

## Survey of Teachers in the La Moine River Ecosystem Partnership

In the winter of 2004, the La Moine River Ecosystem Partnership sponsored a mail survey of teachers in Adams, Brown, Fulton, Hancock, McDonnough, and Schuyler counties in western Illinois. All elementary teachers and middle school and high school teachers of science, math, language arts, art, and agriculture were surveyed (N = 452). After the initial questionnaire was sent, the selected teachers received a thank-you postcard two weeks later. A second questionnaire was mailed to non-respondents approximately six weeks from the initial mailing. Completed questionnaires were received from 157 teachers – for a 35 percent response rate.

Environmental education is a main goal of the La Moine River Ecosystem Partnership. The Partnership is interested in ways that it can assist teachers in the watershed with presenting environmental topics to their students. The purpose of the survey was to identify the type of training that teachers need and the type of supplemental materials that will help them teach environmental topics.

### Respondents

The largest response was from elementary teachers (52.2%) who teach all subjects. Respondents reported a range of tenure with the average response being from teachers with 15-20 years experience in the classroom. The most responses were received from Adams County (29.3%). (Tables 1, 2, 3 and Chart 1.)

Table 1. Subject areas taught by respondents

Subject	Percent Responding
All	49.0
Science	17.2
Language Arts	10.2
Other	9.6
Math	4.5
Science & Math	4.5
Art	3.2
Agriculture	1.3
No Response	0.6

Table 2. Grade level taught by respondents

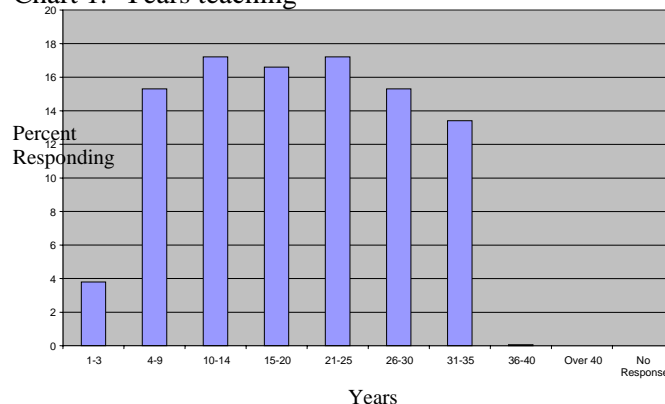
Grade Level	Percent Responding
Elementary (1-5)	52.2
Middle School (6-8)	21.0
High School (9-12)	14.6
Other	11.5
No Response	0.6

Table 3. County teaching in

County	Percent Responding
Adams	29.3
Other*	26.8
Fulton	14.0
Hancock	11.5
McDonnough	10.2
Brown	4.5
Schuyler	2.5
No Response	1.3

\* Cass, Morgan, Pike, and Scott Counties

Chart 1. Years teaching



### Teacher Training Needs

The survey results indicate that teachers are lacking in content knowledge of several environmental topics. Elementary teachers reported a lack of confidence in teaching about environmental legislation, geology, ozone depletion/air quality, global warming, biodiversity, and preservation/land management ( $p < .05$ ). Middle school teachers indicated a lack of confidence in teaching environmental legislation and preservation/land management. High school teachers reported a lack of confidence in teaching about environmental legislation, climate/weather, and geology ( $p < .05$ ).

Respondents overall reported the most confidence with presenting lessons on: recycling/waste reduction, water cycle/water quality, and ecosystem types such as - forests, prairies, and wetlands. (Table 4.) Science teachers at the middle and high school levels reported high confidence levels when teaching about: global warming, ozone depletion/air quality, biodiversity, water cycle/water quality, energy cycle, ecosystem processes/functioning, renewable resources/renewable energy, threatened and endangered species, forests, and soil erosion ( $p < .05$ ).

Sixty-two respondents replied to an open-ended question asking them to identify three workshop topics

at their grade level that would best enable them to meet the Illinois State Learning Standards. Responses were varied among a wide variety of environmental topics, with no two responses being the same. (Table 5.) Topics related to teaching skills were mentioned the most often. Twenty-two respondents indicated that they would like training in how to teach environmental topics, creating environmental lesson plans or curriculum, how to use technology to teach science, how to incorporate other subjects when teaching about the environment, and information on environmental hands-on projects for their students.

It is interesting to note that the respondents did not necessarily request training in areas that they had previously reported a lack of confidence in teaching, and that training was also requested for areas that they had previously reported a high confidence level in teaching. It is also worth noting that the Illinois Department of Natural Resources currently offers workshops in several areas that were requested for training, but respondents generally did not report a strong desire to attend those environmental workshops. (Table 6.) However, seventeen percent reported that they have previously attended one of the listed workshops. Respondents who teach fine art and language art reported less desire to attend training workshops ( $p < .05$ ), and newer teachers with less tenure indicated the most interest in attending training workshops ( $p < .05$ ).

The responses indicate that full-day workshops are the most desirable. Respondents also indicated that mid-week workshops during the summer months are the most convenient for them to attend. According to the respondents, no obstacle significantly prevents them from attending training workshops. However, travel distance, pay for substitute teachers, and lack of time away from the classroom can be obstacles for some of the respondents. (Table 7.)

Table 4. Confidence in teaching environmental topics

	Percent Lacking Confidence		
	Elementary	Middle School	High School
Environmental Legislation	65.9	72.7	69.6
Geology	57.3	39.4	65.2
Ozone Depletion / Air Quality	63.4	39.4	43.5
Global warming	61.0	36.4	39.1
Biodiversity	58.4	39.4	39.1
Preservation / Land Mgt.	52.4	57.6	43.5
Human Values for Nature / Environmental Ethics	40.2	48.5	26.1
Ecosystem Functioning / Ecosystem Processes	50.0	36.4	39.1
River and Streams	43.9	33.3	39.1
Population growth	43.9	39.4	30.4

(Table 4. Continued)

	Percent Lacking Confidence		
	Elementary	Middle School	High School
Impacts of food production on the environment	37.8	33.3	39.1
Impacts of development on the environment	36.6	42.4	26.1
Soil Erosion / Conservation	35.4	39.4	43.5
Environmental impacts on human health	32.9	33.3	34.8
Renewable resources / Renewable energy	30.5	24.2	34.8
Energy cycle	34.1	30.3	34.8
Wetlands	37.8	15.2	34.8
Climate	15.9	21.2	47.8
Prairies	25.6	24.2	34.8
Pollution issues / Pollution prevention	18.3	30.3	39.1
Forests	25.6	21.2	30.4
Threatened and endangered species	29.3	27.3	21.7
Geography	15.9	15.2	43.5
Water cycle / Water quality	22.0	18.2	30.4
Recycling / Waste reduction	13.4	21.2	17.4

Table 5. Workshop topics to meet Illinois State Learning Standards

Topic	Number of Responses N = (62)
Teaching Environmental Topics	22
Energy Cycle/Renewable Energy	12
Geology	9
Land Preservation / Conservation / Management	8
Water Cycle/Water Quality	8
Pollution Prevention	8
Recycling	8
Ecosystems	8
Biodiversity	7
Illinois Environmental Issues	6
Weather/Climate	5
Geography Skills	5
Environmental Ethics	5
Plants/Plant Life Cycle	4
Threatened & Endangered Species	4
Population Growth	4
River Ecology	4
Prairies	4
Environmental Impacts on Human Health	4
Environmental Values	4
Human Impacts on the Environment	4
Environmental Legislation	3
Forests	3
Global Warming	3
Amphibians/Reptiles	2
Project WILD / WET	2
Project Learning Tree	1
Wetlands	1
Soil Erosion	1
Birds	1
Genetics	1
Animal Identification	1
Impacts	1

Table 6. Desire to attend existing workshops

	Mean	Percent Responding			
		Yes (1)	Maybe (2)	No (3)	Not Sure
<b>One-Day Workshops</b>					
School Yard Habitat Development: K-12	1.83	32.5	26.8	19.1	21.7
Project WILD: K-12	1.84	29.3	27.4	17.2	26.1
Project Learning Tree: K-12	1.90	24.8	27.4	17.8	29.9
Project WILD Aquatic: K-12	1.91	23.6	33.8	17.2	25.5
Project WET: K-12	1.91	23.6	32.5	17.2	26.8
Illinois Prairies: 3-6	2.07	23.6	27.4	29.3	19.7
Illinois Forest Resources: K-3	2.11	19.7	26.8	28.0	25.5
Illinois Birds: 4-6	2.21	21.0	35.0	24.8	19.2
<b>One and Half Day Workshops</b>					
Illinois Geologic Resources: K-6	2.05	19.7	33.1	23.6	23.6
Prairie School Project: K-5	2.12	20.4	27.4	29.9	22.3
Biodiversity 101: K-6	2.30	14.6	20.4	36.3	28.7
Biodiversity 101: 7-12	2.36	14.6	15.3	40.1	29.9
<b>Two-Day Workshops</b>					
Illinois Amphibians and Reptiles: K-6	2.21	17.8	22.9	33.8	25.5
Illinois Amphibians and Reptiles: 7-12	2.42	12.7	15.3	42.7	29.3

Table 7. Obstacles to attending workshops

	Mean	Problem (1)	Percent Responding		
			Somewhat of a Problem (2)	Not a Problem (3)	Don't Know (0)
Too far to travel	1.87	26.8	42.0	15.9	15.3
Need pay for substitute teacher	1.95	33.1	28.7	28.7	9.6
Lack of time away from the classroom for professional development	1.98	27.4	39.5	25.5	7.6
Workshops don't address my needs	2.27	10.2	36.3	31.2	22.3
Not interested in environmental education	2.72	4.5	14.6	66.2	14.6

## Supplemental Material Needs

Respondents reported that a variety of supplemental materials and services would be helpful to their efforts in teaching environmental topics. Overall, forty percent or more reported that supplemental materials and services most helpful would include: environmental videotapes/movies; visits from local environmental specialists/professionals; field trip opportunities for their students; and lesson plans or curriculum guides. Respondents who teach fine art and language arts reported that supplemental materials are not helpful to them ( $p < .05$ ). Newer teachers with less tenure indicated that supplemental materials are very helpful to them ( $p < .05$ ).

Table 8. Usefulness of supplemental materials

(Scale: Very Helpful = 1; Helpful = 2, Somewhat Helpful = 3; and Not Helpful = 4)

	Overall Mean	Percent Reporting Very Helpful or Helpful		
		Elementary	Middle School	High School
Environmental videotapes/movies	1.72	87.8	78.8	78.3
Local environmental specialists/professionals	1.78	80.5	81.9	65.2
Field trip opportunities	1.79	84.1	72.7	60.8
Lesson plans or curriculum guides	1.83	81.7	70.6	69.5
Training workshops	1.84	79.3	81.8	69.5
Environmental magazines	1.93	85.3	51.5	43.4
Special in-school supplemental programs	1.95	79.3	60.6	56.52
Games / Student activities	1.97	78.0	60.6	60.8
Environmental Books	2.02	71.9	63.7	65.2
Environmental posters	2.10	68.3	57.5	43.4
Software programs	2.16	60.9	72.8	56.5
Internet access	2.19	64.6	63.6	47.8
Supplemental text books	2.20	64.6	57.6	52.2
Environmental education CD-ROMs	2.22	57.4	69.7	43.4
Audio tapes	2.52	48.8	42.4	21.7
Grant writing workshops	2.56	30.5	51.6	30.4

## Teacher Involvement

The respondents were asked if they would be willing to assist the La Moine River Ecosystem Partnership with environmental education efforts. Only 5 respondents answered “yes”, and 23 respondents answered “maybe.” More respondents expressed interest in participating in the Illinois Department of Natural Resource’s Eco-Watch Program. Thirty-six respondents reported “yes”, and 56 reported “maybe.” Respondents who teach science reported interest in assisting the Partnership and the EcoWatch Program ( $p < .05$ ).

## Summary

According to the survey results, the La Moine River Ecosystem Partnership can fulfill its environmental education goals by providing funding for supplemental environmental education material and coordinating classroom visits and student field trips. The Partnership can also facilitate advanced training workshops for teachers. The results also suggest that the Partnership should contact science teachers for assistance with environmental education efforts and the EcoWatch Program. Suggested actions include:

- Fund development of environmental videotapes
- Coordinate classroom visits by environmental specialists
- Coordinate field trip opportunities for students
- Facilitate training workshops for elementary teachers in: environmental legislation, geology, ozone depletion/air quality, global warming, biodiversity, and preservation/land management
- Facilitate training workshops for middle school teachers in: environmental legislation and preservation/land management
- Facilitate training workshops for high school teachers in: environmental legislation, geology, and climate/weather
- Facilitate training workshops in methods of teaching environmental topics
- Facilitate training workshops in developing environmental lesson plans and curriculum

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