

ENVS 411: THE SPECIES PROBLEM

Spring 2019 | MW 12-1:50PM | COL 142

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Office Hours: Wed 2-4 pm or
by appointment

Course Description

Since the publication of Charles Darwin's *On The Origin of Species* in 1859, it is scientifically accepted that species are fluid ever-changing things but, despite this dynamic view, they are often still treated as fixed categories to be preserved in their current state. This course explores "species" as a concept and the role the category plays in conservation and in the popular imaginary. We will take an ethically critical lens to conservation

issues to ask questions such as: What is at stake when we represent non-native species as aggressive invaders? How does policy aimed at protecting threatened species disable innovative conservation tactics? How do you decide when lethal control is acceptable? Should de-extinction and rewilding projects be considered as conservation strategies? We will use USFWS outreach publications, environmental education materials, Environmental Impact Statements, contemporary news articles, and more as our archive of materials in this course. Participation in this course includes a field trip and in-class meetings with local land management organizations. Students will be required to participate in one Saturday half-day field trip.

Student Learning Outcomes

By the end of this course students should be able to:

- ◆ Describe and offer examples of how the value of "species" is contested in conservation science and policy, particularly as a framework for determining conservation value.
- ◆ Critically analyze representations of and approaches to species and species boundaries in scientific literature, popular science, and artistic representation.
- ◆ Compare and contrast innovative conservation approaches through ethical and pragmatic lenses.
- ◆ Develop sophisticated written and oral arguments that are in conversation with materials from class and articulate what's at stake with their argument.
- ◆ Apply course concepts to real world conservation examples through interaction with local land management organizations and contemporary news articles.



Required Texts

There are no required texts for this course. All readings will be posted on Canvas.

Course Requirements

Participation/Attendance: Students are expected to arrive on time and prepared for each class session. Participation will be based not only on being present in class but also having done the readings and actively participating in class discussions and activities. This grade will also include any pop reading quizzes or other small in-class assignments throughout the course. If you must be absent from class for any reason contact me as soon as possible so we can discuss what you will miss.

Species in the Media Group Presentation: Once during the term you and a group of about 4 of your peers will present on a current event, news story, exhibition, social media network/hashtag, or other relevant contemporary topic concerning species. You will select your topic as a group but it should broadly fit within the course topic for that week (ideally putting your presentation in conversation with the readings for that day). You will sign-up for your group on the first day of class. These will be 20-minute presentations with 30 minutes of guided discussion following. You will check in with your instructor 1 week prior to the presentation with your chosen topic. This is a group project, so all participants are expected to present part of the material or guide part of the discussion. You will be graded as a group (80%) and as an individual (20%) for this assignment. Group self-evaluations will be given after the presentation to help assess individual participation.

Service Learning Projects & Organization Comparative Analysis: Beginning week 2 of the term and through week 5 we will have a visit once a week from a representative of a local land management organization (3-4 total). These visits/presentations will explore how the different organizations approach the question of species—whether in the context of genetic purity, removing invasive species, planting/introducing natives, or developing entire restoration plans around the recovery of a single species. We will also get to learn more about how different types of organizations (from federal to non-profit) identify their program’s goals and strategies and how they procure funding and support networks for their projects. You will then participate in one of two field trip options with two of the organizations for which you will sign up for during the first week of the course. The field trip will be approximately 3 hours (transportation provided) and will include a hands-on service learning project with the organization.

As part of this project you will complete a 4-5 page comparative analysis of two of the organizations (ideally one will be who you visited on your field trip) due on Monday of Week 6. In this paper you will compare and contrast the different approaches the two organizations take to the

Grade Breakdown

Participation/Attendance	15%
Group Presentation	15%
Service Learning Project & Organization Analysis	30%
Final Paper/Project Proposal	5%
Final Paper/Project Presentation	5%
Final Paper/Project	30%

concept of species. You will offer your own perspective (informed by the presentation and/or field trip) on why each approaches species in their particular way, taking into account the type of organization they are and how/where they obtain funding for their work. *Note: This is NOT intended to be a paper criticizing the different organizations. This is purely intended to be an analytical exercise that will help put into perspective how and why different organizations utilize different conservation strategies. We will debrief and discuss your findings in class where you can share more critical perspectives.*

Final Paper or Project and Presentation: At the conclusion of the term you will write an 8-10 page critical research paper or complete a creative project with accompanying 2-4 page exposition on the topic of your choice. The topic should concern species from any disciplinary lens you choose and must have at least 6 bibliographic sources (negotiable for project option). You can use the topic for your group presentation or your engagement with the local land management organizations as a launching point if you desire.

A paper/project proposal will be due Wednesday of week 6 which will include a 300-word abstract and at least 3 bibliographic sources you *might* use in your paper (these do not need to be annotated). Your instructor will return your proposal with comments by Monday of week 7. During week 10 you will give an 6-8 minute presentation on your paper or project topic in conference-style panels. The final paper or project will be due by Wednesday of finals week at 5pm.



Course Policies

- **Respect:** A respectful environment is essential to facilitate discussions and to create a safe space for students to share their thoughts. Part of being an active participant is listening to others' ideas and being considerate with your own comments. At times, discomfort can be productive when our ideas are challenged, but at no time will we tolerate sexist, racist, or homophobic comments in class. I reserve the right to ask any student to leave if he or she does not adhere to these guidelines. Furthermore, the UO Student Conduct Code provides clear guidelines regarding student behavior. You are responsible for acting in accordance with this code or you will be subject to disciplinary action.
- **Academic Honesty:** The UO Student Conduct Code defines plagiarism as: "using the ideas or writings of another as one's own." Plagiarism is not only detrimental to your own development as a scholar and a writer; it is also a serious violation of UO policy. Any plagiarized assignment will result in a failing assignment grade, the threat of a failing course grade, and academic sanctions as determined by the Office of Student Conduct and Community Standards.

- **Reading & Late Work:** Assigned readings are due on the day they are listed on the syllabus. We will build on the ideas from the reading during class, and a thorough understanding of the reading will be necessary in order to complete the class activities. Unless otherwise noted, all assignments are due by the beginning of the class period. Unless you have made prior arrangements with me, failing to turn in your assignment at that time means that the assignment is late. Late work will drop a full letter grade for each class meeting it is late. *I will not accept work more than 1 week past the due date.* Feedback and comments on late papers will be minimal. We are all human and live human lives (presumably). Things happen when we wish they didn't. As is always the case, clear, frequent and early communication solves a lot of problems, so don't hesitate to contact me!
- **Outside of class contact:** I always plan to respond to emails within 48 hours, though sometimes an email slips through the cracks. If I have not responded in that time do email me again (I will not take it personally). As always, do feel free to email if you have questions (though do NOT email me for answers found in your syllabus) or need to make an appointment outside of my office hours.
- **Cell Phones and laptops:** Cell phones are to be turned off during class. The use of laptops in order to access readings and take notes is perfectly fine unless this becomes a distraction to your peers. It goes without saying that social media, email, or other content irrelevant to our course should not be open during class. If laptop use becomes a problem we will ban their use in the classroom (so don't ruin it for your peers!).
- **Access:** The University of Oregon is working to create inclusive learning environments. I am available to discuss appropriate academic accommodations that may be required for students with disabilities. Requests for academic accommodations are to be made during the first two weeks of the quarter. Students are encouraged to register with the Accessible Education Center in 164 Oregon Hall at 541-346-1155 or uoaec@uoregon.edu.
- **Harassment, Assault, and Discrimination:** UO is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic and dating violence, and gender-based stalking. If you have experienced or experienced gender-based violence (intimate partner violence, attempted or completed sexual assault, harassment, coercion, stalking, etc.), know that you are not alone. UO has staff trained to support survivors in navigating campus life, accessing health and counseling services, getting academic and housing accommodations, getting legal protective orders, and accessing other help. If you tell me about harassment or assault, I am not required to report this information to anyone unless you request that I do so. I am required to consult with a confidential UO employee (someone with legal confidentiality, such as a counseling professional or a crisis center advocate) to ensure that you are supported. If you decide to make a report, I and other UO employees will help you to do so. My goal is to make sure you are aware of the range of options available and that you have access to the resources you need. If you wish to speak to someone confidentially, you can call 541-346-SAFE, UO's 24-hour hotline, to be connected to a confidential counselor to discuss your options or visit the SAFE website at safe.uoregon.edu.

Schedule of Assignments

In the unlikely event that this schedule changes, students will be given ample notice in class and on Canvas.

<p>Week One: <i>Getting to Know the "Problem"</i></p>	<p>4/1: Introduction: Conservation Value & the Species Problem</p> <p>4/3: Biodiversity, Species, & Taxonomy Read: Chapters 1 & 2 from <i>What is Biodiversity?</i> By James Madaurin and Kim Sterelny, 2008, pp. 1-41.</p>
<p>Week Two: <i>Species-Based Conservation</i></p>	<p>4/8: Defining Species in Conservation Read: "Implications of changing species definitions for conservation purposes" by Stephen T. Garnett and Les Christidis in <i>Bird Conservation International</i> vol. 17, no. 3, 2007, pp. 187-195.</p> <p>"Understanding and confronting species uncertainty in biology and conservation" by Hey, Jody et al. from <i>Trends in Ecology and Evolution</i>, vol. 18, no. 11, 2003, pp. 597- 603.</p> <p>4/10 Should Species Guide Conservation? Read: "Conservation Conundrum: Is Focusing on a Single Species a Good Strategy?" by Richard Conniff https://e360.yale.edu/features/conservation-conundrum-is-focusing-on-a-single-umbrella-species-a-good-strategy</p> <p>"Protected Areas and Species" by Brooks et al. in <i>Conservation Biology</i>, vol. 18, no. 3, 2004, pp. 616-618</p> <p>And replies published in <i>Conservation Biology</i>, vol. 18, no. 6, 2004 (all short!): "The Sum is Greater Than the Parts" by Molnar et al., pp. 1670-1671 "Beyond Noah: Saving Species is not Enough" by Higgins et al., pp. 1672-1673 "Nature Conservation Requires More Than a Passion for Species" by Cowling et al, pp. 1674-1676</p> <p>And reply to replies: "Species, Data, and Conservation Planning" by Brooks et al., pp. 1682-1688</p> <p>"Ecological Function Analysis: Incorporating Species Roles into Conservation" by Jedediah F. Brodie et al. in <i>Trends in Ecology & Evolution</i>, vol. 33, no. 11, 2018, pp. 840-850.</p>

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Week Three: *Policy & Practice*

4/15: **Conflict & the ESA**

Read: "Listing Endangered and Threatened Species" by J.B. Ruhl from *Endangered Species Act: Law, Policy, and Perspectives*, edited by Donald C Baur and WM. Robert Irvin, 2009, pp. 16-39.

"Polar Bears: Proposed Listing Under the Endangered Species Act" by Eugene H. Buck from *Inuit, Polar Bears, and Sustainable Use: Local, National and International Perspectives*, 2009, pp. 81-94.

"Response to the U.S. Fish and Wildlife Service's Proposed Rule to List the Polar Bear as Threatened Throughout its Range" by the Government of Nunavut from *Inuit, Polar Bears, and Sustainable Use: Local, National and International Perspectives*, 2009, pp.153-165

In-Class: Visit from Jason Balazar of Friends of Buford Park & Mt. Pisgah

4/17: **Lethal Control**

Read: "Animal Damage Control and the First Standing Depredation Order for Cormorants," from Wires, Linda R. *The Double-crested Cormorant: Plight of a Feathered Pariah*, Yale University Press, 2014, pp. 111-125

Skim selections from: "Experimental Removal of Barred Owls to Benefit Threatened Northern Spotted Owls: Final Environmental Impact Statement" by Oregon Fish and Wildlife and U.S. Fish and Wildlife Service, 2013

- Chapter 1: "Purpose of and Need for Action," pp. 1-9
- Appendix A: "Barred Owl History and Effects on Spotted Owls: Why the U.S. Fish and Wildlife Service is Contemplating Barred Owl Removal Experiments," pp. 312-343

In-Class: Group Presentation

Week Four: *Unexpected Species*

4/22 (Earth Day!): **The Hybrid Problem**

Read: "Hybridization and Extinction: In protecting rare species, conservationists should consider the dangers of interbreeding, which compound more well-known threats to wildlife" by Donald A. Levin in *American Scientist*, vol. 90, no. 3, 2002, pp. 254-261.

"A framework to guide the conservation of species hybrids based on ethical and ecological considerations." By Raeya N. Jackiw et. al. in *Conservation Biology*, vol. 29, no. 4, 2015, pp. 1040-1051.

Selection from "Call of the New Wild" from *The New Wild* by Fred Pearce (2015), pp. 179-184

In-Class: Visit with Daniel Dietz of McKenzie River Trust

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4/24: **Alien Species**

Read: "Nonindigenous Species: Ecological Explanation, Environmental Ethics, and Public Policy" by David M. Lodge and Kristin Shrader-Frechette in *Conservation Biology* vol. 17, no. 1, 2003, pp. 31-37.

"Myths of the Aliens" from *The New Wild* by Fred Pearce, 2015, pp. 103-120.

In-Class: Visit with Abby Colehour from Long Tom Watershed Council

Week Five: *Species out of Place*

4/29: **Climate Change & Assisted Colonization**

Read: "Assisted Colonization: Integrating conservation strategies in the face of climate change." By Scott R. Loss et. al. in *Biological Conservation*, vol. 144, no. 1, 2011, pp. 92-100.

"Scientists, managers, and assisted colonization: Four contrasting perspectives entangle science and policy." By Mark W. Neff and Brendon M.H. Larson in *Biological Conservation*, vol. 172, no. 1, 2014, pp. 1-7.

In-Class: Visit with Sally Villegas-Moore of the BLM West Eugene Wetlands Project

5/1: **Ex situ Conservation**

Read: "*In situ* and *ex situ* conservation: blurring the boundaries between zoos and the wild" by Lesley A. Dickie et al. in *Zoos in the 21st century: Catalysts for Conservation?* 2007, pp. 220-235.

"Freezing the Ark: The Cryopolitics of Endangered Species Preservation" by Matthew Chrulew in *Cryopolitics: Frozen Life in a Melting World* edited by Joanna Radin and Emma Kowal, 2017, pp. 283-305.

In-Class: Group Presentation

Week Six: *Extinction*

5/6: **Extinction**

Due: Land Management Organization Comparative Analysis

Read: Ursula K. Heise's "Lost Dogs, Last Birds, and Listed Species: Cultures of Extinction" from *Configurations*, vol. 18, no. 1, 2010, pp. 49-72.

"Forever Gone: How bird lives and black lives intertwine under the long shadow of history" by L. Drew Lanham in *Orion* <https://orionmagazine.org/article/forever-gone/>

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	<p>5/8: To Save or not to Save? Due: Final Paper/Project Proposal</p> <p>Read: "Should Some Species be Allowed to Die Out?" by Jennifer Kahn in <i>The New York Times Magazine</i>, pp. 1-16</p> <p>"Conservation Biology: The Evaluation Problem" from <i>What is Biodiversity?</i> By James Madaurin and Kim Sterelny, 2008, pp. 149-171</p> <p>In-Class: Group Presentation</p>
<p>Week Seven: <i>Biotechnology & Conservation</i></p>	<p>5/13: Cloning Wildlife Read: Chapters 1 & 2 from <i>Cloning Wild Life: Zoos, Captivity, and the Future of Endangered Animals</i> by Carrie Friese, 2013, pp. 21-69.</p> <p>5/15: Synthetic Biology Read: "Is It Time for Synthetic Biodiversity Conservation?" by Antoinette J. Piaggio, et al. in <i>Trends in Ecology & Evolution</i>, vol. 32, no. 2, 2017, pp. 97-107</p> <p>"The (in)significance of species boundaries" by Ronald Sandler from <i>The Ethics of Species: An Introduction</i>, 2012, pp. 144-170</p> <p>In-class: Group Presentation</p> <p>5/17: Endangered Species Day!</p>
<p>Week Eight: <i>Reviving Species, Reviving Worlds</i></p>	<p>5/20: De-Extinction Read: "The Ethics of Reviving Long Extinct Species" by Ronald Sandler in <i>Conservation Biology</i> vol. 28, no. 2, pp. 354-360.</p> <p>"Reintroducing resurrected Species: selecting DeExtinction candidates" by Philip J. Seddon, Axel Moehrensclager, and John Ewen in <i>Trends in Ecology & Evolution</i>, vol. 29, no. 3, pp.140-147.</p> <p>5/22: Rewilding Read: "Future Megafaunas: A Historical Perspective on the Potential for a Wilder Anthropocene" by Jens-Christian Svenning in <i>Arts of Living on a Damaged Planet</i> 2017, pp. G67-G86</p> <p>"Pleistocene Park: does re-wilding North American represent sound conservation for the 21st century?" by Rubenstein et. al. in <i>Biological Conservation</i> vol. 132, no. 2, 2006, pp. 232-238.</p> <p>"Pleistocene Rewilding: An Optimistic Agenda for Twenty-First Century Conservation" by C. Josh Donlan, et al. in <i>The American Naturalist</i>, vol. 168, no. 5, 2006, pp. 660-681.</p> <p>In-Class: Group Presentation</p>
<p>Week Nine:</p>	<p>5/27: NO CLASS, Memorial Day Holiday</p>

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<p><i>Re-envisioning Worlds</i></p>	<p>5/29: Novel Ecosystems Read: "Novel Ecosystems" from <i>The New Wild: Why Invasive Species will be Nature's Salvation</i> by Fred Pearce, 2015, pp. 153-164. "Novel Ecosystems: Implications for Conservation and Restoration" by Richard J. Hobbs et al. in <i>Trends in Ecology and Evolution</i> vol. 24, no. 11, 2009, pp. 599-605.</p>
<p>Week Ten: Presentations</p>	<p>6/3: Final Project Presentations 6/5: Final Project Presentations Continued</p>
<p>Finals Week</p>	<p>6/12: Due: Final Paper/Project by 11:59pm</p>