

INTRODUCTION TO ENVIRONMENTAL STUDIES: OCEANS, CLIMATE CHANGE, AND NORTHWEST COASTAL TRIBES FALL 2023 SYLLABUS

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PROGRAM DESCRIPTION

This program will examine how an interdisciplinary approach combining natural and social sciences can be used to understand current environmental problems and to craft effective solutions to these problems. We will apply concepts from ecology, oceanography, and political-cultural geography to study the climate crisis in the Pacific Northwest and the responses by coastal tribal nations exercising their sovereignty and treaty rights.

We will develop an understanding of how marine waters of the Pacific Northwest support diverse and productive habitats, and how human activities and climate change impact these ecosystems by promoting harmful algal blooms, ocean acidification, eutrophication, sea-level rise, and biodiversity changes.

We will study responses led by Native nations, such as salmon habitat restoration, building climate resilience, removing dams, dikes, and culverts, resisting fossil fuel projects, and planning for sea-level rise and climate-related disasters. The process of building partnerships between tribal and non-tribal governments and developing “unlikely alliances” between tribal rights-holders and their neighbors, will be examined as essential elements in developing effective responses to the climate crisis.

Students will engage with the material through lectures, labs, seminars, guest speakers, films, workshops, field trips, biweekly quizzes and written essays, and a research project and presentation. Students will develop skills in writing, research, synthesizing information, and public speaking. The “Follow the Water” research project will focus on case studies of watersheds, estuaries, Salish Sea, and Pacific Ocean coast, to examine rich connections among organisms and communities.

There will be several one-day field trips to explore a variety of local coastal habitats such as estuaries, intertidal beaches, and salt marshes and to visit the Nisqually and Squaxin Island tribes. In addition, there will be a three-day field trip to the Olympic Peninsula to study rainforest and rocky shore habitats and visit the Quinalt, Quileute, and Makah tribes.

This program is coordinated with Greener Foundations for First-Year students, who are prompted to register for a 2-credit Greener Foundations course in addition to this 14-credit program during registration.

SCHEDULE

TUESDAY	10:00 am – 12:00 pm 1:00 – 3:00 pm	Social science lecture Natural science lecture	Longhouse 1007A Purce Hall 2
WEDNESDAY	10:00 am – 12:00 pm	Seminar	Longhouse 1007A & 1002
THURSDAY	9:00 am – 12:00 pm 1:00 – 4:00 pm	Workshop or local field trips Workshop or local field trips	Rooms vary: see Schedule Rooms vary: see Schedule

BOOKMARK CANVAS MODULES: <https://canvas.evergreen.edu/courses/5796/modules>

REQUIRED TEXTS

These assigned books are roughly in the order we'll be reading them. There will also be a few PDF readings posted on our Canvas site. The [Greener Bookstore](#) and independent Olympia bookstores such as [Orca Books](#), [Last Word Books](#), and [Browsers Bookstore](#) have on-line ordering.

NATURAL SCIENCE TEXTBOOK THROUGHOUT QUARTER:

Trujillo, A. and Thurman, V. *Essentials of Oceanography* (Pearson). ISBN: 9780134891521.

The 13th edition is the latest. (It is possible to use an older edition if you make sure to read the same topics assigned in the newer edition.)

BOOKS IN SPECIFIC WEEKS (see Schedule):

Wilkinson, Charles. *Messages from Frank's Landing: A Story of Salmon, Treaties, and the Indian Way* (Seattle: University of Washington Press, 2006). ISBN: 978-0295985930 1st THURSDAY SEMINAR

Parker, Alan & **Grossman**, Zoltán, eds. *Asserting Native Resilience: Pacific Rim Indigenous Nations Face the Climate Crisis* (Oregon State University Press, 2012). ISBN 9780870716638

Berger, David. *Razor Clams: Buried Treasure of the Pacific Northwest* (University of Washington Press, 2017). ISBN 978-0295741420

Mapes, Lynda V. *Orca: Shared Waters, Shared Home* (Braided River, 2021). ISBN 978-1680513264

Klein, Naomi. *This Changes Everything: Capitalism vs. The Climate* (Simon & Schuster, 2014). ISBN 978-1451697384

EVERGREEN STUDENT PROJECT RESOURCES

Olympia's Hidden Histories, digital StoryMaps walking tours of downtown Indigenous, immigrant, environmental, activist histories, by students in "American Frontiers" (2022) and "Taking Back Empire" (2023).

Removing Barriers: Restoring Salmon Watersheds through Tribal Alliances, 132-page PDF book on Indigenous leadership in dam, dike, and culvert removal, by students in "Conceptualizing Place: Pacific Northwest Native Art and Geographies" (2021).

Fossil Fuel Connections, website by students in "Resource Rebels: Environmental Justice Movements Building Hope," on halting Pacific Northwest coast oil and coal terminals (2016).

Nisqually Watershed Podcasts, nine 10-minute podcasts on Nisqually natural and cultural resource programs, by students in "Conceptualizing Native Place" (2009).

Climate Change and Pacific Rim Indigenous Nations Project, founded in Tribal Master of Public Administration program (2006), later organized Indigenous Climate Justice Symposiums (2015 & 2017).

CREDIT AND EVALUATION

Full credit can be earned by doing all of the following:

- Attending class (as attendance is a precondition of participation, absences will diminish your ability to earn full credit; more than three absences will mean reduced credit. Attending means not only being present, but offering full attention to the work at hand.
- Completing all assignments by the date due (or making arrangements with faculty in the case of extenuating circumstances). If you do the above you will earn full credit for the quarter.
- The maximum credit equivalencies for the program are:
 - 5 – Marine Science: Pacific Northwest Coastal Systems and Climate Change**
 - 5 – Native American & Indigenous Studies: Tribal Climate Justice and Resilience**
 - 4 – Climate Studies Project: [Your Pacific Northwest case study]**
- The quality of the work you accomplish will be described in a narrative evaluation. Your evaluation will consist of your seminar leader's written evaluation of your work, your *required* self-evaluation, and the evaluation meeting. You will be evaluated on your level of comprehension of the material, on your skills (writing, thinking, speaking, listening, research, presentation), and on intellectual engagement with the major themes of the program as reflected in assignments and seminar discussions.

WEEKLY SCHEDULE

WEEK ONE: SEPTEMBER 26, 27, 28 (Introduction to Program)

Readings: Wilkinson, *Messages from Frank's Landing* [entire]; *Oceanography* text: Ch. 1 (Introduction), Ch. 5 (Water/SeaWater), Ch. 15.2 (Sediment covered shores) (pp. 497-500).

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| Tuesday 10:00-12:00 | Guest: Vanessa Marenco, Assistant Director of s'gwigwi?altxw: / House of Welcome (Longhouse Education and Cultural Center)
Introduction to program, faculty, syllabus, Canvas, assignments, notetakers |
| Tuesday 1:00-3:00 | Lecture: Introduction to Native America
Lecture: Marine Habitat: Properties of Seawater;
Announce seminars |
| Wednesday 10:00-12:00 | Seminars: Program Agreement; introduction to seminar
Workshop: Guidelines on Visiting Native Communities
Discuss article "Meeting the Challenge of Climate Change"
Student introductions (bring Survey / Academic Statement)
DUE: Student Introduction Survey (email to both faculty)
Red Square Block Party: free food! (12:00-2:00) |
| Thursday 9:00-12:00 | Evergreen Beach Survey at Bushoowah-ahlee Point. Depending on weather meet at Longhouse or at trailhead in Parking Lot F (by dorms) at 8:30 AM |
| Thursday 1:00-4:00
Longhouse 1007A | All-program Seminar: <i>Messages from Frank's Landing</i> [entire];
Follow the Water Project overview
DUE: Sign up for Projects and Friday Check-Ins |
| Friday | CHECK-INS WITH FACULTY in-person or via Zoom
DUE by midnight: Practice Syllabus and Map Quiz (Week 1 Information)
DUE: Sign up for Popular Media Talk (see Canvas) |
| Saturday (optional) | 34 th annual Nisqually Watershed Festival, 10:00 am-4:00 pm
Billy Frank Jr. Nisqually National Wildlife Refuge, I-5 Exit 114
https://nisquallyriver.org/festival (or see Canvas) |

WEEK TWO: OCTOBER 3, 4, 5 (Fisheries, Treaty Rights, and Ocean Dynamics)

Readings: Parker & Grossman, eds., *Asserting Native Resilience*: pp. 208-224, 10-52; *Oceanography* text: Ch. 7 (Circulation), Ch. 8 (Waves), Ch. 9 (Tides).

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| Asynchronous film | <i>As Long as the Rivers Run</i> (Carol Burns, 1971, 60 min.) |
| Tuesday 10:00-12:00 | Lecture: Northwest Treaty Rights and Nisqually Watershed |
| Tuesday 1:00-3:00 | Lecture: Marine Environment: Circulation, Waves and Tides |
| Wednesday 10:00-12:00 | Seminar: <i>Asserting Native Resilience</i> , pp. 208-224, 10-52 |
| Thursday 9:00-12:00
Longhouse 1007A | Workshop: Library research, citations, capitalization
Workshop: Follow the Water Project (bring laptop) |
| Thursday 1:00-4:00
Longhouse 1007A | Videos: <i>Nisqually Watershed Podcasts</i>
Guests: Anthony Levenda & Michael Joseph
(Center for Climate Action and Sustainability at Evergreen)
Week 5 Field Trip Preparation; van drivers; food committee meets
DUE: Field trip waiver, release form, food restrictions / preparation |
| Friday midnight | DUE: Essay (A) Weeks 1-2 (in Canvas Assignments) |
| Friday-Saturday (optional) | Fall Arts Walk downtown: https://www.artswalkoly.com
Saturday 10 am: Launch of new Olympia's Hidden Histories walking tours, Olympia-Rafah Solidarity Mural (State Ave. & Capitol Way) |

WEEK THREE: OCTOBER 10, 11, 12 (Watershed Productivity / Restoration and Climate Resilience)

Readings: Parker & Grossman, eds., *Asserting Native Resilience*, pp. 53-85, 102-108, 145-154, 175-192; *Oceanography* text: Ch. 10.6, 10.7 (Coastal Water Types and Issues), Ch. 13. (Biological Productivity)

- Asynchronous film *River of Kings* (Saving the Ocean, 2012, 52 min. in two parts)
- Monday midnight **DUE: Quiz (B & C) Weeks 1-2 (in Canvas Quizzes)**
Indigenous Peoples' Day
- Tuesday 10:00-12:00 Video: *The Rising* (Crosscut / Quinault Nation; 2019, 25 min.).
Lecture: Northwest Native Climate Resilience
- Tuesday 1:00-3:00 Lecture: Marine Productivity in Coastal Waters
- Wednesday 10:00-12:00 Seminar: *Asserting Native Resilience*, pp. 53-85, 102-108, 145-154, 175-192
- Thursday 9:00-4:00 **NISQUALLY ESTUARY FIELD TRIP** Gather at 9:00; leave Lot C 9:15 sharp. (bring bag lunch, pen/notebook, good shoes, rain gear). We'll visit the Billy Frank Jr. Nisqually National Wildlife Refuge on the west bank of the river, and the Nisqually Cultural Center and Braget Marsh on the east bank.
- Friday midnight **DUE: Project description** (100 words) & **Project bibliography list** (publications & links for at least 10 sources). Project papers double-spaced, posted in Assignments as attachment (pdf, doc, or docx).

WEEK FOUR: OCTOBER 17, 18, 19 (Estuaries and Coastal Beaches)

Readings: David Berger, *Razor Clams* [entire]; *Oceanography* text: Review Ch 10.6, 10.7.; Scientific article (Biological and physical dynamics of domoic acid production off the Washington Coast, pdf in Modules)

- Asynchronous films *3 Feet Under: Digging Deep for the Geoduck* (Justin Bookey, 2003; 63 min.)
- Tuesday 10:00-12:00 Lecture: 19th-21st century Native History
- Tuesday 1:00-3:00 Lecture: Estuaries
- Wednesday 10:00-12:00 Seminar: *Razor Clams* [entire]
- Thursday 9:30-4:00 **DESCHUTES RIVER ESTUARY / BUDD INLET FIELD TRIP**
Meet downtown (locations TBA) at 9:30 am sharp. (bring *charged* smartphone, bag lunch or \$ for lunch, pen/notebook, walking shoes, rain gear). Students will gather data in boats, while other students will take 2 of 3 "Olympia's Hidden Histories" StoryMaps self-guided walking tours (Steh-Chass, Tidelands, Dam), then groups alternate (one group will take tours today but go on boat Friday). Farmer's Market is an easy place to have lunch. <https://artforces.org/hiddenhistories>
- Friday midnight **DUE: Essay (A) Weeks 3-4**

WEEK FIVE: OCTOBER 24, 25, 26 (OLYMPIC PENINSULA FIELD TRIP)

Readings: Field trip packet: Field trip handout, *Who We Are* (Wray) chapters. *Oceanography* text: Ch. 15 (Benthic Animals).

- Asynchronous film *Usual and Accustomed Places* (Sandra Osawa, 2002, 48 min.)
- Monday **DUE: Quiz (B & C) Weeks 3-4**
- Tuesday Gather 9:00; vans leave Lot C at 9:15 *sharp*. Bring bag lunch
Quinault Nation: Meeting with natural resources and Move to Higher Ground staff in Taholah. Stay at Olympic Natural Resources Center in Forks.

Wednesday	Quileute Nation: Morning meeting in La Push with tribal staff on climate change and Move to Higher Ground; afternoon hike to Second Beach (weather permitting); evening Drum and Healing Circle potluck and dances
Thursday	Makah Nation: Morning tour of Makah Museum in Neah Bay, meet with tribal climate staff; afternoon hike to Cape Flattery; return to campus ~8 pm.
Friday midnight	DUE: Annotated bibliography (of 5 most important sources), 1st draft Summary / Abstract (250 words)

WEEK SIX: OCTOBER 31, NOVEMBER 1, 2 (Environmental Justice)

Readings: Mapes, *Orca*: Map, Preface, Introduction, Ch. 1, 3 (pp. 9-46, 73-93). [Ch. 2, 4 are optional.];
Oceanography text: Ch. 14 (Pelagic Animals), Review Ch 13.2 (Photosynthetic Organisms). 13.5 (Fisheries)

Asynchronous film	<i>Homeland: Four Portraits of Native Action</i> (Roberta Grossman, 2005, 89 min.)
Tuesday 10:00-12:00	Lecture: Native Environmental Justice and Removing Barriers
Tuesday 1:00-3:00	Lecture: Coastal Ecosystems and Fisheries
Wednesday 10:00-12:00	Seminar: <i>Orca</i> : Map, Preface, Introduction, Ch. 1, 3
Thursday 9:00-12:00	Gerardo seminar lab (Room TBA): Microscopy Zoltán seminar workshops (Longhouse 1007B): Powerpoint guidelines, and article "Ocean Cultures: Northwest Coast Ecosystems and Indigenous Management Systems" (Darcy L. Mathews & Nancy J. Turner)
Thursday 1:00-4:00	Zoltán seminar lab (Longhouse 1007B): Microscopy Gerardo seminar workshops (Room TBA): Powerpoint guidelines, and article "Ocean Cultures: Northwest Coast Ecosystems and Indigenous Management Systems" (Darcy L. Mathews & Nancy J. Turner) DUE: Sign up for Friday Mid-Quarter Check-Ins DUE: Mid-Quarter Checklist (in Assignments by midnight)
Friday midnight	DUE: Essay (A) Weeks 5-6, including field trip reflections MID-QUARTER CHECK-INS WITH FACULTY in-person or via Zoom

WEEK SEVEN: NOVEMBER 7, 8, 9 (Decolonizing and Revitalizing Ecosystems)

Readings: Mapes, *Orca*: Ch. 5, 6, 7 (pp. 107-175); *Oceanography*: Ch. 6 (Air-Sea), Ch 16. Climate Change).

Asynchronous film	<i>Return of the River: The Largest Dam Removal in History</i> (John Gussman & Jessica Plumb, 2014, 72 min.)
Monday	DUE: Quiz (B & C) Weeks 5-6
Tuesday 10:00-12:00	Lecture: Unlikely Alliances of Native Nations and White Communities
Tuesday 1:00-3:00	Lecture: Oceans and Global Climate Change-A Election Day
Wednesday 10:00-12:00	Seminar: <i>Orca</i> : Ch. 5, 6, 7
Thursday 9:30-4:00	SQUAXIN ISLAND FIELD TRIP: Gather 9:00; vans leave Lot C 9:15 sharp. Visiting Squaxin Island Museum, Candace Penn, Kennedy Creek Salmon Trail (bring bag lunch, pen/notebook, walking shoes, rain gear, \$ for gifts).
Friday midnight	DUE: 2nd draft Summary / Abstract (250 words) 1st draft Project Presentation Outline (including image descriptions)

WEEK EIGHT: NOVEMBER 14, 15, 16 (Climate Justice)

Readings: Klein, *This Changes Everything*: Introduction, Ch. 4, 8, 9, 11 [other chapters are optional] ; *Oceanography* text: Ch. 6 (Air-Sea), Ch. 16 (Climate Change). *Car and Driver* article (pdf in Modules)

Asynchronous film	<i>This Changes Everything</i> (Avi Lewis, 2015, 90 min.)
Tuesday 10:00-12:00	Lecture: Northwest Fossil Fuels Resistance Videos from Port and Fossil Fuels Tour
Tuesday 1:00-3:00	Lecture: Global Climate Change Responses
Wednesday 10:00-12:00	Seminar: <i>This Changes Everything</i> : Introduction, Ch. 4, 8, 9, 11
Thursday 9:00-12:00 Longhouse 1007A	Workshop: Fossil Fuels Connections and Alliances (bring laptops) https://fossilfuelconnections.org
Thursday 1:00-4:00 Longhouse 1007A	PORT AND FOSSIL FUELS FIELD TRIP "Olympia's Hidden Histories" walking tour; meet at 4 th and Plum food carts at 1:00. Bring <i>charged</i> cellphone, walking shoes, raingear, bag lunch or \$ for lunch. Tour starts 2:00.
Friday midnight	DUE: Essay (A) Weeks 7-8, including field trip reflections

FALL BREAK: NOVEMBER 20-24 (Project preparation; No class)**WEEK NINE: NOVEMBER 28, 29, 30 (Climate Solutions)**

Readings: Klein, one assigned chapter for seminar presentation: either Ch. 6, 10, 12, or 13; *Oceanography* text: Ch. 11 (Marine Pollution), *Geoengineering* article (TBA)

Asynchronous film	<i>Awake: A Dream from Standing Rock</i> (Josh Fox / James Spione / Myron Dewey, 2017, 89 min.)
Monday midnight	DUE: Quiz (B & C) Weeks 7-8
Tuesday 10:00-12:00	Lectures: The Resilience Doctrine; Colonial/Corporate and Community-based Solutions to the Climate Crisis
Tuesday 1:00-3:00	Lecture: Eutrophication and Harmful Algal Blooms
Wednesday 10:00-12:00	Seminar: Student panels prepare <i>This Changes Everything</i> presentations. Academic Fair (to find out about winter programs)
Thursday 9:00-12:00 Longhouse 1007B	Workshop: Team panels on <i>This Changes Everything</i> : Ch. 6 (Watersheds), Ch. 10 (Estuaries), Ch. 12 (Salish Sea), Ch. 13 (Pacific Ocean).
Thursday 1:00-4:00 Longhouse 1007B	Workshop: Self-Evaluations, Faculty Evals, Academic Statement DUE: Sign up for week 11 evaluation with your seminar faculty Workshop: Week 10 project presentation panels preparation
Friday midnight	DUE: Final Draft Project Abstract, Outline, Bibliography (one document)

WEEK TEN: DECEMBER 5, 6, 7 (Student presentation panels)

Tuesday 10:00-12:00	Student panel presentations: Watersheds
Tuesday 1:00-3:00	Student panel presentations: Estuaries
Wednesday 10:00-12:00 Purce Hall 2	Students panel presentations: Salish Sea
Thursday 9:00-2:00 Longhouse 1007A	Students panel presentations: Pacific Ocean Potluck lunch to celebrate (<i>please bring a dish to pass</i>) Summative discussion

WEEK 11: EVALUATIONS

Required evaluation meeting will be scheduled early this week; sign up for slot in Modules. Do not make winter-break travel plans without first signing up for a meeting.

DUE: Both Self-Evaluation and Faculty Eval on my.evergreen.edu after your Week 11 eval meeting (*required*)

ASSIGNMENTS

1.) ATTENDANCE: Attendance is the single most important factor in your success in this program, to learn, gain equal access class information, and build a learning community. Our program is in-person, so lectures and workshops will not be recorded, just like back in the olden days of the 2010s. So please inform your families and friends that your attendance will be vital to your success this quarter, and not to make plans that would take you away from class. “90% of life is showing up.”

2.) ACADEMIC STATEMENT or Biography: Incoming students to Evergreen are required to write an Academic Statement about their college education and perspective. If you don't have such an Academic Statement, please prepare a short biography for yourself, as part of the Student Introduction Survey.

3.) READINGS AND FILMS. You will be reading *Oceanography* textbook chapters to prepare for the Tuesday afternoon natural sciences lecture. You will be reading books (or chapters from books) to prepare for the Wednesday morning book seminar. You will also view an asynchronous (out-of-classroom) film online to prepare for the Wednesday morning seminar.

You should find a quiet place without distractions to read well ahead of time (over the weekend and Monday) and not cram just before class or read on your phone. You can take notes in your notebook or the margins, or on your laptop, to retain the information, but don't get bogged down in details and pay attention to the author's main messages. Reading the start and end of a book or chapter can help reveal the “big picture” of the text.

4.) INTEGRATED ASSESSMENT. There will be four biweekly Assessments. Each will have three parts: A.) A synthesis essay, B.) Natural sciences quiz, and C.) Social sciences quiz, in order to assess your learning for the previous two weeks. They will all be due in Canvas: the essay (A) by Friday at midnight, and quizzes (B & C) by Monday at midnight. It is advisable to get all three done on Friday, to leave time for your reading and film for the next week.

4A.) BIWEEKLY SYNTHESIS ESSAYS (due Friday weeks 2, 4, 6, 8 in Assignments) are the first part of the Assessment, and worth a credit each. The essays will be a minimum of 500 words (2 pages double-spaced), that draws from and synthesizes the previous two weeks' seminar book readings, drawing from their themes (what the author was trying to say). You then relate the readings to other class material the two weeks (lecture, film, field trip, discussion). The *Oceanography* textbook is *not* a seminar reading for the synthesis paper; it is prep for the Tuesday natural science lecture.

This assignment is to get you to show your engagement with the seminar readings, but also to practice synthesis (interweaving or integration) of different observations into a coherent whole. You might, for example, identify a theme that cuts across the readings, and extract from all parts of the two weeks to provide evidence for your analysis. You should be *specific* with quotations and page numbers from the readings.

The purpose of essay assignment is to provide verification that you have done the reading, and to prepare you for seminar discussion. You can bring a draft to seminar to help prepare you for discussion, and then change it for the assignment if you wish. Faculty will review essays and give feedback. Write and save the essay outside of Canvas (which can freeze or lose text), and paste it into the essay box. Assignments need to be in .pdf, .doc, or .docx; convert from any other programs.

For credit, papers must include **ALL of the following:**

1. A quote, fact, concept, or argument from the *previous week's* reading(s) in last week's seminar.
2. A related quote, fact, or concept from *this week's* reading(s) in this week's seminar.
- 3. Related material from the classroom (lecture, film, field trip, discussion, etc.)**
4. A sense of synthesis (interweaving / integration) of these observations into a coherent whole.

4B & C.) BIWEEKLY QUIZZES (due Monday weeks 3, 5, 7, 9 in Quizzes). In Quiz B, you will answer 10-15 questions in the natural sciences (oceanography), and in Quiz C you will answer 10 questions in the social sciences (Native studies). Completing both two online, open-book quizzes is also worth one credit. Most will be multiple choice, matching, or ranking questions. The quizzes are to confirm that you understood key points in the lectures, films, and natural science text. They will be due Monday midnight, but you can submit them earlier and have an opportunity to correct your errors. The practice quiz due Friday week 1 will match a list of Northwest reservations to a map (see study map in syllabus).

5.) “FOLLOW THE WATER” PROJECT. The “Follow the Water” research project focuses on case studies of watersheds, estuaries, Salish Sea, and Pacific Ocean coast, to examine rich connections among organisms and communities in Pacific Northwest regional ecosystems, which stretch from northern California to Oregon, Idaho, Washington, British Columbia, and southeast Alaska.

The project will be organized in four geographical areas: following the flow of streams and rivers from mountains through **watersheds** (water catchment basins), to **estuaries** (mouths of rivers), into the **Salish Sea** (Puget Sound, Hood Canal, Strait of Juan de Fuca, Strait of Georgia), and the northwest coast of the **Pacific Ocean**. Each student will examine a case study involving mainly one of these geographical areas and focusing on 1-2 organisms that are confronted by climate change in the area, and its relationship to Native peoples and other human communities. Faculty has provided a list of potential climate change case studies below, but you can also propose your own topic.

The case study project is worth four credits, so should be a central part of your work this quarter. We will have workshops to help in library research, bibliography citations, and developing PowerPoint presentations. Your research should be heavily cited (showing the source in the text and referring it to the bibliography). Quotations or concepts should be *always* cited with page number(s). In your bibliography, use APA format; see <https://owl.english.purdue.edu/> for guidelines. Looking ahead to your Week 10 presentation, you should keep a desktop folder for graphics pertaining to the topic, and keep track in a document of the URLs where you found the graphics.

The project is scaffolded, so assignments are due biweekly (on Fridays in odd-numbered weeks) to construct your findings and ideas, including a 100-word **Project Description** (plus an initial bibliography list), 250-word **Summary / Abstract** that narrates the key points of your case study, an **Annotated Bibliography** that describes your key sources, and a presentation **Outline or Script** that helps you organize topics, subtopics, and image ideas into a coherent chronological story. With the thought put in these assignments documents, you have developed familiarity with the topic and can confidently develop your Week 10 Presentation.

The Project papers should ***all be double-spaced to enable proofmarks in faculty editing***. Each of these papers will be submitted as Canvas Assignments. as a .doc, .docx, or .pdf only (*not* .pages or any other program). Your attached paper should be *one document*, and start with your LastName only / assignment number (such as Carmichael2.pdf for second draft), to help faculty keep track.

The case study project culminates in your Week 10 **PowerPoint presentation** of 8-10 minutes. The PowerPoint development handout will help you put together your presentation. You should be gathering images in a laptop folder as you do the research, so you can use the visual elements for your presentation. You'll be presenting your individual case study research as part of student panel that is covering the same geographical area, so you are encouraged to find connections between your case studies.

Project due dates

Week 1 (Friday, Sept. 29): Select project

Week 3 (Friday, Oct. 13): Project description (100 words) and Project bibliography list (publications & links for at least 10 sources),

Week 5 (Friday, Oct. 27): 1st draft Summary / Abstract (250 words) and Annotated bibliography (of 5 most important sources),

Week 7 (Friday, Nov. 10): 2nd draft Summary / Abstract (250 words) and 1st draft Project Presentation Outline (including image descriptions)

Week 9 (Friday, Dec. 1): Final Draft Project Abstract, Outline, Expanded Bibliography beyond the 10 sources (as one document)

Week 10: Final PowerPoint presentation on your case study project, turned in to Canvas Discussions, as an attachment in your project panel by 6 pm the night before your presentation.

Research guide

We will review possible sources in a Library workshop. Your goal is to conduct a thorough analysis of your case study examining a variety of sources and considering diverse points of views if your case study involves conflicting interests. Some sources of information include:

- 1.) Peer-reviewed scientific literature, whether on your case study, or t(if it is too local or recent) a very similar case study elsewhere or on material relevant to the case study.
- 2.) Key government studies / reports, such as state or federal agency Environmental Impact Statements or Environmental Assessments, starting with the Executive Summary (overview of report).
- 3.) News reports, such as from the *Seattle Times*, *The Olympian*, and other newspapers (accessible for free through the Evergreen Library website), or TV and radio news websites (found through Google search with specific places, projects, tribes, and resources).
- 4.) Tribal perspectives, using pertinent tribal government websites, Northwest Indian Fisheries Commission (NWIFC) publications <https://nwifc.org>, and especially the NWIFC magazine *Northwest Treaty Tribes* <https://nwtreatytribes.org>
- 5.) Other sources, if suggested (and required) by faculty. For dam-related case studies (marked with asterisk *), see *Removing Barriers* at <https://sites.evergreen.edu/removingbarriers>

The best way to find possible sources is to review and “mine” the bibliographies of existing books, studies / reports, and articles.

Possible case study topics. You can also propose a case study (specific to a Pacific Northwest watershed, estuary, sea, or ocean, preferably with an Indigenous angle), subject to prior approval by both faculty.

WATERSHED

Tulalip Beaver Project and beaver dam analogs

Tulalip Tribes biogas energy (Qualco Energy)

Skokomish Tribe & Cushman dams*

Quinalt & Chehalis tribal opposition to proposed Chehalis River flood control dam*

Proposed removal of four Snake River hydroelectric dams*

Pending removal of four Klamath hydroelectric dams to restore salmon & suckers*

Nisqually watershed salmon habitat restoration

Causes and effects of wildfires on watersheds (Fraser or Columbia valleys)

Yurok cultural burning in northern California

Marine Derived Nutrients-MDN (How salmon deliver MDN inland supporting forest ecosystems)

Melting Washington glaciers and predicted consequences

Sea lion population culling to protect salmon

ESTUARIES

Swinomish Climate Change Initiative in Skagit River Delta

Nisqually estuary restoration through dike removal*

Qwuloolt Estuary Restoration Project of the Tulalip Tribes

Swinomish clam gardens

5th Avenue Dam removal in Olympia*

City of Olympia (or other cities in PNW) plans for sea level rise

Columbia River Inter-Tribal Fish Commission (CRITFC) *Spirit of the Salmon* plan

Eutrophication (dead zones) in PNW estuaries

Wetland restoration projects in Pacific Northwest

Constructed wetlands as natural wastewater treatment plants

An invasive species in the Pacific Northwest (e.g., European green crab, Chinese mitten crab tunicates, Zebra mussel, *Spartina alterniflora*)

Treaty-backed shellfish (other than geoduck) harvesting

SALISH SEA

Shellfish & low-oxygen (hypoxia) conditions in Hood Canal

Tsleil-Wauthuth & Swinomish opposition to TransMountain tar-sands oil pipeline

Lummi opposition to Cherry Point coal terminal

North West Indian Fisheries Commission (NWIFC) *Tribes at Risk* report

Culvert removal in the Chico Creek watershed*

Indigenous Health Indicators in Swinomish Tribe Action Plan

Harmful Algal Blooms (select a species/syndrome, for example the dinoflagellate *Alexandrium*, which causes Paralytic Shellfish poisoning)

Future of Southern Resident Orcas In the Salish Sea

Restoration of the native Olympia Oyster (*Ostrea lurida*)

Removal of seawalls in Puget Sound / Salish Sea intertidal zones
Wetlands as sites of carbon sequestration (Blue Carbon)
Tribal geoduck harvesting

PACIFIC OCEAN

Oysters & ocean acidification
Projected sea-level rise on Washington coast
Quinault fishing & tribal opposition to offshore wind turbines
Makah whaling controversy as gray whales face environmental threats
Makah climate change projects
Quinault climate change projects and blueback salmon
Quinault opposition to Bakken oil terminals in Grays Harbor
Quileute move to higher ground
Red tide and toxins in shellfish (e.g., the diatom *Pseudo-nitzschia* and amnesic shellfish poisoning (ASP))
Climate threats to Dungeness crab
Evidence of past tsunamis on Washington coast and current responses to future tsunamis
Sea otter conservation and reintroduction

6.) SEMINAR PARTICIPATION. All students must be prepared and ready to contribute to the Wednesday discussion. Start by ***making sure you have a copy of the reading with you.*** You must have your book, e-book, or a print out of any .pdf that is available on Canvas. This is important because you build on your initial reading through discussion, and will need to refer to passages in the text.

Bring a quotation from the reading with you, to prepare for discussion, and note the chapter and page number so others can look it up during seminar. Expect to hear faculty and students read aloud passages (and if you feel comfortable, be prepared to read aloud as well). Reading out loud underscores significant ideas of the text and increases student comprehension. Students can work with the text in small groups after the faculty have presented information for students to consider. Students can have the option to lead or be a notetaker (scribe) in seminar after signing up in Week 1 and meeting with faculty.

7.) POPULAR MEDIA CONNECTIONS TALK. The purpose of this assignment is to make connections between the program content (oceans, climate change, Northwest coastal tribes) and current (up to 5 years old) events reported in the popular media. Each student will do a brief (2-3 minute max) presentation on a news article relevant to program themes. Ideally the article would be on climate/environmental issues in the Pacific Northwest (including tribal lands) but can be from other parts of the world, as long as the relevance to program themes is explained.

1. Sign up for a presentation time on Week 1. Presentations will begin on Week 2. There will be 2 presenters before each of the lecture sessions on Tuesday (am and pm) and 2 presenters in Wednesday seminar. There will a sign-up sheet for this assignment in Modules.
2. Find a news article from the popular literature (written for a broad audience). Examples include print or online news sources such as *The Olympian*, *Seattle Times*, BBC.com, CNN.com, NPR.org, etc. You can also use sites that disseminate scientific information to the public like sciencenews.org. Do not use peer reviewed scientific papers, which will be required for a different project.
3. Prepare one PowerPoint slide with the name of the article, date and source. Include an image related to the piece of news and text to summarize the content. Plan and practice a 2-3 min. talk presenting the main points of the article and how it relates to the program. You can also comment on how accurately the news piece communicates the information. In Week-1 the faculty will show examples of these talks.
4. In Canvas discussions go to the Discussion titled "Popular Media Presentations". Respond to the root post by entering your name, the article and a brief summary. Then upload your PowerPoint slide into your posting. An example of a post is provided in Discussions.

8.) NOTETAKING. Take care with your notetaking. Studies show that information is retained in our memory if we write it down. You do not have to take notes on everything, but record enough information to jog your memory later. Some lecture notes and powerpoints will be made available ahead of class, so you can download them, or print them off if you are able (using Handouts-3 pages print-out selection in powerpoint) and take notes on additional information from the lecture.

9.) CHECKLISTS AND EVALUATIONS. Students will be reporting the progress of their work with Mid-Quarter and Final Checklists, meeting on Zoom with faculty in weeks 1 and 4, and writing a self-evaluation and a faculty evaluation at the end of the program, to be posted on <https://my.evergreen.edu>.

Friday, September 29: Check-in with faculty, discussion of project selection; sign up for 10-minute slot.

Thursday, November 3: Mid-quarter Checklist of all written assignments due. Students will note which assignments have been submitted, submitted late, or not submitted, in prep for check-in with faculty.

Friday, November 4: Morning Zoom check-in with faculty

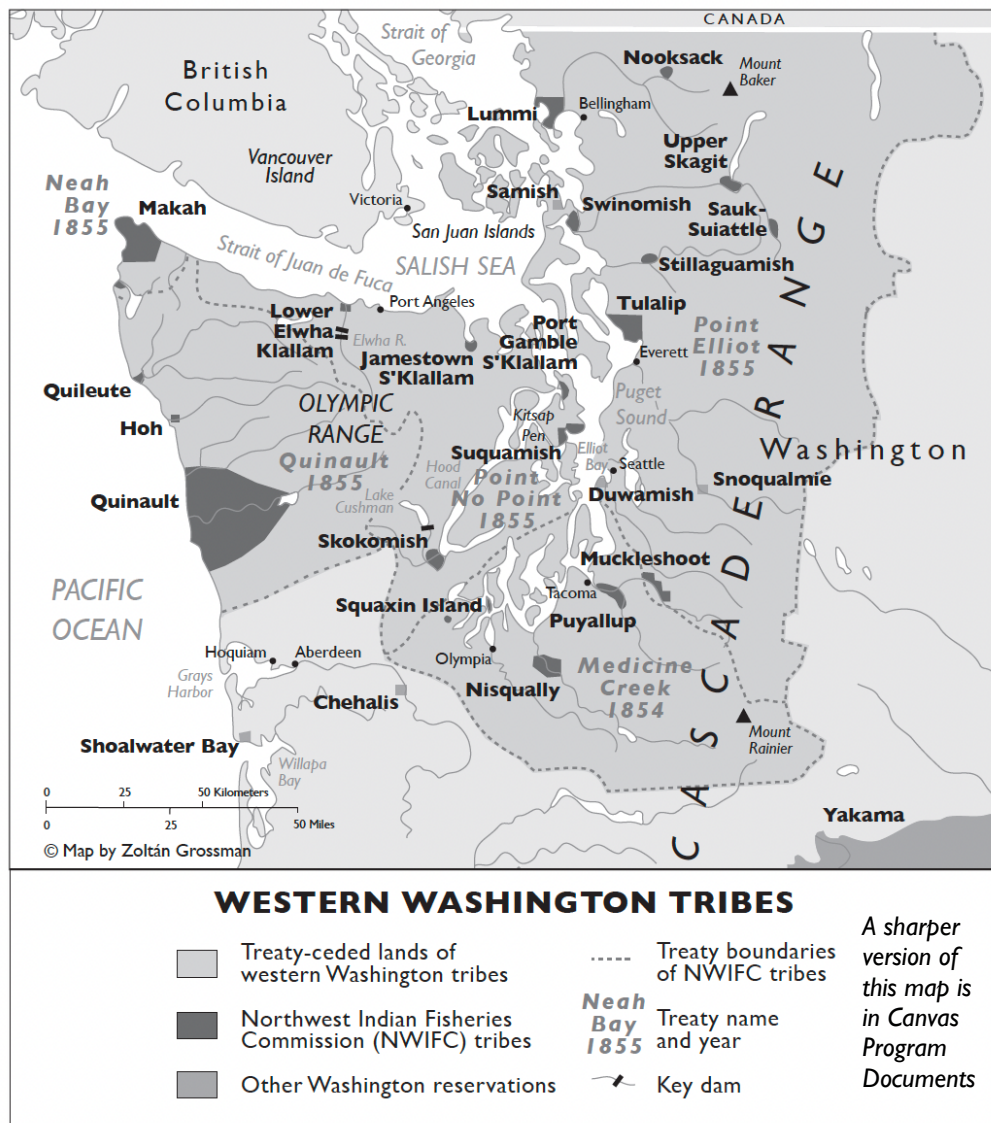
Thursday, December 7: Final Checklist, Self-Evaluation draft, and Evaluation of your faculty (optional to share faculty eval before meeting). *Both the Self-Evaluation and Faculty Evals of each faculty are due on my.evergreen.edu after your Week 11 eval meeting.*

EVERGREEN LAND ACKNOWLEDGEMENT

We gratefully acknowledge and honor the Squaxin Island Tribe, upon whose traditional homelands the Evergreen Olympia campus is situated. For thousands of years, their ancestral families lived and thrived here. They named Budd Inlet *Steh-Chass*, and Eld Inlet where the campus is located *Squi'Aitl*. Today the Squaxin Island Tribe continues to live on and steward the lands and waters of the southern Salish Sea.

We also gratefully acknowledge the Puyallup Tribe whose traditional lands Evergreen's Tacoma Campus is located upon. *[Squaxin Island Tribe bands, Puyallup Tribe, Nisqually Tribe signed 1854 Medicine Creek Treaty.]*

We respect and acknowledge the Squaxin Island and Puyallup tribes, and other tribes across the Americas, and their many contributions to The Evergreen State College (in support of education, tribal sovereignty, and environmental stewardship). This acknowledgement is one small step toward respect and collaboration with the aim of uplifting the voices, cultures and histories of the tribes of these lands and waters.





"The answers you seek can be found in the syllabus."
