

Gray Family Foundation's Competitive Grant Program

2011-2014

**A Summative Evaluation
of Four Years of Grant Making**



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Gray Family Foundation Vision

We seek an Oregon:

- Where people work together to actively shape communities that are robust, resilient, and sustainable.
- That is inclusive, equitable, and diverse.
- Where multi-disciplinary knowledge informs decisions and enables people to think through solutions to complex problems.
- That is known for the wealth of its communities and natural areas.

Gray Family Foundation Mission

Engage the people of Oregon to become active stewards of their natural and built communities.

Summary of Evaluation Report

The competitive grant program is one of the Gray Family Foundation's avenues for achieving its vision and mission. The competitive grant program supports outdoor school, teacher professional development and community field trips. From 2011-2014 the competitive grant program provided financial and evaluation support for three hundred and nineteen educational projects. Over 3 million dollars were granted, directly serving nearly 80,000 Oregonians during four years. The educational projects were spread throughout Oregon and distributed equitably according to population. More densely populated areas in the Willamette Valley received greater support, while less populated areas of Eastern Oregon received less support.

Grant projects concentrated their support to youth in middle school, though youth in Pre-K to 12th were served. Likewise, teacher professional development projects concentrated around middle school, though supported teachers of all grades. Nearly all programs had an outdoor field component (95.2%). The most frequently visited locations were water sources, farms/gardens and natural areas/parks. Of the Gray Family Foundation's four evaluation goals, there were no distinct trends among the types of programs. Goal #1, "Strengthening and developing programs that provide outdoor experiences for youth," was the most frequently identified. Evaluation indicated that most programs met or exceeded their goals and objectives. Less than 20% of programs failed to meet their objectives.

Evaluation reports indicate that programs focused on developing participants' knowledge and cultivating environmental dispositions, or attitudes. The most frequently cited effect or impact of a program was regarding developing new understanding of physical and ecological systems. Reports often included statements like: "[students showed] increased understanding of populations and resources, how energy flows through an ecosystem...and the importance of maintaining biodiversity." The development of new competencies (skills) and engagement in environmentally responsible behaviors were indicated far less frequently. The environmentally responsible behavior most frequently cited was related to eco-management (e.g., native planting, restoration, invasive removal).

Grant projects highlighted successful initiatives and room for improvement. Projects cultivated partnerships, thoroughly engaged with their community, promoted diversity, carefully coordinated logistics and used precise evaluation tools to successfully run their programs. Scheduling, funding and evaluation were difficult for some projects, though many programs discussed strategies to mitigate these difficulties.

Contents

Introduction

Gray Family Foundation's Vision
Gray Family Foundation's Mission
Summary of Evaluation Report

Section 1: Impact and Extent of Competitive Grant Program for 2011-2014	1
Section 1: Summary	1
Section 1: At a Glance	1
Section 1.1: Total Dollar Amounts Awarded	2
Section 1.2: Did Projects Receive Entire Funding Request?	3
Section 1.3: Number of People Impacted	4
Section 1.4: Are Projects Meeting Their Target Numbers?	5
Section 1.5: How Much Did Projects Cost Per Person?	6
Section 1.6: Geographic Extent of Projects	7
Section 1.7: Who Participated?	8
Section 1.8: Where Did Projects Occur?	8
Section 1.9: Length of Participant Experience	8
 Section 2: Gray Family Foundation's Goals	9
Section 2: Summary	9
Section 2: At a Glance	9
Section 2.1: Project Alignment to the Gray Family Foundation's Four Goals	10
Section 2.2: Project Evaluation – How Well Did Projects Meet Their Goals?	11
 Section 3: The Impact of Projects – Evidence of Change in Environmental Literacy	12
Section 3: Summary	12
Section 3: At a Glance	12
Section 3.1: What Elements of Environmental Literacy were Developed?	13
Section 3.2: Evidence of Change in Knowledge	14
Section 3.3: Evidence of Change in Competencies (Skills)	15
Section 3.4: Evidence of Change in Dispositions (Attitudes)	16
Section 3.5: Evidence of Change in Environmentally Responsible Behaviors	17
 Section 4: Highlights, Lessons Learned and Looking Ahead	18
Section 4: Summary	18
Section 4: At a Glance	18
Section 4.1: Efforts and Examples Promoting and Valuing Diversity	19
Section 4.2: Project Implementation	20
Section 4.3: Project Evaluation	21
Section 4.4: Support for Projects that Develop Environmental Literacy	22
Section 4.4: Recommendations	23

Section 1:

Impact and Extent of Competitive Grant Program for 2011-2014

Section 1 Summary:

From 2011-2014 the competitive grant program provided financial and evaluation support for three hundred and nineteen educational projects. Over 3 million dollars were granted, directly serving nearly 80,000 Oregonians during four years. The average cost per program was \$617 dollars per person served. The educational projects were spread throughout Oregon and distributed equitably according to population. More densely populated areas in the Willamette Valley received greater support, while less populated areas of Eastern Oregon received less support.

Section 1 at a Glance:

- \$3,083,151 total dollars were awarded over four years to three hundred and nineteen projects
- \$9,883.12 awarded on average per project
- Outdoor school programs received the most grants of three main types of projects (outdoor schools, community field trips and teacher professional development)
- Projects did not always receive full funding. On average, projects received \$6,122 than they requested.
- 79,844 people were directly impacted over four years
- 184,583 people were indirectly impacted over four years
- Projects served 65.7% of their targeted population. In total, 121,467 people were directly targeted and 79,844 people were directly reached.
- Projects costed, on average, \$617.24 per person directly served
- Projects costed, on average, \$399.09 per person directly and indirectly served.
- 93.8% of projects had additional funding support beyond the Gray Family Foundation.
- Grant projects concentrated their services on middle school youth and teachers
- Roughly 25% of outdoor schools worked with high school volunteers
- 95% of all projects had an outdoor field component
- Data from 51 of the 319 projects were not included in most of the analysis because of missing or incomplete reporting.

Section 1.1 Total Dollar Amounts Awarded

The Gray Family Foundation awarded \$3,083,151 total dollars over four years to three hundred and nineteen projects. On average \$9,883.12 was awarded per project. Outdoor school programs received the most grants of three programs, 126 in total. Teacher professional development projects were, on average, awarded similar dollar amounts per project as outdoor schools. Community field trips received ~20% less per project. There were seven unique projects that fell into the 'other' category (e.g. research or web development). Table 1.1 provides detail for the total and average amounts awarded for each of the types of projects. Data from 51 of the 319 projects were not included in the analysis represented in Table 1.1 because of missing or incomplete reporting.

Table 1.1 Gray Family Foundation Competitive Grants Program 2011-2014 – Total and Average Amounts Awarded

Table shows the total amount of money distributed to grantees for each of the four grant cycle years, four types of grant programs and combined totals. *Data from 51 of 319 projects were not included because missing or incomplete reporting.

Grant Cycle	Outdoor School Programs	Community Field Trips	Teacher Professional Development	Other Projects	All Projects
2011 Grant Cycle	total: \$414,666 average: \$11,518.50 n = 36	total: \$136,561 average: \$8,535.06 n = 16	total: \$169,032 average: \$11,268.80 n = 15	total: \$12,500.00 average: \$6250.00 n=2	total: \$732,759 average: \$10,610.70 n = 69
2012 Grant Cycle	total: \$294,500 average: \$11,326.00 n = 26	total: \$180,563 average: \$10,031.28 n = 18	total: \$135,888 average: \$11,324.00 n = 12	total: \$6,500.00 average: \$3,250.00 n=2	total: \$617,451 average: \$10,645.71 n = 58
2013 Grant Cycle	total: \$305,750 average: \$10,191.67 n = 30	total: \$196,085 average: \$8,525.43 n = 23	total: \$120,633 average: \$8,616.64 n = 14	total: \$18,500.00 average: \$9,250.00 n=2	total: \$640,968 average: \$9,289.39 n= 69
2014 Grant Cycle	total: \$318,600 average: \$9370.59 n = 34	total: \$162,430 average: \$7,062.17 n = 23	total: \$171,467 average: \$12,247.64 n = 14	total: \$5,000 average: \$5,000 n = 1	total: \$657,497 average: \$9,131.90 n = 72
2011-2014 Grant Cycles	total: \$1,333,516 average: \$10,583.46 n = 126	total: \$675,639 average \$8,445.49 n = 80	total: \$597,020 average: \$10,854.91 n = 55	total: \$42,500 average: \$6,071.43 n = 7	total: \$2,648,675 average \$9,883.12 n = 268*

Section 1.2 Did Projects Receive Entire Funding Request?

Projects did not always receive full funding. On average, projects received \$6,122 less than they requested. Community field trips and 'other projects' received the highest percentage of their funding request. Outdoor schools received the lowest percentage of their requests. During the four years, on average, an outdoor school program received \$10,583.46 which was \$7,397.18 less than they requested. Table 1.2 details differences between requested and received amounts. Data from 51 of the 319 projects were not included in the analysis represented in Table 1.2 because of missing or incomplete reporting.

Table 1.2 Gray Family Foundation Competitive Grants Program 2011-2014 – Difference Between Requested and Received Amounts Table shows the average difference between requested and received amounts of money for each of the four grant cycle years, four types of grant programs and combined totals. *Data from 51 of 319 programs were not included because missing or incomplete reporting.

Grant Cycle	Outdoor School Programs	Community Field Trips	Teacher Professional Development	Other Projects	All Projects
2011 Grant Cycle	average: \$9,285.17 n = 36	average: \$2,969.47 n = 16	average: \$9,641.04 n = 15	average: \$3,750.00 n = 2	average: \$7,737.58 n = 69
2012 Grant Cycle	average: \$7,833.85 n = 26	average: \$5,632.04 n = 18	average: \$5,005.29 n = 12	average: \$500.00 n = 2	average: \$6,312.42 n = 58
2013 Grant Cycle	average: \$7,226.45 n = 30	average: \$3,479.74 n = 23	average: \$6,220.21 n = 14	average: \$0.00 n = 2	average: \$5,563.92 n = 69
2014 Grant Cycle	average: \$5,214.85 n = 34	average: \$4,857.91 n = 23	average: \$4,842.73 n = 14	average: \$0.00 n = 1	average: \$4,956.04 n = 72
2011-2014 Grant Cycles	average: \$7,397.18 n = 126	average: \$4,258.18 n = 80	average: \$6,537.46 n = 55	average: 1,214.29 n = 7	average: \$6,122.23 n = 268*

Section 1.3 Number of People Impacted

In total, 79,844 people were directly impacted over four years and 184,583 people were indirectly impacted over four years. Community field trips directly affected the most people, totaling 40,593 and averaging 534 people per project. Teacher professional development activities had the largest indirect impact. This accounts for the many students that each teacher goes on to work with after a project. Table 1.3 details the number of people impacted for each type of program. Data from 51 of the 319 projects were not included in the analysis represented in Table 1.3 because of missing or incomplete reporting.

Table 1.3 Gray Family Foundation Competitive Grants Program 2011-2014 – Number of People Impacted Table shows the total and average number of people directly and indirectly impacted for each of the four grant cycle years, four types of grant projects and combined totals. Data from 51 of 319 projects were not included because missing or incomplete reporting.

Grant Cycle	Outdoor School Programs	Community Field Trips	Teacher Professional Development	Other Programs	All Programs Combined
2011 Grant Cycle	total direct: 4,981 average direct: 138	total direct: 6,287 average direct: 393	total direct: 6,639 average direct: 474	total direct: 86 average direct: 43	total direct: 17,993 average direct: 264
	total indirect: 4,981 average indirect: 138	total indirect: 11,987 average indirect: 749	total indirect: 13,506 average indirect: 964	total indirect: 86 average indirect: 43	total indirect: 30,560 average indirect: 449
2012 Grant Cycle	total direct: 4,954 average direct: 190	total direct: 15,652 average direct: 921	total direct: 1,420 average direct: 142	total direct: 115 average direct: 58	total direct: 22,141 average direct: 402
	total indirect: 4,954 average indirect: 190	total indirect: 21,330 average indirect: 1255	total indirect: 20,812 average indirect: 1892	total indirect: 115 average indirect: 58	total indirect: 47,211 average indirect: 843
2013 Grant Cycle	total direct: 9,263 average direct: 309	total direct: 8,161 average direct: 371	total direct: 3,484 average direct: 290	total direct: 40 average direct: 20	total direct: 20,948 average direct: 322
	total indirect: 9,263 average indirect: 309	total indirect: 15,361 average indirect: 698	total indirect: 18,796 average indirect: 1446	total indirect: 18,040 average indirect: 9,020	total indirect: 61,460 average indirect: 917
2014 Grant Cycle	total direct: 6,529 average direct: 192	total direct: 10,493 average direct: 500	total direct: 1,720 average direct: 123	total direct: 20 average direct: 20	total direct: 18,762 average direct: 268
	total indirect: 6,529 average indirect: 192	total indirect: 10,493 average indirect: 500	total indirect: 28,310 average indirect: 2,022	total indirect: 20 average indirect: 20	total indirect: 45,352 average indirect: 648
2011-2014 Grant Cycles	total direct: 25,727 average direct: 204	total direct: 40,593 average direct: 534	total direct: 13,263 average direct: 265	total direct: 261 average direct: 43	total direct: 79,844 average direct: 309
	total indirect: 25,727 average indirect: 204	total indirect: 59,171 average indirect: 779	total indirect: 81,424 average indirect: 1,566	total indirect: 18,261 average indirect: 2,609	total indirect: 184,583 average indirect: 707

Section 1.4 Are Projects Meeting Their Target Numbers?

In total, 121,467 people were directly targeted and 79,844 people were reached, directly. Community field trips came closest to reaching their targets, directly reaching 97.2% of their targeted number. Both community field trips and teacher professional development exceeded their targets indirectly; teacher professional development exceeded numbers indirectly by nearly 3.5 times. Outdoor school programs reached 46.1% of their targeted number. These figures, targeted vs reached numbers, do not account for the partial funding that projects received. On average, outdoor schools received 58.8% of their funding. Considering this partial funding, outdoor school programs were close to meeting their target numbers. Table 1.4 details the targeted and reached numbers of each type of project. Data from 51 of 319 projects were not included because missing or incomplete reporting.

Table 1.4 Gray Family Foundation Competitive Grants Program 2011-2014 – Number of People Targeted vs Reached Table shows the number of people directly targeted, directly reached and indirectly reached for each of the four types of grant projects and combined totals during the 2011-2014 grant cycles combined. Data from 51 of 319 projects were not included because missing or incomplete reporting.

	Outdoor School Programs	Community Field Trips	Teacher Professional Development	Other Projects	All Projects
2011-2014 Grant Cycles	# directly targeted: 55,838 people	# directly targeted: 41,753 people	# directly targeted: 23,592 people	# directly targeted: 284 people	# directly targeted: 121,467 people
	# directly reached: 25,727 people	# directly reached: 40,593 people	# directly reached: 13,263 people	# directly reached: 261 people	# directly reached: 79,844 people
	# indirectly reached: 25,727 people	# indirectly reached: 59,171 people	# indirectly reached: 81,424 people	# indirectly reached: 18,261 people	# indirectly reached: 184,583 people

Section 1.5 How Much Did Projects Cost Per Person?

Projects costed, on average \$617.24 per person directly served and \$399.09 per person indirectly served. Teacher professional development projects cost, on average, the most per person directly served at \$1,646.37. When considering the number of people indirectly served, teacher professional development projects cost decreased to \$658.18 per person. Community field trips were the least expensive and cost, on average, \$279.26 per person directly served. Outdoor schools cost, on average, \$377.13 per person. Table 1.5 details the cost of each type of project per person. Data from 51 of 319 projects were not included because missing or incomplete reporting. Data from 51 of 319 projects were not included because missing or incomplete reporting.

Table 1.5 Gray Family Foundation Competitive Grants Program 2011-2014 – Cost of Project Per Person Table shows the average cost of a project per person both directly and indirectly impacted for each of the four grant cycle years, four types of grant projects and combined totals. Data from 51 of 319 projects were not included because missing or incomplete reporting.

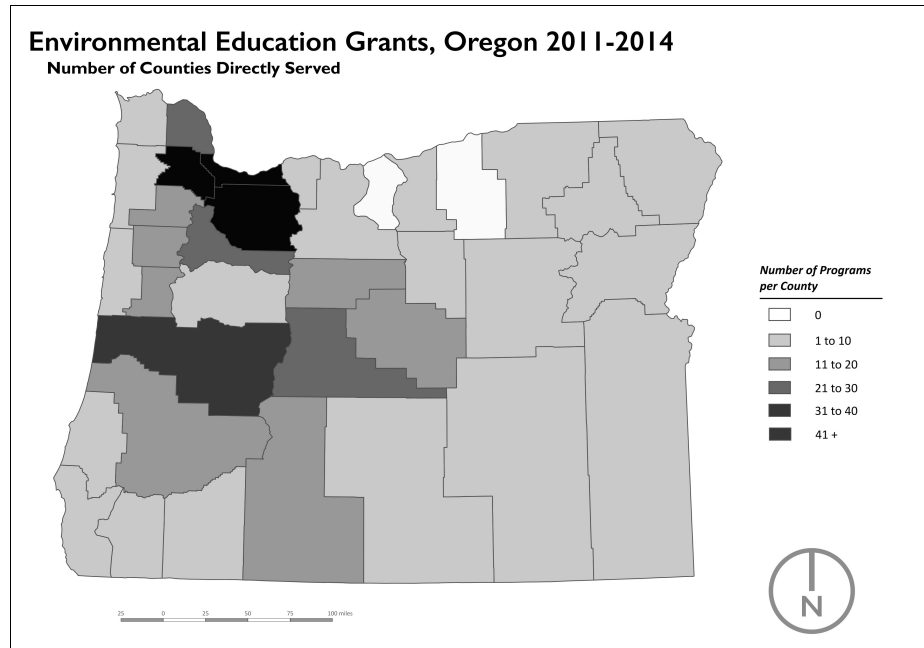
Grant Cycle	Outdoor School Programs	Community Field Trips	Teacher Professional Development	Other Projects	All Projects
2011 Grant Cycle	average direct: \$434.64/person	average direct: \$299.69/person	average direct: \$1,365.81/person	average direct: \$294.59/person	average direct: \$614.25/person
	average indirect: \$434.64/person	average indirect: \$276.64/person	average indirect: \$619.86/person	average indirect: \$294.59/person	average indirect: \$430.99/person
2012 Grant Cycle	average direct: \$323.14/person	average direct: \$235.06/person	average direct: \$1,250.15/person	average direct: \$260.51/person	average direct: \$479.21/person
	average indirect: \$323.14/person	average indirect: \$202.93/person	average indirect: \$468.16/person	average indirect: \$260.51/person	average indirect: \$311.67/person
2013 Grant Cycle	average direct: \$415.15/person	average direct: \$175.72/person	average direct: \$1565.76/person	average direct: \$233.75/person	average direct: \$545.75/person
	average indirect: \$415.15/person	average indirect: \$157.13/person	average indirect: \$665.36/person	average indirect: \$118.47/person	average indirect: \$369.44/person
2014 Grant Cycle	average direct: \$311.52/person	average direct: \$407.95/person	average direct: \$2,279.03/person	average direct: \$600.00/person	average direct: \$809.16/person
	average indirect: \$311.52/person	average indirect: \$407.95/person	average indirect: \$839.12/person	average indirect: \$600.00/person	average indirect: \$473.19/person
2011-2014 Grant Cycles	average direct: \$377.13/person	average direct: \$279.26/person	average direct: \$1646.37/person	average direct: \$323.99/person	average direct: \$617.24/person
	average indirect: \$377.13/person	average indirect: \$261.84/person	average indirect: \$658.18/person	average indirect: \$278.16/person	average indirect: \$399.09/person

Section 1.6 Geographic Extent of Projects

Projects were spread throughout Oregon and distributed equitably according to population. More densely populated counties in the Willamette Valley received greater support, while less populated areas of Eastern Oregon received less support. The second map shows that more grants supported, per capita, areas of Eastern Oregon. However, many of these counties have less than 10,000 residents. Counties like Wheeler, Wallowa and Harney show 6 to 8 projects per 10,000 residents, but the map shows extrapolations with less than 10,000 residents in each of these counties. The per capita map indicates a relatively equitable distribution of support throughout Oregon.

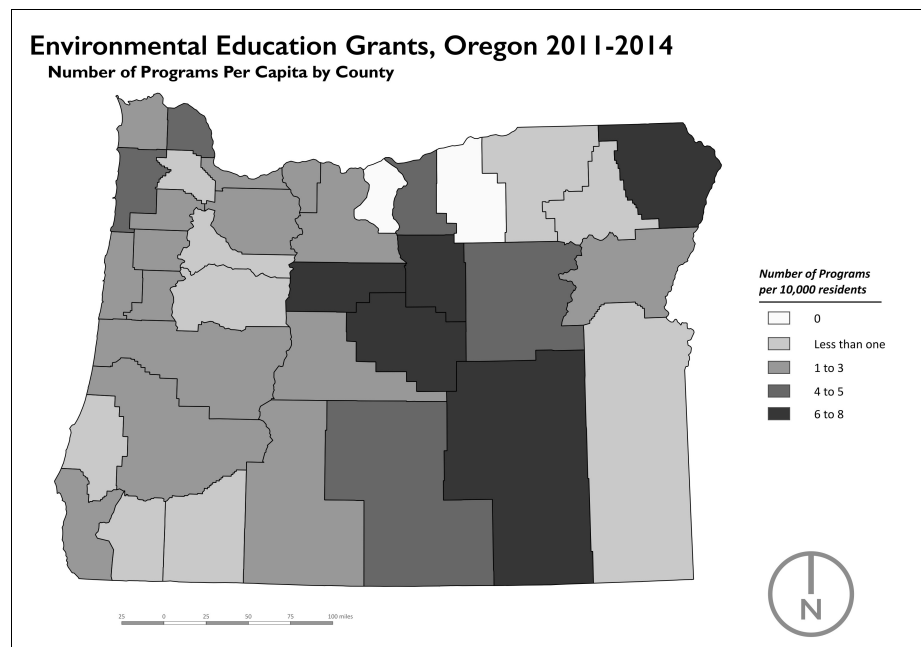
Total Number of Grants Per County:

- The Total Number of Projects was Highest in Densely Populated Counties within Willamette Valley.
- Fourteen Projects Indicated a Statewide Scope and were Not Included in These Maps.



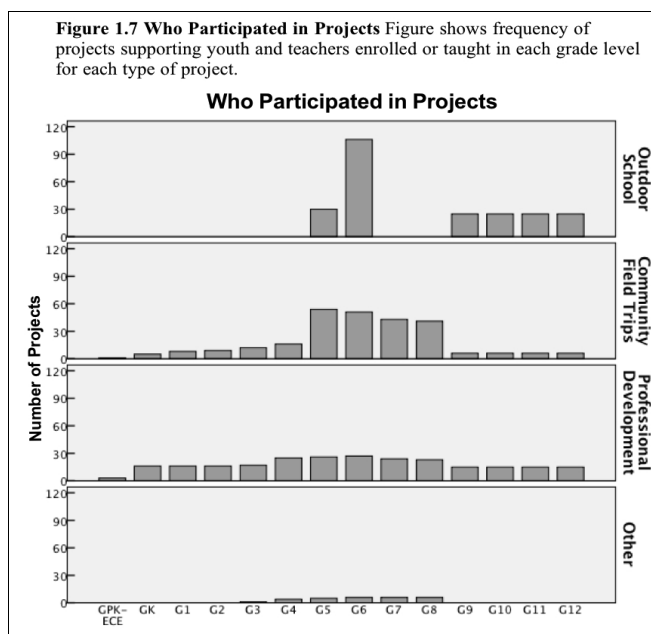
Number of Grants per Capita by County:

- The Number of Projects Per Capita Considers Population and Showed More Equitable Geographic Distribution of Grant Support.
- Many Counties in Eastern Oregon had less than 10,000 residents and Should be Considered an Extrapolation



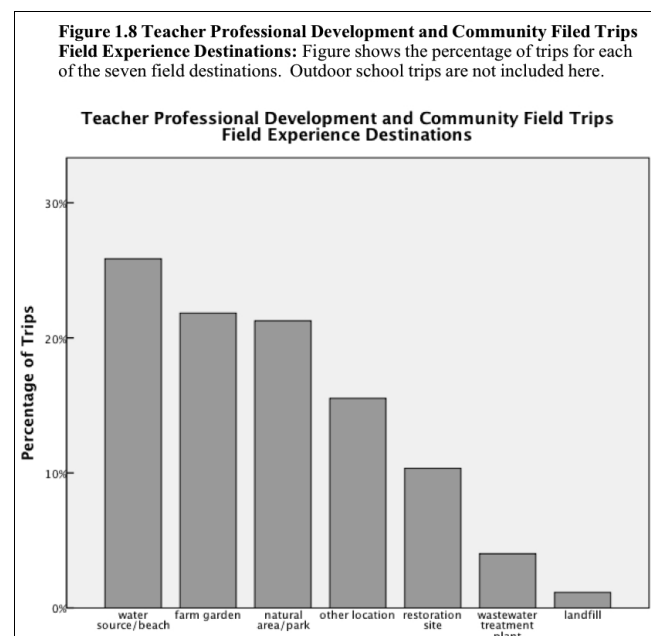
Section 1.7: Who Participated?

Overall, grant projects concentrated their support to youth in middle school, though youth in Pre-K to 12th were served. Likewise, teacher professional development projects concentrated around middle school, though they did support teachers of all grades. Results indicate that roughly 25% of outdoor schools worked with high school volunteers. Very few community field trips supported youth in high school.



Section 1.8: Where Did Projects Occur?

Nearly all programs had an outdoor field component (95.2%). The most frequently visited locations were water sources, farms/gardens and natural areas/parks. Landfills and wastewater treatment plants were the least frequently visited sites. Restoration sites often occurred at natural areas and parks. They were however listed as restoration sites when eco-management activities occurred (e.g., native planting, invasive removal).



Section 1.9 Length of Participant Experience

Most students participating in outdoor school programs spent between two and four nights in the field. About 10% of programs indicated they spent five nights in the field; one program indicated ten nights total. Only 45% of community field trip and teacher professional development projects reported how much time they spent in the field. Those teacher professional development and community field trip projects reporting the amount of time averaged 3.5 days in the field.

Section 2:

Gray Family Foundation's Goals

Section 2 Summary:

Competitive grant projects identified and pursued one or more of the Gray Family Foundation's four goals during the 2011-2014 grant cycles. There were up to seventeen objectives which corresponded to these goals. Programs evaluated their success at reaching these goals and objectives. Of the Gray Family Foundation's four evaluation goals, there were no distinct trends among the types of programs. Goal #1, "Strengthening and developing programs that provide outdoor experiences for youth," was the most frequently identified. Goal #4, Encouraging programs that explore and integrate boundaries between art and science and connect creativity with the natural environment," was the least frequently identified. Evaluations indicated that most programs met or exceeded their goals and objectives. Less than 20% of programs failed to meet their objectives.

Section 2 At a Glance:

- Outdoor school programs most frequently identified goal #1.
- Community field trip programs most frequently identified goals #1 and #2.
- Teacher professional development programs most frequently identified goal #3.
- Goal #4 was the least frequently identified.
- Over 80% of projects met or achieved their stated goals and objectives.
- All types of projects performed relatively the same.
- There were no clear patterns in performance according to specific goals (e.g., programs that identified goal #1, performed relatively the same as programs that identified goal #2).

Section 2.1 Project Alignment the Gray Family Foundation's Four Goals:

Of the Gray Family Foundation's four evaluation goals, there were no distinct trends among the types of programs. Goal #1, “Strengthening and developing programs that provide outdoor experiences for youth,” was the most frequently identified. Goal #4 “Encouraging programs that explore and integrate boundaries between art and science and connect creativity with the natural environment,” was the least frequently identified. Community field trips and teacher professional development often identified several goals.

Gray Family Foundation Goals:

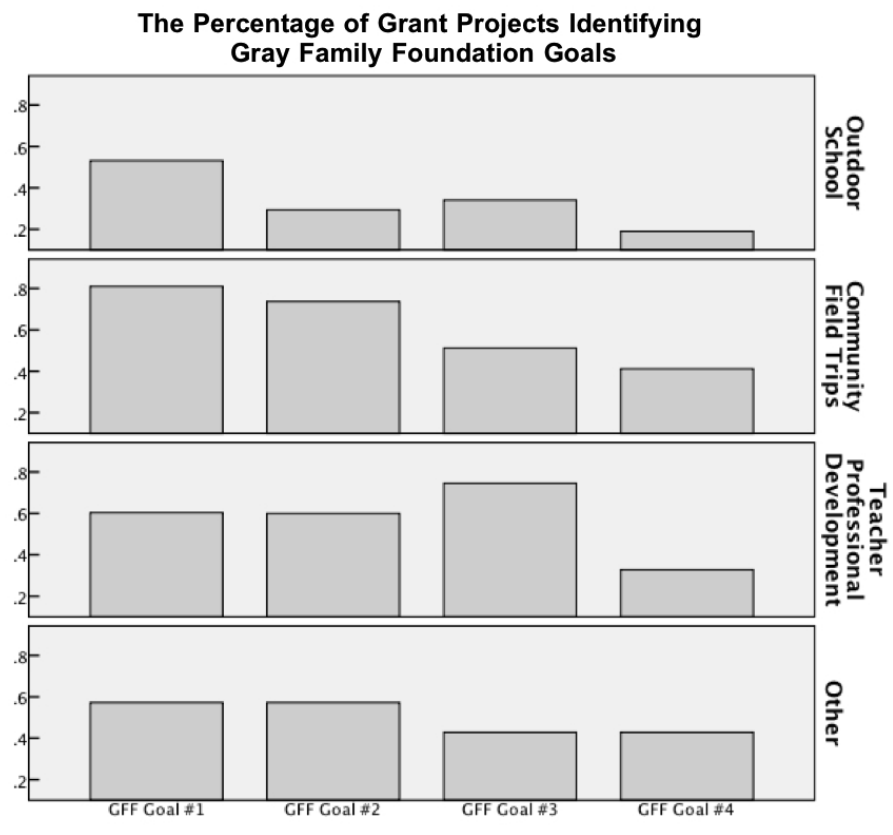
#1) Strengthening and developing programs that provide outdoor experiences for youth.

#2) Creating, expanding and improving programs that connect schools with their communities and provide students with practical hands-on experience in addressing environmental issues both locally and globally.

#3) Supporting programs committed to creating comprehensive, significant lasting change in educational systems, fostering improved understanding of and interaction with our natural systems.

#4) Encouraging programs that explore and integrate boundaries between art and science and connect creativity with the natural environment.

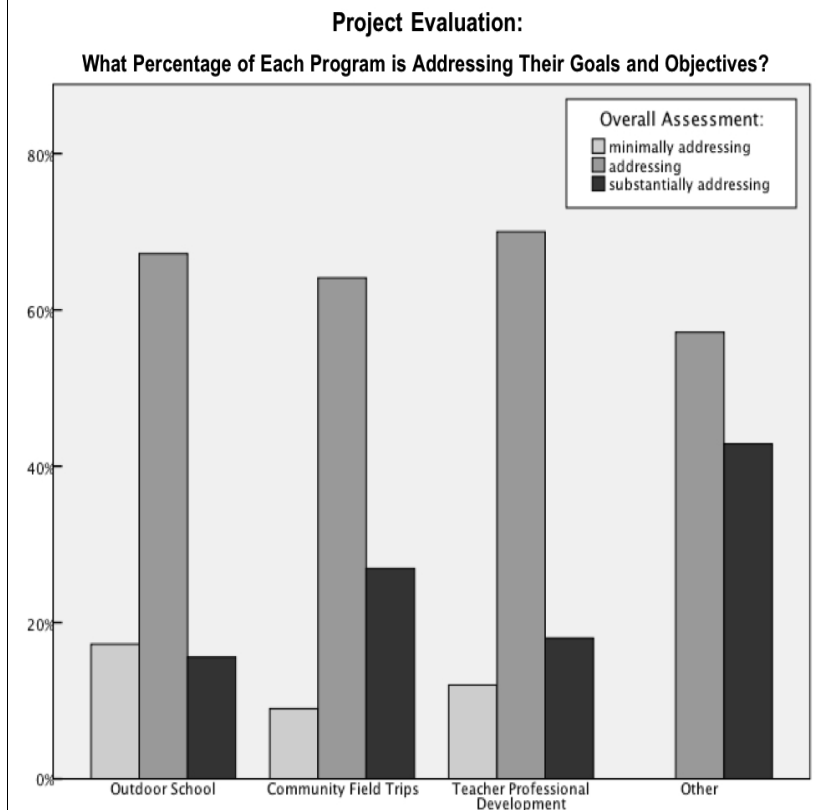
Figure 2.1 The Percentage of Grant Projects Identifying Gray Family Foundation Goals
Figure shows, for each of the types of grant projects, the percentage of projects (represented as a decimal) which identified and pursued each of the four Gray Family Foundation's goals.



Section 2.2 Project Evaluation – How Well Did Projects Meet Their Goals and Objectives?

Projects were evaluated according to the goals and objectives identified in their proposals. Considering all of the listed goals and objectives projects were scored as either minimally addressing, addressing or substantially addressing these goals and objectives. A frequently cited objective was “As a result of the program or curriculum, the number of individuals participating in nature-oriented experiences will increase.” Objectives like this were considered *minimally addressing* when programs did not achieve participation targets. In one case a project report included: “[it was difficult] finding classes within the target student grade levels to participate in the program.”

Figure 2.2 Project Evaluation Figure shows, for each of the type of grant projects, the percentage of projects that are either minimally addressing, addressing or substantially addressing their identified goals and objectives.



Over 60% of all Projects Addressed Their Goals and Objectives

“[Students] understand the major hydrologic factors in Deschutes river and Tumalo creek.”

“86% of the teachers report that they increased their knowledge of the Oregon Environmental Literacy Plan and ways to integrate it into their curriculum.”

More than 20% of all Projects Substantially Addressed Their Goals and Objectives

“Class sizes were bigger than expected.”

“Students are very positive about their engagement, feel like they are, 'making a difference' and displaying high levels of attendance and participation.”

Less than 20% of all Projects Minimally Addressed Their Goals and Objectives

“We were not able to overcome some technology obstacles to create an 'electronic' group.”

“Initially a pre-test was given with multiple-choice questions based on anticipated concepts that would be covered at outdoor school. However, most of the questions weren't covered.”

“It took us longer to get the elementary school program going than anticipated.”

Section 3:

The Impact of Projects – Evidence of Change in Environmental Literacy

Section 3 Summary:

Evaluation reports indicate that programs focused on developing participants' knowledge and cultivating environmental attitudes, or dispositions. The most frequently cited effect or impact of a program was regarding the development of new understandings of physical and ecological systems. Reports often included statements like: “[students showed] increased understanding of populations and resources, how energy flows through an ecosystem...and the importance of maintaining biodiversity.” The development of new skills, or competencies, and engagement in environmentally responsible behaviors were indicated far less frequently. The environmentally responsible behavior most frequently cited was related to eco-management (e.g., native planting, restoration, invasive removal).

Section 3 at a Glance:

- 42% of all reported project outcomes provided evidence of knowledge gains; most frequently regarding physical and ecological systems.
- 26% of all reported project outcomes provided evidence of change in attitudes (dispositions); most frequently showing environmental sensitivity.
- 15% of all reported project outcomes provided evidence of skill (competencies) development; most frequently the ability to investigate environmental issues using primary and secondary sources.
- 17% of all reported project outcomes provided evidence of environmentally responsible behaviors; most frequently eco-management (e.g., native planting, restoration, invasive removal).

Section 3.1 What Domains of Environmental Literacy were Developed?

Environmental literacy is understood to have four elements or domains. Within the context of this analysis, The four domains are knowledge, dispositions (attitudes), competencies (skills) and environmentally responsible behaviors. Therefore, environmental literacy is unique from other types of literacies in that it includes attitudes and behaviors. Consider that geographic and scientific literacy involves two main components, skills and knowledge. The National Geography Standards have five geographic skills and 18 knowledge standards, while the Next Generation Science Standards have science and engineering practices (skills) and disciplinary core ideas (knowledge) and cross cutting concepts (knowledge). Environmental literacy recognizes that developing each and all of the four domains (knowledge, dispositions, competencies, and environmentally responsible behaviors) is iterative. Development of one domain may reinforce the development of another domain¹.

Evidence of Gains or Development of Knowledge was Most Frequently Provided – 42% of Occurrences

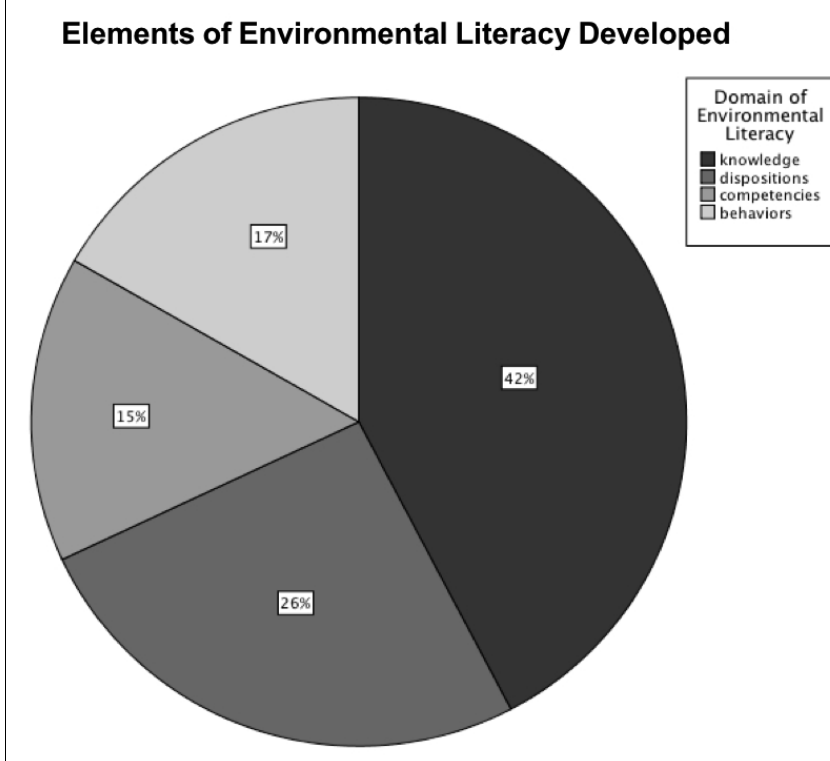
“I learned about rivers and impressed my parents by knowing about fluvial geomorphology.”

“Students concluded that vegetation is one of the major factors of a healthy river and the diversity of macros [i.e. stream insects].”

Evidence of Change in Attitudes were Provided Next Most Frequently – 26% of Occurrences

“I absolutely love ODS! Science, well, it is more fun (wait, correction, 10 million times more fun)! I love the hands on stuff, and can’t wait for soil field study! WHOO- HOO!”

Figure 3.1 Domains of Environmental Literacy Figure shows the percentage of each of all reported project outcomes classified according to each of the four domains of environmental literacy.



¹ For further information see:

NGSS Lead States. 2013. *Next Generation Science Standards: For States, By States*. Washington, DC: The National Academies Press.

Geography Education Standards Project, *Geography for Life: National Geography Standards 2012*, Volume 2.

Hollweg, K. S., Taylor, J. R., Bybee, R. W., Marcinkowski, T. J., McBeth, W. C., & Zoido, P. (2011). *Developing a framework for assessing environmental literacy*. Washington, DC: North American Association for Environmental Education.

Section 3.2 Evidence of Change in Knowledge:

Evaluation reports indicate that programs focused on developing participants' knowledge. Knowledge gains were categorized by the type (e.g., knowledge of physical and ecological systems) and by the level of attainment (e.g., nominal, functional, operational). When projects demonstrated their impacts, statements and data provided evidence of gains in knowledge 42% of the time. The most frequently cited effect or impact of a program was regarding developing new understanding of physical and ecological systems at a functional level. Reports often included statements like: “[students showed] increased understanding of populations and resources, how energy flows through an ecosystem...and the importance of maintaining biodiversity.”

There are Five 'Types' of Knowledge Within Environmental Literacy:

1.) Knowledge of Physical and Ecological Systems

2.) Knowledge of social, cultural and political systems

“increased their understanding of sustainability, specifically in regards to the three pillars of sustainability, environment, economy and equity.”

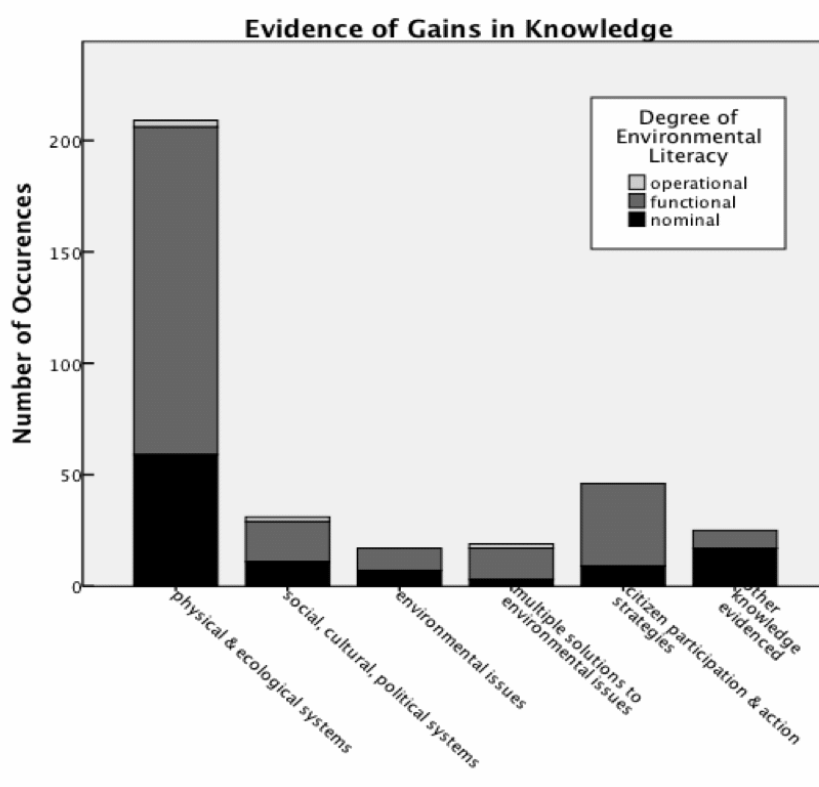
3.) Knowledge of Environmental Issues

4.) Knowledge of Multiple Solutions to Environmental Issues

5.) Knowledge of Citizen Participation and Action Strategies

“86% of the teachers report that they increased their knowledge of the OELP and ways to integrate it into their curriculum”

Figure 3.2 Evidence of Gains in Knowledge Figure shows the number of occurrences of evidence of gains in knowledge for each of the types of knowledge within environmental literacy.



Each Type of Knowledge was Considered According to the Degree of Environmental Literacy Represented:²

Degree	Example
Nominal (Low)	Name the watershed you live in - Pre 35% and Post 100%
Functional	<i>“We also learned about pore spaces and an area where people step on usually have small pore spaces and a spot with large pore spaces usually is a place where people and things do not step.”</i>
Operational	<i>“I watched [student's name] initiate leadership in our discussions of adjudication of water rights in Klamath County, the pros/cons of dam removal and the coordination and documentation of raising Rainbow Trout for the Fish and Wildlife.”</i>

² See Roth, C. (1992). *Environmental literacy: Its roots, evolution, and directions in the 1990s*. Columbus, OH

Section 3.3 Evidence of Change in Competencies (Skills):

Evaluation reports indicate that programs did not focus on developing participants' competencies. Competencies gains were categorized by the type and level of attainment. When projects demonstrated their impacts, statements and data provided evidence of gains in competencies only 15% of the time. The most frequently cited effect or impact of a program was regarding participants' ability to investigate environmental issues using primary and secondary sources of information. Reports often included statements like: "Students measured pH, turbidity and temperature to investigate the health of the river." Evidence demonstrating participants' ability to create and evaluate plans was also common.

There are Seven 'Types' of Competencies Within Environmental Literacy:

- 1.) Identify Environmental Issues
- 2.) Ask Relevant Questions
- 3.) Analyze Environmental Issues
- 4.) Investigate Environmental Issues

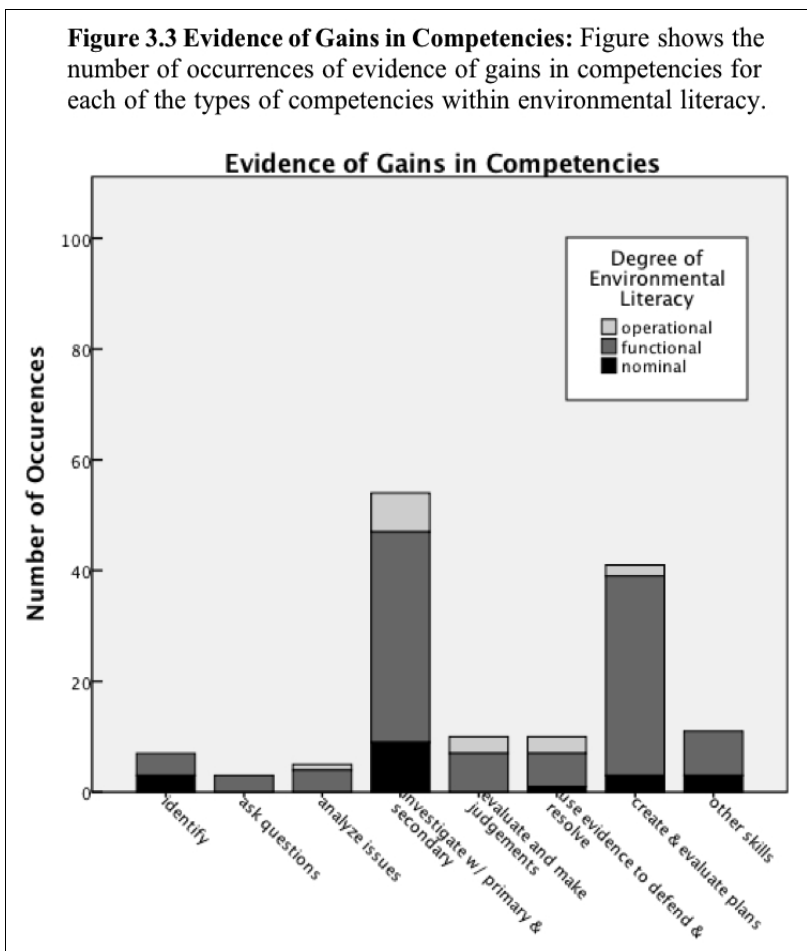
"Armed with nets and buckets students collected, sorted, and analyzed macroinvertebrates in two different areas ... [after] making health predictions based on riparian zone features discussed in class."

- 5.) Evaluate and Make Personal Judgements about Environmental Issues

- 6.) Use Evidence to Defend Positions and Resolve Issues

- 7.) Create and Evaluate Plans to Resolve Environmental Issues

"[Participants] were able to deeply analyze and integrate equity, diversity, inclusion with environmental programs, practices, and policies"



Each Type of Competency was Considered According to the Degree of Environmental Literacy Represented:

Degree	Example
Nominal (low)	[Teachers can] get a hold of Natural Resource Specialists in their communities, and ... engage specialists with student projects.
Functional	[youth] constructed evidence based arguments that explained how our use of water and land resources affects watersheds
Operational	students could follow the inquiry process: question, hypothesis, data collection, analysis, presentation

Section 3.4 Evidence of Change in Disposition (Attitudes):

Evaluation reports indicate that programs focused on developing participants' dispositions. Disposition gains were categorized by the type and level of attainment. When projects demonstrated their impacts, statements and data provided evidence of gains in dispositions 26% of the time. The most frequently cited effect or impact of a program demonstrated environmental sensitivity. Reports often included statements like: “My child always liked nature, but this helped solidify her love for nature and open her eyes to new aspects.” Evidence demonstrating participants' motivations was also common.

There are Five 'Types' of Dispositions Within Environmental Literacy:

1.) Sensitivity

“The first time I went for a walk along the river I thought it was so beautiful. I felt like I belonged there like it has been calling my name for years. The forest is special to me because it is the only place where I can be alone. Nothing to bother me. The place I can be me. Another reason the forest is special to me is because I feel alive there. No one is the boss of me. I can do what I want and no one makes fun of me. I can be my own person.”

2.) Attitudes, Concern and Worldview

3.) Personal Responsibility

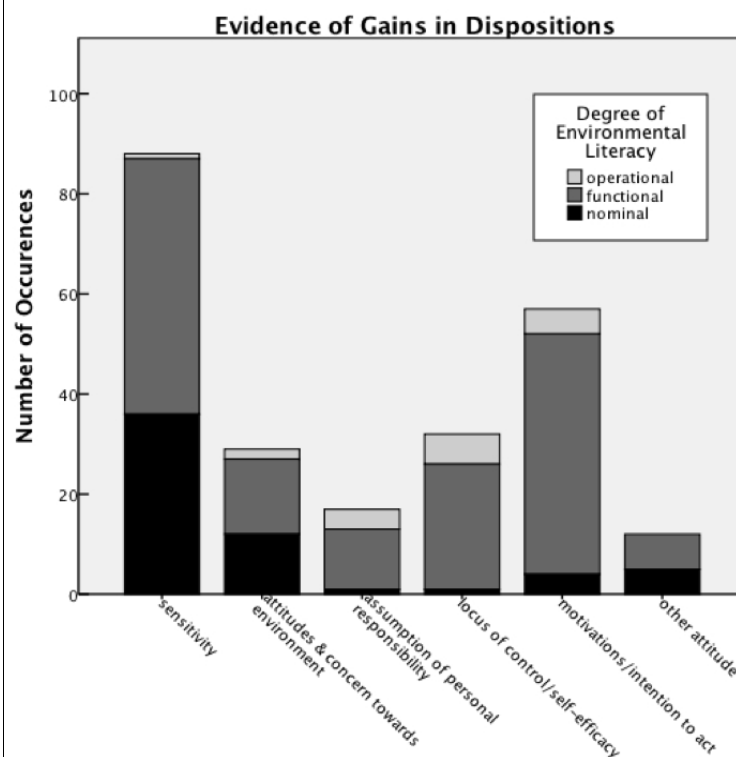
[teachers] self-identified as sustainability leaders

4.) Locus of Control/Self-Efficacy

“students are very positive about their engagement, feel like they are, “making a difference”

5.) Motivation and Intentions

Figure 3.4 Evidence of Gains in Dispositions: Figure shows the number of occurrences of evidence of gains in dispositions for each of the types dispositions within environmental literacy.



Each Type of Disposition was Considered According to the Degree of Environmental Literacy Represented:

Degree	Example
Nominal	Increase number of students said in “would rather play outside”
Functional	student discussed: “regret they felt about moving on from this project, and their hopes to continue to participate in ecological and restoration service projects.”
Operational	“I have taken so much from this experience! For starters, I was reminded of the strong need to protect our environment and different ways we can do so. I also became a significantly stronger leader thanks to the sometimes slightly overwhelming 6th graders! The importance of interactive experience and good ole fun were also reinforced in my mind after this trip. I cannot wait for next year!!

Section 3.5 Evidence of Change in Environmentally Responsible Behaviors:

Evaluation reports indicate that programs did not focus on promoting environmentally responsible behaviors. Behaviors were categorized by the type and level of attainment. When projects demonstrated their impacts, statements and data provided evidence of environmentally responsible behaviors 17% of the time. The most frequently cited was eco-management (e.g., native planting, restoration, invasive removal). Reports often included statements like: “Youth planted over 1,500 native trees and shrubs.” Educational or persuasive behaviors were also common. There was no evidence that legal action occurred.

There are Five 'Types' of Environmentally Responsible Behaviors:³

1.) Eco-Management

[Youth] planted elk and deer habitat with hunters association.

2.) Persuasion (Includes Teaching)

“seven of our students are working to protect urban wildlife, particularly birds, by creating and distributing “cat-bell cards” to educate pet owners about the threats cats pose to urban wildlife.”

3.) Consumer/Economic Action

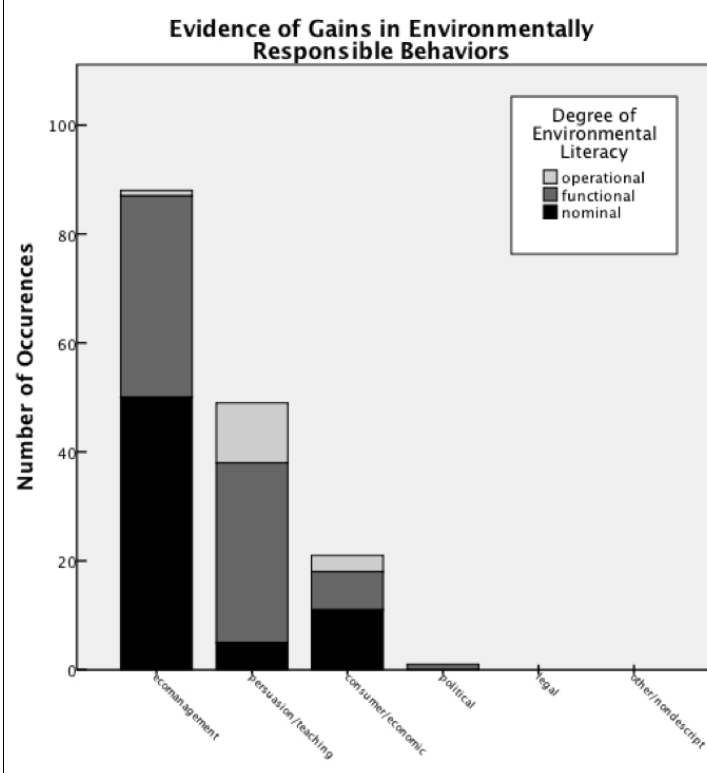
“Following a waste audit, the school reduced total waste by 19% and food waste by 33%”

4.) Political Action

[youth took] political initiative by letter writing for Outdoor School for All

5.) Legal Action

Figure 3.5 Evidence of Gains in Behaviors Figure shows the number of occurrences of evidence environmentally responsible behaviors for each of the types of environmentally responsible behaviors within environmental literacy.



Each Type of Behavior was Considered According to the Degree of Environmental Literacy Represented:

Degree	Example
Nominal	<i>Teachers report spending more time outdoors with their classes</i>
Functional	<i>“I have finally convinced my parents to let me plant a small garden at our house!”</i>
Operational	<i>[teachers] wrote seven additional unit plans aimed at engaging their students in learning activities aimed at enhancing their knowledge of their own community and place in ways that encourage civic involvement and stewardship</i>

3 Hungerford, H., & Peyton, R. (1980). A paradigm for citizen responsibility: Environmental action. In A. Sacks, et al. (Eds.). *Current issues VI: The yearbook of environmental education and environmental studies* (pp. 146-154).

Section 4:

Highlights, Lessons Learned and Looking Ahead

Section 4 Summary:

Grant projects highlighted successful initiatives and room for improvement. Programs cultivated partnerships, thoroughly engaged with their community, promoted diversity, carefully coordinated logistics and used precise evaluation tools to successfully run their programs. Scheduling, funding and evaluation were difficult for some projects, though many programs discussed strategies to mitigate these difficulties.

Section 4 at a Glance:

- Only 3.5% of the targeted population for outdoor school projects were expected not to attend.
- Projects made strong efforts to include and embrace diverse populations.
- Including and embracing diverse populations was valuable.
- Financial support for projects was valuable.
- Projects cultivated partnerships and built capacity.
- Projects demonstrated strategies for coordinating logistics.
- Projects demonstrated strategies for scheduling.
- Evaluation was both challenging for some projects.
- Quality evaluation was helpful for some projects.
- There was widespread for projects that develop environmental literacy

Section 4.1: Efforts and Examples Promoting and Valuing Diversity

Project coordinators made strong efforts to include youth and adults from diverse populations. Further, reports often indicated value or impact of including diverse populations. Coordinators worked to mitigate parent fears, provide scholarships to families with low income, provide individualized services to youth with disabilities, translate materials into native language and understand cultural differences. Only 3.5% of the targeted population for outdoor school projects were expected not to attend; reasons were very seldom financial. Outdoor schools worked to support economically disadvantaged youth. While fees ranged from \$0 – \$350 per child, the average was \$84.14 with 65.8% of families expected to contribute. Scholarships were often provided to youth who could not afford to attend.

Projects Made Strong Efforts to Include and Embrace Diverse Populations

Schools translated their materials, had parent information nights, provided scholarships, held fundraisers and secured donations

“Over the years our Hispanic families have been reluctant to send their children to outdoor school. There are a variety of reasons, not the least of which is feeling alienated from the school system. Huge efforts have been made to reach out to our Spanish speaking families. We host several events throughout the year that honor their heritage and its contribution and place in our school culture. We feel trust is increasing and families are feeling more comfortable within our schools. The number of hispanic kids that attended camp this year grew and supports this belief.”

The Value of Including and Embracing Diverse Populations

“One student...had autism and some other personal issues. His mother was very concerned about his ability to attend. We allow and encourage parent chaperones to attend our programs, so we made arrangements for the student and his mother to have their own cabin. The student was then able to be safe, have his dignity protected and still participate in the program to the fullest.”

“Students with behavioral issues or extremely reserved in typical school settings came out of their shell or were a great leader at ODS and then taking that experience back to the classroom.”

“students rallied to support [student in wheelchair]...working together to include him in activities”

Value of Financial Support

“The majority of [our] students will not have the opportunity to go on camping trips with their families or be able to afford summer camp”

“On the last day of school, I had the enjoyable task of letting this year’s fifth graders know that they will be attending outdoor school in the fall. Because our district has not attended ODS for at least 30 years, if ever, the students have no context for it. I watched their eyes light up as I explained what outdoor school is, and saw the excitement in the room growing. Then I noticed one student, a look of veritable concern on his face as his hand shot up. “How much does it cost?” he asked. I know a little about this student’s circumstances, and know that any cost would be prohibitive to his attendance of something like ODS. While our school always finds a way to make it work when a student’s family can’t pay for an activity, I know from experience that many kids growing up in poverty, especially middle-school kids, are acutely aware of the disparity between their means and those of their peers, and will often opt out of an activity if they have to receive “charity” in order to participate. The smile on my face couldn’t have been more genuine as I answered this particular question. “Thanks to a very generous grant from the Gray Family Fund...”

Section 4.2: Project Implementation

Grant projects highlighted successful initiatives and room for improvement. Programs cultivated partnerships and carefully coordinated logistics to successfully run their programs. Scheduling and funding were difficult for some projects, though many programs discussed strategies to mitigate these difficulties.

Cultivating Partnerships and Building Capacity

“Increased community volunteerism, particularly from local businesses, raises the visibility of [the] project and our mission.”

“we needed more volunteers to assist with group management and facilitate learning during small group activities, I underestimated. [This was] Handled by enlisting additional forest service volunteers at each site during field days.”

“we partnered with a Capstone class from Portland State University. Many of these field trips (and other fall trips) were led by PSU students. This is our fourth year of partnership with PSU. Each crop of PSU students is different.”

Coordinating Logistics

“For the 2012-2013 school year, we have specifically designated time and money in the administrative line item to make these procedures (coordinate supplies; collect and document monies, forms, medicines and medical concerns; schedules and curriculum for students not attending) run more smoothly.”

“A time line has been drafted for staff to reference to help ease some anxiety concerning the workload surrounding Outdoor School.”

Scheduling

“getting the OR licensed teachers to follow through on their commitment to attend the course, even after they registered for the course, was challenging when they had no financial investment to back up their commitment ... teachers were not as invested as they are when they actively search for a training such as ours and are grateful to find us.”

“[We] continue to face challenges when building ... professional development into the extremely busy teacher schedule.”

“schedule fieldwork on a master schedule months in advance if possible. This allows teachers to plan ahead and schedule coverage when extra staff is needed.”

Funding

“fundraising...[seek] support from the community. They rallied around our students, bought beef sticks, wreaths, held a Zumba-thon, donated money to students with special needs and gave us amazing support.”

“[we were] trying to raise \$160,000 - Once we were within 15 – 20 thousand dollars of our goal, people felt their donation would make a difference. We learned that the closer we are to our goal, the more willing folks are to contribute.”

Section 4.3: Project Evaluation:

Some projects had substantial problems with evaluation. Some projects did very little evaluation all together. On the other hand, some projects used their evaluation to demonstrate the success of their project to other funders and improve their projects.

Evaluation - Difficulties

“Evaluation presented a challenge. [We] discontinued it due to ineffectiveness.”

“needed to make the questions more simple for youth to understand and need to make sure that core ideas are clearly transmitted on to youth”

“difficult time measuring students’ ability to plant, tend, and harvest crops.”

Evaluation – Successes

“[We] developed a concise evaluation of our program results...the report will be used in the future to assist us in communicating the value of the ... program and the impact on the community.”

“We expect to more than double our outcome targets”

Section 4.4: Support for Projects that Develop Environmental Literacy:

Evidence of the widespread impacts and support for projects which develop environmental literacy was common. Reports often discussed interagency collaboration or community efforts to rally around a program and raise substantial sums of money. Several difficult to quantify impacts were shared. For example: “Eating a meal at a dinner table may be thought of as an everyday event, but many of the students commented that this was the first time they had sat down together and talked through a meal.”

Systemic Support

“This site provides a particularly strong demonstration of partnerships among local agencies; The participation of two elected officials (state senator and city councilor) was very encouraging.”

“we created a fieldwork and place-based curriculum coordinator who will oversee all outdoor learning K-8, work closely with teachers to better integrate classroom and outdoor studies, and will train staff how to safely lead students in the field.”

Widespread Impacts

“ [The college student partners are] new to both environmental education and to working with children. Most of them had never spent much if any time on a farm. By the end of the season, the students have gone through a transformation. Some take to the teaching with great skill, and some of these end up changing their major or career goals. Most of them gain quite a bit of confidence in their abilities.”

“regarding students who are struggling in typical school setting – we saw a marked change in... behavior, grades, attendance”

“we had teachers who were initially ambivalent or unsure about their role who became increasingly excited about making the curriculum changes necessary to better align their classes with the hands on fieldwork component and the Oregon Environmental Literacy standards.”

Section 4.5: Recommendations:

Educational projects which develop environmental literacy are diverse and numerous in Oregon. Moreover, the educational landscape in the state and county is rapidly changing. Oregon is in the forefront of this change, being one of the first states to adopt and implement a statewide environmental literacy plan. Oregon is a leader in outdoor education where the Oregon legislature recently passed the Outdoor School Bill (SB 439) and ~ 50% of all youth attend outdoor school.

The Gray Family Foundation is the largest private foundation in Oregon supporting educational projects that develop environmental literacy. The competitive grant program works towards achieving the mission and vision of the foundation. Recognizing the Foundation's mission, “[to] engage the people of Oregon to become active stewards of their natural and built communities,” several recommendations are provided. Recommendations are specific to both the Gray Family Foundation's competitive grant program and to educational projects. Geography, Environmental, Science, Outdoor, Natural Resources and Conservation Education are all growing and changing fields. One project coordinator said it well “NGSS is transforming the curriculum.”

Recommendations for Gray Family Foundation's Competitive Grant Program:

- Maintain use of ten objectives and keep consistent for future years.
- When possible, utilize survey-like reporting measures which are forced choice (e.g., clickable boxes and drop-down menus) and content specific (e.g., field only accepts numbers).
- Streamline and eliminate data input for future evaluation projects by using online survey platform (e.g., Qualtrics, SurveyPal).
- Provide further evaluation support (e.g., consultation, webinar) for programs struggling to adequately design and use their evaluation materials.
- Use automatic email reminders to secure evaluation materials.
- Work specifically with outdoor school programs to secure evaluation materials. Evaluation reports were most frequently missing from outdoor school programs.
- Eliminate or clarify redundancies in grant proposal (e.g., selecting goals on evaluation matrix and “aligning project to Gray Family Foundation's Goals” narrative).
- Request and distribute exemplary lesson plans in standardized format via Gray Family Foundation's or Oregon Environmental Literacy Program's website.
- Consistent with research for middle and younger aged youth, promote field visits to 'positive' environmental locations (e.g., water sources, natural areas, restoration sites) rather than 'discouraging' locations (e.g., landfills or polluted sites).

Recommendations for Grant Projects:

- Teach humanities, environmental literacy is more than earth and physical science.
- Develop competencies (skills) which transfer to different subject areas.
- Design evaluation materials that will inform future practice and demonstrate outcomes to other funders.
- Translate materials and hold information nights.
- Make accommodations for diverse learners.
- Involve students in process of supporting other students with unique needs.
- Recognize that fundraising can do more than bring in money, it can help build community.
- Design and propose realistic evaluation materials. What can you actually measure?
- Schedule far in advance and use incentives to promote follow-through.
- Cultivate partnerships with community members, private and public organizations.
- Demonstrate success to diverse stakeholders; cultivate support for similar projects.