Outdoor Nature-Based Licensing

STEM Education Innovation Alliance Meeting

February 22, 2023

www.dcyf.wa.gov

Washington State Department of CHILDREN, YOUTH & FAMILIES

Washington – First in Nation!

- Washington first in nation to permanently license outdoor, nature-based child care for preschool and school age children
- Aligns with DCYF's Strategic and Racial Equity Plan

Outdoor Nature Based Rules

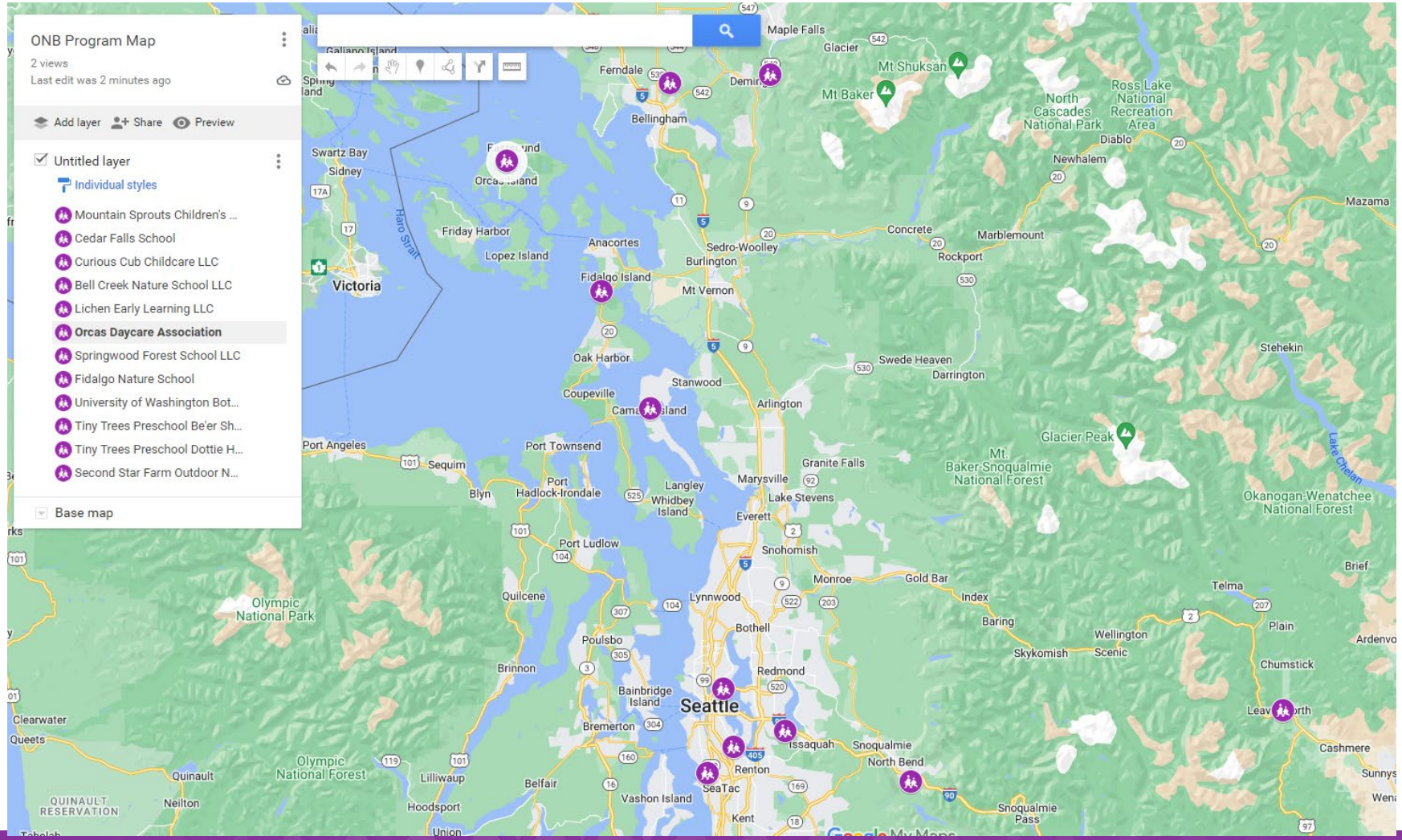
Social Responsibility

By licensing/certifying outdoor programs, we can:

1. Increase options for **all** families.
2. Increase access for families that need subsidies, regulated or full-day care.
3. Promote connections to nature for more children.

ONB Provider Locations

Anacortes
Bellevue
Bellingham
Burien
Camano Island
Deming
Eastsound
Leavenworth
North Bend
Puyallup
Seattle
Yakima



Benefits of Outdoor Nature Based Programs

Better physical development

- Strength, eyesight, hearing, bone structure, immune system and lifelong interest in physical activities.

Better cognitive development

- Executive functioning, self-regulation, self-esteem, observation and problem-solving, abstract reasoning and focus.

Better social-emotional development

- Independence, collaboration, reduced anxiety/depression, empathy and care for nature.

STEM learning

Educator/adult well-being

Learning Begins By…

- Promoting positive experiences and connections in and with nature
- Developing an ecological identity
- Encouraging wonder, awe, expression and reflection….
  - We are developing emotional and reciprocal relationships with other living things

ONB Leadership Qualifications and Teaching Supports

Early childhood /school age education partnered with nature based credits

ONB Basics – on the way!

ONB 10 hour training developed by DCYF, Cultivate Learning – U of W

ONB Short Certificate

Questions?

Thanks

Debbie Groff - Area Administrator

Outdoor Nature-Based Licensing

debbie.groff@dcyf.wa.gov

https://www.dcyf.wa.gov/services/early-learning-providers/licensed-provider/onb

Legislative Provisos
Washington's pK–12 Education

Washington Office of Superintendent of
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Outdoor Education Programs

Sheila Wilson

Outdoor Education Program Manager

Secondary Education and Pathway Preparation

OSPI

Washington Office of Superintendent of
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HB 2078

Section 2:
Outdoor Learning Grants

Washington Office of Superintendent of
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$1.95 million

WASHINGTON STATE
Recreation and
Conservation Office

$1.85 million

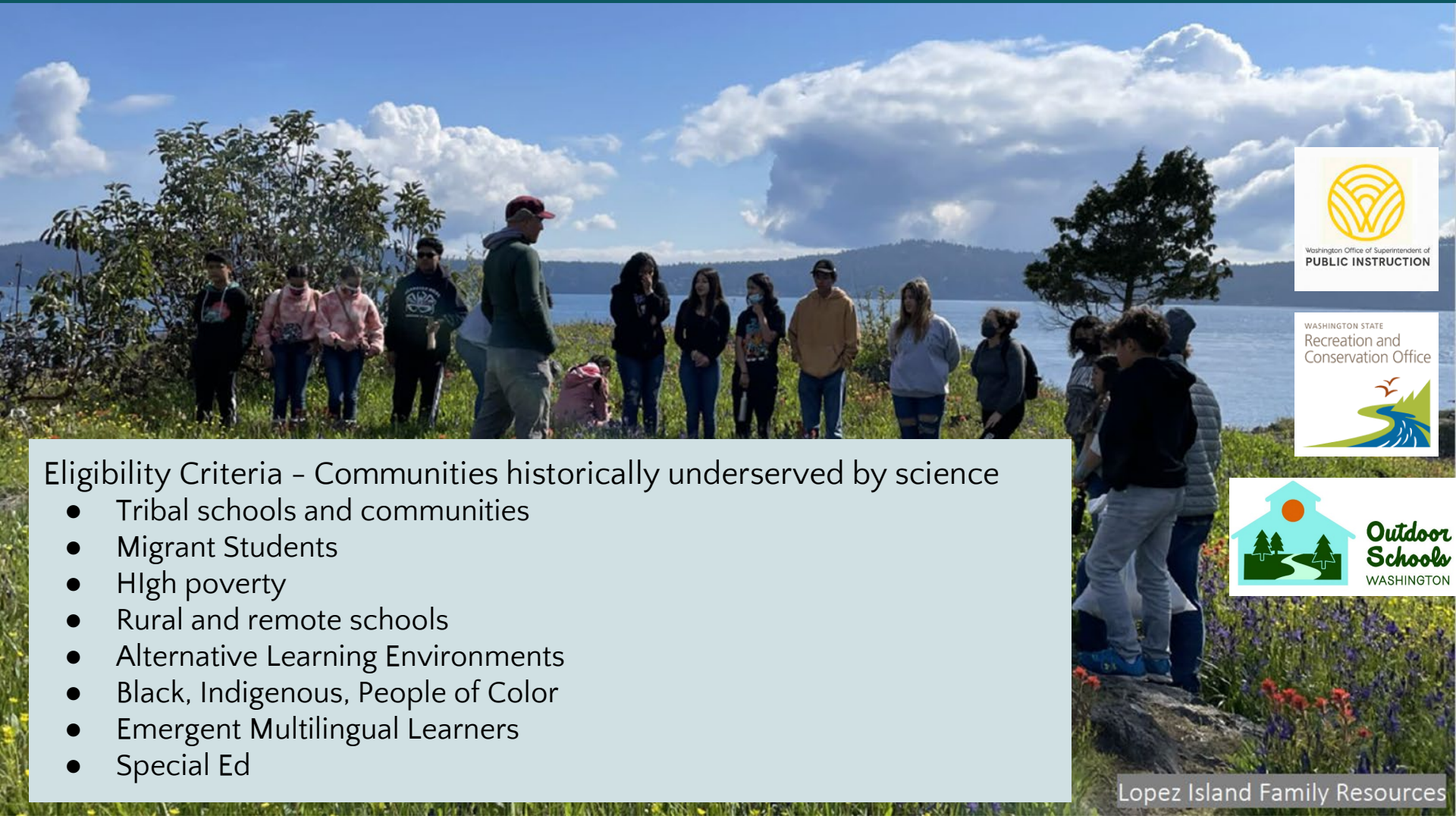
Section 3:
Overnight Outdoor Education Experiences

Outdoor Schools
WASHINGTON

$5.9 million

Outdoor based learning that includes...

- Aligned and integrated curriculum
  - NGSS
  - Since Time Immemorial
  - Social Emotional Learning
- Equitable access for all geographic regions
- High levels of accessibility for students with disabilities

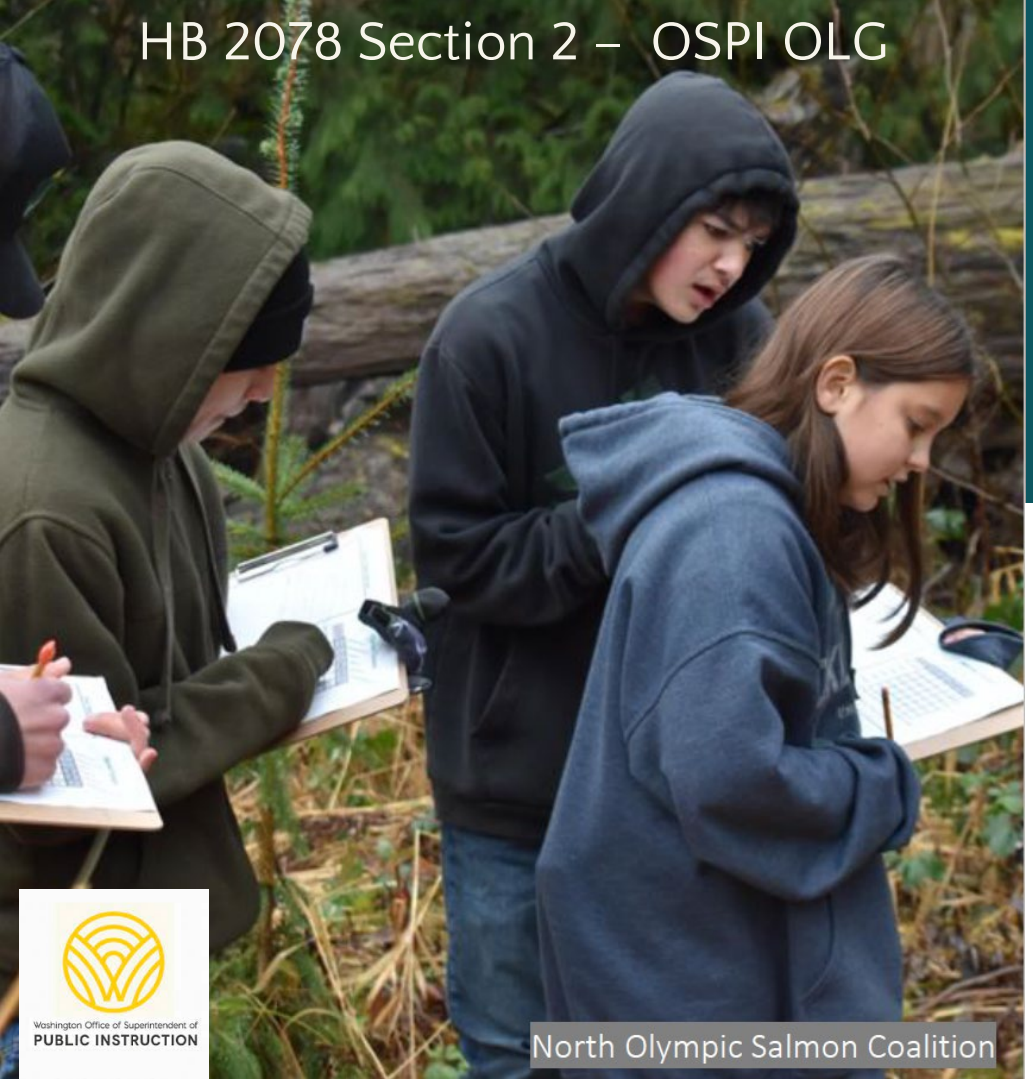


Eligibility Criteria - Communities historically underserved by science

- Tribal schools and communities
- Migrant Students
- HIgh poverty
- Rural and remote schools
- Alternative Learning Environments
- Black, Indigenous, People of Color
- Emergent Multilingual Learners
- Special Ed

Lopez Island Family Resources

HB 2078 Section 2 – OSPI OLG



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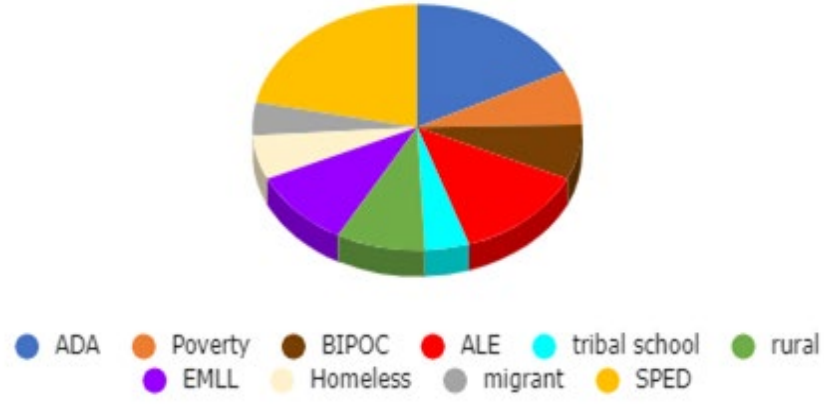
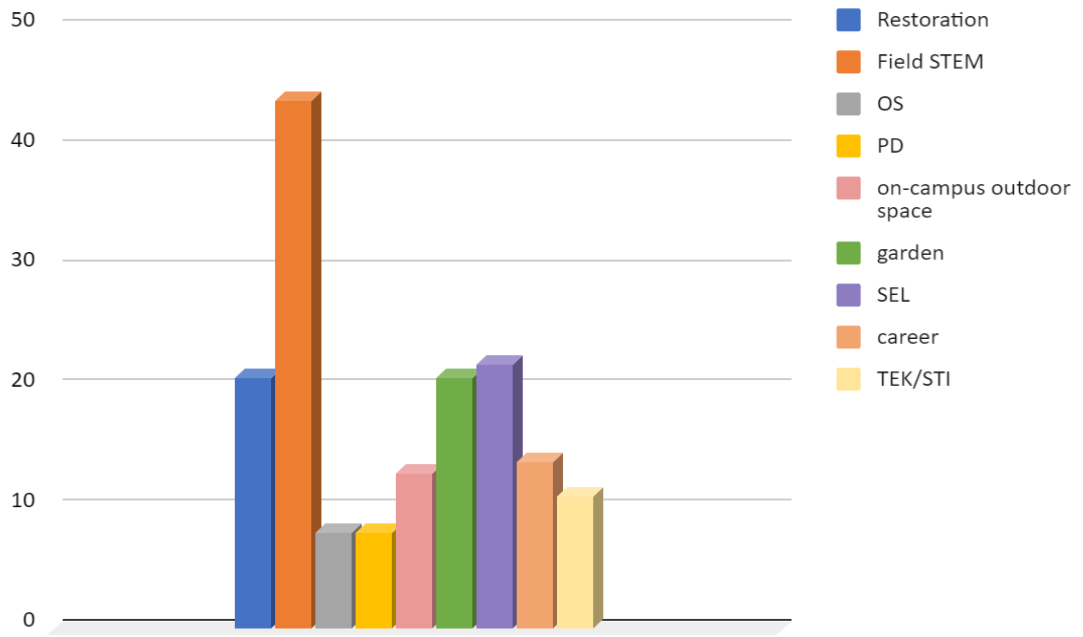
iGrants

- $1.951M available
- 71 projects
- 37,669 students

OSPI Outdoor Learning Grants by Audience Served



OSPI Outdoor Learning Grants by Project Type



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Providing opportunities for underrepresented science students to see themselves in the STEM fields through visits to outdoor research institutions, conducting investigations in the field, and meeting diverse local STEM professionals and...indigenous naturalists.

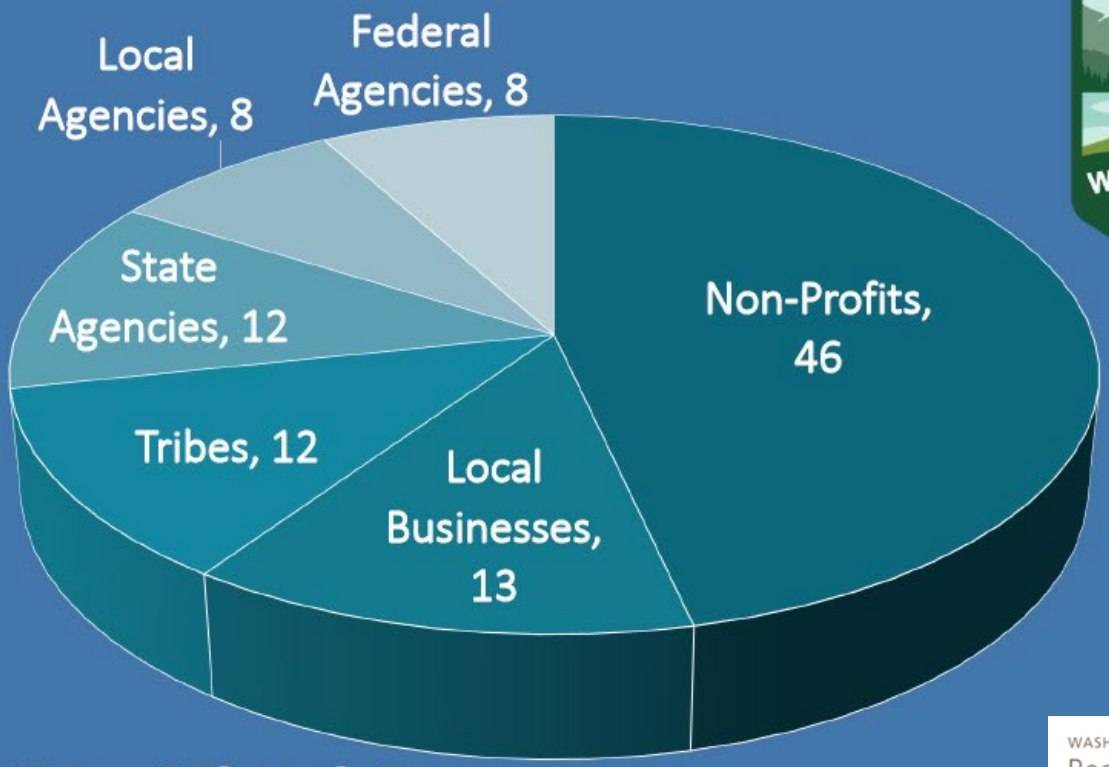
These activities reduce stress, improve student focus and engagement resulting in better academic performance, a reduction in anxiety, and an increase in problem solving and leadership skills while developing a deep sense of place within the community and connection to the lands.

Networking opportunities with different environmental departments like MidColumbia Fisheries, Department of Natural Resources, Bureau of Reclamation, Yakama Nation, and Washington State Fish and Wildlife Department. In addition, the cultural significance of the ecology restoration work is integrated into the program to allow students to increase their knowledge and appreciation of the cultural significance of the work being done.

WASHINGTON STATE
Recreation and Conservation Office

HB 2078 Section 2:
RCO Outdoor Learning Grants

- $1.85M available
- 17 projects
- 20,046 students



Non-School Community Partnerships of the 17 Funded Projects

WASHINGTON STATE
Recreation and
Conservation Office

Outdoor Schools Washington

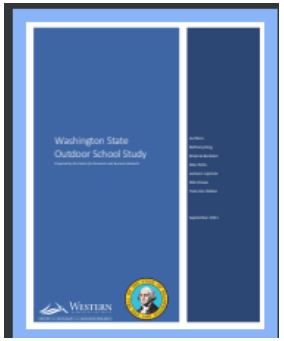
HB 2078 Section 3 (1)

Section 3

(1) Subject to the availability of amounts ...the outdoor education experiences program is established as a program within the outdoor learning grant program established in section 2 of this act. The purpose of the outdoor education experiences program is to develop and support outdoor learning opportunities for 5th and 6th grade students in Washington public schools, with related opportunities for high school students to volunteer as counselors. The program will consist of hands-on learning experiences that: Are three to five days in duration and up to four nights; are overnight or day programs when overnight programs are impractical due to health, cultural, or capacity considerations; and have a focus on environmental education aligned with the Washington state learning standards and the development of social and emotional learning skills.

Outdoor Schools
WASHINGTON

HB2078 Section 4
OSWA 22-23 Funding Model



Based on WWU study, $125 per student per day (or $75 per student for single day trips).

≤ 35.3%:	Transportation
35.4-51.3%:	Funding based on data
≥ 51.3%:	Robust Funding

Outdoor Schools
WASHINGTON

Voices from the Field

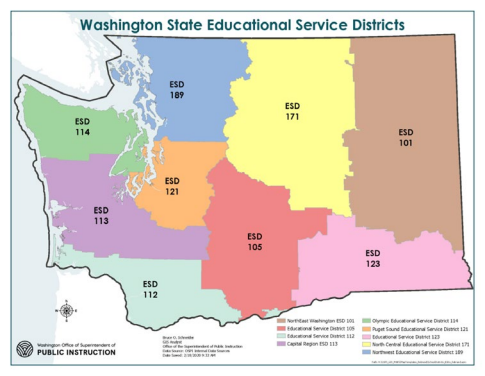
- *My week was a real real challenge. One, my cabin was tough and very outspoken of their needs, feelings and opinions. I thought it was good because usually at things that challenge me I back down but this time I couldn't just leave. This week was great. Not only did I help other kids feel good about themselves, but they also made me feel good about myself. A. Faimalo, Evergreen HS*

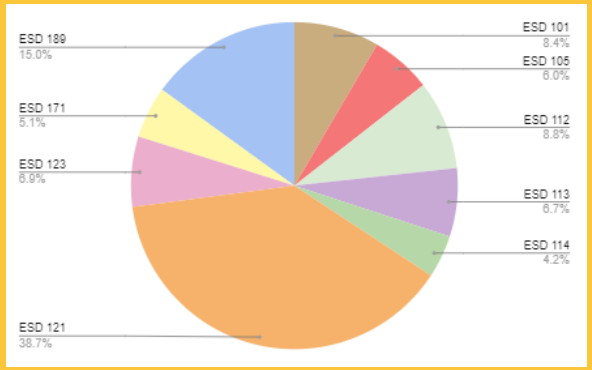
- I felt that during the week at outdoor school I have discovered another side of myself. I had no idea I could be as outgoing as I was. Being a counselor showed me how 6th graders can look up to older people. This experience made me feel imported and that I was always needed and wanted. *J. Syzmanski, Nathan Hale HS*

- Thank you. This week has been as important for me as I know it was for the children. I know I was a positive leader and I learned some wonderful things. It was truly a growing experience. Now I know I can work with kids effectively. That was a powerful lesson Thank you for letting me try this and be successful. *S. Nichols, Truman HS*

Outdoor Schools WASHINGTON

Student Population & Funding by ESD





ESD	population	by %	iGrants Funds - potential	iGrants funds - actual	RCO Funds - Potential	RCO Funds- Actual	OSWA Funds - Potential	OSWA Funds - Actual	Total Potential Funding Available	Total Actual Funding	Actual Compared to Potential (based on population)
TOTAL---->			$1,950,000		$1,850,000		$5,900,000		$9,700,000		
ESD 101	92137	8.4%	$164,620	$295,316	$156,178	-	$498,082	$257,760	$1,114,196	$553,076	49.64%
ESD 105	65701	6.0%	$117,387	$266,202	$111,367	$14,789	$355,172	$201,947	$864,917	$482,938	55.84%
ESD 112	96255	8.8%	$171,978	$95,855	$163,158	$153,149	$520,343	$315,650	$1,104,483	$564,654	51.12%
ESD 113	73655	6.7%	$131,599	$217,567	$124,850	$206,096	$398,170	$645,335	$1,078,282	$1,068,998	99.14%
ESD 114	46107	4.2%	$82,379	$130,755	$78,154	$134,819	$249,249	$323,719	$675,356	$589,293	87.26%
ESD 121	421946	38.7%	$753,886	$329,181	$715,226	$100,000	$2,280,990	$3,011,017	$4,179,283	$3,440,198	82.32%
ESD 123	75725	6.9%	$135,297	$157,167	$128,359	$14,789	$409,360	$90,000	$844,972	$261,956	31.00%
ESD 171	55920	5.1%	$99,912	$206,557	$94,788	$155,332	$302,297	$211,421	$858,886	$573,310	66.75%
ESD 189	163958	15.0%	$292,942	$253,243	$277,919	$1,071,553	$886,337	$881,874	1,457,198.80	$2,206,670	151.43%
Total (math chec	1091404	100.0%	$1,950,000	$1,951,843	$1,850,000	$1,850,527	$5,900,000	$5,938,724	$9,700,000	$9,741,093.61	1.004236455

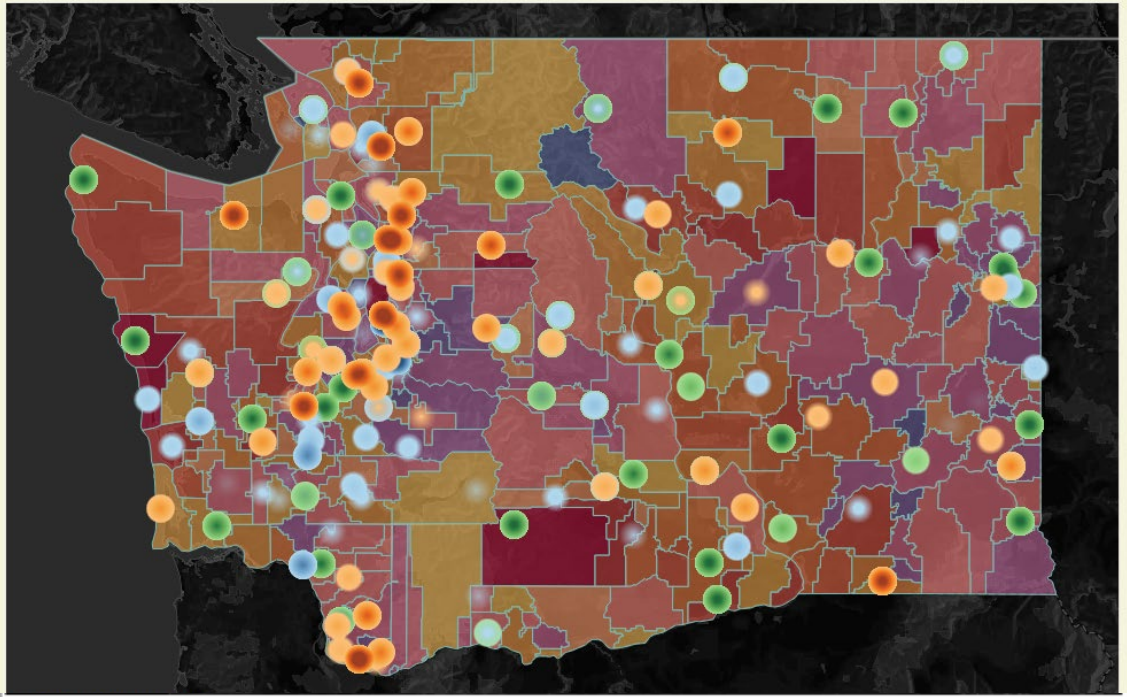
Outdoor Education Funding Allocation: LEA

LEA Dropdown

(All)

OSWA-ESSER	OSWA-HB2078	iGrant-HB2078
$2,513,216.85	$5,917,337.10	$1,951,000.00

- OSWA-ESSER
- OSWA-HB2078
- iGrant-HB2078



Needs most support — Needs least support

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HB 2078: Year 1

	# Apps	Grant ask	# Projects	# Students
OSPI OLG	140+	$2.5M ($1.95M available)	71	37,669
RCO OLG	72	$8M $1.85M available)	17	20,046
OSWA		$16.37M ($5.9M + $4.27 ESSER available)	501 schools	37,981
Total Students				98,961

Climate Science Learning in Washington's K–12 Schools

Ellen Ebert, Ph.D., Director, Secondary Education, OSPI
Lorianne Donovan, Regional Science Coordinator ESD 123
Luke Matlack, Regional Science Coordinator, ESD 105
Carissa Haug, Regional Science Coordinator ESD 171
Lori Henrickson, Climate Science Curriculum Integration Consultant, OSPI
Johanna Brown, Associate Director, Secondary Science, OSPI

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CLIME TIME

CLIMATE SCIENCE LEARNING IN WASHINGTON STATE

ClimeTime Initiative Background

Ellen K. Ebert, Ph.D.

Director, Secondary Education Content

Secondary Education and Pathway Preparation

OSPI

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What is ClimeTime?

The initiative, the proviso, the funding

2017	Invitation from the Governor-Listening Session
2018	$4 Million Legislative Proviso
2019-21	$6 Million in continuation funding
2021-23	$8 Million in continuation funding
2021-23	$300,000 for Higher Education Teacher Climate Cooperative
2022-23	$200,000 Climate Science Content

CLIMATE SCIENCE IN WASHINGTON STATE

What is ClimeTime?

Intentional use of *system coherence to* frame equity and justice while learning about climate science.

- Equity: Intentional collaboration with underrepresented populations
- Required Collaboration: Educational Service Districts (public) and Community Based Organizations (non-profits)
- Open Educational Resources (OER) requirement
- Classroom practices as a form of equity - formative assessments & relevant phenomenon anchoring, lifting student voice
- Innovative professional learning formats and supports
- Using NGSS performance expectations to drive Earth and Space Science learning.

CLIMATE SCIENCE IN WASHINGTON STATE

ClimeTime Grantees 2021-23

Community Based Organizations

EarthGen
Gonzaga Center for Climate Learning
Institute for Systems Biology
IslandWood
Nooksack Salmon Enhancement Association
Padilla Bay National Reserve
Pacific Education Institute

Tribal Schools

Paschal Sherman Indian School
Chief Leschi School
Chief Kitsap Academy

Educational Service Districts

North Central ESD 171
Northeast ESD 101
Northwest ESD 189
Central ESD 105
Vancouver ESD 112
South Central ESD 123
Puget Sound ESD 121
Olympic ESD 114
Capital Region ESD 113

CLIMATE SCIENCE IN WASHINGTON STATE

Statewide Data from 2021-22

Beneficiaries in 2021-22 School Year:

Number of School Districts:
>852 some school districts participated more than once.
Number of Schools: 1847
Number of Students: 177,257 (approximately)
Number of Educators: 3983
(numbers impacted by COVID Closures)

Other: TOSAs, Administrators: 378 approximately

Since 2018 -- Approximately 26,000 educators have participated in professional learning

CLIMATE SCIENCE IN WASHINGTON STATE

Beneficiaries

Fiscal Year	Number of School Districts	Number of Schools	Number of Students	Number of Educators	Number of Other
2022	**852**	1847	177,257	3983	378
2021	>200	2021	284,448	6640	836
2020	>200	1742	244,894	6058	745
2019	>200	not reported	not reported	7500	included in educator total

CLIME TIME

CLIMATE SCIENCE IN WASHINGTON STATE

Some project highlights

ClimeTime website	STEAM in the Field Studies
Increased community and family engagement	Student engagement and activities
Using local resources for field studies and outdoor learning.	Professional learning opportunities shifted to a variety of venues including new virtual canvas courses
Interpreting climate science research	Projects translated learning materials into Spanish
Washington Tracking Health Network data to track health issues and a changing climate,	*Voices of Hope Project Glad* expands learning opportunities for teachers of multilingual students
STEM Storylines and its library	*OpenSciEd*.
Systems are Everywhere (ISB)	Climate Justice League
K12 professional learning projects in consultation with tribal nations focusing on Indigenous ways of knowing and understanding the natural and physical world	STEM Seminars - Learning to Live with Rising Seas *AESD Climate Science Survey Report*

Learnings

- We benefited greatly from the work of Learning in Places. Dr. Megan Bang and Dr. Carrie Tzou's work gave us a path to follow.
- Working with historically marginalized communities requires respectful and consistent attention to build trust. Creating long-term place-based collaborations in relation to each other and the environment is critical in any science professional learning efforts.

Learnings

Click on a portrait below to read more:

Elementary ClimeTime Institute

The Elementary ClimeTime Institute offered by ESD121 created a hybrid professional learning community of K-5 educators who used the phenomenon of poor air quality due to wildfires to learn how to engage with the NGSS science and engineering practices through the pedagogical approaches outlined in the Ambitious Science Teaching (AST) Project.

Voices of Hope Project GLAD unit by Kate Lindholm & Dr. Sara Martinez

The Teaching for the Climate project was a field-based professional learning experience to support K-5 teachers' ability to lead outdoor, experiential, place-based, and NGSS-aligned science learning that addresses climate topics.

Teaching for the climate

The Teaching for the Climate project was a field-based professional learning experience to support K-5 teachers' ability to lead outdoor, experiential, place-based, and NGSS-aligned science learning that addresses climate topics.

Earth systems and changes at Coyote Canyon Mammoth Site

Earth is ever-changing, and Earth Science education aims to teach students about the ways that humans influence landscape and climate. The Next Generation Science Standards (NGSS) have many standards that help us understand Earth's dynamic nature.

Analyzing & interpreting data: a canvas course for Washington teachers

Teachers across Washington state expressed that they wanted to better understand how to interpret climate science data before leading classes with their own students. In order to reach a broad range of teachers, ESD 113 developed and launched an online course in January 2020.

Exploring water quality in the classroom, the field and through games

Teaching students how to "do" science requires leadership, planning and a strong grasp of academic content. Cheney Middle School's seventh graders had rich opportunities to understand different aspects of water quality through Rebecca Hansen's science teaching and Tammie Schrader's mentorship...

Portraits of Projects

www.climetime.org

www.climetime.org/project-portraits/

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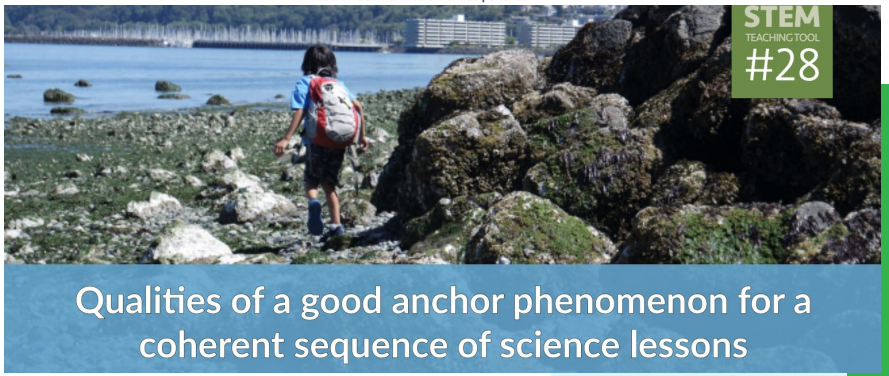
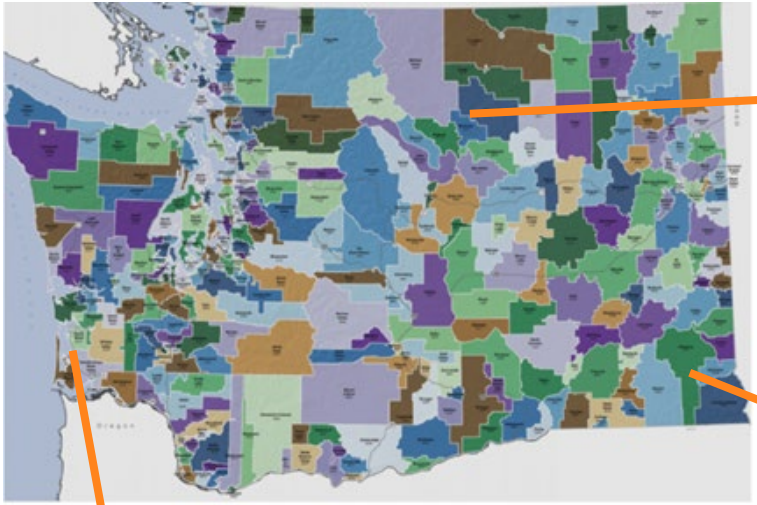
Learnings

- Administrator support at the school and district level supports educators to innovate and thus these educational leaders also need professional learning opportunities.

- Relevant and authentic topics are of keen interest to educators, students, and the communities we serve more broadly.



What challenges exist?



WA has 295 School Districts and 7 Tribal Compact Schools with 2,370 schools each located in unique biological, geological, and cultural environments. Making sure we are meeting all needs is always a continued focus.

CLIME TIME

CLIMATE SCIENCE IN WASHINGTON STATE

New York Times Article

The New York Times | https://www.nytimes.com/2022/11/01/climate/middle-school-education-climate-change.html

Many States Omit Climate Education. These Teachers Are Trying to Slip It In.

Around the United States, middle school science standards have minimal references to climate change and teachers on average spend just a few hours a year teaching it.

By Winston Choi-Schagrin

Nov. 1, 2022 Updated 4:43 p.m. ET

In mid-October, just two weeks after Hurricane Ian struck her state, Bertha Vazquez asked her class of seventh graders to go online and search for information about climate change. Specifically, she tasked them to find sites that cast doubt on its human causes and who paid for them.

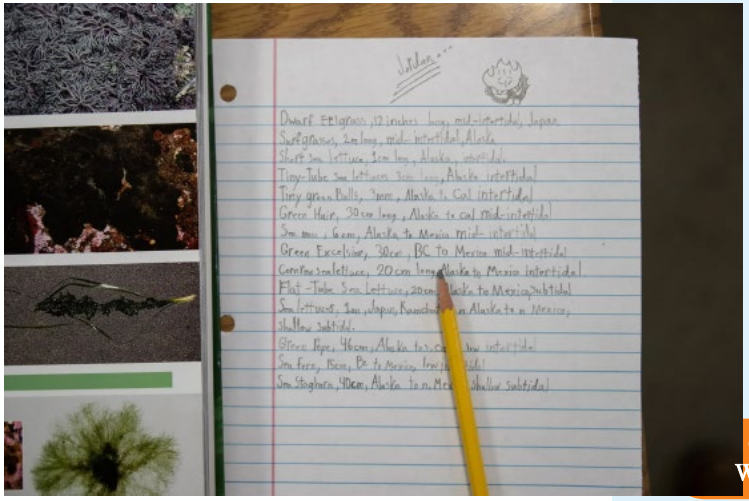
National science educators have lauded ClimeTime as one of the best efforts. The program receives several million dollars a year in state funding. Since 2018, it has trained 14,000 teachers, or more than a fifth of the teachers in Washington State.

NY Times Article

We reflected on the article and how climate science is taught nationwide.

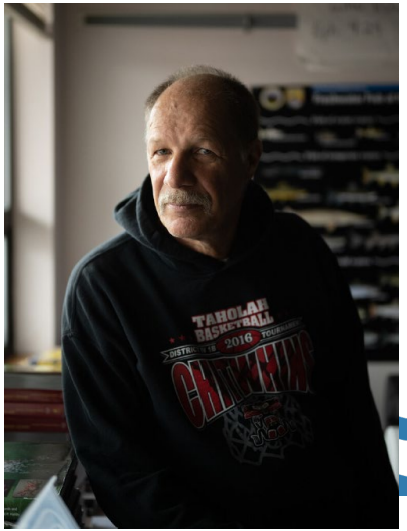
We asked ourselves,

"What are the implications for us in the ClimeTime project? How can we continue to improve our projects and better serve our teachers, students,and communities?"



CLIME TIME

CLIMATE SCIENCE IN WASHINGTON STATE



Jerry Walther
Educator
Taholah Schools

ClimeTime Success Stories ESDs 171, 105, and 123 Collaboration

Lorianne Donovan

Cari Haug

Luke Matlack

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Our Climate is Changing, Why Aren't We? Getting Started Using Children's Literature

Oct 6, 2022 | NEWESD, ESD 105, ESD 123, NCESD 171

CLIMETIME™
CLIMATE SCIENCE LEARNING

Lorianne Donovan Regional Science Coordinator ESD 123 -Tri Cities

Luke Matlack Regional Science Coordinator ESD 105 - Yakima

Cari Haug Regional Science Coordinator ESD 171 - Wenatchee

The start of an idea

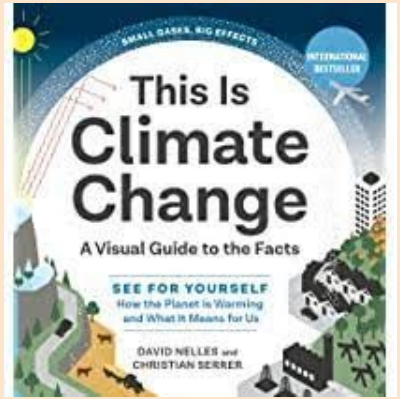
- Feedback from teachers in other Clime Time Professional Learning Opportunities
  - “What do I do with my 6 year olds on the carpet”
  - “I don’t have the confidence to teach about climate change”
  - “Climate change can be scary for young learners”
  - “I don’t have the time and tools to teach climate change”

- Our response, let’s start with Children’s Literature

- Let’s Collaborate as Eastern Washington Regional Science Coordinators

Off to the Bookstore!

- Started with building teacher confidence with

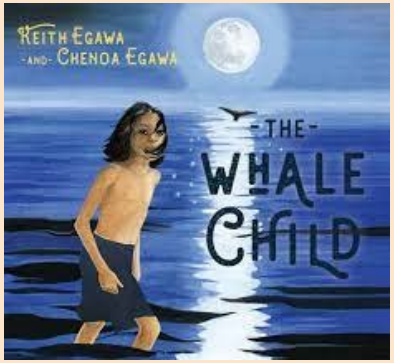


- Reviewed more student centered books
  - All book had a action and hope strands
  - Diversity of perspectives
    - Latino
    - Indigenous Peoples
    - African American
  - Animals and Plants Voices
- Reading Levels of book K-5


Tammie Schrader ESD 101
Lorianne Donovan ESD 123
Cari Haug NCESD 171
Luke Matlack ESD 105
Eva Petroff
Kelsey Daniels
Lori
John Fraczek (He/Him)
Mary's iPad (2)
Katie Beery
Stacy M
LisaSwearingen
Kristina Jones
2nd grade LaiLee Daling
DOROTHY ARMISTEAD
DRichardson
Angelica
JDutcher
Marla Mathison
Stephanie Cuceu
Gayle 5th
Gayle 5th
JessicaHoff
Tracie Utt Tonasket
RACHEL PAXTON
Jennifer Bunney
karla.way
Jennifer Collins
Tiffany DeWitt
Anna Rawson
Julie Lowery-Twain Librarian
Linda Wilkins
Cathy Morris
Elise Mills - 5th Grade
alvina marcil
kimberly.manderbach
Kiran Dhillon
Merry
Maribel Gonzalez
hollyferrell
Christine Rase
Abby Amador
Heidi Hague
Jenn Hartsfield
Rosa Benitez-MSD
Alma Guillen-Washington
Joyce Johnson
Julia Lazaroff
Emily Gurnard
Lauren Doerrie

Opening Minds to Learning, Action, and Hope.

Feb 1, 2023 | NEWESD, ESD 105, ESD 123, NCESD 171



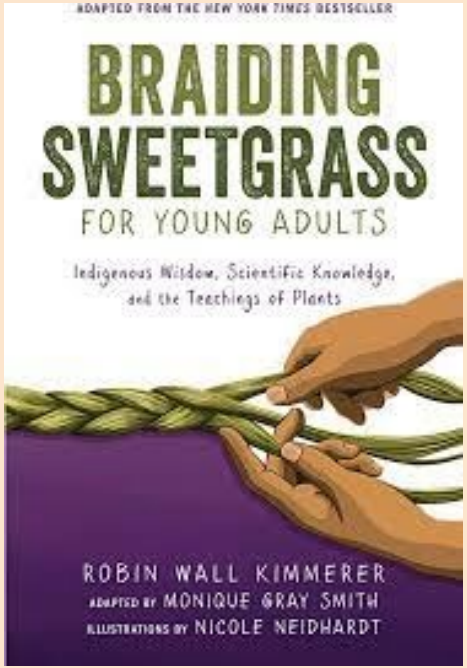
Local Salish Voice

- Connected with Keith and Chenoa
- Joined the teachers in Session #3
- Integration with Literacy/Science Coordinators (Guide)
- Building Relationships

Read Aloud Guide

Impact and Next Chapter

- Session #4 is TONIGHT - we will hear teacher impact stories
- We will offer this professional learning again in the next CLIME TIME funding year
- Next year Secondary book study with Braiding Sweetgrass for Young Adults



ESD105 EDUCATIONAL SERVICE DISTRICT 105

EDUCATIONAL SERVICE DISTRICT 123

NCESD

Climate Science Integration Program

Lori Henrickson

Climate Science Curriculum Integration Consultant

Secondary Education and Pathway Preparation

OSPI

Washington Office of Superintendent of
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What does a Climate Science Curriculum Integration Consultant do?

- Support integrating climate change content into Learning Standards
- Develop materials and resources to help school districts develop interdisciplinary units focused on climate change
  - Authentic learning experiences
  - Integrating a range of perspectives
  - Action oriented

(x) Within amounts provided in this subsection (1)(a), $200,000 of the general fund—state appropriation for fiscal year 2023 is provided solely for a climate science curriculum staff position within the office of the superintendent of public instruction and to integrate climate change content into the Washington state learning standards across subject areas and grade levels. The office shall develop materials and resources that accompany the updated learning standards that encourage school districts to develop interdisciplinary units focused on climate change that include authentic learning experiences, that integrate a range of perspectives, and that are action oriented.

ALL students deserve to learn about climate change

...and not just in science class

The solutions needed to reduce the human impact on our climate and climate's impact on humans are not found only in science concepts.

Designing innovative solutions to these challenges requires a multi-disciplinary approach, connecting diverse ways of knowing across multiple content areas.

ALL Teachers Can Be Climate Teachers

K–12 Climate Teachers Are...

More Like	Less Like
A 1st grade teacher who integrates Science, Social Studies, ELA, Math, and Visual Arts Content Learning Standards to help students figure out what the plants in the school garden need to survive.	A teacher who has their students read about plants during the ELA-block without making connections to other content areas or bringing in real plants for students to investigate.
A 3rd grade teacher who integrates Science, Social Studies, ELA, Math, and Visual Arts Content Learning Standards to help students investigate extreme weather students have experienced locally.	A teacher who has their students color in a pie chart to show how water is distributed around the world without context.
A 7th grade team that centers their instruction around making a difference in their community, especially around climate change.	A teacher who teaches their content area in a "silo," and doesn't help connect similar concepts taught in other content areas for their students.
High school Contemporary World Problems, ELA, and science teachers who work together to incorporate a local tribe's "Climate Resiliency Plan" into instruction with their shared students.	A teacher who doesn't approach climate change or climate science because the words "climate change" or "climate science" don't appear in their standards.

Wui Ling Phang for ArtistsForClimate.org CC-BY-NC-SA

Amina Abdul Salam CC-BY-NC-SA

How do we support ALL educators to teach climate?

Expanding support to all content areas looks like:

- Providing sustained climate-specific professional learning for all educators.
- Creating and supporting climate-centered cross-disciplinary teacher networks.
- Providing instructional guidance to support climate integration.
- Evaluating the structures and supports for the Washington State Learning Standards.

Washington State Climate Education Summit

When: April 28-29, 2023

Where: The Museum of Flight, Seattle

Who: 200 K–12 educators from all subject areas across the state

We are bringing teachers from all across the state from all different content areas to build our network of climate teachers.

More information coming soon!

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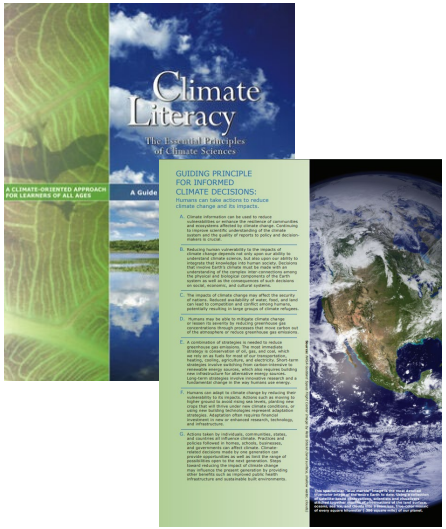
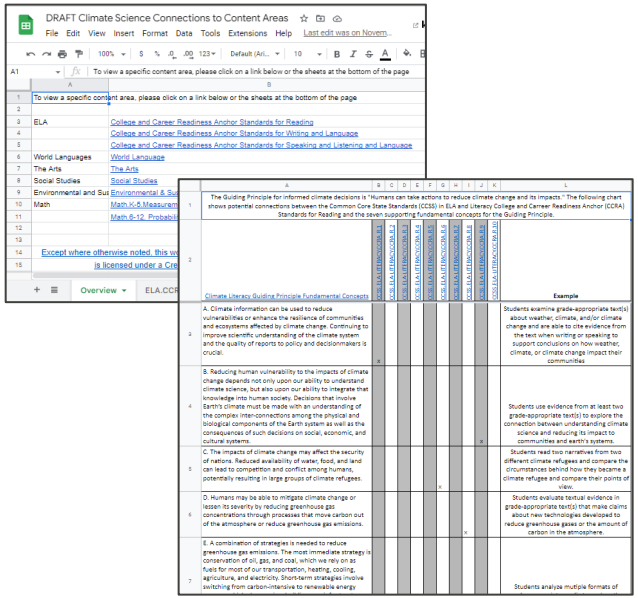
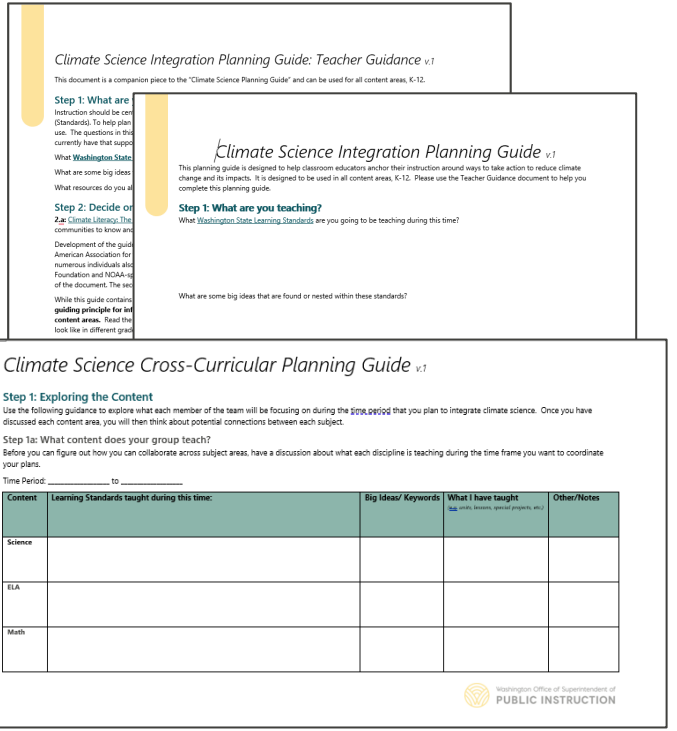
Connecting Content Areas to Climate



[Guiding Principle for Informed Climate Decisions:](#) Humans can take actions to reduce climate change and its impacts



[Draft Climate Science Connections](#)



[Climate Science Integration Planning Tools](#)

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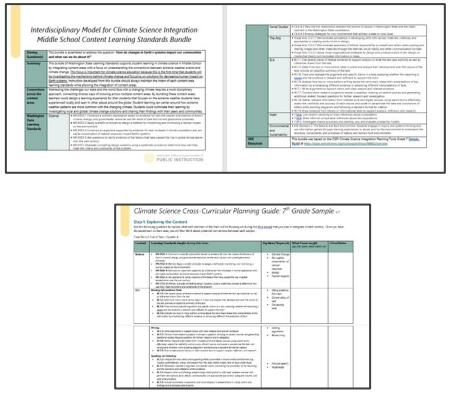
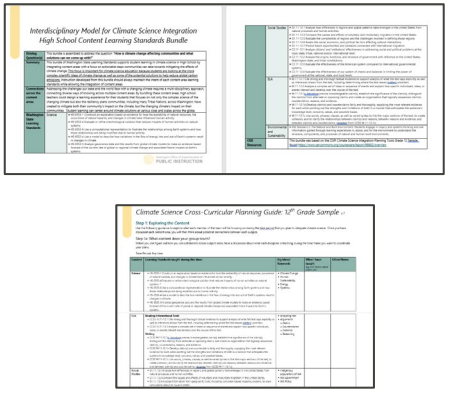
Sample Bundles and Planning Guides

K-5
[Interdisciplinary Model for Climate Science Integration Content Learning Bundles]



Middle School
[Interdisciplinary Model for Climate Science Integration Content Learning Bundle]

[Grade 7 Sample Climate Science Cross-Curricular Planning Guide]



High School
[Interdisciplinary Model for Climate Science Integration Content Learning Bundle]

[Grade 12 Sample Climate Science Cross-Curricular Planning Guide]

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Looking Ahead
Bringing the pK-12 Initiatives Together

Johanna Brown

Associate Director; Secondary Science

Secondary Education and Pathway Preparation

OSPI

Washington Office of Superintendent of
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ClimeTime in five years, where will we be?

A New Vision for Science Education

Key Shifts that come with the Next Generation Science Standards

- Phenomenon and Problem-Centered Learning
- Student-Centered and Student-Driven Active Learning Experiences
- Focus on Student Sensemaking

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link to document

A New Vision for Science Education

Implications of the Vision of the Framework for K-12 Science Education and the Next Generation Science Standards

SCIENCE EDUCATION WILL INVOLVE LESS:	SCIENCE EDUCATION WILL INVOLVE MORE:
Rote memorization of facts and terminology	Facts and terminology learned as needed while developing explanations and designing solutions supported by evidence-based arguments and reasoning.
Learning of ideas disconnected from questions about phenomena	Systems thinking and modeling to explain phenomena and to give a context for the ideas to be learned
Teachers providing information to the whole class	Students conducting investigations, solving problems, and engaging in discussions with teachers' guidance
Teachers posing questions with only one right answer	Students discussing open-ended questions that focus on the strength of the evidence used to generate claims
Students reading textbooks and answering questions at the end of the chapter	Students reading multiple sources, including science-related magazine and journal articles and web-based resources; students developing summaries of information.
Pre-planned outcome for "cookbook" laboratories or hands-on activities	Multiple investigations driven by students' questions with a range of possible outcomes that collectively lead to a deep understanding of established core scientific ideas
Worksheets	Student writing of journals, reports, posters, and media presentations that explain and argue
Oversimplification of activities for students who are perceived to be less able to do science and engineering	Provision of supports so that all students can engage in sophisticated science and engineering practices

The Shift to “Figuring Out” or “Sensemaking”

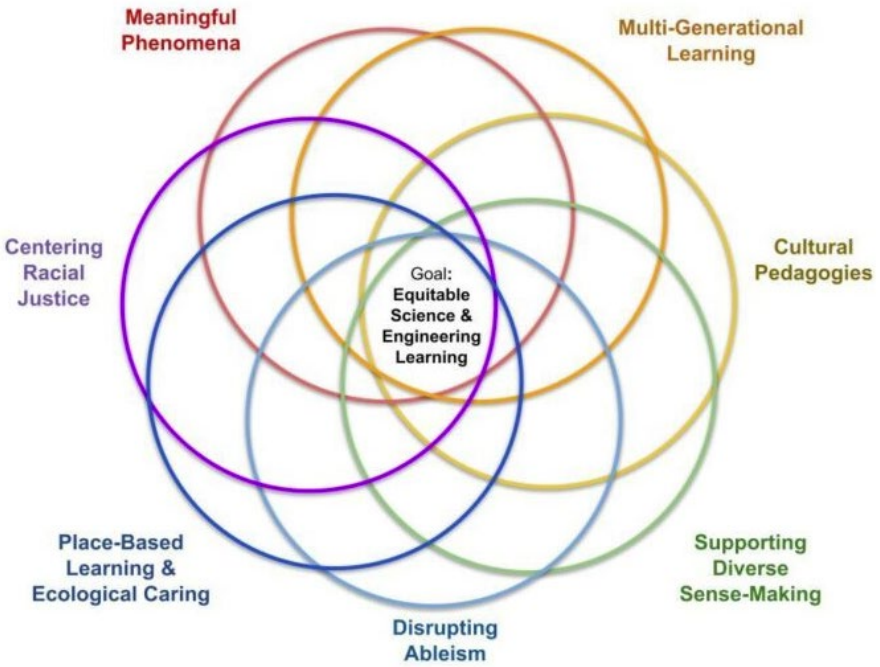
“By centering science education on phenomena that students are motivated to explain, the focus of learning shifts from learning about a topic to figuring out why or how something happens.”

The future of science learning means students need to be in the field for authentic learning and imagining solutions for real-world problems.

Image from Pacific Education Institute

From Using Phenomena in NGSS-Designed Lessons and Units

A Coherent Framework for Science, Climate, and Outdoor Learning



From STEM Teaching Tool #71

How do we effect change now for our future?

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Photos (from left) courtesy of ESD 112, Pacific Education Institute, Chief Leschi Schools, & ESD 113.

Content Integration

The major challenges of today such as climate change and pandemic responses do not only live in science, they are social, political, and cultural.

Integrating content around climate prepares students to be tomorrow's innovators.

Integrating content in elementary especially allows for equitable access to science learning.

Photo courtesy of Padilla Bay

High Quality Curricula

A well-designed curriculum creates equitable access to learning.

The ClimeTime Proviso supports the development of High Quality Open Access Instructional Materials housed on Washington's Open Educational Resource (OER) Hub.

Further work is continuing in partnership with many other states to train teachers and administrators in using updated OER materials.

Photo courtesy of Chief Leschi Schools

Evidence-Based Pedagogy

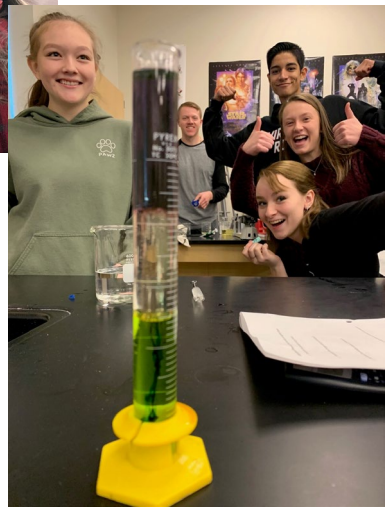
Increasing student access to the outdoors for place-based learning and physical and mental health.

Creating classroom assessments that demonstrate student ability to transfer learning to novel environments and attend to their social emotional learning.

Supporting STEM learning in CTE classrooms by updating further CTE science equivalencies and creating professional learning opportunities for CTE teachers.

Photo courtesy of the Chief Kitsap Academy Ocean 2 Table Project

The Future Vision of STEM Education in Washington State:



Beyond hands-on, grounded in complex phenomena that are relevant to student identity and interest and are:

- Authentically engaging and accessible to all students.
- Integrated with all content areas.
- Responsive to the future needs of our state
- Preparing students to be citizens ready to be the solution innovators needed to confront the impacts of climate change.

Photos courtesy of Pullman Public Schools

Our Future Vision Requires

- Quality professional learning for current and pre-service teachers.
- Outreach to instructional leaders about the shifts in STEM and the need for robust science programs in elementary schools.
- Connecting students to their communities and land via outdoor education.
- Ensuring climate science is integrated into content
- Strong relationships with industry, higher education, and community-based organizations.

Photo courtesy of ESD 112

A child's learning begins with cultivating and nurturing...

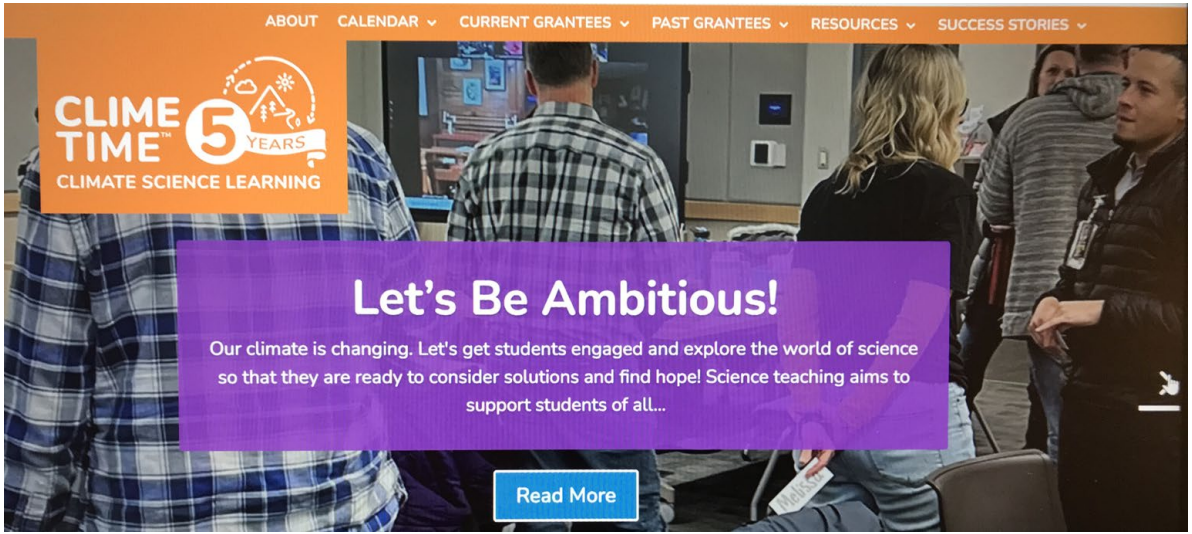
- Tending and caring
- Awe and wonder
- A sense of place
- Interconnectedness
- Mentoring at all ages
- Time to explore and discover
- Engaged action

...and results in Student Citizenship and Stewardship

Photo courtesy of Spokane Public Schools

ClimeTime in the next five years!

The future is solutions-oriented and filled with hope and action for what our students will be able to accomplish



Thank you for your time today.

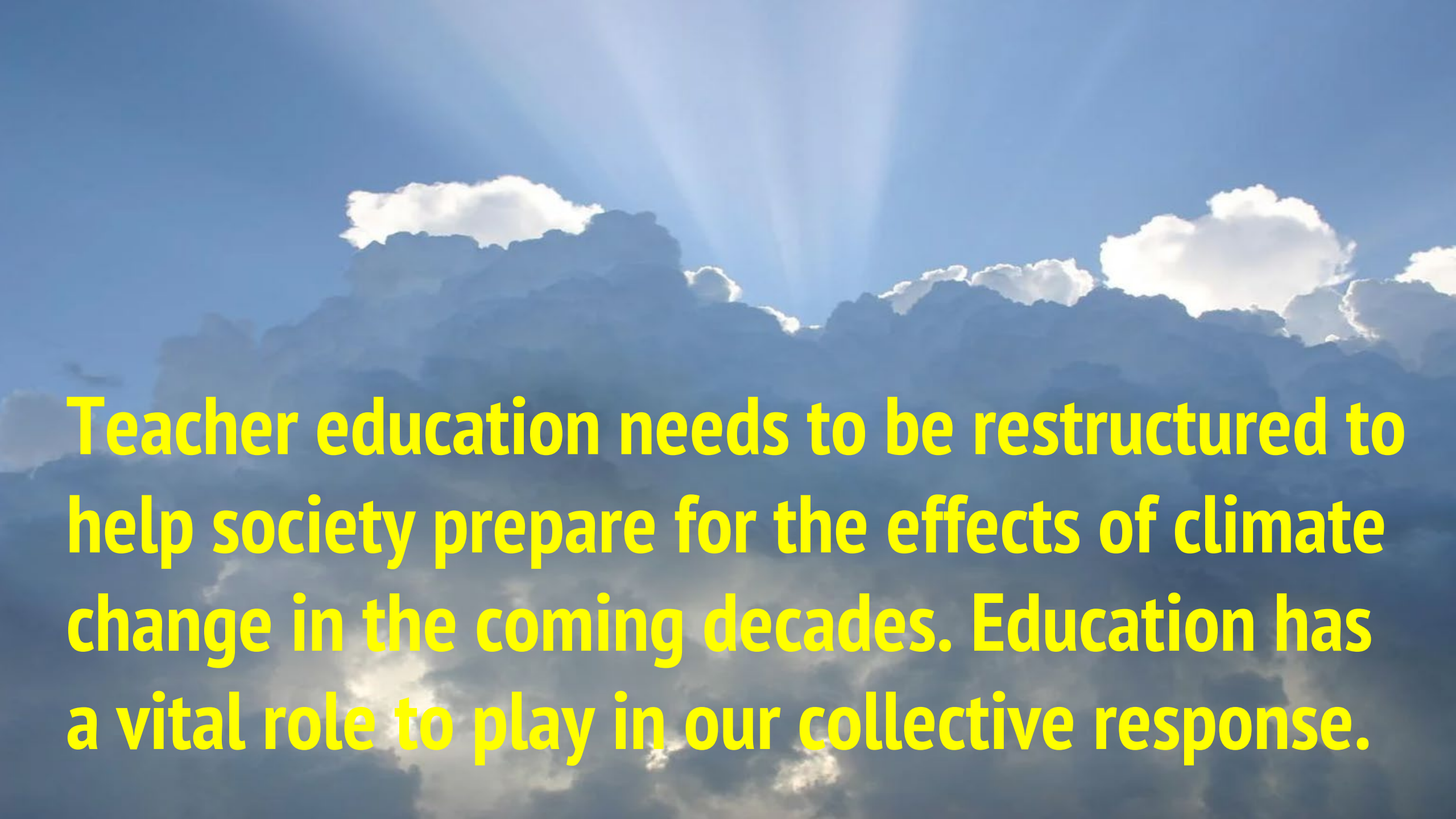
Questions, comments, and discussion.

CLIMATE SCIENCE IN WASHINGTON STATE

@ClimateEdTools

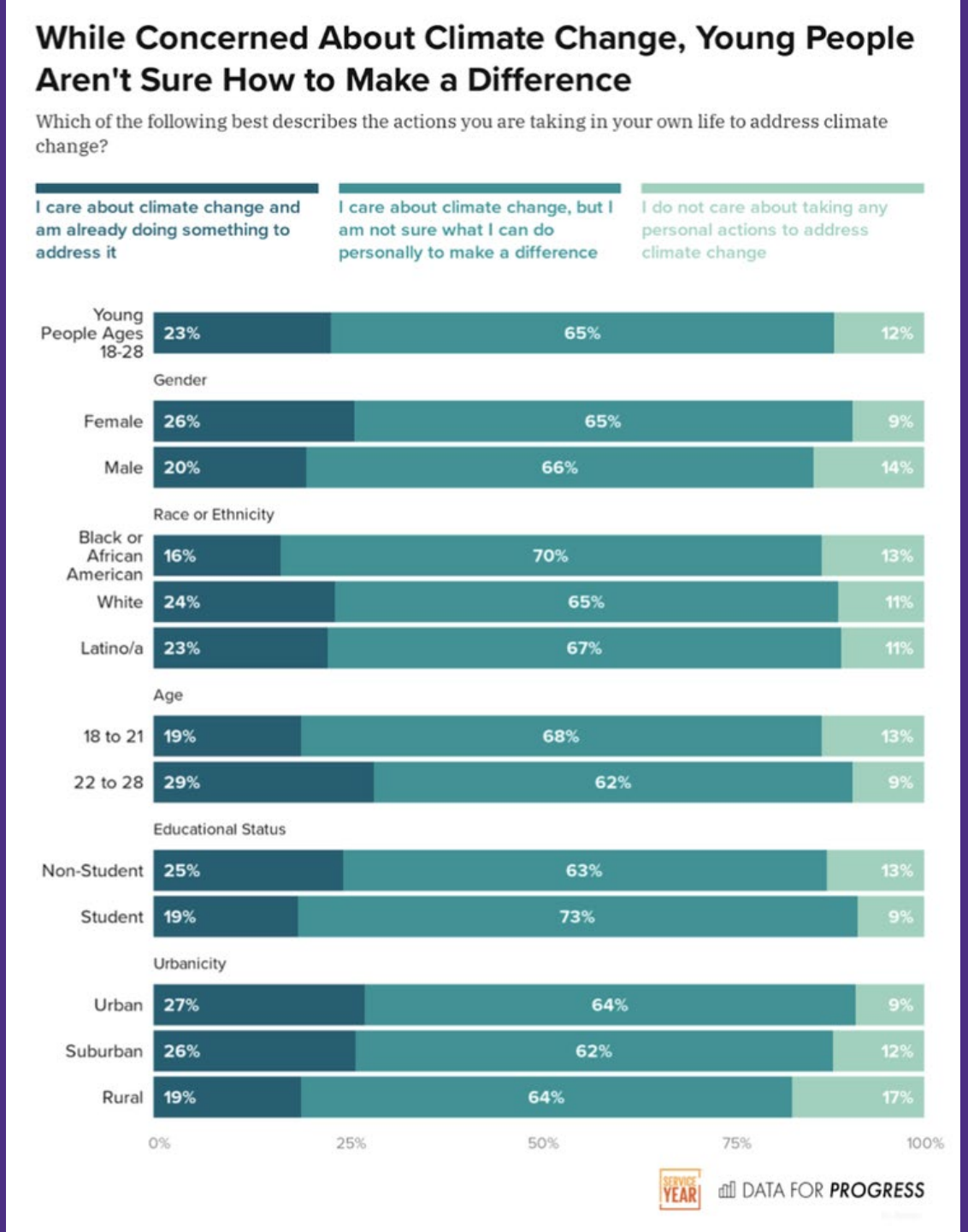
The Climate Teacher Ed Collaborative

Philip Bell & Deb L. Morrison • February 2023 •
Institute for Science + Math Education • UW Seattle


Teacher education needs to be restructured to help society prepare for the effects of climate change in the coming decades. Education has a vital role to play in our collective response.

"While a strong majority of young people (88%) care about the climate, roughly two-thirds (65%) are unsure of what they can do to personally impact climate change." Data For Progress (11 May 2022)

Education has a vital role to play in closing the 'climate action gap.'



The Climate Teacher Ed Collaborative

A network building resources and capacity to teach about community climate justice projects and youth civic action in teacher education programs.

We have been convening the network and engaging in: (a) shared learning experiences & building community, (a) co-design of teacher ed OER, and (c) redesigning teacher ed courses.

The Climate Teacher Ed Collaborative

STEMteachingtools.org
@ClimateEdTools

Contact us to learn more about this work...
Prof. Philip Bell pbell@uw.edu @PhilipLBell
Dr. Deb L. Morrison eddeb@uw.edu @educatordeb
University of Washington • College of Education

STEM teaching tools STEMTeachingTools.org
Practical tools for science educators

12/21/2021

PROJECT SUMMARY

Education needs to dramatically build capacity to teach all students how to engage in scientifically and ethically informed civic action to address climate change. This collaborative network is building resources and capacity to teach about climate change in teacher education programs across Washington state and beyond. We are hosting network events, developing rich case studies of climate response, and engaging small collaborative teams in imagining, developing, and using open education resources (OER) that help future science teachers learn how to teach about *community climate justice projects*.

BACKGROUND

The Institute for Science + Math Education at the University of Washington is coordinating this WA state-funded collaborative in partnership with the Washington State Office of Superintendent of Public Instruction (OSPI). It builds on the success of the ClimeTime Initiative that has worked with over 22,000 inservice teachers since 2018. The OER resources will be published to the STEM Teaching Tools site and will be shared broadly.

COLLABORATIVE DESIGN APPROACH

Resources and capacity are being developed through an iterative design process that intentionally disrupts dominant power structures and centers the histories and interests of frontline communities impacted by climate change. Collaborative design teams will include expertise from a diverse set of participants including: teacher educators, frontline community leaders, climate youth activists, educators, community and Tribal Nation experts, climate scientists, and educational researchers. Network participants are supported to take up a shared commitment to just, thriving, and regenerative conditions for all living things in their contexts—in keeping with how we want all students to learn to respond to climate change. Please follow the work of the collaborative on Twitter and consider getting involved!

Link to One Pager & Twitter Handle

Climate Teacher Ed Collaborative

Central Washington University (2 teacher ed programs)
Eastern Washington University
Gonzaga University (2 teacher ed programs)
Seattle University
University of Washington Bothell
University of Washington Seattle (4 teacher ed programs)
Washington State University, Vancouver
Washington State University, Pullman
Western Washington University

Individuals from Islandwood, UC Berkeley, University of Colorado Boulder, and OSPI routinely participate. We have met with PESB and WACTE.

Climate Collaborative Shared Aim and Driver Diagram

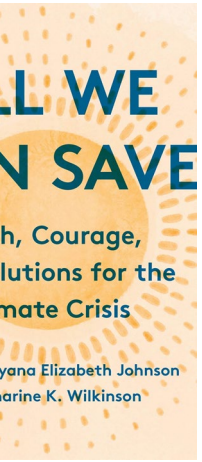
Shared Aim

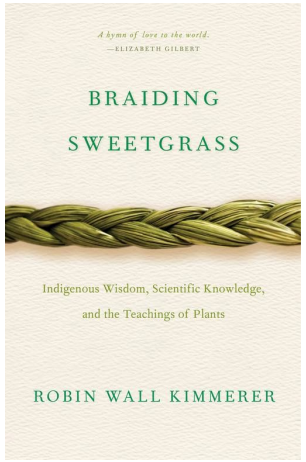
Future teachers are ready to engage youth in community climate justice projects & justice-centered civic participation about the climate crisis

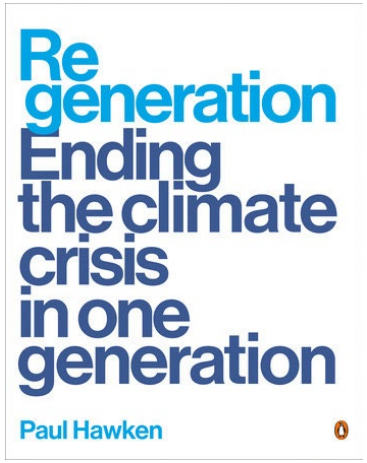
Collaborative Activities

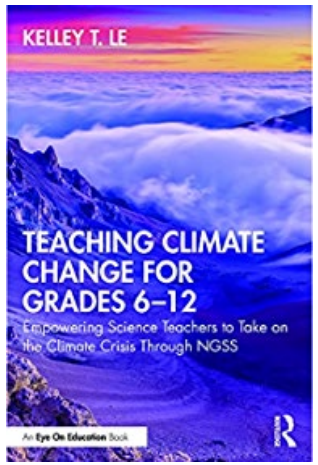
- Network Convenings & Shared Learning Experiences
- Co-Design of Professional Learning Resources, Course Modules & Field Engagements
- Supporting Course & Field Experiences
- Coordination with other Networks & Colleagues

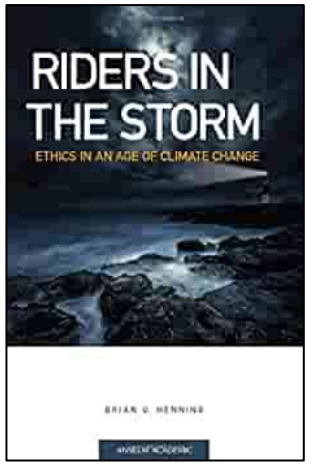
Climate Texts Integrated into Courses Across the Network

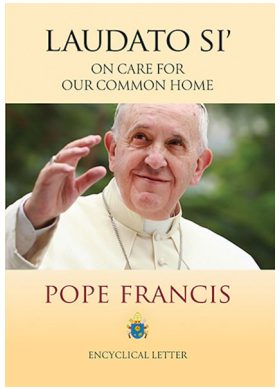


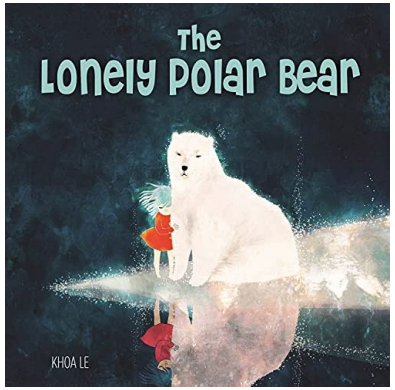


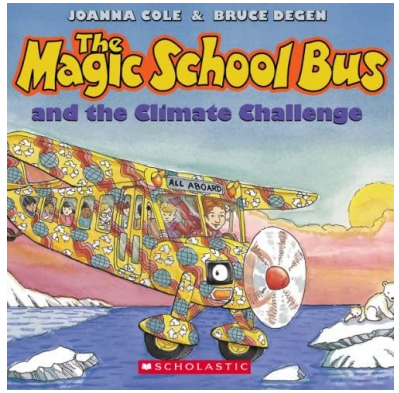


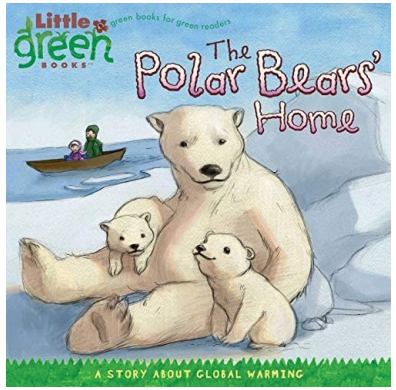


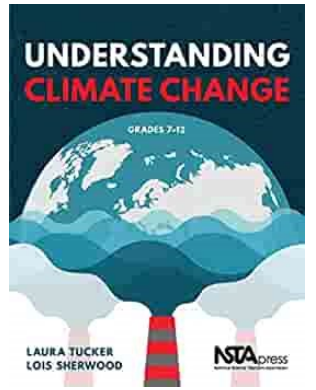


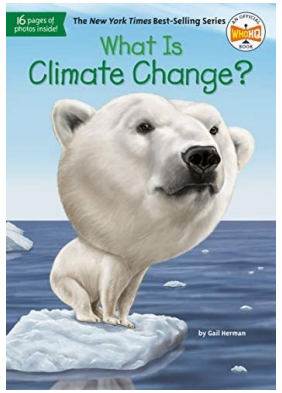












Climate Teacher Education Collaborative: Webinar Series

Webinars invite climate ed experts to share their work and supporting resources for new teachers.

Each webinar becomes the kernel of an OER teacher ed lesson plan.

Webinar Playlist

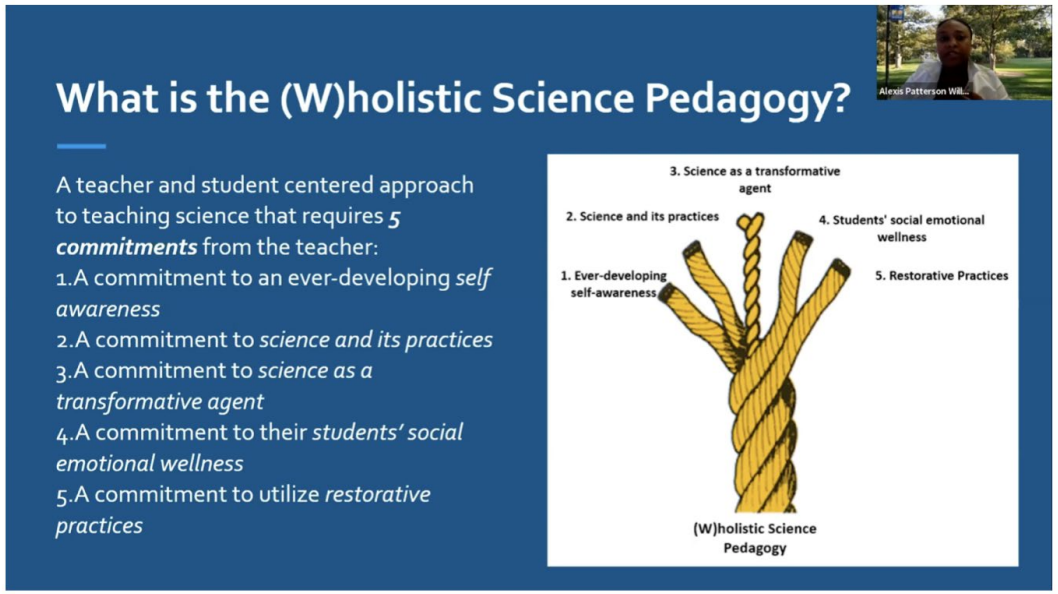
Co-Design of Climate Ed Tools

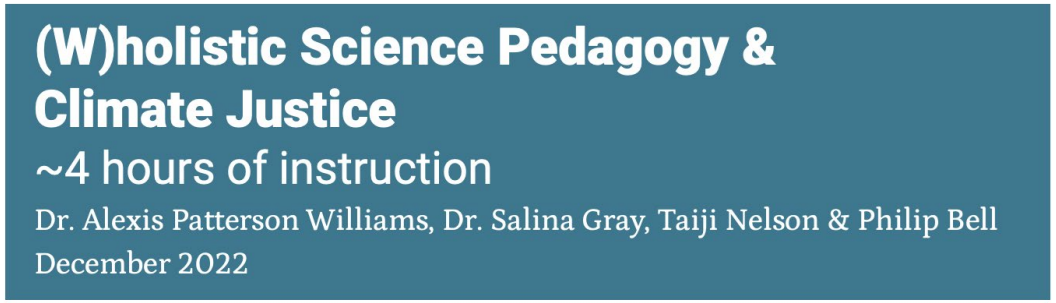
We have been developing a set of OER lessons for climate teacher education. Lessons are developed to pair with each monthly webinar recording. They support the development of specific climate justice teaching practices.

Climate Ed Tool #5: (W)holistic Science Pedagogy & Climate Justice

STEM teaching tools

Climate Education Tool #5





When Might You Use It: (link)

To help teachers work to adopt a coherent pedagogical approach that supports just and liberatory science education; to learn about climate justice, social-emotional learning, and the UN Sustainable Development Goals

Collaborative Design Workgroups

- **Arts, Education & Climate Justice:** creating an asynchronous online undergraduate course and an associated set of teacher ed course modules
- **Elementary Integration:** convened local network to build capacity and develop integrated lesson approaches
- **Climate Teaching Support Tools:** generating thematic categories of tools and resources for adapting existing curricula for climate action
- **Rural Climate Ed:** identifying rural contexts, groups, and phenomena to integrate into teacher ed courses

Arts, Climate & Equity Course

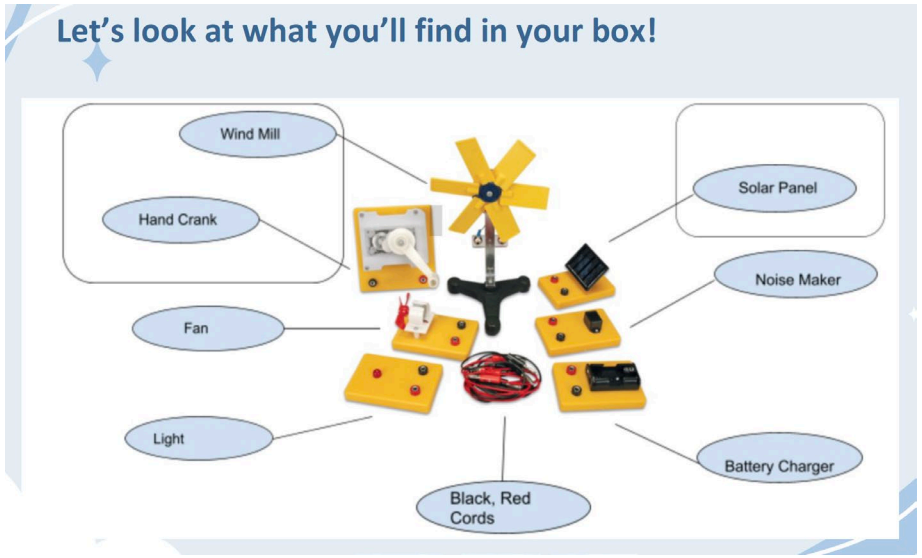
Modules

- Module 1 - Introduction to the challenges and opportunities of climate change
- Module 2 - Humans and Nature: A Necessary Unity
- Module 3 - Inheritance of Land, Forests, Oceans
- Module 4 - Cities
- Module 5 - Food Systems
- Module 6 - Energy
- Module 7 - Climate and Emotion
- Module 8 - Communicating with Children and Youth
- Module 9 - Imagining New Stories, New Futures

A co-design group has authored a full undergraduate course on learning about climate science and climate change response through arts-based pedagogies.

The course will be taught this spring, published as an OER course, and adapted into teacher education modules.

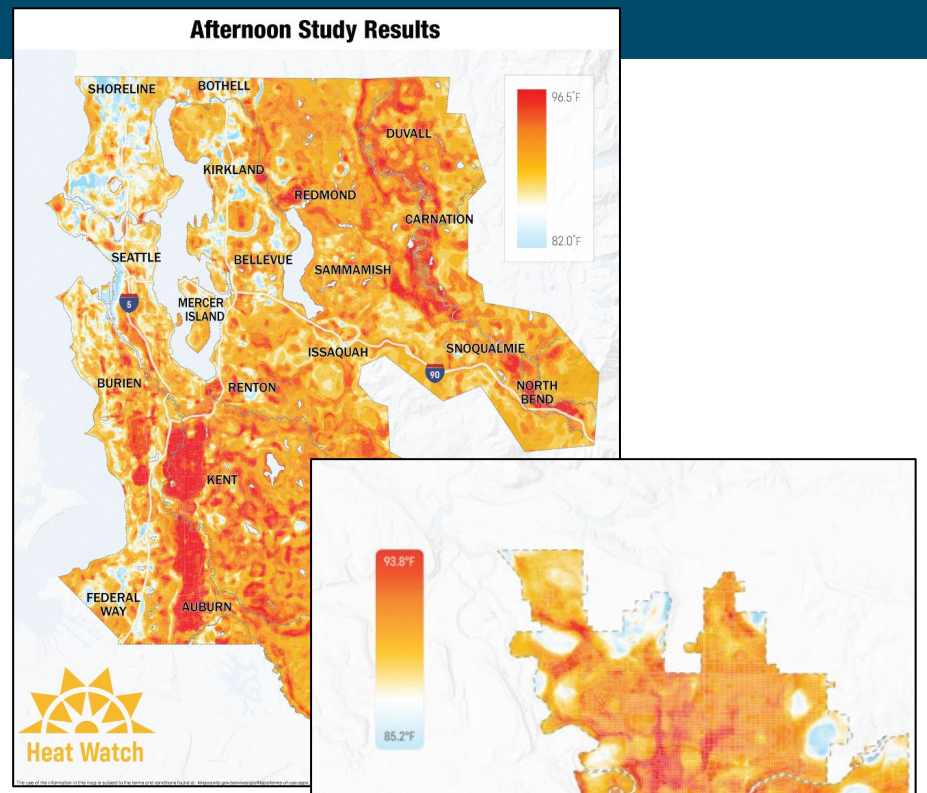
Integration of Climate Literacy into Elementary Teacher Education

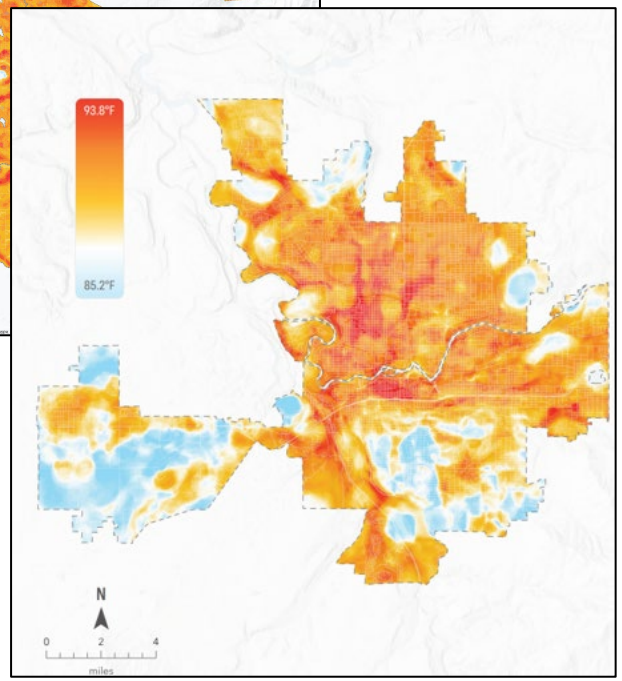


With support from the Collaborative, staff from the Center for Climate, Society & the Environment at Gonzaga U has been integrating climate literacy learning sequences into teacher education courses in collaboration with faculty.

In addition to climate literacy lectures, they engage future teachers with model curricular units focused on a range of topics—e.g., renewable energy sources and associated green jobs.

Community-led Climate Justice Response: Urban Heat Islands





Another co-design group is focused on helping future teachers learn about urban heat islands by analyzing recent heat maps, contributing to citizen science data collection efforts, designing and carrying out their own neighborhood investigations, and studying how communities and municipalities (Spokane and Seattle) are responding to the disproportionate impacts of urban heat islands.

They are developing a model that engages preservice teachers with justice-centered community groups preparing for future heat waves & greening the city.

Future Activities of the Collaborative

We are continuing existing work and taking up…

- **Expanding the Collaborative** (e.g., through WACTE network)
- **Curriculum Adaptation:** support university teams in adapting existing resources for local, embedded use
- **Teacher Ed Program Integration:** developing capacity and resources to support faculty in engaging their local colleagues in this climate-centered instructional work
- **National Networking:** connect WA state faculty into national network of climate teacher educators

Climate Learning Resource Portal (on STEM Teaching Tools) Slide Deck

Portal Includes:

- Practice Briefs
- Climate Assessments
- Webinar Recordings
- OER Teacher Ed Lesson Plans
- Practitioner Accounts
- Research Summaries
- Climate Justice Grad Seminar

http://stemteachingtools.org/sp/climate-learning

Back Pocket Slides

CLIME TIME™

CLIMATE SCIENCE LEARNING

@ClimateEdTools

The Climate Teacher Ed Collaborative

ClimeTime: A State-level Professional Learning Network in Washington

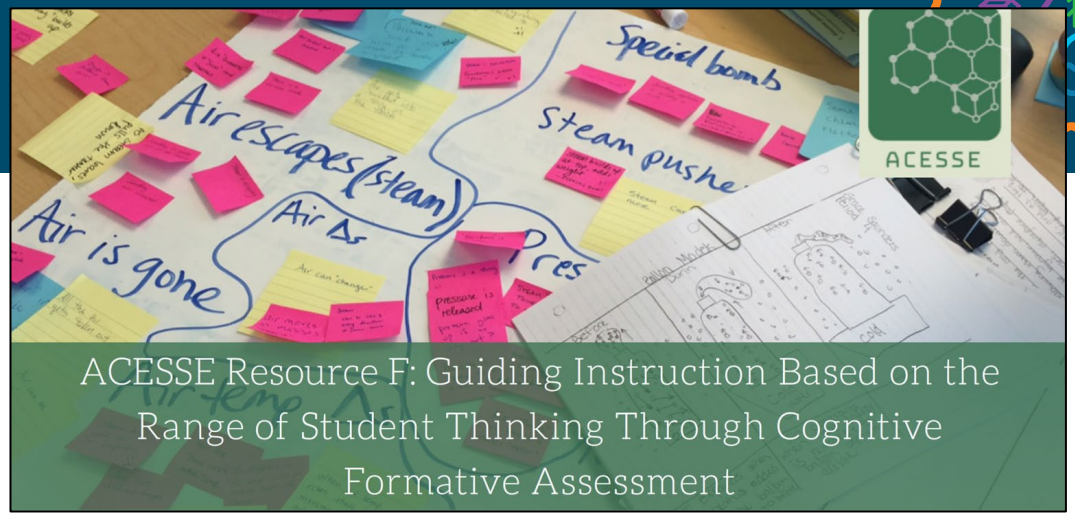
A network engaging educators across Washington state in professional learning about equitable science education with a focus on climate science instruction. Since 2018, the ClimeTime network of state employees, community-based organizations, and Tribal Nations have worked with 26,000 teachers across Washington.

Learning about regenerative agriculture

Learning about Indigenous ways of knowing with members of Muckleshoot Tribal Nation

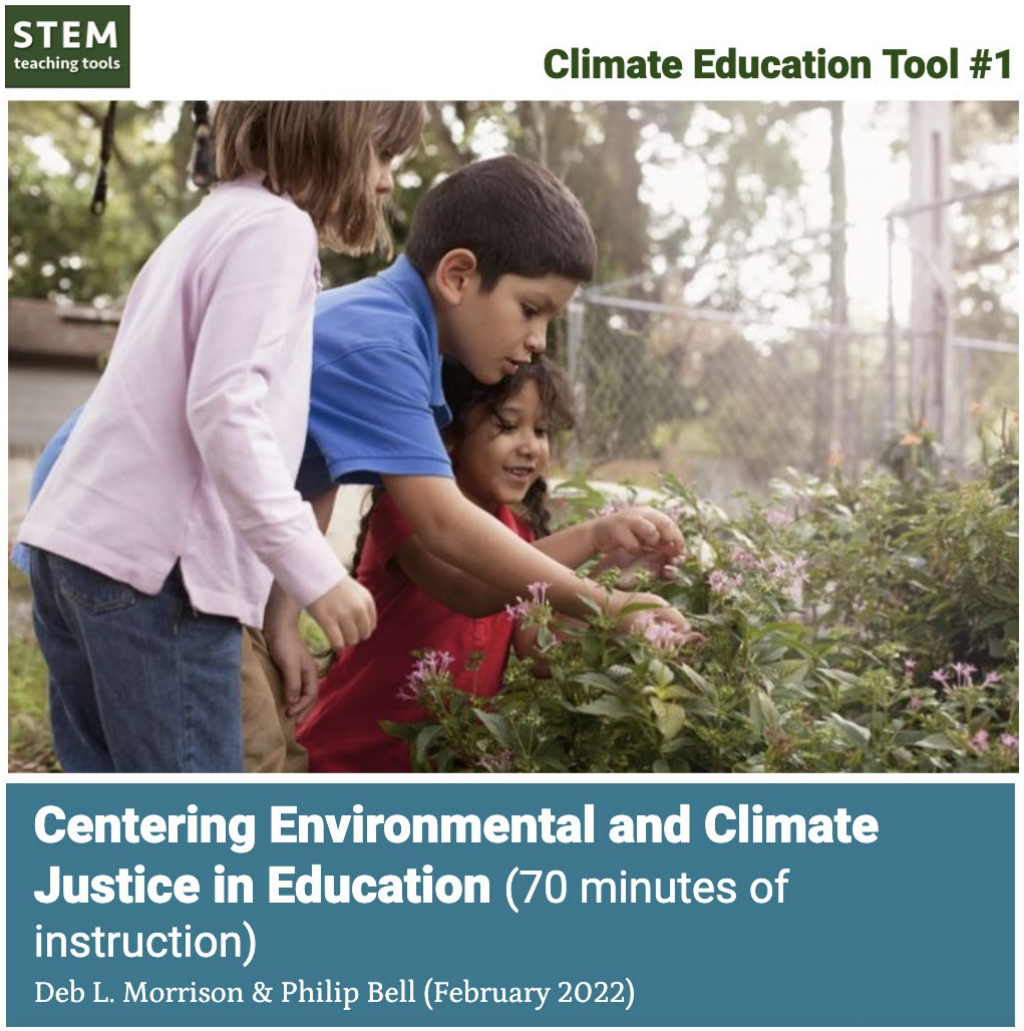
Learning about fuel load with mega forest fires

New STEM Teaching Tools



Playlist of PD Video Recordings

Climate Ed Tool #1: Centering Environmental and Climate Justice in Education



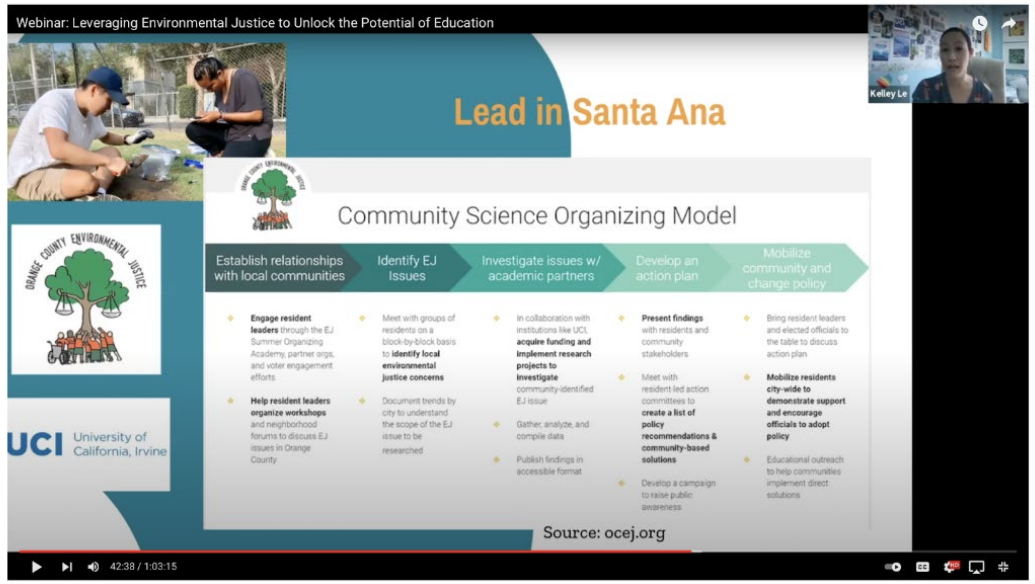
When Might You Use It: (link)

To introduce teachers to the concept of climate justice and help them think about how to choose climate justice phenomena that fit into their curricular goals

Climate Ed Tool #2: Leveraging Environmental Justice to Unlock the Potential of Education

STEM teaching tools

Climate Education Tool #2



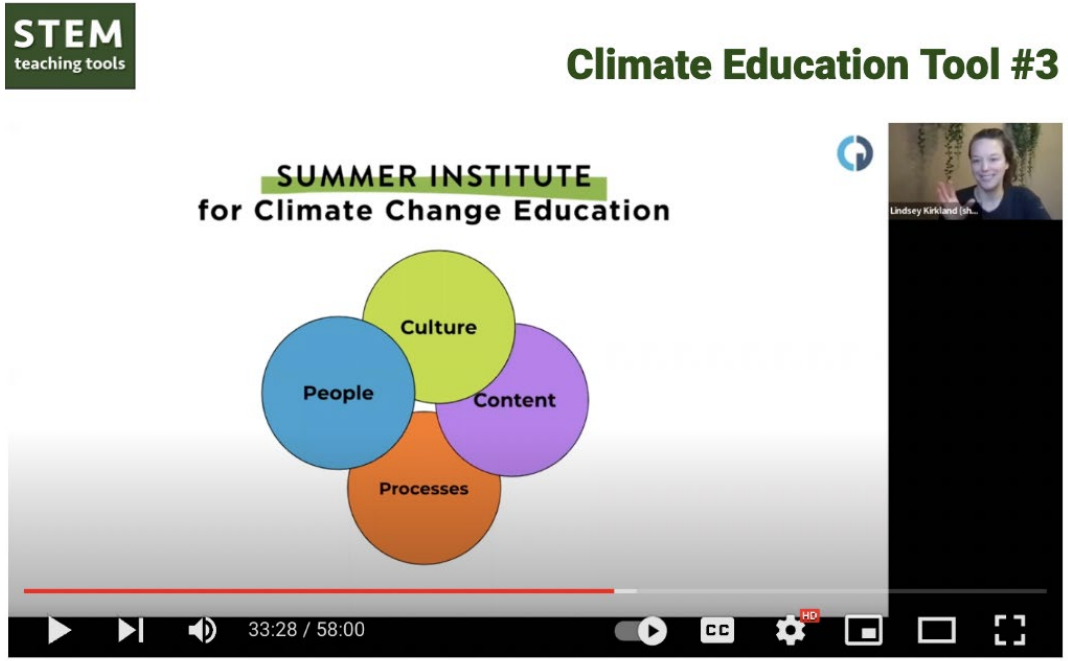
Leveraging Environmental Justice to Unlock the Potential of Education
(~3 hours of instruction)

Jeanne Norris, Kelley Lê, Juan Manuel Rubio, Deb L. Morrison & Philip Bell
June 2022

When Might You Use It: (link)

To introduce teachers to the concept of environmental justice through a rich historical / scientific case study, to help them consider goals of science as an institution, and to support them in brainstorming how to select and incorporate local environmental justice phenomena into their curriculum

Climate Ed Tool #3: It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education



It's Not Only About the Content: People, Culture, and Processes within Climate Justice Education (~3 hours)

Jeanne Norris, Lindsey Kirkland, Kristen Poppleton, & Deb L. Morrison

December 2022

When Might You Use It: (link)

To ask teachers to explore climate justice stories of themselves and others, to look at an organizational model of community-centered climate justice partnership, and to consider how to build their own climate justice network

Climate Ed Tool #4: Teaching for Climate Justice and Student Action

STEM teaching tools

Climate Education Tool #4

Teaching for Climate Justice and Student Action (~4.5 hours)

Jeanne Norris, Tim Swinehart, Deb L. Morrison, and Philip Bell

December 2022

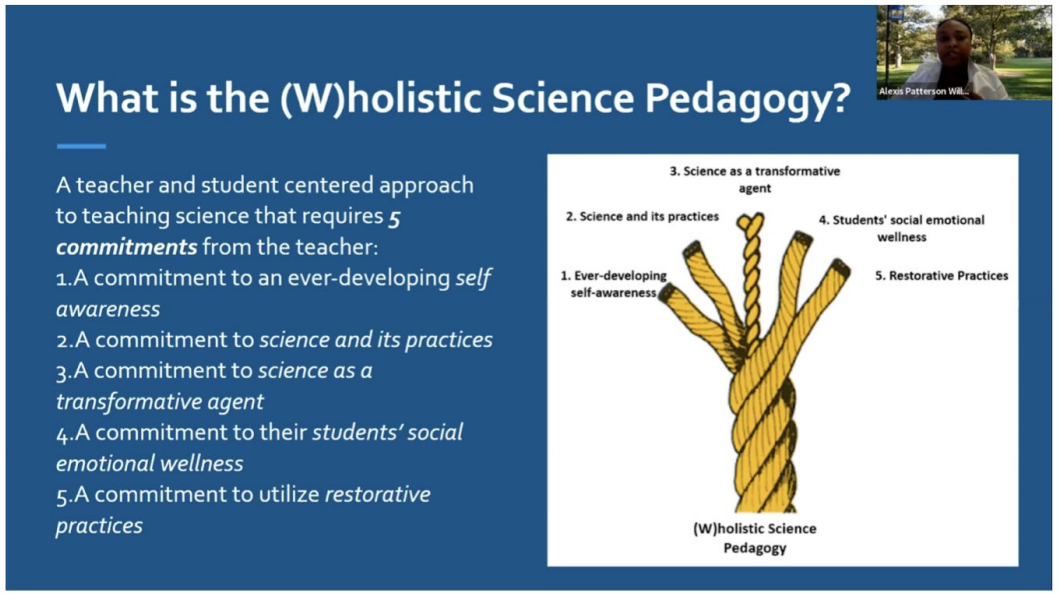
When Might You Use It: (link)

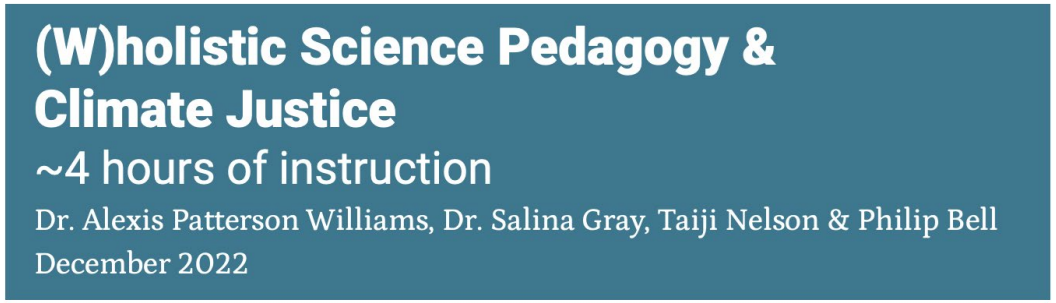
To help teachers learn about engaging students in different forms of climate action and activism centered on hope, to learn how to navigate educational systems when doing climate justice work, and to learn about teacher-led curricular efforts about climate

Climate Ed Tool #5: (W)holistic Science Pedagogy & Climate Justice

STEM teaching tools

Climate Education Tool #5





When Might You Use It: (link)

To help teachers work to adopt a coherent pedagogical approach that supports just and liberatory science education; to learn about climate justice, social-emotional learning, and the UN Sustainable Development Goals

@ClimateEdTools

Climate Ed Tools: New climate resources for teaching and learning about climate & environmental justice

Philip Bell @PhilipLBell (on Twitter)
College of Education • University of Washington

Twitter Announcement

CLIME TIME™
CLIMATE SCIENCE LEARNING

The Climate Teacher Ed Collaborative

9

Climate Ed Tools: Kinds of Resources

1. Practice Briefs on Climate Teaching & Learning
2. Webinars on Climate & Environmental Justice Teaching
3. OER Teacher Ed Lessons on Climate & Environmental Justice Teaching
4. 3D Assessment Item Clusters about Climate Phenomena
5. Climate & Environmental Justice Teaching Images of Practice
6. Research Briefs on Climate Teaching
7. OER Graduate Course on Climate & Environmental Justice

10

STEM Teaching Tools: Educator Learning Resource Collection

STEM Teaching Tools are short, two-page briefs on particular topics in education. We have worked with collaborators to develop STEM Teaching Tools on the following themes:

- Why Teach Climate Change?
- Pedagogy with a Foundation of Justice and Ecological Caring
- Selecting Justice-Centered, Local Anchor Phenomena
- Focusing Climate Change Learning on Solutions
- Building Partnerships with Scientists, Families, and Other Community Members

11

The Climate Teacher Ed Collaborative

A network building resources and capacity to teach about community climate justice projects and youth civic action in teacher education programs.

We have been convening the network and engaging in: (a) shared learning experiences & building community, (a) co-design of teacher ed OER, and (c) redesigning teacher ed courses.

12

Climate Teacher Education Collaborative: Webinar Series

Webinars invite experts to share their work and supporting resources.

Each webinar becomes the kernel of an OER teacher ed lesson plan shared on STEM Teaching Tools.

Webinar Playlist

13

OER Teacher Ed Lessons (in development for each webinar)

14

ClimeTime: A State-level Professional Learning Network in Washington

A network engaging educators across Washington state in professional learning about equitable science education with a focus on climate science instruction. Since 2018, the ClimeTime network of state employees and community-based organizations have worked with 26,000 teachers.

15

3D Assessment Item Clusters about Climate Phenomena

In collaboration with the ClimeTime Initiative, we have created a shared Google Drive folder with assessments designed to support climate change science teaching and learning. These assessments are intended to support educators in understanding the nature of equitable assessment practices in the context of climate science learning across a range of grade levels and topics. The ClimeTime Initiative Assessment Project has further details.

16

ClimeTime Open Education Resources for Curriculum & Professional Learning

Professional learning and instructional materials from ClimeTime are published as open education resources (OER)

17

Climate & Environmental Justice Teaching Images of Practice (teacher articles)

We have worked with educators and researchers to craft a series of articles that highlight images of instructional practice. They span elementary, middle, and high school contexts. Instruction in classrooms, outdoors, and in community settings. They all center climate and environmental justice.

18

Research Briefs on Climate Teaching

The *Relating Research to Practice Project* developed 14 research briefs to summarize and clarify research on communicating climate change. Access briefs on topics like trusted scientific sources, the relationship between beliefs and action , and using story in science communication.

19

OER Graduate Course on Climate & Environmental Justice in Education

How can we learn to create a more just world where all humans and other creatures can thrive? Philip Bell and Nancy Price taught a course at the University of Washington on climate and environmental justice in education. The course overview, readings, resources, and products can be accessed for free.

Explore how themes of ecological care, multispecies wellbeing, and equity relate to climate and environmental education. Check out the graduate seminar online here, and join the inquiry on Twitter at #UWClimateEd.

20

CLIMATE SOLUTIONS PROGRAM

Washington State Board for Community & Technical Colleges

Carli Schiffner, Deputy Executive Director of Education

Lynn Palmanteer-Holder, Director of Tribal Governmental Affairs

STEM Education Innovation Alliance Meeting, Feb 22, 2023

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

THANK YOU!

- Governor Inslee
- Washington State Legislature
- K-12 / OSPI mentorship
- Climate Solutions Work Group

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

THE PROVISO

$1.5 Million (2022-2023 Biennium)

The SBCTC seeks to infuse climate solutions/climate justice across the curriculum at its 34 community and technical colleges that will lead to greater economic vitality in a green workforce for the state of Washington.

Education: Develop an aligned (with K-12) and coherent plan for a solutions-focused climate action and justice curriculum at the college-level across the community and technical college system. Provide training and professional development for college faculty and staff, so that colleges teach climate justice and solutions through their own practices.

Equity: Develop curricula in concert with local community-based organizations, relevant initiatives, and tribal communities to address the needs of underserved and underrepresented communities and identify barriers that prevent these communities from fully benefitting from emerging economic opportunities.

Economy: Prepare the future workforce for the new green economy by enhancing existing programs and by development of new programs to meet this growing demand.

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

Strategies
What we do

Climate Solutions Education
Integrate climate justice and solutions-focused curriculum throughout all 34 colleges and into every discipline.

Green Workforce Development
Create accessible, equitable, green workforce pathways to support a just transition.

Tribal Engagement
Create a statewide program that supports Tribal students in accessing and thriving in workforce programs that enable them to become Tribal stewards.

Sustainable Colleges
Through statewide action planning and collaborative learning, support our colleges in reducing their CO2 footprints, and operating and managing our infrastructure in proactive, sustainable, and resilient ways.

Approaches
How we do it

Distributed ownership and leadership

Professional development

Collective, cross-disciplinary learning

Honoring choice, expertise and autonomy

Open-source sharing

Shared visioning

Collaboration and partnership

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

BY THE NUMBERS UPDATE

Overall Program

- $1,055,800 allocated to 26 colleges on December 14, 2022.
- 439 Faculty and Staff engaged currently, 609+ by year end.

Green Workforce Development

- 10 Faculty trainers & co-hosts hired for workforce retreats.
- 93 Faculty will attend retreats with industry tours, curriculum workshops and industry speakers to develop plans to revise their programs and curriculum to reflect current climate solutions competencies and technologies to increase workforce competitiveness.

Tribal Stewards Program

- 10- 15 Tribal Leaders will convene to co-design this program.
- Deliverable: 2 pilots to fund in the next Biennium.

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

BY THE NUMBERS, CONTINUED…

Climate Justice Across the Curriculum Program

- 17 Colleges participating.
- 34 Leads are being trained to develop a Climate Justice Professional Development Program on their campus.
- 170 additional fauclty will develop climate justice modules.
- 104 Faculty will participate in high impact workshops (on Zines, CO2 research, & integrative assignments).

Sustainable Colleges

- 38 Facilities Directors and Sustainability Leaders will convene to share CTC models (i.e., living lab, resource conservation projects), engage in workshops with Commerce & Smart Buildings Center and industry partners and develop an outline of a plan for statewide climate action.

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

HIGHLIGHT: TRIBAL STEWARDS PROGRAM

Goals:

1) Support a just transition by reducing disparities in Tribal student education and economic opportunities.
2) Provide opportunities for tribal students to earn an in-demand associate's degree in natural resoruces: using work-based learning, field classrooms, and hands-on field experience within traditional Tribal Territory, in partnership with Tribal employers, mentored by Tribal Scholars, and to experience cultural continuity in community & technical college programs.

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

TRIBES ARE VISIONARIES IN LAND, FOOD, & WATER STEWARDSHIP & GREEN ECONOMIES

Yakama Nation advances food sovereignty efforts with Inaba Produce Farms acquisition

Management

New Federal Guidance Aims to Strengthen Indigenous Land Management

Tribal governments will now have a say in how 620 million acres of federal lands are managed.

How Native Tribes Are Taking the Lead on Planning for Climate Change

With their deep ties to the land and reliance on fishing, hunting, and gathering, indigenous tribes are especially vulnerable to the impacts of climate change. Now, native communities across North America are stepping up to adopt climate action plans to protect their way of life.

BY NICOLA JONES · FEBRUARY 11, 2020

ABOVE THE NOISE

Land Back: The Indigenous Fight to Reclaim Stolen Lands

By Cheyenne Bearfoot Apr 21, 2022 Save Article

Building Economic Sovereignty: A Model for Renewable Energy Emerges in the Spokane Nation

Steve Dubb
January 22, 2020

Indigenous Leaders at the Frontlines of Environmental Injustice and Solutions

October 11, 2021 | Giulia C.S. Good Stefani

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

TRIBAL STEWARDS DESIGN PROCESS

We will convene Tribal scholars and leaders to:

1. Collaboratively design a Tribal Stewards Program and form a statewide network of Tribal students, scholars, employers, and partners.
2. Develop Tribal Student Pathways with intentional recruitment, retention, completion policies and practices.
3. Formalize government to government relationships with Tribes and CTCs to support local workforce training needs.
4. Indigenize the curriculum & train non-Tribal faculty in CTC programs.
5. Develop Indigenous Climate & Environmental Science Faculty Learning Community Model.
6. Run 2 Pilots in 2023-2024

Creating Pathways for Future Tribal Stewards

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

Climate Solutions Program Goals: Support a just transition by reducing disparities in Tribal student education, workforce, and economic outcomes.

1. Develop WA Tribal student pathways with intentional recruitment, retention, completion policies and practices.
2. Formalize G2G relationships with Tribes to support local workforce training needs.
3. Intentional recruitment and hiring of Tribal Stewards known as Traditional Scholars.
4. Indigenize the curriculum.

The WA State Board's (SBCTC) Mission: Leading with racial equity, our colleges maximize student potential and transform lives within a culture of belonging that advances racial, social, and economic justice in service to our diverse communities.

WA State Community & Technical Colleges

- 34 Community and Technical Colleges
- In 2021-2022, 8400 American Indian and Alaska Native students attended CTCs in WA
- Statewide Coverage / Service Districts
- SBCTC—advocacy, policy, & funding
- Confederation of colleges

We are seeking collaborators to create meaningful partnerships to further these goals, and to join our design team. Please join us!

Contact Us:
Lynn Palmanteer-Holder, PhC (ABD)., MEd. | Colville
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Maya Esquivido, MSW
Nor Rel Muk Wintu | Hupa Graduate
Student Intern, SBCTC
mesquivido@sbctc.edu

CLIMATE SOLUTIONS

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

OVER THE NEXT BIENNIUM

- Include all 34 colleges, expand faculty participation
- Provide ongoing professional & curriculum development
- Provide workforce program redesign grants for scaled curriculum implementation & upgrades
- Ongoing strategic planning and funding of pilots for sustainable colleges
- Implement Tribal Stewards Program

COMMUNITY AND TECHNICAL COLLEGES
Washington State Board

QUESTIONS?

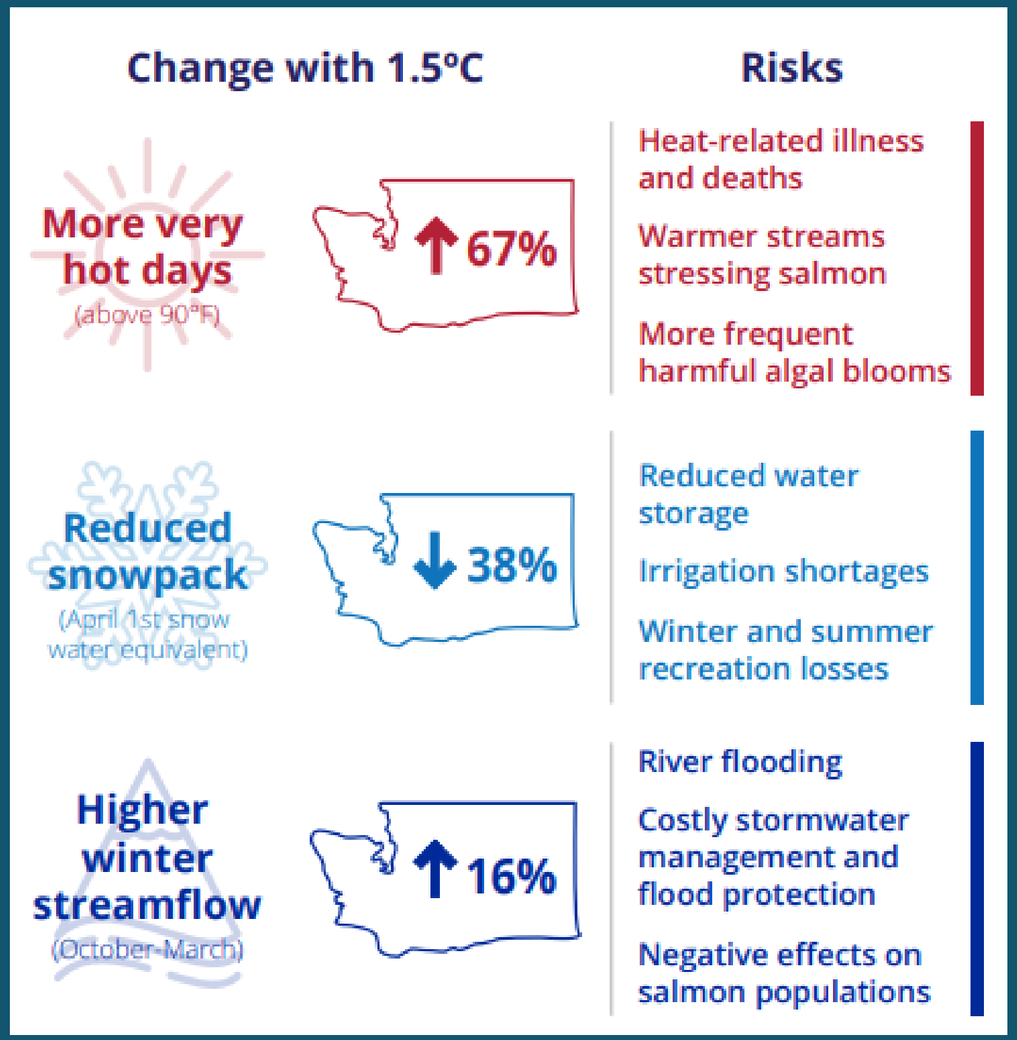
- Carli Schiffner, Deputy Executive Director of Education
  cschiffner@sbctc.edu
- Lynn Palmanteer-Holder, Director of Tribal Government Affairs
  lpalmanteer-holder@sbctc.edu
- Irene Shaver, Program Administrator, Climate Solutions
  ishaver@sbctc.edu

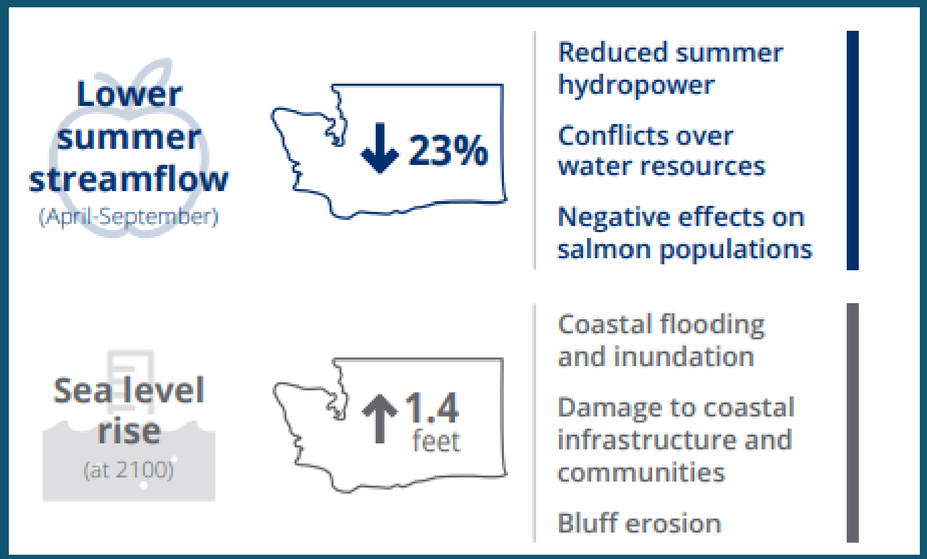
AmeriCorps
Washington

Expanding Opportunities for Climate Action and Climate Careers through Service and Workforce Development

Substitute House Bill 1176 & Senate Bill 5274

THE CLIMATE CRISIS IN WASHINGTON

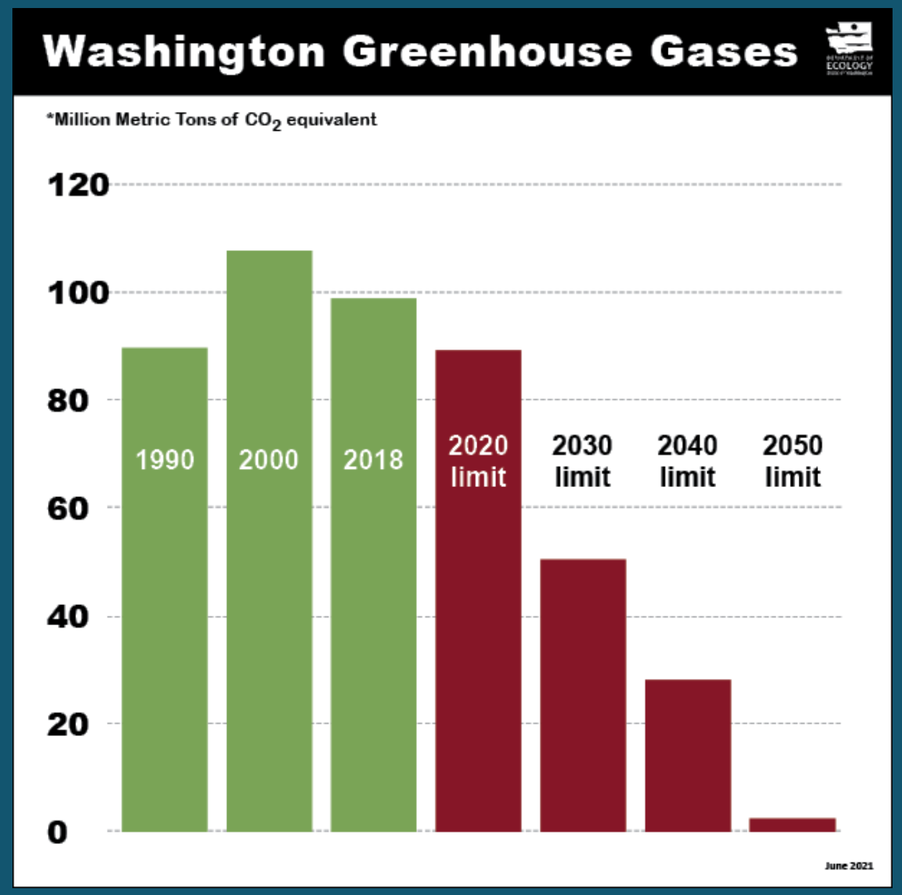




***UW Climate Impacts Group** special report
"No Time to Waste"

SERVE WASHINGTON

TAKING ACTION ON CLIMATE CHANGE



Washington's suite of climate laws & investments include:

- Climate Commitment Act
- Clean Energy Transformation Act
- Clean Fuel Standard
- Building efficiency standards & investments
- Targets for zero emissions vehicles

SHB 1176 & SB 5247

DEVELOPING OPPORTUNITIES FOR SERVICE AND WORKFORCE PROGRAMS TO SUPPORT CLIMATE-READY COMMUNITIES

- Creates the Washington Climate Corps Network to connect and grow climate-related service opportunities and increase equitable access to these programs;
- Launches a focused effort on clean energy workforce development, in partnership with labor and business.

SERVE WASHINGTON

WASHINGTON CLIMATE CORPS NETWORK

Supports and grows climate-related service opportunities for young adults and veterans

Builds clean energy, low-carbon, and climate-resilient communities, ecosystems, and economies

Provides education, workforce development, and career pathways with a focus on overburdened communities.

SERVE WASHINGTON

SERVE WASHINGTON

Established in February 1994, with duties per Executive Order #16-08 including:

- Administering AmeriCorps*State federal funding in Washington.
- Identifying existing and new policies or practices that lead to the expansion of national service in Washington.

The Work of Serve Washington is guided by a 20-member board of Governor-appointed commission**.**

2022-2023 AmeriCorps program year

21 AmeriCorps programs ~ 1,490 AmeriCorps members

$21 Million federal funding ~ $28 Million local match

Average living allowance $22,000

WA ranks 5th in competitive funding

SERVE WASHINGTON

WA SERVICE PROGRAM LANDSCAPE

5 organizations support 400 environmental focused **AmeriCorps** positions

Traditional Environmental Stewardship approach

- Areas of public and tribal land treated and improved
- Number of individuals receiving education or training in environmental stewardship
- Miles of public trails or waterways treated and/or improved

What might Climate Action Service look like?

- Providing critical capacity and support to local governments to develop and execute climate action plans and/or projects;
- Building upon and expanding existing conservation and youth corps to do hands-on projects, including wildfire and flood mitigation;

AMERICORPS MEMBERS

While in full time service receive:

- A living stipend
- Health Insurance
- Professional Development

After satisfactory service completion receive:

- an Eli Segal Education Award = to Pell grant
- Service to career transition supports

Did you know that…

- 8 out of 10 AmeriCorps members have identified service as benefiting their career path
- AmeriCorps alumni are more likely to attain a bachelor's degree or higher than the average adult?

SERVE WASHINGTON

CLIMATE CORPS LANDSCAPE

Nationally State Service Commission have launched 8 Climate Corps

Partnership for the Civilian Climate Corps is a non-partisan collection of national, state, and local organizations working toward implementing a national service corps to tackle climate resilience and mitigation, while developing career pathways in clean energy economy, disaster mitigation, infrastructure resilience, and conservation sectors.

“Building a pipeline to energy sector careers through service.” Brookings Institute, December 2022

"Civilian Climate Corps Programs Take Off in States Across the Country." The Washington Post, October 2022

What is unique about Washington’s?

- Seeks long term funding vs short term ARPA funding
- Focuses on overburdened communities
- Develops a service learning, green jobs exposure track
- Builds upon a robust environmental service footprint, connecting efforts across programs rather than launching a new program or corps.

A UNIQUE OPPORTUNITY

MOBILIZE

Mobilizes Washington's young adults, veterans, and workforce to strengthen our communities and ecosystems in the face of climate impacts.

SERVE

Addresses the needs of communities across the state, especially those disproportionately impacted by environmental and health burdens.

INNOVATE

Fosters innovation, investment, and growth in clean energy.

CATALYZE

Creates pathways for workers, young adults, and veterans to help build our clean energy, climate-resilient future.

ADMINISTRATION

CONNECT, AMPLIFY, AND GROW CLIMATE-RELATED SERVICE OPPORTUNITIES

Coordinate network activities;

Collect and share outcomes

ESTABLISH COMMON REQUIREMENTS

Climate focus;

Participation requirements;

Service learning

DELIVER SERVICE-LEARNING PROGRAM

Develop leadership;

Foster environmental stewardship;

Introduce to career opportunities

Leverage partnerships

FOCUS ON EQUITY

EQUITABLE PARTICIPATION

Raise stipends to living wage

Statewide recruitment to increase diverse participation

Support members ineligible for federal funds

REDUCE COMMUNITY BARRIERS

Subsidize host or project fees for overburdened communities

GROW SERVICE REACH

Planning grants for new program development
Coordination with advisory and stakeholder communities to strategically grow new programs

WHY NOW?

IN, FOR, OR BY MEMBERS OF OVERBURDENED COMMUNITIES

COLLECTIVE ACTION FOR GREATER IMPACT

Engages industry, labor, and environmental partners;

TARGETED SUPPORT

For service members and overburdened communities

BUILDS ON WHAT'S WORKING

Engages and supports Washington's Exceptional Service program community, while leveraging learning from national movement of climate corps initiatives already active.

HOW CAN YOU GET INVOLVED?

IDENTIFY NEEDS

Tell us where service can help your communities tackle climate change

CONNECT THE DOTS

Share your workforce, leadership, and training resources and contacts so we can build the strongest program possible

JOIN THE PARTY

Let us know if you want to stay involved as the bill takes shape.

CLEAN ENERGY WORKFORCE DEVELOPMENT

Washington’s transition to a clean-energy economy will bring job growth and evolve the skills needed.

SHB 1176 / SB 5247 launches collaborative work between the State Workforce Board, labor, business, and communities to:

- Convene the Clean Energy Technology Workforce Advisory Committee to recommend how to support expansion of clean energy jobs and prepare the workforce;
- Evaluate and report on the labor market trends and workforce demands; and
- Explore the feasibility of a “transition to retirement” program for workers.

QUESTIONS & DISCUSSION

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

Washington students for Washington jobs

Kimber Connors
Executive Director
She/her/hers

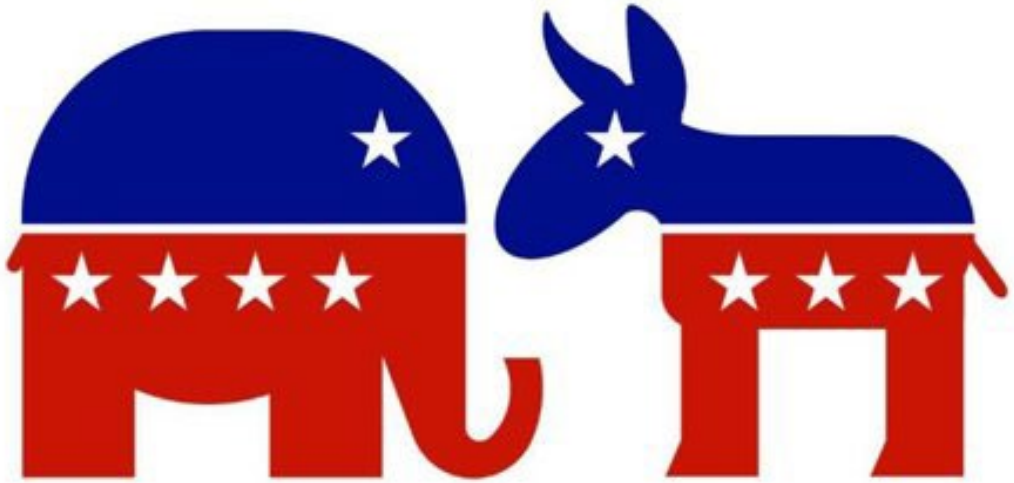
WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

History: Unique, public-private model launched in 2011 with cornerstone partnership of $25M from MSFT, $25M from Boeing and a dollar-for-dollar match commitment from the state

Mission: To build pathways into high-demand Washington careers for Washington students.

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

BIPARTISAN SUPPORT



WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

OUR WORK

- **Build a qualified workforce** to fill high-demand STEM, health care and trade industries
- **Create pathways** for those historically left out of opportunity
- **Change communities** by breaking the cycle of intergenerational poverty

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

Earn a **post-secondary credential** in a high-demand STEM, health care or trade field

Gain **employment** in field of study in WA state within nine months of graduation

THEORY OF CHANGE | Scholarships + Continuum of Support Services

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

SCHOLARSHIP PROGRAMS

Up to $22,500

Bachelor's in STEM or health care

BaS

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

BACCALAUREATE

$1,500 / quarter

Apprenticeships, associates or certificates

CTS

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

CAREER & TECHNICAL

+ $500 or more/quarter

RURAL JOBS | WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

A CAREER & TECHNICAL SCHOLARSHIP INITIATIVE

Up to $25,000

Doctorate of Nursing Practice DNP/MSN

GRD

WASHINGTON STATE OPPORTUNITY SCHOLARSHIP

GRADUATE

OUR SCHOLARS

SCHOLARS ARE

67%
First-generation college students

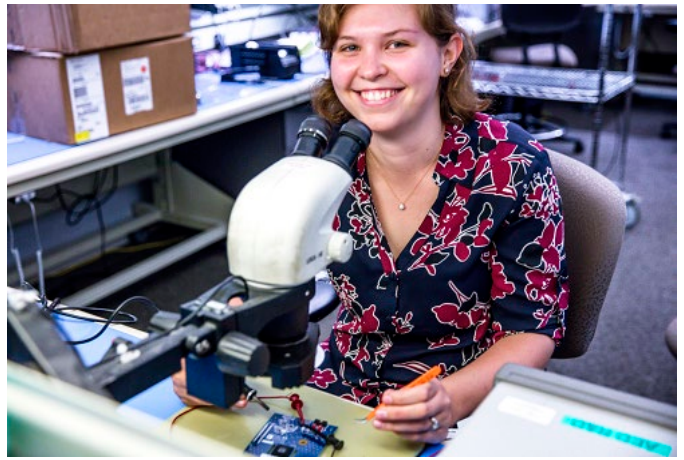
57%
Women

70%
Students of color

100% low- or middle-income
From **every county & legislative district** across the state

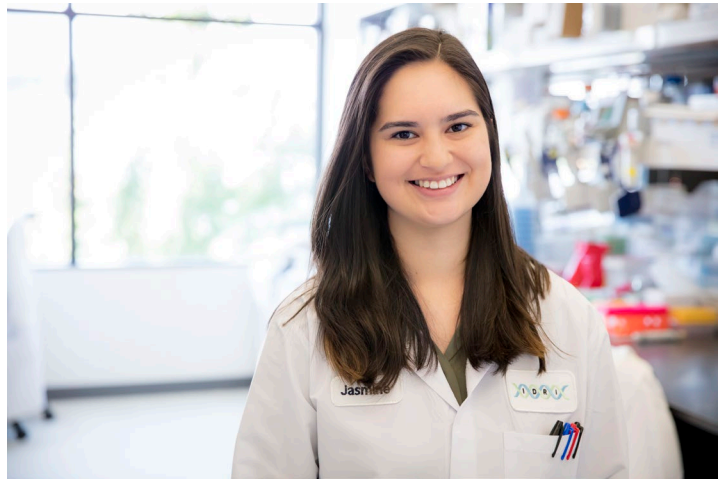
WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP





#iamopportunity



WSOS | BACCALAUREATE

14,297
Scholars
(and counting!)

7,404
Graduates
to date

DEGREES EARNED PER INDUSTRY

1,348
Health Care

1,399
Biology

927
Computer Science

1,457
Engineering

FROM A RECENT ALUMNI SURVEY,

94% **of BaS respondents** who graduated more than five years ago are working full-time

84% **remain in STEM or health care fields**

3/4 **still live in Washington,** with half living near where they attended high school.

CAREER & TECHNICAL

1,979
Scholars
(and counting!)

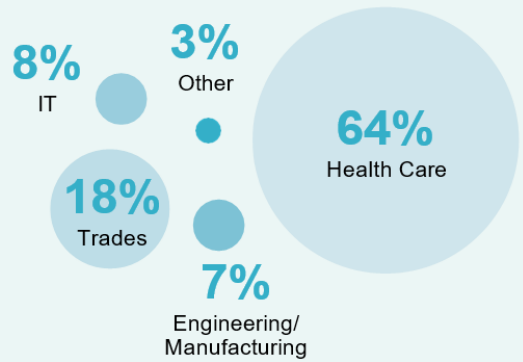
506
Graduates
to date

SCHOLARS PER INDUSTRY

58% Health Care
14% Trades
6% Engineering & Manufacturing
15% IT
7% Other

RURAL JOBS

SCHOLARS PER INDUSTRY



165
Scholars
(and counting!)

28
Graduates
to date

GRADUATE (GRD)

Eligible programs include
either a Master of Science (MSN) or Doctor of Nursing Practice (DNP).

26
Scholars
(and counting!)

1
Graduate
to date

SCHOLARS PER FIELD OF STUDY

21
Doctor of Nursing

5
Master of Science

16
family nurse practitioner

11
psychiatric mental health nurse practitioner

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

GRADUATE

SUPPORTING PERSISTENCE THROUGH PEER MENTORSHIP

BaS RECIPIENTS:

64%

less likely to leave school between first and second year

2x as likely to graduate in four years

SCHOLAR LEAD

CTS RECIPIENTS:

Nearly half of CTS recipients graduated within 2 years of selection

Nationally, less than 40% of CTC students earn a credential within 6 years

LAUNCHING CAREERS THROUGH INDUSTRY MENTORSHIP

BaS RECIPIENTS:

90% said StS better prepared them for the workforce

4 out of 5 agreed that StS connected them to career opportunities they wouldn't have had

Earning more than double what their family made when they entered college within 5 years of graduation

CTS RECIPIENTS:

Earning 3x what their family made just 1 year after graduating

WS OS | Skills that Shine
Mentorship Program

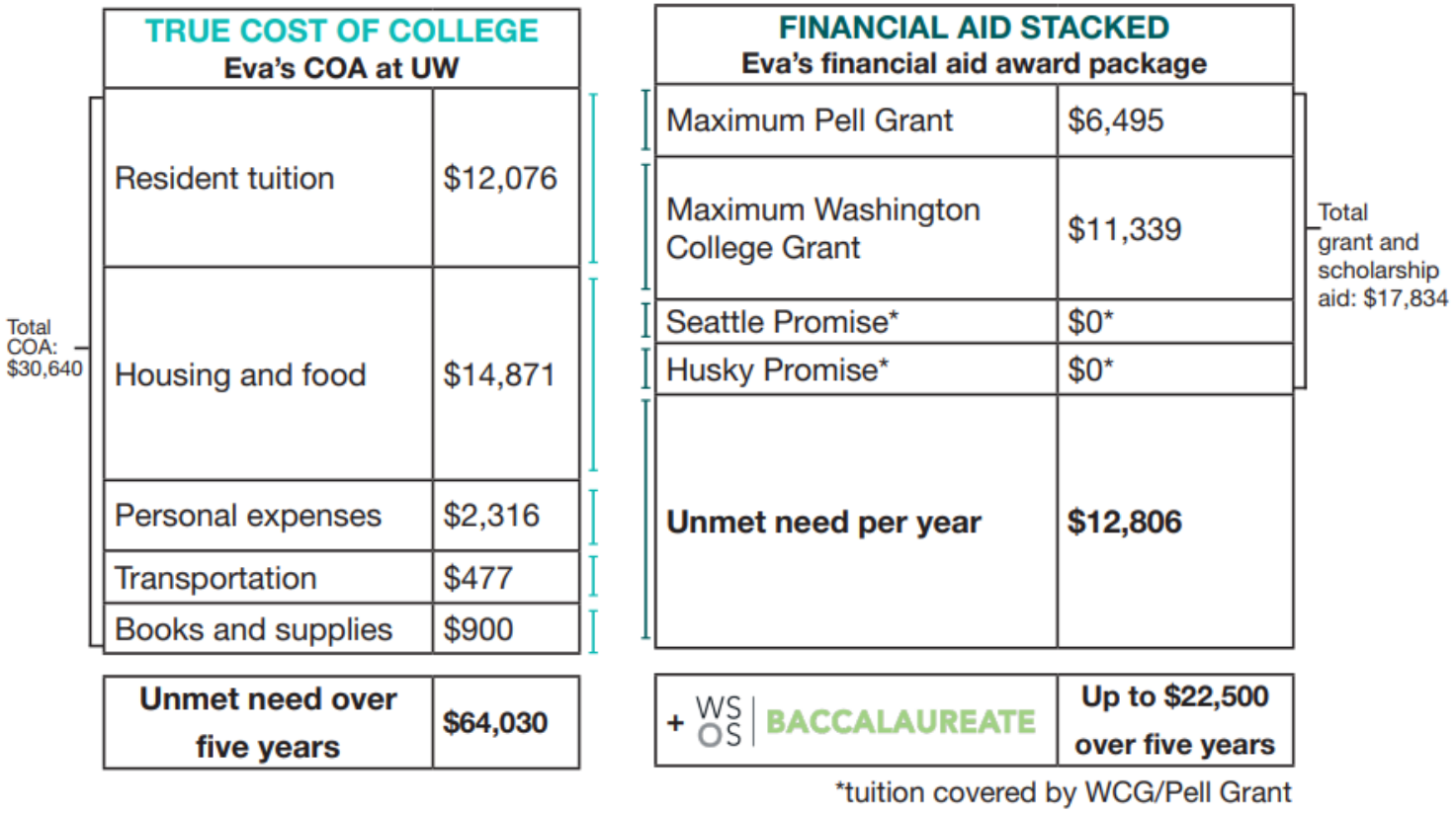
Abudeen Dumbuya
Biology
St. Martin's University
(He/him)

Current Scholar Lead and mentorship participant

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

WSOS IN THE FINANCIAL AID LANDSCAPE

WSOS funding is intended to be **flexible**, to help students cover their basic needs and **couples with other programs** like WCG.




COLLEGE SUCCESS FOUNDATION
MESA Mathematics Engineering Science Achievement WASHINGTON
CAREER CONNECT WASHINGTON
WASHINGTON STEM
REIMAGINING SCIENCE, TECHNOLOGY, ENGINEERING + MATH EDUCATION
COLLEGE POSSIBLE WASHINGTON
community-based organizations to promote statewide
intermediary bodies when their work can better connect Scholars with education and the workforce
WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP
COLLABORATES WITH...
advocacy organizations when issues impact Scholars and higher education. When needed, we rely on partner support to advance our legislation, or we support theirs if it poses harm or benefit to our Scholars.
COLLEGE PROMISE COALITION
WR
WASHINGTON ROUNDTABLE

2023 FOCUS AREAS

- Legislation to: 1) allow the WSOS Board to create non-profit(s) and contract directly with non-profit(s) for program administration; 2) clarify language regarding state match mechanics and timing
- Increase participation in city, county & tribal matching opportunity
- Partner with WSAC and regional partners to promote WSOS

SEATTLE INVESTMENT ($385,000)
+ STATE MATCH = $770,000

CITY FOCUSED ON DIVERSIFYING WORKFORCE WITH HIGHEST CONCENTRATION OF STEM JOBS IN US

Q&A

- What **shared goals** does your organization have with WSOS?

- How might WSOS **better partner** with other similar or adjacent efforts across the state regarding career-connected learning and college completion?

WASHINGTON STATE
OPPORTUNITY
SCHOLARSHIP

EVERETT
COMMUNITY COLLEGE

Operational Technology Cyber Controls Technician Apprenticeship in Washington State

EVERETT COMMUNITY COLLEGE

Solving a Legacy Problem

- Automation was introduced into the electrical grid in the 70's
- Security to industrial networks has not had training pipeline outside
- Cyber and physical threats to industrial systems are increasing
- Cybersecurity in Operational Technology (OT) requires a specialized training pipeline to solve today's challenges

EVERETT COMMUNITY COLLEGE

Building Apprenticeship Systems in Cybersecurity (BASIC)

- Grant funded through the Department of Labor
  - Southern Utah University
    - WSU Energy Program
    - Regional Education & Training Center (RETC)
    - EnergySEC
    - Everett Community College

EVERETT COMMUNITY COLLEGE

Building a Pipeline

- International Brotherhood of Electrical Workers (IBEW) Local 77 has partnered with industry leaders to develop an Operations-based Technology training
  - Builds on the work from military cyber operations
  - Fused with oversight from industry experts in industrial cybersecurity
  - Addresses the increasing cyber-attacks on our critical systems and structures

Joint Apprenticeship and Training Committee (JATC)

- Christine Reid, Political Director, International Brotherhood of Electrical Workers Local 77; Chair, JATC
- Tyler Swartz, Cybersecurity Operations Manager, Tacoma Power/Tacoma Public Utilities
- Dennis Skarr, IT Instructor in Industrial Cybersecurity, Everett Community College
- Ted Harris, OT and IT Electronics Technician, Grant County Public Utility District; Labor Member, JATC

EVERETT COMMUNITY COLLEGE

Operational Technology Cyber Controls Technician

- 2000 Hours of On-The-Job Training
  - Advance cybersecurity policies and procedures appropriate to an Industrial Control System (ICS) environment
  - Gather cybersecurity knowledge about emerging industry or technology trends
  - Test cybersecurity system operations to ensure proper functioning
  - Collaborate with others to resolve cyber OT/ICS issues

EVERETT COMMUNITY COLLEGE

Dennis Skarr

Cyber Operator for the National Guard

- Developed and lead training for the Air Force on Critical Infrastructure assessments
- Performed security assessments on critical systems
  - Seven WA election security missions
- Work contributed to Secretary of Defense Ash Carter Visit in 2016

Washington State Guard's Cyber Protection Team

- Creating and leading training on Industrial Cybersecurity

Tenured Faculty at Everett Community College (EvCC)

- 2019 Exceptional Faculty of the Year
- Created three classes on cybersecurity topics unique to EvCC

EVERETT COMMUNITY COLLEGE

2019 SBCTC Technology Enhancement Award for $1.3M

- Partnered with industry leader GRIMM
- 15 foot Industrial Cybersecurity Range
- 25 Industrial Cybersecurity Training stations
- Two Capture the Flag Competitions

EVERETT COMMUNITY COLLEGE

Year 1 Apprenticeship Classes

- Introductory Scripting using Python
- Internet Safety and Securing Personal Technology
- Information and Cyber Warfare
- Assessing and Securing Control Systems

EVERETT COMMUNITY COLLEGE

Thank you!

Questions?

Scan to learn more