

EXTINCTION AND CLIMATE CHANGE
PROFESSOR PARENTEAU
SYLLABUS FALL 2017



Wild Pacific Salmon, including the Sockeye salmon shown above, are extremely important not only as one of the most valuable fish in the world, but also as supporters of marine ecosystems, food for millions, and symbols of cultural tradition. Pacific Salmon numbers are increasingly threatened by over-fishing and habitat loss, but also due to warming and acidifying oceans driven by anthropogenic climate disruption.

Course Description: There is a strong scientific consensus that human activity is causing a mass extinction of plants and animals that rivals the five great extinctions that have occurred over earth's geological history. Habitat loss is the leading cause of this extinction crisis, followed closely by the increasing spread of introduced and invasive species. Poaching and illegal trade are the greatest threats for some "charismatic megafauna" such as elephants, tigers, rhinos, wild birds, and the great apes. The current rate of human-caused species extinctions is already hundreds or thousands of times greater than the natural or "background" rate of extinction, yet it pales in comparison to the projected scale of extinction threatened by climate disruption driven

by anthropogenic sources of greenhouse gases (GHG). Scientists have forecast a catastrophic loss of more than a third of the earth's biological diversity unless decisive actions are undertaken immediately to stabilize and reduce greenhouse emissions while at the same time adopting plans and strategies to help species and ecosystems "adapt," as best they can, to a world already undergoing profound changes.

This course will examine the history of species protection under domestic laws such as the Endangered Species Act and international treaties such as the Convention on International Trade in Endangered Species of Flora and Fauna (CITES). While these measures will remain important for staving off the extinction of many species in short run, the surpassing threat of climate disruption demands much more aggressive action to "de-carbonize" the global economy and to help human and natural communities adapt to a climate-altered world. The climate issue is too large to cover in a single course. We will look at aspects of domestic and international law that focus on conservation of carbon sinks like forests and wetlands that also serve as critical habitat for much of the world's biodiversity. Guest lectures will provide additional perspectives.

Course Website and Materials: Readings will be found on TWEN along with the syllabus, a course calendar, weblinks, bulletin board, job announcements, and other materials. I will post notices of any changes in the schedule, to add materials for discussion, to answer questions, and to communicate other information. So be sure the email address you register on the site is kept current.

Recommended Supplemental Text: *The Sixth Extinction: An Unnatural History* (2014) by Elizabeth Kolbert. This is a highly engaging and readable account of the extinction crisis by one of the most well respected journalists writing about the big environmental issues of the day. It's optional but I encourage acquiring it for your library.

Class participation: Learning is a shared experience. The more you invest, the greater the return. I encourage questions, comments and spirited, respectful discussion. All points of view are welcome. Please let me know ahead of time if you cannot make a class. I will post news items of interest on the course bulletin board and encourage students to do likewise.

Evaluation: The grade will be based upon three things:

1. One third on a 1000 word **Commentary** related to the subject matter of the course. You can take a topic from the syllabus or class discussions, or choose your own and email it to me for approval. There is a **Rubric** for the commentary on TWEN. There is also a folder on TWEN where the commentaries should be posted
2. One third on class discussion. There will be several in class exercises with students assigned to groups..
3. One third on a final project addressing the issues covered in the course. The final project could be a policy paper evaluating bills in Congress that would amend the ESA; a detailed case note on a pending or recently decided (i.e. within the past 18 months) judicial decision; a critical analysis of a proposed rule or policy; a petition to list a species or designate critical habitat; a draft complaint challenging a violation of the ESA; or something else you want to do provided it has been approved.

Schedule:

Oct 18: Post Commentary on TWEN

Oct 25: Email me your topic for final project

Nov 25: Email me a draft of final project

Dec 20: Post final project on TWEN by midnight. Extensions granted for good cause only; late papers subject to grade penalty.

Office Hours: Tuesday one hour before class; otherwise by appointment. My office is room 201 Eaton House (ext 1305).

Class Schedule and Readings*

* Readings are in the Course Materials folder on the website unless otherwise noted.

Aug 30. The State of the Planet

Nova Special: [Mass Extinction](#)

Joel Sartore <https://www.youtube.com/watch?v=49lzBOB4HB4>

Biodiversity Hot Spots https://www.youtube.com/watch?v=YqUdcW_uNMo

Importance of Biodiversity https://www.youtube.com/watch?v=YqUdcW_uNMo

Questions to ponder:

Is there a mass extinction crisis?

How are extinction rates calculated?

What are the root causes of species extinction?

What role do humans play in the process of extinction?

Do species matter?

Is species preservation a realistic goal?

Should we try to save every species?

Should a benefit-cost analysis be used to decide which species are worth preserving?

What is the appropriate role for zoos and other captive breeding programs?

What about cloning and “reanimation?”

What are biodiversity hot spots?

Sept 6: The Endangered Species Act Overview

Read sections 2, 3, 4 (a) & (b), 7 (a)-(d), and 9(a)(the full text of the ESA is posted on TWEN) (Yes, it’s important to actually read the text of the statute before reading any cases)

Houck, *The ESA and Its Implementation by the Departments of Interior and Commerce*

TVA v Hill (Focus particularly on the way the Court describes the absolute nature of the jeopardy prohibition. What must a court do when faced with a violation of this prohibition?)

Watch: Plater: Things I learned from a very small fish <http://progressvideo.tv/?video=305929>

Questions to Ponder

Who owns wildlife?

Who owns wildlife habitat?

Who should pay for wildlife conservation?

Does the “free market” value habitat?

Is the ESA’s prohibitory approach appropriate or counter-productive?

What kinds of incentives should government offer to encourage conservation?

Is extinction a “market externality?”

How can the economic values of ecosystems be incorporated into resource management decisions?

Class Discussion: What are the lessons from the Tellico Dam case?

Sept 13: Listing: Gateway to Protection

Review ESA §§ 3, 4 (a), (b) & (f)

Listing Petition Flowchart

DOW v Babbitt

Distinct Population Segment Policy

NAHB v Norton

Candidate Conservation Agreements Policy

Greater Sage Grouse Case Study

Sex on the Lek <https://vimeo.com/113617499>

FWS “Not Warranted” Finding:

https://www.fws.gov/greaterSageGrouse/PDFs/GrSG_Finding_FINAL.pdf

Conservation Plan: <https://www.fws.gov/greaterSageGrouse/findings.php>

Zinke Review: <https://www.eenews.net/eenewspm/stories/1060058915>

Questions To Ponder:

How does the ESA define a “species?”

What is a “threatened species?”
What is an “endangered species?”
What is a “distinct population segment?”
What are the criteria for listing?
What role do citizens play in the listing process?
What timetables does the ESA establish for listing decisions?
Why is there such a backlog of listings?
How do courts enforce the listing process?

Class Discussion: Pros and Cons of voluntary conservation as a substitute for listing.

September 20: Critical Habitat

NAHB v USFWS

Alaska Oi & Gas Assn v Jewell

Gifford Pinchot Task Force v Norton

Adverse Modification Rule

Critical Habitat Exclusions

Questions to Ponder

How is critical habitat defined?
How is it designated?
When is it supposed to be designated?
What factors must be considered in designating it?
What is the legal effect of designation?
Why is it so controversial?
Is it worth it?

Class Exercise: Teams will be assigned to evaluate the proposed rule to revise the definition of adverse modification and the proposal to create exclusions from critical habitat

Sept 27. Wolves and Bears: What does “Recovery” Mean in the Case of an Apex Predator?

Review the materials in the Wolf folder on TWEN

Grizzly Bears vs Wolves in Yellowstone <https://www.youtube.com/watch?v=GeF25GJleA8>

Watch *Shades of Gray*

Humane Society v Zinke

Yellowstone Grizzly Bear to be Delisted

https://www.nytimes.com/2017/06/22/science/yellowstone-grizzly-bear-endangered-species-list.html?_r=0

Questions to Ponder

What are the biological standards for recovery?

What are the legal requirements for recovery and delisting?

Is there a timetable for recovery?

What constitutes an adequate recovery plan?

Can the DPS policy be used to subdivide a species for purposes of delisting?

How should “significant portion of the range” be defined?

What does “social carrying capacity” mean?

Class Discussion: Should the Gray Wolf be delisted throughout the US except for the Southwest? Teams will be assigned to debate the pros and cons.

Oct 4: The Consultation Process and the Jeopardy Prohibition

ESA, § 7 (a), (b), (c)

Consultation Flow Chart

NAHB v DOW

NWF v NMFS

CBD v BLM

Questions to Ponder:

What triggers the consultation requirement?

Who does the consulting?

Can an agency consult with itself?

What is the scope of consultation?

What is the product of consultation?

What happens during consultation?

What constitutes “jeopardy” to a species?

What is a “reasonable and prudent alternative?”

What is the effect of a jeopardy opinion?

How do courts enforce consultation requirements?

Oct 11: The Take Prohibition

ESA § 9 (a) 16 USC 1539 (a)

The Harm/Harass Rule (50 CFR 17.3)

Babbitt v Sweet Home

Aransas Project v Shaw

Wild Earth Guardians v DOJ

Questions to Ponder:

How is “take” defined in the ESA?

What does the “Harm Rule” prohibit?

What is an “incidental take?”

To whom does the take prohibition apply?

What evidence is required to prove a take?

What are the sanctions for an unlawful take?

What is the *mens rea* requirement for criminal conviction?

Class exercise: Should the “McKittrick Policy” be abolished? Two teams pro/con

Oct 18 Incidental Take Permits and Landowner Incentives

ESA § 10; 50 CFR § 17. 22

Arizona Cattlegrowers v USFWS

Tools for Landowners: <http://www.fws.gov/endangered/landowner/index.html>

Conservation Banks Fact Sheet

Habitat Conservation Plans Fact Sheet

Safe Harbor Policy (FWS)

Safe Harbor Agreements Q&A

No Surprises FAQs: <http://www.fws.gov/endangered/what-we-do/hcp-faq.html>

Oct 25 Guest Lecture Professor Craig Pease

Tentative Topic: Where Have All the Bugs Gone (And Why It Matters)

[Readings TBA]

Nov 1 NO CLASS

Nov 8 The ESA and Climate Change

Enlisting Endangered Species As a Tool to Combat Warming

http://e360.yale.edu/features/enlisting_endangered_species_as_a_tool_to_combat_warming

Solicitor’s Memo, Consultation on GHG Emissions (TWEN)

Alaska Oil & Gas v Pritzger

Wild Earth Guardians v Jewell

November 15: Green vs Green

Green vs Green: <http://e360.yale.edu/content/feature.msp?id=2236>

Animal Welfare Institute v Beech Ridge Energy

Shearwater v Ashe

Video: Solar Collecting Plants

Video: Ivanpah (PBS Clip)

Video: Desert Tortoise

Video: Wind on Water

Class Discussion: Should Renewables be given special treatment (exempted or fast tracked) under the ESA and other environmental laws?

Nov 22: The Wildlife Trade

Racing Extinction trailer <https://vimeo.com/95903058>

The Illegal Wildlife Trade <https://www.fws.gov/international/travel-and-trade/illegal-wildlife-trade.html>

CITES Introduction (TWEN)

Lacey Act: <http://www.wri.org/blog/2009/12/fact-sheet-are-you-ready-lacey-act>

Can Trophy Hunting Actually Help Conservation?

<http://www.conservationmagazine.org/2014/01/can-trophy-hunting-reconciled-conservation/>

Namibia: A Model of Sustainable Wildlife Management?

<https://www.worldwildlife.org/places/namibia>

Class Discussion: Is trophy hunting (a) a legitimate use of wildlife, (b) immoral and unacceptable under any circumstance, or (c) repugnant to many but a necessary economic incentive for many communities who must live with large, sometimes dangerous species?

Nov 29: Forests

Willie Smits, How to restore a Rainforest: <https://www.youtube.com/watch?v=3vfuCPFb8wk>

Criticisms and response to Smits talk: <http://www.ted.com/about/programs-initiatives/ted-talks/willie-smits-ted-talk-challenged>

Carbon sequestration: Managing forests in uncertain times <https://www.nature.com/news/carbon-sequestration-managing-forests-in-uncertain-times-1.14687>

REDD Framework Document

REDD Equity Issues

Dec 6: Oceans

Acid Trap: <http://www.youtube.com/watch?v=eedBMXudQfE>

Kolbert, The Darkening Sea

OA for Policymakers

Taylor Oyster Farm: <https://vimeo.com/93272507>

Water Quality Criteria for An Acidifying Ocean

Blue Carbon <https://www.scientificamerican.com/article/blue-carbon/>