A Formative Evaluation of the Prairie Science Class

Ernst, J. & Stanek, D. (2006). The Prairie Science Class: A model for re-visioning environmental education within the National Wildlife Refuge System. *Human Dimensions of Wildlife, 11,* 255-265.

Ernst, J. (2005). A formative evaluation of the Prairie Science Class. *Journal of Interpretation Research, 10*(1), 9-30.

Contact: Julie Athman Ernst
Assistant Professor
Department of Health, Physical Education, and Recreation
University of Minnesota-Duluth
110 Sports and Health Center
1216 Ordean Court
Duluth, MN 55812-3032
jernst@d.umn.edu

Program Profile	
Program Description:	This partnership between the U.S. Fish and Wildlife Service's Prairie Wetlands Learning Center and the Fergus Falls Independent School District 544, offers hands-on learning opportunities for fifth graders using the prairie wetland as an integrating and motivating context for math, science, and writing. Two classes of fifth graders from the district attend the learning center for two hours a day over the duration of the school year. At the learning center, students experience field based instruction to study math, science, and writing using the prairie wetlands ecosystem.
Program Goals:	1. Develop knowledge and skills in math, science, and writing 2. Increase motivation toward learning 3. Develop technology, problem solving, and communication skills 4. Foster character skills and stewardship ethic
Program Funding:	USFWS, Fergus Falls ISD 544, National Fish and Wildlife Foundation, Fergus Falls Education Foundation, Friends of the Prairie Wetlands Learning Center, Fergus Falls Fish and Game Club, Otter Tail Power Company, Ottertail Coaches Inc and private sponsors.
Program Links:	http://www.fws.gov/midwest/pwlc/psc_information.html
Evaluation Profile	
Evaluation Goals & Questions:	Purpose: To document program outcomes for stakeholders and to support decisions regarding program continuation and expansion. Questions: 1. Have students attained grade-level proficiency in science, math, and writing? 2. Have the students' science process, problem solving, and technology skills and their skills in working cooperatively and communicating with others increased? 3. Do the students have a more positive attitude toward learning, a more positive attitude toward the prairie wetlands environment, a stronger stewardship ethic, and a stronger sense of civic responsibility than their peers in traditional classrooms? 4. Did the Prairie Science Class meet the needs of the students and parents, the Fergus Falls

	School District, and the U.S. Fish and Wildlife Service?
Evaluation Methods:	Data were gathered from a variety of stakeholders using quantitative and qualitative methods. The fifth grade students in the Prairie Science Class were the primary source of data. Students' knowledge, attitudes, and skills were measured using standardized tests, pretests, posttests, retrospective pretests, and interviews. The PSC students' standardized test scores and attitudes toward learning, their stewardship ethic, and their sense of civic responsibility were compared to those of students in traditional classrooms. Data were gathered from parents using a survey and focus group. Formal and informal interviews were conducted with stakeholders from the U.S. Fish and Wildlife Service and the Fergus Falls Independent School District 544. Data were analyzed using t-tests, multiple linear regression, analytic induction, and descriptive statistics.
Evaluation Instruments:	A partial set of evaluation instruments is available in the report
How were results used?	The evaluation results were used to support decisions regarding program continuation at the same grade level (5^{th} grade) and expansion from two participating classes to four classes. The results were also used to identify areas where the program can be improved (for example, professional development of teachers regarding integrated, field-based teaching methods). In addition, this evaluation was used to inform future evaluations of the program (on-going evaluation and monitoring of student progress is needed for continued stakeholder support; additional use of control groups across range of instruments; use of performance measures in addition to skill self-reports, etc.)
Evaluation Cost:	The evaluation was conducted internally while the author was a USFWS employee; thus it is difficult to partial out the cost for her time, about an equivalent of $10,000 (cost of hours spent on it). There were no additional costs, with the exception of copying instruments (no research subject payments, no purchasing of instruments, no postage, etc.)
Evaluation Insights:	**What worked well?** The evaluation questions addressed stakeholders' questions and the results were actually used. The evaluation activities did not become intrusive, nor did they take away from instruction time. For example, The Minnesota Comprehensive Assessments and curriculum-generated assessments were a part of typical classroom assessment procedures, and did not add another layer of testing for students. The self-report surveys were designed to take about 15 minutes or less. In addition, the evaluation design and reporting format provided enough detail for guiding subsequent education specialists in their additional internal evaluation efforts. **What were important evaluation "lessons learned"?** It is difficult to find control groups in formal education settings. Teachers in traditional classroom settings were hesitant to allow their students to participate in the control group, for fear that it would make their teaching "look bad" if the Prairie Science Class students scored higher than their students. Teachers of students in the control group needed to be reminded often that their students provided baseline data and that the intent of the evaluation was not to try and determine if their traditional instruction was better or worse than the Prairie Science Class instruction. **What could have been done differently?** Future evaluation efforts should look more closely at the impact of the Prairie Science Class on students' skills. For example, using performance measures of these skills, along with the self-report data, could have provided a better assessment of the program's impact on skills.
Profile information provided by:	Julie Athman Ernst Assistant Professor Department of Health, Physical Education, and Recreation University of Minnesota-Duluth 110 Sports and Health Center 1216 Ordean Court Duluth, MN 55812-3032

	jernst@d.umn.edu
Profile prepared by:	Jennifer Sellers & Dr. Michaela Zint, University of Michigan Dr. Beth Covitt, Michigan State University
Posted on:	January 2008