

# Urban Wilderness Canoe Adventures Program

Brief Evaluation Report 2014

**Evaluation Team**

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# Overview

This brief evaluation report summarizes the findings of a preliminary analysis of the data collected from Minneapolis Public Schools (MPS) middle school students who participated in the Urban Wilderness Canoe Adventures (UWCA) program during summer 2014. It also summarizes the responses of teachers who accompanied youth on those field trips. These are preliminary findings only. A more comprehensive analysis of these data will be presented later in the year.

## Student Survey Highlights

### SURVEY INSTRUMENT AND PROCEDURE

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The student pre-trip survey is an 18-item survey designed to collect middle school students' attitudes about the outdoors, science, their prior outdoor experiences, as well as some demographic data. The pre-trip survey was administered to all students grades 5-7, who were both, enrolled in the MPS summer sessions and were scheduled to participate in a UWCA Mississippi River during the 2014 summer session (about 1,200 youth). Pre-trip surveys were administered as a paper and pencil survey during the first week of summer session.

The post-trip student survey is a 31-item paper survey designed to collect middle school students' attitudes related to a six-hour Mississippi River field trip. The survey also contains four demographic items and three science content items.

### PARTICIPANT INFORMATION

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Before the program began, the evaluation team printed and distributed 1,200 pre- and post-trip surveys to the four MPS schools participating in the summer UWCA program. At the conclusion of the program over 600 pre-trip surveys (about one-half) and over 400 post-trip surveys (about one-third) were returned for analysis. The tables that follow indicate that the student samples obtained from the pre- and post-trip surveys are quite similar. For example, we observe roughly the same percentages of female and male participants on the pre- and post-trip surveys in *Table 1. Gender*.

*Table 1. Gender*

<b>Gender</b>	<b>Pre (n=616)</b>	<b>Post (n=364)</b>
Male	312 (54%)	194 (54%)
Female	263 (46%)	170 (47%)

In *Table 2. Ethnicity*, we see the two largest groups participants identified themselves as were African American (33% POST) and Hispanic/Latino (24% POST). Again, the ethnic composition of post-trip survey participants was similar to the pre-trip survey participants.

*Table 2. Ethnicity*

<b>Ethnicity</b>	<b>Pre (n=616)</b>	<b>Post (n=403)</b>
African	56 (9%)	35 (9%)
African American	201 (33%)	135 (34%)
American Indian	54 (9%)	31 (8%)
Asian/Asian American	45 (7%)	31 (8%)
Hispanic/Latino	157 (26%)	97 (24%)
White	85 (14%)	52 (13%)
Other	101 (16%)	63 (16%)

## OPINION ITEMS ON BOTH PRE- AND POST- TRIP SURVEYS

The levels of agreement on the 12 Personal Views opinion items were similar for the pre- and post-trip surveys, varying by only a few percentage points. The eight items that we would expect to have the most agreement (items: 1, 2, 3, 5, 6, 7, 10, & 12) were observed to have the highest level of agreement.

*Table 3. Personal Views*

<b>Item</b>	<b>n</b>	<b>Pre-Trip Survey Agreement</b>	<b>n</b>	<b>Post-Trip Survey Agreement</b>
1. When I am in school, I feel like I belong.	585	80%	383	78%
2. I like learning in small groups.	580	78%	387	78%
3. I prefer learning through hands-on activities.	575	80%	380	83%
4. Environmental problems are not as bad as most people think.	566	58%	378	59%
5. I feel that I have a number of good qualities.	570	85%	380	83%
6. I like learning about science.	573	75%	380	73%
7. It is important for me to get good grades.	566	89%	376	90%
8. My family doesn't like to do outdoor activities.	567	27%	381	33%
9. I am afraid of getting sick or hurt while canoeing or walking in the woods.	568	39%	381	37%
10. My parents think it is important to learn about nature.	565	75%	375	76%
11. School is harder for me than it is for my classmates.	561	35%	372	37%
12. I am skilled at observing and recording data.	564	69%	377	66%

## ONLY POST-SURVEY ITEMS

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### Opinion Items

Six of every ten youth agreed on nearly all (11 of 13) post-trip items with the highest frequency of agreement (86%) on the item, “Trip leaders were friendly to all students.” Two items with lower levels of agreement—still about half—were: “I studied about the Mississippi River before coming on this trip,” and “This was a new activity for me; I had never done anything like it before.”

*Table 4. Post Trip Views*

<b>Item</b>	<b><i>n</i></b>	<b>Agreement Rate (% responded strongly or slightly agree)</b>
I studied about the Mississippi River before coming on this trip.	364	55%
My teachers prepared me for what would happen on this trip.	366	77%
Because of this trip, I am more interested in the environment.	358	66%
This was a new activity for me; I had never done anything like it before.	355	49%
On the trip I worked with others as a team.	354	84%
Because of the trip, I feel closer to others—even people who weren’t my friends.	359	63%
Trip leaders were friendly to all students.	358	86%
Trip leaders made learning fun.	358	75%
Because of the trip, I feel more connected to my teachers.	358	61%
I have learned things I can do to help protect the environment on this trip.	356	79%
I learned new skills.	356	74%
I want to continue studying about the science, because of the trip.	359	65%
On the trip, I learned the environmental issues that affect the Mississippi River.	351	83%

## Knowledge Items

Four of every ten trip-participants answered the post-trip science content questions correctly.

*Table 5. Knowledge Items*

<b>Item</b>	<b><i>n</i></b>	<b>Percent Correct (% of students that answered correctly)</b>
When we see trash near the storm drains that empty into the river...	324	44%
An indicator species is...	319	57%
The presence of high levels of phosphorus in a river...	331	40%

# Teacher Survey Highlights

## SURVEY INSTRUMENT AND PROCEDURE

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The post-trip teacher survey is a short, 15-item survey designed to collect middle school teachers' perceptions and attitudes related to a six-hour Mississippi River field trip. The survey also gathers some teacher demographic data.

The teacher post-trip survey was designed as an online survey and was administered to all 5<sup>th</sup> through 7<sup>th</sup> grade teachers who participated in the MPS summer sessions and the UWCA Mississippi River Trip program in 2014 ( $N=40$ ). The evaluation team sent a web link to teacher-participants shortly after the summer session ended. Teachers were informed that those who completed the survey would be entered into a drawing for Wilderness Inquiry clothing and trip discounts to encourage participation. The link to the survey was closed on August 1, 2014.

## PARTICIPANT INFORMATION

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Twenty-one teachers (53%) completed the survey before it closed on August 1, 2014. Each of the summer school program sites and all grade levels were represented by the teacher respondents. Analysis of responses demonstrate that summer teachers held a variety of teaching licensures, including: special education, English as a second language, social studies, language arts, science, and music; notably, only one respondent's teaching licensure was in science. Finally, over half of the teachers reported being "intermediate canoeists."

*Table 6. Teacher Demographics*

<b>Teacher Demographic</b>	<b>Response Rate</b>
<b>Summer Site (<math>n=21</math>)</b>	
Northeast Middle School	6
Lucy Laney	7
Ramsey	4
Seward	4
<b>Grade Level* (<math>n=21</math>)</b>	
Grade 5	8
Grade 6	15
Grade 7	8
<b>Canoe Ability (<math>n=21</math>)</b>	
First-timer	4
Intermediate canoeist	12
Experienced canoeist	5
Expert Canoeist	0

\*Note: Some respondents taught more than one grade level.

## BELIEFS AND ATTITUDES ABOUT THE TRIP (N=21)

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Teachers' responses to the belief and attitude items from the post-trip survey are categorized into six themes that include how teachers report the trip impacted: student engagement, teamwork, hands-on learning, environmental awareness, participation in a new experience, and trip quality.

### Student Engagement

A majority of teachers (19/21) believed their students were engaged in the trip activities, and trip participation improved their students' engagement in learning.

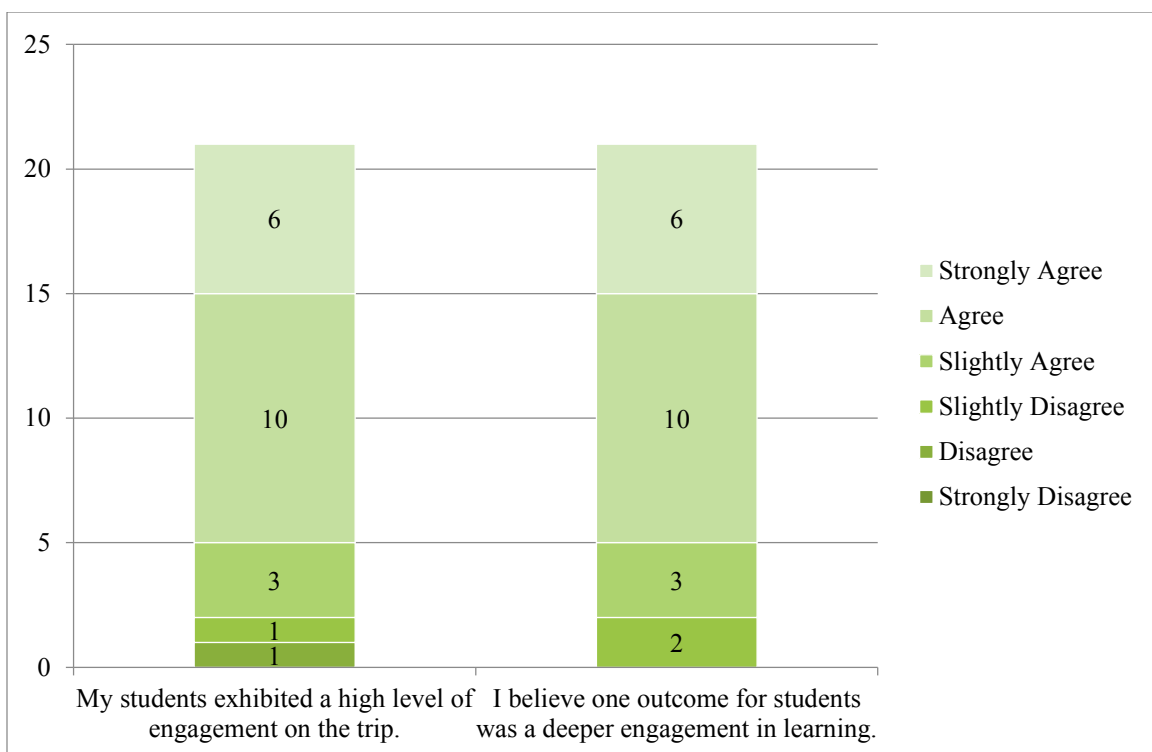


Figure 1. Teacher Perceptions of Student Engagement

## Teamwork

Twenty of 21 teachers reported their students effectively worked as members of team during the trip.

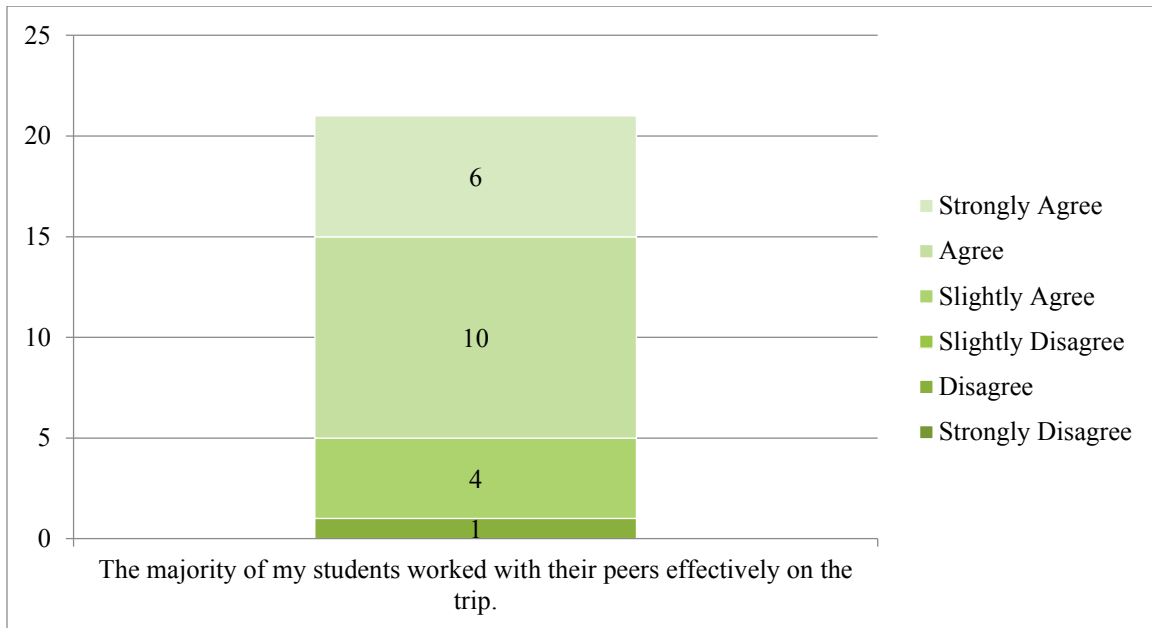


Figure 2. Teacher Perceptions of Student Collaboration

## Hands-on Learning

All teachers agreed hands-on learning opportunities like the UWCA river trip are an optimal way to learn about science, with 14 of 21 responding “Strongly Agree.”

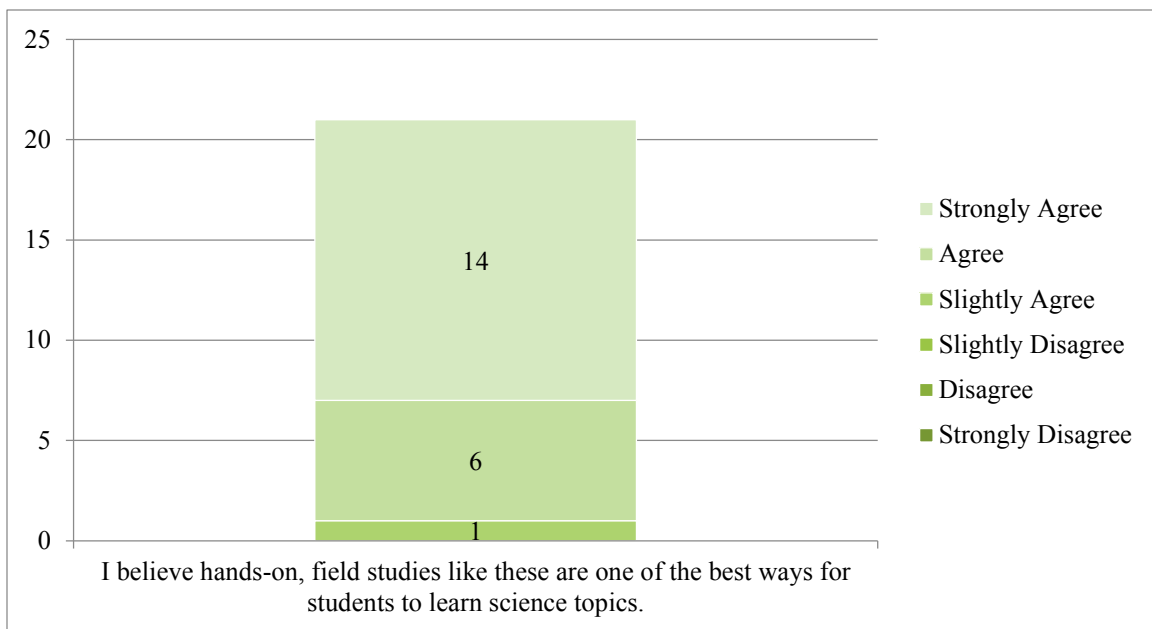


Figure 3. Teacher Perceptions of Hands-on Learning



## Environmental Awareness

Overall, teachers (21/21) believed students environmental awareness improved through trip participation.

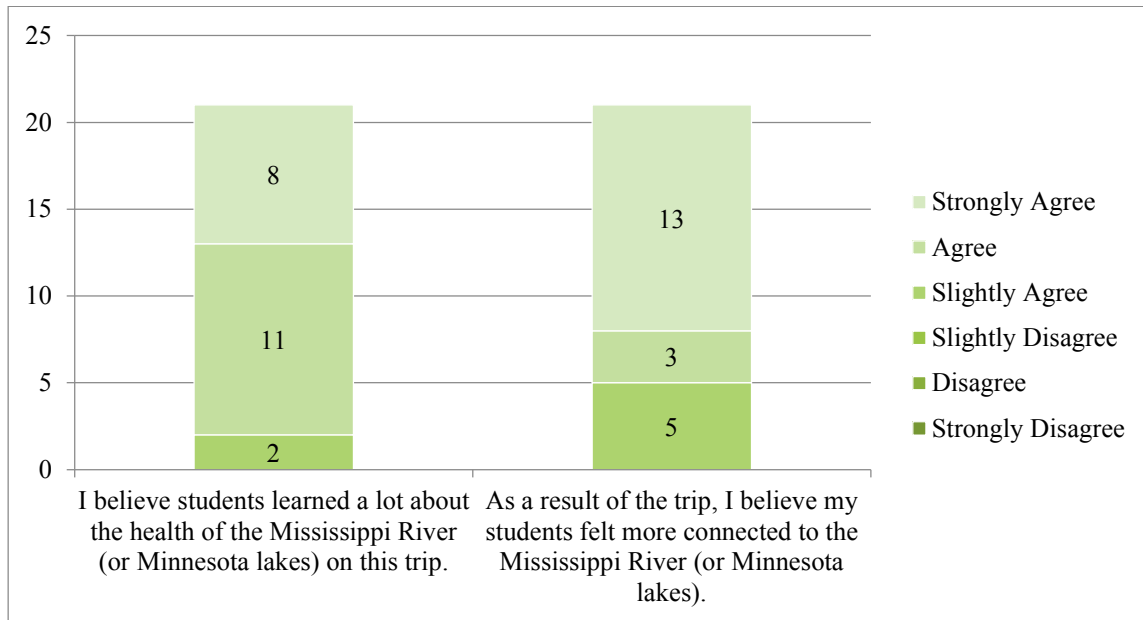


Figure 4. Teacher Perceptions about Environment

## Participation in a New Experience

Most teachers (20/21) agreed their students learned new skills while on the river trip, and all (21/21) believed students who had less exposure to outdoor activities benefited the most from the new experiences.

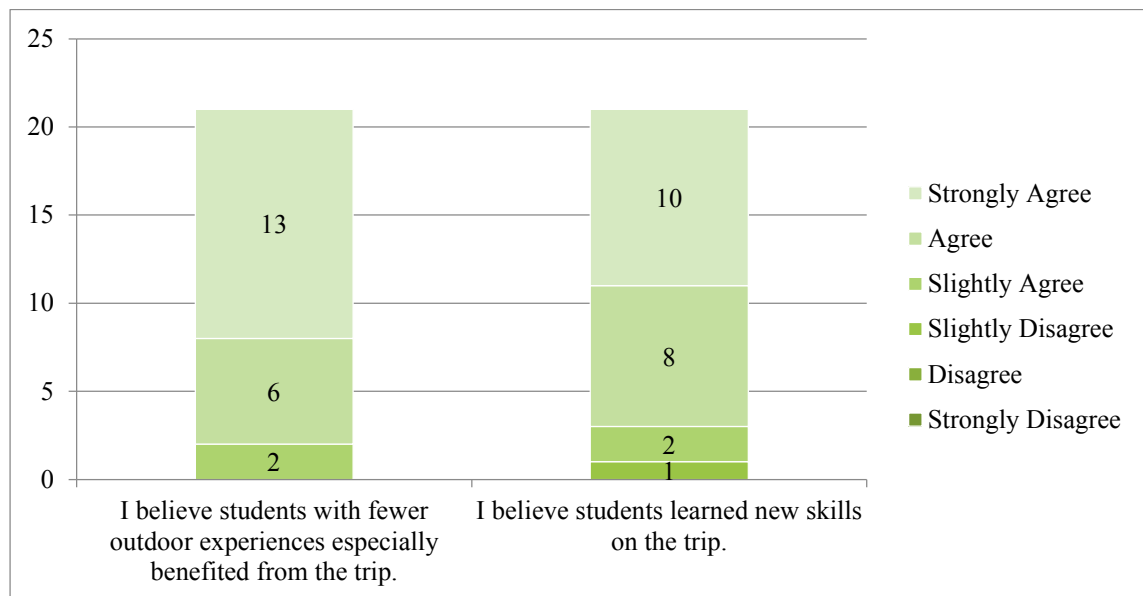


Figure 5. Teacher Perceptions about Student Experiences

## Trip Quality

All teachers believed the trip was a valuable experience for students, with 14 of 21 responding “Strongly Agree” when asked about the overall value of trip participation. Teachers also reported the trip leaders were both friendly (19/21) and knowledgeable (20/21), and the trip was well organized (19/20).

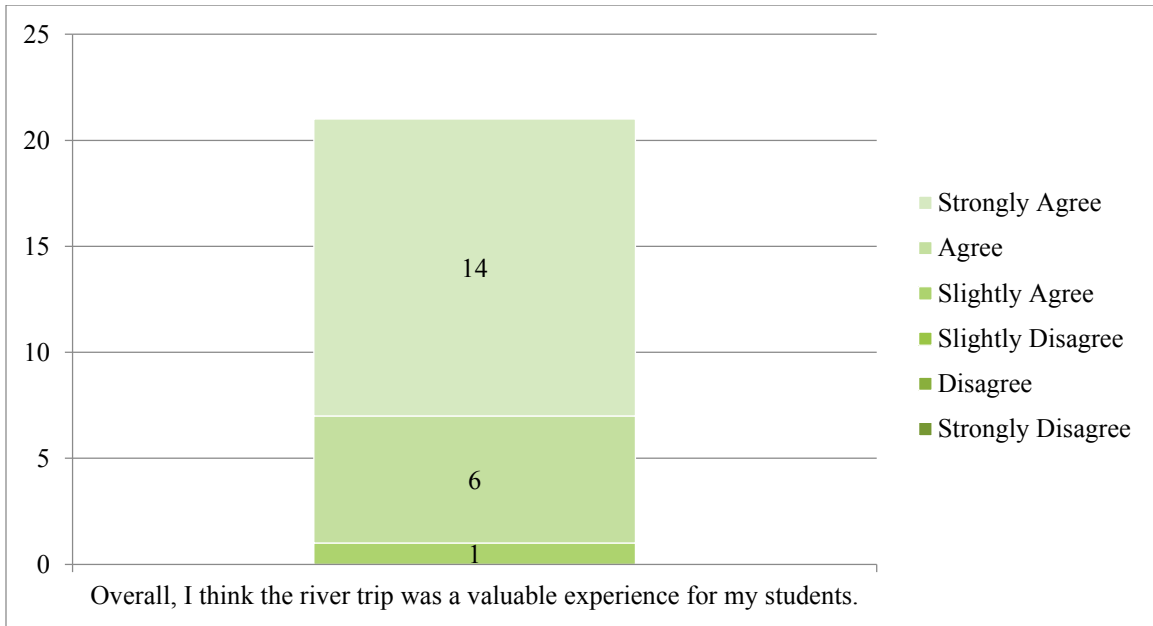


Figure 6. Teachers' Overall Perceptions of Trip

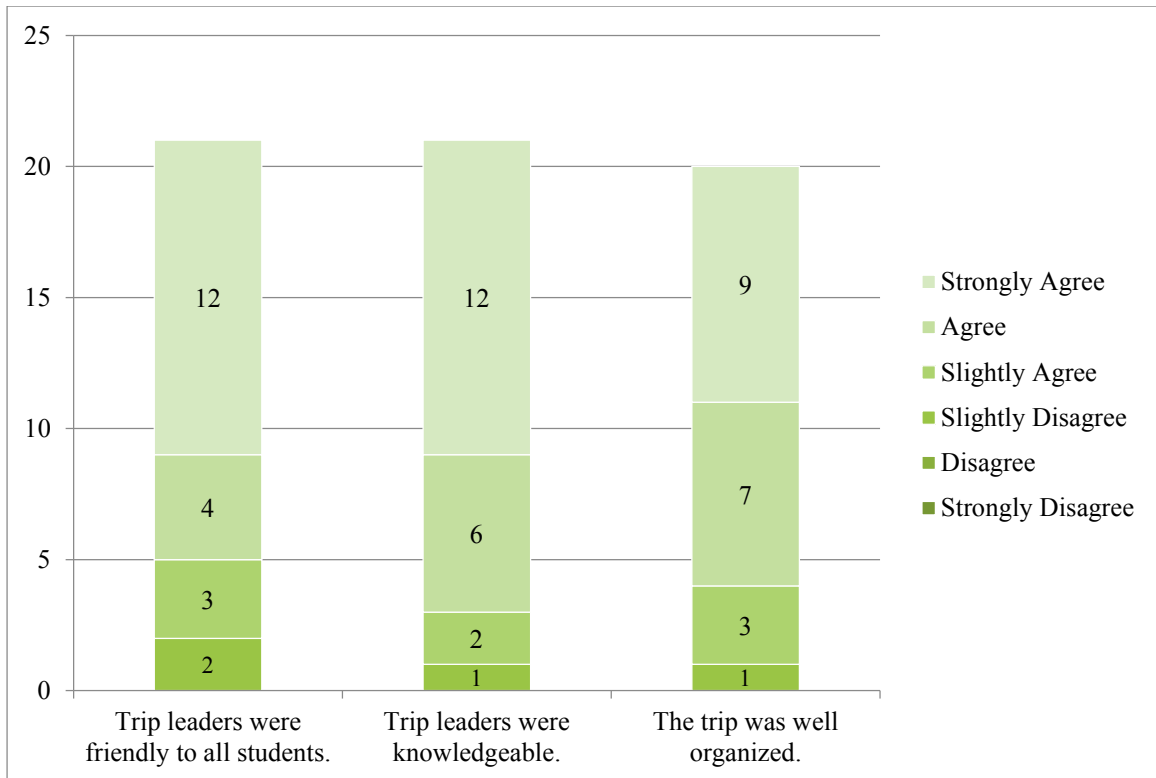


Figure 7. Teachers' Perceptions of Trip Leaders and Logistics

## BIGGEST TRIP SURPRISE (N= 14)

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One open-ended item addressed what surprised teachers most about the UWCA trip. Fourteen teachers provided a response to this item. When asked to complete the sentence “What surprised me most about the river trip was...,” teachers’ responses fell into the three themes reflected below.

*Table 7. Biggest Surprises According to Teachers*

<b>Theme</b>	<b>Response Rate</b>	<b>Sample Responses</b>
Student engagement and participation	5 of 14	One teacher completed the sentence with, “...the various activities to keep the students (and me) engaged,” while another noted, “[S]tudents were as willing to participate.”
Reference to ecology	5 of 14	One teacher said, “The quality of the water in Wirth Lake. I expected it to be much worse!”  Similarly, another teacher completed the sentence prompt with “the amount of different organisms the students caught in the nets.”
Quality of trip activities	5 or 14	One teacher completed the prompt with “how well organized it [the trip] was,” while another teacher reported “the variety of active [activities] for the students” was most surprising.

## GREATEST BENEFIT OF THE TRIP (N= 15)

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Another open-ended item asked teachers to complete the sentence, “I believe that the greatest benefit to students that a trip like this offers is...” The teachers’ responses were categorized into the three themes listed in the table below.

*Table 8. Greatest Benefits According to Teachers*

Theme	Response Rate	Sample Responses
Trip was a new experience for students	4 of 15	One teacher completed the sentence with, “...outdoor activities they may not have experienced yet,” and another said, “gaining confidence to try new things.”
Accessibility of local parks and outdoor spaces	5 of 15	One teacher said, “...for them [the students] to understand the great things that they can find in their own backyard.” Another teacher completed the sentence prompt with “[G]etting to know [our] parks systems, and that they are accessible to everyone.”
Alignment of hands-on learning with classroom instruction	7 of 15	One teacher completed the prompt with “an opportunity to apply what they [the students] are learning and to connect with the outdoors,” while another teacher reported “[a] chance to explore what they [the students] are learning hands-on and see it in the real world!”

The following responses did not align with the three themes that emerged from the responses to the item regarding the greatest benefit of the trip, but seem to include relevant, helpful information for evaluating the impact of the UWCA trip.

- One teacher noted the greatest benefit of trip participation was seeing students “believing in themselves as learners.”
- Another teacher believed the greatest benefit was that, “[s]tudents were interested in and engaged with their community.”
- Finally, in addition to completing the sentence prompt, one teacher added, “I would like to see a different trip offered for those students attending the trip for the third year in a row.” This comment may be helpful when planning for future experiences.

## ADDITIONAL COMMENTS (N= 11)

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A final open-ended item instructed teachers to “Please share any final comments about the overall program (lessons and trip).” The responses to this item are organized into the three themes seen below.

*Table 9.* Additional Teacher Comments

<b>Theme</b>	<b>Response Rate</b>	<b>Sample Responses</b>
Trip was a positive, enjoyable experience	7 of 11	Several teachers made comments like “[h]ad a great time” and “[p]lease keep this connection going for the future.”
Suggestions for changes to future trips	4 of 11	The suggestions included, “[it] would have been beneficial to have smaller groups of students...I also think some of the activities might be more engaging with a smaller group, because then the kids have more accountability to participate!,” have teachers “pre-group the students the day before,” and the trip leaders “need to have more patience.”
Student engagement in a new, outdoor experience	2 of 11	One teacher commented, “It was a nice change for the students to get outside and explore the world around them in a way many of them have never done before.”

# Summary and Takeaways

A summary of the main points and takeaways from the student and teacher survey analyses are provided below.

## STUDENT SURVEYS

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- More than 400 middle school post-trip surveys were analyzed.
  - Approximately half (53% POST) of participants were male.
  - The two largest self-identified groups were African American (33% POST) and Hispanic/Latino (24% POST).
- Response patterns to the 12 opinion items were very similar in pre- and post-trip surveys.
  - Agreement rates were over 50% on both pre- and post-trip surveys for nine of 12 questions.
  - The three items with <50% agreement were:
    - My family doesn't like to do outdoor activities.
    - I am afraid of getting sick or hurt while canoeing or walking in the woods.
    - School is harder for me than it is for my classmates.
- Agreement was above 50% for 11 of the 12 opinion items included only on the post-trip survey
  - The highest agreement rate (86%) was in response to the item “Trip leaders were friendly to all students”
  - The lowest agreement rate (49%) was in response to the item “This was a new activity; I had never done anything like it before.”
  - Nearly three-quarters (74%) of students agreed with the statement “I learned new skills.”
- At least four out of ten students responded to each of the three knowledge items correctly.
  - The item “An indicator species is an organism that may help a scientist know” had the highest proportion of students scoring correctly (57%).
  - The third knowledge item, “the presence of high levels of phosphorus in a river may be a sign of” appeared to be the most difficult of the three, as the percentage of students who answered correctly (40%) was lowest for this knowledge item.

## TEACHER SURVEYS

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- A total of 21 teachers completed the teacher survey.
  - More grade 6 teachers (n=15) completed the survey than grade 5 (n=8) or grade 7 (n=8) teachers.
  - About half (12 of 21) of teachers considered themselves to be intermediate canoeists.
- All teachers believed that the trip was a valuable experience for students.
- The majority (19 of 21) of teachers believed students were engaged in trip activities, and that trip participation improved student engagement in learning.
- Nearly all (20 of 21) teachers reported that their students collaborated as a team on the trip.
- All teachers agreed that hands-on learning is an optimal way to learn about science.

- Most teachers (20 of 21) agreed that students learned new skills, and all teachers agreed that the experience was particularly beneficial for students with little outdoor experience.
- Teachers were surprised by their students' level of engagement, the ecological aspects of the trip, and the overall quality of the trip activities.
- Teachers made some suggestions for future improvements, such as having smaller groups of students that were pre-determined by the teacher.

## 2014 MIDDLE SCHOOL UWCA SURVEY MEANS

Average agreement ratings for pre- and post- trip middle school student surveys are provided in *Table 10*. Numerical ratings correspond with agreement designations as follows: 1=*strongly disagree*, 2=*slightly disagree*, 3=*slightly agree*, 4=*strongly agree*. Thus, a rating of 3.5 falls midway between *slightly agree* and *strongly agree*.

*Table 10.* Pre- and Post-trip survey mean responses for agreement items

Item	<i>n</i>	Mean (Pre)	<i>n</i>	Mean (Post)
When I'm in school I feel like I belong	585	3.07	383	3.03
I like learning in small groups	580	3.12	387	3.10
I prefer learning through hands-on activities	575	3.20	380	3.26
Environmental problems are not as bad as people think	566	2.59	378	2.58
I feel that I have a number of good qualities	570	3.18	380	3.19
I like learning about science	573	3.08	380	3.02
It is important for me to get good grades	566	3.58	376	3.59
My family doesn't like to do outdoor activities	567	1.87	381	2.06
I am afraid of getting sick or hurt while canoeing or walking in the woods	568	2.18	378	2.12
My parents think it is important to learn about nature	565	3.02	375	3.02
School is harder for me than it is for my classmates	561	2.18	372	2.22
I am skilled at observing and recording data	564	2.85	377	2.78
I studied about the Mississippi River before coming on this trip	<i>a</i>	<i>a</i>	364	2.55
My teachers prepared me for what would happen on this trip	<i>a</i>	<i>a</i>	366	3.15
Because of this trip, I am more interested in the environment	<i>a</i>	<i>a</i>	358	2.81
This was a new activity for me, I had never done anything like this before	<i>a</i>	<i>a</i>	355	2.43
On the trip I worked with others as a team	<i>a</i>	<i>a</i>	354	3.25
Because of this trip, I am more interested in the environment	<i>a</i>	<i>a</i>	359	2.72
Trip leaders were friendly to all students	<i>a</i>	<i>a</i>	358	3.41
Trip leaders made learning fun	<i>a</i>	<i>a</i>	358	3.08
Because of this trip, I feel more connected to my teachers	<i>a</i>	<i>a</i>	358	2.65
I have learned things I can do to help protect the environment on this trip	<i>a</i>	<i>a</i>	356	3.09
I learned new skills	<i>a</i>	<i>a</i>	356	3.04
I want to continue studying about science because of the trip	<i>a</i>	<i>a</i>	359	2.79
On the trip I learned about environmental issues that affect the Mississippi River	<i>a</i>	<i>a</i>	351	3.25

Note: An 'a' indicates that the item was administered only on the post-trip survey.