

**A FOREST IN THE CITY?
RECOMMENDATIONS FOR DEVELOPING,
IMPLEMENTING, AND MAINTAINING “A FOREST
FOR EVERY CLASSROOM” IN MILWAUKEE AND
CHICAGO FOR THE U.S. FOREST SERVICE**

by

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A project submitted
in partial fulfillment of the requirements
for the degree of
Master of Science
(Natural Resources and Environment)
at the University of Michigan
April 2010

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Abstract

This study, conducted in three phases from February 2009 to April 2010, was guided by a single overarching goal: to provide the U.S. Forest Service (USFS) Urban Connections program in Region 9 and the Conservation Education Office in Washington D.C. with recommendations to develop, implement, and maintain a conservation education program based on the *A Forest For Every Classroom* (FFEC) model, and tailored for use in Chicago, IL and Milwaukee, WI. Urban Connections is an outreach program which operates in nine cities in the Eastern Region and which aims to increase awareness of National Forests among urban populations. FFEC is a place-based conservation education program offering professional development for both formal and non-formal K-12 teachers which was originally developed in Vermont through a partnership between the USFS Green Mountain National Forest and other public- and private-sector partners. The program is currently active in Vermont, New Hampshire, Texas and Montana. Participating teachers develop individual curricula that utilize their local environment and resources as a context for teaching any subject matter, with a focus on creating a sense of place and developing stewardship behavior and civic responsibility. To meet the study's overarching goal, interviews and focus groups were conducted with 85 USFS personnel, potential external partners, FFEC -program representatives, teachers who have participated in FFEC ("FFEC alumni"), and teachers from Milwaukee and Chicago. Interview data was analyzed using content analysis with categorization of responses. Results were used to create recommendations specific to FFEC implementation in Milwaukee and Chicago. These recommendations fall into six categories: Getting Started, Partnerships, Program Design, Urban Adaptations, School Support and Recruitment, and In the Classroom: Curriculum Implementation.

Acknowledgements

The authors would like to thank Dr. Safiya Samman for providing direction during the earliest stages of our work, and for allowing us the opportunity to work with the U.S. Forest Service on a project that we all believe in. Dr. Samman was instrumental in this project's development, and the entire process could not have happened without her. We also extend a very special thank you to those with whom we worked most closely in the USFS Urban Connections Program for their continued support and feedback (particularly during site visits!): Daryl Pridgen, Jean Claassen, and Ashlee Ransom. Many thanks to the members of our steering committee: Sue Cummings, Kathleen Diehl, Jean Claassen, Trudy Fagre, Dave Haugen, Lisa Perez, Daryl Pridgen, Ashlee Ransom, Jessie Scott, Dr. Safiya Samman, Linda Wellings, Dr. Pat Stephens Williams, and Dr. Michaela Zint. We deeply appreciate all the time you spent on conference calls and in webinars, offering advice and lending expertise. For their especially enthusiastic and continued support, we would like to thank Don Howlett, Dr. Stephens Williams, and Tamberly Conway. The team gives a special note of thanks to Kathleen Diehl, Linda Wellings, Joan Haley, and all the teachers and presenters from the 2009 FFEC Vermont Summer Institute who helped make the team's visit possible, memorable, and very informative. We also extend our appreciation to Megan Camp, for her willingness to meet in any location, be it in a barn or car.

To the University of Michigan's School of Natural Resources and Environment (SNRE), we are genuinely grateful for the educational, financial, and resource support afforded to our research. We offer our deepest gratitude to our faculty advisor, Dr. Michaela Zint, for all of the support and guidance she gave throughout the duration of our research. This report would not have been possible without her expertise, experience, and late-night emails. Thank you for being patient with us, encouraging us, and tolerating all six of us crammed into your office. We acknowledge Dr. Bunyan Bryant and Sarah Lashley for assisting us during the team formation and research development phases. We are still in the practice of starting our meetings on a positive note with "excitement sharing". We are also grateful to the Education Foundation of America who provided the financial support for this endeavor.

Thanks so much to all our interviewees for their important insights and thoughtfulness, and to all others who have contributed their energies in some capacity to this project. We recognize and are thankful for the support and patience of our families, significant others, and friends throughout the last two years. Finally, this project was inspired by a speech given by Richard Louv, author and co-founder of the *Children & Nature Network*, at Michigan State University in the fall of 2008. We thank him for his work to enable children to reconnect with nature, and hope the results of this project help promote his mission to the benefit of students, teachers, and communities in Milwaukee and Chicago.

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Executive Summary

Introduction

A Forest for Every Classroom (FFEC²) is a place-based conservation education program offering professional development for K-12 teachers. Participating teachers “develop curriculum that foster student understanding of and appreciation for the public lands in their communities [and that] integrate hands-on natural and cultural explorations that address concepts in ecology, sense of place, stewardship, and civics.”³ This study analyzed the feasibility of adapting FFEC for Milwaukee, WI, and Chicago, IL, through the U.S. Forest Service (USFS) Urban Connections Program. The FFEC program was originally developed in Vermont through a partnership between the USFS Green Mountain National Forest and other public- and private-sector partners including the National Park Service (NPS) Marsh-Billings-Rockefeller National Historical Park, the Northeast Natural Resource Center of the National Wildlife Federation, the Conservation Study Institute of the NPS, and Shelburne Farms. To date, FFEC has been replicated and adopted in three other states (New Hampshire, Montana, and Texas). Past evaluations have documented areas where FFEC has been successful, including helping teachers initiate place-based education practices in their schools, building capacity for resource sharing among partners, and increasing partners’ visibility.

Table 1. FFEC Elements¹

Place-Based
Interdisciplinary
Civic-Engagement
Service-Learning
Community-Based
Balanced Views
Partnerships
Full Year and Subsequent Support
Family-Friendly

Purpose

This study, conducted in three phases from February 2009 to April 2010, was guided by a single overarching goal: to provide the U.S. Forest Service Urban Connections program in Region 9 and the Conservation Education Office in Washington D.C. with recommendations to develop, implement, and maintain a conservation education program based on the FFEC model, tailored for use in Chicago, IL and Milwaukee, WI. The breadth of this goal allowed the authors flexibility and thus, allowed them to be responsive to the needs of Urban Connections, a USFS urban outreach program, which at the beginning of this study was just beginning to explore adopting FFEC in UC cities.

To meet this overarching goal, the team conducted interviews and focus groups with 85 USFS personnel, potential external partners, FFEC -program representatives, teachers who have participated in FFEC

¹ P. Stephens Williams, personal communication, January 18, 2010

² FFEC program representatives pronounce the acronym \fëk\.

³ National Park Service, FFEC website (<http://www.nps.gov/mabi/forteachers/forest-for-every-classroom.htm>)

("FFEC alumni"), and teachers from Milwaukee and Chicago. Results from the study were used to create recommendations specific to FFEC implementation in Milwaukee and Chicago.

Recommendations

The authors' recommendations for FFEC development and implementation in Milwaukee and Chicago are grouped into six categories: Getting Started, Partnerships, Program Design, Urban Adaptations, School Support and Recruitment, and In the Classroom: Curriculum Implementation.

Getting Started Recommendations for the initial phases of FFEC development in Milwaukee and Chicago include:

- Develop a vision statement and strategic plan for implementation, which outlines the goals of the FFEC program for UC.
- Invite key partners and stakeholders to participate in FFEC development from the start.
- Open FFEC professional development to all teachers, but make special efforts to recruit from private and specialty schools like those with environmental themes.
- Start small - pilot the FFEC program in each city first, and evaluate its outcomes to garner support from K-12 teachers, non-formal educators, school administrators, and funders.

Partnerships Partners are a core component of the FFEC program. In working with partners in Milwaukee and Chicago, it is important to:

- Partner with USFS personnel (such as resource specialists who provide content knowledge to teachers) as well as external partners that can help deliver and support the program in diverse ways (Appendix 3, *Potential Partners*).
- Collaborate and build on, rather than compete with, existing environmental education programs. For example, because the Mighty Acorns program in Chicago targets 4th - 6th grades, FFEC could act as an extension of the program by focusing on other grade levels. In Milwaukee, FFEC could integrate the LEAF Wisconsin K-12 Forestry Education program, in programming.
- Leverage the strengths of existing partners. For example, Neighborhood House in Milwaukee has strong connections with teachers and administrators that could help in marketing FFEC.
- Sustain communication about FFEC's strengths and potential areas for improvement with representatives from other FFEC programs.

Program Design Incorporating the following elements into the program design may support and enhance teachers' professional development experience:

- Provide participants with an immersive experience during the workshops. For example, provide comfortable overnight accommodations at workshops and include interactive, hands-on sessions for teachers based on the FFEC model.
- Design workshops to be responsive to teachers' needs. For example, allow teachers to bring their children to workshops if childcare is a concern, gradually expose teachers to outdoor experiences, and focus on content that teachers find relevant, such as local habitats or local water and air quality.

- Create an environment in which teachers receive professional and social support from the program. For example, provide opportunities for teachers to engage with experts in content and state education standards and encourage teachers to share their expertise and experience with other teachers in the program.
- Assist FFEC alumni in networking with USFS personnel and other FFEC program alumni. For example, facilitate networking opportunities for FFEC teachers by helping them identify one another at professional conferences.
- Focus on local historical, cultural, and community resources near schools that are accessible to teachers to give students a sense of place. Such resources could include public lands and urban forests.

Urban Adaptation The following recommendations offer suggestions for adapting the program to meet the needs of urban audiences:

- Choose a program name that fits with audiences in Milwaukee and Chicago and reflects the relevant local resources for each city. Thus, instead of the program title being *A Forest for Every Classroom*, it might be *An Urban Forest for Every Classroom* or *A Greenspace for Every Classroom*.
- Intentionally engage communities of color and ethnic groups that reflect the rich diversity of the city, to help ensure the programs will be relevant and accessible to these audiences.
- Use workshops to demonstrate how local green space at any scale - from a squirrel on a patch of grass, to a single tree, to a park - can be used to support the curriculum.
- Work with participating schools or individual teachers to develop custom “asset maps” - or inventories of relevant community resources, such as nearby green spaces, sources of local expertise (including on environmental, cultural, and historical aspects), and local financial and material resources. The asset mapping process helps teachers think creatively about where to find resources for curriculum planning and implementation. While asset mapping is a part of the program, the exercise could be expanded as part of the alumni support component (see Appendix 5 for more information on asset mapping).
- Develop ways for teachers in each city to share equipment and material resources (e.g. compasses, books, examples of FFEC curricula, etc.). For example, regional resource centers could be established through, and staffed by, Urban Connections, other program partners, or participating schools across each city.
- Support participating teachers in obtaining the necessary funding for their curriculum implementation and local green space development by providing 1) a seed-money fund for \$500-\$1,000 grants, 2) a grant-writing session in the professional development program, and 3) an opt-in listserv for sharing relevant grant opportunities with teachers on an ongoing basis.
- Address safety and liability concerns as an integral part of the professional development workshops.

School Support and Recruitment It is critical to garner support from schools to encourage teacher participation, therefore recommendations to achieve this goal include:

- Generate state and school district-level administrators' interest by demonstrating FFEC's successes through past evaluations and providing examples from existing FFEC programs that clearly show how FFEC curriculum can, and have, been aligned to state education standards. Ensure enough time to develop buy-in from all levels of the school system (superintendents, school boards, principals, administrators, department chairs, curriculum specialists, parents) through sustained communication.
- Strategically align the program to public school standards and service-learning requirements (Chicago) and environmental courses (Milwaukee - forthcoming).
- Recruit teachers in teams from the same school to help sustain programs in schools. This also creates a support system within the school. Networks of teacher participants amongst schools can help build a community of teachers for mutual sharing of skills and resources in the form of clubs, list serves, etc.
- Recruit teachers interested in place-based education by giving presentations in schools and at professional conferences, and through science curriculum coordinators.

In the Classroom: Curriculum Implementation One important goal of FFEC is for teachers to ground their lessons in the local and nurture a sense of “place” in their students. To ensure that FFEC curricula are used in the classroom, the following is recommended:

- Require teachers to provide evidence of administrative support (letters, pledges, etc.) prior to their participation in the professional development.
- During workshops provide resources (e.g. speakers, sample curricula, lists of curriculum requirements) to help teachers develop curricula that meet their educational demands (e.g. state standards, curriculum pacers, etc.).
- Offer mini-grants to teachers to support curriculum development, implementation, and evaluation.
- Conduct evaluations of teacher and student outcomes and use results to improve the program.

Purpose of Study

This study was conducted as part of a Master's degree requirement for a team of six students at the University of Michigan's School of Natural Resources and Environment. The team evaluated the feasibility of adapting the place-based conservation education program, ***A Forest for Every Classroom*** (FFEC⁴), to the urban settings of Milwaukee, Wisconsin, and Chicago, Illinois, in cooperation with the client, the United States Forest Service (USFS).

Logic Model

The team developed a logic model as guidance for the project, outlining a series of outputs and outcomes (Appendix 2, *Logic Model*). These were identified based on input from the Master's Project Advisor, Dr. Michaela Zint, as well as contributions from the USFS Urban Connections personnel. Below are the outputs and short-term outcomes this project aimed to achieve.

Outputs:

- This final report titled *A Forest in the City? Recommendations for Developing, Implementing, and Maintaining "A Forest for Every Classroom" in Milwaukee and Chicago for the U.S. Forest Service Urban Connections Program*
- Executive Summary (p. 1-3 of this final report)
- Interview and focus group data from 85 participants (Appendix 9, *Themes Derived from Interviews and Focus Groups*)
- Research tools (interview guides, focus group guides)
- Tools for FFEC Implementation, including a 1 & 3 year strategic communication plan for UC
- Conference presentations (Appendix 10, *Submitted Conference Abstracts*)

Short-Term Outcomes: These emerged from conversations with USFS and UC personnel as well as the project's faculty advisor (Appendix 1, *Goals of Study Diagram*).

- Identify FFEC program strengths
- Identify FFEC startup and sustainability challenges
- Identify the need(s) for FFEC in Milwaukee and Chicago
- Identify existing resources within UC
- Identify existing (FFEC & city) resources external to UC offices
- Identify UC's vision for FFEC
- Identify anticipated challenges for implementation

⁴ FFEC program representatives pronounce the acronym \fěk\.

Introduction to Urban Connections

Urban Connections (UC) is an outreach program created for the Eastern Region of the USFS in 2000, through a joint effort by its three branches (The National Forest System [NFS], State and Private Forestry, and Forest Service Research), to increase the awareness of National Forests among urban populations (Urban Connections: Points of Pride, 2009). The program builds relationships with communities in some of the largest metropolitan areas of the Eastern Region of the USFS, involving and engaging these communities in USFS activities. This goal is accomplished mainly through partnerships with local organizations. For example, in Milwaukee the list of partners includes the Milwaukee Public School system, Betty Brinn Children's Museum, the National Park Service Urban Treehouse, and the non-profit organization, Greening Milwaukee. Currently, UC operates in Boston, Chicago, Detroit, Milwaukee, and the Twin Cities of Minneapolis-St. Paul (Urban Connections: About, 2009).

Introduction to A Forest for Every Classroom (FFEC)

A Forest for Every Classroom (FFEC) was founded in Vermont in 1999 through a partnership between the USFS Green Mountain National Forest, National Park Service (NPS) Marsh-Billings-Rockefeller National Historical Park, the Northeast Natural Resource Center of the National Wildlife Federation, the NPS Conservation Study Institute, and Shelburne Farms, a non-profit environmental education center. FFEC is a year-long professional development program that supports teachers in developing their own curricula utilizing place-based education practices. These practices encourage teachers to draw on local cultural, historical, and natural resources and to include a service-learning component to address community needs (USFS, n.d.). The FFEC program is open to formal (in-school, structured settings) and non-formal (out-of school, structured or unstructured settings) educators teaching grades K-12. FFEC curricula can be developed for any subject area, including social studies, science, math, English, and art.

FFEC is currently being replicated in three locations around the United States: New Hampshire, Texas, and Montana. These three programs all exist in different settings in regards to their rural-urban context and in proximity to natural resources. The New Hampshire and Montana programs both serve largely rural areas similar to the original program in Vermont. The replication in Texas has both rural and urban audiences, which it serves through an Urban Connections Expansion program and a Rural Connections program. This study aimed to explore the needs and potential for expanding the FFEC program to Milwaukee, Wisconsin, and Chicago, Illinois and in so doing, sought to describe a process for adapting professional development programs like FFEC to explicitly urban areas. Because FFEC was originally designed for communities with easier access to large public land areas, the team also examined the need for FFEC to be adapted to Milwaukee's and Chicago's unique urban environments. The team was able to draw on the Texas program's experience with urban audiences to make further suggestions for urban adaptations to the FFEC program.

The concept of place-based education comprises the core of the FFEC program. Semken and Freeman (2008), drawing on a growing body of literature on the subject, define place-based education as involving:

- experiential learning in and about local or regionally characteristic (i.e., authentic and representative of the encompassing region) natural and social settings;
- transdisciplinary and cross-cultural synthesis of place-related knowledge and pedagogy; and
- service-learning or other forms of community outreach.

In essence, place-based education is the use of a school's immediate surroundings, including natural, historical, and cultural elements, as an extension of the classroom to root students' education in their local context and also meet state and national educational outcomes. Some evidence suggests that place-based education provides students with a number of benefits, including an improved ability to understand the relevance of academic lessons, increased engagement in learning, and the ability to develop connections to the environment in their own communities (Powers, 2004). The assumptions underlying place-based education are that connecting people to their community strengthens civic engagement and increases academic achievement with concrete "real-world" examples, instead of abstract concepts (Powers, 2003). An analysis of seven place-based education programs by the Place-based Education Evaluation Collaborative (PEEC, 2007) documented a connection between participating in place-based education and improved student performance⁵. For more information on place-based education, please see Appendix 5 (*Background Literature*).

The FFEC Program

Scheduled over the course of one year and corresponding with each of the four seasons, teachers attend four workshops (11 total days of professional development) that seek to provide the content knowledge, skills, and inspiration to create individualized place-based education curricula. Seven critical features of the FFEC program are identified in Table 2 (Powers, Duffin, & Lafond, 2004).

During the workshops, sessions are taught on a variety of topics from forest management to curriculum development by individuals who are committed to serving as ongoing resources for teachers in the program. This means that teachers who participate in FFEC can call upon the instructors for questions, to be guest presenters, or for other assistance after the conclusion of the professional development program.

Another key component of the FFEC professional development program is the incorporation of service-learning into every curriculum that is created. In service-learning, students learn through community-based service projects, often addressing issues of their choosing, under the supervision of their teachers.

⁵ For more information on FFEC evaluations, please see '*Past FFEC Evaluations*' starting on page 8.

Students may investigate and examine the chosen community issue in depth, gather data, and ultimately decide on a course of action to help alleviate the problem. Examples of the types of service-learning projects FFEC teachers can undertake include riverbank restoration based on water quality readings of a local stream or river, research on invasive species, or holding a food drive in response to an observed need at an area food bank or homeless shelter. The development and completion of this type of a “real-world” project is intended to help meet academic learning objectives while further connecting students to their communities and empowering students to take actions benefitting their local environment.

Also essential to the FFEC model is offering continuing support of experts and building long-term relationships with participating teachers and schools. Upon completion of the FFEC program, participating teachers are known as “FFEC alumni” and may act as a support system for others who are implementing FFEC in their classrooms by participating in future trainings and/or mentoring new teachers. FFEC alumni are also provided with opportunities for ongoing support. This includes access to small grants for classroom activities and service-learning projects, and scholarships for attending professional conferences. The founding partners are using FFEC to evaluate whether intentional, long-term relationships with teachers produce desired changes in teaching methods and respectively, in students’ environmental stewardship.

Table 2. FFEC Essentials

(Powers, Duffin & LaFond, 2004)

- | |
|---|
| 1. Demonstrate best practices in place-based education |
| 2. Cultivate an understanding of public lands and the local community |
| 3. Offer diverse and balanced perspectives on public lands issues |
| 4. Develop relationships with teachers through sustained professional support |
| 5. Foster connections between schools, communities, and resource specialists |
| 6. Enhance the roles of public and private organizations as community resources |
| 7. Foster students as active participants in the care of public lands through service-learning activities |

Past FFEC Evaluations

FFEC has conducted formative and summative evaluations since its inception in 2000. The FFEC program and partners belong to the Place-based Education Evaluation Collaborative (PEEC), which carries out individual as well as cross-program evaluations of place-based education programs. FFEC program evaluations are publicly available for the periods from 2002-2003 and 2003-2004, and a cross-program evaluation of FFEC and three other programs was published in the *Journal of Environmental Education* (Powers, 2004).

Adaptations of the FFEC model include ***A Trail to Every Classroom*** (TTEC) for educators from Georgia to Maine along the Appalachian Trail and a ***Watershed for Every Classroom*** (WEC) for educators in the Lake Champlain Basin (Vermont, New York, and Quebec). TTEC was evaluated in 2006 and WEC was evaluated from 2007-2008.

Evaluation Methods and Goals

For the 2002-2003 FFEC evaluation, program partners assessed the first two years of programming to better understand 1) the achievements and challenges of program development and implementation, and 2) the degree to which program outcomes were attained. They also sought to learn how to improve the FFEC program to better achieve desired outcomes.

The major goal of the 2003-2004 evaluation was to learn what aspects of the FFEC program impact teachers' practices and hosting schools. A combination of case studies (of two community schools and of the partnership itself) and a survey of FFEC alumni teachers were conducted to meet the evaluation's goal. This evaluation also examined partnership aspects, of how internal and external partners have been impacted by the partnership as well as each partner's contribution to the partnership. To determine the program's long-term impacts on teacher practice, surveys were distributed to FFEC alumni teachers who had participated in the first two years of the program.

Evaluation Findings

The 2002-2003 evaluations provided valuable insights into the program. For example, results indicated that teachers appreciated and were satisfied with their own professional development resulting from this program. The most salient program strengths identified by teachers were applying role-model teaching practices, using diverse and balanced perspectives, respecting and nurturing teachers as professionals, maintaining a well-organized program, and providing long-term support for teachers. Teacher outcomes revealed that they gained new knowledge and resources, changed their teaching practices, drew on local environments and public lands, and created a support network for other teachers. In addition, teachers also reported feeling inspired and rejuvenated by teaching about local natural resources.

Due to low student responses to pre- and post-test surveys, teacher reports and observations were used to gauge student outcomes. Teachers indicated that students developed a relationship with local community resources (i.e. attachment to place), experienced an increased sense of community and cooperation in the classroom, and were more likely to engage in more outdoor learning activities, resulting in the program positively influencing students' academic performance. According to FFEC teachers, students also showed evidence of civic engagement in local environmental issues. Last, several teachers also reported that the place-based component helped to engage special needs students.

Some of the process challenges that were identified included program implementation costs, service-learning challenges (i.e. understanding what service-learning is, how to implement service-learning in the classroom, managing time constraints), underutilization of follow-up visits to local sites, teachers' limited time to develop lesson plans and/or other teaching responsibilities, and a lack of clarity of partners' roles.

In light of these challenges, the evaluation recommended that FFEC more clearly define and consistently use terminology (e.g. place-based education), help teachers understand how to gain school support to implement curricula, offer opportunities for participants to explore certain content areas in more depth, and clarify partners' roles.

The 2003-2004 evaluation identified similar results as the 2002-2003 evaluation. Teacher participants reported that FFEC changed their teaching practices by providing tools for utilizing local forests in traditional classroom content. Teachers also shared their practices with other teachers in their school. In addition, FFEC strengthened school involvement in the community, for example connecting teachers to local resource experts. As a result of FFEC, students' knowledge of public lands increased and the place-based approach resulted in students showing greater interest in learning conventional curriculum content.

Results of the partnership case study indicated that partner organizations and the FFEC program benefited from the collaborative process. As a result of participation in the FFEC program, partners built relationships with communities and schools, gained regional credibility (especially larger organizations), received increased state and community visibility, and reported increased confidence in offering programs that were previously not within their scope (due to the resource sharing capacity of the partnership). Diversity of organizations within the partnership networks (ranging from national agencies to national non-profits) provided legitimacy to the program and increased program resilience. Key recommendations for FFEC were to 1) help participating teachers support other teachers in their school in using FFEC concepts (e.g. give participants tools for other teachers in their school, more school-wide activities, and offer whole-school FFEC training workshops); 2) improve the usability of the service-learning component by providing access, skills, and encouragement to teachers; and 3) support participant implementation of curricula by recruiting teachers who have support in their school for the program and encouraging teams of teachers from each school to participate. In addition, the evaluation provided a number of recommendations for strengthening the partnership including clarifying partners' roles (e.g. logistics, implementation, or strategic planning) and inviting potential disseminators (key partners or people) to participate in FFEC workshops.

Reviewing these evaluations helped the study team understand the FFEC program's strengths and opportunities for improvement as well as to get an in-depth understanding of the lessons FFEC teachers and coordinators learned from the evolving process of program development and implementation. This provided important background information in understanding why the USFS was interested in implementing the FFEC program. Additionally, the evaluations helped the team describe FFEC program characteristics to potential partners in Milwaukee and Chicago during interviews and focus groups.

Study Framework

This study was structured around one overarching goal: to provide the U.S. Forest Service Urban Connections (UC) program in Region 9 and the national USFS Conservation Education program with recommendations needed to develop, implement, and maintain a place-based education program based on the FFEC model, tailored for use in Chicago, IL and Milwaukee, WI. At the time the study began in February 2009, UC was beginning to explore the possibility of developing a program like FFEC. At this early stage, UC was not yet certain what role it would play in developing a FFEC program and therefore this research goal allowed for flexibility and for the team to be responsive to UC's needs.

To meet the study's overarching goal, the team developed a Goals of Study Diagram (Appendix 1) with tiered categories and questions that served to direct the team's work. The Goals Diagram is divided temporally into three categories: past, present and future. These categories are comprised of the study's short-term outcomes, as follows:

Past (*i.e. past FFEC programs and replications*)

- Identify FFEC startup and sustainability challenges
- Identify FFEC program strengths

Present (*i.e. current state of program, partner, and city resources*)

- Identify the need(s) for FFEC in Milwaukee and Chicago
- Identify existing resources within UC
- Identify existing (FFEC & city) resources external to UC offices

Future (*i.e. anticipated challenges and vision*)

- Identify UC's vision for FFEC
- Identify anticipated challenges for implementation

Study Sites: Milwaukee and Chicago

The Urban Connections program of the USFS is established in six cities in the Eastern Region: Boston, Chicago, Detroit, Milwaukee, and the Twin Cities (Minneapolis/St. Paul). While Urban Connections is interested in implementing a program like FFEC in all six cities, due to time and budgetary constraints, the Master's project team selected the two sites that would be most cost-effective for the team to visit and also maximize the study's benefit for the client. Note that at the time of the project's initiation, Detroit did not have a FFEC coordinator and therefore Detroit was not selected as one of the study sites.

Why Milwaukee?

The city of Milwaukee, Wisconsin was chosen because it is home to the USFS Region 9 headquarters office which houses the Urban Connections Program Manager and Urban Connections Coordinators for Milwaukee and Chicago. Urban Connections is well-established in Milwaukee, and there are a number of

strong partnerships already in place that assist UC Milwaukee in bridging gaps between urban residents and rural public lands in Wisconsin and involving underrepresented audiences in USFS activities. Established partnerships include other state and federal agencies (National Park Service, Milwaukee Public Schools), corporations (Strive Media), and non-profit organizations (Greening Milwaukee, Groundwork Milwaukee). Also, having the expertise of the regional office close at hand was beneficial to the team's ability to conduct research and interviews with other USFS personnel.

Greater Milwaukee is home to more than 715,000 people. The recent economic downturn had a detrimental impact on the city, with unemployment listed at 9.8% in July 2009. Twenty-two percent of its residents live below the poverty line, and the average income is near \$38,000 (U.S. Census Bureau, 2010). The city does, however, rank 12th among similarly sized cities for the amount of green space per resident (The Trust for Public Land, 2009). This large park system can support teachers in their efforts to implement place-based education in the urban environment.

Why Chicago?

The city of Chicago, Illinois was chosen due to its proximity to both the USFS Region 9 offices in Milwaukee and the Master's Project team's location in Ann Arbor, Michigan. In addition, the Urban Connections program in Chicago was founded more recently than that in Milwaukee, making the team's research to identify potential partners particularly important.

Chicago covers approximately 227,000 square miles and had an estimated population of more than 2.8 million people in 2006 (U.S. Census Bureau). Statistically, the city is similar to Milwaukee with median household income around \$38,500 and almost 20% of people living below the poverty line. Chicago also has more than 550 city parks including 20 miles of shoreline on Lake Michigan (DNR, 2010). Schools in the city can raise awareness of the important ecological role played by Lake Michigan and place based education can be a valuable tool in raising this awareness.

Methods

Because the nature of this project required that the team identify interviewees and focus group participants over time, the project was completed in three phases with distinct timelines. Throughout the duration of the project, team members met weekly as a team and bi-monthly with Urban Connections personnel. In Phase I, background research was conducted on FFEC, including assessment of USFS capacity for FFEC implementation in Milwaukee and/or Chicago. In Phase II, the necessary steps for successful FFEC implementation in the two cities were ascertained. In Phase III, data from Phases I and II was analyzed and used to formulate recommendations for FFEC implementation. Below are detailed descriptions of the methods used during each phase.

Phase I (February 2009 - October 2009)

The team began by formulating goals for the project. In the first three months, conversations with the USFS Conservation Education Office, USFS Urban Connections Program, and project advisor, Dr. Zint helped to develop a series of objectives (Appendix 1, *Goals of Study Diagram*). These objectives were used to construct a logic model, illustrating the activities that were necessary to achieve these objectives and thus, the overarching project goal (Appendix 2, *Logic Model*). A steering committee was formed with representatives from FFEC, the USFS Conservation Education Office, the USFS Urban Connections Program, and the University of Michigan. After establishing planned activities, the team used virtual meeting technology to finalize its role with the project steering committee before setting October 2009 as the deadline for completing Phase I.

Phase I activities included:

- Steering committee formation
- Development of research goals (Appendix 1) and interview guide (Appendix 8)
- Site visits:
 - FFEC Summer Institute at Green Mountain National Forest in Huntington, Vermont and Marsh-Billings-Rockefeller National Historic Park in Woodstock, Vermont (observed FFEC in action and learned about essential components for FFEC replication)
 - Shelburne Farms in Shelburne, Vermont (a founding Vermont FFEC partner)
 - Chicago and Milwaukee (potential sites for FFEC replication)
- Interviews and focus groups (Tables 3 and 4): **Bold indicates that communication took place during Milwaukee and Chicago site visits in August 2009**
 - **USFS Urban Connections personnel**
 - USFS Conservation Education Office personnel
 - **Potential internal partners in the USFS**
 - **Potential external partners in Milwaukee and Chicago**
 - **Teachers in Milwaukee and Chicago**
 - FFEC program representatives in Vermont
- Content analysis of interviews (development of themes)

Table 3: Phase I interview and focus group participants at Milwaukee and Chicago sites (August 2009) ⁶

Location	Urban Connections Community Partners	USFS Personnel	Teachers
Milwaukee	<ul style="list-style-type: none"> • LEAF (2) • Urban Ecology Center (1) • Neighborhood House (1) • Earth Partnership for Schools (1) • Keeping Greater Milwaukee Beautiful (1) • Wehr Nature Center/Milwaukee County Parks (1) • Discovery World (1) 	<ul style="list-style-type: none"> • Urban Connections Coordinator (1) • Eastern Region Deputy Regional Forester (1) • Botanist (1) • Aquatic Ecologist (1) • Public Affairs (2) • Summer interns (4) 	<ul style="list-style-type: none"> • Milwaukee Teachers (3)
Chicago	<ul style="list-style-type: none"> • Chicago Conservation Corps (1) • Chicago Wilderness (1) • REI (2) • Cook County Park District (1) • Peggy Notebaert Nature Museum (1) • Chicago Inner-city Outdoors (1) • North Park Village Nature Center (2) • Shedd Aquarium (2) 	<ul style="list-style-type: none"> • Urban Connections Coordinator (1) • Social Scientist (1) • Natural Resources Specialist (1) • Public Services Team Lead (1) • Landscape Architects (2) 	<ul style="list-style-type: none"> • Chicago Teachers (2)
Total	19	16	5

Table 4: Phase I phone interview participants (August - September 2009) ⁷

Location	Urban Connections Community Partners	USFS Personnel	Vermont FFEC Coordination Team
Ann Arbor	<ul style="list-style-type: none"> • Alliance for the Great Lakes (1) 	<ul style="list-style-type: none"> • UC Coordinator (1) • Conservation Education Office staff (2) 	<ul style="list-style-type: none"> • Green Mountain Partnership Coordinator (1) • Shelburne Farms Education Program Director (1)
Total	1	3	2

⁶ Numbers in parentheses indicate the number of interviewees for each category.

⁷ Numbers in parentheses indicate the number of interviewees for each category.

Phase II (November 2009-March 2010)

The content analysis of interviews and focus groups conducted during Phase I was used to identify additional participants for Phase II. The team determined that the most beneficial insights for future implementations were likely to come from those who work with FFEC on the ground. At the same time more input from teachers in Milwaukee and Chicago was needed.

Phase II activities included:

- Continued meetings with steering committee (added a representative from a FFEC replication)
- Interviews and Focus Groups (Table 5)
 - Milwaukee teachers
 - Chicago teachers
 - FFEC replication representatives
 - FFEC teachers
- Content analysis of interviews (development of themes)
- Development and launch of a website to communicate progress of the study with interviewees

Table 5: Phase II phone interview and focus group participants (November 2009 - March 2010)⁸

Location	USFS Personnel	FFEC Replication Representatives	Teachers
Ann Arbor (via telephone)	<ul style="list-style-type: none"> • White Mountain National Forest Environmental Education Coordinator (1) • State and Private Forestry Environmental Education Coordinator (1) 	<ul style="list-style-type: none"> • New Hampshire - Project Learning Tree State Coordinator (1) • New Hampshire - State and Private Forest EE Coordinator (1) • Texas - Urban Connections Coordinator (1) • Texas - Ph. D Assistant Professor of Human Dimensions of Natural Resources (1) • Montana - USFS Coordinator for Partnerships, Conservation Education, and Special Projects (1) 	<ul style="list-style-type: none"> • Vermont FFEC Teachers (7) • Chicago focus group (through the Peggy Notebaert Nature Museum) (13)⁹ • Chicago teacher (1) • Milwaukee focus group with St. Rose Catholic School teachers (3) • Milwaukee focus group with public school teachers (5)
Total	2	5	Vermont: 7 Chicago: 14 Milwaukee: 8

⁸ Numbers in parentheses indicate the number of interviewees for each category.

⁹ Focus group was conducted with an on-site facilitator from the Master's Project team.

Phase III (March 2010-April 2010)

Major activities included data analysis and the development of recommendations. During this time, the project team analyzed the results from the first two phases in aggregate, determining both the themes that emerged across all groups of interviewees and focus group participants (Urban Connections, USFS, FFEC replications, Milwaukee partners, Chicago partners, FFEC teachers, Milwaukee teachers, and Chicago teachers) and number of participant groups that mentioned each theme. Phases II and III overlapped by several weeks and thus several interviews (of FFEC teachers) were conducted while data analysis was underway.

Phase III activities included:

- Continued meetings with steering committee
- Deriving themes from data collected during Phases I and II
- Identifying frequencies and supportive quotes for each theme
- Formulating recommendations for UC and the USFS Conservation Education Office

Results & Recommendations

Getting Started

Results

Meeting USFS Goals

Results suggested that the USFS and UC need to clarify and understand the goals and intended outcomes of the FFEC program prior to its adaptation or implementation. Currently, FFEC's program goals and outcomes do not explicitly include increasing teachers' and students' knowledge about the USFS. However, this seems to be an important objective for USFS personnel. Aligning FFEC's intended outcomes with the strategic goals of the USFS is likely to be important in ensuring this goal is met in the future.

Planning and Building Support

Interview results indicated that the development of a strategic plan and 1-3 year implementation plan for FFEC program development could help guide the first years of the program's adaptation to urban settings for Urban Connections. Building support for FFEC among local schools, teachers, and potential partner organizations, as well as within all levels of the USFS, is key to ensuring FFEC's sustainability and future ability to meet the goals as outlined by UC. Findings indicated the importance of involving teachers and school administrators in the development process to best serve each city's specific educational needs and gain school support. There is also much to be learned from those who have already replicated and adapted the FFEC program. Interviewees recommended forming a strong relationship with representatives of existing replications to facilitate the adaptation process. Results suggested that creating strong support for the FFEC program will take time, with more than 6 months needed for partnership development alone.

Pilot Programming

Study results showed that a pilot program can be a useful first step. Such a pilot program can demonstrate the value of FFEC and thus, increase interest in the program. The majority of interviewees recommend starting FFEC with enthusiastic teachers from specialty schools (including private, charter, Montessori, International Baccalaureate, and environmentally-themed schools). However, there were also some who suggested that it was important to pilot test the program with public schools to demonstrate the program's value for these types

"[FFEC] promotes understanding of some of the things that the USFS is trying to accomplish, although it does not necessarily talk specifically about the USFS."

***- FFEC Teacher
(November 2009)***

"I work with a private school here in Chicago. I can tell you we would love something like this. We have a lot more autonomy and flexibility with our curriculum. And we have explicit initiatives to start more project based learning."

***- Chicago Teacher
(January 2010)***

"Try and get into the schools that really need the support."

***- Milwaukee Teacher
(August 2009)***

of schools. Either way, a pilot program should be conducted to help promote FFEC to a wider audience. Developing a teacher recruitment plan is also important in planning the pilot program. And, past FFEC programs have also found that conducting an evaluation early on, to demonstrate the program's success, can also help promote support for the program.

Funding

Findings suggested that some startup funding for partnership development may be available from within Urban Connections. Additional funding will need to be sought from grants, regional special projects funding, and the help of local partner organizations. The estimated cost for implementing FFEC is \$40,000-60,000 per year, which accounts for the standard 11 days of professional development over the course of one year for up to 20 teachers.

Recommendations

- Develop a vision statement and strategic plan for implementation, which outlines the goals of the FFEC program for UC.
- Invite key partners and stakeholders to participate in FFEC development from the start.
- Open FFEC professional development to all teachers, but make special efforts to recruit from private and specialty schools like those with environmental themes.
- Start small - pilot the FFEC program in each city first, and evaluate its outcomes to garner support from K-12 teachers, non-formal educators, school administrators, and funders.

"[Urban Connections] should not be afraid to ask those who have been doing the FFEC replications to be a resource. We can help other UC offices avoid pitfalls."

***- FFEC Program Representative
(January 2010)***

"Sell your program to the right people... If you want interest, you want people to jump on board."

***- Milwaukee Teacher
(January 2010)***

Partnerships

Results

Forming Robust Partnerships for FFEC

Long-term and mutually-beneficial partnerships were identified as characteristics for sustaining an educational program like FFEC. Partners with similar missions should understand and build off of each other's strengths, increasing their capacity to work together while avoiding competition. An urban FFEC program could utilize the diverse resources offered by (1) the USFS itself, (2) organizations the USFS has partnered with in either city, and (3) other organizations whom the USFS has yet to connect with. The vast numbers of environmental education programs in both cities make identifying these as yet unconnected organizations difficult, especially in Milwaukee where there is a lack of sustained communication between environmental organizations. Through this study numerous partners were identified, along with the skills and resources they might provide to enhance FFEC (See Appendix 3, *Potential Partners*). Community forums have also been used by past replications to identify partners and establish buy-in.

Types of Partners

Internal USFS partners and external partners were vital for FFEC implementation. Each of the following potential partners could play a unique and important role in urban FFEC replications: urban forestry programs, local resource experts (i.e. environmental, cultural, and economic resources), local foundations and other potential funders, state and federal agencies, universities, boards of education, and intermediate school districts. Additionally, FFEC program representatives from the other replications and adaptations are potential partners as they have communicated with each other to share evaluation information and troubleshoot.

Roles of Partners

Partners of current FFEC programs have served on a core planning team and/or assisted with program delivery. They provided diverse skills for relationship building, grant writing, delivering FFEC programs and alumni workshops, marketing, and experience working with both non-profit and government agencies. Partners also offered access to teachers, school administrators, and local green spaces. Therefore, partners could build on Urban Connection's capabilities and expand its reach.

"Partnerships are really important. Building relationships with partners is vital to do a program like this. You need to find partners that have a stake in being involved. Look at natural resource based organizations as well as federal, state and local governments and universities that would like to see long-term investment in the educators and their community. Partners must be willing to support educators over the long term – even years."

*- FFEC Program Representative
(August 2009)*

"There's too many other people doing too many good things whereas the Forest Service could just empower them to expand capacity."

*- USFS Personnel
(August 2009)*

"[FFEC] needs the Chicago Park District or the Forest Preserve District of Cook County to be a major partner, they have resources that would have to be used in the city."

*- USFS Personnel
(August 2010)*

Recommendations

- Partner with USFS personnel (such as resource specialists who provide content knowledge to teachers) as well as external partners that can help deliver and support the program in diverse ways (Appendix 3, *Potential Partners*).
- Collaborate and build on, rather than compete with, existing environmental education programs. For example, because the Mighty Acorns program in Chicago targets 4th - 6th grades, FFEC could act as an extension of the program by focusing on other grade levels. In Milwaukee, FFEC could integrate the LEAF Wisconsin K-12 Forestry Education program, in programming.
- Leverage the strengths of existing partners. For example, Neighborhood House in Milwaukee has strong connections with teachers and administrators that could help in marketing FFEC.
- Sustain communication about FFEC's strengths and potential areas for improvement with representatives from other FFEC programs.

"See if FFEC can add value to other successful programs. DON'T compete."

*- USFS Personnel
(January 2010)*

"Partners [in Milwaukee] currently don't have the capacity to expand their programming beyond what is currently offered. If Urban Connections provided funding [for FFEC] the partners' capacity would be increased and the partners would likely be on board [with the program]."

*-USFS Staff
(August 2009)*

"Partner with groups like us that already have connections with schools. WE could help get buy-in."

*-Milwaukee Contacts
(August 2009)*

Program Design

Results

Workshop Design

Workshops were identified as a core component of the FFEC model, with four workshops held over the course of one year. Results indicated support for this approach because it can ensure sustained contact between program participants. Workshops can also provide participants with an immersive and enjoyable experience. Past FFEC workshops have been responsive to teachers' needs by offering overnight workshops, family-friendly options, and flexibility about requirements for participation and attendance. Interview and focus group participants anticipated that urban teachers may be more comfortable in a program with gradual exposure to outdoor and natural experiences over the course of the year. Results also indicated that program content needs to be relevant to the teachers' state and local areas and that moving workshops around (to different locations) is important to expose teachers to different environments.

Creating a Supportive Environment

Perceived strengths of the FFEC program were that it provides teachers with the opportunity to create their own curricula, connect with experts in content topics and state education standards and with a link to funding opportunities. Additional suggestions that came out of this study included providing internet at workshops so teachers can access websites mentioned during the sessions, and time as part of the workshops for teachers to align curricula to their required education standards. The development of supportive social networks among participants also emerged from the findings as an important aspect that the program should facilitate.

Networking Opportunities

Results pointed to the importance of providing continued support for teachers that complete the FFEC program, for example by contacting participants who have completed the program with continuing professional development sessions or by maintaining an email list serve for FFEC participants and other relevant professionals to contact and network with one another. Suggestions included connecting current program participants to program alumni (to benefit from their experience and expertise in applying what they learned in their classrooms), other program participants at professional conferences, and USFS personnel.

"One strength is the year-long training...Our evaluations have shown that the more [professional development] teachers get the more likely they are to change their behavior in the classroom."

- FFEC Program Representative (December 2009)

"There are so many professional development courses you do where they stand in front of the room and lecture you about how lecturing is a bad way to teach people things. [FFEC] wasn't that. We were doing things and being the students and getting dirty, and that made a huge difference."

- FFEC Teacher (March 2010)

"I think [FFEC] would be interesting- [the training] would go a little more in depth than I have in the past and would get to know some of the people at the Forest Service...I've never even thought about using them."

-Milwaukee Teacher (January 2010)

"When I signed up for FFEC I saw the term forest and thought it would be a science, ecological based class – then when I went to my first meeting I realized I was one of two science teachers out of 16. That was really helpful for me to see that it's history and it's art and all these different ways to tie this in and tie it together."

- FFEC Teacher (February 2010)

“The resources [experts] make it easier. Since you met them in person, you feel more comfortable calling them and ask them to come visit the classroom. For me, those resources have been the most useful.”
 - FFEC Teacher
 (March 2010)

“The staying together part helped create this close-knit group, learning together. We know that learning is a social act, we learn a lot from each other through conversation. Experiencing activities together is a very different experience.”
 - FFEC Teacher
 (March 2010)

“Having [students] view their local parks and ponds and even the fields or backyard habitat through different lens. [It] doesn’t matter what - rural or urban – what you’re doing is putting a different lens on how these students view the natural world and the best way to do it is to get them outside.”
 - FFEC Teacher
 (March 2010)

“Provide short exposure in safe environments, such as places that look like they have bug spray, or nice weather, or wine and dine them...Increasing exposure is gradual.”
 - FFEC Program Representative
 (January 2010)

Use of “Place” and Local Resources

Research participants indicated that the place-based nature of the FFEC model is a strength, as is service-learning, the use of public lands, and the presentation of balanced viewpoints. Research participants indicated that the program should encourage teachers to use the outdoors in teaching, help students and teachers connect with the natural world, and focus on community resources, including urban forests, cultural and historical elements.

Content and Techniques

Perceived strengths of the FFEC model included the emphasis on place-based learning and that it has engaged children who have learning challenges. Results also indicated that teachers were more interested in learning and becoming comfortable with the content taught at workshops than they were in learning about teaching techniques. A variety of topics were suggested for workshop content, such as wetlands or air quality, and the need for interdisciplinary content was identified.

Recommendations

- Provide participants with an immersive experience during the workshops. For example, provide comfortable overnight accommodations at workshops and include interactive, hands-on sessions for teachers based on the FFEC model.
- Design workshops to be responsive to teachers’ needs. For example, allow teachers to bring their children to workshops if childcare is a concern, gradually expose teachers to outdoor experiences, and focus on content that teachers find relevant, such as local habitats or local water and air quality.
- Create an environment in which teachers receive professional and social support from the program. For example, provide opportunities for teachers to engage with experts in content and state education standards and encourage teachers to share their expertise and experience with other teachers in the program.
- Assist FFEC alumni in networking with USFS personnel and other FFEC program alumni. For example, facilitate networking opportunities for FFEC teachers by helping them identify one another at professional conferences.
- Focus on local historical, cultural, and community resources near schools that are accessible to teachers to give students a sense of place. Such resources could include public lands and urban forests.

Notes from the Field

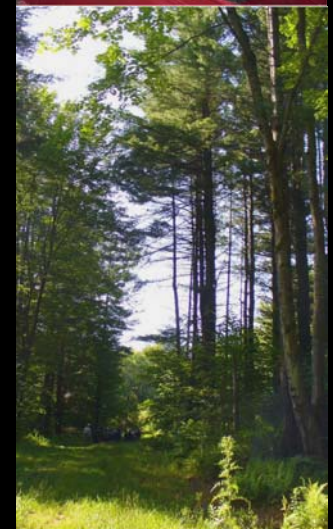
To observe FFEC in action and gain a more thorough understanding of the program, two study team members attended the 2009 FFEC Summer Institute consisting of a five day workshop in two Vermont locations. The Institute was held in the foothills of the Green Mountain National Forest at Huntington, VT (Wednesday, July 8 – Friday, 10) and in the Marsh-Billings-Rockefeller National Historic Park (Monday, July 13 – Tuesday, July 14).

Facilities

Workshops were held at sites that allowed for both indoor and outdoor activities. Space was sufficient for up to twenty teachers, two program coordinators, and two workshop presenters. In both locations, the primarily indoor training space had long tables surrounded by chairs and doubled as a dining area. Secondary indoor training spaces included a sitting room with couches and chairs, a rustic cabin, and a visitor center presentation room with rows of chairs facing a projection screen. At least half of the time was spent outdoors, including in forests, trails, open grassy clearings, and an outdoor pavilion. Teachers utilized outside decks and sitting rooms for reading and discussion between and during sessions. One teacher remarked that FFEC was the best professional development program which she had participated in, because it was well-organized and most daily logistics (lodging, meals, etc.) were pre-arranged.

Activity Resources

Each day, workshop activities included a mix of lectures, outdoor experiential learning, and group discussion. Indoor lectures were aided by flipcharts on easels, PowerPoint presentations via laptop and projector, and printed handout materials. Binders of state education standards and an extensive spread of sample FFEC curricula, and a resource library of books also complemented workshop activities and were available to participants throughout the week. During outdoor activities, teachers sat on the ground, stood, hiked, and touched plants along the way. Materials for outdoor activities included found objects from the forests, Biltmore sticks, measuring tapes, digital cameras, and teaching props more typical of K-12 classrooms (i.e. made out of construction paper).



Facilitating Learning

Workshops modeled the kinds of inquisitive, hands-on, place-based learning techniques that FFEC teachers are encouraged to adopt as part of their own teaching practice. Participants learned from activities that they could subsequently repeat in their own classrooms, such as nature walks, forest games, photography exercises, and directed journaling sessions. FFEC trainers and coordinators often explained and demonstrated how the activities could be modified for different age groups or different situations, such as having or not having an adult teaching assistant. Sometimes the teachers were separated into groups for grade-specific lessons in the grade range they taught - elementary or high school, with middle school teachers joining the group they felt best fit their needs. Six teachers fulfilled their program requirement to present at least one activity that they already teach, which was expected to be useful to others in the cohort.

Skill-building in observation and critical thinking were an inherent part of the learning process at the Institute. A FFEC coordinator was even nicknamed the “Facilitator of Wonder,” for her love of teaching and ability to spark curiosity and awe in participating teachers. Adequate time was allowed for teachers to ask questions. The teachers were highly engaged in the activities and asked both teaching-related and personal interest questions. Program coordinators remained flexible and responded to participant requests, such as for more time outdoors during workshop sessions. A teacher commented that camaraderie between participants was an important characteristic of FFEC, because participants learned a great deal from each other by talking casually and sharing information during outdoor hikes between sessions. Evenings were set aside as “free time,” allowing participants to relax, absorb the day’s lessons, and write in their FFEC journals.



Urban Adaptations

Results

Adaptation Opportunities

FFEC program adaptations could highlight the unique community organizations, cultural character, and environmental resources of each host city and neighborhood. Current FFEC program representatives recommended that adapted programs align with the missions of partnering community organizations and reflect local diversity in terms of program coordinators, trainers, and target audiences. Interviews suggested that a successful program would allow for easy customization to local urban environments, utilizing and building upon environmental and cultural resources for curriculum content and associated place-based activities. For example, the program could encourage local activities rather than costly field trips, e.g. work with Chicago Public Schools to capitalize upon the Illinois' student community service requirement for high school graduation, and incorporate Lake Michigan and urban agriculture into appropriate curriculum. Respondents also felt that instituting FFEC-like programs in Milwaukee and Chicago offer an important opportunity to enhance environmental literacy and programming where it is needed most, in underserved grade levels (particularly 9th-12th) and underserved communities. Finally, interviewees noted that the program name "A Forest for Every Classroom" would not resonate with urban audiences and the nature of their outdoor experiences in cities, and should be changed for Milwaukee and Chicago.

Urban Implementation Challenges

Interviewees believed that a successful program in urban communities must address critical funding, logistical, and green space access needs. Teachers need funding to implement their curriculum, including for the development of green spaces close to schools (e.g. landscaping or planting gardens on or near school grounds) or for transportation to local resources. Teachers and environmental educators indicated that professional development support is required to increase teachers' knowledge of local resources and existing green space, science concepts, and how to use the outdoors as an extension of their classrooms. Teachers face constraints in terms of ability to access outdoor spaces within the time allotted for a class, and the additional time needed to prepare for outdoor activities. Also, perceived and real dangers of urban outdoor environments may limit the willingness of teachers, parents, and students to participate in outdoor activities. School administrators are similarly concerned about associated liabilities. In addition to being afraid of the outdoors, urban teachers and students may have limited exposure to nature, making it difficult for them to feel comfortable in natural areas and relate to them. Therefore, students need role models to provide positive outdoor experiences. Interviewees suggested that, because teachers may not

"Use what's in your area, which I think would help you start noticing what's in your area... So even in the most urban of environments there's some way to notice your world and some way have an immersion experience."
- FFEC Teacher
(March 2010)

"It's not about your school but your neighborhood, so they sense that if you can connect into your neighborhood there's more depth into the experience and the values."
- USFS Staff
(August 2009)

"Our playground is completely paved. Three sides of our school are set back about 50 ft from sidewalks and there is a slope of rocky, grassy area but that's about it."
- Milwaukee Teacher
(December 2009)

"When you're trying to get people used to the outdoors and trying to persuade teachers who wouldn't normally take their students outdoors ... you want to make the experience as safe and comfortable as possible for them."

*- FFEC Program Representative
(January 2010)*

"Even teachers are afraid of bugs, 'bogeymen,' and getting lost in natural spaces."

*- Chicago Contact
(August 2009)*

"Sadly, there are no longer lots of extra funds at schools to support these kinds of experiences. We do have our own school garden and a small park nearby, so our students are able to utilize those free of charge."

*- Milwaukee Teacher
(December 2009)*

be able to take their students outside, the program can incorporate alternative lesson plans utilizing other resources, such as films and books.

Recommendations

- Choose a program name that fits with audiences in Milwaukee and Chicago and reflects the relevant local resources for each city. Thus, instead of the program title being *A Forest for Every Classroom*, it might be *An Urban Forest for Every Classroom* or *A Greenspace for Every Classroom*.
- Intentionally engage communities of color and ethnic groups that reflect the rich diversity of the city, to help ensure the programs will be relevant and accessible to these audiences.
- Use workshops to demonstrate how local green space at any scale - from a squirrel on a patch of grass, to a single tree, to a park - can be used to support the curriculum.
- Work with participating schools or individual teachers to develop custom "asset maps" - or inventories of relevant community resources, such as nearby green spaces, sources of local expertise (including on environmental, cultural, and historical aspects), and local financial and material resources. The asset mapping process helps teachers think creatively about where to find resources for curriculum planning and implementation. While asset mapping is a part of the program, the exercise could be expanded as part of the alumni support component (see Appendix 5 for more information on asset mapping).
- Develop ways for teachers in each city to share equipment and material resources (e.g. compasses, books, examples of FFEC curricula, etc.). For example, regional resource centers could be established through, and staffed by, Urban Connections, other program partners, or participating schools across each city.
- Support participating teachers in obtaining the necessary funding for their curriculum implementation and local green space development by providing 1) a seed-money fund for \$500-\$1,000 grants, 2) a grant-writing session in the professional development program, and 3) an opt-in listserv for sharing relevant grant opportunities with teachers on an ongoing basis.
- Address safety and liability concerns as an integral part of the professional development workshops.

School Support and Recruitment

Results

Garnering Support

Results suggest that entire school systems (i.e. principals, administrators, department chairs, curriculum specialists, superintendents, school boards, and state education administrators) need to be approached to garner program support, not just individual teachers. High teacher turnover rates amongst public schools in these cities were identified as a major hurdle to continuing a program started by a teacher in a school. School administrators need to be convinced about a program to support teachers in individual schools. This could be achieved by providing evidence of the success of existing place-based programs and monetary support for such programs.

Research participants stated that the FFEC program was more likely to obtain administrative support if it was designed to help meet the specific needs of teachers. In Chicago, public school respondents said that there was a need to meet high school students' service-learning requirements and in Milwaukee public schools, teachers may need professional development for an environmental science class that will be mandated in the city in the near future.

Standards and Educational Demands on Teachers

Teachers shared that they had numerous responsibilities demanding their time such as standards, pacers, and other curriculum requirements. This could make it difficult to draw interest from teachers for a program like FFEC. Teachers most likely to be interested would be educators who are already passionate about place-based education and or see it as meeting some of their present needs. Most teachers indicated that they need curricula aligned with standards. Study participants also indicated the importance of incentives (e.g. graduate credit, continuing education credits, funding, and scholarships) to attract teacher participation in FFEC professional development.

Recommendations

- Generate state and school district-level administrators' interest by demonstrating FFEC's successes through past evaluations and providing examples from existing FFEC programs that clearly show how FFEC curriculum can, and have, been aligned to state education standards. Ensure enough time to develop buy-in from all levels of the school system (superintendents, school boards, principals, administrators, department chairs, curriculum specialists, parents) through sustained communication. Ensure enough time to develop buy-in from all levels of the school

"You couldn't do FFEC without school districts and education agencies, all the way to the top."

- FFEC Program Representative (January, 2010)

"We have a mandated curriculum that is almost put down to the day, as to where you're supposed to be, and so finding that flexibility and a trusted administrator to say look, this really is beneficial - I want to steer away from the scope and sequence that I have and this is going to benefit students."

- Chicago Teacher (January 2010)

"Show the administrators what's going on, what happened when the program was piloted in other parts of the country even if it wasn't in an urban area. If [administrators] could see some results, some statistics...proof that getting [students] outside, doing some work helps them in the classroom, if they see some data, I think [administrators] would go along with it."

*- Milwaukee teacher
(January 2010)*

system (superintendents, school boards, principals, administrators, department chairs, curriculum specialists) through sustained communication.

- Strategically align the program to public school standards and service-learning requirements (Chicago) and environmental courses (Milwaukee - forthcoming).
- Recruit teachers in teams from the same school to help sustain programs in schools. This also creates a support system within the school. Networks of teacher participants amongst schools can help build a community of teachers for mutual sharing of skills and resources in the form of clubs, list serves, etc.
- Recruit teachers interested in place-based education by giving presentations in schools and at professional conferences, and through science curriculum coordinators.

In the Classroom: Curriculum Implementation

Results

Benefits of FFEC Curricula for Teachers and Students

Interviewees felt that FFEC provided a number of benefits for teachers and students. Teachers believed it increased their enthusiasm for teaching, understanding of environmental education, and knowledge of forests and local environments. In addition, teachers used their FFEC curricula to meet education standards. Through these curricula, they taught their students field skills and helped increase students' awareness of the local environment, community, and public lands. Teachers also reported that students expressed excitement about participating in outdoor components of the curricula. Thus teachers felt that FFEC helped promote positive student attitudes toward school/learning. Teachers also reported that some students shared what they learned through the curriculum with their parents.

Challenges for Curriculum Implementation

While teachers felt that they benefitted from their FFEC curricula, they also faced a number of challenges in implementing these curricula. In particular, teachers who lacked administrative support for FFEC found the curricula more difficult to use in their school than those who felt they had such support. Another major challenge for teachers was lack of time. Because of other school-related demands, teachers indicated that they were pressed for time to write, plan, and implement their curricula. For teachers who utilized field trips, challenges included scheduling and having access to transportation.

Supporting Teacher Implementation

Interviewees pointed to a number of strategies that could help teachers implement their curricula more easily. Prior to participating in the FFEC workshops, teachers could garner administrative support to ease implementation. Moreover, facilitators could encourage teachers to develop usable and easy to implement curricula during the workshop. This could include designing curricula to meet school-specific guidelines. In addition, if a teacher's school has a tight budget, then teachers could design curricula that can be implemented at a low-cost or draw on resources like parent volunteers. Current FFEC programs offered mini-grants for curriculum implementation to teacher participants. These were seen as crucial by some teachers. Finally, given that USFS personnel indicated the agency's desire to use effective education models, evaluations of both teachers and students (including the programs' impact on student test scores) could assess the impact of the program and inform program improvements.

"One of the things that is so great about FFEC, and I know I'm not the only one who feels this way, is that it really invigorated us as teachers, reminding us that we're still students, and that there's so much to learn."

*- FFEC Teacher
(February 2010)*

"The impediments for me have been administrative... just when you think that everything is moving forward, someone like a principal would change their mind."

*- FFEC Teacher
(March 2010)*

"We have some funding sources that help back up teachers who are doing things [in their classroom], and that has been critical - that's been a lynchpin in some of the [FFEC] success stories."

*- FFEC Teachers
(March 2010)*

Recommendations

- Require teachers to provide evidence of administrative support (letters, pledges, etc.) prior to their participation in the professional development.
- During workshops provide resources (e.g. speakers, sample curricula, lists of curriculum requirements) to help teachers develop curricula that meet their educational demands (e.g. state standards, curriculum pacers, etc.).
- Offer mini-grants to teachers to support curriculum development, implementation, and evaluation.
- Conduct evaluations of teacher and student outcomes and use results to improve the program.

"Teachers don't have the resources, the time, the effort [to implement a curricula like this] because we're so worried about meeting our standards, we don't have time for anything else. We get graded, I guess, on how we're fulfilling those standards."

*- Milwaukee Teachers
(August 2010)*

"I think [FFEC has] really impacted who I am as a teacher. It certainly has uncovered areas in me that I was not sure I would necessarily uncover had I not taken that course. It put me in wild places...so for me to see these amazing places certainly stirred something in me, and stirred something within my students as well."

*- FFEC Teachers
(March 2010)*

Conclusions

Researcher Reflections & Recommendations

As the team collected data for this report and conversed during the course of the study, team members inevitably formulated personal conclusions about FFEC adaptation and implementation that were not explicitly supported by the data collected. These thoughts from members of the team have been termed ‘researcher reflections’ and can be categorized into the same six categories as are found in the body of the report: Getting Started, Partnerships, Program Design, Urban Adaptations, School Support, and Recruitment and Curriculum Implementation.

Getting Started

- Develop a steering committee for each city comprised of UC personnel (including UC coordinators from other cities working to establish a FFEC program), representatives of important partner organizations, and individuals from established FFEC replications.
- Consider partnering with Urban Forestry or established city greening efforts to help urban schools develop green schoolyards or gardens. Many teachers spoke about their lack of access to nearby green spaces in which to teach, or about the many challenges that prohibit them from taking their students to city parks. Creating green spaces on school property can solve this problem.
- Determine the focus of the FFEC program (e.g. urban forestry, the Great Lakes, urban parks etc.) and then recruit partners whose resources or expertise fit with that particular topic.
- Ideally, FFEC should be designed to explicitly address behavior change. However, the team recognizes for a government agency, like the USFS, this goal may not be in line with their mission. Therefore we recommend the goal instead be framed in terms of stewardship. In any case, allow the goals of the FFEC program in UC cities to go beyond developing content knowledge and awareness. The FFEC program can be an important contributor to creating the next generation of environmental stewards, but this is unlikely to happen if behavior is not specifically part of FFEC’s goals.

Partnerships

- Promote FFEC and recruit teacher and administrator support through networking in both cities. This includes attending relevant conferences and meetings, visiting schools and school boards, and reaching out to a diverse and creative array of potential partners. Partners need not come from just the sciences, but can also encapsulate other parallel interests including community theater groups, artists, social activists, and local businesses.
- Generate a business plan/agreement for each city with the organizations that will be important partners for the FFEC program to help ensure financial stability.

- Employees of federal agencies may not be able to apply for federal grant funds. Therefore, it is in UC's interest to work with partners who can pursue grants to support joint FFEC program efforts.

Program Design

- Be prepared to work with teachers who come to the program with different levels of content and pedagogical knowledge. For example, some teachers will have expertise with service-learning while for other teachers this method will be new. When possible, assess the knowledge and needs of teachers before the workshops and adjust the workshops accordingly.

Urban Adaptations

- Realize that no two cities will be the same— what may work in Milwaukee may not be feasible or relevant in Chicago. With this in mind, adapt each program to the city's specific needs and set of challenges.
- Ensure the program is relevant for urban audiences. One possible addition could be a training workshop session for teachers on environmental justice (including urban green space development, parking lot and school gardens, city carbon sequestration, air quality improvement through tree planting, etc.).
- Another possibility for the resource center mentioned in the recommendations (*Urban Adaptations*, p.25) would be enabling teachers to share equipment and other material resources via an online resource center with listings of available resources and contact information for the teacher who possesses each item. Application forms for implementation funding granted by the program could have a space where teachers indicate which resources they would be willing to share through the online resource center (i.e. items that are newly purchased through the grant or already in their possession).

School Support and Recruitment

- Invite active alumni and other FFEC speakers to talk with teachers and administrators as real-life success stories to gain buy-in. The team found many FFEC teachers who are incredibly devoted to and passionate about the FFEC program who could be instrumental in garnering support for the program elsewhere.
- Work through partner organizations to recruit teachers that reflect the city's ethnic diversity.

In the Classroom: Curriculum Implementation

- Consider applying a "whole-school" approach to teacher participation (i.e. engaging an entire school in the FFEC program versus several teachers alone) to ensure that teachers have adequate peer and administrative support. These schools might then serve as case studies for the benefits of FFEC and place-based education, which may assist in teacher and school recruitment in the long run.
- Outside of a formal interview, a FFEC program representative suggested that teachers in a common school or region form grant-writing teams. Even if a jointly-written proposal is not awarded, the writing processes will have built momentum for a future project.

Meeting Study Goal & Outcomes

This study sought to provide the U.S. Forest Service Urban Connections (Region 9) and Conservation Education Office with recommendations for developing, implementing, and maintaining a place-based education program using the FFEC model for the cities of Chicago, IL and Milwaukee, WI. To accomplish this goal, the team derived recommendations from data collected during interviews and focus groups held with more than 80 stakeholders over the course of nearly one year (July 2009-March 2010). Individuals representing the USFS, potential external partners in Milwaukee and Chicago, FFEC program representatives, Milwaukee and Chicago teachers, and Vermont FFEC teachers participated in this study. Insights from these conversations enabled the team to meet the study's overarching goal as well as the objectives the team had identified to meet this goal.

Identify FFEC Program Strengths

Current FFEC teachers indicated that the FFEC program has a number of strengths including the quality of its professional development for teachers, its subsequent influence on teacher practice and ultimately, benefits for student. More details about FFEC strengths are described in the section entitled *In the Classroom: Curriculum Implementation* (p. 29) and many of these strengths have also been identified by a number of external FFEC program evaluations (see *Past FFEC Evaluations*, p. 8).

Identify FFEC Start-up and Sustainability Challenges

Challenges for starting and sustaining a program like FFEC include garnering support and interest from teachers and school administrators, partnership development, funding, and demonstrating success. Additional results and recommendations pertaining to these topics can be found in the sections entitled *Getting Started* (p. 17), *Partnerships* (p. 19), and *School Support and Recruitment* (p. 27).

Identify the need(s) for FFEC in Milwaukee and Chicago

The needs for FFEC in these two cities were measured in a number of ways, including identifying interest in the program, identifying gaps that exist in environmental education and teacher professional development, and determining what resources are needed for successful FFEC replication. Results show that teachers in both cities are eager to participate in a program like FFEC, with a number of those interviewed for this study volunteering to participate in the first cohort. The study identified a few gaps in existing programs for teachers and students in Milwaukee and Chicago, the largest of which are a lack of environmental education programming for high schools and few existing place-based education professional development programs. The overarching needs of the program are identified and addressed in each section of the recommendations, including the financial cost (outlined in *Getting Started*, p. 17) and the importance of garnering support (found in *School Support and Recruitment*, p. 27).

Identify Existing (FFEC and City) Resources Internal and External to UC

A number of resources were identified including a list of potential partner organizations for UC to draw upon when implementing FFEC in Milwaukee and Chicago (Appendix 3, *Potential Partners*). Importantly

the team learned that by collaborating with these potential partners, FFEC can benefit in a variety of ways (*Partnerships*, p. 19). Importantly, perceived and actual competition among programs for limited resources will also be reduced through such collaborations.

Identify UC's Vision for FFEC

Interviews conducted with UC and USFS personnel indicated that the vision for FFEC is not clearly articulated at this time. Because the team felt this vision should come from within the organization, one recommendation developed is for UC to identify a unified goal for the FFEC program that is in line with the organization's mission and vision.

Identify Anticipated Challenges

Many recommendations for the FFEC program contain suggestions for overcoming anticipated challenges including meeting USFS goals to ensure program longevity, developing a pilot program to identify and address potential problems, evaluating the pilot program prior to creating a full-fledged program, forming partnerships to leverage FFEC development and coordination, and designing workshops to address the needs of urban teachers.

Future Considerations

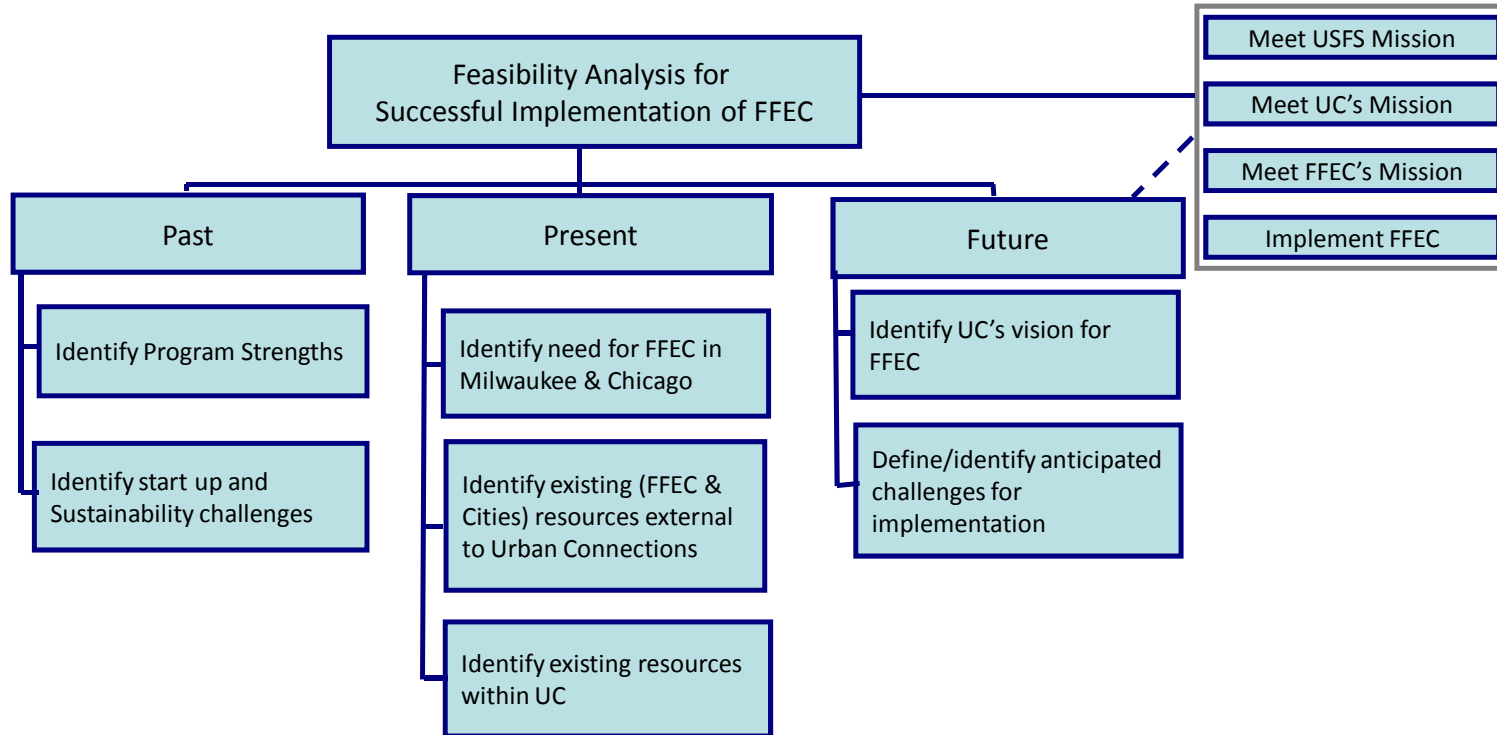
While much of the information in this study may be applicable to anyone interested in adapting the FFEC model for use in a given community, this study was conducted with the specific needs of the USFS Urban Connections (Region 9) programs in Chicago, IL and Milwaukee, WI. Therefore, parts of the report and some recommendations may not be applicable to other locales and other organizations seeking to replicate FFEC. Please refer to Appendix 4 (*"How To" Document*) for information on how to replicate the study process in alternate locations and for other organizations.

The team also identified several areas for further study. These suggestions are intended to provide support for the FFEC model of place-based education, which can in turn assist UC in generating support and buy-in from schools, teachers, potential partners and funders.

- Gather evidence of FFEC's success in meeting educational standards. For example, a research project could determine to what extent children in classrooms where the FFEC model is used score higher on standardized tests than children in conventional classrooms.
- Interview students in urban areas to identify how to best target their needs through place-based education.
- Conduct a needs assessment to identify specific content and grade level gaps among existing environmental programs.
- Compile a comprehensive database of existing environmental education programs in cities including the program goals, activities as well as age and location of target audiences.

Appendix 1: Goals of Study Diagram

Project Goals Document



Appendix 2: University of Michigan Master's Project Logic Model

Logic Model					
Inputs	Activities & Duration	Outputs	Outcomes & Impacts		
			Short-term	Intermediate	Long-term
<p>Program Budget</p> <ul style="list-style-type: none"> Education Foundation of America Grant (\$9,000) <p>Client</p> <ul style="list-style-type: none"> USFS Urban Connections <p>Researchers</p> <ul style="list-style-type: none"> University of Michigan Master's Project Team <p>Steering Committee</p> <ul style="list-style-type: none"> USFS Conservation Education USFS Urban Connections FFEC UM Team Advisor <p>RESEARCH INPUTS:</p> <p>Interview/Focus Group Participants</p> <ul style="list-style-type: none"> Milwaukee & Chicago USFS partners & potential partners USFS personnel Milwaukee & Chicago teachers & administrators FFEC representatives & teachers <p>Literature</p> <ul style="list-style-type: none"> USFS & UC Research FFEC evaluations 	<p>Meetings</p> <ul style="list-style-type: none"> Steering Committee Meetings Client Meetings Weekly UM Team Meetings <p>Research Activities</p> <ul style="list-style-type: none"> Literature Review Interviews with UC & USFS personnel Interviews with FFEC contacts Observation of FFEC workshop Interviews with FFEC teachers Interviews/focus groups with potential partners & contacts in Chicago & Milwaukee <p>Final Steps</p> <ul style="list-style-type: none"> Identify resources & stakeholders in Chicago & Milwaukee for FFEC implementation Write summary reports & final report Present study at conferences Identify existing & new tools for FFEC implementation <p>Project Duration April 2009-April 2010</p>	<ul style="list-style-type: none"> Final Report – summarizing methods, results, & recommendations Executive summary Interview & Focus Group Data Research tools (interview guides, focus group guides) Tools for FFEC implementation <ul style="list-style-type: none"> 1 & 3 year strategic communication plan for UC Conference presentations 	<p>Past</p> <ul style="list-style-type: none"> Identify FFEC startup & sustainability challenges Identify FFEC program strengths (benefits to USFS, schools) <p>Present</p> <ul style="list-style-type: none"> Identify need(s) for FFEC in Milwaukee & Chicago Identify existing resources within UC Identify existing (FFEC & city) resources external to UC offices <p>Future</p> <ul style="list-style-type: none"> Identify UC's vision for FFEC Identify anticipated challenges for implementation 	<ul style="list-style-type: none"> Successful implementation of FFEC by UC 	<ul style="list-style-type: none"> UC provides a professional develop program for educators focused on place-based education that: <ol style="list-style-type: none"> Achieves UC's mission (of involving urban audiences in Forest Service activities and; Promotes the Forest Service's mission to sustain the health, diversity, & productivity of the Nation's forests & grasslands to meet the needs of present & future generations.

Appendix 3: Potential FFEC Partners in Milwaukee and Chicago

Potential FFEC Partners in Milwaukee and Chicago

	Organization* (Green=interviewed, Blue= recommended through interviews)	Advisory (Aligned Missions and Programs)				Providing Networking Opportunities		Providing Special Skills and Experience			Providing City/Regionally Specific Resources							Providing Incentives					
		Educational Perspective	Natural Resource Perspective	Experience w/ non-profits and gov't organizations	Experience with FFEC implementation	With Teachers	With other organizations	Grant writing	Professional development	Program planning	Teacher training experience	Logistical staff time	Meeting space	Access to green space	Access to indoor interpretive space	Access to curriculum support materials	Speakers and presenters	Funding	Marketing and visibility	Capacity to host service learning project	Continuing education credit for teachers	Changing regional/school curricula to include place-based ed. focus	
Milwaukee	Urban Ecology Center	✓	✓	✓		✓	✓					✓											
	Neighborhood House	✓	✓	✓		✓	✓			✓			✓										
	LEAF	✓	✓	✓		✓	✓			✓					✓								
	Earth Partnership for Schools	✓	✓	✓			✓		✓	✓					✓								
	Milwaukee County Parks/ Wier Nature Ctr	✓	✓	✓			✓					✓	✓										
	Urban Tree House														✓								
	Keeping Greater Milwaukee Beautiful		✓	✓			✓							✓									
	Milwaukee Public Schools(MPS) – Mary Staten	✓		✓		✓									✓							✓	
	Wisconsin Environmental Education Association	✓		✓		✓			✓	✓	✓				✓				✓				
	Milwaukee Public Museum			✓			✓					✓		✓		✓							

*Roles for organizations in green were determined based on interviews whereas those in blue were determined using background research. Thus, the green organizations are likely more accurate, whereas the blue may require additional research.

Potential FFEC Partners in Milwaukee and Chicago

	Organization* (Green=interviewed, Blue= recommended through interviews)	Advisory (Aligned Missions and Programs)				Providing Networking Opportunities		Providing Special Skills and Experience			Providing City/Regionally Specific Resources							Providing Incentives		
		Educational Perspective	Natural Resource Perspective	Experience w/ non-profits and gov't organizations	Experience with FFEC Implementation	With Teachers	With other organizations	Grant writing	Professional development Program planning	Teacher training experience	Logistical staff time	Meeting space	Access to green space	Access to indoor interpretive space	Access to curriculum support materials	Speakers and presenters	Funding	Marketing and visibility	Capacity to host service learning project	Continuing education credit for teachers
Milwaukee	UW-Milwaukee Curriculum Dev. – Tracy Posnanski	✓				✓								✓					✓	✓
	UW EE independent consultant – Chris Beimborn	✓					✓												✓	✓
	DNR Education Center – Kirsten Held	✓	✓	✓			✓				✓	✓	✓	✓	✓		✓			
	UW-Parkside	✓				✓								✓					✓	
	Growing Power		✓	✓			✓			✓	✓	✓	✓		✓			✓		
	Schlitz Audubon	✓	✓	✓							✓	✓								
	Wisconsin Department of Public Instruction	✓				✓	✓		✓	✓				✓					✓	✓
	UW- Stevens Point EE Training Center	✓	✓	✓		✓	✓		✓	✓				✓					✓	
	Green Schools Initiative	✓	✓	✓																
Chicago	North Park Village Nature Center	✓	✓	✓		✓	✓		✓	✓										
	Cook County Forest Preserve		✓	✓																

*Roles for organizations in green were determined based on interviews whereas those in blue were determined using background research. Thus, the green organizations are likely more accurate, whereas the blue may require additional research.

Potential FFEC Partners in Milwaukee and Chicago

	Organization* (Green=interviewed, Blue= recommended through interviews)	Advisory (Aligned Missions and Programs)				Providing Networking Opportunities		Providing Special Skills and Experience			Providing City/Regionally Specific Resources							Providing Incentives		
		Educational Perspective	Natural Resource Perspective	Experience w/ non-profits and gov't organizations	Experience with FFEC implementation	With Teachers	With other organizations	Grant writing	Professional development Program planning	Teacher training experience	Logistical staff time	Meeting space	Access to green space	Access to indoor interpretive space	Access to curriculum support materials	Speakers and presenters	Funding	Marketing and visibility	Capacity to host service learning project	Continuing education credit for teachers
Chicago	Shedd Aquarium	✓	✓	✓		✓	✓		✓			✓	✓	✓	✓		✓		✓	
	Chicago Conservation Corps	✓	✓	✓		✓	✓		✓					✓						
	Peggy Notebardt Nature Museum	✓	✓	✓		✓	✓		✓		✓		✓	✓	✓		✓		✓	
	Midwin National Tallgrass Prairie		✓									✓								
	USFS Regional Staff (Evanston)	✓	✓	✓			✓							✓						
	Forest Preserve District of Cook County		✓	✓								✓								
	Chicago Wilderness	✓	✓	✓			✓							✓						
	El Valor – Dr. Vince Allocco, president	✓	✓	✓			✓													
	Chicago Park District		✓	✓		✓	✓					✓		✓	✓		✓	✓		
	Project Budburst	✓	✓											✓						
	Eden Place – Michael Howard	✓		✓																
	Chicago Center for Green Technology		✓	✓																

*Roles for organizations in green were determined based on interviews whereas those in blue were determined using background research. Thus, the green organizations are likely more accurate, whereas the blue may require additional research.

Potential FFEC Partners in Milwaukee and Chicago

	Organization* (Green=interviewed. Blue= recommended through interviews)	Advisory (Aligned Missions and Programs)				Providing Networking Opportunities		Providing Special Skills and Experience				Providing City/Regionally Specific Resources							Providing Incentives	
		Educational Perspective	Natural Resource Perspective	Experience w/ non-profits and gov't organizations	Experience with FFEC implementation	With Teachers	With other organizations	Grant writing	Professional development Program planning	Teacher training experience	Logistical staff time	Meeting space	Access to green space	Access to indoor interpretive space	Access to curriculum support materials	Speakers and presenters	Funding	Marketing and visibility	Capacity to host service learning project	Continuing education credit for teachers
Chicago	Mayor's Green Streets Initiative	✓	✓	✓																
	Calumet Initiative		✓	✓			✓													
	Morton Arboretum	✓	✓									✓								
	Lincoln Park											✓								
	REI			✓											✓					
	Lake County Forest Preserve		✓	✓								✓								
	After School Matters – David Sinski, ed/iec director	✓		✓																
	Area Instructional Officers	✓		✓		✓														✓
Both (USFS)	State and Private Forestry Branch		✓	✓										✓						
	Research and Development Branch		✓	✓										✓						
	Washington Office – Edward Dickerhoff		✓	✓			✓													

*Roles for organizations in green were determined based on interviews whereas those in blue were determined using background research. Thus, the green organizations are likely more accurate, whereas the blue may require additional research.

Potential FFEC Partners in Milwaukee and Chicago

	Organization* (Green=interviewed, Blue= recommended through interviews)	Advisory (Aligned Missions and Programs)				Providing Networking Opportunities		Providing Special Skills and Experience			Providing City/Regionally Specific Resources							Providing Incentives				
		Educational Perspective	Natural Resource Perspective	Experience w/ non-profits and gov't organizations	Experience with FFEC Implementation	With Teachers	With other organizations	Grant writing	Professional development Program planning	Teacher training experience	Logistical staff time	Meeting space	Access to green space	Access to indoor interpretive space	Access to curriculum support materials	Speakers and presenters	Funding	Marketing and visibility	Capacity to host service learning project	Continuing education credit for teachers	Changing regional/school curricula to include place-based ed. focus	
Both (USFS)	Natural enquirer – Barbara “Babs” McDonald, editor	✓	✓	✓										✓	✓							
	More Kids in the Woods cost-share program															✓						
Both (Eternal Partners)	National Forest Foundation		✓	✓			✓							✓	✓							
	FFEC Replications and Adaptations	✓	✓	✓	✓		✓		✓					✓	✓							
	Kearns and West			✓												✓						
	PLT, P-Wet, P- WILD	✓	✓											✓								
	Center for Disease Control	✓														✓						
	Environmental Protection Agency	✓														✓						
	National Wildlife Federation	✓	✓	✓	✓									✓								
	National Park Service	✓	✓	✓	✓								✓									

*Roles for organizations in green were determined based on interviews whereas those in blue were determined using background research. Thus, the green organizations are likely more accurate, whereas the blue may require additional research.

Appendix 4: “How To” Document for Repeating the Study Process

Researching FFEC and Urban Settings:

A Step-by-Step Guide for Analyzing and Aligning the FFEC Program Model in Cities

This document is intended to guide other Master’s Projects or partners who may conduct similar future studies. Due to OMB restrictions, the process (i.e. the data collection) may not be possible for the U.S. Forest Service.

- 1 **D**etermine goals and objectives (see Appendix 2, specifically “Present” and “Future” categories), and create a Logic Model (See Appendix 1 for example).
Additional Resource: W.K. Kellogg Logic Model Development Guide
www.wkkf.org/~media/475A9C21974D416C90877A268DF38A15.ashx
- 2 **I**dentify key stakeholder groups. These should include USFS staff (from National Forest, State and Private Forestry, and Research and Development branches), representatives from other FFEC programs, city environmental and educational organizations, along with teachers and school administrators. Also in this step, complete background research on FFEC including a visit to an existing FFEC workshop.
- 3 **E**stablish an advisory board. Convene the advisory board, comprised of key decision-makers, for periodic meetings held face-to face, through webinars, or by phone conferences. The advisory board should (1) approve methods for analysis, (2) discuss findings, and (3) identify areas to focus study efforts. The advisory board is most effective when the majority, if not all, members are present for meetings. Thus, it is important to schedule meetings well in advance.
- 4 **C**ollect data. Conduct interviews, focus groups, and community forums with key stakeholder groups.* In advance, create a question guide for each interview and focus group (see Appendix 5 for example), and seek the advisory board’s approval and input. Send questions to participants prior to their interviews, and request their permission to record the conversation. If possible, use recordings to transcribe interviews in order to accurately recall quotes during data analysis (step 5).
- 5 **A**nalyze data. Categorize data according to stakeholder groups (as defined in step 2). Within each group identify themes (short summary statements answering a question) for each study objective, with supporting quotes (See Appendix 6 for an example). Compare themes across groups to see how many stakeholder groups denote that theme (frequency). Present themes to the advisory board, noting frequent and surprising themes. If the advisory board decides that all necessary information has been collected from relevant stakeholders, move on to step 6.
- 6 **A**ssemble recommendations. Recommendations should be derived from themes, with supporting quotes from stakeholders.
- 7 **R**eport recommendations. If staff has been established for implementing FFEC, use the advisory board to ensure that the recommendations are reported in the most usable fashion. A strategic plan should be produced, with a 1- and 3-year timeline.

*In this study, interview responses were presented anonymously per University of Michigan Institutional Review Board requirements. Coordinators in other organizations may be able to disclose the identification of stakeholders interviewed, if appropriate.

Appendix 5: Background

Background

What are benefits of nature access?

Across the nation, children are leading extremely structured lives that place increasingly more value on standardized test scores than on unstructured recess time. A publication by the National Wildlife Federation (2008) found that children today spend only half the amount of time outdoors as their counterparts did twenty years ago, and an average of six hours per day of their indoor time is spent using electronic media. As the amount of time allotted for unstructured outdoor play decreases and availability of electronic media increases, this trend contributes to a generation of children whose lives are disconnected from the natural world (Louv, 2005). This disconnect deprives children of the many benefits of nature, which researchers have only begun to understand. One study showed that girls having more contact with nature had greater self-discipline, were more likely to perform well in school, and were more likely to avoid risky and unhealthy behaviors than girls with less nature exposure (Faber Taylor, Kuo, & Sullivan, 2002). Spending time outdoors can provide relief from the symptoms of Attention Deficit Hyperactivity Disorder (ADHD) (Faber Taylor, Kuo & Sullivan, 2004) and decrease overall feelings of fatigue and irritability (Kuo & Sullivan, 2001). Studies indicate that children who participate in outdoor learning programs have higher grade point averages and higher standardized test scores (Lieberman, 1998 as cited in Faber Taylor & Kuo, 2006). In addition, such children developed a greater appreciation for natural resources (Louv, 2008). A correlation has also been made between the amount of time children spend outside and their physical health. In the past 20 years, the number of children diagnosed with obesity has doubled, rates of adolescent obesity have tripled, and research has linked these numbers with the decreasing amount of time children spend in outdoor play (NWF, 2008).

Although there are benefits to bringing children outside, it can be challenging to integrate outdoor experiences into the formal education system. Classrooms are increasingly focused on state-mandated curricula, meeting test standards, and implementing electronic technologies. This pressure is especially evident in underserved communities where the need for funding, which is often granted based on test scores, drives pedagogy. In fact, despite an overall lack of evidence to support the use of technology for learning, schools have tripled annual spending on technology to \$6.2 billion over the past decade (Louv, 2008). According to Louv, "We have industrialized the classroom to the extent that there is not room for nature in the curriculum" (2008). Despite these challenges, efforts are growing to change such trends in education. In support of change, some research indicated that outdoor experiences are not necessarily at odds with standardized test performance. Evidence from a study directed by the California Department of Education showed that students who learned in outdoor classrooms increased their science test scores by 27% (Cleaver, 2007). One method being used to get students outdoors more often and familiarize students with nature in their own communities is place-based education.

What is place-based education?

Place-based education is an educational approach designed to integrate community awareness and local topics into curriculum by utilizing nearby settings and resources. One develops a sense of place by

having meaningful interactions with nearby locales, generating understanding of a place's aesthetic, cultural, and political value (Semken & Freeman, 2008). Education programs of this sort have demonstrably helped students see relevance in what they are learning, increased students' engagement in education, and developed a connection between students and the environment in their community (Powers, 2004). Additionally, an evaluation of four place-based education programs suggests that community partners can offer local knowledge, resources, and expertise that make these lessons more meaningful to students (Powers, 2004). These methods, however, do not need to be limited to K-12 classrooms. Studies have shown that place-based education can also be an important pedagogical method for college courses (Semken & Freeman, 2008) and adult informal education (Rae & Pearse, 2004).

Place-based education postulates that connecting people to their community strengthens civic engagement and increases success through active learning and engagement with concrete "real-world" examples instead of abstract concepts. One definition of "place-based learning" can be found in the report, *Living and Learning in Rural Schools and Communities*, from the Harvard Graduate School of Education: "In its most simple form, pedagogy/curriculum of place is an expression of the growing recognition of context and locale and their unique contributions to the educational project. Using what is local and immediate, as a source of curriculum tends to deepen knowledge through the larger understandings of the familiar and accessible. It clearly increases student understanding and often gives a stronger impetus to apply problem-solving skills." (1999, reported in Powers, 2003). A more recent study by Powers (2007) supported an association between participating in place-based education and improved student performance. These benefits are not limited to students, however, even teachers engaged in place-based education report being energized and inspired by the use of local resources in their pedagogy (Powers, 2007).

Powers (2003) presents a theory of how understanding of and connection to place can be developed through interaction between schools and communities, and skill development. Thus place-based learning can create changes in attitude towards place and "enhanced competency", which may lead, in turn, to behavior change ("stewardship" behaviors, "civic engagement", etc) and strengthening of social capital within a community (Powers, 2003). Ultimately, these experiences and behavior changes lead to "healthier social and natural communities" (Powers, 2003). An evaluation by the Harvard Graduate School of Education for the Rural Trust (1999, reported in Powers, 2003) found interaction between schools and communities regarding education were associated with students performing better academically and being more interested in their community, as well as greater job satisfaction among teachers, and greater connections between community members, schools, and students.

While there are many benefits to place-based education, it is not always easy to adopt into the classroom. Many of the challenges found by Powers (2003) were echoed by teachers with whom the project team spoke with in Chicago and Milwaukee. Study participants expressed the challenges of having schools focus on standardized testing, demanding schedules, lack of administrative buy-in and challenges associated with transportation for place-based education. The study offers recommendations for program start-up (defining goals, documenting success early on, etc.), securing buy-in from teachers

and administrators, partnerships and collaboration, and communication related to place-based education programming. A 2007 study of a 3-day place-based education teacher professional development workshop found that, while participants were inspired by the workshop and the ideas generated there, they found it difficult to translate their enthusiasm into action upon returning to their schools. One recommendation was to establish an ongoing professional development program to sustain enthusiasm and provide enough support to allow teachers to develop and implement a place-based education effort in their classrooms (PEER, 2007). Recommendations for the program include pursuing personal follow-up with each participating teacher, encouraging teachers to participate in teams in an effort at sustaining support and enthusiasm, and focusing more time on service-learning, as this is one of the more complex aspects of a place-based education curriculum (PEER, 2007).

What is service-learning?

Service-learning is a key characteristic of many place-based educational programs, and involves service activities that are often youth-led and teach academic lessons while addressing community needs. Service-learning is defined as “a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities” (Learn and Serve America, 2009). Service-learning engages students in real world community issues, and may lead to a number of positive outcomes, including improved understanding between youth and adults, the development of active citizenship in youth, and closer relationships between schools and government (Powers, 2003). More importantly to the proponents of place-based education, service-learning has been shown to “ground the learning experience in the local context, enhance student participation in community matters, and increase student engagement in their academic studies” (Corporation for National Service, reported in Powers, 2003).

What is A Forest For Every Classroom (FFEC)?

FFEC is a year-long, place-based professional development program for educators that aims to provide the knowledge and skills required to transform standards-based classroom teaching into effective place-based education. The program was conceived and founded by a unique joint venture of public land management organizations and NGOs. Established in 2000, the public land management partnership consisted of Shelburne Farms, the National Park Service’s Marsh-Billings-Rockefeller National Historical Park (MBRNHP) and Conservation Study Institute (CSI), the Northeast Natural Resource Center of the National Wildlife Federation (NWF), and the Green Mountain National Forest (GMNF). The seven critical features of the FFEC are as follows: (1) demonstrate best practices in place-based education, (2) cultivate an understanding of public lands and the local community, (3) offer diverse and balanced perspectives on public lands issues, (4) develop relationships with teachers through sustained professional support, (5) foster connections between schools, communities, and resource specialists, (6) enhance the role of public and private organizations as community resources, and (7) engage students as active participants in the care of public lands through service-learning activities (Powers, Duffin, & Lafond, 2003-04).

Teachers in the program attend 3 two-day weekend workshops - one in spring, fall, and winter - and a five-day summer institute. The approximate cost of running the program is between \$40,000 and \$60,000 per year. These estimates include: the 11 days of workshops for up to 20 teachers, registration stipend for teachers from schools that cannot pay, and mini-grants that participating teachers can apply for to purchase books, materials, supplies, software, etc. to support their subsequent classroom activities.

The FFEC program also has additional unique features including custom curriculum development and long-term support for program alumni. Educators create their own curricula based upon local cultural, historical, and natural resources and include a service-learning component addressing community needs. The program provides educators the skills to identify how they can use public lands within their local communities to teach children in grades K-12. Alumni of the program are supported after they complete the program with additional workshop opportunities. Alumni can also apply for scholarships to attend conferences and for small grants to assist with service-learning projects for their students (USFSER, n.d.).

What do FFEC replications need?

The FFEC program model in Vermont and all FFEC replications share certain characteristics in common. They employ the principles of place-based education, are interdisciplinary, promote civic-engagement, provide service-learning experiences, are community-based, and present balanced viewpoints. The programs are built through partnerships and require professional development for teachers over the course of a year, after which participating educators (known as FFEC alumni) continue to receive ongoing program support (P. Stephens Williams, personal communication, January 18, 2010).

A 2006 report produced by PEER Associates analyzed existing models of other place-based education program replications and used the findings to inform the FFEC staff in Vermont about the potential for FFEC program replication beyond Vermont. These replicated programs included the Community Mapping Program (CMaP), Project Learning Tree (PLT), Roots and Shoots, and Earth Force. The report described strategies those programs employed in their replication processes and recommended replication strategies most pertinent to FFEC, including suggestions for funding, national office support, and quality control (PEER, 2006a). While this report was aimed at meeting the needs of the FFEC Vermont program for expanding and managing this expansion, it is a good resource for those looking for more information on FFEC program replication.

What tools already exist for replication?

First, Vermont FFEC partners developed a document titled *An Evaluation Toolkit for A Forest for Every Classroom Program Replication*, providing suggestions, surveys, and other instruments for evaluating FFEC replications (PEER 2006b). A second version of the toolkit is currently in development by the FFEC program. Second, in 2007, original FFEC program partners in Vermont developed a toolkit to inform

program replication, titled *Principles and Promising Practices of Place-Based Learning* (Clark, 2007). This resource promotes and provides broad recommendations for starting place-based educational programs in general (not necessarily bearing the FFEC name). The document offers tools for an organization interested in developing a place-based program, including information on how to develop a logic model, build strong community partnerships, and sustain a program. Third, a promising resource for FFEC replicators is the recommendation list in the PEEC Cross-Program Evaluation Report (Powers, 2003). Starting on page 51 of the PEEC document, this list encompasses start-up approaches, partnership development, and sustaining communication with all stakeholders. While the report was developed specifically for FFEC in Vermont, many of the recommendations are applicable to replications.

What are some additional resources for FFEC implementation in Milwaukee and Chicago?

The Wisconsin Forest Resources Education Alliance (WFREA), through the University of Wisconsin-Stevens Point, has been in action since 1998 and supports forestry education for grades K-12 through teacher tours, educational materials, and serves as a clearinghouse of forestry and natural resources information for teachers. WFREA has previously partnered with universities, state and federal agencies, teachers, and forest industry, and could be a partner for FFEC in Milwaukee (USFSNR, n.d.). The publication *How to Grow a School Forest: A Handbook for Wisconsin Educators*, which was sponsored by the Wisconsin Forest Resources Education Alliance, can be downloaded at: <http://www.uwsp.edu/cnr/leaf/adobe/sf/sfhand04.pdf>.

The “Bringing the Northern Forest to Your Classroom” program may also be useful for FFEC replication. Created as part of an Adirondack Curriculum Project workshop with the USFS Northern Research Station in New York, this is a set of lesson plans created by teachers working with resource and educational professionals on various aspects of the northern forests. Lesson plans were developed in much the same way as FFEC curriculum is developed, with teachers independently developing lesson plans after receiving workshop-based professional development taught by forest experts who serve as ongoing teacher resources (USFS, 2007a). These lesson plans were developed by teachers to be place-based in the forests of the Northeastern Region, and were developed to utilize educators’ local resources and incorporate education-by-design principles similar to FFEC. *Bringing the Northern Forest to Your Classroom: Teacher-Developed Lesson Plans for Active Learning* can be found at http://www.fs.fed.us/nrs/pubs/gtr/gtr_nrs21.pdf.

The Illinois Department of Natural Resources (IDNR) runs a variety of youth programs that could complement or partner with a Chicago FFEC program. One example of an Illinois DNR youth program is the Urban Fishing program where children can participate in free fishing clinics and have access to gear rentals (IDNR, 2010). The Office of Mines and Minerals of the IDNR also directs teacher education on mining at an annual conference, has experienced staff, and offers a variety of pre-prepared educational materials for teachers to use free of charge. The IDNR Environment and Nature Training Institute for Conservation Education (ENTICE) program, an existing professional development program for teachers in Illinois, previously partnered with the Midewin Tallgrass Prairie on a series of workshops. More information on ENTICE can be accessed at: <http://dnr.state.il.us/education/entice/index.htm>. The IDNRE

offers two relevant grant opportunities that may serve as important resources for future FFEC teachers: the Schoolyard Habitat Action Grant and the Illinois Biodiversity Field Trip Grant. More information on these grant programs can be accessed at: <http://dnr.state.il.us/education/CLASSRM/grants.htm>.

How does FFEC fit with...

...the USFS and the agency's mission?

The USFS has a long history of conservation and environmental education in the U.S. and recently has worked to formalize these efforts through the creation of two new programs. The Conservation Education program was created in 1999 (USFS, 1999) and the Urban Connections (UC) program was created in 2000 (Urban Connections: About, 2009). UC was created in response to a study conducted in 2000 for the USFS, which found that residents of metropolitan areas in the United States placed a high value on forests, but that many residents were unaware of the relationship between National Forest System and the USFS (Urban Connections: About, 2009). As a subsidiary of the USFS, UC works to uphold the mission of the USFS: "To sustain the health, diversity and productivity of the Nation's forests and grasslands to meet the needs of current and future generations" (USFS: About, 2009). Another relevant USFS value is the desire to be responsive to national and local interests. The FFEC program allows UC, and therefore the USFS, to directly connect with local interests through collaborating with teachers and students in large urban population centers such as Milwaukee and Chicago. FFEC could also assist the USFS with meeting one of its major goals outlined in the Strategic Plan for Fiscal Years 2007-2012 (USFS, 2007c). This goal, Goal 6, states "Engage urban America with Forest Service programs."

...the USFS Conservation Education program?

The Conservation Education Program works with partners to coordinate the development and delivery of high-quality, science-based education about forests, grasslands, and related natural resources to pre-kindergarten through 12th grade students and their educators, in both formal and non-formal settings. The FFEC program could help the USFS Conservation Education program meet a number of goals including "coordinate the development and delivery of high quality conservation education programs and materials" (Goal 1) and "maximize partnerships to ensure mission success" (Goal 3) (USFS, 2007b). The Conservation Education department also strives to align with overarching USFS agency goals including the particularly relevant and previously mentioned Goal 6, "Engage urban America with Forest Service programs" (USFS, 2007c).

...the Urban Connections program?

Urban Connections (UC) is currently considering developing a program modeled after the FFEC program. The UC program attempts to inspire urban residents to learn more about surrounding forests and the agencies managing them, with the goal of developing residents' sense of belonging to these lands. Urban Connections also works to improve the USFS Eastern Region's outreach initiatives while staying abreast of other USFS efforts throughout the nation (UC: About, 2009). FFEC believes that partnerships between public and private organizations is a model for how collaboration can increase the

effectiveness of organizations to serve communities, enhance educational outreach, and protect public lands (Powers, Duffin, & Lafond, 2003-04).

What is participatory planning?

Stakeholder involvement in the project-planning process is beneficial for accessing local knowledge and creating a venue for participants to share meaningful information (Kaplan & Kaplan, 1982; Gump & Barker, 1964). One study suggested that the urban environment serves as a storehouse of information when stakeholders are effectively involved in the planning process (Carr & Lynch, 1968). Unfortunately, stakeholder participation has been shown to be challenging at times due to miscommunications between planners and stakeholders. Kaplan provides four steps for the minimization of miscommunications and their accompanying consequences: (1) consider the project's genuine impact, (2) carry out adequate sampling, (3) build a stable growth model, allowing for continuous benefits from the project, and (4) use a satisfactory medium for communication, such as models or verbal exchange (Kaplan, 1982). Several studies show that stakeholder involvement can be maximized by decreasing the scope of the project rather than increasing it (Irvine & Kaplan, 2001).

What is asset mapping?

Asset mapping, sometimes called community mapping, is a capacity-focused process for cataloguing the resources available in a certain neighborhood or area in order to achieve a specified goal. Asset mapping can help participating FFEC teachers identify multiple layers of local resources of interest for their place-based education curricula. Because educators often do not live where they teach, an asset mapping exercise is one avenue for familiarizing teachers with resources available near their schools. As part of an asset mapping exercise for a FFEC program, teachers identify and locate parks and public green spaces near their school, relevant cultural and historical landmarks and local businesses, organizations, and even community members who can assist in implementing place-based education. Two useful publications that explain the process of asset mapping are (1) *Mapping the Assets of Your Community: A Key Component for Building Local Capacity*, by the Southern Rural Development Center (2006) (http://srdc.msstate.edu/publications/227/227_asset_mapping.pdf), and (2) *Asset Mapping: Locating the Gifts in Your Community*, module 4 by Holly Deblois and Nicole LaPoint of the University of New Hampshire "Empowering Communities Through Access to Information and Training" program (2003) (www.nhhealthpolicyinstitute.unh.edu/ec/ppt/03_asset-mapping.ppt).

The E-Growth Community Project of Dawson Creek, British Columbia offers excellent visual examples of asset maps at <http://egrowth.peacecountry.com/resources/images/EGrowthAssetMapcolour.jpg> and <http://egrowth.peacecountry.com/resources/images/AboriginalAssetMapcolour.jpg>. Human Resources and Skills Development Canada also offers an example of a youth-created asset map at: <http://www.hrsdc.gc.ca/eng/hip/lld/olt/images/map1.jpg>.

Appendix 6: Notice of IRB Exemption & Interview Consent Forms

Notice of Exemption

Behavioral Sciences Institutional Review Board • 540 East Liberty Street, Suite 202, Ann Arbor, MI 48104-2210
phone (734) 936-0933 • fax (734) 998-9171 • irbhsbs@umich.edu

To: Andrea Liberatore

From:

James Sayer
Colleen Seifert

Cc:

Michaela Zint
Annie Gregory
Catherine Game
Andrea Liberatore
Mona Younis
Ericka Popovich
John Cawood III

Subject: Notice of Exemption for [HUM00029401]

SUBMISSION INFORMATION:

Title: UM Urban Connections

Full Study Title (if applicable): An Operational Feasibility Analysis of Place-Based Education Programs for Future Implementation by the USFS's Urban Connections Program

Study eResearch ID: [HUM00029401](#)

Date of this Notification from IRB: 5/12/2009

Date of IRB Exempt Determination: 5/12/2009

UM Federalwide Assurance: FWA00004969 expiring on 4/18/2011

OHRP IRB Registration Number(s): IRB00000246

IRB EXEMPTION STATUS:

The IRB Behavioral Sciences has reviewed the study referenced above and determined that, as currently described, it is exempt from ongoing IRB review, per the following federal exemption category:

EXEMPTION #2 of the 45 CFR 46.101.(b):

Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could

reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Note that the study is considered exempt as long as any changes to the use of human subjects (including their data) remain within the scope of the exemption category above. Any proposed changes that may exceed the scope of this category, or the approval conditions of any other non-IRB reviewing committees, must be submitted as an amendment through eResearch.

Although an exemption determination eliminates the need for ongoing IRB review and approval, you still have an obligation to understand and abide by generally accepted principles of responsible and ethical conduct of research. Examples of these principles can be found in the Belmont Report as well as in guidance from professional societies and scientific organizations.

SUBMITTING AMENDMENTS VIA eRESEARCH:

You can access the online forms for amendments in the eResearch workspace for this exempt study, referenced above.

ACCESSING EXEMPT STUDIES IN eRESEARCH:

Click the "Exempt and Not Regulated" tab in your eResearch home workspace to access this exempt study.

James Sayer

Co-chair, IRB Behavioral Sciences

Colleen Seifert

Co-chair, IRB Behavioral Sciences

“An Operational Feasibility Analysis of A Forest for Every Classroom (FFEC) for Future Implementation by the USFS's Urban Connections Program”

In-Person Interview Informed Consent Form

Faculty Advisor

Michaela Zint, Professor

School of Natural Resources and Environment (SNRE), University of Michigan

Study Coordinators

John Cawood

Catherine Game

Annie Gregory

Andrea Liberatore

Ericka Popovich

Mona Younis

School of Natural Resources and Environment (SNRE), University of Michigan

Purpose of the research study:

The purpose of this study is to assess the potential of the A Forest for Every Classroom (FFEC) program for meeting the place-based environmental education needs of the U.S. Forest Service's Urban Connections department and its community partners in Milwaukee and Chicago. Information gathered through interviews and focus groups will be used to make recommendations for developing successful future FFEC programs in these cities.

What you will be asked to do in the study:

You are being asked to participate in an interview. You will be asked questions about U.S. Forest Service (USFS) environmental education needs and resources, and/or your community's needs and assets relevant to a potential FFEC environmental education program.

Time required:

60-90 minutes.

Risks and Benefits:

You will not be at physical or psychological risk and should experience no discomfort resulting from the study procedures. This study meets the definition of minimal risk because the likelihood and degree of discomfort or harm anticipated in the research are not greater, in and of themselves, than those ordinarily encountered in daily life. Refreshments will be provided to minimize your discomfort during your participation.

This study is an opportunity to provide input into the environmental education programs in your community and/or in your place of business.

Compensation:

No monetary compensation will be provided for your participation. If you choose to withdraw from this study at any time, the benefits mentioned above will still be provided to you.

Audio Recording:

The phone interview session will be audio recorded and transcribed. Upon completion of the study, audio tapes or files will be archived until completion of the study and then destroyed.

Please sign if you are willing to have this interview audio recorded.

Participant Signature for Audio Recording

Date

Confidentiality:

Records will be kept confidential to the extent provided by federal, state, and local law. One copy of this document will be kept together with the study records. Also, you will be given a copy to keep. Your information will be kept in a locked file at the School of Natural Resources and Environment (SNRE), University of Michigan until completion of a final report, after which the information will be destroyed. However, the Institutional Review Board, the study sponsors, or university and government officials responsible for monitoring this study may inspect these records.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact in the School of Natural Resources and Environment (SNRE), University of Michigan if you have questions about the study:

Andrea Liberatore, Master's Student, Phone: (734) 277-2025

Mona Younis, Master's Student, Phone: (810) 845-4633

Whom to contact about your rights as a research participant in the study:

Should you have questions regarding your rights as a research participant, please contact the Institutional Review Board, Mona Moore, Assistant Administrative Manager at (734) 936-0933 or irbhsbs@umich.edu

Agreement:

I have read the information given above. The focus group facilitator has offered to answer any questions I may have concerning the study. I voluntarily agree to participate in this study, and I have received a copy of this description.

Participant Printed Name

Participant Signature

Date

Do not complete below this line. To be completed by interviewer:

Interviewer Printed Name

Interviewer Signature

Date

Interview Date & Time

Interview Location (Site Name & City)

“An Operational Feasibility Analysis of A Forest for Every Classroom (FFEC) for Future Implementation by the USFS's Urban Connections Program”

Focus Group Informed Consent Form

Faculty Advisor

Michaela Zint, Professor

School of Natural Resources and Environment (SNRE), University of Michigan

Study Coordinators

John Cawood

Catherine Game

Annie Gregory

Andrea Liberatore

Ericka Popovich

Mona Younis

School of Natural Resources and Environment (SNRE), University of Michigan

Purpose of the research study:

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What you will be asked to do in the study:

You are being asked to participate in a focus group, or a small group of people (about 5 to 10) who meet together and provide answers plus opinions to some questions asked by a group facilitator. You will be asked questions about your community's needs and assets relevant to a potential FFEC environmental education program.

Time required:

60-90 minutes.

Risks and Benefits:

You will not be at physical or psychological risk and should experience no discomfort resulting from the study procedures. This study meets the definition of minimal risk because the likelihood and degree of discomfort or harm anticipated in the research are not greater, in and of themselves, than those ordinarily encountered in daily life. Refreshments will be provided to minimize your discomfort during your participation.

This study is an opportunity to provide input into the environmental education programs in your community.

Compensation:

You will be provided refreshments for participating in this research. No monetary compensation will be provided for your participation. If you choose to withdraw from this study at any time, the benefits mentioned above will still be provided to you.

Audio Recording:

The focus group session will be audio recorded and transcribed. Upon completion of the study, audio tapes or files will be archived until completion of the study and then destroyed.

Please sign if you are willing to have this interview audio recorded.

Participant Signature for Audio Recording

Date

Confidentiality:

Records will be kept confidential to the extent provided by federal, state, and local law. One copy of this document will be kept together with the study records. Also, you will be given a copy to keep. Your information will be kept in a locked file at the School of Natural Resources and Environment (SNRE), University of Michigan until completion of a final report, after which the information will be destroyed. However, the Institutional Review Board, the study sponsors, or university and government officials responsible for monitoring this study may inspect these records.

Voluntary participation:

Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study:

You have the right to withdraw from the study at anytime without consequence.

Whom to contact in the School of Natural Resources and Environment (SNRE), University of Michigan if you have questions about the study:

Andrea Liberatore, Master's Student, Phone: (734) 277-2025

Mona Younis, Master's Student, Phone: (810) 845-4633

Whom to contact about your rights as a research participant in the study:

Should you have questions regarding your rights as a research participant, please contact the Institutional Review Board, Mona Moore, Assistant Administrative Manager at (734) 936-0933 or irbhsbs@umich.edu

Agreement:

I have read the information given above. The focus group facilitator has offered to answer any questions I may have concerning the study. I voluntarily agree to participate in this study, and I have received a copy of this description.

Participant Printed Name

Participant Signature

Date

Do not complete below this line. To be completed by facilitator:

Focus Group Facilitator Printed Name

Focus Group Facilitator Signature

Date

Focus Group Date & Time

Focus Group Location (Site Name & City)

“An Operational Feasibility Analysis of A Forest for Every Classroom (FFEC) for Future Implementation by the USFS's Urban Connections Program”

Phone Interview Informed Consent Form

Faculty Advisor

Michaela Zint, Professor

School of Natural Resources and Environment (SNRE), University of Michigan

Study Coordinators

John Cawood

Catherine Game

Annie Gregory

Andrea Liberatore

Ericka Popovich

Mona Younis

School of Natural Resources and Environment (SNRE), University of Michigan

Purpose of the research study:

The purpose of this study is to assess the potential of the A Forest for Every Classroom (FFEC) program for meeting the place-based environmental education needs of the U.S. Forest Service's Urban Connections department and its community partners in Milwaukee and Chicago. Information gathered through interviews and focus groups will be used to make recommendations for developing successful future FFEC programs in these cities.

What you will be asked to do in the study:

You are being asked to participate in a phone interview. You will be asked questions about U.S. Forest Service (USFS) environmental education needs and resources, your involvement in FFEC, and/or your community's needs and assets relevant to a potential FFEC environmental education program.

Time required:

60-90 minutes.

Risks and Benefits:

You will not be at physical or psychological risk and should experience no discomfort resulting from the study procedures. This study meets the definition of minimal risk because the likelihood and degree of discomfort or harm anticipated in the research are not greater, in and of themselves, than those ordinarily encountered in daily life.

This study is an opportunity to provide input into the environmental education programs in your community or by your place of business, or to provide input for replication of the FFEC program.

Compensation:

No monetary compensation will be provided for your participation. If you choose to withdraw from this study at any time, the benefits mentioned above will still be provided to you.

Audio Recording:

The phone interview session will be audio recorded and transcribed. Upon completion of the study, audio tapes or files will be archived until completion of the study and then destroyed.

Please sign if you are willing to have this interview audio recorded.

 Participant Signature for Audio Recording

 Date
Confidentiality:

Records will be kept confidential to the extent provided by federal, state, and local law. One copy of this document will be kept together with the study records. Also, you will be given a copy to keep. Your information will be kept in a locked file at the School of Natural Resources and Environment (SNRE), University of Michigan until completion of a final report, after which the information will be destroyed. However, the Institutional Review Board, the study sponsors, or university and government officials responsible for monitoring this study may inspect these records.

Voluntary participation:

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Right to withdraw from the study:

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Agreement:

I have read the information given above. The focus group facilitator has offered to answer any questions I may have concerning the study. I voluntarily agree to participate in this study, and I have received a copy of this description.

 Participant Printed Name

 Participant Signature

 Date

Do not complete below this line. To be completed by interviewer:

 Interviewer Printed Name

 Interviewer Signature

 Date

 Phone Interview Date/Time

Appendix 7: Observation Protocol for the 2009 FFEC Summer Institute

In order to observe FFEC in action and gain a thorough understanding of the program, its context and implementation, two study team members observed the Vermont 2009 FFEC Summer Institute, consisting of five workshop days in two locations. The Institute was held in the foothills of the Green Mountain National Forest near Huntington, VT (Wednesday, July 8 – Friday, 10) and in the Marsh-Billings-Rockefeller National Historic Park in Woodstock, VT (Monday, July 13 – Tuesday, July 14).

Prior to the visit, team members obtained approval for participation in the workshops from FFEC coordinators and partners and developed an observation protocol. The observation protocol consisted of unobtrusive participant observation and a guide for recording information. Unobtrusive participant observation meant that study team members participated in the Institute such that their influence on the sessions was minimized. Primarily, the team members were silent observers and engaged in workshop activities when it did not disrupt workshop dynamics. For example, team members were invited to participate in outdoor nature walks that were integral to some workshop sessions, but they did not participate in discussion prompted by the workshop trainers. The observation guide (provided below) prompted team members to think about and record information on the human, space, and material resources utilized in the Institute.

During the Institute, team members each completed one observation guide per workshop session, documented indoor and outdoor workshop spaces through photographs, debriefed at the end of each day, and jointly recorded other observations and thoughts in a journal. In addition, on Saturday, July 11 the team members toured the grounds of Shelburne Farms, one of the founding FFEC partner organizations, courtesy of the FFEC coordinator from Shelburne Farms. The observation guide and protocol were informed by research into observation techniques and insights from the study team project advisor (Taylor-Powell & Steele 1996; USAID 1996).

Shelburne Farms' Forest for Every Classroom (FFEC) 2009 Summer Institute
Wednesday, July 8-Tuesday, July 14

UM Master's Team Observation Guide: Session Observations

Title of Session: _____

Date/Time: _____

Location: _____

Observer: _____

Brief description of the context (e.g. indoor, outdoor, park): _____

PRESENTERS	
Names of presenter(s), organizational affiliation, and area of expertise.	
Number of presenters for each session:	
What qualifies them to be presenters (Are they professional teacher trainers, USFS staff members, professors, hobbyists)?	
Staff	
Staff and their organizational affiliation(s) and areas of expertise.	
Number of staff involved in session:	
Are there issues that come up that require staff to be adaptable to changing plans/situations? If so, describe.	
Does staff need to pull in additional resources or information to answer questions or otherwise help prepare teacher participants?	

Do Shelburne Farms staff and/or other presenters commit to providing additional support to participants in the future? If so, what level, content, and types of support (material, financial, reference, advising, etc.) are offered?	
Teachers:	
Are the teachers engaged in the activities? Note expressed motives if applicable.	
What reservations, if any, do teachers exhibit about the curriculum development, or being able to start this in their school?	
Do teachers mention any power relationships, decision-making or current issues within their schools or communities that may impact the future success of their FFEC implementation?	
What kinds of challenges have the teachers encountered so far?	
In what ways are the different teachers tailoring FFEC for their own classroom/program needs?	
Do teachers ask for from Shelburne Farms and/or presenters? If so, what level, content, and types of support (material, financial, reference, advising, etc.) are requested?	
Training	
Proportion of time spent teaching content vs. curriculum development and skill building?	
What knowledge and skills does this session cover?	
Proportion of sessions involving hands-on/experiential learning:	
Describe the teaching aids (props, powerpoints) and/or learning techniques (visual learning) that are employed during the training session.	
Training materials (handouts, binders, etc.) provided and the content covered in each.	

Reflections on ways the workshops could be improved in the future.	
Does the question of meeting state or other education standards come up?	
Indoors	
Room set-up and seating arrangements:	
Types of indoor area used:	Conference room ___ Classroom ___ Lounge ___ Other ___ (Describe)
What did or did not work well about the indoor space used?	
Types of activities done in this indoor space for this session:	Lecture ___ Team-building ___ Hands-on ___ Group discussion ___ Icebreaker ___ Socialization ___ Other ___ (Describe)
Describe the atmosphere, the setting, and what the needs seem to be overall for indoor space.	
Outdoors	
Outdoor space set-up and seating arrangements:	
Type of outdoor area used:	Forest ___ Trail ___ Open space ___ Campfire ring ___ Other ___ (Describe)

What did or did not work well about the outdoor space used?	
Types of activities done in this outside space:	Lecture ___ Team-building ___ Hands-on ___ Group discussion ___ Icebreaker ___ Socialization ___ Other ___ (Describe)
How was inclement weather accommodated, if applicable?	
How could inclement weather be accommodated, if needed?	
Describe the atmosphere, the setting, and what the needs seem to be overall for outdoor space.	
Resources	
Equipment used:	
Multimedia support needed:	
Technical issues noticed:	
Technical Assistance that was required:	
Other materials and resources used:	
Additional materials and resources that could be helpful for training:	
Note any logistical challenges or barriers.	

Appendix 8: Interview Guide

Introductory Statement for Interview/Focus Group Questions

A Forest for Every Classroom, also known as FFEC (*pronounced FEC*) is a professional development program designed to prepare teachers to utilize forests as an extension of their classrooms. FFEC trains educators to teach students about a wide range of topics (such as science, math, and creative writing) with forests as an overarching theme and an outdoor learning space. This program was developed and first put into action in Vermont, thanks to a partnership between the U.S. Forest Service, the National Parks Service, and an organization called Shelburne Farms which coordinates the professional development program.

The U.S. Forest Service's Urban Connections division is interested in starting A Forest for Every Classroom programs in major cities across the eastern half of the United States, beginning with Milwaukee and Chicago. I am part of a team of Master's students from the University of Michigan which is helping Urban Connections determine how to adapt FFEC for the urban communities it serves and to better understand the resources needed to make the programs a success.

I'm going to ask you a series of questions about how FFEC could benefit your [organization/community], anticipated challenges, and other questions relevant to starting a FFEC program. It is fine if you haven't thought about something or do not have an answer. We appreciate any thoughts you have on our questions.

Questions for Urban Connections and USFS Personnel

I. Questions for USFS Personnel

1. Could you describe your position within the Forest Service? What are major projects you are currently involved in?
2. How would you describe the Forest for Every Classroom (FFEC) program and its relationship to the Forest Service?
3. What is it about the program that has piqued your interest in promoting it?
4. What challenges does the USFS experience in trying to increase students' awareness and stewardship of natural resources within urban areas? What about that of teachers? In what ways have such challenges already been addressed?
5. How do you think the USFS will benefit from having FFEC in Milwaukee and Chicago?
6. How would the implementation of FFEC in Milwaukee and Chicago align with the USFS' conservation education objectives?
7. How do you see the FFEC program growing within the USFS in the future? Is there a timeframe in mind for any such growth or expansion?
8. Are you aware of other professional development programs within the USFS with similar goals and/or a similar audience as FFEC?
9. What funding opportunities are available through USFS for FFEC development and implementation? If none are available, how do you see UC financing FFEC?
10. Do you think FFEC will be adaptable to other environments - specifically urban areas? Why or why not?
11. How do you think we could present our findings to ensure that the implementation process can be duplicated in other UC cities or USFS locations?
12. Is there anything else that you think we should know regarding FFEC or any related topics?

II. Questions for Urban Connections (UC) Personnel

1. Could you describe your position within the Forest Service? What are major projects you are currently involved in? Could you give us a list of UC's programs?
2. What are UC's specific objectives for increasing support and awareness of the USFS in Milwaukee and Chicago?
3. How does UC foresee a program like FFEC fulfilling these objectives?
4. What challenges have you observed through Urban Connections in increasing students' awareness and stewardship of natural resources in Milwaukee and Chicago? What about that of teachers? In what ways have such challenges already been addressed?
 - a. How do you see a program like FFEC being a useful tool for UC in overcoming such challenges?
5. Have you considered any potential FFEC partners and/or community support for UC in Milwaukee and Chicago? If so, which partners have you considered and why?
 - a. What support and/or expertise could these potential partners provide?
 - b. What benefits do you think these organizations may receive in return for their partnership?
6. How much of UC's current budget can be allocated for future development and/or implementation of a program like FFEC? And which categories could this funding be used for (presenters, food, materials, supplies, etc.)?
7. What funding opportunities do you hope to pursue to support and sustain a program like FFEC's development and implementation?

8. What UC personnel would be involved in FFEC (or a similar program) implementation in the future and how much time will they have to commit?
9. At this time, and in the future, where does a program like FFEC rank in priority compared to the other UC programs?
10. If necessary, would there be potential to expand staffing in the future to accommodate the growth of UC as a result of implementing a program like FFEC?
11. What role do you envision UC playing in a program like FFEC? How do you foresee it changing over time?
12. What tools could we provide to help get FFEC off the ground in Chicago/Milwaukee?
13. How do you think we could present our findings to ensure that the implementation process can be duplicated in other UC or USFS cities?
14. Is there anything else that you think we should know regarding FFEC or any related topics (additional contacts)?

Questions for Forest for Every Classroom (FFEC) Contacts

1. Could you describe your position and any major projects you are involved with?
2. What do you think are the greatest strengths of the current FFEC program?
3. Considering FFEC's relationship to the Forest Service, would you say participation in the program increases teacher and student awareness of the Forest Service? If so, how?
4. What makes a successful partnership for FFEC? (with regards to partner organizations)
5. What role does each of the current partners play?
6. What characteristics of partners are important for fulfilling each of these roles?
7. What is the estimated cost of implementing FFEC as a whole?
8. What kinds of monetary support has FFEC received from the USFS, partner organizations and others in the past?
9. What kinds of non-monetary support has FFEC received from the USFS, partner organizations and others in the past?
10. Based on your past experiences, what do you think would facilitate the adaptation of FFEC in UC's urban setting?
11. How do you think the current FFEC program could be adapted to meet the needs of urban teachers and students?
12. What kinds of staff and time commitments are needed to implement FFEC?
13. What kinds of expertise are needed for implementing FFEC from UC personnel? Partners?
14. Does FFEC offer any resources to help teachers meet standards? If so, please describe.
15. What would you want to improve upon in FFEC, if anything?
16. How do you think we could present our findings to ensure that the implementation process can be duplicated in other US or USFS cities?
17. Is there anything else that you think we should know regarding FFEC or other topics?

Additional Questions Specific to Replications (or Adaptations):

1. What elements does your program have in common with other FFEC replications/adaptations?
2. What is the organizational framework of this replication?
3. Could you describe the replication process?
 - a. How long did it take to implement?
 - b. What did you learn from other FFEC programs?
 - c. How did you modify or adapt the program to meet the needs of the community?
 - d. What was most challenging aspect of the implementation process?
 - e. What worked best during the implementation process?
 - f. Describe your experience with the Memorandum of Understanding process.
4. How do you envision this replication growing in the next 5-10 years? (i.e. future goals)
5. Are you trying to ensure that your FFEC program is sustainable? How?

Questions for Chicago and Milwaukee Contacts

1. Could you describe your position and any major projects you are involved with?
2. What do you think FFEC needs to improve on to suit the needs of the audiences here? For example, what challenges do you think need to be met, in terms of content and/or context, keeping in mind the unique environmental problems that Milwaukee/Chicago faces?
3. In what ways could a program like FFEC assist in overcoming barriers to increasing natural resource stewardship in Milwaukee/Chicago?
4. Are there other professional development programs for teachers being used to increase natural resource stewardship in Milwaukee/Chicago that we could contact and learn from, or that you think would be relevant partners in this project? If so: Please describe. (program description, program coordinator, contact information, etc.)
5. What specific organizations could be partners for assisting UC in FFEC implementation?
 - a. What support and/or expertise could these potential partners provide?
 - b. What benefits would these organizations hope to receive for their partnership?
 - c. What potential partners in Milwaukee/Chicago could provide non-monetary resources such as personnel support and office space?
 - d. Do you know of any potential partners in Milwaukee/Chicago that might be able to provide funding for FFEC implementation?
6. What green spaces (e.g. parks, arboretums, etc.) are available in your area for teachers and their students to utilize?
7. Are there any other organizations that you think we should talk to?
8. Is there anything else you think we should know or consider?

Questions for Chicago/Milwaukee Teachers

1. From our brief description of the program, what appeals to you about the Forest for Every Classroom (FFEC) model for professional development?
2. What would a model like FFEC need to improve upon or change to suit the needs of schools in Chicago/Milwaukee?
 - a. Are there natural resource (even related to culture or history) education gaps that you think need to be filled, in terms of content and context in Chicago/Milwaukee? (ex: are there certain grades that receive more natural resource education opportunities than others)?
 - b. To increase the likelihood of teachers participating, what additional incentives could the Forest Service could offer (teacher credit, research opportunities, grants, etc.) teachers?
 - c. How is administrative support best garnered for teachers to participate in professional development programs?
 - d. What do you think might be the best approach for initiating a program like this in Chicago/Milwaukee? (starting with private or charter schools; starting with schools with access to green space, etc.)
3. What green spaces (e.g. parks, arboretums, etc.) are available in your area for teachers and their students to utilize?
 - a. How comfortable are you taking students to those areas?
4. What cultural and/or historical resources (buildings, locations, businesses) are available in your area for teachers and students to utilize?
 - e. Have you ever utilized those areas before for teaching?
 - f. How comfortable are you taking students to those areas?
5. Are you aware of any other professional development programs for teachers which are being used to increase natural resource stewardship in Chicago/Milwaukee which you think would be relevant partners in this project?

If so, please describe (program description, coordinator, contact information, etc.).
6. Is there anyone else that you recommend we talk to? We are particularly interested in organizations or agencies relevant to education. We already have spoken with multiple environmental organizations in the city (Urban Ecology Center, Neighborhood House, etc.)
7. Is there anything else you think we should know or take into consideration?

Questions for FFEC Alumni Teachers

1. What challenges have you faced in developing, implementing and coordinating your FFEC curriculum?
2. Since becoming involved with FFEC, to what extent has your awareness of the USFS and public lands changed? How has it done so?
3. To what extent has FFEC increased your students' awareness of the US Forest Service and public lands? How has it done so?
4. In what ways have your students benefitted from Forest for Every Classroom?
5. Do you know if your FFEC curriculum has changed your students' environmental stewardship behavior? If so, how?
6. How has FFEC changed your classroom environment or the way you teach?
7. To what extent did the FFEC training workshops prepare you to use place-based education in your teaching?
8. If you were teaching in an urban area, what do you imagine would be the benefits of using a pedagogy like FFEC?
 - a. How is this different from your current experience?
9. If you were teaching in an urban area, what do you imagine would be the challenges of using a pedagogy like FFEC?
 - a. How is this different from your current experience?
 - b. Do you have any suggestions for how FFEC could be adapted to overcome such challenges?
10. What kinds of FFEC support or material resources are most important/useful to you?
11. Have you needed outside funding to carry out your FFEC curriculum? If so how did you acquire it?
12. Does FFEC offer adequate resources to help teachers meet standards? Either way, please describe.
13. Do you have any suggestions for implementing FFEC in an urban environment?
14. Is there anything else that you think we should know regarding FFEC or any related topics?
15. As an example of FFEC curriculum, would you be willing to share a copy of your curriculum with:
 - a. Our University of Michigan team?
 - b. Potential users in Milwaukee and Chicago (those developing a FFEC-like program)?

Appendix 9: Themes Derived from Interviews and Focus Groups

*Citations include the source group and month/year of statement. The sources are labeled in citations as follows:

CT = Chicago Teachers

Chicago = Chicago Contacts/Groups

USFS = USFS Personnel

FT = FFEC Teachers

FFEC = FFEC Program Representatives

MT = Milwaukee Teachers

Milwaukee = Milwaukee Contacts/Groups

Getting Started

Theme	Supporting Quote(s)	Quote(s) Citation*	# of Theme Sources
Pilot with charter schools who are more flexible.	<p>1) "We've also started looking as much as we can towards the charter schools... we can fight the monolith or we can find kids elsewhere."</p> <p>2) "I think the non-public schools are going to be easier."</p> <p>3) "I work with a private school here in Chicago. I can tell you we would love something like this. We have a lot more autonomy and flexibility with our curriculum. And we have explicit initiatives to start more project based learning."</p>	<p>1) Chicago, 8/09</p> <p>2) MT, 1/10</p> <p>3) CT, 1/10</p>	3 (Chicago, MT, CT)
Funding is start-up and sustainability challenge for FFEC.	<p>1) "We went to the national office to get money to leverage for a cost-share agreement and I was able to get some starter money, but as we go to other places getting matching dollars."</p> <p>2) "One thing that is really needed is funding for teachers to participate. Even a \$400 fee could be prohibitive depending on who you're trying to reach."</p> <p>3) "The first year there was some grant funding from USFS but that has dried up. They provided a lot of in-kind contributions."</p> <p>4) "[STATE] UC has enough funding to cover its FFEC costs and is careful about how its monies are spent."</p> <p>5) "UC in Chicago cannot get as many kids engaged (as desired) due to lack of funding from the USFS and other sources."</p> <p>6) "This program usually needs \$15,000-\$30,000 to get running. Because of UC's budget, we would have to submit a request for a special project and then outline it for one city and submit it as a pilot."</p> <p>7) "The conservation education program has money for every region to help start the program. Money has been provided in Texas, New Hampshire & Montana. Urban Connections also has money."</p>	<p>1) FFEC, 12/09</p> <p>2) USFS, 11/09</p> <p>3) FFEC, 12/09</p> <p>4) FFEC, 1/10</p> <p>5) USFS, 8/09</p> <p>6) USFS, 8/09</p> <p>7) USFS, 8/09</p>	2 (USFS, FFEC)

<p>FFEC can help the USFS engage community/schools in forest issues.</p>	<p>1) "I would focus on the whole aspect of community. If USFS wants to have an impact on communities where they're located, it's not good enough to go into schools once in a while and do a "flash in the pan" program where you teach about frogs, leave, and never come back. What we're trying to do with this program is turn that whole thing around. If they really want to have an impact, this program is a natural program – it uses things the FS already uses (natural, cultural, historical resources) just doing it a different way. "</p> <p>2) "Milwaukee and Chicago are large cities with urban communities. FFEC will integrate knowledge of forest and nature ecosystems into the curriculum through the professional training of teachers, respecting the knowledge of teachers and allowing them the capacity to put together a curriculum in all disciplines, not only science, that will include learning about the environment."</p>	<p>1) FFEC, 8/09 2) USFS, 8/09</p>	<p>2 (USFS, FFEC)</p>
<p>Exposing students to the outdoors early is important so they don't develop a fear of nature.</p>	<p>1) "I think that starting early (in the elementary grades) is vital so that students don't develop a fear of things in nature that is difficult to overcome later. I take my kids pond-dipping every year and the children love it (I get them prepared for what they'll see ahead of time), but the parents are always squealing at the insects and such to where I find we are educating them as well as their children. Starting early crucial."</p> <p>2) "Middle school gets a lot of attention. Mostly everything starts at 6-8th grade. I'm a primary teacher. I think it should start at the beginning and build on a foundation so that by the time they get to high school... Mostly everything is geared toward middle school and then you can adapt up and down."</p>	<p>1) MT, 1/10 2) CT, 1/10</p>	<p>2 (MT, CT)</p>
<p>FFEC should involve teachers and administrators in the decision-making process and secure their buy in.</p>	<p>1) "The challenges are going to be the same, no matter where you are – figuring out how to make it happen. Getting support from the administration."</p> <p>2) "We have a mandated curriculum that is almost put down to the day, as to where you're supposed to be, and so finding that flexibility and a trusted administrator to say look, this really is beneficial - I want to steer away from the scope and sequence that I have and this is going to benefit students."</p>	<p>1) FT, 2/10 2) CT, 1/10</p>	<p>2 (FT, CT)</p>
<p>Competing with other teacher professional development could be a start-up challenge.</p>	<p>1) "There is a lot of competition between many organizations offering teacher workshops, especially when trying to get teachers to complete four workshops"</p> <p>2) "See if FFEC can add value to [other successful programs]. DON'T compete."</p>	<p>1) FFEC, 1/10 2) USFS, 8/09</p>	<p>2 (FFEC, USFS)</p>
<p>FFEC increased teacher</p>	<p>1) "When they [teachers] are learning about Forest</p>	<p>1) FFEC, 12/09</p>	<p>2 (FFEC, FT)</p>

awareness of USFS by generating excitement about USFS, educating them about forest management and teaching them how to use public lands for educational purposes.	management in the National Forest vs. private landowners... there is always the awakening of "there is so much work that goes into implementing a forest management plan." 2) "There's not a lot of USFS land around us that we are using. I did meet USFS people through the program and they were great resources. The town public land is what we are more involved with using."	2) FT, 3/10	
Increasing teacher and student awareness of the USFS has not been an explicit goal of FFEC.	1) "It [FFEC] promotes understanding of some of the things that the USFS is trying to accomplish, although it does not necessarily talk specifically about the USFS." 2) "I don't think it [FFEC] really heightened my awareness of anything [about USFS] that I knew prior to going into FFEC. I don't think it really hit on the public lands issue." 3) "If this program was to be perceived as a FS program we would probably have a lot of backlash and apprehension, saying 'what's the government doing trying to brainwash our kids?'"	1) FFEC, 11/09 2) FT, 2/10 3) FFEC, 12/09	2 (FFEC, FT)
Developing a communication plan (including brief presentation tools and detailed report) will help the USFS share the program.	"Key is an integrated communication plan, take advantage of media, a PowerPoint to take somewhere, a website that can be explored."	USFS, 8/09	1 (USFS)
Developing a 1 and 3 year plan (for implementation) will help guide the program.	"1 and 3 year Plan – could be incorporated as a part of Communication Plan but those are two immediate sources." "Being able to sustain these efforts funding wise, any networks, links or resources for similar minded philanthropy networks would also be good."	USFS, 8/09	1 (USFS)
Challenges for UC include cost/funding.	"When UC approaches partners for support with a conservation education program, which the partners already do a lot of themselves, the partners' first question is how much funding UC has toward the proposed program. At the same time, this is the same question UC is asking of the partners."	USFS, 8/09	1 (USFS)
Urban Connections' resources for FFEC include staff time.	"FFEC is just one piece of what UC coordinators do. They would not be able to commit >30% of their time to this."	USFS, 08/09	1 (USFS)
Teachers can help the USFS build capacity for communicating about forests.	"[There is a] Strong need to build capacity with community leaders, which may include teachers, to communicate with people about the forests."	USFS, 8/09	1 (USFS)
Urban Connections' resources for FFEC	"UC could contribute a small amount (\$1,000-\$2,000) from UC's existing budget for a start-up partnership. For	USFS, 8/09	1 (USFS)

include potentially \$1,000-2,000 in start-up funds.	larger amounts (\$50,000-\$60,000), UC would have to apply for grants directly or through their partners."		
FFEC can help meet USFS objective by enhancing environmental literacy.	"Enhancing environmental literacy along a spectrum from awareness, to providing information, to building knowledge, and developing skills that ultimately lead to action is part of USFS objectives."	USFS, 08/09	1 (USFS)
FFEC integrates three USFS branches and aligns with Forest Service strategic plan.	"If you know what the USFS mission is and what they are trying to accomplish, it can help to think about how FFEC can help USFS managers get on board with this professional training. Show how FFEC can help them accomplish their targets, e.g. through employment, service-learning project, pulling invasives, trail maintenance. All are elements of how the USFS is measured. Align with the Forest Service strategic plan-use it to format the importance of this project and show how FFEC can help. Formulate conclusions in a way relevant to the strategic plan."	USFS, 8/09	1 (USFS)
Teachers can help support USFS goals through a multiplier effect.	1) "Teachers are valuable contacts, have a multiplier effect- they pass what they learn in FFEC on to their students, who will take it home to family " 2) "We [the USFS] need to find ways to multiply our messages and be able to train the trainer."	1) USFS, 8/09 2) USFS, 8/09	1 (USFS)
Urban Connections sees their role as facilitating partnerships and moving FFEC implementation forward.	"UC's role would be as cheerleaders for the FFEC project, to find additional partners in various cities."	USFS, 8/09	1 (USFS)
UC will initially provide maintenance and technical support while gradually shifting responsibility to community partners.	"There is always the need for maintenance and technical support, but it's going to be a mutual benefit thing. Now, some people see the government and coming in with a program and then leaving. We want to sustain our relationship and not leave. This might involve a clearly defined charter at the outset and then from there outline a 1, 3, 5 year plan that would show how we would wean ourselves to just technical and maintenance support."	USFS, 8/09	1 (USFS)
There are natural resource education gaps in middle school because teachers are preparing students for high school.	"I would think the biggest gap is probably like in our, 7th and 8th grade, because that's the big pressure to get the kids ready for high school. And I think most teachers would say to get a kid ready for high school does not include having them like the outdoors."	MT, 1/10	1 (MT)
Older kids are harder to get excited about science.	"They really are hard to wow, and the older the kids get the gap I think is just inherent on the kid's age; it takes a lot to wow them and have them walk outside, like I do	MT, 1/10	1 (MT)

	with my kids, and have them go through things, find things. Until I get them into it, they do not have a desire to be there. So to answer your question I don't know about the grades, but I know that the older kids are, the harder it is to get them excited."		
FFEC helped teachers better understand the USFS as an organization.	"I couldn't tell you which of the people [USFS staff] who have visited us work with all of the different organizations, but I do have a bigger general idea of the different organizations and departments that work together, how they interact."	FT, 3/10	1 (FT)
FFEC helped teachers better understand the education opportunities provided by the USFS.	"Through FFEC I realized they [the USFS] are not just looking for tree diseases and insects, they are trying to creating education opportunities for students and teachers."	FT, 3/10	1 (FT)
FFEC has not increased students' awareness of USFS but has increased their awareness of public lands and resources at the local level.	1) "Their awareness is not of USFS as an organization, but again the county foresters, and the Vermont youth conservation corps, they're becoming more aware of those things, but much more on the local level than the bigger level." 2) "I think it has increased their understanding [of public lands] as well. We have as a class attended meetings like town hall meetings, conservation commission meetings, and often every couple of years we go to these meetings to see how we can provide a service to these communities and what the needs are."	1) FT, 3/10 2) FT, 3/10	1 (FT)
Any awareness generated of the USFS is believed to be stronger in teachers than students.	"Awareness is probably stronger for teachers than the students because the focus [of FFEC] is more on topic areas. I don't know if students learn a lot more about the USFS. Everything that the USFS is interested in though, we do incorporate into workshops."	FFEC, 11/09	1 (FFEC)
Other replications could be helpful to collaborate with.	1) "We met with other replication groups earlier in the month and it was very good to compare what's worked and hasn't work and how to work together more in the future." 2) "The main thing for Urban Connections in Milwaukee and Chicago to know is that they should not be afraid to ask those who have been doing the FFEC replications to be a resource."	1) FFEC, 11/09 2) FFEC, 1/10	1 (FFEC)
Community forums help to establish ownership and show value of program.	"We scheduled a bunch of community forums in Helena in the small communities around the Elkhorn Mountains and invited people in a roundtable discussion and asked them "if we were building place-based program, what	FFEC, 12/09	1 (FFEC)

	would be important that people learn about your place and what do we need to know?"		
The cost of teacher training is about \$40,000-60,000 per year.	"\$45,000 in direct funds for 1 year (mini grants, teacher resources, room and board, documentation and evaluation), though a lot of time for development and delivery has been in-kind for the various partners."	FFEC, 9/09	1 (FFEC)
Funding needs and sources vary among replications.	<p>1) "The first year there was some grant funding from USFS but that has dried up. They provided a lot of in-kind contributions; they don't get paid for the extra stuff."</p> <p>2) "The founding partners have estimated that your first replication will cost about \$60,000 and I think that was salaries, transportation, printing costs, all kinds of things and I am sure they could provide you that and then about \$40,000 per replication after that. I think ours is going to be less than that actually, but it's kind of hard to get that number, because there has been so much donated stuff."</p> <p>3) "The northeast FFEC coordinators would tell you that it takes about \$60,000 to put a FFEC program on the ground. [We] do not get as much funding."</p>	<p>1) FFEC, 12/09</p> <p>2) FFEC, 12/09</p> <p>3) FFEC, 1/10</p>	1 (FFEC)
Logistical qualities that have made FFEC successful include advanced preparation, partnerships (both agency and NGO), providing incentives to teachers, gender balance among presenters, a diverse range of USFS staff involved, and learning from evaluations.	<p>1) "One best practice is to align everything up ahead of time - commitments, funders, and teachers."</p> <p>2) "We purposely made sure we had a diversity of agencies involved, representatives from education and natural resources, and worked hard to make sure we had a balance of gender diversity...FFEC devotes a lot of resources to evaluation to continually improve."</p> <p>3) "It was important to have their feedback [from teachers' evaluations] on a constant basis."</p> <p>4) "The idea of getting credit for this was also a good carrot to get a teacher to put together a curricula."</p>	<p>1) FFEC, 12/09</p> <p>2) FFEC, 12/09</p> <p>3) FFEC, 1/10</p> <p>4) FFEC, 12/09</p>	1 (FFEC)

Partners			
Theme	Supporting Quote(s)	Quote(s) Citation	# of Theme Sources
FFEC should building on existing USFS programs/other programs through partnerships.	<p>1) "The biggest issue we will have is that there are many people doing many different things, trying to find the way to not compete with programs, but to convince people that this is value added to what they are doing as opposed to another program."</p> <p>2) "The most success that we have had has been training that we do through our own partnerships with schools; [our program] has a lot of resources developed to do this well. That's because we have an ongoing relationship with them."</p> <p>3) "Strongly suggests that urban forestry program and state/private foresters be involved in these cities (Chicago and Milwaukee) and should make links between them."</p> <p>4) "Get buy-in from the people that are already doing this kind of work, because they want to continue being successful too. Build mutually-beneficial partnerships building from existing programs."</p> <p>5) "How can FFEC come in and bring new resources and information, bring new opportunities to partnerships and not be perceived as competition."</p>	<p>1) Chicago, 8/09 2) Milwaukee, 8/09 3) FFEC, 12/09 4) FFEC, 1/10 5) USFS, 8/09</p>	4 (Chicago, Milwaukee, FFEC, USFS)
Partner, as opposed to compete, with existing environmental education organizations.	<p>1) "There is a lot going in those cities and Urban Connections needs to recognize that."</p> <p>2) "Figure out what is going on in the city [in terms of place-based education] and see how you can compliment it."</p> <p>3) "The biggest issue we will have is that there are many people doing many different things, trying to find the way to not compete with programs, but to convince people that this is value added to what they are doing... [Having] many programs is a boon and a bane for Chicago-it confuses the teachers about where to go. There are many grassroots programs doing the same things in the same neighborhoods, how to make that network work?"</p> <p>4) "Play down FFEC and talk partnerships, co-operations. That's the way to go in Chicago."</p>	<p>1) FFEC, 12/09 2) FFEC, 12/09 3) Chicago, 8/09 4) USFS, 8/09</p>	3 (FFEC, Chicago, USFS)

<p>There is a lack of knowledge in cities regarding what programs are already working, what they need, and where gaps might be.</p>	<p>1) "I'd like to add along with the needs assessment there's also a strengths assessment...so that it's what's already working...all of the programs going on in [city] hardly means that all schools are served, that all teachers' training needs are met and that all the students are getting what they need, far from it. There's a huge need, it's more how to mesh in some way."</p> <p>2) "...really want to ascertain as [person] mentioned, in terms of a needs assessment, what they really need, from their perspective you know, what would work for them."</p> <p>3) "There are many environmental organizations here, but they are all disconnected. There is so much going on – we need a needs assessment to see what gaps there might be in content."</p>	<p>1) USFS, 8/09 2) USFS, 8/09 3) Milwaukee, 8/09</p>	<p>2 (USFS, Milwaukee)</p>
<p>Potential partners include state and federal agencies (including three USFS branches).</p>	<p>1) "Having the range of government agencies and nonprofit agencies helps open up your funding opportunities a lot more. Also, having someone connected with education in the state/city is very important."</p> <p>2) "There is a need for a national team to help get FFEC off the ground in order for it to grow within the USFS. This will also help preserve the program's basic principles."</p> <p>3) "Integrated effort of all three branches to ensuring relevance to communities and national forests."</p>	<p>1) FFEC, 12/09 2) USFS, 8/09 3) USFS, 8/09</p>	<p>2 (USFS, FFEC)</p>
<p>Potential partners include nonprofits (can help with funding).</p>	<p>1) "Have to have a strong agency partner, strong support from the school system and a non-profit entity that can pay for and do things that the governmental agencies can't do and if that non-profit already has credibility and a relationship with the school system, that's very valuable."</p> <p>2) People want to see public benefits. Non-profits want benefits that are relevant, linked to funding, and broaden their network.</p> <p>3) "UC partner dialogue sessions recommended by Kearns & West. LEAF is a partner program with a curriculum and teacher training, and Earth Partnership for Schools (EPS) is also similar with teacher training and teacher-created curriculum. Urban Ecology Center could also take the program on."</p>	<p>1) FFEC, 12/09 2) USFS, 08/09 3) USFS, 08/09</p>	<p>2 (USFS, FFEC)</p>

<p>Potential partners include universities.</p>	<p>1) "Partnerships are really important. Building relationships with partners is vital to do a program like this. Need to find partners that have a stake in being involved. Look at natural resource based organizations as well as federal, state and local governments and universities that would like to see long-term investment in the educators and their community. These partnerships are unusual, as USFS has not been involved with a long-term development program like this before."</p> <p>2) "Different teacher training institutes that exist lack different pieces of the whole FFEC program - e.g. service-learning, continuity of relationship with teachers, professional training, and offering credit hours. FFEC has to partner with a university who will agree to offer 3 continuing education credits based on the training specifics."</p> <p>3) "Two different funding sources exist depending on if you have a local or national focus. For a national focus, [Conservation Education] has money, and has previously enticed EPA grants. For more local focus, I would suggest partnering with a local university."</p> <p>4) "We consciously had our draft agendas and content reviewed by the [State] Office of Public Instruction and the University of [State] so that we would make sure that we had the rigor and the academic stuff that we needed to have...We invited [science teacher] to be a core participant in this effort and he so believes in the importance of getting kids outside that he jumped on board. So we had him, with the approval of his administrators, and he has worked with us to navigate the educational system, so that we could work with the [State] Office of Public Instruction for the in-service credits that teachers need and he helped navigate the application system with the University of [State] for 5 graduate school credits for teachers."</p>	<p>1) FFEC, 8/09 2) USFS, 8/09 3) USFS, 8/09 4) FFEC, 12/09</p>	<p>2 (USFS, FFEC)</p>
<p>Partners can help provide access to green space.</p>	<p>1) "Need Chicago Park district or the Forest Preserve District of Cook County to be a major partner, they have resources that would have to be used in the city. Midewin has a sort of partnership with the forest preserve district for a youth training program (but they're out of high school), transportation is a big challenge if the park is not next door."</p> <p>2) "Most of the work falls into 2 parts: 1) training the teachers, which involves what to teach, who will do it, and who will grade the final reports and papers for graduate credit, and 2) Logistics, which involves finding retreat facilities, places to hold workshops and getting out brochures. This work is done by Shelburne Farms."</p>	<p>1) USFS, 8/09 2) FFEC, 8/09</p>	<p>2 (USFS, FFEC)</p>

<p>Long-term relationships can help build capacity within the USFS.</p>	<p>1) "Strong need to build capacity with community leaders (which may include teachers) to communicate with people about the forests."</p> <p>2) "It's a community effort to start a program like this and bring in all these people – foresters and park personnel all together."</p> <p>3)"Partnerships are really important. Building relationships with partners is vital to do in a program like this."</p>	<p>1) USFS, 8/09 2) FFEC, 8/09 3) FFEC, 8/09</p>	<p>2 (USFS, FFEC)</p>
<p>There are many existing environmental education programs, but they are not all on the same page.</p>	<p>1) "[There are] a lot of place-based education [programs in Chicago but they are not cohesive."</p> <p>2) "There are many environmental organizations here, but they are all disconnected. There is so much going on – we need a needs assessment to see what gaps there might be in content."</p>	<p>1) CT, 1/10 2) Milwaukee, 8/09</p>	<p>2 (CT, Milwaukee)</p>
<p>Partners can help write grants.</p>	<p>1) "Partnerships are really important. Building relationships with partners is vital to do a program like this. Need to find partners that have a stake in being involved. Look at natural resource based organizations as well as federal, state and local governments and universities that would like to see long-term investment in the educators and their community. These partnerships are unusual, as USFS has not been involved with a long-term development program like this before. Most are short-term programs. Partners must be willing to support educators over the long term – even years. Teachers really like having people to call on if they want to attend a cultural or resource meeting or workshop. A lot of stuff needs to be done: Funding, services, logistics, grant writing."</p> <p>2) "I have tried to get about \$10,000 each year from the budget (sometimes get more, sometimes less). NPS asks for money from the 'Parks in the Classroom' funding, and also pursue grants and does some in-kind as well. Shelburne Farms gives mostly in-kind donations, but also seek grants. Not sure about NWF's contributions in terms of in-kind versus. money."</p> <p>3) "Most of the work falls into 2 parts: 1) training the teachers, which involves what to teach, who will do it, and who will grade the final reports and papers for graduate credit, and 2) Logistics, which involves finding retreat facilities, places to hold workshops and getting out brochures. This work is done by Shelburne Farms. NWF does workshops on PBE, climate change, and global forestry. USFS writes grants, teaches Forestry 101, and arranges a forum panel of a state or federal forest manager, environmentalist groups, and someone who makes their living from forests. The Park Service</p>	<p>1) FFEC, 8/09 2) FFEC, 8/09 3) FFEC, 8/09 4) FFEC, 8/09 5) FFEC, 9/09 6) USFS, 8/09 7) USFS, 8/09 8) USFS, 8/09</p>	<p>2 (FFEC, USFS)</p>

	<p>opens up the parks to the teachers, and help with grant writing. All partners attend planning meetings."</p> <p>4) "Partners need to put on the table that they have staff that can teach these things – cultural, historic, natural resource topics. Expertise would be in what personnel they have: e.g. people who can write grants – that kind of expertise. It's not only time and expertise, but also who has databases that can be shared, who has office space, who has conference rooms for meetings etc. When you're talking with partners you have to get all that stuff out on the table – who has what – including yourself. It's not just about finding people with money – lots of other things can be brought into the partnership."</p> <p>5) "Grant writing requires every day maintenance, but not 8 hours a day – maybe only half an hour to look for something new."</p> <p>6) "Another avenue for opportunity is through CDC funding-funds to prevent childhood obesity is an avenue, partnership and opportunity."</p> <p>7) "Applying for such grants is definitely the way for UC to get started. Being able to demonstrate why FFEC has been effective will help to justify the grant, and hopefully an ongoing pot of funding will be set aside for the program in subsequent years. Seed money will come from UC grant writing."</p> <p>8) "UC could contribute a small amount (\$1,000-\$2,000) from UC's existing budget for a start-up partnership. For larger amounts (\$50,000-\$60,000), UC would have to apply for grants directly or through their partners."</p>		
<p>There are a number of environmental education professional development contacts FFEC could partner with.</p>	<p>1) "In our conversations with a group from the [state] Department of Education, it was clear that high school professional development in science was weak."</p> <p>2) "There are amazing existing environmental education resources using the urban environment in [my city]."</p>	<p>1) FFEC, 12/09 2) USFS, 11/09</p>	<p>2 (FFEC, USFS)</p>
<p>Partners should be selected strategically, since USFS is not always the strongest partner in urban areas.</p>	<p>1) "[A key working group in my area] already had a long history of working together. We did a lot of up-front work to make sure that we had a lot of ownership and were going places where we knew we had a lot of capacity, tapping and leveraging those relationships that already exist."</p> <p>2) "There's a push-pull between wanting to engage new partners and wanting to go deeper with existing ones."</p>	<p>1) FFEC, 12/09 2) USFS, 11/09</p>	<p>2 (FFEC, USFS)</p>

Potential partners include environmental education organizations.	"In the environmental education realm the organizations are: Department of Natural Resources, Urban Ecology Center, Earth Partnership for Schools, Project Learning Tree, University of Wisconsin-Stevens Point (which has the Environmental Education Training Center and does most of the teacher training in the environmental education realm."	USFS, 8/09	1 (USFS)
Potential partners include local organizations	1) "Program design and key elements (place-based education, connecting to local forests/public land, service-learning) could resonate in urban areas and benefit USFS and UC...May be an opportunity to test FFEC model in urban setting, things may be in place to help facilitate the change." 2) "A program like FFEC could assist in overcoming barriers to increasing awareness of stewardship and natural resources by: drawing on local resources, building on existing USFS programs, providing teachers with opportunity to mentor students about local natural resources."	1) USFS, 8/09 2) USFS, 8/09	1 (USFS)
Potential partners include other environmental education professional development programs.	"Keep Greater Milwaukee Beautiful, Urban Ecology Center, Neighborhood House, Department of Natural Resources, Milwaukee Public Schools (teacher trainings and advertise the program through them), Discovery World, Milwaukee County Zoo, Milwaukee County Parks, Growing Power has more of a focus on greenhouses and growing food so would probably not be a good fit. In Milwaukee, UC would have to contract (outsource) for the teacher training, maybe the Urban Ecology Center or Joe Wilson (Keep Greater Milwaukee Beautiful). In Chicago, the Master's Project team should look to Chicago Wilderness, which has contacts for all major environmental organizations and agencies. The USFS is a corporate sponsor of Chicago Wilderness."	USFS, 8/09	1 (USFS)
Potential partners include foundations/funders.	1) "National Forest Foundation – board members are all around the country, and they have many wealthy board members that have lots of connections." 2) "Kearns & West – have given suggestions on who to contact for money." 3) "More Kids in the Woods cost share program, a lot of funding has gone to urban programs."	1) USFS, 8/09 2) USFS, 8/09 3) USFS, 8/09	1 (USFS)
There are many environmental education programs in cities.	"There is so much to be learned from what's already being done in cities. There are amazing existing environmental education resources using the urban environment in (my city)."	USFS, 11/09	1 (USFS)

FFEC could develop partnerships within the USFS (e.g. with Midewin).	"Need Chicago Park district or the Forest Preserve District of Cook County to be a major partner, they have resources that would have to be used in the city. Midewin has a sort of partnership with the forest preserve district for a youth training program."	USFS, 8/09	1 (USFS)
Interns provide additional capacity to the USFS.	"A lot of kids are reached though the UC conservation education interns and community partners."	USFS, 8/09	1 (USFS)
Urban Connections' resources for FFEC include potential interns.	"We would have to have a dedicated intern to be able to help in the process so that their other program duties are met as well."	USFS, 8/09	1 (USFS)
Urban Connections' resources for FFEC include connections with existing partners.	<p>1) "FFEC is something that UC would want to implement with existing partners."</p> <p>2) " Work with the teachers, work with the community people. Get buy-in from the people that are already doing this kind of work, because they want to continue being successful too. Build mutually-beneficial partnerships building from existing programs."</p> <p>3) "The two cities need a strong partner that has staff time, money, administrative and logistical support. Find a strong local partner who can share responsibility for resources and support. USFS role- coordinating, logistics, networking, professionals for training."</p> <p>4) "There's too many other people doing too many good things whereas FS could just empower them to expand capacity, the same outcome occurs. Capacity building out of shared values, shared outcomes."</p>	<p>1) USFS, 8/09</p> <p>2) USFS, 1/10</p> <p>3) USFS, 8/09</p> <p>4) USFS, 8/09</p>	1 (USFS)
There are multiple possibilities for funding the program.	"None at regional level for implementing programs, supported by funding from other programs. There are three possible ways to fund: One, More Kids in the Woods cost share program, two Contact [Conservation Education Office] with a proposal, and three submit regional special projects proposal...The two cities need a strong partner that has staff time, money, administrative and logistical support. Find a strong local partner who can share responsibility for resources and support. USFS role- coordinating, logistics, networking, professionals for training. Basically, do FFEC without much USFS support, aside from professional trainers."	USFS, 8/09	1 (USFS)

Utilizing existing partnerships with schools and existing environmental organizations (e.g. No Child Left Inside) can help build capacity.	"The most success that we have had has been training that we do through our own partnerships with schools."	Milwaukee, 8/09	1 (Milwaukee)
Partners can help deliver the program to teachers.	<p>1) "(USFS provides) in-kind services/donations in the form of training and attending planning meetings."</p> <p>2) (For FFEC) NWF does workshops on PBE, climate change, and global forestry. USFS writes grants, teaches Forestry 101, and arranges a forum panel of a state or federal forest manager, environmentalist groups, and someone who makes their living from forests."</p> <p>3) "The trainers have to be tailored to what kinds of things can be taught in that location. 'Forest' might be changed to 'city park' or 'treehouse'. They need to take advantage of what is there and what is nearby – national forest, state park, botanical garden, refuge, natural history museum etc."</p> <p>4) "This is the biggest position: to decide where the workshops will be held, make distribution lists and all that kind of thing. They may even get involved in the training. This can be shared between groups too (e.g. NPS & Shelburne). Other partners would have to figure out where to fit in and what to offer that would go along with what the coordinator was doing. The coordinator and/or trainer need to know what the teachers need – e.g. someone who already does teacher training. They should know what the education standards are in that state, and how to help teachers meet those standards with this program. Shelburne Farms already had teachers trained to do it. With UC, the hardest thing will be to find someone who does teacher training already and who would be willing to take on a long-term project like this. In Texas, they have a contract with someone to do the teaching part."</p> <p>5) "She really likes the idea of getting a person involved with the teachers, who's not just going to talk, but get them out there, so that they get excited. Providing teachers with experiential learning during the training sessions. The more hands-on the better. Showing them how easy it is to interpret this stuff instead of going somewhere, find teacher trainers who are really talented and can get teachers fired up."</p> <p>6) "Sometimes host the Illinois Department of Natural Resources program, ENTICE, teacher training all-day</p>	<p>1) FFEC, 08/09</p> <p>2) FFEC, 08/09</p> <p>3) FFEC, 08/09</p> <p>4) FFEC, 08/09</p> <p>5) FFEC, 08/09</p> <p>6) FFEC, 08/09</p> <p>7) FFEC, 08/09</p> <p>8) FFEC, 08/09</p> <p>9) FFEC, 08/09</p>	1 (FFEC, USFS)

	<p>workshops throughout Illinois, with a focus on Project Learning Tree and water resources."</p> <p>7) "Earth Partnership for Schools would be most relevant for Milwaukee. EPS has been in existence for about 10 years and applied for a "More Kids in the Woods" grant worked with inner city and suburban youth and then brought them together for a student summit. EPS involves teacher development and creative curriculum. This program is like "An Outside Space for Every Classroom", with outside place-based education. LEAF is a curriculum with teacher training. Although LEAF is offered more in northern Wisconsin, the Urban Ecology Center worked with LEAF to develop an urban component. Milwaukee County Parks also offer teacher training."</p> <p>8) "Different teacher training institutes that exist lack different pieces of the whole FFEC program - e.g. service-learning, continuity of relationship with teachers, professional training, and offering credit hours. FFEC has to partner with a university who will agree to offer 3 continuing education credits based on the training specifics."</p> <p>9) "LEAF is a partner program with a curriculum and teacher training, and Earth Partnership for Schools (EPS) is also similar with teacher training and teacher-created curriculum. Urban Ecology Center could also take the program on."</p>		
<p>There are two types of partners: core planning team and program delivery.</p>	<p>1) "We had basically two groups of partners: a core planning team and a team of resource people who would be delivering the FFEC session. We realized there needed to be a separation - not everybody should do everything. "</p> <p>2) "Most of the work falls into 2 parts: One, training the teachers, which involves what to teach, who will do it, and who will grade the final reports and papers for graduate credit, and two, logistics, which involves finding retreat facilities, places to hold workshops and getting out brochures."</p>	<p>1) FFEC, 12/02 2) FFEC, 8/09</p>	<p>1 (FFEC)</p>

Potential partners include cooperative extension.	"Our partnerships are relatively small compared to Vermont. We have a small core partnership between the USFS three branches and NHPLT. During the first year we had a partnership with the Harbor Brook Forest Research Foundation, but the person we were working with left, so that partnership fell through. The larger network of partnerships with cooperative extension, businesses, and other folks is fostered through the NHPLT network."	FFEC, 12/09	1 (FFEC)
Potential partners include experts.	"Partners need to put on the table that they have staff that can teach these things – cultural, historic, natural resource topics. Expertise would be in what personnel they have, e.g. people who can write grants – that kind of expertise."	FFEC, 8/09	1 (FFEC)
Partners can help promote the program.	<p>1) "Most of the work falls into 2 parts: 1) training the teachers, which involves what to teach, who will do it, and who will grade the final reports and papers for graduate credit, and 2) Logistics, which involves finding retreat facilities, places to hold workshops and getting out brochures."</p> <p>2) "Once partners understand the program, there needs to be one person – a driver – within each organization who wants it to succeed, can build relationships and bring people together. Partners need to bring their own strengths to the table, and be supportive of it. They also promote the program within their own organization, spread the word, and help with fundraising. The biggest one, though, is being a driver."</p>	<p>1) FFEC, 08/09</p> <p>2) FFEC, 08/09</p>	1 (FFEC)
Some FFEC replications had content review by the state education office and a university.	"We consciously had our draft agendas and content reviewed by the MT Office of Public Instruction and the University of [STATE] so that we would make sure that we had the rigor and the academic stuff that we needed to have."	FFEC, 12/09	1 (FFEC)
FFEC programs receive non-monetary support in the form of presenters, logistics, planning, workshop presence, and general in-kind (staff, space, educational materials) although this varies from replication to replication.	"Most of the work falls into two parts: [1] training the teachers, which involves what to teach, who will do it, and who will grade the final reports and papers for graduate credit, and [2] logistics, which involves finding retreat facilities, places to hold workshops and getting out brochures."	FFEC, 8/09	1 (FFEC)

Partnerships that provide program sustainability are long-term, mutually beneficial, build off of each partner's unique strengths, and offer shared-learning opportunities.	<p>1) "Successful partnerships require the ability to work in a long term partnership. They should be multi-year, share responsibility, accountability, and commitments. They should also use the fact that each organization has unique strengths and that partners can learn from each other."</p> <p>2) "Partners must be willing to support educators over the long term – even years. Teachers really like having people to call on if they want to attend a cultural or resource meeting or workshop."</p> <p>3) "Build mutually-beneficial partnerships building from existing programs."</p>	<p>1) FFEC, 9/09 2) FFEC, 8/09 3) FFEC, 1/10</p>	1 (FFEC)
FFEC programs have recruited and maintained teacher interest by connecting with education stakeholders at all levels and showing evidence of FFEC's successes.	"Absolutely, you couldn't do FFEC without them [school districts and education agencies], all the way to the top. We just gave a presentation at the [STATE] Environmental Education Advisory Committee and they are top of the heap; they were quite impressed with what we did. It is important to share with people at that level....You can't work with the schools without keeping contact because there are so many other programs out there that schools could do so you have to be a program that they like."	FFEC, 1/10	1 (FFEC)
Collaborating with other FFEC replications and adaptations.	"It would also be good to strengthen ties with other groups that are doing similar work. We Need to meet with other groups on a more regular basis and do a cross-group evaluation."	FFEC, 11/09	1 (FFEC)
Working under agency constraints could be a challenge for FFEC (personnel need time to build relationships for start-up).	"[The founding partners] told us that we needed to go slow in order to go fast...We thought about trying to do a program quickly in spring 2008, but hadn't built support and confidence with school administrators and principals. [We] spent the winter of 2008 and 2009 to build that support and launched the program in the spring of 2009."	FFEC, 12/09	1 (FFEC)
Leveraging support for FFEC as a priority from USFS is a challenge.	"One of the challenges [is to create an] organizational culture that would recognize this as a priority and allow individuals within the agency to develop some expertise in it...they don't adjust workloads and things to allow them to have the time to build the robustness of relationships that they need to or to develop their own understanding of the value of place-based approaches."	FFEC, 12/09	1 (FFEC)

Partners can help offer workshops for alumni.	"If USFS wants to have an impact on communities where they're located, it's not good enough to go into schools once in a while and do a "flash in the pan" program where you teach about frogs, leave, and never come back. What we're trying to do with this program is turn that whole thing around. If they really want to have an impact, this program is a natural program – it uses things the FS already uses (natural, cultural, historical resources) just doing it a different way. It's also making a commitment for long term. Teachers are kept in the loop on FS information, workshops, conferences etc. It's a long-term commitment and an investment."	FFEC, 8/09	1 (FFEC)
Potential partners include Education Organizations (Boards, Intermediate School Districts, State).	"Brought in a science teacher as part of the planning team from Helena Capital High School. He was already involved in another program we have for high school kids, a youth monitoring program, where we provide high school kids with a summer experience and pay them a stipend to help with forest monitoring activities. That's an example of how we build on relationships. We invited Tom (science teacher) to be a core participant in this effort and he so believes in the importance of getting kids outside that he jumped on board. So we had him, with the approval of his administrators, and he has worked with us to navigate the educational system."	FFEC, 12/09	1 (FFEC)
FFEC should partner with existing programs, not compete.	1) "The biggest issue we will have is that there are many people doing many different things, trying to find the way to not compete with programs, but to convince people that this is value added to what they are doing as opposed to another program." 2) "See if FFEC can add value to [other successful programs]. DON'T compete."	1) Chicago, 8/09 2) USFS, 8/09	2 (Chicago, USFS)
Partners can help participate in the planning process.	"Once partners understand the program, there needs to be one person – a driver – within each organization who wants it to succeed, can build relationships and bring people together. Partners need to bring their own strengths to the table, and be supportive of it. They also promote the program within their own organization, spread the word, and help with fundraising. The biggest one, though, is being a driver."	FFEC, 8/09	1 (FFEC)

Program Design

Theme	Supporting Quote(s)	Quote(s) Citation	# of Theme Sources
<p>Program content in urban areas could include energy, water, and wildlife.</p>	<p>1) "For example, [interviewee] could help provide topic areas like pollinator surveys. Surveys are easy to train and cheap. [Affiliated organization] have planted 40 pollinator gardens in [the region] that are close to people."</p> <p>2) "I personally have a soft spot for wetlands and you know [city] was built on a swamp and I find [organization] doesn't address that. Most of our partner organizations don't except for the ones that are down in [location omitted], because that's where they still have active, functional wetlands that they're working on remediating right now."</p> <p>3) "The subject matter – in the past, other issues (water and air quality) in the community overtook tree issues in importance. The content should be relevant to the community. FFEC should teach holistically – not just one subject."</p> <p>4) "Include an economic component – talk about how much it costs families to take care of parks to get rid of garlic mustard."</p> <p>5) "I think the fact that you have 60% of your professional development being content is really important. I think that professional development that just wants to focus on curriculum and lesson plans is less effective at getting teachers passionate about the actual content and becoming more expert in that area of science and will help them a lot."</p>	<p>1) USFS, 8/09 2) Chicago, 8/09 3) Milwaukee, 8/09 4) Milwaukee, 8/09 5) CT, 1/10</p>	<p>4 (USFS, Chicago, Milwaukee, CT)</p>
<p>The used of placed-based learning is a perceived strength of FFEC.</p>	<p>1) "The unique thing about this program being place-based is that you have to adapt it to the place you are in."</p> <p>2) "This puts them [teachers] in the position of learning about environmental education in their area, place-based, where they're teaching and gets them out there in the summer, spring, winter, and fall, just like we'd like them to get the students out."</p> <p>3) "Getting kids outside increases engagement, it increases connection to their local place. Having them view their local parks and ponds and even the fields or backyard habitat through different lens doesn't matter what rural or urban what you're doing is putting a different lens on how these students view the natural world and the best way to do it is to get them outside."</p>	<p>1) FFEC, 12/09 2) USFS, 11/09 3) FT, 3/10</p>	<p>3 (FFEC, USFS, FT)</p>
<p>Evaluate the</p>	<p>1) "We have a number. of partners struggling with the</p>	<p>1) USFS, 8/09</p>	<p>2 (USFS, FFEC)</p>

program to determine effectiveness.	same issue. If there is a combined objective and the ability to measure success and adjust based on that measurement. There has to be continuity to make it happen, strong link to research on the effectiveness. " 2) "Evaluations show that FFEC enhanced teacher performance."	2) FFEC 9/09	
FFEC could support teachers with pre-prepared curriculum and ideas to get started.	1) "I don't know if our teachers are going to be able to plan a lot of it on their own. I think they would need some pre-prepared curriculum, and ideas at first to get them started." 2) "One of the things I keep hearing, when we see more proposals to find development of curricula is people go 'uh, you've got the curricula, they exist already there are goo gobs of curricula out there, why are we making more as opposed to maybe adapting ones that already exist or using them?'"	1) MT, 1/10 2) USFS, 8/09	2 (MT, USFS)
FFEC's interdisciplinary content and approach is a perceived strength.	1) "What FFEC did for me was to open up my eyes. When I signed up for FFEC I saw the term forest and thought it would be a science, ecological based class – then when I went to my first meeting I realized I was one of two science teachers out of 16. That was really helpful for me to see that it's history and it's art and all these different ways to tie this in and tie it together." 2) "Even though we focus on science, having the balance of social and economics are also extremely important for having people see how forests are part of their community. Having discussions about state issues are also key."	1) FT, 2/10 2) FFEC, 12/09	2 (FT, FFEC)
Perceived strengths of the workshop set-up include overnight teacher trainings, the repeated contact with teachers four times a year, and providing comfortable accommodations.	1) "It is also nice to have people in the same place – a kind of forced community. The overnights are key." 2) "We stayed together for three days at this inn, then we were together for two days and we traveled all over the state. That was really helpful, that culture where you can immerse yourself." 3) "One strength is the year long training...Our evaluations have shown that the more teachers get the more likely they are to change their behavior in the classroom." 4) "I doubted whether [urban] teachers would be willing to participate in primitive conditions [accommodations], nor that such conditions would be conducive to getting a whole family involved."	1) FFEC, 12/09 2) FT, 3/10 3) FFEC, 12/09 4) FFEC, 1/10	2 (FT, FFEC)
FFEC's focus on public lands is a	1) "We hope teachers will realize that USFS is out there and that they can use our land."	1) USFS, 11/09 2) FFEC, 12/09	2 (FFEC, USFS)

perceived strength.	2) "The core of the program [includes a] ... focus on public lands."		
Civic engagement, service-learning, community, and balanced views in learning are key elements of FFEC's perceived strengths.	<p>1) "Diversity of partners helps offer a balanced perspective – we don't get complaints about being more on one side [corporate, environment, etc.] than the other... Also service-learning is a key component."</p> <p>2) "There's actually a list of elements for a replication, which everyone agreed would need to be part of a FFEC program." The document she references cites civic-engagement, service-learning, community-based, and balance views as key elements (along with interdisciplinary, partnerships, a full year with subsequent support, and family friendly)."</p> <p>3) "The community service component of FFEC is very powerful. All my students have done presentations to community organizations... to present their results to adults in the community and I think that's been very powerful."</p>	<p>1) FFEC, 11/09</p> <p>2) FFEC, 1/10</p> <p>3) FT, 3/10</p>	2 (FFEC, FT)
Perceived strengths of the program structure include providing teachers with the opportunity to create their own curriculum, connect with experts, learn about funding options (mini grants, grants), and receive follow through in the form of additional alumni support and professional development.	<p>1) "We provide the process to allow the teachers to design a unit that meets their goals."</p> <p>2) "The direct connection with experts is also key for teachers to be able to get their questions clarified."</p> <p>3) "The resources [experts] make it easier, since you met them in person, you feel more comfortable calling them and ask them to come visit the classroom. For me those resources have been the most useful."</p> <p>4) "I think it has quite a few strengths...it goes on to offer other opportunities for professional development and for connecting with colleagues to share information."</p> <p>5) "The alumnus come in every year for free and share ideas and get support even after their year is up. Alumnus come back to share their experiences."</p> <p>6) "There are certain partners [from FFEC] that are always sending information about grants and other possibilities. So both the stuff that they let us know about and the hands on stuff on these weekend retreats are very valuable."</p>	<p>1) FFEC, 9/09</p> <p>2) FFEC, 12/09</p> <p>3) FT, 3/10</p> <p>4) FFEC, 12/09</p> <p>5) FFEC, 11/09</p> <p>6) FT, 3/10</p>	2 (FFEC, FT)
The long commitment of the training can be a	"[FFEC requires] a year-long commitment, which is difficult, so [we have to do] whatever it takes to make that happen."	FFEC, 1/10	2 (FFEC)

challenge for teachers.			
Gradually increasing teacher outdoor exposure may help urban teachers feel more comfortable.	"Some urban teachers are really skeptical. It's all about knowing your audience and adjusting accordingly. Provide short exposure in safe environments, such as places that look like they have bug spray, or nice weather, or wine and dine them...Increasing exposure is gradual."	FFEC, 1/10	1 (FFEC)
In urban areas, FFEC should help teachers and students make contact with the natural world.	1) "But most teachers don't have that exposure or experience and that's really where we fall apart as educators." 2) "I think that urban students and teachers need to make contact with their natural world, but don't always have the resources or opportunities to do so."	1) CT, 1/10 2) MT, 1/10	2 (CT, MT)
Teachers need experience/guidance using the outdoors.	1) "One of the issues we have is that the elementary school teachers might not be as experienced at teaching science or nature, and they kind of steer away from it. So this would be a good program for them, especially." 2) "But most teachers don't have that exposure or experience and that's really where we fall apart as educators. We expect everybody to be everything to every person and everybody can be an expert on the planets and go talk about a prairie – it's a personal connection."	1) MT, 1/10 2) CT, 1/10	2 (CT, MT)
In some replications, teachers are very geographically dispersed.	"You have to go longer distances here, 13 Vermont's would fit into [this state]."	FFEC, 12/09	1 (FFEC)
One best practice for replications is providing childcare for teachers' families.	"[We] understand that it would be an inconvenience to ask FFEC participants to arrange childcare four times per year."	FFEC, 1/10	1 (FFEC)
Showing results from the program evaluations can help garner support from partners.	1) "Show results of Vermont FFEC evaluations, perhaps after showing the FFEC promotional video. Ask partners if they have evaluated their own programs and say that UC/USFS wants to implement a program that has tangible results." 2) "Yes. While writing the grant in 2000, we weren't sure if it was going to work. We thought a longer term teacher training and development program would be a good idea. In the first evaluation teachers raved about	1) USFS, 8/09 2) FFEC, 8/09	2 (USFS, FFEC)

	the continued support. Since then 2 other, more specific evaluations have been done and the program is beginning to spread out of state."		
Interdisciplinary lessons are a perceived strength of FFEC.	"Interdisciplinary lessons can teach about art and nature at the same time, or math and nature. That's another positive about programs like this - you're not just learning one thing, you're connecting all of your skills to apply it to something – and it's all about application."	USFS, 8/09	1 (USFS)
Leaders/coordinators of FFEC should be able to relate to the city's demographics.	"I can envision that we could hold a session that is more ethnically diverse and more in the [city] center. Right now we are moving the training sessions around the state to expose teachers to all these different things they perhaps haven't seen before. We could have overlapping sessions for different ethnic audiences throughout the year. For example, one week we could have a session with Latino or African-American audiences."	FFEC, 1/10	1 (USFS)
Long-term teacher training is a perceived strength of FFEC.	"We thought a longer term teacher training and development program would be a good idea. In the first evaluation teachers raved about the continued support."	FFEC, 8/09	1 (USFS)
Technology is a way to build student interest.	"There's a generational gap now between people like us who had to use our imagination to do a lot of things and kids now that are so used to technology. Technology is what engages their interest and it's hard to get urban youth interested in paper-based activities or a game you made up, to get them to imagine things happening. Maybe we do need something technological that also connects them to nature."	USFS, 8/09	1 (USFS)
In urban areas, FFEC should get kids outside and build environmental awareness in kids over time starting from an early age.	"I think it would just be excellent to get the kids outside. I think they would be very interested in that, especially at the younger ages. Once I get them as seniors, a lot of these kids haven't been outside and they're very scared to go out and do something. So it would be nice to get the kids at an early age and build up environmental awareness as they get older and they might get more involved in what's going on in their community - that would help greatly."	MT, 1/10	1 (MT)
FFEC could fill elementary teachers' gap in experience	"One of the issues we have is that the elementary school teachers might not be as experienced at teaching science or nature, and they kind of steer away from it."	MT, 1/10	1 (MT)

teaching science or nature.	So this would be a good program for them, especially."		
Teachers met experts from the Forest Service at the training.	"And would get to know some of the people at the forest service. Some of the contacts we have, I don't think I've ever used them. Usually I just go through our Department of Natural Resources. I've never even thought about using them."	MT, 1/10	1 (MT)
Hands-on learning is important for learning.	"Kids really learn by hands on, experiential learning. She tries to tie this into her classroom now."	MT, 8/09	1 (MT)
The team approach for teacher training is important in urban areas.	"The team approach is key to training teachers. It may be even better to literally take the program into a school rather than a couple teachers. You could use their in-service days."	Milwaukee, 8/09	1 (Milwaukee)
One best practice is to provide monetary support to teachers for attending.	"I started in first year when it was free – that is a good draw especially now in this economy when schools are cutting back. I know that in my school the teachers gave up a lot of professional development money which would have paid for participating in something like this."	FT, 3/10	1 (FT)
Resources and grant money have been helpful for teachers.	"They provided us with books, handouts, posters etc that has helped me build my understanding and to help me build my understanding more for the future. And also there was grant money that was great."	FT, 3/10	1 (FT)
FFEC brought in experts to help teachers with standards.	"Sometimes they brought someone in from the state department of education or alumni from another school to show how FFEC fits with the state standards."	FT, 3/10	1 (FT)
There was time during the workshop for teachers to align with standards and it was also required.	" They [FFEC coordinators] set aside time to work and apply to the standards...this is sort of one of those things that is the last thing teachers choose to do, but given time and the requirement for producing – we had to do a five column chart – was the incentive that was needed to push teachers to the standards."	FT, 3/10	1 (FT)
The interactive engagement of teachers in the training is a perceived strength.	"There are so many professional development courses and workshops you do where they stand in front of the room and lecture you about how lecturing is a bad way to teach people things. This wasn't that. We were doing things and being the students and getting dirty, and that made a huge difference."	FT, 3/10	1 (FT)
The program created a close-knit community within cohorts of teachers.	"The staying together part helped create this close-knit group, learning together. We know that learning is a social act, we learn a lot from each other through conversation, experiencing activities together is a very	FT, 3/10	1 (FT)

	different experience."		
FFEC provided teachers with structure for using the outdoors in teaching.	1) "FFEC added structure and dimension [to curricula], and showed us how we could expand things that we were already doing." 2) "There are certain protocols that come with different types of field excursions. [FFEC] Taught me a variety of those things that I didn't know."	1) FT, 3/10 2) FT, 3/10	1 (FT)
FFEC caters to multiple learning styles.	"We all have our fair share of students that aren't meeting standards. And in all of our classes in our building, they [students] are more able to access the curriculum because it involves more than just reading and writing, it's doing and feeling and seeing and manipulating and all of that. So for me it reaches out to the kids in difficulty, kids that have learning challenges as well."	FT, 3/10	1 (FT)
Suggestions include having participating teachers visit past alumni to see what they are doing in their schools.	"One of the suggestions I had was to try and get more people to see a cohort in action. One of the things we didn't get a lot of time for was visiting some of the ongoing sites. We had teachers come in and talk about their projects but it would be nice to visit other teachers in your group and see what's going on in their school."	FT, 3/10	1 (FT)
Suggestions include using additional networking tools (like lanyards).	"One of the things I tried to suggest was to make something like FFEC lanyards that say FFEC alum, and have a year. So that when you end up going to another environmental event and see someone that has a FFEC lanyard, it would create an on-the-spot networking thing."	FT, 3/10	1 (FT)
Suggestions include creating a resource library for teachers to share equipment.	"What I advocated for was a sharing library. For example, I bought 25 minnow traps, but I don't always need 25 minnow traps. If there was a resource center, then anyone in the FFEC program could access it, and apply for 6 or 10 of them."	FT, 3/10	1 (FT)
FFEC helps teachers use other resources in addition to the outdoors.	"I mean, I did tons of different projects that you don't really need to be in the woods to do. If you've got the books... I showed them that video of Planet Earth, and the forest section, you know there's a forest one. So I think that you can study about the forest without having a forest, as long as you've got a park."	FT, 3/10	1 (FT)
FFEC currently accommodate approximately 30 teachers per year.	"The last Texas FFEC training had 42 teachers and that's about the comfortable limit. If FFEC wanted to grow and could do a train-the-trainer format, that would be awesome. In these [tough] financial times, FFEC probably would not be able to grow beyond the current	FFEC, 1/10	1 (FFEC)

	average of about 30 new participating teachers every other year."		
One best practice is to be flexible in the requirements for teacher participation and attendance in workshops.	"Letting additional people in, even if after the start of a program year is a great way to sell the program. Additional participants will help to advertise by word of mouth."	FFEC, 1/10	1 (FFEC)
One best practice is to provide internet access to teachers.	"Also, the connection to the internet was very important for teachers. They would go to links during breaks."	FFEC, 12/09	1 (FFEC)
One best practice is to be family friendly.	"FFEC tries to make the program family friendly, so that people can bring their kids – either to the area of the training or to the training itself, and participants in that situation are not doubled up with others for the housing so that families can stay together in a hotel room."	FFEC, 1/10	1 (FFEC)
One replication provided a flexible enrollment policy for teacher participants.	"It's better to be inclusive than exclusive...[We made the] week-long session the last workshop rather the first workshop, so if a person cannot attend it will not be very evident that they have missed some key components."	FFEC, 1/10	1 (FFEC)
One replication worked to respond to the need of participants (e.g. providing childcare).	"Regarding allowing children to attend, it's part of practicing what we preach in the trainings... We understand that it would be an inconvenience to ask FFEC participants to arrange childcare four times per year."	FFEC, 1/10	1 (FFEC)
The FFEC toolkit could be tweaked.	"I was pretty critical of the toolkit... we're talking about how to tweak [it]... [its] concept of how to go through replication I feel was pretty solid... we have a bigger need for tools."	FFEC, 12/09	1 (FFEC)
Ensuring long term funding for FFEC is a challenge.	1) "Funding is always going to be an issue, especially in this current economy." 2) "I have concerns about long term future of FFEC – not sure if there is commitment from funders or if there is buy-in on the ground within the Forest Service. "	1) FFEC, 12/09 2) FFEC, 12/09	1 (FFEC)
FFEC coordinators suggested providing more opportunities for teachers to reflect.	"[We would] give teachers time to absorb the huge amounts of knowledge they get in the 11 days, allowing for reflection and dialogue amongst participants."	FFEC, 11/09	1 (FFEC)

Moving FFEC workshops around regionally could make it easier for teachers to participate and expose them to different kinds of natural resources.	"Right now we are moving the training sessions around the state to expose teachers to all these different things they perhaps haven't seen before."	FFEC, 1/10	1 (FFEC)
FFEC suggested providing examples of curriculum developed by past participants, as well as at the Understanding by Design booklets.	"Maybe [we could provide] the Understanding by Design booklets, old units prepared by teachers."	FFEC, 11/09	1 (FFEC)
Long-term teacher training is a perceived strength of FFEC.	"We thought a longer term teacher training and development program would be a good idea. In the first evaluation teachers raved about the continued support."	FFEC, 8/09	1 (FFEC)
FFEC should build off existing research about cities.	"We know, for example, the University of Illinois has done research on how crime is reduced in neighborhoods that have more trees, the incidents of crime are less. I think there's already stuff out there that if an individual were given the priority to pull some of that together and then do the stakeholder convening that we did, I think you could make it work."	FFEC, 12/09	1 (FFEC)
FFEC should adapt to attitudes of urban students and teachers.	"I think you're on the right path in terms of asking teachers themselves. Very important to select the right leaders/coordinators to work with urban audiences – should represent the diversity in the classroom (ex: people of color). Urban students have a very different understanding of the outdoor environment – sometimes they perceive it as very scary. In some inner city settings, those are very dangerous places... You would have to make the program fit as well as possible. There could even be differences even between cities in adapting it. You cannot lump everyone together – look at each city's people."	FFEC, 11/09	1 (FFEC)
Providing adequate accommodations can help teachers who may not be comfortable in a rugged setting.	"When you're trying to get people used to the outdoors and trying to persuade teachers who wouldn't normally take their students outdoors or might have concerns about taking their kids outdoors, you want to make the experience as safe and comfortable as possible for them. Be more even careful to do this for urban audiences than for rural audiences, where teachers are	FFEC, 1/10	1 (FFEC)

	already halfway comfortable with the idea of outdoor education."		
Long terms support is a perceived strength of FFEC for teachers.	"I like that it was long-term and that you're encouraging the group to stay together, which does help for sustaining and maintaining the program and being excited about it."	CT, 2/10	1 (CT)
FFEC content should focus on urban forests and local resources.	<p>1) "There are a lot of green spaces and parks and nature areas in the city. So it is even introducing teachers to those resources."</p> <p>2) "Maybe out of those 11 days, one or two of them at the end, after they've had the content knowledge in the forest, could be focused on their local green resource. So they could take what they've learned out on the forest and apply it to a local green space that they could then directly utilize with their class."</p> <p>3) "We have Lake Michigan so close to downtown Chicago. Most students don't know that it's a lake. We talk about this constantly when we're in classrooms - they think it's the ocean. That needs to be more of a focus in science in Chicago. We live on this huge water system that the kids don't know anything about."</p>	<p>1) CT, 1/10</p> <p>2) CT, 1/10</p> <p>3) CT, 1/10</p>	1 (CT)
FFEC content should be easily adaptable to urban ecology.	"My interest is in the nature of the city too. Look at what the urban ecology is and how would you fit that in [to the program]."	CT, 1/10	1 (CT)
FFEC's focus on content is a perceived strength.	"I think the fact that you have 60% of your professional development being content is really important. I think that professional development that just wants to focus on curriculum and lesson plans is less effective at getting teachers passionate about the actual content and becoming more expert in that area of science and will help them a lot."	CT, 1/10	1 (CT)
FFEC can get teachers excited about the content.	"I think the fact that you have 60% of your professional development being content is really important. I think that professional development that just wants to focus on curriculum and lesson plans is less effective at getting teachers passionate about the actual content and becoming more expert in that area of science and will help them a lot."	CT, 1/10	1 (CT)
Add a student component along with teacher professional development.	"You need another part where there is a section for the students. Let's say you have the teachers in June. In July invite the teachers back with a group of kids. And they're out there developing new curriculum, plus what you have, and there's your balance. And then your program would be very effective."	CT, 1/10	1 (CT)
Teachers face	1) "I think the idea is great, but then what's the	1) CT, 1/10	1 (CT)

<p>challenges getting students outside because of lack of resources and liability.</p>	<p>connection with the students? How do we get the students to the forest? This is Chicago. I don't think of Chicago as a forest."</p> <p>2) "I live in a very industrial part of the city. So for me to even explore a natural habitat around me - we are literally cement locked, we don't have a playground."</p> <p>3) "They [the principals] start freaking about the liabilities."</p>	<p>2) CT, 1/10 3) CT, 1/10</p>	
<p>FFEC should encourage teachers to do outdoor learning.</p>	<p>"You really need that outside connection to enhance learning. It's crucial."</p>	<p>CT 1/10</p>	<p>1 (CT)</p>

Urban Adaptations

Theme	Supporting Quote(s)	Quote(s) Citation	# of Theme Sources
For urban audiences, having a neighborhood and/or community focus is important.	<p>1) "It's not about your school but your neighborhood, so they sense that if you can connect into your neighborhood there's more depth into the experience and the values and there's more of an opportunity to influence behaviors and decision processes."</p> <p>2) "I would focus on the whole aspect of community. If USFS wants to have an impact on communities where they're located, it's not good enough to go into schools once in a while and do a "flash in the pan" program."</p> <p>3) "The content should be relevant to the community. FFEC should teach holistically – not just one subject."</p>	<p>1) USFS, 8/09 2) FFEC, 8/09 3) Milwaukee, 8/09</p>	3 (USFS, FFEC, Milwaukee)
There is a need in urban areas for more high school programming.	<p>1) "High school is an age that kind of gets forgotten [in environmental education]."</p> <p>2) "There is a lack of high school programs [in Milwaukee]."</p>	<p>1) CT, 12/09 2) Milwaukee, 8/09</p>	2 (MT, CT)
In urban areas, FFEC should utilize local cultural and historical aspects to make FFEC relevant to students.	<p>1) "Making it relevant to the students would make our job of bringing the idea to them a lot easier. There are even a lot of historical things within walking distance from our school. So if we're talking in terms of culture and history than that would be a lot easier in our setting to bring alive for our students and make relevant for them."</p> <p>2) "Have a cultural basis to make it relevant to the local community (African America, Latino, Polish, tribal, etc.) Also, draw on the history of the land."</p>	<p>1) MT, 1/10 2) Milwaukee, 8/09</p>	2 (MT, Milwaukee)
In urban areas, FFEC should focus on local natural resources (e.g. urban forests or a single tree).	<p>1) "There are resources: a lot can be taught about urban, natural and cultural resources – cultural and historic might be more important in urban areas. In every city, there is an urban forestry program, which is working to get more tree cover. These programs could be part of FFEC in urban areas."</p> <p>2) "It is not as easy to wow students in an urban</p>	<p>1) FFEC, 8/09 2) Chicago, 8/09 3) FT, 3/10</p>	3 (FFEC, Chicago, FT)

	<p>setting... Local prairies, woods, and lakes are flat – relatively boring at first glance. What transforms that superficial perception is digging into local natural resources to explore why natural features are the way they are. This requires educating the teachers that there’s not just “boring old woods” in Chicago. There’s a lot going on in Chicago, and the teachers can get enthused about it and bring it back to the kids.”</p> <p>3) "In the urban environment, I would say what I said before – use what you have, use what’s in your area... even in the most urban of environments there’s some way to notice your world and some way have an immersion experience."</p>		
There is a need for high school programming.	<p>1) "High school is an age that kind of gets forgotten."</p> <p>2) "Another selling point from the high school perspective is that our students have to accrue 10 hours of service-learning at the minimum per year as part of their graduation requirements and we're always looking for action projects to do."</p> <p>3) "In our conversations with a group from the New Hampshire Dept of Ed, it was clear that high school professional development in science was weak."</p> <p>4) "There is a lack of high school programs."</p>	<p>1) CT, 12/09 2) CT, 1/10 3) FFEC, 12/09 4) MT, 8/09</p>	3 (CT, FFEC, Milwaukee)
Fear of nature is a concern in urban areas.	<p>1) "Always have alternatives for classroom teachers who can’t do it [get kids outside], because there are schools where teachers can’t take their kids outside. Whether it’s real or perceived danger, it just doesn’t happen."</p> <p>2) "Urban students have a very different understanding of the outdoor environment – sometimes they perceive it as very scary. In some inner city settings, those are very dangerous places."</p> <p>3) "There is a difference in the level of risk kids are willing to take. Urban kids are more protected by parents, due to potential dangers of being outside."</p>	<p>1) Chicago, 8/09 2) FFEC, 11/09 3) USFS, 8/09</p>	3 (Chicago, FFEC, USFS)
FFEC should give students a sense of “place”.	1) "Creating a sense of place to the ground where kids are, then expand their sense of neighborhood	<p>1) USFS, 8/09 2) MT 12/09</p>	2 (USFS, MT)

	<p>over time and eventually broaden out, creating that connectedness to land, awareness of the land is important. We think we have to take them some place to show nature, whereas nature is all around them."</p> <p>2) "Urban student have no idea of the geography/geology of the area - hard for them to imagine what the area looked like 300 years ago... Students don't know that the old armory is down there - students are interested in learning, but they don't know... going out there is "like a vacation for them."</p>		
Utilizing local resources will be key for sustaining FFEC.	<p>1) "It's still the same people work (partners and relationships) – the difference is that you won't have the same natural resources. But there are resources: a lot can be taught about urban, natural and cultural resources – cultural and historic might be more important in urban areas. In every city, there is an urban forestry program, which is working to get more tree cover. These programs could be part of FFEC in urban areas. And every city is part of a watershed. In urban areas, the partners will be able to do cultural and historical place-based education easier than natural resources."</p> <p>2) "The trainers have to be tailored to what kinds of things can be taught in that location. 'Forest' might be changed to 'city park' or 'treehouse'. They need to take advantage of what is there and what is nearby – national forest, state park, botanical garden, refuge, natural history museum etc. Even though the city is on concrete, there are still things that can be taught about stewardship and sustainability. It's being taught everywhere; it just looks a little different in a city."</p> <p>3.)"Start right in kids' own backyards or school yards to teach the big picture. If kids learn about conservation in school through teachers that make it part of what they learn, UC's conservation messages will be more familiar. That could ease a lot of the challenges UC experiences in teaching its messages. The parent generation will also be taught through kids."</p>	<p>1) FFEC, 8/09 2) FFEC, 8/09 3) USFS, 8/09</p>	2 (USFS, FFEC)
Using local resources is key for urban teachers.	1) "Program design and key elements (place-based education, connecting to local forests/public land, service-learning) could resonate in urban areas and	<p>1) USFS, 8/09 2) CT, 1/10 3) CT, 1/10</p>	2 (USFS, CT)

	<p>benefit USFS and UC."</p> <p>2) "I teach less than a mile away from the lake, and the students that I teach are unaware of what beach glass even is. They don't understand what a rip tide is and they live there - they were born and raised there. That's very indicative of that need to bring the nature into the classroom, because if we don't, we're not going to produce anyone who is not science phobic."</p> <p>3) "For teachers in the city of Chicago, we look at cost. What's near us? What's useable and what's feasible? And that's how we try to approach nature."</p>		
In urban areas, kids should learn that they have nature around them.	<p>1) "I like the idea of taking our kids to see the environment around them rather than having them say we don't have any nature. Getting them to see what there is in the city."</p> <p>2) "I think that with an urban audience you have to get down to what can they see outside, what parts of nature are available. Especially with dwindling bus money, you have to keep kids close to home, even if you have to do a planted ecosystem just around the school, with native plants, just to get the kids more aware. And just looking. [edited out a section] But you can go to a tree and see lots of things going on that tree, or even a grass and flower, the different pollinators. And making them aware of how much of their food comes from natural sources so that they can touch the earth a little more even within an urban environment."</p>	<p>1) MT, 1/10 2) USFS, 11/09</p>	2 (MT, USFS)
Field trips are challenging in urban areas due to transportation constraints.	<p>1) "Transportation is a challenge for field trips [to national forests]."</p> <p>2) "Transporting kids somewhere to learn about nature is still not really teaching them what's in their backyard."</p>	<p>1) USFS, 8/09 2) MT, 8/09</p>	2 (USFS, MT)
Transportation is a challenge for urban schools.	<p>1) "Transportation is [a hurdle] If we're just talking about green space, we have a lot of parks. But to get to something larger than a woods is a hike."</p> <p>2) "Transportation is a big challenge if the park is not next door."</p>	<p>1) MT, 1/10 2) USFS, 8/09</p>	2 (MT, USFS)
Safety is a concern when taking kids outside in urban areas.	<p>1) "If you're talking inner city that comes with a whole slew of other challenges like keeping kids together and safe and focused and directed."</p>	<p>1) FT, 2/10 2) CT, 1/10</p>	2 (FT, CT)

	2) "But I also feasibly think what can I do with students where I'm at? And that's a really hard thing. The river runs near us, but I also know that there are logistics with bringing students near water - liability issues."		
Recruiting teachers, especially high school teachers, is a challenge.	"Recruiting at the high school level is very challenging. Because their subjects are so specific, sometimes something more general is not as attractive to them."	FFEC, 12/09	2 (FFEC, USFS)
For urban audiences, FFEC could tie in cultural and historical information.	1) "But there are resources: a lot can be taught about urban, natural and cultural resources – cultural and historic might be more important in urban areas." 2) "Have a cultural basis to make it relevant to the local community (African America, Latino, Polish, tribal, etc.) Also, draw on the history of the land." 3) "There are even a lot of historical things within walking distance from our school. So if we're talking in terms of culture and history than that would be a lot easier in our setting to bring alive for our students and make relevant for them."	1) FFEC, 8/09 2) Milwaukee, 8/09 3) MT, 1/10	3 (FFEC, Milwaukee, MT)
FFEC should build on existing urban education models.	1) "Strongly suggests that urban forestry program and state/private foresters be involved in these cities (Chicago and Milwaukee) and should make links between them. There is a lot going on in those cities and Urban Connections needs to recognize that." 2) "Figure out what is going on in the city [in terms of place-based education] and see how you can compliment it." 3) "The biggest issue we will have is that there are many people doing many different things, trying to find the way to not compete with programs, but to convince people that this is value added to what they are doing... [Having] many programs is a boon and a bane for Chicago-it confuses the teachers about where to go. There are many grassroots programs doing the same things in the same neighborhoods, how to make that network work?"	1) FFEC, 12/09 2) FFEC, 12/09 3) Chicago, 8/09	2 (FFEC, Chicago)
In urban areas, FFEC should help teachers use local resources like Lake Michigan.	1) "We have Lake Michigan so close to downtown Chicago; most students don't know that it's a lake. We talk about this constantly when we're in classrooms - they think it's the ocean. That needs to be more of a focus in science in Chicago; we live	1) CT, 1/10 2) FFEC, 12/09	2 (CT, FFEC)

	<p>on this huge water system that the kids don't know anything about. For some of the outlying areas of the city a forest might be completely appropriate, but maybe there's something that needs to be developed about the great lakes."</p> <p>2) "I think there's a real opportunity of working with the city and other partners to say let's get our kids connected to these great open spaces we have and you have the lake for both Chicago and Milwaukee."</p>		
Urban students lack of exposure to natural areas so it's hard for them to relate to nature.	<p>1) "I teach less than a mile away from the lake, and the students that I teach are unaware of what beach glass even is. They don't understand what a rip tide is and they live there. They were born and raised there! That's very indicative of that need to bring the nature into the classroom, because if we don't, we're not going to produce anyone who is not science phobic. [Our kids don't get] the things I was exposed to [as a child, like] going fishing when I was 8 years old, and knowing the nature of things. Our kids don't know beyond their living room and going to school [because] their world is isolated to that. And whatever it takes to tap into that is what we need to be doing."</p> <p>2) "Urban youth don't necessarily relate to trees/nature as part of their world, as something they care about, or as interesting. They may not understand why it's relevant. It is important to make them relevant and immediate points of interest by talking about air quality, pollution or what products you get out of plants."</p>	<p>1) CT, 1/10 2) Chicago, 8/09</p>	2 (CT, Chicago)
Teachers could mentor students about local natural resources.	"Having a mentor to guide them [students] is also important. With urban youth not having such an exposure to natural environments, having a mentor is even more important. Teachers are people that kids are around every day, and can fill the role of mentors."	USFS, 8/09	1 (USFS)
Students lack positive role models who provide them experiences in nature.	"Some kids don't have a role model that gives them an experience in nature."	USFS, 8/09	1 (USFS)
FFEC can help the USFS connects with diverse audiences.	"Reaching urban audiences helps the Forest Service connect to a broader, more diverse audience."	USFS, 8/09	1 (USFS)
Urban Connections hopes	1) "If there was a high demand by teachers in the	1) USFS, 8/09	1 (USFS)

<p>to reach urban and underrepresented groups that the USFS does not normally engage with.</p>	<p>suburbs the program could address this demand. Suburban teachers have expressed that their students do not receive as much environmental education as people often think."</p> <p>2) "UC's audiences are urban and underrepresented groups (minority, disabled, etc.), people that the USFS usually does not engage with. That's a broad group – minorities, disabled audiences, etc."</p>	<p>2) USFS, 8/09</p>	
<p>In urban areas, FFEC should encourage the use and increase the awareness of existing urban green spaces by teachers.</p>	<p>1) "It is difficult to familiarize yourself with the area and then teach your children about it. I would have to be informed about where I was taking the children and why before taking them there and teaching it to them."</p> <p>2) "They know about [omitted] and they know about [omitted], but do they know about other spaces around [city] that they could go, even city parks that are available and that they would have access to. Once again, if they know things than they can use their education and say 'I can actually take it out someplace'."</p> <p>3) "I need to know where these things are - I teach less than a mile away from the lake, and the students that I teach are unaware of what beach glass even is. They don't understand what a rip tide is and they live there - they were born and raised there. That's very indicative of that need to bring the nature into the classroom, because if we don't, we're not going to produce anyone who is not science phobic."</p> <p>4) "Maybe out of those 11 days, one or two of them at the end, after they've had the content knowledge in the forest, could be focused on their local green resource. So they could take what they've learned out on the forest and apply it to a local green space that they could then directly utilize with their class."</p>	<p>1) MT, 1/10 2) MT, 1/10 3) CT, 1/10 4) CT, 1/10</p>	<p>2 (MT, CT)</p>
<p>There are gaps in natural resource education in all grades.</p>	<p>"I do think there are gaps in natural resource education across all grade levels. I think today's children (at least in urban environments) are very disconnected from their natural surroundings. I see this each time I take my children into a natural environment and there is such a gap even in the everyday vocabulary. But then, I guess it really isn't</p>	<p>MT, 1/10</p>	<p>1 (MT)</p>

	their everyday situation, is it?"		
In urban areas, FFEC could organize opportunities and/or grant money to visit forests/environmental centers.	"Finding and organizing opportunities to visit forests/environmental centers. Seeking grant money to help schools/teachers be able to afford this."	MT, 1/10	1 (MT)
Urban schools need financial resources allowing activities to be carried out.	"The basic problems in [Milwaukee Public Schools] is money, bus money and money for a substitute teacher."	MT, 1/10	1 (MT)
Different schools in the cities have different science programs and opportunities.	1) "If you deal with some of the specialty schools in Milwaukee you'd probably get some takers, but in the general high school they are just worried about getting through biology." 2) "Graduating class of 2014, they have to have 3 years of science our school has 4 years of science the rest of the schools have only 2 years. Most will be adding a requirement and so many schools are talking biology, chemistry, and then environmental studies."	1) MT 1/10 2) MT 1/10	1 (MT)
Perceptions of safety for students, teachers, and parents/safety walking are a challenge for urban schools.	"I'm comfortable with bringing the kids there.... It's more about having a teacher who is comfortable in teaching in this area."	MT, 1/10	1 (MT)
Funding is a challenge for urban schools.	"Sadly, there are no longer lots of extra funds at schools to support these kinds of experiences. We do have our own school garden and a small park nearby, so our students are able to utilize those free of charge."	MT, 1/10	1 (MT)
Lack of green space - is a challenge for urban schools.	1) "There is no Green Space near [my] school...we are literally cement locked, we don't have a playground." 2) "Our playground is completely paved. Three sides of our school are set back about 50 ft from sidewalks and there is a slope of rocky, grassy area but that's about it."	1) MT, 1/10 2) MT, 1/10	1 (MT)
In urban areas there is high teacher/student turnover, so they lack local knowledge.	1) "There's a very high teacher turnover in Milwaukee and with students too. We have a lot of students who are here for a year or two and then take off again." 2) "Young staff too, a lot of people aren't from MKE which makes it hard...it is difficult to familiarize yourself with the area and then teach your children	1) MT, 1/10 2) MT, 1/10	1 (MT)

	about it. I would have to be informed about where I was taking the children and why before taking them there and teaching it to them."		
Content: Build on cultural resources/ use a multidisciplinary focus.	<p>1) "The subject matter – in the past, other issues (water and air quality) in the community overtook tree issues in importance. The content should be relevant to the community."</p> <p>2) "I agree and think this is why LEAF has had a hard time getting into urban settings. They are too focused on forests."</p> <p>3) "Have a cultural basis to make it relevant to the local community (African America, Latino, Polish, tribal, etc.) Also, draw on the history of the land."</p> <p>4) "In urban areas, the partners will be able to do cultural and historical place-based education easier than natural resources."</p>	<p>1) Milwaukee 8/09</p> <p>2) Milwaukee 8/09</p> <p>3) Milwaukee 8/09</p> <p>4) FFEC 8/09</p>	2 (Milwaukee, FFEC)
In urban areas, FFEC could include topics on urban agriculture.	<p>1) "Talk with someone from Growing Power. Milwaukee education system is stressed so there are a lot of gaps."</p> <p>2) "UW Madison's school of agriculture wants to launch a new urban agriculture program."</p>	<p>1) Milwaukee, 8/09</p> <p>2) Milwaukee, 8/09</p>	1 (Milwaukee)
Getting classes outside in an urban setting could be a challenge.	"It would be more difficult to get your classes outside in an urban setting. Something like FFEC could hold the hand of those teachers, and give them the encouragement and guidance that they need to figure out how to do it."	FT, 3/10	1 (FT)
Transportation to offsite locations in urban areas is a challenge.	"If a teacher would have to access a place that is quite a distance [from their school] that would be a great challenge."	FT, 3/10	1 (FT)
One best practice is to target underserved grade levels.	"We only take middle school and high school teachers so that research can really be a part of the program...But in our conversations with a group from the state Department of Education, it was clear that high school professional development in science was weak."	FFEC, 12/09	1 (FFEC)
Recruiting high school teachers is a challenge for FFEC.	"High school teachers are the toughest teachers to reach – word of mouth seems to be best [way to recruit them]."	FFEC, 12/09	1 (FFEC)
Achieving desired ethnic diversity of teacher participants is a challenge for FFEC.	"Very important to select the right leaders and coordinators to work with urban audiences. They should represent the diversity in the classroom."	FFEC, 11/09	1 (FFEC)
FFEC suggested engaging	"We could have overlapping sessions for different	FFEC, 1/10	1 (FFEC)

audiences of different demographics through customized programming.	ethnic audiences throughout the year. For example, one week we could have a session with Latino or African American audiences. It would take more on-the-ground work, planning, and money."		
FFEC could connect to urban forestry efforts.	"Strongly suggests that urban forestry program and state/private foresters be involved in these cities (Chicago and Milwaukee) and should make links between them."	FFEC, 12/09	1 (FFEC)
FFEC can help teachers identify local resources.	1) "Some of our rural teachers aren't from the place they teach and they become a little intimidated that their kids might know than they do so they're even more reluctant to take the kids outside. We're finding all kinds of reasons why the teachers are hungry for this kind of opportunity. It's all about using whatever resources you have. " 2) "The beauty of the model is that you can focus it down to what your place is. Chicago has a legacy of open space and forest preserves that were very thoughtfully done. I think there's a real opportunity of working with the city and other partners to say let's get our kids connected to these great open spaces we have and you have the lake for both Chicago and Milwaukee. I think it's maybe helping them understand what are the natural assets they have."	1) FFEC, 12/09 2) FFEC, 12/09	1 (FFEC)
In urban areas, FFEC should help teachers use local resources.	1) "I live in a very industrial part of the city. So for me to even explore a natural habitat around me - we are literally cement locked, we don't have a playground. The trees that we have - the city planted them for aesthetic reasons, but nobody knows anything about them. I consider myself really knowledgeable and wanting to learn, but I also feasibly think what can I do with students where I'm at? And that's a really hard thing. The river runs near us, but I also know that there are logistics with bringing students near water - liability issues." 2) "For teachers in the city of [omitted], we look at cost. What's near us? What's useable and what's feasible? And that's how we try to approach nature."	1) CT, 1/10 2) CT, 1/10	1 (CT)
FFEC should adapt to Chicago Public School system's specific curriculum guidelines.	1) "I think a lot of the CPS schools are very tracked, if that makes any sense. I know at our school we have a very specific curriculum we have to follow." 2) "We have a mandated curriculum that is almost	1) CT, 1/10 2) CT, 1/10	1 (CT)

	put down to the day."		
Urban schools lack green spaces.	"We are literally cement locked, we don't have a playground."	CT, 1/10	1 (CT)
Ensuring appropriate content knowledge for urban youth is a challenge.	"Urban youth don't necessarily relate to trees/nature as part of their world, as something they care about, or as interesting. They may not understand why it's relevant. It is important to make them relevant and immediate points of interest by talking about air quality, pollution or what products you get out of plants."	Chicago, 8/09	1 (Chicago)

School Support and Recruitment			
Theme	Supporting Quote(s)	Quote(s) Citation	# of Theme Sources
Administrative support is important.	<p>1) "Getting buy-in from administration; Teachers and administration are both stuck in a system that doesn't work so well."</p> <p>2) "You need to get principal buy-in and get teachers comfortable using the outdoors."</p> <p>3) "You primarily do the same things for your audiences, whether urban or rural: be in touch with your teachers, with your school administrators, with resource professionals..."</p>	<p>1) CT, 8/09 2) Milwaukee, 8/09 3) FFEC, 1/10</p>	3 (CT, MT, FFEC)
FFEC could target younger/preservice teachers in Chicago and Milwaukee.	<p>1) "I would think the younger ones, yes. If they had a hand in it and worked at it in the four different times they went out that they would buy into it."</p> <p>2) "It starts almost at the college level. How to get these teachers involved and interested. So you have to really get the new year one involved. The seasoned teachers seem to know what to do, but how do you start the young ones to start the roller coaster, to get on there and get a ride."</p>	<p>1) MT, 1/10 2) CT, 1/10</p>	2 (MT, CT)
Teachers indicated interested in participating in a FFEC pilot program.	<p>1) "I would definitely be, like sign me up, that kind of thing. I would be the first one to sign up. And I hope, because I'm doing this that I will get some consideration to be offered the possibility, should the money come through to do this, I'd like to be a part of this."</p> <p>2) "I would think so, I just finished up that Master's program, but if I had some time available, yes - I think it would be interesting - would go a little more in depth than I have in the past."</p> <p>3) "I would be interested in this and so I wouldn't want your focus to be parochial schools or charter schools because I'm not in one of those schools."</p> <p>4) "I think you should start it by us, we'll be the pioneers, the guinea pigs!"</p>	<p>1) MT, 1/10 2) MT, 1/10 3) CT, 1/10 4) CT, 1/10</p>	2 (MT, CT)
Teachers have a difficult time getting administrative support due to funding restrictions.	<p>1) "You have to throw the money in their face. With a lot of the administrations these days, money talks."</p> <p>2) "I don't think administrators would have any objection as long as there is not a cost to them/the school."</p>	<p>1) CT, 1/10 2) MT, 1/10</p>	2 (CT, MT)
Provide incentives	1) "Not for old teachers, but for new teachers in	1) MT 1/10	2 (MT, CT)

for teachers (e.g. continuing education credits) can help with recruitment.	<p>Wisconsin you need 6 credits each year to maintain license, so for younger teachers that could be important."</p> <p>2) "Continuing professional development units could be a pretty good motivator. College credit."</p> <p>3)"I'm finding right now that what people want is graduate credit, and if they can get it, not science education, but science credits because those they can apply to endorsement in science, and that's really what teachers are craving right now... so definitely think graduate credit - I think its an important component for something like this."</p>	<p>2) CT 1/10 3) CT 1/10</p>	
FFEC should overcome perceived risks/barriers (e.g. 'science phobia').	<p>1) "The whole thing in our school is science-a-phobia... And so it's just that knowledge base just isn't there. At least ion elementary, it's teach reading, teach reading. And once people have to switch to teach math or anything science or social science, people's content knowledge just isn't there."</p> <p>2) "The ability to work with schools seems to depend a lot on the principal. If principals are leery of risk/exposure/liability, they can actually shut the trips down."</p>	<p>1) CT, 1/10 2) Chicago, 8/09</p>	2 (CT, Chicago)
Teachers' lack of knowledge of science and environmental education, and how to use the outdoors.	<p>1) "The whole thing in our school is science-a-phobia. In elementary, it's 'teach reading, teach reading.' And once [teachers] have to switch to teach math or anything science or social science, the content knowledge just isn't there. [Nor is] their ability to do the research and become somewhat knowledgeable on those types of subjects. I ended up being the science guy but I have an MBA and two master's degrees, [and have to] gather a lot of materials together for different people to do their units because they have such a phobia with it."</p> <p>2) "Even teachers are afraid of bugs, 'boogeymen, and getting lost in natural spaces."</p> <p>3) "But most teachers don't have that exposure or experience and that's really where we fall apart as educators. We expect everybody to be everything to every person and everybody can be an expert on the planets and go talk about a prairie."</p>	<p>1) CT, 1/10 2) CT, 1/10 3) CT, 1/10</p>	1 (CT)
One-on-one consultation with teachers and principal can help get their support.	<p>"This year [one replication] did a one-on-one consultation with the school's teachers and principal the week before they went out, and laid out what they would be doing in a face to face meeting, not just a phone call... We have to meet people half way."</p>	USFS, 11/09	1 (USFS)
Schools may be more interested in the	<p>"Lots of the schools want us to come out for career days but they want us to bring Smoky Bear & Woodsy Owl.</p>	USFS, 11/09	1 (USFS)

USFS brand than environmental education knowledge outcomes.	They want our emblems, not necessarily our knowledge."		
Some schools perceive outdoor education as supplemental or a "luxury."	"[There is the] perception that time spent outside of classrooms is a luxury and unproductive."	USFS, 8/09	1 (USFS)
Teachers would be interested in FFEC if time/cost/location was right.	"Yes, if most of it took place during the summer (as far as the professional development piece, or if it was offered at a convenient time/location...). Funding and cost of credits would be very important into whether or not it would be feasible for me (as I am still paying off student loans)."	MT, 1/10	1 (MT)
Only motivated teachers may participate in FFEC.	"[We are] very motivated teachers when it comes to environmental education, so if you are trying to get other teachers to come, it might be difficult if they have to pay for it."	MT, 8/09	1 (MT)
Teachers not having a team in their school is a challenge for some FFEC teachers.	"The most accessible schools who are involved with FFEC around here are people who have a team working together ... They have the same goals and they realize how important it is to use place-based education and local resources."	FT, 3/10	1 (FT)
There are program costs to teachers in terms of time, effort and transportation.	"Transportation cost, though not substantial. But time, and creativity, is a big cost for teachers."	FFEC, 9/09	1 (FFEC)
Chicago Public Schools have a service-learning requirement that FFEC could build on.	1) "Students could take care of community service requirements by participating in a service project." 2) "Another selling point from the high school perspective is that our students have to accrue 10 hours of service-learning at the minimum per year as part of their graduation requirements and we're always looking for action projects to do."	1) CT 12/09 2) CT 1/10	1 (CT)
Urban teachers are pressured to meet standards and keeping up other educational demands.	1) "At our school we have a very specific curriculum we have to follow. Its already kind of predisposed." 2)"Many Chicago teachers are forced to use pacing guides for their classrooms, to make sure all the classes stay together – teaching the same things at the same time. They might be fearful of having to adapt to a new curriculum."	1) CT, 1/10 2) CT, 8/09	1 (CT)

In the Classroom: Curriculum Implementation			
Theme	Supporting Quote(s)	Quote(s) Citation	# of Theme Sources
Teachers need funding.	<p>1) "As a low-income teacher in an urban setting, I don't have the money to send kids to urban spaces. It would be great if we had funds!"</p> <p>2) "The greatest constraint to that program is getting the kids out to the field sites. The funding has dried up for transportation."</p> <p>3) "Teachers also need money in order to attend these trainings."</p> <p>4) "I would think the big thing for us, since our schools are in the city and not near any forest, is money for the field trips - especially for field trips - that's the big thing."</p>	<p>1) MT, 8/09 2) USFS, 8/09 3) Milwaukee, 8/09 4) MT, 1/10</p>	3 (MT, USFS, Milwaukee)
Teachers feel overwhelmed with their current curriculum load.	<p>1) "My biology book is about 1,050 pages long, trying to get through that and still spend a good amount of time on ecology, outdoor ed, environment is very difficult."</p> <p>2) "Teachers don't have the resources, the time, the effort because we're so worried about meeting our standards. We don't have time for anything else. We get graded, I guess, on how we're fulfilling those standards."</p>	<p>1) MT, 1/10 2) MT, 8/09</p>	1 (MT)
Standards are a challenge for teachers to meet.	<p>1) "Teachers don't have the resources, the time, the effort because we're so worried about meeting our standards, we don't have time for anything else. We get graded, I guess, on how we're fulfilling those standards."</p>	MT, 8/09	1 (MT)
FFEC allows teacher to adapt the curriculum to their state or other standards and provide teachers with relevant resources (standards, curricular supplements, and other teaching resources).	<p>"They are familiar with the standards so they need to identify in their curriculum development binder how their program meets the standards. It's also good for administrators because they can see that what they are working is relevant."</p> <p>"Sometimes [FFEC] brought someone in from the state department of education or alumni from another school to show how FFEC fits with the state standards."</p>	<p>1) FFEC, 11/09 2) FT, 3/10</p>	2 (FT, FFEC)
Teachers have positive attitudes toward FFEC and the outdoors.	<p>1) The teachers' main feedback [from interviews about FFEC], short and sweet, was: this was an awesome program, they wanted to see it continue, and they wanted to know who to write to express their support."</p> <p>2) "One of the things that is so great about FFEC, and I</p>	<p>1) FFEC, 1/10 2) FT, 2/10</p>	2 (FFEC, FT)

	know I'm not the only one who feels this way, is that it really invigorated us as teachers, reminding us that we're still students, and that there's so much to learn... [FFEC] reinvigorated some passions for the outdoors from what I heard from my colleagues on the closing day."		
The USFS wants to use education models that are effective.	"There are too many models around, and funding seems to be geared towards new programs... [we need to] find a model we know is effective."	USFS, 8/09	1 (USFS)
Having enough time for teachers to prepare for an outside activity is a challenge.	"I don't have a classroom so I feel like I have the time to check out what kinds of resources are available beforehand. When I was in another urban spot, I would always do that preparation work too. But teachers might not have that flexibility."	FT, 3/10	1 (FT)
Some teachers have use parent volunteers to help plan FFEC projects.	"I probably have a group of 8 to 10 parent volunteers and they just, you know they help, they don't do a lot of prep, but they're in the classroom and that really really helps. So I think volunteering is good, and then also it brings the community together a little bit and it gives the parents a good idea of what's going on in the classroom."	FT, 3/10	1 (FT)
Teachers lack time to write the FFEC curriculum.	"The only thing I have trouble with is getting time to sit down and write it in an organized fashion so I can hand it in to the instructors."	FT, 3/10	1 (FT)
Coordinating field trips (time, scheduling, access to transportation) is a challenge for teachers.	"Time which is connected to scheduling - it does take time to... my idea of FFEC is doing a lot of place-based science which is in your local communities, or accessing local places, either with the park service or national forest service or conserved land, you have to get to those places, and so you can't typically do that in a class period or 40-50 minutes. Transportation can be an issue."	FT, 3/10	1 (FT)
Having enough time to plan and implement curricula within school constraints is a challenge for teachers.	"Time is the biggest challenge – having enough time to work with the different teachers and then convince them that they have enough time to go out and do the things that we want to do – they just get pushed and pushed and pushed by other priorities. "	FT, 3/10	1 (FT)
Lack of administrative support is a challenge for teachers in implementing their curricula.	1) "The impediments for me have been administrative, like trying to get the ok to implement your project. And just when you think that everything is moving forward, someone like a principle would change their mind. It was a sort of dance, a tactful dance, between teacher and supervisor, where I would have to say 'I think you're wrong boss, we're going to do it.'" 2) "I don't have support and cheerleading in my school],	1) FT, 3/10 2) FT, 2/10	1 (FT)

	[so I had to] figure out how to start off as an island [of the FFEC network."		
Involving other teachers in a school can be a challenge for FFEC teachers.	"They haven't given up, but their implementation wasn't as smooth as mine. For one its personal idiosyncrasies – she just didn't have faith in it. She didn't think she could do it, and that it would attract criticism. The other is not that way, but she is an English teacher so she is getting her own barrage of administrative impediments. My current efforts are just to support her and keep her as a teacher."	FT, 3/10	1 (FT)
FFEC inspires teachers to use their local resources in teaching.	"I think it's really impacted who I am as a teacher. It certainly has uncovered areas in me that I was not sure I would necessarily uncover had I not taken that course. It put me in wild places...so for me to see these amazing places certainly stirred something in me, and stirred something within my students as well."	FT, 3/10	1 (FT)
Some FFEC teachers benefited from administrative support.	"I do have a principal that does support what I do and wants to encourage me to continue to do what I do. So he does build a schedule that allows me to take kids out for hours at a time once a week, into the field. I feel very fortunate that I have his support, that he's in charge of the schedule and will allow that."	FT, 3/10	1 (FT)
FFEC can be implemented in the classroom without a lot of money.	"I think teachers are very resourceful and you can do place-based learning without spending money."	FT, 3/10	1 (FT)
FFEC changed some teachers' attitudes toward environmental education.	"[FFEC] I love it, it's an amazing thing but before I got to know it I had this bias that I wasn't aware of, that all educators at [FFEC] were people who couldn't get jobs at a real school. It's embarrassing to admit that now. Then I get to know them and get to know the programs there and they're these incredibly intelligent, remarkably skilled people who don't want to work in a public school because what they want to do is environmental ed, their whole training is a different track and that is really interesting to me."	FT, 3/10	1 (FT)
FFEC has helped students get excited about school.	"I also think the kids are more energized – they are always asking me, 'When are we going out on the next trip?' It makes school more exciting."	FT, 3/10	1 (FT)
FFEC helps to increase student's awareness of their community.	"I think that from the stories I have heard, and what I'm hoping also to get from my students, is the heightened awareness of their surroundings is pretty ubiquitous with students who have experienced a FFEC derived curriculum."	FT, 2/10	1 (FT)
FFEC may not necessarily be changing stewardship	"I would be hesitant to say if that's [the FFEC curriculum] going to heighten environmental stewardship. I think it would heighten their [students'] sense of community,	FT, 2/10	1 (FT)

behaviors in students.	and a sense of ownership of the community, which might lead to environmental stewardship, but I don't think those things go hand in hand."		
FFEC increased teacher knowledge of the forest environment.	"I think that it [FFEC] was very very valuable in terms of finding out specific information about a whole range of things in the forest environment. For example, tree identification, amphibian identification, geology, soil, wildlife, tracking."	FT, 3/10	1 (FT)
Changed how teachers teach science in terms of using an interdisciplinary approach.	"It has changed the way I teach... I learned that in FFEC through field naturalists from the School of Natural Resources at the [State University] had taught me a lot about teaching more interdisciplinary in terms of science, so everything was being woven together."	FT, 3/10	1 (FT)
FFEC teachers use more community resources in their teaching.	"The biggest way that is has [changed the way I teach] is through the community forest piece. Before FFEC I wasn't doing anything really outside of the school. Through FFEC I found a lot more connections in the community of people who are doing environmental work and support education initiatives and were excited to have the students working on projects."	FT, 3/10	1 (FT)
FFEC increases student's knowledge of forests and local environments.	"They [students] understand the interconnectedness in the forest much more."	FT, 3/10	1 (FT)
Students share knowledge they learn with their parents.	"They follow through with the kinds of things that they are doing in the program. For example, invasive plant species. We spend quite a bit of time every year in our natural area to manage invasives and then the kids go home and talk to their parents and encourage them to get rid of it."	FT, 3/10	1 (FT)
Students learn field skills.	"They're developing field techniques while they are out there, for them it's important, you empower them. In their minds they are a scientist, they're out there collecting data."	FT, 3/10	1 (FT)
Some students participate volunteer in stewardship activities.	"I know that I get 95% out for amphibian crossing from 7-midnight on a school night or during the weekend, that they feel really committed to be stewards, to be citizen scientists, when they don't have to. You know it's outside of school hours volunteer work and they choose to go. To me that says that they do care and they do want to be involved. I think that it is a form of stewardship."	FT, 3/10	1 (FT)
FFEC provides teacher incentives, offer mini-grants and reimbursements for	"Continuous teacher support, even over emails, finding mini grants, reimbursements. What needs to be done to get the 200 dollar FFEC provided mini-grant."	FFEC, 11/09	1 (FFEC)

teachers.			
Sustained communication with teachers is a challenge for FFEC.	"Not being able to contact many alumni due to rates of mobility, and even due to change in (our) staff."	FFEC, 11/09	1 (FFEC)
Evaluations should include students (not just teachers).	"It would be good to do a study to see what the kids are getting out of this."	FFEC, 11/09	1 (FFEC)
Adjusting the due date and implementation date for FFEC curricula may help teachers with implementation.	"[Our program is] considering shifting the actual making of the unit by teachers to the next year. [Teachers would] commit to using it in the coming term and [just create an] outline after the 11-day training."	FFEC, 11/09	1 (FFEC)
There are challenges for teachers in implementing their FFEC curricula.	"Three teachers did everything in the [professional development workshops] but didn't start the unit in their classes. They said that... class work, didn't evolve that way. There seems to be some disconnect."	FFEC, 11/09	1 (FFEC)
Linking FFEC to test scores is important for administration.	"Test scores mean funding, and that's always in the back of an administrator's mind as well."	CT, 1/10	1 (CT)
In urban areas, teachers could replace field trips with local activities (saving costs, stress, transportation time).	"Could replace field trips, which are a pain for teachers, and save money by not having to transport students to the forest."	CT, 8/09	1 (CT)
Teachers like easily implemented lessons.	"Be a pick-up-and-teach model. Teachers appreciate not having to put in too much time into making it."	Chicago, 8/09	1 (Chicago)
FFEC should incorporate alternative lessons for teachers who can't take students outside.	"Always have alternatives for classroom teachers who can't do it [get kids outside], because there are schools where teachers can't take their kids outside. Whether it's real or perceived danger, it just doesn't happen."	Chicago, 8/09	1 (Chicago)
In Chicago, FFEC should tie into pacing guides and school curriculum requirements.	"I know at our school we have a very specific curriculum we have to follow. It's already kind of predisposed...Even if someone was very passionate about a topic to be able to really take it and run. And also to find somebody else who will be a colleague for	1) CT, 1/10 2) CT, 1/10 3) CT, 1/10	1 (CT)

	<p>them to go to these. I think at least in my particular school it would be quite challenging.”</p> <p>2) "We have a mandated curriculum that is almost put down to the day, as to where you're supposed to be, and so finding that flexibility and a trusted administrator to say look, this really is beneficial - I want to steer away from the scope and sequence that I have and this is going to benefit students.”</p> <p>3) “Another selling point from the high school perspective is that our students have to accrue 10 hours of service-learning at the minimum per year as part of their graduation requirements and we're always looking for action projects to do. Since this doesn't have a curriculum I can see where people in the program can develop action projects that can tie into a local resource like a forest reserve or park, and we can do an action project of that kind...That way we can say well we're not just going on this field trip but we're actually creating hours that the kids need towards graduation and we've learned about this in the classroom and now we're going to go out and actually do something that relates to it.”</p>		
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Appendix 10: Submitted Conference Abstracts

Conference Presentations

To disseminate the results and recommendations of this report in accordance with the study's logic model (see Appendix 2), the study team has submitted abstracts to the three conferences detailed below. Confirmation of acceptance to present at these conferences is currently pending.

North American Association for Environmental Education (NAAEE) Annual Conference September 29-October 2, 2010 Buffalo, New York

Abstract: This study analyzed the feasibility of adapting a place-based professional development program called A Forest for Every Classroom (FFEC) in two urban locations (Milwaukee, WI and Chicago, IL). FFEC was originally developed in Vermont through a partnership between the U.S. Forest Service (USFS) and other public- and private-sector partners and has since expanded to New Hampshire, Montana, and Texas. Now the USFS's Urban Connections Program is exploring implementing FFEC in Milwaukee and Chicago. This study assessed the need for a place-based environmental education professional development program in Milwaukee and Chicago as well as researched methods for successful FFEC adaptation and implementation. Thus, it particularly aligns with the NAAEE Nonformal Environmental Education Programs Guidelines for Excellence since the study included a city-specific needs assessment while examining the organizational needs and capacities of the USFS.

An external research team from the University of Michigan interviewed and conducted focus groups with over 50 individuals, including teachers, environmental educators, USFS employees, and FFEC program coordinators. The team analyzed data using content analysis with categorization of responses. Recommendations were compiled and provided to Urban Connections, the USFS Conservation Education Office in Washington D.C., and research participants. In addition to discussing the results of this assessment, this presentation will provide attendees with a step-by-step process for exploring professional development needs in urban areas.

Society of American Foresters (SAF) National Convention 2010 October 27-31, 2010 Albuquerque, New Mexico

Abstract: Graduate student-initiated and executed, A Forest in the City: Exploring Place-Based Education with the U.S. Forest Service, is a study analyzing the feasibility of adapting the conservation education program, A Forest for Every Classroom (FFEC), in Milwaukee, WI and Chicago, IL. Originally developed in Vermont through a partnership between the U.S. Forest Service (USFS) and other public- and private-sector partners, FFEC has since expanded to New Hampshire, Montana, and Texas. The USFS's Urban Connections (UC) Program in the Eastern Region is exploring how to adapt FFEC to meet the professional development needs of urban educators through collaborative partnerships.

The graduate student team developed this project for their Master's Degree opus at the University of Michigan's School of Natural Resources and the Environment, with UC serving as their client organization.

Objectives were to (1) assess the cities' need for place-based professional development, (2) explore the extent to which FFEC can support the mission and goals of UC and USFS, and (3) identify means for successful adaptation of FFEC in urban settings, where "forests" often consist of individual trees. Methods consisted of FFEC program observation, interviews and focus groups with approximately 90 stakeholders and potential partners (including teachers, environmental organizations, USFS employees, and FFEC program coordinators), and the development of a project website.

The team provided the final synthesis report to UC, the USFS Conservation Education Office in Washington D.C., research participants, and other stakeholders. Results included (1) recommendations for FFEC implementation in cities (e.g. utilize local parks and greens spaces), (2) the development of a preliminary network of interested organizations for UC, and (3) an action plan for FFEC implementation.

This presentation will highlight the research process and results from the perspective of the graduate student team, who will also describe the knowledge and skills they gained from conducting large-scale research.

**National Association for Interpretation (NAI) National Workshop 2010
November 16-20, 2010
Las Vegas, Nevada**

Abstract: A University of Michigan research team worked with the U.S. Forest Service's (USFS) Urban Connections program to assess the feasibility of adapting a conservation education program entitled A Forest for Every Classroom (FFEC) to two cities (Milwaukee, WI and Chicago, IL). Methods consisted of conducting interviews and focus groups with over 90 individuals including teachers, environmental educators, USFS employees, and FFEC coordinators. Results determined best practices for planning a conservation education program in urban areas, including identifying partners and stakeholders, securing funding, and recruiting teacher and administrative support. Data was analyzed using content analysis with categorization of responses.

Appendix 11: Study Team Biographies



John Cawood

John has a Bachelor's degree from Albion College (2008), with a major in biology, and concentrations in environmental studies and public service. He has worked with environmental education programs and researchers throughout the state of Michigan. Additionally, John gained valuable experience this past summer (2009) with stakeholder engagement through an internship with National Oceanic and Atmospheric Administration's Great Lakes Regional Collaboration team. John is pursuing a Master's degree at the University of Michigan's School of Natural Resources and Environment (SNRE).

Catherine Game

Catherine earned her B.A. in art and biology from Albion College in Albion, MI. At some point between painting landscape murals and coordinating environmental programs for local elementary schools, she realized that art could play a crucial role in communicating about environmental issues. She then decided to combine her art and biology interests in the field of environmental education. Currently a student in the Behavior, Education and Communications track in SNRE, Catherine enjoys exploring how art can be used as a tool to develop creative experiences for people to learn about environmental conservation. In addition, she works as a part-time environmental educator at the Ecology Center and volunteers as the Environment Program Manager for the Global Alliance of Artists. Catherine has been named Doris Duke Conservation Fellow for her leadership promise in the non-profit and public sector.



Annie Gregory

Annie has a Master's Degree in Environmental Science from The Institute of Science, Mumbai (2007) and a Bachelor's degree in Zoology from the University of Mumbai (2005). She is now pursuing a Master's degree in Behavior, Education and Communication at the University of Michigan's SNRE. She works part-time with BioKIDS, a science education research project at the University of Michigan's School of Education. Annie is interested in incorporating environmental education and sustainability perspectives to bring conceptual richness in school subjects making them relevant to students' lives.

Andrea Liberatore

Andrea holds a Bachelor's degree in Biology from Bradley University (2002). She has worked as a Construction Leader for Habitat for Humanity, a dendrochronologist, and a Teacher Trainer in rural South Africa (through U.S. Peace Corps). She has experience with generating stakeholder involvement and facilitating youth environmental education programs. Currently, she is working towards her Master's Degree at the University of Michigan's SNRE with a concentration in Behavior, Education, and Communication.



Ericka Popovich

Ericka holds a Bachelor's degree in Wildlife from Purdue University (2007). She has held multiple conservation education internships, where she gained experience as an educator as well as in designing educational materials and coordinating interns. Ericka believes in the importance of sound natural resources management and is passionate about engaging partners, stakeholders, and the public in these activities. Her goal is to develop positive and lasting relationships between communities and natural resource professionals through outreach and education efforts and is pursuing her M.S at the University of Michigan's SNRE with a concentration in Behavior, Education, and Communication.

Mona Younis

Mona holds a Bachelor's degree in Environmental Science and Planning from the University of Michigan-Flint (2006). She works full-time as Project Coordinator for University Outreach at UM-Flint, where she supports service-learning development and implementation, university-community partnerships, and faculty professional development for public scholarship. Through other professional roles at UM-Flint, she developed skills in research administration, focus group research, and stakeholder engagement. In February 2010, Mona co-founded the Flint Environmental Justice Action Network (FEJAN), a grassroots community organizing and capacity-building organization in Flint, MI. Mona is currently pursuing a Master's degree at the University of Michigan SNRE, with concentrations in Environmental Justice and Environmental Policy.



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