

Grant SPL-325-14: iPaddle Youth Watershed Education Project  
Friends of the St. Croix Headwaters Project Report  
January 11, 2016

**Purpose:** The purpose of the grant was to fund an effort to enhance the learning of middle school students participating in an outdoor canoeing experience, by incorporating technology into the existing Canoes on Wheels program. We investigated whether the use of technology enhanced Wisconsin youths' understanding of key concepts of natural resources stewardship, their understanding of sustainable water management practices, and their involvement in environmentally responsible behaviors as related to watersheds and rivers. Project methods will be explained in a master's thesis document which should be available by the summer of 2016.

**Background:** Friends of the St. Croix Headwaters (FOTSCH) works cooperatively with middle and high school aged students in northwestern Wisconsin through their schools and youth organizations. Since 2009, our Canoes on Wheels (COW) program ([canoesonwheels.org](http://canoesonwheels.org)) offers the day-trip use of a canoe trailer, eight canoes suited for river or lake use, and canoe gear such as paddles and life vests on a no-cost basis to local schools and youth groups. COW also provides no-cost workshops for teachers to help them understand how to safely manage canoe outings. COW has been expanded to include the Eco Adventure project that can be briefly described as middle-school students on the river in canoes with planned educational lesson modules for two days with an overnight camping experience (i.e. experiential learning by means of an immersive experience).

**Use of Technology:** iPaddle is our name for an iPad tablet computer in a waterproof case that is set up to enhance learning and provide a memorable way to record (e.g., pictures, journals) and augment their adventure. iPaddle embraces technology to support the way younger folks want to learn, and offers support for alternative learning approaches. The four (iPaddle) tablets that we used contain reference materials, lesson plans, keying guides, maps, and natural sciences applications, and have the capability of recording still and video geo-tagged images, as well as text entry. iPaddle tablets are used in the canoes and/or can be used while wading in the river. Students are divided into teams, each team having an (iPaddle) tablet.

**Abstract:** Extensive pre- and post-work was included within the project to plan, investigate, and evaluate the effectiveness of supplementing with technology traditional outdoor educational methods for two paddle/camps held in the Fall of 2014 and the Spring of 2015. Attachment 1 shows the itinerary for the first event and Attachment 2 shows the itinerary for the second event.

**Outdoor Education Consulting Expertise:** Sheila Fillmore, who is currently a UM-Duluth graduate student at the Center for Environmental Education, directed our project as she worked on her master's thesis relating to curriculum development and an assessment of the use of iPad (computer tablet) technology in an outdoor experiential-learning setting. Ms. Fillmore is experienced in outdoor activities and has worked extensively in leadership and management of youth education programs for Douglas County 4-H.

**Educational Partners:**

- University of Minnesota Duluth Center for Environmental Education provided faculty support for the project's educational framework and other educational resources for Sheila Fillmore.

- Boulder Lake Environmental Learning Center (Duluth) loaned the project twelve supplemental iPad tablets for river-side and classroom student training sessions on multiple occasions. These tablets were not used by students while in canoes and did not have waterproof cases.
- Hamline University (St. Paul) Center for Global Environmental Education provided curriculum and teacher development instruction, as well as scholarships for Sheila Fillmore and Scott Peterson (FOTSCH) at their three-day St. Croix River Institute on June 23-25, 2014 where Sheila Fillmore presented this project.
- NorthStar Community Charter School (Northwoods School in Minong) partnered with participating teachers, middle-school students, and parent volunteers.

Subject Matter Experts: Multiple natural resources and outdoor education subject-matter experts volunteered expertise in areas such as aquatic plants, aquatic invasive species, macroinvertebrate identification, fly-fishing, fisheries management, artistic expression, field biology (birds, mammals, and terrestrial plants), Native American and settler history, and water quality assessment by citizen scientists. Participating organizations included Washburn County, NPS, St. Croix River Association, and Hayward Fly Fishing Company. These experts are identified in Attachments 1 and 2.

Support Partners:

- National Park Service/St. Croix National Scenic Riverway (NPS) provided logistical support (camp site planning, transportation, camping equipment, and public safety) and interpretive ranger support at river landings.
- Friends of the St. Croix Headwaters provided Canoes on Wheels equipment, river safety training, iPad software and technical assistance, presentation materials, insurance coverage, and logistical support including canoe trailer transportation,

Other Funding Partners:

- Norcross Wildlife Foundation and Outdoor Nation/Paddle Nation provided equipment funding for four iPad mini tablets with waterproof cases. These tablets were used by student teams while in their canoes and during riverside class sessions.
- St. Croix River Fund of the St. Croix Valley Foundation provided funding for paddle/camp supplies, student busing, replacement teachers, and gas for the canoe trailer towing vehicle.
- Friends of the St. Croix Headwaters provided financial support for the Eco Adventure project.

Evaluation and Deliverables:

- Sheila Fillmore's master's thesis tentatively titled "iPaddle: Incorporating the use of iPads into an Outdoor Education Curriculum".
- Project presentation by Sheila Fillmore and several NorthStar Community Charter students at the 2016 St. Croix Summit at UW-River Falls on March 22, 2016.
- iPaddle video: <https://drive.google.com/a/fotsch.org/file/d/0B7EanHh8-GEYVpBRFYycHNnekk/view>

## Attachment 1

### iPaddle Eco Adventure September 16-17, 2014 Leisure Lake Itinerary \*

#### **First Day iPaddle**

- 11:15 am Meet students at Leisure Lake Camp, students lunch on way
  - 11:30 am iPaddle- (Sheila Fillmore)-Literature, using senses, record, pix, etc. with iPads
  - 11:50 am Paddle around the whole lake as a group while following iPaddle assignment with stop midway through time to switch iPads(iPads were used in canoes)
  - 1:45 pm iPaddle debrief-(Sheila Fillmore)-discuss canoeing, senses, wonders, etc.
  - 2:00 Students use GPS units geocaching (Brian Olson)/set up cabins
  - 2:45 pm Conduct Aquatic Plant (Lisa Burns) and Macroinvertebrate (Frank Pratt) (a few students tried macro id with iPads) lessons (three hours with break in middle) Students will be in two groups. Each lesson will be taught twice.
  - 4:15 pm Snack, bathroom break
  - 4:30 pm Switch groups and repeat Aquatic Plant and Macroinvertebrate lessons
  - 6:00 pm Start camp fire and prepare and eat dinner
  - 6:45 pm Journaling-poems, drawings (Sheila Fillmore) (Ipads were used for journaling and photography)
- Note: Sunset 7:18 pm Evening activities: Fishing, Big group game at field, Tonka toasters, informal use of iPads to look at night sky
- 9:30 pm Bedtime

#### **Second Day iPaddle**--Note: sunrise about 6:45am

- 7:00 am Breakfast
- 8:45 am Water Quality lesson (Scott Peterson) This will include determining: water temperature, dissolved oxygen, pH, clarity (turbidity) of the water.
- 9:30 am at latest-- Rendezvous-(Dara Fillmore and Sheila Fillmore and John Fillmore) (Ipads were used for viewing the video about rendezvous)
- 10:45 am Time limited iPad Scavenger Hunt (Sheila Fillmore, Brian Olson) with canoes and on land/Fishing and Geocaching time (Ipads were used on water and land)
- 11:15 am Lunch, tear down tents, clean-up campsite and load what can
- 12:00 pm Making fish lures to 'match the hatch' (Frank Pratt) and Fishing (Sheila and Scott and Frank) as soon as some students have a lure, get them out fishing in canoes or from shore
- 2:00 pm Final clean up and group photo
- 2:30 pm Load students onto school bus and depart for school

\* Note: paddle/camp was held at Leisure Lake near Minong as the Namekagon River was at flood stage due to a recent rain event and NPS recommended that we not paddle the river.

Attachment 2  
iPaddle EcoAdventure: May 26-27 2015  
Itinerary

**Day 1-Tuesday, May 26**

Brian Olsen is the teacher for this group of students and he will be helping along the way. Some parents of students may also be coming. And a few educators will also travel on the canoe trip.

Scott Peterson will pick up some camping supplies from the National Park Service. Brian Olsen will also provide camping supplies and food, water, etc.

**9:45 am:** Meet at Launch (put-in) site: Springbrook Landing on the Namekagon River

**10:00** Class #1-Angelique Edgerton-St. Croix River Association and Lisa Burns-Washburn County Conservation Coordinator-Why does the river matter? Who cares about the river? What is going on downstream? Aquatic Invasive Creatures

**11:00** Sheila Fillmore-UMD Environmental Education graduate student- Discuss Canoe Trip Documentary iPad work-safety first-student interviews of Angelique, Scott, and take photo and video shots at landing

**11:20** Eat lunch now/Use toilet before departure

**11:45** Scott Peterson-Canoes on Wheels (COW)-River Safety Briefing; verify student partners

**12:15** Class #2 Matt McKay-WGSN FIELD Corps-Field Biologist-Wildlife on the River-What is living along the river? Lesson introduction before we get on the water

**12:30** Start paddle to Big Bend (5 river miles) (1.5 hours paddling)  
En route-Stop with Matt McKay for 15-30 minutes for looking at creature signs and tracks-maybe at Big Bend or place to be determined( TBD)-  
En route-Canoe Trip Documentary iPad work-student interviews Matt if we stop en route, take photo and video shots

**2:15-2:30** Big Bend arrival-Wildlife on the River lesson wrap up-15 minutes (At this stop, if needed one can walk to the campsite right after this landing to use a "toilet". Also might have a snack here.)

**2:45-3:00** pm Leave Big Bend-start paddle to Earl Park Landing (3.5 river miles)(1 hour of paddling)  
En route-Canoe Trip Documentary iPad work-take photo and video shots

**3:45-4:00** Arrive at Earl Park Landing(This is our overnight location)-Quickly take bathroom breaks!

Note: Students will be divided into two groups and each lesson will be taught twice  
Canoe Trip Documentary iPad work-student interviews Larry beforehand if possible

**4:00 pm** Class # 3a Larry Mann Hayward Fly Fishing Guide-Where do the fish live on the

Namekagon River? How do I catch a fish? What about bait? Fly fishing casting lessons.

**4:00 pm** Class # 3b Sheila Fillmore-Guided Journaling time on iPads

**4:30** Switch groups

**5:00** Canoe Trip Documentary iPad work-student interviews Larry if has not happened yet, take photo and video shots

**5:30 pm** Set up tents, start camp fire, and prepare dinner

Canoe Trip Documentary iPad work-student interviews Jeff before program if able, take photo and video shots

**7:00 pm** Class # 4 Jeff Butler-National Park Service-Cecelia-An Amazing Ojibwe Woman-Campfire program

Canoe Trip Documentary iPad work-student interviews Jeff if has not happened yet, take photo and video shots

**8:00 pm** Evening activities: Storytelling, marshmallow roasting, night sky on iPads-Canoe Trip Documentary iPad work, interview Matt if has not happened yet, take photo and video shots

**8:47 pm** Sunset

## **Day 2-Wednesday, May 27**

**5:33 am** Sunrise

**8:00 am** Breakfast

**9:00 am** Take down tents, clean-up campsite

Canoe Trip Documentary iPad work-student interviews Joan beforehand if possible, take photo and video shots

**9:45** Class #5 Joan Jacobowski-National Park Service-Veazie Dam/Logging history introduction

**10:00 am** Launch and start paddle to Trego Town Park Landing-Approximately 2.0 hour paddle (a little over four river miles)

Students follow Joan in canoes and see historical logging sites on the river

En route Canoe Trip Documentary iPad work-take photos and video

**12:00 pm-noon** Lunch

**12:30 pm** Sheila Fillmore-Namekagon River Canoe Trip review-what do we want to take away from this learning experience? On iPad, write down three things you learned on this trip. Group discussion

**12:50** Joan Jacobowski-Riverscape Watercolor Painting

Canoe Trip Documentary iPad work-student interviews Joan beforehand if possible, take photo and video shots

**1:30** Final clean up and prepare to depart

**1: 45 pm** Load students onto school bus. Stop at Jack's Canoes for ice cream en route.

**TBD pm** Participants depart from Jack's Canoes for school