

KEEN EcoExplorers

Year-Long Environmental Science & Stewardship Projects

Program Overview

KEEN EcoExplorers is a hands-on, year-long environmental science and outdoor learning program for youth ages 11–16. Meeting weekly from September through May, EcoExplorers gives young people the opportunity to explore the Yakima Canyon, develop real-world field science skills, participate in habitat restoration, and contribute to the stewardship of local ecosystems.

Rather than treating each week as a stand-alone lesson, EcoExplorers is organized around three long-term, interconnected projects that students develop throughout the school year. Each month's theme—from canyon ecology and wildlife tracking to climate resilience, water science, community science, and native plant restoration—adds another layer to the students' ongoing work.

Through these projects, students move beyond simply learning about environmental science. They become field researchers, stewards, and community scientists, building knowledge over time and contributing meaningful work to the Yakima Canyon and the Pond to Pines Outdoor Learning Campus at the Yakima Canyon Interpretive Center.

At the end of the year, students will have developed a body of field experience, scientific data, restoration accomplishments, and observations that they can share with their families and community.

Long-Term Project 1

The YCIC Field Study

Understanding the Ecosystem Around Us

The **YCIC Field Study** is an ongoing investigation of the ecosystems and natural processes found at the Yakima Canyon Interpretive Center and surrounding landscape.

Throughout the year, EcoExplorers students will establish study areas and return to them repeatedly, observing how the landscape changes through the seasons. Students will learn how environmental scientists study ecosystems and will practice collecting, recording, and interpreting real field data.

Students will investigate:

- Shrub-steppe ecology
- Plant and animal communities
- Microhabitats
- Seasonal changes
- Soil and vegetation
- Weather and climate
- Biodiversity
- Water and wetland systems
- Relationships between living and nonliving components of an ecosystem

Field science skills may include:

- Species identification
- Field journaling
- Transect and quadrat sampling
- Biodiversity surveys
- Habitat mapping
- Soil and vegetation measurements
- Weather observations
- Water quality testing
- Data collection and analysis

Project Outcome

Over the course of the year, students will develop a **YCIC Ecosystem Field Guide and Field Study Dataset** documenting the plants, animals, habitats, and ecological changes they observe.

The project will help students understand that science is not simply something that happens in a textbook or laboratory. The YCIC land itself is the laboratory.

Long-Term Project 2

The Restoration Plot

Helping Heal the Land

The **Restoration Plot** gives EcoExplorers students the opportunity to participate directly in the ecological restoration work happening at YCIC.

Students will work with KEEN staff and restoration partners to identify and adopt a specific area of habitat that can be improved through stewardship. Over the course of the year, students will learn how ecosystems become degraded, what healthy habitat looks like, and how people can help restore ecological function.

Students will not simply participate in one-time volunteer projects. They will have the opportunity to **follow the restoration process over time** and see the results of their work.

Students will explore:

- Native and invasive species
- Shrub-steppe ecology
- Habitat degradation
- Invasive species management
- Native plant restoration
- Soil health
- Pollinator habitat
- Climate resilience
- Restoration planning
- Long-term habitat monitoring

Hands-on activities may include:

- Invasive species identification and removal
- Native plant identification
- Seed collection
- Seed cleaning and preparation
- Native plant propagation
- Site preparation

- Native plant installation
- Habitat improvement
- Wildlife habitat enhancement
- Restoration monitoring

Project Outcome

Students will create and maintain an **EcoExplorers Restoration Plot**, documenting:

- The site's condition at the beginning of the year
- Restoration goals
- Work completed
- Species planted or removed
- Changes observed over time
- Recommendations for future restoration

Students will be able to return to the site year after year and see how their work contributes to the long-term health of the landscape.

The Restoration Plot reinforces one of KEEN's central values:

We don't just learn about the environment—we help care for it.

Long-Term Project 3

The Canyon Biodiversity Project

Discovering Who Lives Here

The **Canyon Biodiversity Project** is an ongoing effort to document the diversity of life found at YCIC and in the surrounding Yakima Canyon.

Students will investigate wildlife, plants, insects, and other organisms throughout the seasons, learning how scientists monitor biodiversity and use observations to understand ecosystem health.

The project combines wildlife tracking, community science, species identification, and habitat observation.

Students will investigate:

- Birds
- Mammals
- Reptiles
- Amphibians
- Insects and pollinators
- Native plants
- Wildlife signs and tracks
- Seasonal wildlife patterns
- Species interactions
- Habitat use

Field activities may include:

- Wildlife tracking
- Bird surveys
- Wildlife camera monitoring
- Track and sign identification
- Pollinator counts
- Plant surveys
- Species observations

- Biodiversity inventories
- Community science projects
- iNaturalist and other citizen science platforms

Students will learn how to distinguish between simply **seeing wildlife** and collecting observations that can contribute to scientific knowledge.

Project Outcome

Throughout the year, EcoExplorers will build a **Canyon Biodiversity Inventory**, documenting the species and wildlife activity they observe.

Students will contribute appropriate observations to community science databases and use their data to explore questions such as:

- Which species live at YCIC?
- Which habitats do they use?
- How does wildlife activity change with the seasons?
- What species are common?
- What species are rarely observed?
- What does biodiversity tell us about habitat health?

By the end of the program, students will have created a growing record of the living community that shares the canyon with us.

The Three Projects Working Together

The power of EcoExplorers comes from the way these three projects connect.

The YCIC Field Study

We study the ecosystem.



The Restoration Plot

We help restore the ecosystem.



The Canyon Biodiversity Project

We monitor the life that depends on it.

Together, the projects create a continuous cycle of **observation, action, and reflection**.

Students learn to ask:

What is happening here?

Then:

Why is it happening?

Then:

What can we do to help?

And finally:

How do we know whether our actions made a difference?

This approach allows EcoExplorers to develop not only scientific knowledge, but also critical thinking, collaboration, outdoor leadership, stewardship, and a sense of responsibility for the natural world.

Year-End EcoExplorers Canyon Report

At the conclusion of each program year, students will bring their work together in an **EcoExplorers Canyon Report**.

The report may include:

- Field study observations
- Species documented
- Biodiversity findings
- Wildlife monitoring results
- Water and habitat data
- Restoration accomplishments
- Native plants propagated and planted
- Community science contributions
- Climate and seasonal observations
- Recommendations for future stewardship

Students will have the opportunity to present their findings to their families, KEEN staff, community members, and partner organizations.

The annual report becomes a tangible record of what students discovered and accomplished—and a way for their work to contribute to the broader understanding and stewardship of the Yakima Canyon.

The EcoExplorers Promise

We explore with curiosity.

We study with purpose.

We restore with care.

We observe with respect.

We share what we learn.

Through EcoExplorers, young people become active participants in the future of the Yakima Canyon—not just visitors to it.