



# TEND, GATHER AND GROW

# CULTURAL ECOSYSTEMS

## CAREER-CONNECTED LEARNING

*Cultural ecosystems, including camas prairies, saltwater beach clam gardens, food forests, mountain huckleberry meadows, and wetlands, are distinct habitats that Indigenous people have stewarded for thousands of years. Many land management practices, such as burning, weeding, and sustainable harvesting, are utilized to promote the growth of culturally significant plants and animals. This conscientious stewardship helps generate healthy ecosystems as well as human well-being. Given the wide range of existing ecosystems, there is also a wide range of career paths!*





# CULTURAL ECOSYSTEMS

## Explore Career Connections

*We are a part of the land. The land shapes our culture, and our culture shapes the land.*



- **Research and Observe the World around You:** Ecologist, Field Researcher, Naturalist
- **Educate Others about Ecosystems:** Environmental Educator, Park Ranger, Public Health Worker
- **Protect and Understand the Landscape:** Environmental Scientist, Firefighter, Forest Services, Land Steward, Landscape Ecologist, Natural Resource Manager, Salmon Habitat Restoration Manager, Wildlands Restoration Biologist
- **Keep Systems Running Sustainably and Justly:** Environmental Law, Recycling and Waste Management
- **Work with Animals:** Zoologist, Wildlife Biologist, Entomologist (insects), Apilologist (bees), Herpetologist (reptiles and amphibians), Ornithologist (birds), Seabird and Marine Mammal Biologist, Shellfish Biologist
- **Work with Plants:** Botanist, Ethnobotanist, Native Plant Grower
- **Water Work:** Marine Biologist, Oceanographer (ocean), Hydrologist (how water moves), Limnologists (freshwater), Aquatic Plant Specialist, Watershed Coordinator
- **Study the Intricacies of Earth's Dynamic Processes:** Archaeologist (historical artifacts), Agronomist (soil), Geologist (solid, liquid, and gaseous matter that forms the Earth), Mineralogist (minerals), Volcanologist (volcanos)
- **Bring Your Visions to Life:** Environmental Engineer, Cartographer (map maker), Landscape Architect, Urban Planner



# MEET ADAM OSBEKOFF

(Aleut)

## Cultural Resource Compliance Manager



*I am Aleut and grew up in western Washington State. I work for the Snoqualmie Tribe as a Cultural Resource Compliance Manager. I mostly review development permits to determine if there are any cultural resource (CR) concerns within any Area of Potential Effect (APE). Cultural resources are things or places of significance to the tribes. They may include village sites, harvesting sites, burial sites, projectile points, fire cracked rock, or even traditional spaces for ceremonies. We also look for middens (piles of shellfish where people frequently ate) and culturally modified trees—the original road signs. I work with multiple tribes, agencies, and other cultural resource management related professionals, such as archaeologists, ethnographers, project managers, GIS related careers, and many more.*

### JOB RESPONSIBILITIES

- Review federal, state, county, and municipal CR policies, as well as private development permits to identify, protect, and preserve cultural resources
- Manage archeological technicians and send them to sites when we have CR concerns
- Community outreach regarding cultural resources

### CAREER PATHWAY

I studied sustainable community development at The Evergreen State College with an emphasis in tribal governance. Studying sustainability was an enriching process and expanded beyond green power production and green architecture. Our culture was/is sustainability. Our Ancestors utilized everything and did not waste. They would be shocked to see how we treat our environment. My deeper understanding of sustainability made me question how tribes were approaching sustainability while staying true to their cultural roots.

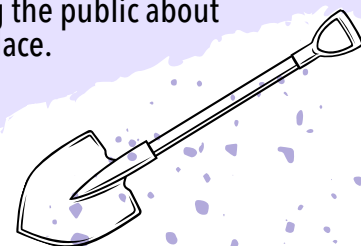
While in college, I got hired as an air quality intern with the Snoqualmie Tribe. Since then, I have held positions as a solid waste technician, energy auditor, cultural technician, and assistant director before moving into my current position.

### WHAT IS YOUR FAVORITE PART OF YOUR JOB?

The favorite part of my job is when tribes work together to save or minimize negative impacts of cultural resources. I am also motivated to push back against policies that are influenced by economics rather than the conservation of cultural resources.

### WHAT HELPS YOU TO BE SUCCESSFUL?

One of the things that has helped us to be successful is involving tribal council, upper management, and enlisting other tribes to support each other in conservation efforts. When several tribes collaborate by signing letters of support or petitioning together to avoid or minimize impact on a cultural site, it makes our case more powerful and we are more likely to succeed. For example, multiple tribes are working on preserving Ballast Island along the new Seattle waterfront and are educating the public about the history and significance of the place.





# MEET JOE WILLIAMS

(Swinomish)  
**Shellfish Community  
Liaison**



*We are doing a clam garden project here at Swinomish. Clam gardens are also called “sea gardens.” We build a short rock wall at the extreme low tide. Sediment builds up behind the wall and it creates a terrace where clams can grow. The rock wall becomes like a reef habitat where aquatic vegetation such as kelp and sea creatures including urchins, sea cucumbers, and octopus can live. The increase in biodiversity helps to create resiliency during disturbances*

*The clam garden will be built by our community—a team of volunteers. It is my job to build enthusiasm around this project and getting back to our ancestral teachings. The whole idea is to create a space where Elders and youth can gather together and hand down the teachings of how to harvest clams, how to tend to your beach, and how to be at one with your surroundings. The clams need us as much as we need them. We tend and nourish the beach and it nourishes us.*

## JOB RESPONSIBILITIES

- Doing beach surveys with the shellfish team including monitoring the number, type, and size of clams
- Community engagement including educating people about the clam garden and answering questions
- Teach workshops for fishermen and tribal members such as gill net mending

## CAREER PATHWAY

I am a commercial fisherman and have spent my entire life on the water. I got my first job when I was 7 years old. It has been a life-long journey—living off of the land. As Coast Salish People, we are taught that when the tide is out the table is set. We spend a lot of time harvesting clams, fishing, and crabbing. When the clam garden project was introduced, I was immediately interested. At the time, I was an elected tribal senator here at Swinomish, and I was on the fish, game, and hunting commission. I became the spokesperson for the project as a tribal leader, and then became a member of the team.

## FAVORITE THING ABOUT YOUR JOB

I love being face to face with people and being on the beach and the water. This has become a perfect role. There are certain things that I don't enjoy like what I have to do on a computer, but I am learning. We are very community-based people and being around each other is our way of life. That is how we share our teachings and knowledge—face to face on the land.

## WHAT HELPS YOU TO BE SUCCESSFUL?

Having the ability to be a storyteller and being personable—knowing how to relay a message. We have speakers at every one of our gatherings, whether it is a funeral, a pow pow, or the Canoe Journey. I pay attention and remain teachable. Public speaking was always a big fear of mine, and when I was elected as a tribal senator, I did not realize how much speaking I was going to have to do. All those years of listening and paying attention to our tribal speakers from when I was a young boy has helped me.



# CAREER HIGHLIGHT

# ENVIRONMENTAL EDUCATION

## WHAT EXACTLY IS ENVIRONMENTAL EDUCATION?

“Environmental education is a process that allows individuals to explore environmental issues, engage in problem-solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions.” (Environmental Protection Agency, 2018).

## WHAT CAN YOU DO IN THE FIELD OF ENVIRONMENTAL EDUCATION?

Environmental education is a lot like detective work. It requires a sense of curiosity, awareness, and sensitivity to the environment around you. You build observation skills, strive to understand the unique perspectives of different life forms, and share your knowledge with others. You might learn from school, stories and cultural perspectives, your own direct experiences, and resources such as books, papers, videos, and conferences.

Environmental educators teach in many settings including schools, outdoor education programs, community-based organizations, city, state, and federal programs, and more. You might teach people directly, write articles, develop teaching tools, and create videos as a means to get information to people.

## WHY IS ENVIRONMENTAL EDUCATION IMPORTANT?

We need environmental educators to teach people about the world we live in. When people learn about nature and develop a direct relationship with it, they are more likely to care for it. One passionate person can make such a difference!

## WHERE CAN I LEARN MORE ABOUT ENVIRONMENTAL EDUCATION CAREERS AND HOW TO BECOME ONE?

- [Educatopia: Outdoor and Environmental Education: Resource Roundup](#)
- [United States Environmental Protection Agency \(EPA\): \(Including a Tribal Environmental and Natural Resource Assistance Handbook\)](#)
- [National Wildlife Federation: Connecting Kids and Nature](#)

## ENVIRONMENTAL EDUCATION PROGRAMS IN WASHINGTON AND OREGON:

- [Evergreen State College](#)
- [Islandwood](#)
- [Pathways for Native American Students](#)
- [University of Oregon](#)
- [University of Washington](#)
- [Western Washington University](#)

## NORTHWEST ENVIRONMENTAL EDUCATION RESOURCES

- [Indigenous Environmental Network](#)
- [North American Association for Environmental Education \(NAAEE\)](#)
- [Northwest Aquatic & Marine Educators \(NAME\)](#)
- [e3 Washington](#)
- [Pacific Education Institute \(PEI\)](#)



# CAREER HIGHLIGHT

## PUBLIC HEALTH WORKFORCE

### WHAT EXACTLY IS PUBLIC HEALTH?

The field of public health strives to prevent, protect, and improve individual and community health through the use of education, research, law and policy reform, advocacy, healthcare response, and social justice. A large portion of public health careers focus on increasing access to healthy ways of living—from environmental health to health care reform.

Public health includes access to clean water and healthy food, quality education, affordable healthcare, disaster relief, cleaning up pollution, planting trees, habitat restoration, salmon recovery, and so much more!

### WHAT CAN YOU DO IN THE FIELD OF PUBLIC HEALTH?

Oftentimes, people enter the field of public health because they want to make a difference in the world. Public health can have a large impact on many people. It is less focused on aiding one individual at a time and more focused on improving the systems and policies that directly impact communities and populations.

### WHY IS PUBLIC HEALTH IMPORTANT?

Public health impacts just about everyone and everything including plants, animals, and the land. People in this field often strive to serve the most vulnerable populations to ensure that health is an equal right for all.

This career field works to prevent health disasters and diseases from becoming too large to manage. Take climate change for example—many public health scientists are tirelessly working to better understand climate change, educate the public, and find solutions to create a healthier environment for all.

### EXAMPLES OF PUBLIC HEALTH JOBS:

- Biostatistician (analyzes data)
- Demographer (studies populations)
- Environmental health scientist
- Epidemiologists (i.e. disease detective)
- Habitat restoration
- Health analyst (looks at medical data)
- Health educator
- Healthcare management
- Public health adviser
- Public health nurse
- Sanitarian (makes sure environments are healthy and safe)
- Toxicologist (studies the safety of chemicals)
- Surgeon general (protects and improves the health of the American people)
- And so much more...

*Spokane Tribal Network recognizes that we are all connected, and human healing is entwined with healing the land and our plant relatives. Therefore, we facilitate events and activities to increase the connections among our people, our plants, and the land. That means we garden, we gather wild food and medicine plants, we get together to share all the labors with one another, and we give care to the land as we do all this. Our wellness and the health of our lands and community is the goal and the vision that keeps us activated."*

Melodi Wynne, Ph.D.  
(Spokane Tribal Member)  
Community and Cultural Psychology





# CULTURAL ECOSYSTEMS RESOURCES

## BOOKS

- *As Long as the Grass Grows* by Dina Gilio-Whitaker
- *As We Have Always Done: Indigenous Freedom through Radical Resistance* by Leanne Betasamosake Simpson
- *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants* by Robin Wall Kimmerer
- *The Earth's Blanket* by Nancy Turner
- *Geology and Plant Life* by Arthur Kruckeberg
- *How to Raise a Wild Child: The Art and Science of Falling in Love with Nature* by Scott Sampson
- *Indians, Fire and the Land in the Pacific Northwest* by R. Boyd
- *Keeping It Living: Traditions of Plant Use and Cultivation on the Northwest Coast of North America* by Deur, Douglas, and Nancy Turner
- *Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder* by Richard Louv
- *Native Seattle: Histories from the Crossing Over Place* by Coll Thrush
- *Nature and the Human Soul* by Bill Plotkin
- *Peoples of the Northwest Coast: Their Archaeology and Prehistory* by Ames, Kenneth M. and Herbert D. G.
- *Tending the Wild: Native American Knowledge and the Management of California's Natural Resources* by M. Kat Anderson

## PUBLIC HEALTH AND ENVIRONMENTAL SCIENCE PROGRAMS IN WASHINGTON, OREGON, AND ONLINE

- [American Indian Public Health and Wellness Certificate](#)
- [Bastyr University](#)
- [John Hopkins: Public Health Training Certificate for American Indian Health Professionals](#)
- [Northwest Indian College](#)
- [Tulane University: Free Online Environmental Health Courses](#)
- [University of Washington](#)
- [Urban Indian Health Institute Internship Program](#)

## LEARN MORE ABOUT PUBLIC HEALTH

- [American Public Health Association \(APHA\)](#)
- [Health Inequity: America's chronic condition? Esteban López](#)
- [Healthy People 2030](#)
- [Oregon Public Health Association \(OPHA\)](#)
- [Washington State Public Health Association \(WSPHA\)](#)

## ACKNOWLEDGMENTS

Developed by: Rachel Collins and Elise Krohn

*Tend, Gather and Grow* is a K-12 curriculum on native and wild plants of the Pacific Northwest. For more information visit <https://www.goodgrub.org/tend-gather-grow>