

# PHIL 285: Philosophy of Environmental Science: Concepts, Evidence, Policy

Professor: Karen Kovaka

Spring 2024

E-mail: [kkovaka@ucsd.edu](mailto:kkovaka@ucsd.edu)  
Office Hours: Mon 12pm-2pm  
Office: A & H Building 0450

Web: [karenkovaka.com](http://karenkovaka.com)  
Class Hours: Mon 4-6:50pm  
Class Room: A & H Building 0472

---

## Course Description

This course will introduce you to philosophical questions in the environmental sciences and set you up to pursue research in this area. The content will vary along two primary axes. First, “environmental science” includes a wide range of disciplines. We will explore philosophical questions that arise across this range: geology, paleo-biology, conservation biology, and ecology. Second, the issues we tackle will run the gamut from theoretical to applied. The course will begin by examining key concepts in the environmental sciences (e.g. “biodiversity” and “the Anthropocene”). This will give you a sense of the conceptual puzzles that philosophy of environmental science commonly trades in. Next, we will take an epistemic turn and look at challenges that arise when (a) gathering evidence and (b) making inferences on the basis of that evidence. We will end with policy case studies that bring our philosophical analysis into contact with real problems policymakers face and real decisions they must make.

## Evaluation

1. Seminar co-lead: 10%
2. Individual writing assignments: 70%
  - (a) Note-taking exercise (due same day as seminar co-lead): 10%
  - (b) Research question identification exercise (due 4/26): 15%
  - (c) Literature review exercise (due 5/17): 15%
  - (d) Short (approx 3000 words) argument paper (due 6/7): 30%
3. Peer review assignment (due 6/14): 20%

## Fine Print

- **Attendance:** I expect you to come to every class session except when illness or other personal circumstances prevent you. You should be prepared to contribute to the discussion by sharing your own thoughts, answering my questions, and responding to others' observations. If your circumstances require you to miss classes, you and I need to speak about alternative ways for you to participate in the course.
- **Accessibility:** We all learn differently, and I am committed to making this course accessible to everyone. Please come talk to me if some aspect of the course isn't working for you: we can collaborate on alternatives that suit your needs, interests, and learning style. If you have a disability (or think you might), it's also a good idea to contact [Services for Students with Disabilities](#).
- **Technology:** Our phones, tablets, and laptops are crucial tools for learning, yet they are also notorious distractions. I will leave it to you to regulate your technology use. But my expectation is that during our weekly seminar, you do not check your email, message people, or use the Internet for things that aren't course-related. That's why we have a break halfway through.
- **Academic integrity:** I take academic integrity very seriously. It's important that all the assignments you complete are your own work and that you know how to credit and cite sources appropriately. If you have any questions about my expectations for a particular assignment, be sure to talk to me!
- **Changes to the syllabus:** I may adjust the course readings and schedule as the semester goes along. It is your responsibility to pay attention to Canvas and your email so that you are aware of any changes.

## Texts

There are no required books for this course. All of the texts I assign are available on our Canvas site.

# Reading Schedule

Date	Content
<p>Week 1 4/1</p>	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Peter Kareiva and Michelle Marvier, "What Is Conservation Science?" (2012)</li> <li>– Daniel Doak, Victoria Bakker, Bruce Evan Goldstein, Benjamin Hale, "What Is the Future of Conservation?" (2014)</li> <li>– Miguel Ohnesorge and Aja Watkins, "What Is Philosophy of the Geosciences?" (2024)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Sahotra Sarkar, "Environmental Philosophy: From Theory to Practice" (2014)</li> </ul> </li> </ul>
<p>Week 2 4/8</p>	<p><b>The Anthropocene</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Alexandra Witze, "It's Final: The Anthropocene Is Not an Epoch, Despite Protest over Vote" (2024)</li> <li>– Carlos Santana, "Waiting for the Anthropocene," (2019)</li> <li>– Dale Jamieson and Marcello Di Paola, "Political Theory for the Anthropocene,"(2016)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– James Russell and Christoph Kueffer , "Island Biodiversity in the Anthropocene" (2019)</li> </ul> </li> </ul>
<p>Week 3 4/15</p>	<p><b>Ecosystems</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Raymond Lindeman, "The Trophic Dynamic Aspect of Ecology" (1942)</li> <li>– Katie McShane, "Ecosystem Health" (2004)</li> <li>– Jay Odenbaugh, "On the Very Idea of an Ecosystem" (2010)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Matthew Slater, "Anchoring in Ecosystemic Kinds," (2018)</li> <li>– Ulrich Krohs and Martin Zimmer, "Do Ecosystems Have Functions?" (2023)</li> </ul> </li> </ul>

Date	Content
<p>Week 4 4/22</p>	<p><b>Biodiversity</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– James Justus, <i>The Philosophy of Ecology: An Introduction</i>, ch 5 (2021)</li> <li>– Stefan Linquist, "Two (and a Half) Arguments for Conserving Biodiversity on Aesthetic Grounds" (2019)</li> <li>– Katie Morrow, "A Scale Problem with the Ecosystem Services Argument for Protecting Biodiversity" (2023)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Jonathan Newman, Gary Varner, and Stefan Linquist, <i>Defending Biodiversity</i> (2017)</li> <li>– Katie Morrow, "Toward a Consensus on the Intrinsic Value of Biodiversity" (forthcoming)</li> </ul> </li> </ul>
<p>Week 5 4/29</p>	<p><b>Invasive Species</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Emily Parke and James Russell, "Ethical Responsibilities in Invasion Biology" (2018)</li> <li>– David Frank, "Disagreement or Denialism?" (2019)</li> <li>– Charles Warren, "Beyond 'Native V. Alien': Critiques of the Native/alien Paradigm in the Anthropocene, and Their Implications" (2021)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– S. Andrew Inkpen, "Are Humans Disturbing Conditions in Ecology?" (2017)</li> <li>– Mark Sagoff, "Fact and Value in Invasion Biology" (2019)</li> </ul> </li> </ul>
<p>Week 6 5/6</p>	<p><b>Paleoscientific Evidence</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Federica Bocchi, Alisa Bokulich, Leticia Castillo Brache, Gloria Grand-Pierre and Aja Watkins, "Are We in a Sixth Mass Extinction? The Challenges of Answering and the Value of Asking" (2022)</li> <li>– Aja Watkins, "Using Paleoclimate Analogues to Inform Climate Projections" (2024)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Max Dresow, "Uniformitarianism Re-examined, or the Present is the Key to the Past, Except When It Isn't (and Even When It Kind of Is)" (2023)</li> </ul> </li> </ul>

Date	Content
<p>Week 7 5/13</p>	<p><b>Evidence-Based Conservation</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Nick Salafsky et al., "Defining and Using Evidence in Conservation Practice" (2019)</li> <li>– Federica Bocci, "Metrics in Biodiversity Conservation and the Value-Free Ideal" (forthcoming)</li> <li>– Alkistis Elliott Graves, "The Future of Predictive Ecology" (2019)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Nick Salafsky et al., "A Practical Approach to Assessing Existing Evidence for Specific Conservation Strategies" (2022)</li> <li>– Jacob Stegenga, "Down with the Hierarchies" (2014)</li> <li>– Karen Kovaka, "Environmental Interference"</li> </ul> </li> </ul>
<p>Week 8 5/20</p>	<p><b>Novel Ecosystems</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Yasha Rohwer and Emma Marris, "Ecosystem Integrity is Neither Real Nor Valuable" (2021)</li> <li>– James Karr, Eric Larson, and Ellen Chu, "Ecological Integrity Is Both Real and Valuable" (2021)</li> <li>– Carlos Santana, "The Value in and Of Novel Ecosystems" (2022)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Derek Halm, "The Epistemological and Conservation Value of Biological Specimens" (2023)</li> <li>– Françoise Cardou and Mark Vellend, "Stealth Advocacy in Ecology and Conservation Biology" (2023)</li> </ul> </li> </ul>

Date	Content
<p>Week 9 5/27</p>	<p><b>Genetic Engineering</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Kent Redford and William Adams, <i>Strange Natures: Conservation in the Era of Synthetic Biology</i>, selections (2021)</li> <li>– Chris Lean, "Synthetic Biology and the Goals of Conservation," (2024)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Yasha Rohwer, "Gene Drives, Species, and Compassion for Individuals in Conservation Biology" (2020)</li> <li>– Ronald Sandler, "The Ethics of Genetic Engineering and Gene Drives in Conservation" (2020)</li> </ul> </li> </ul>
<p>Week 10 6/3</p>	<p><b>Species Preservation</b></p> <ul style="list-style-type: none"> <li>• <b>Required Reading:</b> <ul style="list-style-type: none"> <li>– Craig Callendar, "On the Horns of a Dilemma: Let the Northern White Rhino Vanish or Intervene" (2023)</li> <li>– Jay Odenbaugh, "Owl vs. Owl: Examining an Environmental Moral Tragedy" (2023)</li> </ul> </li> <li>• <b>Additional Reading:</b> <ul style="list-style-type: none"> <li>– Derek Halm, "Ecological Zoos and the Limits of the Public Trust Doctrine" (2022)</li> </ul> </li> </ul>