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 Quinault, 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

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<tr>
<th>DAY</th>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
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<tbody>
<tr>
<td>TUESDAY</td>
<td>10:00 am – 12:00 pm</td>
<td>Social science lecture</td>
<td>Longhouse 1007A</td>
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<td></td>
<td>1:00 – 3:00 pm</td>
<td>Natural science lecture</td>
<td>Purce Hall 2</td>
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<tr>
<td>WEDNESDAY</td>
<td>10:00 am – 12:00 pm</td>
<td>Seminar</td>
<td>Longhouse 1007A &amp; 1002</td>
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<tr>
<td>THURSDAY</td>
<td>9:00 am – 12:00 pm</td>
<td>Workshop or local field trips</td>
<td>Rooms vary: see Schedule</td>
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<td>1:00 – 4:00 pm</td>
<td>Workshop or local field trips</td>
<td>Rooms vary: see Schedule</td>
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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:

BOOKS IN SPECIFIC WEEKS (see Schedule):


EVERGREEN STUDENT PROJECT RESOURCES


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


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).

Tuesday 10:00-12:00 Guest: Vanessa Marenco, Assistant Director of s’gʷigʷiʔaltxʷ: / 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 All-program Seminar: Messages from Frank’s Landing [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) 34th 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).

Asynchronous film As Long as the Rivers Run (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: Asserting Native Resilience, pp. 208-224, 10-52

Thursday 9:00-12:00 Workshop: Library research, citations, capitalization Longhouse 1007A Workshop: Follow the Water Project (bring laptop)

Thursday 1:00-4:00 Videos: Nisqually Watershed Podcasts Longhouse 1007A 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**  

**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](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 *Homeland: Four Portraits of Native Action* (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: Orca: 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 *Return of the River: The Largest Dam Removal in History* (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: Orca: 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

*This Changes Everything* (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: *This Changes Everything*: Introduction, Ch. 4, 8, 9, 11

Thursday 9:00-12:00
Workshop: Fossil Fuels Connections and Alliances *(bring laptops)*
Longhouse 1007A
https://fossilfuelconnections.org

Thursday 1:00-4:00
**PORT AND FOSSIL FUELS FIELD TRIP** “Olympia’s Hidden Histories”
walking tour; meet at 4th and Plum food carts at 1:00. Bring *charged* 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

*Awake: A Dream from Standing Rock*
(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 *This Changes Everything* presentations. Academic Fair (to find out about winter programs)

Thursday 9:00-12:00
Workshop: Team panels on *This Changes Everything*: Ch. 6 (Watersheds), Ch. 10 (Estuaries), Ch. 12 (Salish Sea), Ch. 13 (Pacific Ocean).
Longhouse 1007B

Thursday 1:00-4:00
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
Students panel presentations: Salish Sea
Purce Hall 2

Thursday 9:00-2:00
Students panel presentations: Pacific Ocean
Longhouse 1007A
**Potluck lunch** to celebrate *(please bring a dish to pass)*
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 the 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.

8
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 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](https://nwifc.org), and especially the NWIFC magazine Northwest Treaty Tribes [https://nwttreatytribes.org](https://nwttreatytribes.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](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*
- Quinault & 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-Waututh & 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 Squ’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."