

M.L. 2013, Chp. 52, Sec. 2, Subd. 07b **Project Abstract**

For the Period Ending **June 30, 2015**

**PROJECT TITLE:** Youth Outdoors: Mississippi River Education and Employment Opportunities

**PROJECT MANAGER:** Chad Dayton

**AFFILIATION:** Wilderness Inquiry

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**FUNDING SOURCE:** Environment and Natural Resources Trust Fund)

**LEGAL CITATION:** M.L. 2013, Chp. 52, Sec. 2, Subd. 07b

**APPROPRIATION AMOUNT:** \$450,000

### **Overall Project Outcomes and Results**

Youth in Minnesota and across the country are spending less time outdoors than ever before. Minnesota is home to beautiful wilderness areas and our youth are missing out on opportunities to experience it. The goal of the Youth Outdoors project is to bring more youth outside to experience the wilderness -- urban and remote -- and gain a new appreciation for their environment and community through guided outdoor experiences.

Between July 1, 2013 and September 1, 2015 Wilderness Inquiry (WI) engaged 12,000 youth in outdoor programming. More than 11,000 youth joined WI for an introductory outdoor day experience and more than 830 youth participated in an overnight camping experience. Additionally, 31 youth were employed as interns with job responsibilities including supporting participants, leading educational stations, and creating new activities. On single day events, youth canoed, fished, hiked, explored, and collected data from lakes and rivers for hands-on water quality tests. Youth worked in teams to paddle 24-foot Voyageur canoes on urban waterways such as the Mississippi and Minnesota Rivers and Minneapolis Chain of Lakes as well as remote lakes and rivers across the state such as Voyageurs National Park and Lake Itasca. Outdoor Educators, with the support of partner organizations, facilitated activities to engage students with each other and the outdoors. On overnight camping experiences, youth set up tents, built fires, and cooked outside. We reached out to schools, formalized district partnerships, and engaged a variety of groups to offer these experiential and educational opportunities.

The University of Minnesota's Center for Applied Research and Educational Improvement (CAREI) collected data from the project as part of a 5-year plan to evaluate the program outcomes. We are continuing our relationship with CAREI to determine best practice and next steps. By engaging thousands of Minnesota youth in the outdoor educational experiences, we are energizing the next generation of environmental stewards.

### **Project Results Use and Dissemination**

We disseminated information about the project and its outcomes through a variety of media including our website, social media networks, quarterly newsletter, partner website, and news sources. We have shared our educational resources with schools in an effort to support the continued engagement of their students in the outdoors. Our program has been highlighted in a number of local newspapers.



# Environment and Natural Resources Trust Fund (ENRTF) M.L. 2013 Work Plan Final Report

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**Date of Status Update Report:** November 12, 2015

**Date of Next Status Update Report:** Final Report

**Date of Work Plan Approval:** June 11, 2013

**Project Completion Date:** September 15, 2015

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**PROJECT TITLE:** Youth Outdoors: Mississippi River Education and Employment Opportunities

**Project Manager:** Chad Dayton

**Affiliation:** Wilderness Inquiry

**Mailing Address:** 808 14<sup>th</sup> Ave SE

**City/State/Zip Code:** Minneapolis, MN 55414

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**Location:** Statewide – Including the 7 county metro area along the Mississippi River beyond Minneapolis and St Paul, and outstate communities such as Grand Rapids, St Cloud, Hastings, and Red Wing.

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**Total ENRTF Project Budget: \$450,000**

**ENRTF Appropriation: \$450,000**

**Amount Spent: \$450,000**

**Balance: \$0**

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**Legal Citation:** M.L. 2013, Chp. 52, Sec. 2, Subd. 07b

**Appropriation Language:**

\$450,000 the first year is from the trust fund to the commissioner of natural resources for an agreement with Wilderness Inquiry to provide outdoor education, recreation, and youth employment on the Mississippi River from Grand Rapids to St. Cloud, the Twin Cities, Hastings, and Red Wing. This appropriation is available until June 30, 2016, by which time the project must be completed and final products delivered.

## I. PROJECT TITLE: Youth Outdoors: Mississippi River Education and Employment Opportunities

## II. PROJECT STATEMENT:

**Youth Outdoors: Mississippi River Education and Employment Opportunities (YO)** provides environmental education trips for more than 6,000 youth from Grand Rapids, St. Cloud, the Twin Cities, Hastings, Red Wing, and other communities throughout Minnesota. YO engages youth in fishing, canoeing, camping, and provides employment opportunities over a 2-1/2 year period.

While many programs offer opportunities for youth to get outside for an environmental learning experience, none provide this type of hands-on learning opportunity on such a large scale. Our ultimate goal is to make the YO program a regular part of the school experience for all kids in Minnesota. This program is a national model for engaging youth in the conservation movement through national, state, and local partnerships.

Through an unique partnership between Wilderness Inquiry, the National Park Service, the Mississippi River Fund, school districts throughout the state, the DNR, and more than 40 other organizations, YO will deliver outdoor education and recreation program on the Mississippi River and surrounding watersheds, complete with guided day trips, fishing, aquatic sampling, overnight camping, and environmental education programs for youth in elementary, middle and high school. The program also includes an outdoor employment component, linking youth to outdoor education and career opportunities. Our goal is to encourage outdoor recreation and environmental stewardship as life-long pursuits among disadvantaged youth. We also aim to grow the perception of the Mississippi River as a world-class resource for education and understanding about the natural world for Minnesotans.

YO is a response to the sharp decline in participation in outdoor education and activities such as canoeing, camping, hunting and fishing by today's youth. YO is based on the premise that youth who have meaningful outdoor education experiences are more likely to become engaged and committed environmental stewards, and to invest in Minnesota's outdoor resources as adults.

### Anticipated outcomes include:

- A) 6,000 youth from the Twin Cities, Grand Rapids, St. Cloud, Hastings, and Red Wing are introduced to fishing, canoeing, and camping as viable recreation pursuits on the Mississippi River.
- B) 800 youth participate in overnight camping along the banks of the Mississippi River or in the watershed from Grand Rapids to Hastings, and Red Wing to the Iowa border, including the Twin Cities metro area.
- C) Expansion of an aquatic sampling program on the Mississippi River, including creating a baseline of species currently in the river, and monitoring the advancement of invasive species, such as Asian Carp.
- D) 20 youth gain summer employment in outdoor and conservation jobs; 800 youth gain knowledge of outdoor career opportunities.

## III. PROJECT STATUS UPDATES:

### **Project Status as of:** January 15, 2014

Since launching the program in July of 2013, we've provided 94 daylong outdoor experiences for 4,672 youth, provided six in-classroom presentations for 366 youth in preparation for their outdoor educational experiences, as well as introduced 1,187 youth and families to basic canoeing, water safety, and natural history at local community events. We've provided 12 overnight environmental learning trips on the Mississippi River watershed for 294 youth. We've hired a Youth Outdoor Employment Director to lead the summer employment in environmental jobs initiative. Wilderness Inquiry held the annual meeting of Outdoor Career Advisory group consisting of 20+ outdoor agency and industry employers. In preparation for the coming season, we've begun planning for 2014 programming by meeting with partners, scheduling events, developing new programming and curricula, and creating promotional materials. We also purchased two 24-foot Voyageur canoes for the program to expand our capacity to serve more youth.

The following changes were made to Section VI, Personnel Costs Summary:

- Chad Dayton was hired July 2013 as Wilderness Inquiry's UWCA Director. At least 50% of his time will be devoted to directing the YO program in Minnesota as described in the Personnel Summary.
- Julie Storck was hired July 2013 as Wilderness Inquiry's UWCA Program Manager. At least 50% of her time will be devoted to managing the YO program in Minnesota as described in the Personnel Summary. Julie's hire and project focus also allowed us to combine the roles previously delineated as YO Program Manager and YO Outreach Coordinator into the singular role of YO Outreach Manager.
- The YO Program Coordinator FTE and estimated wages were reduced as a result of the aforementioned program hires.
- Steve Curnow replaced Karen Burrage as YO Program Assistant.

**Project Status as of:** June 30, 2014

Since the last project status update, we continue to experience great success and growth with the YO program component of the Urban Wilderness Canoe Adventures program. We have formalized partnerships with the Minnesota Department of Natural Resources, Minneapolis and Saint Paul Public Schools, and Minneapolis and Saint Paul Parks & Recreation. We have successfully enhanced our partnerships with many other entities and agencies, as well as added 10+ partners to our Outdoor Careers Advisory, now representing 1,400 full and part time summer job and internship opportunities. Between January 15 and June 19, 2014, we have conducted 31 YO programs, reaching over 2,600 youth, and fulfilling all proposed activity types. In addition, we provided 20 classroom and school-wide presentations for 1,348 students and faculty to help prepare for outdoor experiences, as well as present on educational and career opportunities in the outdoors. We continue to expand YO's presence and programming throughout greater Minnesota as well. We have conducted YO events in Shakopee and Mankato and are planning a return to Brainerd and Granite Falls. Plans are currently underway to program soon in Duluth, Rochester, Farmington, and other locations statewide.

**Amendment Request:** July 30, 2014

**Amendment Approved:** July 31, 2014

The following changes were made to Section VI, Personnel Costs Summary:

- Chad Dayton replaced Dave Haugen as YO Program Director. 35% of his time will be dedicated to the managing the YO Program as described in the Personnel Summary. This change better reflects Chad Dayton's role as Wilderness Inquiry's Director of Programs and Partner Relations.
- Julie Storck replaced Chad Dayton as YO Program Manager. This change better reflects Julie's role as Wilderness Inquiry's Educational Program Manager.
- Ashley Pethan was hired in June 2014 as Wilderness Inquiry's Educational Program Coordinator and will replace Josh Garubanda as YO Outreach Coordinator. At least 50% of her time will be devoted to supporting the YO Program in Minnesota as described in the Personnel Summary.
- Brian Peterson replaced Steve Curnow as YO Program Assistant.

**Project Status as of:** January 15, 2015

Between July 1, 2014 and January 15, 2015 Wilderness Inquiry has served more than 4,250 youth on 57 day experiences and 149 youth on 8 overnight and extended trips. Directly and through partnerships, we hired 7 youth interns during the summer, who engaged with an immersion experience as part of their internship.

Our programs continue to become more integrated within school districts and academic curriculum. We continue to expand our partnerships, including with local watershed districts, which further enriches aquatic sampling programs and provides a greater network for our career pathway programs. In addition, we have formalized teacher professional development trainings, which have resulted in more robust and relevant programming for school districts.

Since program launch, Wilderness Inquiry has reached more than 11,000 youth during daylong experiences, 635 youth on overnights, and directly funded youth internship experiences for 7 youth. We are in the process of hiring youth for summer 2015 and already have 3 commitments.

**Amendment Request:** January 15, 2015

The following change was made to Section VI, Personnel Costs Summary:

- Josh Swedberg replaced Ashley Pethan as YO Outreach Coordinator.
- Alex Sitek replaced Brian Peterson as YO Program Assistant.

**FINAL Project Status as of:** September 15, 2015

Since the last update in January, we reached 153 students through classroom career speaking events at four Saint Paul high schools. In addition, 18 participants completed a winter overnight at Baker Near Wilderness and 177 youth participated in 2-3 day overnights at Fort Snelling State Park and along the Saint Croix River. Wilderness Inquiry and partners employed 24 youth interns in 2015.

Overall, “Youth Outdoors” exceeded its goals in serving Minnesota youth in a stepwise progression from introductory to more immersive experiences. Overall, the program reached more than 11,000 Minnesota youth through introductory trips, which included canoeing, fishing, water quality testing, and more. Wilderness Inquiry served youth from the following communities: Bloomington, Brainerd, Brooklyn Center, Burnsville, Crosby, Duluth, Eagan, Elk River, Faribault, Farmington, Grand Rapids, Granite Falls, Hastings, Henderson, International Falls, Ironton, Lakeville, Le Sueur, Little Fork, Mankato, McGregor, Mendota, Minneapolis, Minnetonka, Mounds View, Nett Lake, Roseville, Saint Cloud, Saint Paul, Savage, Shakopee, Silver Bay, South Washington County, Stearns County, Two Harbors, Waseca, West Saint Paul, Woodbury, Yellow Medicine.

**Overall Project Outcomes and Results:**

Youth in Minnesota and across the country are spending less time outdoors than ever before. Minnesota is home to beautiful wilderness areas and our youth are missing out on opportunities to experience it. The goal of the Youth Outdoors project is to bring more youth outside to experience the wilderness -- urban and remote -- and gain a new appreciation for their environment and community through guided outdoor experiences.

Between July 1, 2013 and September 1, 2015 Wilderness Inquiry (WI) engaged 12,000 youth in outdoor programming. More than 11,000 youth joined WI for an introductory outdoor day experience and more than 830 youth participated in an overnight camping experience. Additionally, 31 youth were employed as interns with job responsibilities including supporting participants, leading educational stations, and creating new activities. On single day events, youth canoed, fished, hiked, explored, and collected data from lakes and rivers for hands-on water quality tests. Youth worked in teams to paddle 24-foot Voyageur canoes on urban waterways such as the Mississippi and Minnesota Rivers and Minneapolis Chain of Lakes as well as remote lakes and rivers across the state such as Voyageurs National Park and Lake Itasca. Outdoor Educators, with the support of partner organizations, facilitated activities to engage students with each other and the outdoors. On overnight camping experiences, youth set up tents, built fires, and cooked outside. We reached out to schools, formalized district partnerships, and engaged a variety of groups to offer these experiential and educational opportunities.

The University of Minnesota’s Center for Applied Research and Educational Improvement (CAREI) collected data from the project as part of a 5-year plan to evaluate the program outcomes. We are continuing our relationship with CAREI to determine best practice and next steps. By engaging thousands of Minnesota youth in the outdoor educational experiences, we are energizing the next generation of environmental stewards.

**IV. PROJECT ACTIVITIES AND OUTCOMES:**

**ACTIVITY 1:** Canoeing, Fishing, and Aquatic Sampling Trips for 6,000 Youth

**Description:** The Mississippi River provides wonderful opportunities for fishing and outdoor recreation. In

partnership with the MN DNR MinnAqua Program and the National Park Service, we will provide programs such as water safety, canoeing, and fishing instruction for 6,000 youth, ages 10 to 18 as a part of a daylong experience on the Mississippi River and surrounding watershed throughout Minnesota. In addition, we will demonstrate an aquatic sampling program to help monitor the health of the Mississippi River. Through this program, youth will use seine nets and other fish survey techniques to identify and document the diversity and abundance of various fish species. This will help provide additional baseline fish data and document and monitor the presence of aquatic invasive species. (\$50 x 6,000 youth = \$300,000)

**Summary Budget Information for Activity 1:**

**ENRTF Budget: \$314,600**  
**Amount Spent: \$314,600**  
**Balance: \$0**

**Activity Completion Date:** October 31, 2015

Outcome	Completion Date	Budget
1. Fishing and aquatic sampling trips for 3,000 youth in first year	6/30/2014	\$ 157,300
2. Fishing and aquatic sampling trips for 3,000 youth in second year	10/31/2015	\$ 157,300

**Project Status as of:** January 15, 2014

- We provided 94 daylong outdoor experiences for 4,672 youth. With help from partners at the National Park Service and MN DNR we developed and delivered robust, nature-based experiential learning curricula that included introductions to water safety, canoeing and fishing, water quality testing and aquatic species sampling along the Mississippi River watershed.
- We provided five introductory outdoor education experiences serving 1,187 youth and families. Youth and families paddled 24-foot Voyageur canoes at community events such as the local Aquatennial and Dragon Festivals. We introduced them to basic canoeing, water safety, and natural history interpretation.
- We provided six in-classroom presentations for 366 students and faculty to help prepare for upcoming outdoor experiences, as well as present on educational and career opportunities in the outdoors.
- In all instances, this provided the first exposure to local rivers and lakes for the vast majority of participants.
- We purchased two 24-foot Voyageur canoes for the program.
- We've begun planning for 2014 programming by reviewing evaluations, meeting with partners, scheduling events, developing new programming and curricula, and creating promotional materials.

**Project Status as of:** June 30, 2014

- 2,432 youth participated in fishing and/or aquatic sampling trips within the Mississippi River Watershed, including the Mississippi and Minnesota Rivers and Fort Snelling State Park: 845 youth participated in introductory fishing programs; 1,587 youth participated in aquatics sampling, including water quality, turbidity, role of mussels in ecosystem, and seine netting/species identification.
- 1,348 students and faculty participated in classroom presentations to prepare for outdoor experiences and learn about educational and career opportunities in the outdoors.
- We engaged Shakopee Public Schools to participate in a school-wide aquatics program focused on water quality in their school pond. (414 Shakopee Public School students were engaged over a total of 4 site-specific events.)
- Student participants were from Minneapolis Public Schools, Saint Paul Public Schools, the YMCA, AVID/EMID, Shakopee Public Schools, and a variety of private and charter school within the 7-county metro.
- Additional program partners include the National Park Service, Minnesota Department of Natural Resources, Saint Paul Parks & Recreation, Minneapolis Park & Recreation Board, U.S. Forest Service, and U.S. Fish & Wildlife Service.

**Project Status as of:** January 15, 2015

- 4,250 youth participated in daylong introductory experiences throughout Minnesota; programming included activities such as canoeing, fishing, water safety, and aquatic sampling.

- Metro programming locations included Theodore Wirth, Fort Snelling State Park, Coldwater Spring, Chain of Lakes, Powderhorn Park, Mississippi River, and parks and green spaces near school sites.
- Statewide programs took place in Brainerd, Mankato, Woodbury, Farmington, Faribault, Duluth, and Henderson.
- In addition to youth programming, Wilderness Inquiry worked with teachers to further integrate day programming into classrooms.

**Project Status as of:** September 15, 2015

- 153 Saint Paul high school students participated in a speaker’s bureau that focused on college, career, and internship readiness.

**Final Report Summary:**

Since launching the program in July 2013, Wilderness Inquiry has provided introductory experiences for more than 11,000 Minnesota youth. These day trips included canoeing, fishing, aquatic sampling, ecosystem monitoring, and water safety. Programs were facilitated by Wilderness Inquiry staff in addition to dozens of program partners including National Park Service, Minnesota DNR, local park and recreation boards, Minnesota school districts and educators, watershed districts, Friends of the Mississippi River, University of Minnesota, Army Corps of Engineers, and others. Recent evaluation data from University of Minnesota Center for Applied Research and Educational Improvement (CAREI) showed that trip participation is associated with increases in environmental awareness among students (CAREI 2015).

**ACTIVITY 2: Overnight Camping and Outdoor Education Trips for 800 Youth**

**Description:** Provide hands-on environmental learning trips, which will introduce youth ages 13 to 18 to camping, fishing, canoeing, and other outdoor opportunities in Minnesota. The overnight learning trips will include activities such as water quality and aquatic species education and invasive removal projects. Youth will learn about the many varieties of fish and aquatic life in the Mississippi River. (\$150/youth x 800 kids = \$120,000)

**Summary Budget Information for Activity 2:**

**ENRTF Budget: \$105,900**  
**Amount Spent: \$105,900**  
**Balance: \$0**

**Activity Completion Date:** December 31, 2015

<b>Outcome</b>	<b>Completion Date</b>	<b>Budget</b>
1. 300 youth participate on overnight environmental learning trips in year one. Activities include fishing, canoeing, and camping.	10/1/2014	\$40,000
2. 500 youth participate on overnight environmental learning trips in year two. Activities include fishing, canoeing, and camping.	10/1/2015	\$65,900

**Project Status as of:** January 15, 2014

We provided 12 overnight environmental learning trips on the Mississippi River watershed for 294 youth. Students participated in a variety of introductory camping and environmental learning activities, including the following: canoeing, nature hikes, natural and historical interpretation, water quality testing, aquatic species sampling, invasive removal projects, fishing, camp set-up, outdoor cooking, fire-building, etc. These experiences provided opportunities for students to deepen and expand on the work they have done on the environmental learning day trips. We’ve begun planning and scheduling 2014 overnight trips by reviewing evaluations from 2013, meeting with partners, developing new programming and curricula, and creating promotional materials.

**Project Status as of:** June 30, 2014

- 170 youth participated in 7 overnight environmental learning experiences. Locations include Fort Snelling State Park, Afton State Park, and William O’Brien State Park.
- Activities included camping, cooking, canoeing, hiking, and introductions to ecosystem and watershed concepts.

- 22 additional youth participated in 2 extended outdoor immersion/work trips conducted in partnership with the U.S. Forest Service. Participants camped, hiked, and paddled, as well as shadowed U.S. Forest Service scientists and interpretive rangers. Additionally, participants visited either Vermilion Community College or the University of Minnesota-Duluth upon completion of the immersion experience.
- Student participants were primarily from Minneapolis Public Schools, Saint Paul Public Schools, and AVID/EMID.
- Additional program partners include the National Park Service, Minnesota Department of Natural Resources, Saint Paul Parks & Recreation, Minneapolis Park & Recreation Board, U.S. Forest Service, and U.S. Fish & Wildlife Service.

**Project Status as of:** January 15, 2015

- 149 youth were served during overnight and extended trip experiences, which included camping.
- Programming locations included Twin Cities metro sites, Voyageurs National Park, Itasca State Park, and Chippewa National Forest.
- Trip experiences typically included a careers pathway discussion, and some focused on service learning and developing transferable job skills.
- Participants were from public and charter schools and were often recruited through youth programs such as YMCA, YWCA, and Minneapolis Park and Recreation Board.
- Wilderness Inquiry has been meeting with partners and planning overnight and extended trip opportunities in 2015.

**Project Status as of:** September 15, 2015

- 18 youth participated in a winter overnight at Baker Near Wilderness. Youth were selected from the Saint Paul Public Schools AVID program and had previously participated in a day-long experience with Wilderness Inquiry.
- 164 youth engaged in a spring overnight at Fort Snelling State Park. Youth came from Takoda Prep, Edison High School, North High School, KIPP Academy, and other Minneapolis and Saint Paul schools.
- 13 youth participated in a St. Croix River Canoe trip for three days, from St. Paul JCC Camp Butwin.

**Final Report Summary:**

Since the start of this program, 830 youth have participated in overnight camping trips as the next step in the outdoor environmental progression. Youth were immersed in hands-on learning focusing on Minnesota’s ecosystem and local environment. In addition, youth had the opportunity to learn camp craft, canoeing, water quality testing, hiking, natural and historical perspectives, outdoor cooking, invasive removal techniques, fire building, and more.

**ACTIVITY 3:** Summer Employment in Environmental Jobs for 20 youth

**Description:** Wilderness Inquiry and its partners will provide environmental internships and summer employment for 20 low-income youth ages 15 to 20 (recruited from the pool of 850 kids served through Activity 2), which consists of:

- 3-day outdoor immersion experience
- 136 hour summer employment in an environmental job. Employers who have committed to providing jobs include, but are not limited to, U.S. Fish and Wildlife Service, National Park Service, Mpls. & St. Paul Park & Rec, and Wilderness Inquiry.

This grant will cover all expenses related to the environmental jobs for youth, including wages, transportation, meals, outdoor equipment, work tools, etc.

(Budget: \$1,000/youth x 20 youth = \$20,000 – for 3 day immersion experience with Wilderness Inquiry.  
\$500/youth x 20 youth = \$10,000 for recruitment, training, wages, and follow-up with youth. This will be matched by employers bringing hourly pay to minimum wage.

**Summary Budget Information for Activity 3:**

**ENRTF Budget:     \$29,500**  
**Amount Spent:     \$29,500**

Balance: \$0

Activity Completion Date: December 31, 2015

Outcome	Completion Date	Budget
1. 10 youth complete 3-day outdoor immersion and work experience in year one.	9/30/2014	\$15,000
2. 10 youth complete 3-day outdoor immersion and work experience in year two.	9/30/2015	\$14,500
3. Establish Outdoor Career Advisory Council (individuals serving on this committee will do so as volunteers; no Trust Fund dollars pay for this)	9/1/2013	\$0

**Project Status as of:** January 15, 2014

- We hired a Youth Outdoor Employment Director that will specialize in creating a robust and sustainable pipeline for youth interested in outdoor careers.
- In conjunction with Minneapolis Park and Recreation Board, we worked with Minneapolis STEP UP Achieve interns to provide a career day.
- Provided an overnight camping trip for 25 of these STEP UP students, during which they were given the opportunity to hear from and ask questions of seven outdoor professionals currently working in the Metro Area.
- Held annual meeting of Outdoor Careers Advisory group consisting of 20+ outdoor agency and industry employers.
- Met with Minneapolis and Saint Paul Public School administrators and teachers to strengthen curriculum connections to outdoor education and employment.
- We're currently in discussion with several employer partners to build internship opportunities for summers 2014 and 2015. These partners currently include USDA Forest Service, REI, Mpls and Saint Paul Park and Rec Departments, MN DNR, and US Fish and Wildlife.

**Project Status as of:** June 30, 2014

- 22 youth gained valuable work experience through 2 outdoor immersion experiences in partnership with the U.S. Forest Service. Activities included recreation and service learning/job shadowing as well as a college visit.
- Wilderness Inquiry, in partnership with the National Park Service and the U.S. Forest Service, has engaged three summer youth between the ages of 15-20. They participate in and help facilitate programming/trips.
- Wilderness Inquiry has hired 6 youth (ages 15-20) through Step-Up and other avenues for spring/summer employment, which will include an immersion experience.
- The Outdoor Careers Advisory group now includes 30 partner entities representing over 1,100 part time and nearly 300 full time summer internship and employment opportunities.

**Project Status as of:** January 15, 2015

- 10 youth interns worked with Wilderness Inquiry during 2014.
- 7 of these youth interns completed an outdoor immersion experience and at least 136 hours of employment.
- 4 of these youth were part of a partnership with National Park Service and Mississippi River Fund, to offer specialized training and skills for these youth to serve as UWCA Fellows and deliver program content.
- Outdoor immersion experiences took place in a variety of locations including the Apostle Islands, Glacier National Park, and Twin Cities metro areas.
- Wilderness Inquiry continues to partner and collaborate with more than 23 organizations as part of the Outdoor Career Advisory Council. Collectively, the council provided more than 1,466 youth internships and jobs in 2014. Members of the council serve as volunteers.

**Project Status as of:** September 15, 2015

- Since January, Wilderness Inquiry participated in several teen job fairs and career awareness events, including the Minneapolis Teen Job Fair and school site presentations.

- During the spring, 2 youth interns worked at Wilderness Inquiry learning a variety of job functions within the office, warehouse, kitchen, and in the field. This was completed in partnership with Step Up.
- During the summer, Wilderness Inquiry hired 9 youth interns to assist with warehouse operations, kitchen coordination, office projects, and field leadership. Interns participated in at least one immersion experience to locations such as the Boundary Waters and Fort Snelling State Park. In partnership with the National Park Service, an additional 3 Urban Wilderness Canoe Adventures Fellows assisted with leading programs.
- Fast Track, a pilot program, was a unique opportunity for Minneapolis Public School students to earn high school credit in addition to participating in a paid internship. Program partners included Wilderness Inquiry, Minneapolis Public Schools, Wolf Ridge Environmental Learning Center, Minnesota Pollution Control Agency, Conservation Corps, and Step Up. Fourteen students participated in the four-week summer program.

#### **Final Report Summary:**

Through Youth Outdoors, Wilderness Inquiry facilitated internships for dozens of Minnesota youth. This allowed youth that engaged with day and overnight experiences to take their passion to the next level. Overall, 31 youth completed environmental summer employment facilitated by Wilderness Inquiry and partners. These 31 youth also engaged in an immersion experience to implement their leadership and outdoor skills. As noted in the project status updates, the Outdoor Career Advisory Council collectively employed thousands of Minnesota youth in environmental related jobs. The council continues to discuss ways to create a progression of work experiences, from introductory jobs in the outdoors to developing more professional career skills. In addition to paid work opportunities, Wilderness Inquiry also exposed thousands of youth to environmental jobs and careers through classroom speaking engagements and day and overnight trips.

#### **V. DISSEMINATION:**

**Description:** We will work with our partners at the University of Minnesota and the public schools to identify venues for disseminating information and findings about this project. Information will also be posted at <http://www.urbanwildernesscanoeadventures.org>

#### **Project Status as of:** January 15, 2014

Following the successes and exposure of our ENRTF 2010 Work Program, Urban Wilderness Youth Outdoor Education, our current work program continues to gain statewide and nationwide attention as a model program for engaging youth in the outdoors. Since July 2013, the current program has received media coverage from Star Tribune, Pioneer Press, WCCO, KARE11, Brainerd Dispatch, Lakeland Public Television, Univision Minnesota, Trust for Public Lands, Crosby-Ironton Courier, and Minneapolis Public Schools iDream.tv. In addition to these, the program has also garnered national attention from numerous major media markets including the following: New York City, Philadelphia, Wilmington, Camden, Cincinnati, and Louisville. For a full list of articles and news clips, please visit: [www.wildernessinquiry.org/news/inthenews](http://www.wildernessinquiry.org/news/inthenews).

#### **Project Status as of:** June 30, 2014

- Multi-year, longitudinal tracking of program participants as well as a continuation of the University of Minnesota's Center for Applied Research and Educational Improvement evaluation of the UWCA program remains a priority. The second CAREI evaluation assessment will be published later this year, and those results will be available to all program partners and all interested parties, as well as posted on WI's Website.
- Additionally, we have engaged a University of Minnesota researcher to supplement CAREI's program evaluation with a definitive research component. Research findings and results will be disseminated appropriately as available.
- Thorough media coverage of events related to "Youth Outdoors: Mississippi River Education and Employment Opportunities" is archived and available on WI's Website: <[www.wildernessinquiry.org/inthenews](http://www.wildernessinquiry.org/inthenews)>. Local media coverage includes Star Tribune, Pioneer Press, WCCO, and KARE11.

#### **Project Status as of:** January 15, 2015

- Wilderness Inquiry continues to work with CAREI for program evaluation. CAREI is currently summarizing evaluative data from 2014 while planning for effective processes in 2015. Updates will be disseminated appropriately as available.
- We also continue to work with a University of Minnesota researcher to move forward with a research component.

**Project Status as of:** September 15, 2015

- 2014 CAREI findings are posted on Wilderness Inquiry’s evaluation website at [https://www.wildernessinquiry.org/wp-content/uploads/2015/05/2014-Brief-Report-with-Teacher-and-Student-Data\\_FINAL.pdf](https://www.wildernessinquiry.org/wp-content/uploads/2015/05/2014-Brief-Report-with-Teacher-and-Student-Data_FINAL.pdf).
- In addition, CAREI is finalizing a 5-year analysis of Urban Wilderness Canoe Adventures (UWCA) to provide a summary of best practices and overall outcomes. This will be posted with other UWCA evaluations at <https://www.wildernessinquiry.org/current-news/research-results/uwca-evaluations/>

**Final Report Summary:**

Overall, CAREI has been a critical partner in providing evaluative data for the UWCA. This data informs our practices with youth and environmental learning experiences. Key findings indicate UWCA participation is associated with growth in connection to others and the environment, competence when trying new things, and contribution to society and others. In addition, results suggest UWCA trip participation is also associated with increases in environmental awareness among students, especially when they are prepared by their teachers in advance of the trip.

**VI. PROJECT BUDGET SUMMARY:**

**A. ENRTF Budget:**

Budget Category	\$ Amount	Explanation
Personnel:	\$ 375,260	See summary of Personnel costs below.
Professional/Technical/Service Contracts:	\$ 0	
Equipment/Tools/Supplies:	\$ 15,000	All program supplies and equipment for participants and program volunteers. A detailed listing of anticipated needs for equipment and supplies is provided in Attachment A.
Capital Expenditures over \$3,500	\$ 24,000	Two 24' Voyageur Canoes
Travel Expenses in MN:	\$ 13,875	Vehicle rental, gas, and maintenance to transport staff and equipment to and from program events. For results one and two, we are requesting reimbursement of 50% of the cost of one rental vehicle for each result plus gas and maintenance. We are also requesting funds for busing students to and from trip sites. Other partners will provide funding to cover additional vehicle rental and transportation costs not covered through this grant.
Insurance	\$ 21,865	Students in this program will engage in canoeing, hiking, and other outdoor activities that have inherent risk. While Wilderness Inquiry has an excellent safety record, we must carry liability insurance for this program. We use a standard cost per service day (one person served for one day) to allocate insurance costs. The YO program represents 20% of our overall service days. The total dollar amount for this line represents 20% of our

		insurance cost.
<b>TOTAL ENRTF BUDGET:</b>	<b>\$450,000</b>	

**Personnel:**

- **YO Program Director, Chad Dayton (.35 FTE) – Est. wages \$53,750**  
Responsible for directing all aspects of the YO Project to ensure timely and high quality delivery of service and including oversight of hiring, training, scheduling, and supervising staff and volunteers, coordinating with schools, collecting and maintaining accurate demographic data, and executing all trip logistics.
- **YO Program Manager, Julie Storck (.15 FTE) – Est. wages \$10,000**  
Responsible for managing on the ground details for all events statewide. Supervises staff and ensures quality, safety and cost effectiveness of all events. Oversees the delivery of environmental education curricula and timely communication with school and other partners.
- **YO Outreach Coordinator, Josh Swedberg (.5 FTE) – Est. wages \$41,250**  
Coordinates the development and implementation of the environmental education curricula, coordinates partnership relationships with school partners. Supervises staff and ensures quality, safety and cost effectiveness of all events. Oversees the delivery of environmental education curricula and timely communication with school and other partners, and serves as a trip director for YO events and activities.
- **YO Program Coordinator, Erik Ophaug (.50 FTE) – Est. wages \$46,245**  
Coordinates the day-to-day details of the day and overnight river experiences, including hiring, training, scheduling, and supervising staff and volunteers conducting the events, coordinating with schools, collecting and maintaining accurate demographic tallies, coordinating all trip logistics including permits and reservations, transportation, gear, and food.
- **YO Outdoor Jobs Pipeline Coordinator, Megan O’Hara (.1 FTE) – Est. wages \$4,500**  
Responsible for developing and coordinating the summer youth employment initiatives.
- **YO Program Assistant, Alex Sitek (.4 FTE) – Est wages \$33,218**  
Responsible for entering participant registrations and demographic data, and collecting, entering, and coding project receipts. Provides assistance with scheduling and phone answering for the project.
- **WI Trail Guides, TBA (4 FTE) – Est. wages \$130,000**  
Responsible for conducting safe and enjoyable environmental educational canoe trips.
- **YO Youth Interns (.65 FTE) - Est. wages \$10,000**  
136 hour summer employment in an environmental job. \$500/youth x 20 youth = \$10,000. This is \$3.67 per hour. This amount will be matched by employers to bring hourly pay to minimum wage.
- **Benefits and taxes – Est. \$46,296**  
15% of wages.

**Explanation of Use of Classified Staff:** N/A

**Explanation of Capital Expenditures Greater Than \$3,500:**

As in all programs we do, safety will be our first priority in conducting YO activities. While our greatest safety precaution on Mississippi River trips is trained, professional staff, another key to safe and successful trips is the use of the 24' Voyageur canoes made by Northwest Canoe Company located in downtown St. Paul, MN These boats offer:

- Stability – These canoes are very stable and they can take very large waves.
- Power – Can accommodate up to ten people per boat, providing opportunities to participate for inexperienced or weak paddlers who simply would not be able to safely handle a tandem canoe.
- Efficient staff to student ratios – Because one staff member can paddle eight students, we are able to safely staff these outings with a ratio of 1 staff to 8 students.

In order to expand our capacity to serve an increasing number of youth in the program each year of the grant, we need to purchase two of these specially crafted boats. We will continue to use these boats for environmental education purposes for the life of the boats.

**Number of Full-time Equivalent (FTE) funded with this ENRTF appropriation: 6**

**Number of Full-time Equivalent (FTE) estimated to be funded through contracts with this ENRTF appropriation: N/A**

**B. Other Funds:**

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
<b>Non-state</b>			
Wilderness Inquiry in-kind support	\$246,674	\$0	For Executive staff time, program administration, transportation, web and internet development, and insurance.
National Park Service in-kind support	\$ 88,021	\$0	For curricula development and materials and Park Ranger salaries to provide environmental education curricula and interpretation on environmental education trips.
Mississippi River Fund in-kind	\$ 51,000	\$0	Additional grants to support the program.
<b>TOTAL OTHER FUNDS:</b>	<b>\$385,695</b>	<b>\$0</b>	

**VII. PROJECT STRATEGY:**

**A. Project Partners:** Mississippi National River and Recreation Area (National Park Service) and Mississippi River Fund. Neither partner is receiving monies from the appropriation.

**The National Park Service (NPS); Contact: Paul Labovitz, Superintendent** - NPS will provide educational content and Park Rangers on overnight trips. NPS will also provide opportunities for youth to perform internships in the Mississippi National River and Recreation Area. NPS will broker use agreements to facilitate use of the River with other land management agencies. NPS will provide significant in-kind personnel and funding to the project.

**The Mississippi River Fund; Contact: Katie Nyberg, Executive Director** - The Mississippi River Fund will provide private fundraising support, program promotion, public relations, and evaluation coordination.

**B. Project Impact and Long-term Strategy:** Minnesota has a proud heritage as a great outdoor state. That rich

history and culture is at risk unless we make large-scale and coordinated efforts to counteract the current trend of lack of engagement in outdoor pursuits such as fishing, hunting, camping, and canoeing by people under the age of 30. Our goal is to build public awareness, commitment, and enthusiasm for youth participating in outdoor pursuits, so that YO will be sustained long after this project period. We will seek to establish long-term funding options from foundations, corporations, individuals, events, and the Federal Government (National Park Service). By serving 10,000 to 15,000 youth per year, we aim to create a new generation of outdoor enthusiasts who understand and use canoe and boating routes and waterways throughout the State of MN.

**C. Spending History:**

<b>Funding Source</b>	<b>M.L. 2007 or FY08</b>	<b>M.L. 2008 or FY09</b>	<b>M.L. 2009 or FY10</b>	<b>M.L. 2010 or FY11</b>	<b>M.L. 2011 or FY12-13</b>
<b>STATE:</b>					
ENRTF				\$550,000 Subd. 8(d)	
<b>NON STATE:</b>					
Environmental Protection Agency				\$115,000	
National Park Service			\$45,983	\$125,000	\$107,522
Mississippi River Fund			\$86,391	\$126,700	\$ 32,500
Wilderness Inquiry (with funding from various sources)				\$185,750	\$390,190

**VIII. ACQUISITION/RESTORATION LIST: N/A**

**IX. MAP(S): N/A**

**X. RESEARCH ADDENDUM: N/A**

**XI. REPORTING REQUIREMENTS:**

Periodic work plan status update reports will be submitted not later than January 15, 2014, June 30, 2014, January 15, 2015, and December 31, 2015. A final report and associated products will be submitted between December 31, 2015 and January 15, 2016 as requested by the LCCMR.

**Final Attachment A: Budget Detail for M.L. 2013 Environment and Natural Resources Trust Fund Projects**

**Project Title:** Youth Outdoors (LCCMR ID: )

**Legal Citation:** M.L. 2013, Chp. 52, Sec. 2, Subd. 07b

**Project Manager:** Chad Dayton

**M.L. 2013 ENRTF Appropriation:** \$450,000

**Project Length and Completion Date:** 30 Months; Dec. 31, 2015

**Date of Update:** September 15, 2015

ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Balance	Activity 2 Budget	Amount Spent	Balance	Activity 3 Budget	Amount Spent	Balance	TOTAL BUDGET	TOTAL BALANCE
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BUDGET ITEM	<i>Canoeing, Fishing, and Introductory Outdoor Education Trips (6,000 youth)</i>			<i>Overnight Camping and Outdoor Education Trips (800 youth served)</i>			<i>Summer Employment in Environmental Jobs (20 youth served)</i>				
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<b>Personnel (Wages and Benefits)</b>	249,263	249,263	0	96,497	96,497	0	29,500	29,500	0	375,260	0
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YO Program Director (.35 FTE - Est. wages \$53,750)

YO Program Manager (.15 FTE - Est. wages \$10,000)

YO Outreach Coordinator (.5 FTE - Est. wages \$41,250)

YO Program Coordinator (.5 FTE - Est. wages \$46,245)

YO Outdoor Jobs Coordinator (.1 FTE - Est. wages \$4,500)

YO Program Assistant (.4 FTE - Est. wages \$33,218)

YO Trail Guides (4 FTE - Est. wages \$130,000)

YO Youth interns (.65 FTE - Est. wages \$10,000)

Benefits and Taxes (15% of wages - Est \$46,296)

<b>Equipment/Tools/Supplies:</b> (Examples of program supplies and equipment for participants and program volunteers are listed below. Please note that the items below are estimates of program supplies and equipment needed. We will bill for actual costs):	15,000	15,000	0							15,000	0
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• \$ 1,000 for life jackets (20 @ \$50 ea.)

• \$ 625 for paddles (20 @ \$31.25 ea.)

• \$ 5,625 for boat and equip. maintenance

• \$ 3,500 for staff and volunteer uniform

• \$ 1,500 for port-a-potty rental

• \$ 1,500 for fishing supplies (i.e. tackle, lures, poles)

• \$ 1,250 for tents (5 @ \$250 ea.)

<b>Capital expenditures over \$3,500</b>	24,000	24,000	0							24,000	0
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Two 24' Voyager Canoes @ \$12,000 each

<b>Travel expenses in Minnesota</b> - Vehicle rental, gas, and maintenance to transport staff and equipment to and from program events. For results one and two, we are requesting reimbursement of 50% of the cost of one rental vehicle for each result plus gas and maintenance. We are also requesting funds for busing students to and from trip sites. Other partners will provide funding to cover additional vehicle rental and transportation costs not covered through this grant.	11,100	11,100	0	2,775	2,775	0				13,875	0
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**Insurance** (for liability insurance; we use a standard cost per service day, our unit of measure, to allocate insurance costs. The YO program represents 20% of our overall service days)

	15,237	15,237	0	6,628	6,628	0			0	21,865	0
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<b>COLUMN TOTAL</b>	<b>\$314,600</b>	<b>\$314,600</b>	<b>\$0</b>	<b>\$105,900</b>	<b>\$105,900</b>	<b>\$0</b>	<b>\$29,500</b>	<b>\$29,500</b>	<b>\$0</b>	<b>\$450,000</b>	<b>\$0</b>
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# URBAN WILDERNESS CANOE ADVENTURES

## *Evaluation Brief*

SEPTEMBER 2015



Evaluation Team:  
Timothy D. Sheldon, PhD  
Elyse Farnsworth, MA  
Jason Johnson, MA

Center for Applied Research and Educational Improvement  
UNIVERSITY OF MINNESOTA

# Background and Purpose

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## *UWCA Program Overview*

The Urban Wilderness Canoe Adventures (UWCA) provides a continuum of experiences for youth and families that are designed to engage participants in a lifelong relationship with the outdoors, encourage environmental awareness, and foster leadership and skill development.

The UWCA seeks to achieve these goals through efforts and activities designed to reach and engage underserved, low and middle income urban youth and families.

The partnership between Wilderness Inquiry and the Center for Applied Research and Educational Improvement (CAREI) began in 2010. Since that time, CAREI evaluators have collected data from over 3,000 students, primarily in grades 5-8 (Appendix A). Evaluators have also surveyed or interviewed more than 60 teachers whose students participated in UWCA Mississippi River trips.

## *Past Findings*

Findings from all previous evaluations indicated that the UWCA river trips are an effective means of engaging youth with the outdoors and promoting environmental awareness. Our evaluations have found over 70% of participants:

- agreed they are more interested in the environment,
- worked as a member of a team,
- believed trip leaders were friendly,
- learned how to protect the environment , and
- gained new skills as a result of the trip.

Student responses to surveys underscore the importance of preparing students prior to the river trip and the positive impact trip participation has on students' connections to peers and adults, students' attitudes about science and the environment, and students' self-confidence and competence. Our findings also suggest that trip leaders play an important role in participant outcomes. These findings are very consistent with those found in the literature on outdoor and adventure education (Casson & Gillis, 1994; Norton & Watt, 2014; Passarelli, Hall, & Anderson, 2010).

## KEY FINDINGS

Our findings indicate that UWCA participation is associated with growth in:

- **Connection** to others
- **Competence** to do well and be successful
- **Contribution** to society and others
- **Environmental awareness**

Students who had positive perceptions about their trip leaders and who received preparation for the trip from their teachers showed more growth in these qualities than their peers.

Teachers' perspectives also corroborated the data collected from students across all five years of evaluation. For instance, over 90% of the teachers who responded to the teacher survey reported that trip activities were age-appropriate, and more than 95% reported that trip leaders were knowledgeable and friendly to all students. Teachers consistently reported that students on the trips worked well in groups, benefited academically as a result of the field experience, and exhibited a high level of engagement on the trip (i.e., paid attention, respected others, participated enthusiastically). One teacher wrote:

*This trip really brought students together. They had been bickering in the canoe, but after a while spontaneously began working as a team to paddle faster and they were laughing a lot.*

Teachers also said that they believed the students with the fewest outdoor experiences benefitted most from the river trip experiences and reported that students talked about the experience long after the field trip had ended.

## Our Current Work

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Our aim in this Evaluation Brief is to look across the data we have collected during the past five years. And, since we have a sufficient amount of data, we can look at these data in other ways to more fully understand the impact UWCA has had on participants.

In earlier evaluations, we attempted to measure the effectiveness of UWCA participation using attitudinal, academic, and behavioral outcomes, such as the impact of the program on participants' attitudes, test scores, and school attendance. The research literature and our past findings, however, suggested programs similar to the UWCA may have a greater influence on non-academic outcomes, such as student engagement, self-confidence, and competence, than on academic outcomes (e.g., Passarelli, Hall, & Anderson, 2010).

In 2013, we developed a new conceptual framework to assess the effectiveness of the UWCA river trip program using three important social and emotional factors: connection, competence, and contribution (Sheldon & Farnsworth, 2013). We wanted to see whether or not these factors might be better indicators of UWCA program efficacy. Also, because an important goal of UWCA trips is to increase participants' awareness of the environment, we wanted to determine whether or not trip participation correlated with environmental awareness as another indicator of program effectiveness.

## Research Questions

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This Evaluation Brief answers four important research questions:

- 1) Do group differences (e.g., gender, culture, or previous outdoor experience) correlate with participants' connection to others, ability to contribute to others and society, feelings of competence, and environmental awareness?
- 2) Do characteristics of trip leaders (e.g., if they are fun and/or friendly) correlate with participants' connection to others, ability to contribute to others and society, feelings of competence, and environmental awareness?
- 3) Does preparation and instruction before the trip correlate with participants' connection to others, ability to contribute to others and society, feelings of competence, and environmental awareness?
- 4) Does interest in science and valuing of nature correlate with participants' environmental awareness?

We used exploratory factor analysis to statistically group responses to questions from the student surveys to represent the constructs of connection, competence, contribution, and environmental awareness (for details, see Appendix B). These groupings as well as our definitions of *connection*, *competence*, *contribution*, and *environmental awareness* are presented below.

### CONNECTION

*Connection* is defined as interpersonal relationships between people (peers, teachers, trip leaders). Survey items that served as indicators of connection include the participants' self-report of connection to teachers and the extent to which they felt closer to others following the trip.

### COMPETENCE

*Competence* is defined as participants' belief that they can do things well and be successful in school and in interactions with others. Survey items that served as indicators of competence include: the participants' sense of belonging, ability to work well in groups, perception of their own good qualities, beliefs regarding the importance of earning good grades, and perception of their success at collecting and using data.

### CONTRIBUTION

*Contribution* is defined as the desire or intention to "give back" to others, including peers, the program, and society. Survey items that served as indicators for contribution include: an ability to work as a member of a team, development of the knowledge necessary to contribute to society by protecting the environment, the development of new skills, and the acquisition of knowledge about issues that affect the Mississippi River which may support a contribution to society.

### ENVIRONMENTAL AWARENESS

*Environmental awareness* is defined as knowledge of environmental issues as well as interest in environmental science. Survey items that served as indicators for environmental awareness include: the participants' interest in science, the environment, and hands-on learning opportunities.

## Methods

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### *Exploratory Factor Analysis*

To explore our framework more fully, we analyzed the data we collected from a large number of participants ( $N=680$ ) in 2013 and 2014. For this analysis, we created outcome variables that represent connection, contribution, competence, and environmental awareness by grouping survey items together using a method known as Exploratory Factor Analysis (EFA). Additional information about this procedure and the results of the analysis are found in Appendix B.

### *Regression Analyses*

We used a regression analysis to determine whether or not particular youth attributes or characteristics make them more or less likely to exhibit growth in competence, connection, and contribution. We also tested the extent to which the development of environmental awareness was predicted by group differences (e.g., gender, culture, or previous outdoor experience) and other factors such as trip preparation, family attitudes toward the environment, and student interest in science. These analyses were conducted using data from 232 youth who participated in the UWCA river trips in 2013 or 2014 for whom we had a complete dataset (both pre- and post-trip survey). Additional information about the sample used in these analyses and the methodology are found in Appendix B.

## Results

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Our intentions were to determine whether or not certain youth characteristics correlate with the development of UWCA participants' connection, competence, contribution, and environmental awareness. Results are discussed below. A complete table of results is included in Appendix C.

### *Group Differences*

Group differences (e.g., gender, culture, or previous outdoor experience) were not correlated to the development of connection or contribution. Significant differences were found, however, in the development of competence based on both ethnicity and previous experience. We found that students who identified themselves as African showed more growth in competence when compared to their White, Hispanic, and African American peers. While this relationship is not causal, it is important to consider the role ethnicity and culture may play in students who identify themselves as African.

Further, we observed no significant growth in competence for students who had already participated in three or more outdoor experiences. One possible explanation for this finding is that the participants attained an "experience ceiling" for growth in this quality after two or more experiences. If this is the case, students who have participated more than two times in the river trip may need novel experiences to grow in areas of competence.

### ***Trip Preparation and Trip Leaders***

In addition to checking for group differences, we wanted to better understand the role adults play in ensuring positive outcomes for participants. We posit that adults (teachers and trip leaders) play an essential role in developing connection, contribution, and competence in youth participants. We tested whether or not it was important for teachers to have prepared their students for the trip using the pre-trip lessons and whether or not the trip leaders influenced participants' outcomes. We found that pre-trip preparation and engaging trip leaders both correlated strongly with higher participation benefits in connection, contribution, and competence.

We found that participants who believed their trip leaders were “fun” and “friendly” demonstrated significantly greater gains in connection, contribution, and competence. Likewise, participants who were prepared for the UWCA experience prior to the river trip showed more growth in connection, contribution, and competence after the trip as compared to their peers who were not prepared prior to the trip. These results support the need for ensuring that trips are led by high quality leaders and that teachers prepare their students for the trip experience via class lessons.

### ***Environmental Awareness***

We found that participant growth in environmental awareness was not strongly correlated with student characteristics (e.g., gender, culture, or previous outdoor experience). However, participants who were interested in science before the trip and whose teachers prepared them for the trip were more likely to show growth in environmental awareness than their peers. Likewise, participants who said their families thought it was important to learn about nature showed more growth in environmental awareness following trip participation. Notably, an interest in participating in hands-on learning experiences did not significantly correlate with the participants' development of environmental awareness.

### ***What we believed before, but now we have strong evidence of...***

- Trip leaders and preparation prior to the field experience are clearly key to the overall experience. Together, fun and friendly trip leaders and pre-trip preparation during classroom lessons explain a statistically significant difference in the experience between participants who demonstrated significant growth in connection, contribution, competence, and environmental awareness and their peers who did not show significant growth in these characteristics.
- Students who have been on these or similar trips more than three times experience a tapering off of growth in competence; thus, we infer there may be an “experience ceiling.”
- Student characteristics (i.e., gender and race/ethnicity) do not seem to be significant factors in participants' development of connection, contribution, or environmental awareness. There *is* a slight, statistically significant, correlation with race/ethnicity on competence. Students who identify themselves as African demonstrate a larger growth in competence when compared to their non-African peers.

## Discussion and Implications

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The results of our more rigorous analyses support conclusions of earlier evaluations. These results suggest UWCA river trip participation has important implications for the development of essential social and emotional competencies.

Below are some considerations and implications of the results of these analyses.

1. **Trip leaders matter.** Impact of the trip leader has the largest influence on all three factors. That is, students who identified the trip leader as fun and friendly reported higher increases in all three factors (connection, competence, contribution), and the trip leader was the largest predictor of gains in competence (26% of the variance), connection (25% of the variance), and contribution (45% of the variance).
2. **Pre-trip preparation.** Student perceptions of how well they were prepared for the trip were also correlated with student gains in competence, connection, and contribution. Pre-trip preparation by teachers explains additional variance above and beyond the impact of trip leader on competence (2.5%), connection (10.7%), and contribution (7.2%).
3. **Together both Trip Leader and Preparation** explained nearly 29% of the variance in competence, 36% of the variance in connection, and 52% of the variance in contribution.
4. **Environmental awareness.** Pre-trip preparation also explained the largest and statistically significant amount of variance in environmental awareness.
5. **The environmental awareness factor increased** for students who indicated higher levels of pre-trip preparation, interest in science, and family interest in nature. This combination of factors predicted the greatest increase in environmental awareness among students who participated on the trip.
6. **Persisting environmental interest.** 80% of students indicated increased environmental interest after the river experience. And over 80% of students reported learning how to protect the environment and learning about issues that affect the Mississippi River.
7. **Enhancing teacher and district buy-in** to prepare students for environmental education experiences is an essential factor in increasing the program's impact on youth participants.
8. **Teamwork.** Nearly 90% of participants reported working with others as a team.
9. **Returning to the Mississippi.** In surveys administered in 2010 and 2012, approximately 70% of the students indicated that they would like to canoe on the Mississippi again.
10. **The General Wilderness Program Assessment Inventory.** Our preliminary statistical analysis suggests that CAREI's survey is a valid and useful instrument. Additional item analysis and possible revisions could further improve its usefulness.

## **Appendix A. Participant Descriptive Statistics**

- a. Participant Data Summary Table 2010-2014
- b. Current Evaluation Sample Summary Table

## **Appendix B. Expanded Information on Evaluation Methodology**

- a. Exploratory Factor Analysis
- b. Regression Analyses

## **Appendix C. Regression Results**

## **Appendix D. References**

## Appendix A. Participant Descriptive Statistics

Table 1: UWCA Demographics Frequencies for all students

Demographics	Year 2010		Year 2012			Year 2013			Year 2014			All Observations
	Post (N= 329)	Total (N= 329)	Pre (N= 665)	Post (N= 408)	Total (N= 1073)	Pre (N= 299)	Post (N= 303)	Total (N= 602)	Pre (N= 583)	Post (N= 377)	Total (N= 960)	Grand Total (N= 2964)
<b>Gender</b>												
Female	160	160	311	114	425	131	132	263	261	165	426	1274
Male	147	147	301	106	407	168	171	339	303	186	489	1382
Missing	22	22	53	188	241	0	0	0	19	26	45	308
<b>Ethnicity</b>												
African	--	--	24	8	32	15	18	33	44	28	72	137
African American	--	--	191	59	250	63	63	126	155	103	258	634
American Indian	--	--	25	9	34	9	7	16	20	11	31	81
Asian	--	--	57	29	86	26	27	53	33	24	57	196
Hispanic	--	--	125	50	175	72	90	162	134	84	218	555
White	--	--	63	33	96	17	18	35	42	23	65	196
Other	--	--	84	21	105	30	16	46	62	38	100	251
Multiple Ethnicity	--	--	55	19	74	61	58	119	78	44	122	315
Blank	--	--	41	15	56	6	6	12	15	22	37	105
Missing	329	329	0	165	165	0	0	0	0	0	0	494
<b>Grade Level</b>												
5th	49	49	5	1	6							55
6th	95	95	153	49	202							297
7th	101	101	257	111	368							469
8th	63	63	198	65	263							326
9th	1	1	5	1	6							7
10th	--	--	3	1	4							4
11th	--	--	0	0	0							0
12th	--	--	7	1	8							8

Table 2. Demographic characteristics of sample population used for regression analyses

Variable	2013	2014	Total
<b>Gender</b>			
Female	76	26	102
Male	103	27	130
<b>Race/Ethnicity</b>			
African	15	6	21
African American	50	14	64
Asian	22	2	24
Hispanic	78	22	100
White	14	9	23
<b>Trip Experience</b>			
None	40	7	47
One	105	28	133
Two	21	13	34
Three+	13	5	18

## Appendix B. Expanded Information on Evaluation Methodology

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### *Exploratory Factor Analysis*

During each year of the evaluation (2010-2014), a student survey was administered before and after the UWCA river trip; however, only the 2013 and 2014 survey versions were identical. Thus, Exploratory Factor Analysis (EFA) was conducted on items contained in the post-trip survey for only the 2013 and 2014 data. We felt this ensured consistency while exceeding the minimum threshold of cases needed to conduct this type of analysis (i.e., sample size  $N=500$ ; Tabachnick & Fidell, 2013).

Students ( $N=680$ ) were presented with 25 statements and asked to indicate the extent to which they agreed or disagreed with each statement on a four-point scale with “1” indicating strongly disagree, “2” indicating slightly disagree, “3” indicating slightly agree, and “4” indicating strongly agree. Twelve of these items seemed to align well with the constructs of competence, connection, and contribution and were included in our analyses to create the outcome variables.

### *Regression Analyses*

Once our outcomes (i.e., competence, connection, and contribution) were created, we ran regression analyses to determine what participant characteristics and other factors (e.g., trip preparation and trip leader qualities) were associated with participants’ development of competence, connection, contribution, and environmental awareness. Because some of the predictors came from the student responses on items in the pre-trip survey, only those students ( $N=232$ ) who responded to both the pre-trip and post-trip surveys and answered all of the questions in both surveys were included in the regression analyses. The predictor variables consisted of a composite variable measuring student perception of the trip leader, a composite measuring student perception of preparedness for the trip, and a family attitude variable measured by the extent to which students reported whether or not their family believed learning about nature is important.

## Appendix C. Regression Results

Table 3. Regression Results for Four Factors

Variable	Competence				Connection				Contribution				Environmental Awareness			
	<i>B</i>	<i>SE B</i>	<i>df</i>	<i>p</i>	<i>B</i>	<i>SE B</i>	<i>df</i>	<i>p</i>	<i>B</i>	<i>SE B</i>	<i>df</i>	<i>p</i>	<i>B</i>	<i>SE B</i>	<i>df</i>	<i>p</i>
<i>Intercept</i>	1.71	0.21	221	0.000***	0.42	0.28	221	0.139	0.61	0.22	221	0.006**	0.75	0.22	220	0.001**
<i>Race/Ethnicity (White)</i>																
<i>African</i>	0.22	0.15	221	0.138	-0.19	0.20	221	0.342	0.13	0.15	221	0.390	0.03	0.16	220	0.828
<i>African American</i>	0.14	0.12	221	0.233	-0.05	0.16	221	0.774	0.05	0.12	221	0.670	0.13	0.13	220	0.301
<i>Asian</i>	>0.01	0.14	221	0.980	0.06	0.19	221	0.765	-0.09	0.15	221	0.557	0.05	0.15	220	0.753
<i>Hispanic</i>	0.08	0.11	221	0.467	0.12	0.15	221	0.445	0.02	0.12	221	0.887	0.12	0.12	220	0.303
<i>Gender (Male)</i>																
<i>Female</i>	0.02	0.06	221	0.772	-0.03	0.09	221	0.703	0.08	0.07	221	0.232	0.07	0.07	220	0.300
<i>Previous Experience (None)</i>																
<i>One</i>	-0.02	0.08	221	0.849	-0.04	0.11	221	0.696	0.01	0.09	221	0.914	0.04	0.09	220	0.636
<i>Two</i>	0.17	0.11	221	0.128	0.12	0.15	221	0.434	0.08	0.12	221	0.492	0.02	0.12	220	0.853
<i>Three or more</i>	-0.30	0.14	221	0.028*	0.19	0.18	221	0.302	-0.03	0.14	221	0.837	0.09	0.14	220	0.546
<i>Preparation</i>	0.14	0.05	221	0.005**	0.42	0.07	221	0.000***	0.30	0.05	221	0.000***	0.457	0.05	220	0.000***
<i>Trip Leader</i>	0.29	0.05	221	0.000***	0.36	0.06	221	0.000***	0.50	0.05	221	0.000***				
<i>Pre-trip Science Interest</i>													0.15	0.04	220	0.000***
<i>Family</i>													0.12	0.04	220	0.004**
<i>N</i>				232				232				232				232
<i>R<sup>2</sup></i>				0.288***				0.361***				0.519***				0.418***

Note: \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

Note:  $R^2$  denotes the explained variance of **Preparation** and **Trip Leader** combined in our final model.

## Appendix D. References

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