



Metro
Parks and Nature
2018 Nature Education and Outdoor Experiences Grant
3/6/2018 deadline

Ecology in Classrooms and Outdoors Ecology Education in North Clackamas

\$ 57,700.00 Requested
\$ 120,900 Estimated Match

Submitted: 3/5/2018 7:23:50 PM (Pacific)

Project Contact

[Redacted]

Additional Contacts

none entered

Ecology in Classrooms and Outdoors

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Application Questions

1. Program summary (one paragraph, 255 characters)

Provide a brief summary that describes your program.

Ecology Education in North Clackamas engages 1,200 third through fifth grade students and 40 teachers each year for two years at five Title I elementary schools. Each classroom will receive four ecology lessons and a service-learning field trip.

2. Fiscal agent

If different than the lead organization. If no fiscal agent, please write "not applicable".

Not applicable

3. Program partners

Committed partner organizations.

N Clackamas School District: Milwaukie, Oak Grove, Bilquist, Lewelling, Whitcomb Elementaries, Clackamas Water Environment Services, Oak Lodge Water Services, The Wetlands Conservancy, Milwaukie Elks Lodge, Bilquist PTA, Oregon Forest Resources Institute

4. Potential partners

Potential partner organizations.

Wisdom of the Elders, Latino Outdoors, Verde, Schoolyard Farms, North Clackamas Urban Watersheds Council, Clackamas River Water Providers, City of Milwaukie, North Clackamas Parks and Recreation District, Oregon State Parks Foundation

5. Program length

(Select only one)

- One year
- Two years
- Three years

6. Program narrative (up to one page, 4000 characters)

Provide a narrative that describes the program. Explain why the program is important for your community and organization, such as how it fits your organization's strategic plan or mission.

The Ecology Education in North Clackamas program increases the environmental literacy and builds connections to nature for 1,200 underserved students in five Title I schools per year, for two years (40 classrooms annually). Each class receives four 45-minute ECO lessons in their classroom and one service-learning field trip at a nearby natural area to participate in habitat restoration and improve the environmental health of their community. During these real-world, on-going restoration efforts, students will work on invasive plant removal and native plantings depending on the specific needs of each site. Cumulative visits build students' conceptual knowledge of ecology, enhance understanding of natural science, develop science literacy and increase critical thinking skills. These five schools average sixty-four percent (64%) of students eligible for free or reduced lunch, and the racial/ethnic composition of is as follows: Caucasian (56%), Hispanic (32%), African American (2%), Asian (2%), Native American (1%) and Multi-ethnic (7%).

In total, the project provides North Clackamas students with 12,000 hours (5 hrs per student x 1,200 students x 2 yrs) of Northwest nature study in their classrooms, school yards and communities.

ECO classroom lessons:

3rd grade: NW Habitats, Water Cycle, Salmon Life Cycle, Ethnobotany

4th grade: Watersheds, Water Quality, Macroinvertebrates, Native & Invasive Plants

5th grade: Wetland Food Web, Plant Inquiry, Photosynthesis, Food Chains

Service-learning field trip sites:

Outdoor experiences include habitat restoration activities such as native planting and invasive removal as well as ecology exploration that engages students in observation, plant identification and ethnobotany.

Milwaukie field site- Winsor Court wetland or Schoolyard Farms

Oak Grove field site- Milwaukie Elks Lodge wetland

Bilquist field site- Bilquist bioswale or Hearthwood Court wetland

Lewelling field site- Lewelling wetland or Winsor Court wetland

Whitcomb field site- Whitcomb rain garden or Minthorn wetland

Ecology Education in North Clackamas is in direct alignment with ECO's organizational mission to connect students to the natural world. This program also meets ECO's goals to create equal and greater access to high-quality ecology programming that meets the needs of our diverse community. By partnering with schools to deliver our program during the school day, ECO is able to ensure environment equity and access for an entire school population rather than just a small group of students from families with the means to participate in a fee-for-service program outside of school. All lessons are aligned with Next Generation Science Standards (NGSS) and components of Oregon's Environmental Literacy Plan (OELP). This program creates a strong foundation in science and engineering practices and increases student competency as they advance in their science, technology, engineering, and math (STEM) education and beyond.

ECO's program is supported by the North Clackamas School District (NCSd) and ECO is a valued district partner. Through nature education, the program responds to NCSd community needs to build science literacy, engage students in activities tied to NGSS, develop students' critical thinking skills and apply the science inquiry process to hands-on ecology lessons. ECO works with NCSd's leaders: Joel Stuart, Assistant Superintendent of Education; Alyssa Engle, Associate Director of Teaching and Learning; Meagan Sternberg, Instructional Equity Coach to ensure ECO programs meet district priorities and serve students and teachers effectively.

We follow Best Practices of Environmental Literacy Instruction: focus on the environment and sustainability, instruction and learning take place in a variety of settings, learning is interdisciplinary, curriculum/activities are tied directly to educational standards, and partnerships with local agencies, non-profits, and others are forged and sustained.

7. Goals (up to one page, 4000 characters)

Describe how the program addresses the Nature in Neighborhood nature education and outdoor experiences grant's purpose and goals.

The Ecology Education in North Clackamas program is in direct alignment with the Metro Nature in Neighborhood Grant's purpose to support partnerships in local communities that connect people with nature. As one of the few environmental education organizations extending in to Clackamas County, ECO's goal for this program is to provide nature education to Title I students in order to build their environmental literacy and connect them to the natural world. This increases their knowledge of local ecology, enhances their affinity for science, improves their critical thinking skills and enables them to view themselves as positive agents of change within their communities. Moreover, local watersheds will be enhanced during field trips which include the removal of invasive plants and planting of native species, which benefits wildlife habitat, biodiversity, and creates healthier riparian zones.

This project aligns with the Metro's environmental equity goal. ECO's Ecology Education in North Clackamas provides proven hands-on, place-based ecology programming for upper elementary grades, including habitat restoration field trips to local natural areas. All partner schools are designated Title I and include high percentages of at-risk, low-income students, with an average of sixty-four percent (64%) of students eligible for free or reduced lunch. ECO expects to achieve the following outcomes: a) 20% increase in students' understanding of Northwest ecology based on pre and post surveys, and b) at least 90% of participating students believe they are capable of improving the health of the environment by the end of the program.

Furthermore, ECO's years of partnership development and focus on integrating ecology curriculum into formal education requirements helps students draw natural connections between STEM curriculum, careers and the environment. Because the ECO program assists teachers in meeting classroom standards and teaching requirements, administrators are able to allot time within the restrictive school-day schedule for ECO lessons. Likewise, this project also builds the capacity of our partner school's teachers to deliver ecology curriculum even when ECO isn't in the classroom. During the project, teachers observe ECO educators, as they model techniques for delivering engaging science lessons. This provides a unique learning environment for teachers, as most teachers do not have the opportunity to observe other teaching styles and techniques in their classroom.

A partner testimonial from Kristen Harrison, Director, Portland Metro STEM Partnership: "ECO is one of the leading organizations in delivering science education tied to the Next Generation Science Standards. ECO programs reach students with a variety of learning styles and keep students engaged and excited about science. Teachers are also benefiting from ECO programs as they get to observe unique and interactive science-teaching techniques."

Two North Clackamas teacher testimonials indicate strong support for ECO programming.

"I think ECO is a wonderful opportunity! The lessons enrich student learning. Since lessons are repeated from year to year, and I receive the learning targets in advance, this enables me to add my own vocabulary lessons as well as to connect lessons to my own teaching, and integrate English-language development strategies." Harmony Brown, 4th grade, Milwaukie Elementary.

"ECO is amazing. The ECO teachers did a great job of engaging the students in fun and authentic lessons that helped teach them about the world around them. Every student enjoyed the lessons and took away new information." Brad Kendrick, 5th grade, Oak Grove Elementary.

8. Partnerships (up to one page, 4000 characters)

Show how partnerships and collaboration with other individuals, organizations and groups in your community will be formed, strengthened and extended through this program.

Ecology Education in North Clackamas engages multiple partners, creates new relationships and strengthens existing ones. In order to identify the NCS D schools most in need of its programs ECO partnered directly with the District's Assistant Superintendent of Education, Joel Stuart. NCS D recognizes that ECO supports teachers with valuable educational resources and provides students with unique learning opportunities. Additionally, ECO works with Meagan Sternberg, the Instructional Equity Coach, to ensure ECO lessons are meeting District goals. We are also collaborating on ways the NCS D can provide additional support for our programs as the District works to incorporate ECO into their Full Option Science System adoption. All five participating schools are partners, as they provide the support and time commitment for students, as well as access to materials, copiers, document cameras etc.

This project strengthens partnerships with Clackamas Water Environment Services, Oak Lodge Water Services, The Wetlands Conservancy, Milwaukie Elks Lodge, Bilquist PTA, Oregon Forest Resources Institute and other community based organizations. A key component of ECO's programs is community engagement and outreach. We collaborate with these partners, and seek new partnerships with complimentary organizations like Latino Outdoors, to lead field experiences in local parks and natural areas to engage students in service-learning projects in their communities, support the application of concepts learned in ECO lessons to real-world habitat restoration, and build long lasting community relationships that will extend the reach of ecology education by connecting meaningfully with families and other community networks. Partnering organizations are able to offer cash match and/or in-kind match of staff time, tools and equipment, as well as site access to assist ECO in offering hands-on service learning opportunities at each of the 40 field trips per year. ECO aims to incorporate students, their families and their communities with our service-learning projects in ways that are culturally responsive and relevant, and therefore, more impactful and more likely to be furthered and owned beyond ECO.

9. Organizational preparedness (up to one page, 4000 characters)

Explain why your organization and your partners have the experience and capacity to conduct the program, including identification of key personnel, their roles in the program and their qualifications.

Ecology in Classrooms and Outdoors (ECO) is a nonprofit organization that provides enrichment programs to elementary school students in the Metro area. We meet our mission to connect students to our natural world through our experiential ecology programs which engage students in nature education throughout their elementary career. Our programs are designed to connect students to the natural world, to spark an affinity for science, and to increase students' critical thinking skills. Programs include outdoor exploration and service-learning, giving students the opportunity to apply concepts learned in ECO lessons to the real-world, and deepen ties to their community.

Since 2005, we have provided over 2,900 natural science lessons to 17,820 students and 594 teachers. We serve K-5th grade students in Multnomah, Washington and Clackamas counties. During each program, pairs of ECO educators deliver four to six hands-on ecology lessons per classroom per year. These cumulative visits build students' conceptual knowledge of

ecology, develop environmental literacy and increase their critical thinking skills. Our qualified ecology educators hold advanced degrees in natural sciences and have over 40 years of combined experience in place-based education. Our key staff are Sarah Bercume, Program Director; Betsy Boudreau, Program Manager; Julie Baweja, Lead Educator. Ms. Bercume received a MS from Oregon Health Science University in Ecosystem Restoration and has over 16 years of experience in developing and managing nature education programs. Ms. Boudreau holds a BA in Fine Arts from Lewis and Clark College and has 14 years of experience in environmental education. Ms. Baweja holds a BS from Western Michigan University and a Michigan Provisional Certificate in K-8 general education and 6-8 science education and has devoted 11 years to teaching place-based education.

Within the nature education community, the ECO model is unique and comprehensive. ECO fills a niche by targeting elementary school students in underserved schools, by providing a series of cumulative hands-on ecology lessons presented throughout a child's elementary career and by aligning our lessons with the NGSS. We provide expertise in integrating STEM into our curriculum, leading outdoor exploration and knowledge of educational standards. We assist teachers in meeting required teaching objectives and advance STEM education in elementary classrooms. The project supports region-wide initiatives, as ECO is a member of both the Intertwine Alliance and the Portland Metro STEM Partnership (PMSP), and a strong OELP proponent.

ECO is experienced in facilitating habitat restoration and enhancement projects, including work at community sites and the creation of rain gardens and outdoor classrooms on school grounds. During service-learning projects, students apply concepts learned in ECO lessons to authentic habitat restoration work. To enhance our programs, we actively seek out complementary partnerships including work with Portland Parks and Recreation, Oregon State Parks Foundation, Lents Springwater Habitat Restoration Project, Forest Park Conservancy and others. This project utilizes public sites for educational purposes and is strongly supported by the North Clackamas School District. It is made possible through efforts of many partners, including Clackamas Water Environment Services, Oak Lodge Water Services, The Wetlands Conservancy, Milwaukie Elks Lodge and others.

Finally, ECO is dedicated to remaining current in our approach and teaching methods, putting our curriculum through rigorous review to ensure we best meet the needs of our diverse student body. For ECO, that means being culturally relevant, fully integrating into and being applicable to curriculum and teachers, and implementing effective and pertinent teaching practices. We intend for our program to be a stepping stone into lifelong enthusiasm for learning and connection to nature and one another.

10. Diversity, Equity and Inclusion (up to one page, 4000 characters)

Describe how your program involves communities of color and the demographics of the community served in identifying the need for, designing, and delivering this programming. How does your organization's vision or mission address diversity and equity?

ECO has an extensive history working with Title I schools and communities of color, predominantly working with diverse communities since our start in 2005. Because ECO works primarily with students facing greater equity challenges, our programming hinges on teaching empowerment and agency, instilling a sense of pride, ownership, and belonging so as to inspire stewardship and social justice activism as students become adults. Specifically, over two years this program engages 2,400 students from five low-income schools in Clackamas County. All schools are designated Title I with an average sixty-four percent (64%) of students eligible for free or reduced lunch and racial/ethnic composition of Caucasian (56%), Hispanic (32%), African American (2%), Asian (2%), Native American (1%) and Multi-ethnic (7%).

To best serve multilingual and multicultural populations in Title I schools, ECO has designed programs to be hands-on, highly visual, and community-centered to honor the diversity of our students and families. We continually refine our programs to serve our student populations: ECO understands that for environmental education to have a lasting and deep impact, it must resonate culturally and equitably with our diverse community of students. ECO stays up to date in diversity, equity, and inclusion (DEI) best practices, such as trauma-informed educational practices, to ensure we approach and teach ecology holistically and with the latest insights. ECO is diligent in bridging STEM education, cultural relevance, and educational best practices so that our efforts advancing nature education also create greater equity among our students.

Throughout the planning and design of this program, we have actively engaged the individuals, communities and partnering organizations that we will serve and collaborate with. We have surveyed the teachers and administrators at the five participating schools to gauge their level of interest, commitment and support of this project. Also, we work directly with our community partners to ensure that our project goals are in alignment and provide the maximum level of support to their organization's work, for example we identify restoration sites that are in most need of additional resources and investment. We utilize a systems theory approach to design programs that maximize the benefit to all participants, from the students to the community.

ECO has clearly defined equity plans and goals for internal operations and programmatic development with an organization-wide DEI plan adopted in 2014. In 2016-17, ECO leadership participated in The Intertwine Alliance's DEI intensive training, using lessons learned to attract more diverse talent to ECO and to implement a staff-wide training. In January 2018, ECO staff and several board members participated in a week-long DEI training to further shift and evolve ECO's culture, programs and curriculum to best serve our diverse students. Currently, our Program Director is attending the PMSP's STEM Equity Ally workshop series. The workshops engage participants in collaborative learning around how to make gains in improving access,

opportunity and achievement in STEM education for historically underserved students.

ECO plans to continue this work, including:

- 1) Continue DEI training at the staff and board level
- 2) Continue revisiting our program piece by piece for a multi-faceted review and implementation of DEI, from visuals to vocabulary to align with students' home culture whenever possible
- 3) Collaboration with PMSP for an on-going, external review of our curriculum through the lens of cultural sensitivity and STEM equity
- 4) Better engagement with families to ensure programmatic impact is informed by the diverse cultural beliefs and values represented among the communities we serve
- 5) Use DEI as the lens through which we craft our next five-year strategic plan, effective 2018-19, to aim for greater community engagement and overall impact and inclusion

11. Location and program reach (up to two pages)

On next page, please upload a location/vicinity map that shows where the program and/or participating communities are located within the region, such as on Google Maps, MetroMap, Regional Equity Atlas, or the Regional Conservation Strategy viewer

✓ I uploaded it!

12. Demographic form (two pages)

On next page, please upload the requested the 2018 Nature in Neighborhoods demographic form, which will not be used for the review of your grant application.

✓ I uploaded it!

Document Uploads

Documents Requested *

Provide a location/vicinity map that shows where the program and/or participating communities are located within the region, such as on Google Maps, MetroMap, Regional Equity Atlas, or the Regional Conservation Strategy viewer.

Required? Attached Documents *



[Ecology Education in North Clackamas Location Map](#)






* ZoomGrants™ is not responsible for the content of uploaded documents.

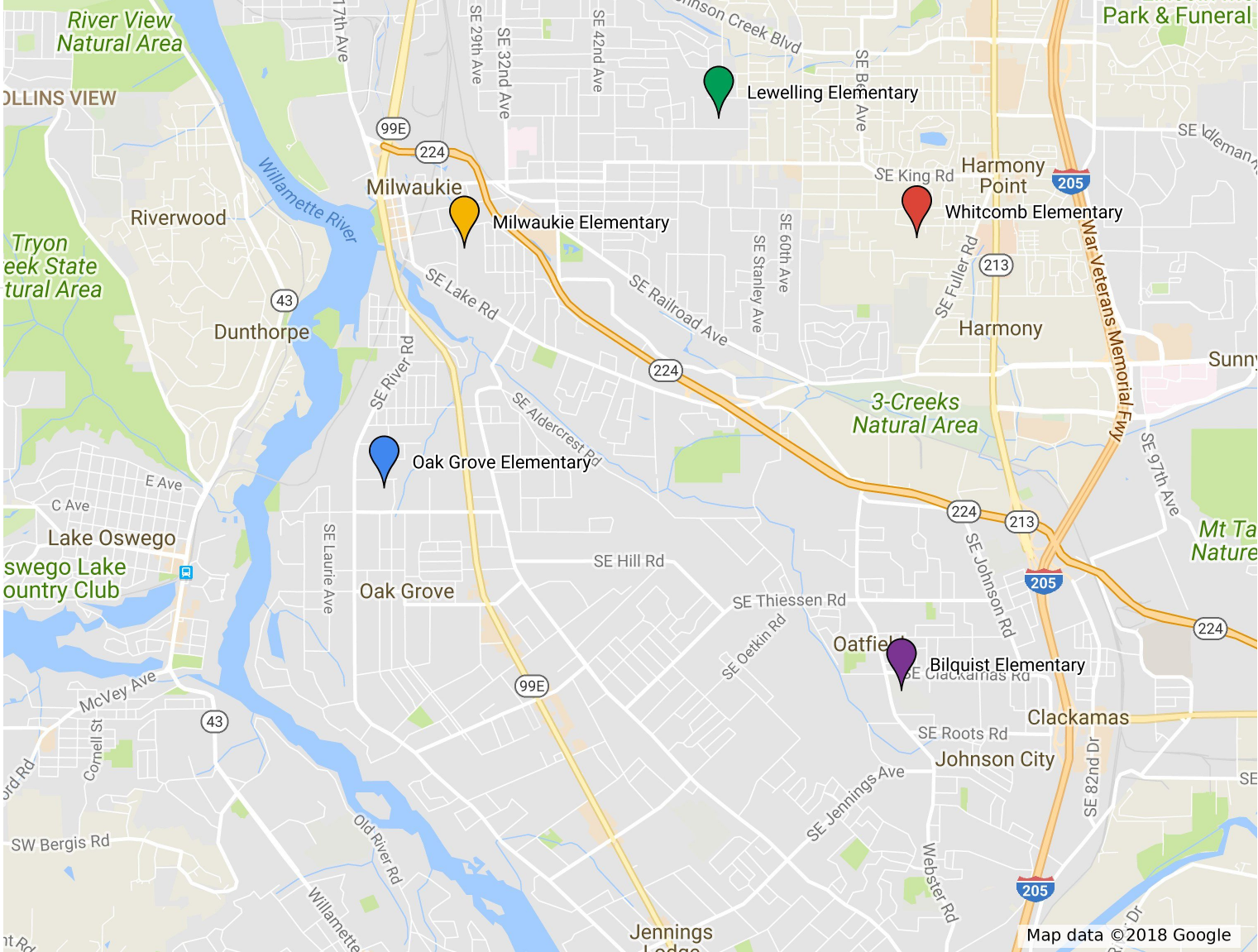
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Ecology Education in North Clackamas

Schools

-  Oak Grove Elementary
-  Lewelling Elementary
-  Milwaukie Elementary
-  Whitcomb Elementary
-  Bilquist Elementary



Map data © 2018 Google

Ecology Education in North Clackamas

Field Trip Sites

- Minthorn Springs Wetland
- Lewelling Wetland
- Bilquist Bioswale
- Whitcomb Rain Garden
- Winsor Court Wetland
- Schoolyard Farms
- Elks Lodge Wetland
- Hearthwood Wetland

