach programs in UP	Wide variety of programs with emphasis on Birds, Wolves, Land and Water Stewardship.	Most programs are day use on site and off site Few programs provided to residential users Raptor outreach programs Purple Martin study with Mercer and Hurley HS Speakers programs at local libraries Snowshoe hikes Geology field trips Bat monitoring
Ontonagon County 4-H - Ontonagon, MI	x		x	Youth ages 5-19 in Ontonagon County	Healthy lifestyles Science Engineering Citizenship	Conducts 3 day 4-H camp at Ford Forestry Center Conducts 4-H day camp with FS and Porcupine Mountain State Park

Porcupine Wilderness		x	x	Summer	Importance of wilderness and	No set programs for schools. Creates
Western Upper Peninsula Center for Science,		x	x	Teachers and students in 5	To enhance science, math and environmental learning	Assembly programs for schools
				12 on site and equal number off site each year) Most schools outside Ontonagon Co.		moose for Ironwood schools Weekly summer program topics at park include wolves, aquatic insects, geocaching, birds, Michigan mammals, bears, archery, bats and geology Participates in 4-H day camp with local 4-H and FS
Trees for Tomorrow - Eagle River, WI	x	x	x	Primarily middle school students from WI and IL Schools from Crystal Falls and Gladstone MI Eagle River area schools	Humans rely on natural resources Natural resource base is limited so proper management is important Great Lakes ecosystem is resilient when properly managed Forest resources must be managed for multiple uses Individuals have responsibility to make informed decisions and take positive action regarding resource issues	Outreach programs primarily in Northern Wisconsin Host conferences Forestry Wildlife Water Outdoor Skills History and Culture Field trips to Sylvania Recreation Area, Bond Falls, Ottawa VC

Mathematics and Environmental Education - MTU Houghton, MI				counties of western UP		<p>Science field trips</p> <p>Family Forest and Science Nights</p> <p>Earth Week Programs</p> <p>Western Upper Peninsula Science Fair</p> <p>Teacher Professional Development Workshops</p> <p>Summer Teacher Institutes On MTUs Research Vessel</p> <p>Lake Superior Stewardship Initiative Grants</p> <p>Clearing house for environmental education material distribution</p>
Wolf Alliance - North Lakeland Discovery Center, Manitowish Waters, WI		x	x	General public Schools in northern WI and western UP	To use education to promote and maintain wolves in the Western Great Lakes with emphasis on Northern WI and UP	<p>Wolf Awareness Week (3rd wk Oct)</p> <p>Weekend with Wolves - August at North Lakeland Discover Center</p> <p>Speakers bureau</p> <p>Field trips</p>

Appendix D – Ottawa Conservation Education Facilities

Ottawa Conservation Education Facilities

Location	Conservation Education Related Facilities/Resources					
	Trails	Cabins	Pavilion/Shelter	Auditorium	Water Resources	Comments
Black River Harbor Recreation Area	5 trails ranging from .25 to .50 miles in length go to waterfalls and overlooks	na	day use building seats about 765	na	lake, beach, rivers, waterfalls	Located on Lake Superior. Trails to waterfalls require close supervision
Bob Lake Campground Beaver Lodge Trail	1.2 mile loop trail	na	na	na	lake	
Camp Nesbit	Approx. 2 miles of loop hiking trails	12 cabins accommodate 144 campers	na	na	lake	Other facilities include, beach, recreation hall, ropes courses, archery and rifle shooting ranges, playfield, and dining hall
Courtney Lake Campground Circle of Life Interpretive Trail	2.2 mile loop trail	na	na	na	lake	
Deer Marsh Trail	3.5 mile Deer Marsh loop trail has boardwalks and overlooks	na		na	marsh, lake, creek, beaver pond	Located adjacent to Lake St. Kathryn and short 10 minute drive from Camp Nesbit
Imp Lake Campground	1 mile loop trail with boardwak	na	na		lake and bog	
J W Toumey Nursery	na	na	small conference room and stocking building	small conference room	na	Nursery provides tree stock for National Forests in NE and NC states. Provides group tours upon request.

	Trails	Cabins	Pavilion/Shelter	Auditorium	Water Resources	Comments
Lake Ottawa Recreation Area	9 mile Ge-Chi Trail provides several loop options	na	Day use shelter seats about 20	na	lake with pier	
Norwich Mine Interpretive Trail	1.1 mile loop trail	na	na	na	na	Interpretive signs tell story of the mining community of Norwich.
Ottawa Visitor Center	.5 mile paved loop trail and adjacent OHV trails	na	na	Auditorium seats about 75	creek and beaver pond nearby	Visitor Center Includes interpretive exhibits and gift shop
Sylvania Recreation Area	About 25 miles of trails in Sylvania Wilderness	na	Day use shelter seats about 75.	na	Helen Lake and Snap Jack Lake outside Wilderness	Group size limit of 10 within Wilderness. Permits required.
NA - facility or resource not available						

Appendix E – Michigan Grade Content Level Correlations

**Michigan Grade Content
Level Correlations**

**CORRELATION OF OTTAWA NATIONAL FOREST CONSERVATION EDUCATION MESSAGES TO
MICHIGAN GRADE LEVEL CONTENT EXPECTATIONS**

TOPIC	MESSAGE STATEMENT	AUDIENCE	Most Applicable Michigan Grade Level Content Expectations*	Forest Resource Challenge
Wildflowers and Pollinators	Flowers and pollinators work together to create new plants on the forest	Grades 3	<p>L.O1.03.31-Describe the function of the following plant parts: flower, stem, root, leaf.</p> <p>L.O1.03.32- Identify and compare structures in animals used for controlling body temperature, support, movement, food-getting, and protection</p> <p>L.EV.03.11-Relate characteristics and functions of observable parts in a variety of plants that allow them to live in their environment.</p>	Continuing to produce forest products and services while maintaining ecosystem integrity
Historic Ties of the Ottawa to Local Communities.	From Copper to Furs - the history of the Western Upper Peninsula is tied to its natural resources.	Grades 4	<p>4-H3.0.3 - Describe how the relationship between the location of natural resources and the location of industries (after 1837) affected and continues to affect the location and growth of Michigan Cities</p> <p>4-H3.08 Describe past and current threats to Michigan's natural resources; describe how Michigan worked in the past and continues to work today to protect its natural resources .</p>	Continuing to produce forest products and services while maintaining ecosystem integrity

<p>Predator-Prey Ecology</p>	<p>Who eats who on the Ottawa -animal survival is based upon cometition and adaptation</p>	<p>Grades 6</p>	<p>L.EC.04.11 - Identify organisms as part of a food chain or web L.EC.4.21- Explain how environmental changes can produce a change in the food web. L.EV.04.22 - Identify how variations in physical characteristics of individual organisms give them and advantage for survival and reproduction. L.EV.05.11 and 12 - Explain how behavioral and physical characteristics of organisms help them survive in their envrionment. S.RS.06.17-Describe the effect humans and other organisms have on the balance of the natural world. L.OL.06.51-Classify producers consumers, and decomposers based on their source of food. 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. L.EC.06.42 - Predict possible consequences of overpopulation of organisms, including humans.</p>	<p>Wolf/human interactions</p>
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<p>Water, Aquatic Life, Watersheds</p>	<p>Clean water and healthy watersheds produce more than good fishing</p>	<p>Grades 6</p>	<p>S.IP.PM04.23 - Compare and contrast the states of matter (solids,liquids, gases) L.EC.06.42 -Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance of ecosystems. 4-H3.0.8 - Describe past and current threats to Michigans natural resources, describe how Michigan worked in the past and continues to work today to protect its natural resources. H-G5.0.1 -Assess the positive and negative effects of human activities on the physical environment of the United States. 6-G5.1.1 - Describe the environmental effects of human action on the...hydrosphere...</p>	<p>Great Lakes Restoration Initiative Travel Management Plan Implementation Non-native Invasive Species Management Continuing to produce forest products and services while maintaining eco-system integrity</p>
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Invasive Species	Invasive Species - what they are the, why we should care, and what can we do.	Grades 5 and 6	<p>SS.RS..05.17 -Describe the effect humans and other organisms have on the balance in the natural world.</p> <p>L.EV.05.11 and 12 -Explain how behavioral and physical characteristics of organisms help them survive in their environment.</p> <p>L.EC.06.23 - Predict how changes in one population might affect other populations based upon their relationships in the food web.</p> <p>L.EC.06.32 - Identify the factors in an ecosystem that influence changes in population size.</p> <p>L.EC.06.41 - Describe how human beings are part of the ecosystem of the Earth and that human activity can purposefully, or accidentally, alter the balance of ecosystems.</p> <p>6-G5.1.3 - Identify the ways in which human-induced changes in the physical environment in one place can cause changes in other places.</p>	Invasive Species Management
Climate Change	Climate change is real and will affect the Ottawa National Forest, but there are actions we can take to reduce its impact.	Grades 9-12	<p>E5.4 A-B - Atmospheric gases trap solar energy that has been reradiated from the Earth's surface (the greenhouse effect). The Earth's climate has changed both gradually and catastrophically over geological and historical time frames due to complex interactions between many natural variables and events. The concentration of greenhouse gases (especially carbon dioxide) has increased due to human industrialization which has contributed to a rise in average global atmospheric temperatures and changes in the biosphere, atmosphere, and hydrosphere. Climates of the past are researched, usually using indirect indicators, to better understand and predict climate change.</p>	Managing for potential effects of a changing climate

Forest Ecology/Management	When forests are properly managed they provide wood products, recreation, inspiration and ecological services on a sustainable basis.	All Ages	<p>E2.4d - Describe renewable and non-renewable sources of energy for home consumption.</p> <p>E2.4d - Describe how carbon moves through the earth system including the geosphere and how it may benefit or harm society.</p> <p>E2.4d - Describe the life cycle of a product, including the resources, production, packaging, transportation, disposal and pollution .</p> <p>B3.3 -Identify how energy is stored in an ecosystem.</p>	Continuing to produce forest products and services while maintaining eco-system integrity
Fire Prevention	Only You Can Prevent Wildfires	K-3 (additional audiences during periods of high fire danger)	<p>S.IP.E.1 and SIP.02.11 Make purposeful observations of the natural world using appropriate senses.</p> <p>S.RS.01.18 Describe the effect humans and other organisms have on the balance of the natural world .</p> <p>K.C2.0.2 Explain why people do not have the right to do whatever they want.</p> <p>1-C5.0.1 Describe some responsibilities people have at home and at school.</p> <p>3-C5.0.2 Describe how people adapt to and use and modify the natural resources of Michigan.</p>	Continuing to produce forest products and services while maintaining eco-system integrity
			* There are many other Grade Level Expectations that may be relevant depending on how the message is presented.	

Appendix F – Message Team

Message Team

Message Team Members

Nan Powell - Teacher, Watersmeet School - Watersmeet, Michigan

David Rowe - Teacher, A.D. Johnston High School - Ironwood, Michigan

Barbara Van Alstine - District Ranger - Kenton Ranger District, Ottawa National Forest

Jeff Mell - North Zone Assistant Ranger Recreation - Ottawa National Forest

Amy Amman - Soil Scientist - Ottawa National Forest

Ellen Lesch - Aquatic Ecologist - Ottawa National Forest

Brian Bogaczyk - Wildlife Biologist - Bessemer Ranger District - Ottawa National Forest

Steve Kickert - Conservation Education Coordinator - Ottawa National Forest

