
Urban Wilderness Canoe Adventures Evaluation

2010 Summary of Findings

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Executive Summary

The Center for Applied Research and Educational Improvement (CAREI) collected program data from multiple sources, which included:

- a 3-item pre-trip survey to all fifth through eighth graders in five school sites;
- Minneapolis Public Schools attendance records for the 2009 and 2010 summer sessions;
- an electronic teacher survey administered to all summer school teachers; and,
- a 15-item post-trip survey to all students in the five school sites in the final week of summer school.

UWCA Program data was sampled from five school sites that were spread geographically across the district. The sites were made up of three elementary school sites (Burroughs, Jenny Lind, and Seward Montessori) with fifth graders and three middle school sites (Lucy Laney, Ramsey, and Seward Montessori) with sixth through eighth grade students. These five sites had an average enrollment of 650 students during summer session 2010.

Our analysis of the school data revealed an ethnically diverse population of students and high levels of poverty. Students of color make up the majority of the student bodies in all 14 schools. In Anderson and Emerson, Hispanic students made up nearly 80% of the population and at Hmong International Academy, more than 80% of the students are Asian Americans. The data also showed that in nine of 14 schools had more than 80% of their families were eligible for Free and Reduced Lunch (FRL). Free and Reduced Lunch eligibility is correlated to poverty and low socio-economic status. These data demonstrate that UWCA served a diverse population of students living at or near poverty.

Based on the findings discussed in this report, we assessed the extent to which the seven evaluation questions were answered.

What was the level of engagement for students who participated on the trip?

Students' participation and engagement were high. Based on our survey data and Wilderness Inquiry records, we estimate between 1,270 and 1,397 students (nearly 80% of all 5-8 graders) participated in the UWCA Program, including an educational day trip on the Mississippi River in canoes.

Demographic data confirm that UWCA served a diverse population of students living at or near poverty. Students of color make up the majority of the student bodies in all 14 schools; and at least 80% of the students in nine of these schools were eligible for Free and Reduced-Priced Lunches.

Over 70% of the teachers believed that students were highly engaged and the majority of the teachers perceived that the students were having fun and learned a lot. Teachers reported that students were talking about the trip afterwards, another indicator of engagement.

River observations, made by students during the trip, also indicated a high level of student engagement during their UWCA experience. Students mentioned over 320 distinct nature sightings and noted the physical structures (locks, dams, and bridges) on or near the river. Students also observed other people using the river. UWCA participants recorded observing people walking dogs, boating and canoeing, fishing, swimming, and running—even kissing.

Did the UWCA Program change participant attitudes and feelings about the Mississippi River?

Yes, positive changes in attitudes about the river. Students' responses to the surveys revealed that at least one-third, and perhaps the majority of Minneapolis fifth through eighth graders had never been on the river prior to summer 2010. When students were asked if the trip changed the way they thought about the Mississippi River, 60% of the students said, yes. Student survey responses indicate, in many cases, exposure amplifies interest in the river.

One-hundred and seventeen students (36%) explicitly named the Mississippi River trip as the best thing they did in summer school. In general, students appeared to favor the more active programming.

Did the river trip change the way you feel about the Mississippi River?

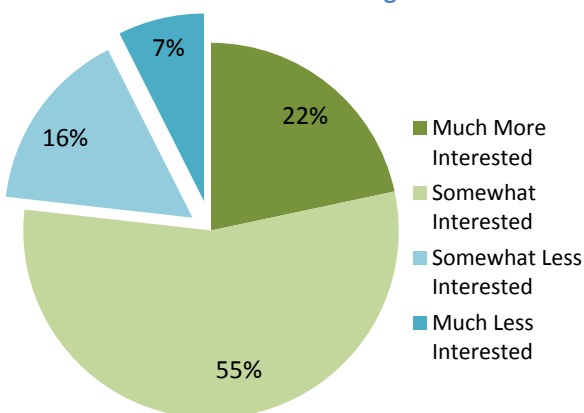
- *Yes. I had never gone this far on the river before and it was cool! I didn't know about the lock and now I went in two.*
- *I thought it was really scary but when I went on it I wasn't scared any more. I thought, oh my gosh, the river likes to think. I was confident in myself.*
- *Yes, now we know that we need to keep the environment safe and healthy.*
- *Yes, because I saw trash in there and it made me want to think twice before I litter.*
- *It changed me a lot. It felt like I should do something to get the river cleaner than ever.*

Did the Program change participants' attitudes about science, the environment, and their educational future?

Yes, the Program changed student attitudes about science and the environment. Student survey responses strongly indicate a change in attitude about the environment and science. More than three-fourths (77%) said they were more interested in the environment because of the river trip; and 22% said

they were much more interested. Sixty-three percent of the students reported that they more interested in science because of summer school.

Students' Level of Interest in the Environment because of the UWCA Program



Over half of the teachers agreed with the statement, *I think that my students will be more interested in science because of the river trip.* Even larger numbers believed their students had a greater interest in the environment. More than 70% of teachers agreed with the statement, *I believe the river trip positively affected students' attitudes about the environment in general.*

Did program participation appear to effect school behaviors (i.e., changes in attendance, changes in the level of engagement in learning)?

Program participation did not appear to affect overall summer school attendance. Our comparison of 2009 and 2010 summer attendance data show that attendance fluctuated, but remained consistent. We also saw evidence of an inverse relationship between age and overall summer program attendance. That

is, older students are more likely to miss more summer school sessions. Based on the current data, we believe the trip had no effect on either attendance the day of the trip or to attendance overall.

Did students who participated on the trip say they are any more likely to pursue similar outdoor activities within a year?

Yes. When students were asked whether they would go on the river again in the next year, 223 students (69%) agreed that they would return to the river within a year.

Were learning objectives achieved?

Yes and no. About two-thirds of the fifth, sixth, and eighth graders were able to answer the key learning objective for their grade, but less than one-fourth of the seventh graders could answer the question correctly. Evaluators believe the learning objective created for seventh graders was too abstract or too complex for those students.

Based on the student responses and comments from teachers, we believe that the curriculum was not fully incorporated into the summer sessions. More than half the teachers identified obstacles to incorporating the materials. Many teachers described a tension between using the curriculum and focusing their efforts on the specific subject areas (math, reading, etc.). These responses suggest the need to improve coordination and continuity between summer session curricula, district goals, teacher training, and the river trip experience overall.

What were teacher attitudes about the Program?

A valuable experience. Analysis of teacher responses suggest that teachers believed the UWCA program and its river trip was a valuable experience for students and the majority of the teachers (88%), also agreed with the statement, *I was excited to go on the river trip during summer session.* In fact, the majority of teachers (58%) stated that they would be more likely to teach during the summer session in 2011 if the trip was offered again.

What surprised teachers most about the river trip was...

- how much the students in my canoe enjoyed themselves. We were laughing, learning, and having a wonderful time!*
- the shining opportunity for students who do not do well academically to explore and experience the river.*
- how well my students cooperated and how tirelessly they paddled without complaint. It was a great experience.*

Conclusions

Our findings confirm that the Urban Wilderness Canoe Adventures program is reaching an underserved population through the Minneapolis Public Schools summer program. We suspect that many youth would miss similar encounters with the natural world without this program.

The program is popular among teachers and participants. This program has fostered greater interest in the Mississippi River and the environment among young people. Based on our evaluation findings, we believe that the program should be continued and expanded as resources allow.

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Urban Wilderness Canoe Adventures Evaluation

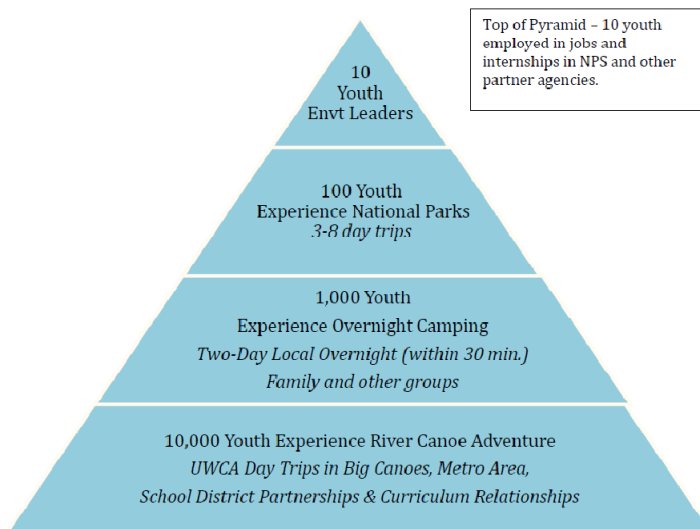
2010 Summary of Findings

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Program Overview

According to Wilderness Inquiry (WI), the ultimate goal of the Urban Wilderness Canoe Adventures (UWCA) program is to engage youth in a series of deepening wilderness experiences that will result in a percentage of these youth becoming environmental leaders as depicted in Figure 1.

Figure 1. Engaging Youth through Deepening Wilderness Experiences



The intermediate goal of Wilderness Inquiry is to improve student academic performance through an innovative classroom/fieldwork curriculum that uses environmental educational experiences to teach science, social studies, and language arts. Through a series of engaging outdoor education experiences, students will make discoveries first-hand, reenergizing their desire to take in and to share new information. Youth will learn new skills and be expected to serve others. Students will work in teams where they quickly learn how much others value and depend on their contributions. The trips are also a valuable opportunity for kids to get to know their teachers and their peers on deeper level, which strengthens their bond to their school.

To achieve these goals WI along with the Minneapolis Public Schools (MPS), and the National Park Service (NPS) worked collaboratively to develop curriculum, hold teacher workshops, and provide day long environmental learning trips and overnights on the Mississippi River to over 1,200 fifth through eighth graders enrolled in the MPS summer program in 2010.

Purpose of this Report

The University of Minnesota's Center for Applied Research and Educational Improvement (CAREI) was contracted by staff of Wilderness Inquiry and the Mississippi National River and Recreation Area to conduct an evaluation of the second year of the Urban Wilderness Canoe Adventures (UWCA) program with the Minneapolis Public Schools. The purpose of this report is to present the initial findings from this second year of the UWCA Mississippi River field trip experience. In this report, we discuss the evaluation approach and data sources. In later sections, we provide our findings, conclusions, and considerations. We provide supporting materials and the instruments used in the evaluation in the Report's Appendix.

Purpose of the Evaluation

The purpose of this initial evaluation was to assess the impact of the UWCA Program and the Mississippi River field trips and on the attitudes and behaviors of fifth through eighth graders in Minneapolis Public Schools' summer school program. While the ultimate goal of the Urban Wilderness Canoe Adventures (UWCA) program is to improve student academic performance, we limited the scope of the initial evaluation to five key objectives. We wanted to determine the extent to which the Program:

- positively influenced students' attitudes about the river, the environment, and science;
- improved student attendance during the summer session.
- advanced the learning objectives of a River-based curriculum;
- increased students interest in the natural environment; and,
- increased students awareness of the river and their personal connection to it;

We also wanted to assess teachers' level of engagement and the extent to which they believed the UWCA program affected students.

Evaluation Plan and Questions

The planning team, made up of stakeholder organizations and the Center for Applied Research and Educational Improvement (CAREI), met regularly to develop the evaluation plan. A summary of the evaluation plan can be found in the Appendix to this report, beginning on page 26.

Project stakeholders identified seven evaluation questions:

1. Did the UWCA Program change participants' attitudes about science, the environment, and their educational future?
2. Did the program appear to effect students' school behaviors (i.e., changes in attendance, changes in the level of engagement in learning)?
3. Were learning objectives of the program achieved?
4. Did students who participated in the program say they were any more likely to pursue similar outdoor activities within a year?
5. What were teacher attitudes about the program overall?
6. What was the level of engagement for students who participated in the program?
7. Did the program change participants' attitudes and feelings about the Mississippi River?

Data Sources and Methods

Collecting data from multiple sources, helps ensure that findings and conclusions are more accurate and reliable. For this evaluation, CAREI evaluators collected data from four sources:

- a 3-item pre-trip survey to all fifth through eighth graders in five school sites;
- Minneapolis Public Schools attendance records for the 2009 and 2010 summer sessions;
- an electronic teacher survey administered to all summer school teachers; and,
- a 15-item post-trip survey to all students in the five school sites after the river trip in the final week of summer school.

The five sites were spread geographically across the district. The sites were made up of three elementary school sites (Burroughs, Jenny Lind, and Seward Montessori) with fifth graders and three middle school sites (Lucy Laney, Ramsey, and Seward Montessori) with sixth through eighth grade students. These five sites had an average enrollment of 650 students during summer session 2010.

Standard frequencies and descriptive statistics are reported for all relevant quantitative data using PASW (a quantitative analysis software package). Qualitative data were analyzed for content and themes. This analysis was performed on all open-ended survey items using Microsoft Excel and Microsoft Access to code data.

Figure 2. Summary of Data Sources

| <i>DESCRIPTION OF SOURCE</i> | <i>ACTORS</i> | <i>RESPONSE RATE</i> | |
|------------------------------|---|----------------------|----------------|
| | | <i>COUNT</i> | <i>PERCENT</i> |
| PRE-trip survey (3-item) | Administered to all 650 eligible students | 610 | 94% |
| MPS Summer Attendance | All summer enrollees in 2009, 2010 | 2337 | n/a |
| Teacher survey (19-item) | All 32 teachers in MPS Summer program | 17 | 53% |
| POST-trip survey (15-item) | Administered to all 650 eligible students | 449 | 69% |

Summary of Findings

The Pre-Trip Survey

The Pre-Trip Survey was a 3-item survey administered to all 650 fifth through eighth graders enrolled in the five study sites during the first week of summer Session 2010.

The survey was designed to determine the extent to which students had prior river experiences (such as, fishing, boating, swimming, and canoeing). We also wanted to assess students' prior knowledge of the Mississippi River. Finally, we wanted to know what students wanted to know about the Mississippi River during the field trip.

Six hundred-ten students completed the pre-trip survey (94%). The results show that 271 students (44%) had previous river experience, while 206 students (34%) had no river experience. Another 133 students (22%) provided no response to the question, so it remains unclear if they had previous river experiences.

The students were also asked to list five things they knew about the Mississippi River. The majority of the students were able to list three to five geographic, ecological, historical, and/or environmental facts about the river. For example, students said the Mississippi River:

- travels through 18 large cities and 10 states;
- is the largest river in the United States;
- is the third longest river in the world;
- begins at Lake Itasca and empties into the Gulf of Mexico at New Orleans, Louisiana;
- is 2,300 miles long; and,
- provides habitat for over 26 species.

Many students noted that their bodies are 70% water, and the water they drink comes from the Mississippi River. A number of students remembered that the 35W Bridge fell into the Mississippi River. Several students demonstrated a deeper understanding of the Mississippi River and their relationship to it. For example, a fifth grade student from Burroughs stated,

"A lot of people or things depend on the Mississippi River for water, food, and habitat."

Similarly, a sixth grader from Ramsey School commented,

"All debris on the ground goes through storm drains that travel directly to the Mississippi."

On the other hand, some students displayed limited understanding, or even misconceptions, about the Mississippi River. For example, a large number of students said the Mississippi River is very deep or that the river has sharks. Many students associated the river with negative connotations such as, the river is "dirty," "polluted," or "filled with garbage." A few respondents commented the river is "full of dead people."

When students were asked what else they would like to know about the Mississippi River, it became clear that the students showed interest and concern for the river on several levels. For instance,

Some students' interests clustered around geographical and historical ideas;

How many gallons of water flow per day?

Where does the water come from?

What does Mississippi mean?

Who named it?

Is it cold?

Other students' interests described environmental or ecological concerns;

How many fish are there in the Mississippi River?

What species of fish are there?

Is the river inhabited by any bull sharks? ("I know bull sharks can live in fresh water.")

Still others' interests centered on public health concerns.

Are fish from the Mississippi safe to eat?

Is the water safe to swim in?

Can we drink the water?

What is the water quality?

Why is it polluted?

Do people die in the river?

The student responses to this question indicate a genuine interest and concern about the health of the Mississippi River.

Analysis of Summer School Attendance in 2009 and 2010

Summer school attendance data were provided to Wilderness Inquiry and CAREI in two ways. Data from summer school 2009 was supplied Wilderness Inquiry staff in a hard copy format. Attendance records consisted of a roster of students, grouped by class, for the entire summer session. These data were manually entered into a database for analysis. Attendance data from the 2010 was also recorded in paper form, but MPS provided CAREI staff with an electronic database that included student identifiers.

The figure below shows the distributions of students in summer sessions 2009 and 2010 by grade and by year.

Figure 3. Attendance by Grade and Year

| | | Summer Session | | |
|--------------|---|----------------|-------------|-------------|
| | | 2009 | 2010 | Total |
| Grade | 4 | 34 | 13 | 47 |
| | 5 | 217 | 443 | 660 |
| | 6 | 75 | 505 | 580 |
| | 7 | 155 | 361 | 516 |
| | 8 | 106 | 340 | 446 |
| | 9 | 5 | 83 | 88 |
| Total | | 592* | 1745 | 2337 |

* MPS staff indicated that the attendance records of some 5-8 grade students are missing.

Overall Attendance and Distribution by Grade

Since 2010 was the first year of the UWCA program, we used 2009 data as the baseline, and compared 2010 data to it to see where differences occurred.

Evaluators also wanted to know demographic characteristics of schools and whether the program and its river trips would alter student attendance rates. For example, did the inclusion of the river trip promote attendance? Were 2009 summer attendance rates comparable to 2010 rates? Were attendance rates on the day of the field trips comparable to other sessions during the summer? We compared 2009 and 2010 summer school attendance data in several ways to answer these questions.

School Characteristics: Ethnicity and Poverty

Figures 4 and 5 show two demographic characteristics of students in the 14 summer school sites in 2010. The figures are based on the data supplied by Minneapolis Public Schools (MPS). The data describe schools that are ethnically diverse and have high levels of poverty. Students of color make up the majority of the student bodies in all 14 schools. In Anderson and Emerson, Hispanic students make up nearly 80% of the population and at Hmong International Academy, more than 80% of the students are Asian Americans.

Figure 4. Enrollment by Ethnic Composition, Summer School 2010

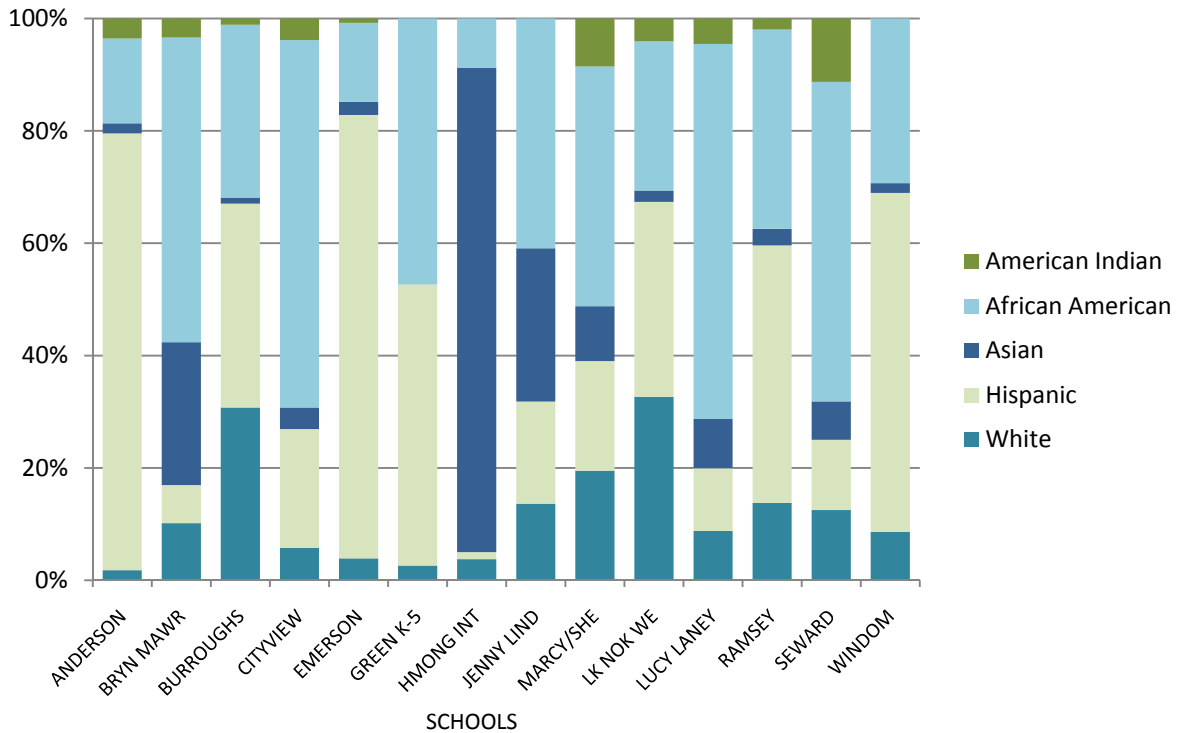
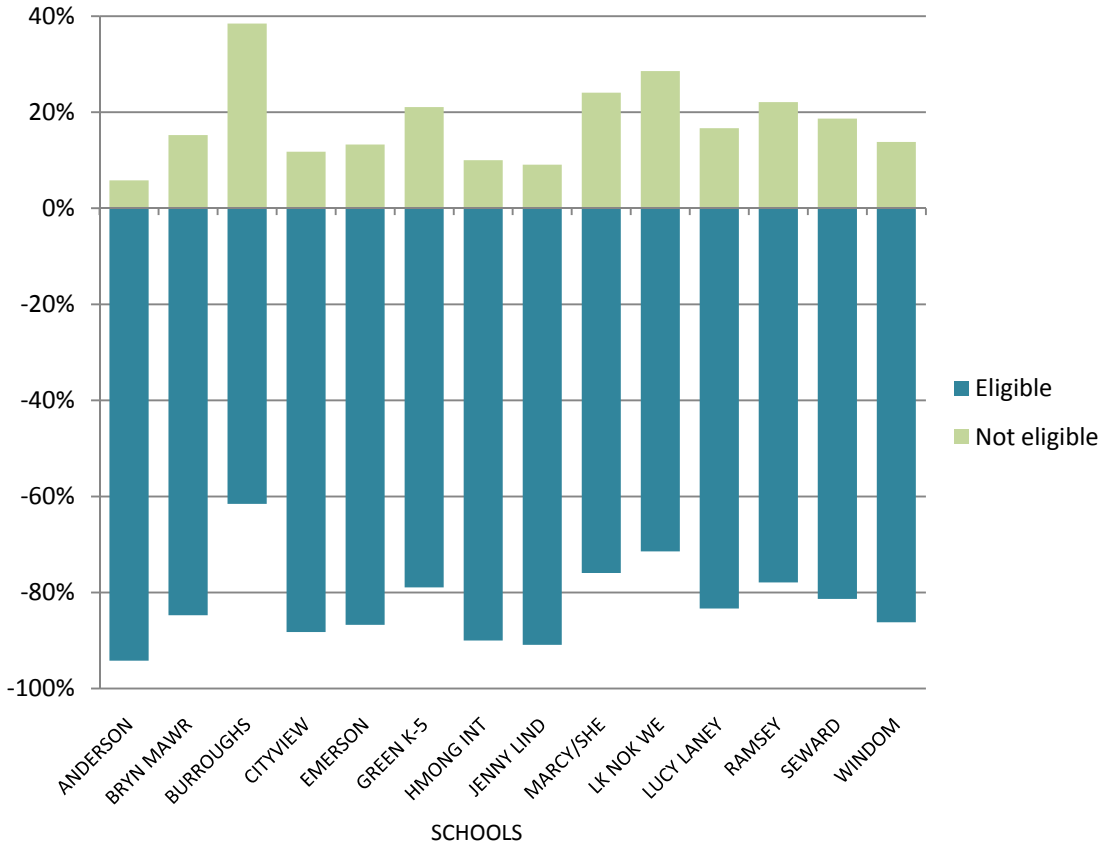


Figure 5 shows the percentages of students eligible for Free or Reduced-Priced Lunches (FRL). In nine of the 14 schools listed here, 80% of the students are eligible for FRL. Free and Reduced Lunch eligibility is correlated to poverty and low socio-economic status. These data demonstrate that UWCA served a diverse population of students living at or near poverty.

Figure 5. Students Eligible for Free and Reduced Lunches in 2010 Summer School Sites

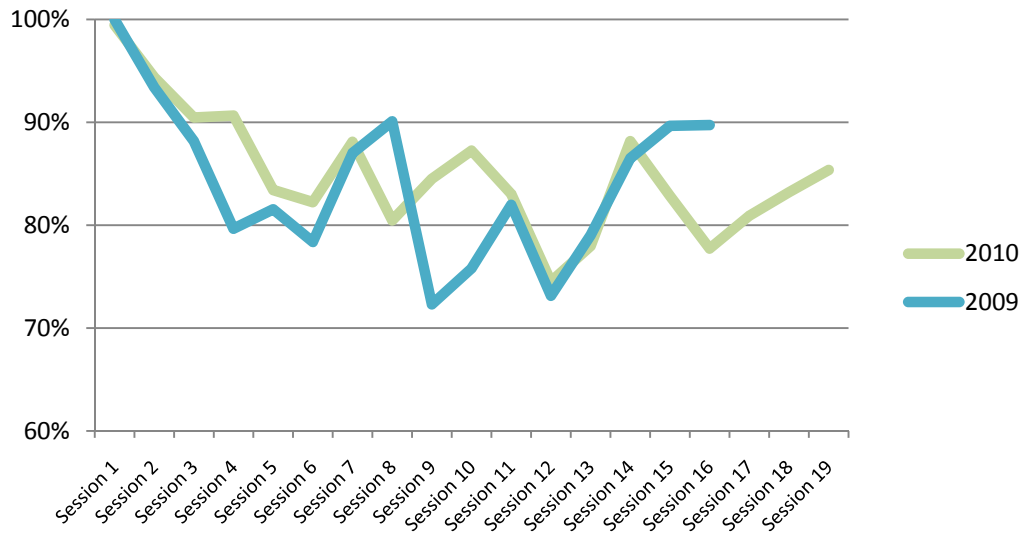


General Attendance Patterns

We used the schools' attendance records to look for differences in attendance patterns between 2009 and 2010. We wanted to determine if the UWCA program had any discernable effect on student attendance. Unfortunately, the attendance records of some students in 2009 were not available, but we believe, that the sample analyzed discussed here was sufficiently large (n>500) to make general conclusions about attendance patterns.

In Figure 6 below, the blue line represents 2009 data. It is shorter because the 2009 summer session was 16 sessions long (four weeks). The 2010 data, represented by the green line, was 19 sessions long (five weeks).

Figure 6. 2009 and 2010 Summer School Attendance Patterns for Students by Session



The results of the 2009 and 2010 summer school attendance data show that attendance fluctuated, but remained consistent. Regardless of the year, overall attendance rates began high, then dropped to between 75% and 90% attendance, and rebounded slightly during the final few sessions.

Another approach to comparing patterns between 2009 and 2010 was to assign attendance “grades” to individual students and determine if the attendance behavior of individuals changed between 2009 and 2011. We calculated students’ attendance ratio by dividing the actual days attended, by the expected days attended (total days enrolled) and then applied our grading criteria. Students who attended summer session 90 or more percent of the time received the highest rank. Students who attended summer sessions between 75% and <90% of the time received the next highest rank. The group of students who attended between 60% and <75% of the time received a lower rank and the group of students attending less than 60% of the time, received the lowest rank.

Using this approach, we found that in 2009, 69% of the students attended at least 75% of the time; while in 2010, 56% of the students attended at that rate (see Figure 7 below). It is not known whether the decline in students attending at the 75% rate is attributable to the four additional days that were added in 2010.

Figure 7. Attendance for 2009 and 2010 Based on Attendance Ranking across All Sessions

| | <60% | 60 to <75% | 75 to <90% | 90 or more% | Total |
|--------------------|-------|------------|------------|-------------|-------|
| 2009 (all schools) | 23.8% | 7.3% | 28.0% | 41.0% | 100% |
| | 141 | 43 | 166 | 243 | 593 |
| 2010 (all schools) | 28.3% | 15.5% | 26.2% | 30.0% | 100% |
| | 495 | 271 | 459 | 524 | 1749 |

Figures 8a and 8b show the information presented above as two pie charts. In these charts, the green portions represent students who maintained higher attendance percentages and the blue shaded areas represent students with lower rates. When we compared the population of students in 2009 to students in 2010, we found more students in 2009 attended the summer program at higher rates.

Figure 8a. Attendance Rankings for Students, 2009

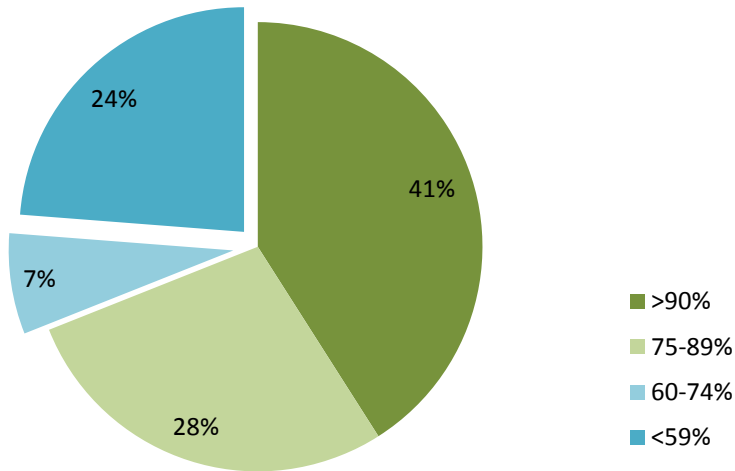
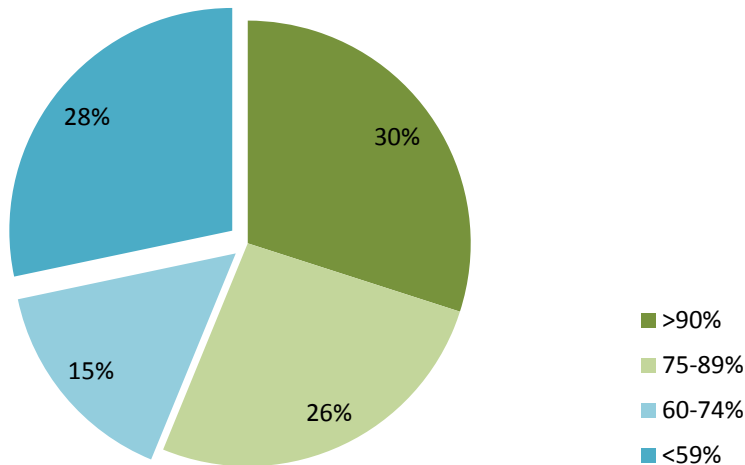


Figure 8b. Attendance Rankings for Students, 2010



Disaggregating Attendance by Grade

We also isolated (disaggregated) student attendance by grade. The results show that attendance rates of fifth and sixth graders were higher than the attendance rates for seventh, eighth, and ninth graders. The areas shaded in yellow in Figures 9a and 9b, highlight that highest levels of attendance decreases at the grade increases. In other words, students in higher grades are more likely to miss more summer school sessions. This relationship between grade and attendance persists in 2009 and 2010.

Figure 9a. Attendance Ranking by Grade across All Sessions, 2009

| | | Grade | | | | | | | |
|--------------------|---------|----------------|--------|--------|--------|--------|--------|--------|--------|
| | | 4 | 5 | 6 | 7 | 8 | 9 | Total | |
| 2009 (all schools) | 90%> | Count | 15 | 94 | 32 | 63 | 38 | 1 | 243 |
| | | % within Grade | 44.1% | 43.3% | 42.7% | 40.6% | 35.8% | 20.0% | 41.0% |
| | 75-<90% | Count | 7 | 70 | 23 | 34 | 30 | 2 | 166 |
| | | % within Grade | 20.6% | 32.3% | 30.7% | 21.9% | 28.3% | 40.0% | 28.0% |
| | 60-<75% | Count | 1 | 14 | 7 | 14 | 7 | 0 | 43 |
| | | % within Grade | 2.9% | 6.5% | 9.3% | 9.0% | 6.6% | .0% | 7.3% |
| | <60% | Count | 11 | 39 | 13 | 44 | 31 | 2 | 140 |
| | | % within Grade | 32.4% | 18.0% | 17.3% | 28.4% | 29.2% | 40.0% | 23.6% |
| Total | | Count | 34 | 217 | 75 | 155 | 106 | 5 | 592 |
| | | % within Grade | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Figure 9b. Attendance Ranking by Grade across All Sessions, 2010

| | | Grade | | | | | | | |
|--------------------|---------|----------------|--------|--------|--------|--------|--------|--------|--------|
| | | 4 | 5 | 6 | 7 | 8 | 9 | Total | |
| 2010 (all schools) | 90%> | Count | 5 | 154 | 164 | 105 | 83 | 13 | 524 |
| | | % within Grade | 38.5% | 34.7% | 32.4% | 29.0% | 24.3% | 15.7% | 30.0% |
| | 75-<90% | Count | 2 | 127 | 120 | 103 | 82 | 25 | 459 |
| | | % within Grade | 15.4% | 28.6% | 23.7% | 28.5% | 24.0% | 30.1% | 26.2% |
| | 60-<75% | Count | 4 | 62 | 85 | 56 | 49 | 15 | 271 |
| | | % within Grade | 30.8% | 14.0% | 16.8% | 15.5% | 14.4% | 18.1% | 15.5% |
| | <60% | Count | 2 | 101 | 137 | 98 | 127 | 30 | 495 |
| | | % within Grade | 15.4% | 22.7% | 27.1% | 27.1% | 37.2% | 36.1% | 28.3% |
| Total | | Count | 13 | 444 | 506 | 362 | 341 | 83 | 1749 |
| | | % within Grade | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |

Disaggregation of Attendance Data by School

During the 2010 summer program, students from 14 schools participated on 16 river trips. When we disaggregated data by school and session, we could determine the effect that the trips had on daily attendance.

We found that in five instances attendance on the day of the trip was higher than the school's average attendance. In three instances the attendance match the average attendance on the trip day and in eight instances, students' attendance on the day of the trip was lower than the school's average attendance. The fluctuation in attendance, both above or below the attendance average follows no discernable pattern (see Figure 10). Therefore, we determined that the UWCA program (bordered cells) had no net positive or negative effect on summer school attendance for any of the 13 schools.

Figure 10. Percent Change from Average Session Attendance, 2010

| | AVE | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | S13 | S14 | S15 | S16 | S17 | S18 | S19 |
|------|-----|------|------|------|------|------|------|-----|------|-----|-----|-----|------|------|-----|------|------|------|-----|------|
| AND | 163 | 5% | 0% | -5% | -8% | -14% | -13% | 5% | 3% | 6% | 8% | 5% | 1% | 3% | 4% | 5% | -7% | 1% | 0% | 0% |
| BUR | 71 | 6% | 0% | -4% | -1% | -11% | -8% | 2% | -4% | 12% | 5% | -8% | -12% | -7% | 2% | -11% | 3% | 5% | 8% | 23% |
| MAR | 61 | 14% | 9% | 2% | -2% | -7% | -15% | 14% | -2% | 6% | 2% | -2% | -7% | 2% | 7% | 1% | -14% | -6% | -1% | -1% |
| LIN | 19 | -11% | -11% | -11% | -11% | -11% | -16% | 26% | -16% | 0% | 15% | 5% | 10% | 10% | 10% | 10% | -6% | 0% | -6% | 10% |
| SEW | 168 | 11% | 4% | 0% | -2% | -15% | -11% | 10% | 1% | 9% | 12% | 0% | 3% | 1% | 3% | 1% | -7% | -5% | -9% | -5% |
| LK N | 36 | -8% | -11% | -19% | -8% | -22% | -19% | 17% | 3% | 12% | 23% | 20% | -5% | 0% | 12% | -8% | -5% | 3% | 6% | 9% |
| WIN | 40 | 13% | 8% | 11% | 11% | -10% | -15% | 18% | -10% | 6% | 3% | 6% | -4% | -12% | -4% | -7% | -10% | -7% | 1% | 3% |
| RAM | 129 | 16% | 3% | 1% | -4% | -11% | -16% | 6% | 10% | 4% | 13% | 8% | 0% | -2% | 5% | 2% | -17% | -8% | -8% | -2% |
| BRY | 45 | 4% | -3% | -5% | -7% | -5% | -12% | -1% | 19% | 8% | 15% | -1% | -3% | -3% | 8% | -7% | 6% | 1% | -1% | -12% |
| EME | 85 | 10% | 5% | 1% | -3% | -7% | -6% | 10% | 1% | 9% | 12% | 4% | -14% | 3% | 13% | -10% | -15% | -12% | 3% | -3% |
| LAN | 215 | 2% | -12% | -13% | -15% | -20% | -12% | 19% | 9% | 14% | 15% | 10% | -1% | -2% | 6% | -7% | -7% | -6% | -1% | 21% |
| CITY | 32 | 7% | 1% | -15% | -12% | -28% | -21% | 13% | 7% | 1% | 7% | 20% | -12% | 1% | 7% | 4% | -2% | 4% | 10% | 7% |
| HIA | 71 | 0% | 1% | 1% | 4% | 1% | -2% | 8% | 0% | 4% | 4% | 4% | -9% | 1% | 0% | 5% | -6% | -6% | -3% | -6% |
| GRE | 25 | 16% | 12% | 4% | 8% | 0% | -12% | 16% | 8% | 12% | 16% | 8% | -24% | -12% | 0% | 4% | -16% | -12% | -8% | -16% |

Factors that might also influence school attendance or the attendance records themselves include:

- on which day the trip occurred on any given week;
- the extent to which weather on the day of the trip was a factor;
- whether trip announcements were sent to students and families in advance of the trip;
- whether teachers promoted the trip;
- family customs or norms affect student participation; and/or,
- if record-keeping was affected on the field trip day.

These and other factors may have affected participation, but based on the data available, we saw no evidence that links the program to changes in summer session attendance patterns in 2010.

Analysis of the Teacher Survey

The Teacher Survey was created to collect teacher impressions of the summer UWCA program in Minneapolis. Evaluators wanted to know the extent to which teachers considered the field trips a “value-added experience” both for their students and for themselves. In the 18-item survey, teachers were asked to indicate their level of agreement with a series of statements about the trip, students’ behavior, students’ learning, and so forth. We wanted to determine the extent to which:

- teachers liked the trip;
- the curriculum seemed age-appropriate to teachers
- if they used the curriculum; and,
- if the existence of the trip made them any more likely to teach in the 2011 summer session.

MPS summer school staff initially contacted all 32 summer school teachers. This was followed-up with message that contained a survey link. Teachers were given two weeks to complete the survey and incentives were provided to encourage teacher participation. These efforts resulted in seventeen teachers (53%) completing the survey.

The findings of the survey, summarized below, suggest that teachers believed the river trip to be valuable.

For example, over three-fourths of teacher-respondents agreed with the first five items listed in Figure 11a, and all but one teacher (94%) agreed with three of these statements:

- I believe that the river trip was age appropriate for students, grades 5 – 8.
- Overall, I think the river trip was a valuable experience—well worth it.
- I think students who had fewer outdoor experiences especially benefited from the river trip.

Figure 11a. Teachers’ Program Impressions

| | STRONGLY DISAGREE | SOMEWHAT DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE |
|---|-------------------|-------------------|----------------|----------------|
| 1. I believe that the river trip was age appropriate for students, grades 5 – 8. | 0 0.0% | 1 5.9% | 1 5.9% | 15 88.2% |
| 2. Overall, I think the river trip was a valuable experience— well worth it. | 1 5.9% | 0 0.0% | 3 17.6% | 13 76.5% |
| 3. I learned a lot on the river trip. | 0 0.0% | 3 17.6% | 7 41.2% | 7 41.2% |
| 4. I think students who had fewer outdoor experiences especially benefited from the river trip. | 0 0.0% | 0 0.0% | 4 23.5% | 13 76.5% |
| 5. The river trip was the highlight of my summer teaching experience. | 1 5.9% | 3 17.6% | 7 41.2% | 6 35.3% |
| 6. I fully incorporated the National Park Service curriculum into my lessons. | 3 17.6% | 7 41.2% | 4 23.5% | 3 17.6% |

By contrast, more than half of the teachers (59%) disagreed with Question 6. *I fully incorporated the National Park Service curriculum into my lessons.* Many teachers said they liked and used the curriculum, however, more than half the teachers (10), identified obstacles to incorporating the materials. For example,

- Eight respondents said they incorporated a portion of the curriculum and/or drew from other resources;
- Six teachers responded they were teaching another subject (ex., math or reading), so it was hard to make the curriculum relevant to that work assignment;
- Three teachers indicated that they never received the curriculum;
- One teacher judged that the curriculum did not include sufficient age-appropriate material;
- One teacher reported that there appeared to be more curriculum than time available; and,
- One teacher reported that they taught the curriculum, but then the trip took place in a different segment of the river.

Teacher responses suggest the need to improve coordination and continuity between summer session curricula and the river trip experience.

Teachers were also asked to share some of their perceptions about the youth experiences. The data, summarized in Figure 11b, show that a majority of teachers (about 4 to 1) agreed that students had fun on the trips, students appeared to be engaged and respectful, and that students learned “a lot.”

The majority of the teachers (88%), agreed with the statement, *I was excited to go on the river trip during summer session.*

Figure 11b. Teacher Perceptions of Youth

| | STRONGLY DISAGREE | SOMEWHAT DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE | TOTAL AGREE |
|--|-------------------|---------------------|-------------------|----------------|-------------|
| 7. I believe the students had fun on the trip. | 0 0% | 3 18% | 5 29% | 7 41% | 12 71% |
| | VERY UNPLEASANT | SOMEWHAT UNPLEASANT | SOMEWHAT PLEASANT | VERY PLEASANT | |
| 8. The weather on the day of the trip was... | 1 6% | 0 0% | 3 18% | 11 65% | |
| 9. My students exhibited a high level of engagement during the river trip -- they paid attention, respected others, and participated enthusiastically. | 0 0% | 3 18% | 5 30% | 7 41% | 12 71% |
| 10. I believe the students learned a lot on the trip. | 1 6% | 2 12% | 7 41% | 4 24% | 11 65% |
| 11. I was excited to go on the river trip during summer session. | 0 0% | 0 0% | 5 29% | 10 59% | 15 88% |

Based on the 14 responses to Question 11a (*Including this trip, I have been on the river ___ times*), the average number of visits teachers made to the Mississippi river was more than four times.

Another indicator of teachers' positive perceptions of the student experience can be found in their responses to Question 12. All teacher responses are listed.

Question 12. *What surprised me most about the river trip was...*

- *seeing the difference between the two rivers where they meet*
- *how much the students in my canoe enjoyed themselves. We were laughing, learning, and having a wonderful time!*
- *The student's engagement*
- *the expression on the students faces when they were in the lock.*
- *the shining opportunity for students who do not do well academically to explore and experience the river.*
- *the perspective of the city from the river.*
- *The beauty of the river surprised me the most, also the great people from the NPS.*
- *going through the Lock system and seeing how it actually worked.*
- *the degree of cooperation maintained by my canoe mates!! Because of the leadership in the boat, we excelled at paddling, passing the other boats many, many times.*
- *how much the students enjoyed themselves*
- *how well my students cooperated and how tirelessly they paddled without complaint. It was a great experience.*

Not all responses to this item were positive. For example, one teacher was not surprised on their trip, one teacher was disappointed by a cancellation and a changed plan, and still another teacher was surprised by the seventh graders response to the trip. Their responses are listed.

- *The trip was not too surprising.*
- *The fact we did not get on the river. The lightning and thunder had passed and I think we could have gone on the river.*
- *How much the seventh graders did not want to go.*

Teachers continued to agree on items 13-19 that the river experience was positive for their students as well as for themselves. A majority of teacher respondents agreed with the statements:

- *I think the students I taught benefited academically from the river trip.*
- *I believe that one outcome of the river trip was a deeper engagement in learning.*
- *After the trip, students talked about the river experience in class.*
- *I believe the river trip positively affected students' attitudes about the environment in general.*
- *I think that my students will be more interested in science because of the river trip.*

More than one-third of the teachers (35%) believed that the river trip would neither deepen students' engagement in learning nor foster greater interest in science (Figure 11c, Items 14 and 17).

Figure 11c. Teacher Perceptions of the River Trip

| | STRONGLY DISAGREE | SOMEWHAT DISAGREE | SOMEWHAT AGREE | STRONGLY AGREE | TOTAL AGREE |
|--|----------------------|----------------------|-------------------|-------------------|----------------|
| 13. I think the students I taught benefited academically from the river trip. | 0% | 12% | 53% | 24% | 76% |
| 14. I believe that one outcome of the river trip was a deeper engagement in learning. | 0% | 35% | 29% | 24% | 53% |
| 15. After the trip, students talked about the river experience in class. | 0% | 12% | 29% | 47% | 77% |
| 16. I believe the river trip positively affected students' attitudes about the environment in general. | 6% | 12% | 41% | 29% | 71% |
| 17. I think that my students will be more interested in science because of the river trip. | 12% | 24% | 47% | 6% | 53% |
| 18. There is a very good chance that I will participate in summer session next year. | 24% | 0% | 35% | 29% | 65% |
| 19. I will be more likely to teach next summer if the river trip is offered again. | 12% | 18% | 35% | 24% | 59% |

The final question of the survey provided teachers with an opportunity to add additional comments. The majority of these comments indicated a sense of gratitude for the opportunity to participate.

- *Thank you for the river trip experience. I thought the guides were fantastic, the route was great, and the kids were engaged!*
- *Thank you for giving the students the opportunity to do something they may have never had a chance to do.*
- *One of the best experiences I have had during summer session.*
- *The river trip was fun and valuable, but if we're not able to do this again, I trust we will have other fun and valuable experiences before us.*

One comment suggested the need to better integrate the river trip experience into the summer sessions

- *It needs to be the focus of the lessons (i.e. read about the native people, math word problems involving the river and the people, etc) It was kind of an isolated event thrown in the middle.*

Analysis of the Post-Trip Student Survey

The Post-Trip Survey was a 15-item survey that was administered during the final week of summer Session 2010 (week 5). The survey was administered to all 650 fifth through eighth graders enrolled in five buildings.

The survey was designed to collect data on several aspects of the student experience in the program. Evaluators wanted to ascertain:

- Who participated on the trip
- What they saw
- The extent to which the trip changed the way they felt about the river
- The extent to which the trip changed the way they felt about science and the environment

Trip Participants

At the end of the 2010 summer session, evaluators received 449 completed surveys, or 69% of the 650 surveys distributed. Of the 449 students who completed the survey, 327 (73%) said that they attended the Mississippi River field trip and 120 (27%) students said they participated on the trip. The analysis of data in this section is based on the information supplied by the 327 students who went on a river trip in summer 2010.

Student Engagement

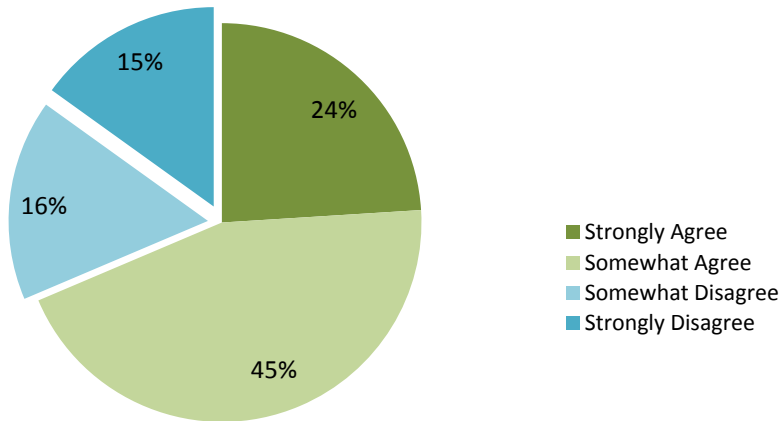
Student engagement on the river trips was observed by teachers (e.g., teachers observing students paying attention and behaving respectfully) and by recording what students observed. In the post-trip survey, when students were asked what they observed, students mentioned over 320 distinct nature sightings including: 82 fish, 56 eagles, 55 birds, 28 blue herons, 17 turtles, 6 ducks, 8 birds' nests, 6 bugs, 16 trees, 3 hawks, 9 dogs, 5 animals, 2 frogs, 2 tadpoles, 1 minnow, 9 shells, 1 chipmunk, 7 islands, 11 waterfalls, 1 vulture, and a coconut. In 15 instances students said they saw: trash (6), garbage (5), litter (2), graffiti (1), and a shoe (1).

Many students noted the physical structures on or near the river. For example, 31 students saw dams, 29 mentioned the locks, 16 noted the bridges, and barges are mentioned by a few students.

Moreover, students reported seeing people interacting with the river. Students saw people walking dogs, boating and canoeing, fishing, swimming, and running.

When students were asked whether they would go on the river again in the next year, 223 students (69%) agreed that they would return to the river in the next year (see Figure 12).

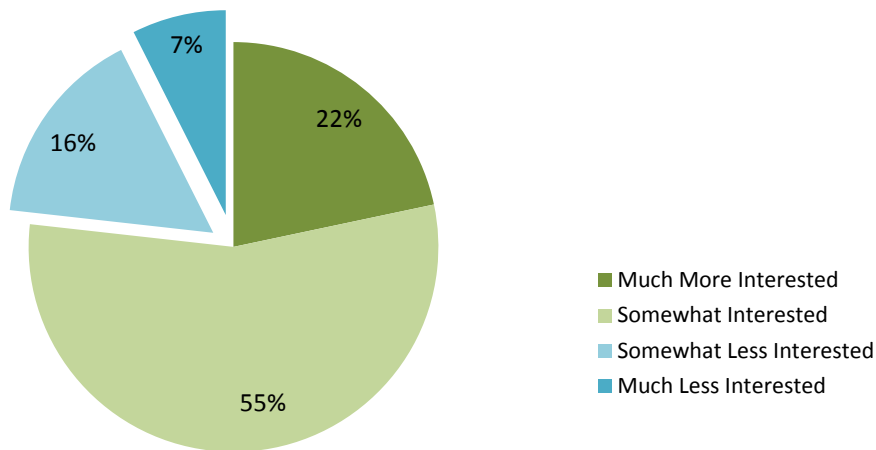
Figure 12. Likelihood of Visiting the Mississippi River in the Next Year



Interest in the Environment and Science

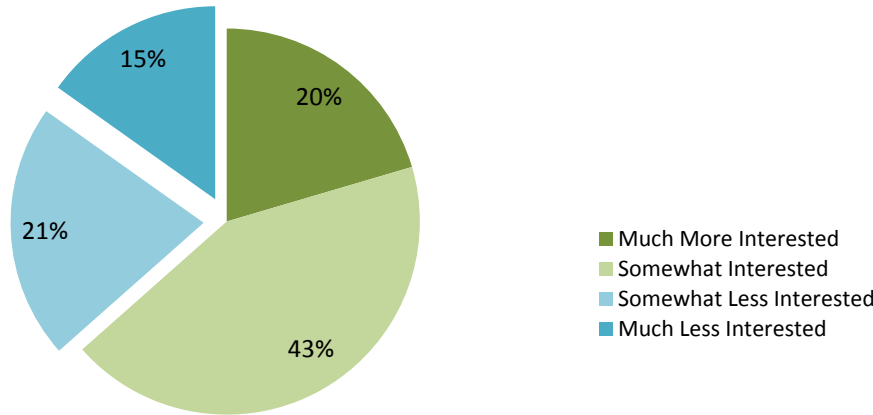
Over three-fourths of the students who participated in the field trip (77%) indicated greater interest in the environment. When students were asked: *Are you more interested in the environment because of the River trip?* Seventy students (22%) said they were much more interested in the environment because of the river trip; and, 178 students (55%) reported that they were somewhat more interested in the environment.

Figure 13. Students' Level of Interest in the Environment because of the UWCA Program



The same number of students, 323, responded to Question 4. *Are you more or less interested in science because of summer school?* Sixty-six students (20%) indicated that they were much more interested in science, and 139 students (43%) said that they were somewhat more interested in science because of summer school.

Figure 14. Students' Interest in Science because of Summer School



Changing Attitudes and Perceptions of the Mississippi River

When students were asked if the trip changed the way they thought about the Mississippi River, 60% of the students said, *yes*. Several students noted that the river was much cleaner than they had expected. Before the trip, some students said they were very afraid of the river; but after the trip were no longer afraid.

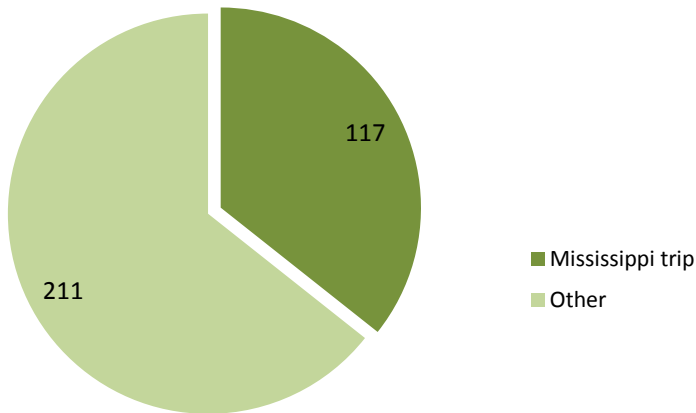
Below, we provide a selection of typical responses to Question 6. *Did the river trip change the way you feel about the Mississippi River?*

- *Yes, because I thought it was dirty, but being in it, it is way cleaner than I thought.*
- *It made me feel like a traveler and free of summer school. Yes!*
- *Yes, now we know that we need to keep the environment safe and healthy.*
- *I thought it was really scary but when I went on it I wasn't scared any more. I thought, oh my gosh, the river likes to think. I was confident in myself.*
- *Yes, because I saw trash in there and it made me want to think twice before I litter.*
- *Yes. I had never gone this far on the river before and it was cool! I didn't know about the lock and now I went in two.*
- *Yes, it did [change the way I feel], because I thought it was just trash all the time, but it wasn't. It was a nice environment.*
- *It made me feel that the Mississippi River was more important than I thought.*
- *It changed me a lot. It felt like I should do something to get the river cleaner than ever.*

Best Thing You Did in Summer School This Year

On the Post-trip survey, 328 students responded to Question 7. *What was the best thing you did in summer school this year?* One-hundred and seventeen students (36%) explicitly named the Mississippi River trip as the best thing they did in summer school. “Science,” “gym,” and “friends,” were distant second (36), third (32), and fourth (31) place finishers for this question. In general, students appeared to favor the more active programming.

Figure 15. Best Thing Activity in Summer School



Student Learning Objectives

Staff from the National Park Service developed a river curriculum that was intended to support the learning that occurred while canoeing on the Mississippi River. Staff at NPS created learning objectives for each grade-specific lesson and each lesson was designed with a specific segment of the river in mind.

The learning objectives were:

GRADE 5: What are some ways that you learned you are connected to the Mississippi River?

GRADE 6: Describe how the river has changed over the last 12,000 years.

GRADE 7: How does your cultural perspective (where you come from) affect how you relate to nature and to other people?

GRADE 8: Describe some changes you can make in your everyday life to help improve the ecosystems of the Mississippi River and even the health of the planet.

On the Post-trip survey, we asked students to answer the learning objective intended for their grade. When fifth graders were asked to describe how they are connected to the Mississippi River, 64% responded correctly that our drinking water comes from the river (23) or that littering pollutes the river (12).

Sixth graders were asked to describe how the river changed over the last 12,000 years. Seventy-four percent of sixth graders correctly described several geological changes that occurred including evidence of: St. Anthony Falls receding (10), the deepening river gorge (18), an earlier ocean (8), human habitation (43), and changing nature (2).

Seventh grade students had the lowest percentage of students answering correctly. Only 24% of the 66 seventh graders adequately answered the question: *How does your cultural perspective (where you come from) affect how you relate to nature and to other people?* Many seventh graders skipped this question entirely. Evaluators believe that the question was too complex and/or too abstract based the responses of the students that did respond. Sixteen students answered that people need to respect the river and noted the interconnectedness between people to the environment.

Two-thirds of the eighth graders, 48 of 66, correctly identified changes they could make in their daily lives to help the environment. Many of these students suggested picking-up litter, recycling, conserving energy, and riding bicycles to name a few.

A large percentage of students, about two-thirds of fifth, sixth, and eighth graders were able to answer the key learning objective for their grade. Seventh graders found it more difficult to answer correctly. The learning objective created for seventh graders was a more abstract and complex question, which may be the reason that less than one-fourth of the seventh graders could answer correctly.

Based on the comments of the teachers and the student responses, it appears that the curriculum was not fully incorporated into the summer sessions. Teachers who responded to our UWCA survey described a tension between using the curriculum and focusing their efforts on the specific subject areas (math, reading, etc.) that they were hired to teach.

Conclusions and Considerations

Based on the findings discussed in this report, we can assess the extent to which the seven evaluation questions were answered.

What was the level of engagement for students who participated on the trip?

Students' participation and engagement were high. Based on our survey data and Wilderness Inquiry records, we estimate between 1,270 and 1,397 students (nearly 80% of all 5-8 graders) participated on the Mississippi River Canoe trip.

Demographic data confirm that UWCA served a diverse population of students living at or near poverty. Students of color make up the majority of the student bodies in all 14 schools; and at least 80% of the students in nine of these schools were eligible for Free and Reduced-Priced Lunches.

Over 70% of the teachers believed that students were highly engaged during the field trip and the majority of the teachers perceived that the students were having fun and learned a lot. Teachers reported that students were talking about the trip afterwards, another indicator of engagement.

River observations, made by students during the trip, were another indicator of student engagement. In the post-trip survey, students mentioned over 320 distinct nature sightings. Many students noted the physical structures (locks, dams, and bridges) on or near the river. Also worth noting, students saw people walking dogs, boating and canoeing, fishing, swimming, and running.

Did the UWCA Program change participant attitudes and feelings about the Mississippi River?

Yes, positive changes in attitudes about the river. Students' responses to the surveys revealed that at least one-third, and perhaps the majority of Minneapolis fifth through eighth graders had never been on the river prior to summer 2010. When students were asked if the trip changed the way they thought about the Mississippi River, 60% of the students said, *yes*. Many students noted that the river was much cleaner than they had expected. Before the trip, some students said they were very afraid of the river; after the trip, they were no longer afraid.

One-hundred and seventeen students (36%) explicitly named the Mississippi River trip as the best thing they did in summer school. *"Science," "gym,"* and *"friends,"* were distant second (36), third (32), and fourth (31) place finishers for this question. In general, students appeared to favor the more active programming.

Student survey responses indicate, in many cases, exposure amplifies interest in the river.

Did the Program change participants' attitudes about science, the environment, and their educational future?

Yes, the Program changed student attitudes about science and the environment. Student survey responses strongly indicate a change in attitude about the environment and science. More than three-fourths (77%) said they were more interested in the environment because of the river trip; and 22 percent said they were much more interested. Sixty-three percent of the students reported that they more interested in science because of summer school.

When teachers were asked to assess the impact of the river trip on students over half agreed with the statement, *I think that my students will be more interested in science because of the river trip.* Even larger numbers believed that students had a greater interest in the environment. More than 70% of teachers agreed with the statement, *I believe the river trip positively affected students' attitudes about the environment in general.*

Did program participation appear to effect school behaviors (i.e., changes in attendance, changes in the level of engagement in learning)?

Program participation did not appear to effect summer school attendance. Our comparison of 2009 and 2010 summer attendance data show that attendance fluctuated, but remained consistent. Regardless of the year, overall attendance rates began high, then dropped to between 75% and 90% attendance, and rebounded slightly during the final few sessions. We found no indication of higher (or lower) daily attendance on the day of the river trip.

We saw evidence of an inverse relationship between age and overall summer program attendance. That is to say, older students are more likely to miss more summer school sessions.

Based on findings, we believe the trip had no effect on either attendance the day of the trip or to attendance overall.

Did students who participated on the trip say they are any more likely to pursue similar outdoor activities within a year?

Yes. When students were asked whether they would go on the river again in the next year, 223 students (69%) agreed that they would return to the river within a year.

Were learning objectives achieved?

Yes and no. About two-thirds of the fifth, sixth, and eighth graders were able to answer the key learning objective for their grade, but less than one-fourth of the seventh graders could answer the question correctly. Evaluators believe the learning objective created for seventh graders was too abstract or too complex.

Based on the student responses and comments from teachers, we believe that the curriculum was not fully incorporated into the summer sessions. More than half the teachers identified obstacles to incorporating the materials. Many teachers described a tension between using the curriculum and focusing their efforts on the specific subject areas (math, reading, etc.) that they were hired to teach. These responses suggest the need to improve coordination and continuity between summer session curricula and the river trip experience overall.

What were teacher attitudes about the Program?

A valuable experience. Analysis of teacher responses suggest that teachers believed the UWCA program and its river trip was a valuable experience for students. For example, all but one teacher (94%) agreed with these statements:

- I believe that the river trip was age appropriate for students, grades 5 – 8.
- Overall, I think the river trip was a valuable experience— well worth it.
- I think students who had fewer outdoor experiences especially benefited from the river trip.

The majority of the teachers (88%), also agreed with the statement, *I was excited to go on the river trip during summer session* and more than half (58%) stated that they would be more likely to teach during the summer session in 2011 if the trip was offered again. Finally, the teachers conveyed a sense of gratitude for the opportunity to participate.

Concluding Remarks

Our findings confirm that the Urban Wilderness Canoe Adventures program is reaching an underserved population through the Minneapolis Public Schools summer program. We suspect that many youth would miss similar encounters with the natural world without this program.

The program is popular among teachers and participants. In addition, the program has fostered greater interest in the Mississippi River and the environment among young people. Based on our evaluation findings, we believe that the program should be continued and expanded as resources allow.

Appendices

For the UWCA evaluation, the Center for Applied Research and Educational Improvement will evaluate:

- Whether identified learning objectives for the activity were achieved;
- The level of interest in and engagement with the UWCA program compared to other 2010 summer school educational experiences;
- Changes in participants' attitudes and feelings about the environment;
- Changes in participants' behaviors;
- Change in participants' attitudes about their educational future; and,
- The likelihood that young people will pursue similar outdoor activities within a year.

| Evaluation objectives | Possible question(s) to be answered | Sources: Methods | Timeline |
|---|--|--|---|
| <p>Determine the extent to which identified learning objectives for the activity were achieved.</p> | <ul style="list-style-type: none"> ▪ Did the majority of students sufficiently meet the intended learning objectives? ▪ Was quality or level of participant satisfaction dependent on age, gender, or previous outdoor experience? | <ul style="list-style-type: none"> ▪ Instructional artifacts: Based on instructional criteria provided before the river activity, determine the proportion of students that met or exceeded the intended learning outcomes of learning activities. ▪ Participant work: Based on participant responses to Pre-, Trip day-, and Post-trip survey items (incl. demographic characteristics) | <ul style="list-style-type: none"> ▪ Shortly after river trip experience ▪ Brief surveys (10-12 items) to be administered at three points during summer session 2010 (Week 1, River day, Final week) |
| <p>Determine the level of interest in and engagement with the river trip experience compared to other summer school educational experiences.</p> | <ul style="list-style-type: none"> ▪ Were participants highly engaged in the river trip activities? ▪ How would summer school students rank the river experience among other prominent summer school activities in 2010? | <ul style="list-style-type: none"> ▪ Participant observations ▪ Journal entry analysis ▪ Post-trip survey | <ul style="list-style-type: none"> ▪ Observations on river day ▪ Participants would be asked to answer specific queries or prompts in their "River journals." Analysis would occur after river day. ▪ Brief post-trip survey administered at or near the conclusion of summer session 2010 |
| <p>Determine the extent to which changes in participants' attitudes and feelings about the environment occurred.</p> | <ul style="list-style-type: none"> ▪ To what extent did the river trip change participants' attitudes and feelings about the environment in general? | <ul style="list-style-type: none"> ▪ Participant survey responses: Compare responses on Pre-, Trip day-, and Post-trip Participant Surveys (paper and pencil test or electronic) ▪ Journal entry analysis (specific questions for participants to answer): Participants would be asked to answer specific queries or prompts in their "River journals," analysis would occur after river day. Thematic analysis of journal entries to uncover common themes of respondents | <ul style="list-style-type: none"> ▪ Brief surveys to be administered at three points during summer session 2010 (Week 1, River day, Final week) ▪ Participants would be asked to answer specific queries or prompts in their "River journals." Analysis would occur after river day. |

| Evaluation objectives | Possible question(s) to be answered | Sources: Methods | Timeline |
|--|--|--|---|
| Determine the extent to which changes in participants' behaviors occurred. | <ul style="list-style-type: none"> ▪ Do participants believe they will be better stewards of the environment because of their river trip? | <ul style="list-style-type: none"> ▪ Compare participant responses on Pre-, Trip day-, and Post-trip Participant Surveys (paper and pencil test or electronic) ▪ Journal entry analysis (specific questions for participants to answer): Participants would be asked to answer specific queries or prompts in their "River journals," analysis would occur after river day. Thematic analysis of journal entries to uncover common themes of respondents | <ul style="list-style-type: none"> ▪ Brief surveys to be administered at three points during summer session 2010 (Week 1, River day, Final week) ▪ Participants would be asked to answer specific queries or prompts in their "River journals." Analysis would occur after river day. |
| Determine the extent to which changes in participants' attitudes about their educational future occurred. | <ul style="list-style-type: none"> ▪ Did the river experience have any effect on participants' interest in pursuing a STEM career? ▪ Did the river experience have any effect on participants' interest in pursuing a further education? ▪ Did the river experience change participants' attitudes about science? | <ul style="list-style-type: none"> ▪ Compare participant responses on Pre-, Trip day-, and Post-trip Participant Surveys (paper and pencil test or electronic) | <ul style="list-style-type: none"> ▪ Brief surveys to be administered at three points during summer session 2010 (Week 1, River day, Final week) |
| Determine the likelihood that young people will pursue similar outdoor activities within a year. | <ul style="list-style-type: none"> ▪ What is the likelihood that participants will return to the river corridor within a year? | <ul style="list-style-type: none"> ▪ Post-trip survey questions | <ul style="list-style-type: none"> ▪ Brief post-trip survey administered at or near the conclusion of summer session 2010 |
| Report evaluation findings to project team | <ul style="list-style-type: none"> ▪ What are the principal findings that were learned from the piloting process of these curricula? | <ul style="list-style-type: none"> ▪ Based on evaluation activities: Summarize prior evaluation activities in a brief report to the project, to be included as a supplement to overall project report | <ul style="list-style-type: none"> ▪ September 2010 |

Professional Capacity

About the evaluator:

Timothy D. Sheldon

Principal Investigator, Research Associate

Center for Applied Research and Educational Improvement, University of Minnesota

Tim Sheldon is a research associate at the University of Minnesota's Center for Applied Research and Educational Improvement. He serves as a principal investigator and project manager for numerous projects relating to educational policy and program evaluation in school districts and other agencies throughout Minnesota. Since 2001, Sheldon has managed several federally-funded afterschool programs for vulnerable students in some of Minnesota's largest school districts. Other research activities include research on University engagement in seven Minnesota communities, evaluation of college preparatory programs for underprepared students, and professional development of science teachers. Sheldon received his doctorate in Educational Policy and Administration at the University of Minnesota in 2005.

About the Center for Applied Research and Educational Improvement (CAREI):

The Center for Applied Research and Educational Improvement (CAREI) is an independent research and evaluation center located in the University of Minnesota's College of Education and Human Development. CAREI conducts rigorous, impartial research and evaluation for the federal and state governments, non-profit organizations, school districts, and private foundations and has done so since its inception in 1989. CAREI seeks to be a leading source of research and evaluation information for communities, policy makers, and other entities that shape educational policy and practice. CAREI advances this mission by conducting rigorous research and evaluation; working closely with community stakeholders in the development of evaluation objectives; and, contributing to the knowledge base by disseminating research and evaluation findings to a wide range of constituencies.

CAREI has the resources and capacity to produce comprehensive evaluations for complex programs and initiatives. To date, CAREI has evaluated over 200 programs for federal and state governments, non-profit organizations, school districts, and foundation grants, in excess of \$18 Million. The center is composed of a team of permanent doctoral-level investigators and master's level staff, who work closely with funders and program staff to determine program and evaluation objectives and strategies. The staff at CAREI have a wide range of skills and backgrounds in both qualitative and quantitative research methods including survey research, focus groups, group interviews, participant interviews, document analysis and statistical analysis (including multiple regression, path analysis, and HLM). Our collaborative efforts within the CAREI team give us the capacity to design studies that incorporate multiple methods into our evaluations to provide clients with the most reliable information needed to assess program effectiveness. CAREI creates and administers evaluation instruments that measure the impact of programs and policies for a diverse range of communities. CAREI also has complete access to the full array of resources available at the University of Minnesota, including highly specialized and diverse faculty expertise, the latest software and equipment, advanced technology support, and the use of all libraries. Currently, CAREI staff collaborate with faculty and senior research staff in more than a dozen University units including the Departments of Neuroscience; Pediatrics; Educational Policy and Administration; Educational Psychology; School of Social Work; Minnesota Extension; Children, Youth, and Families Consortium; Institute of Technology; Office of the Vice President for System Academic Administration; and Office of Equity and Diversity.

From the Teacher Survey

Teachers' explanations for why the curriculum was not used.

6a. Briefly explain, why or why not.

- *I did not have the curriculum. However, we did do some research and report on major rivers in the world and compared and contrasted features. Also watched a video about how rivers form and why we need to take care of our natural resources. For journaling activities I tried to focus a lot on quotes about water and rivers.*
- *There was little that I could add to the Gateway curriculum that would have been relevant*
- *I tried to incorporate some of the activities, but it seemed that we were trying to do too much in the Reading classes with both implementing an Arts Infused curriculum (with the collaborating artist) and the Wilderness Inquiry lessons.*
- *The focus of my work was the Math curriculum. I felt that since the students were not meeting the standards in math I needed to focus on that. Our summer program was also set up such that the students were getting the NPS curriculum in the social studies class they took during summer school.*
- *Do not have enough age appropriate text available for the students*
- *I was teaching math and the curriculum had a Mississippi River component, but the NPS materials did not fit in very well.*
- *I worked with the Media specialist and together we incorporated the information from the National Park Service. She did much more than I, but together we covered a lot of material and felt the kids were exposed to some great material.*
- *I never received the promised materials.*
- *I did not have the National Park Service curriculum, but used the internet to find information about the NPS, especially as it relates to the Mississippi*
- *A little hard to make connections in math, but our warm-ups were Mississippi River focused.*
- *I used material, but I could not, in honesty, say I fully incorporated the curriculum into my lessons/teaching.*
- *There were more ideas presented in the curriculum provided than I had time to give them. But that's a good problem to have!*
- *There was a lightning storm that day so we never had the chance to use the canoes. We walked through the mud to both rivers. It was hot and humid a very unpleasant experience.*
- *Yes, we did try to teach the curriculum and talked about the river but we were told we were starting at the north park and instead we left from further down the river so the kids experienced different part of the river so I didn't feel like I could point out what I had prepared for.*

Instruments

Student Pre-Trip Survey

Have you ever been on the Mississippi River? Did you fish, swim, or boat on the river?

*List at least **5 things you know** about the Mississippi River.*

- ✓
- ✓
- ✓
- ✓
- ✓

*What else would you **like to know** about the Mississippi River?*

Student Post-Trip Survey

Dear Students,

This survey was created to collect students' thoughts and ideas about summer school this year -- especially about the river trip. Please answer the questions honestly. Your responses will help us make the program better and better.

DIRECTIONS: Choose the **best answer** for the following questions.

1. I went on the Mississippi River trip.

YES

NO

2. How likely is it that you will go on another canoe trip or visit the Mississippi River in the next year?

VERY UNLIKELY

Somewhat Unlikely

Somewhat Likely

VERY LIKELY

3. Are you more interested in the environment because of the River trip?

MUCH LESS
INTERESTED

Somewhat less
interested

Somewhat more
interested

MUCH MORE
INTERESTED

4. Are you more, or less interested in science because of summer school?

MUCH LESS
INTERESTED

Somewhat less
interested

Somewhat more
interested

MUCH MORE
INTERESTED

SHORT ANSWER: Please provide short answers to the next three questions.

5. What are some interesting things you saw on the river during your trip?

6. Did the river trip change the way you feel about the Mississippi River?

7. What was the best thing you did in summer school this year?

Student Post-Trip Survey (cont'd)

CHALLENGE QUESTIONS: For this section, answer only the question **for your grade**.

8. If you are in **GRADE 5**:

What are some ways that you learned you are connected to the Mississippi River?

9. If you are in **GRADE 6**:

Describe how the river has changed over the last 12,000 years.

10. If you are in **GRADE 7**:

How does your cultural perspective (where you come from) affect how you relate to nature and to other people?

11. If you are in **GRADE 8**:

Describe some changes you can make in your everyday life to help improve the ecosystems of the Mississippi River and even the health of the planet?

Please choose the best response for the last three questions.

12. I am a:

Girl

Boy

13. I am in grade:

5

6

7

8

14. Not counting the river trip, I had been **ON** the Mississippi River:

Never before

1 or 2 times

3 or 4 times

5 or more times

Teacher Survey

Directions: Please read the statement on the left, and select the most appropriate response on the right.

STRONGLY DISAGREE Somewhat Disagree Somewhat Agree STRONGLY AGREE

1. I believe that the river trip was age appropriate for students, grades 5 – 8.
2. I think those students with fewer outdoor/wilderness experiences *especially* benefited from the river trip.
3. I believe the river trip changed participants' attitudes about the environment in general.
4. I was excited to go on the river trip during summer session.
5. I think the students I taught benefited from the river trip.
6. I believe that, because of the river trip, my students were more engaged in learning during summer session.
7. I think that my students will be more interested in science because of the river trip.
8. My students exhibited a high level of engagement during the river trip -- they paid attention, respected others, and participated enthusiastically.
9. Overall, I think the river trip was a valuable experience— well worth the expense.
10. I learned a lot on the river trip.
11. After the trip, students talked about the river experience in class.
12. I believe the students learned a lot on the trip
13. I believe the students had fun on the trip
14. It is likely I will participate in summer session next year.
15. I will be more likely to teach next summer if the river trip is offered again.
16. I fully incorporated the National Park Service curriculum into my lessons.
17. Please explain, why or why not.
18. Complete the sentence. What surprised me most about the river trip was...