

# Imagining Sustainability [ESS/ANTH 150]

--Dr. David Bunn [NREL, ESS, and ANTH; CLARK room B207]

Tuesday/Thursday 9.30am-10.45am. Venue: GLOVER 130

**Office Hours: Tuesday/Thursday 11-12midday (or by appointment)**



Science alone cannot imagine the revolutionary changes necessary to sustain future life on our planet. Art, literature, film, philosophy, anthropology, politics, and public media all play an equally critical role in rethinking the answers to two key questions: will the future be one of abundance, resolved environmental issues, and equality; or do we face inevitable scarcity, environmental collapse, and social injustice?

This course will explore key concepts and practices of sustainability as represented in contemporary fiction, film, and the news media. Our interdisciplinary approach will also be anthropological and historical, charting the development of sustainability thinking through different epochs of capitalism. We'll begin by considering some apocalyptic perspectives on urbanization and global climate change in works like Kingsolver's *Flight Behavior* and films like *Metropolis* and *Blade Runner*, contrasting these with utopian representations of sustainable culture and indigenous knowledge in films like *Ancient Futures*, and *Avatar*.

Using Paolo Bacigalupi's novel *The Water Knife*, we will explore issues of water, environmental justice, and household metabolism.

Our final emphasis will be on complex adaptive systems and links between biodiversity and resilience through case studies of "wicked" environmental problems. Our main example will be media coverage of the poaching and possible extinction of Africa's wild rhino and elephant populations in documentary films like Kate Brooks' *The Last Animals* (2018).

This experimental course will be open to students from all majors with an interest in and enthusiasm for the interdisciplinary science of sustainability. To that end, one part of the class will offer opportunities for young scientists, anthropologists, artists, curators, and filmmakers to work very practically together on public events, interventions, and publications.

### Objectives

Upon completion of this course, a successful student will be able to:

- articulate key concepts in sustainability and ways of applying these concepts to real-world, social-ecological problems;
- reflect on literary, film, and media texts and their engagement with contemporary issues in sustainability;
- show evidence, in writing and class discussion, of historical and politically situated understanding;
- deploy critical thinking and interdisciplinary methods that draw on science, social sciences, and humanities perspectives;
- show evidence of enhanced verbal and written communication skills;
- engage in collaborative learning through discussions and group projects;
- explore the interconnectedness of local and global concerns, and relations between poverty, inequality, and environmental justice;
- participate in innovative campaigns, web projects, installations, displays, film, or other public communications addressing contemporary issues of sustainable resource use.

### Required Texts

Miller and Spoolman, eds., *Living in the Environment: Principles, Connections, and Solutions*. 17<sup>th</sup> edition. **(Free download )**

### Fiction

Paolo Bacigalupi, *The Waterknife*  
Barbara Kingsolver, *Flight Behavior*

### Film

James Cameron (Dir.), *Avatar* (2009)  
Fritz Lang (Dir.), *Metropolis* (1927)  
Hayao Miyazaki (Dir./Animator), *Nausicaä of the Valley of the Wind* (2005)  
Ridley Scott (Dir.), *Blade Runner* (1982)

### Documentary Film and Television

Kate Brooks (Dir.), *The Last Animals* (2018)  
John Marshall (Dir.), *The Hunters* (1957)  
Jeff Orlowski (Dir.), *Chasing Coral* (2017)

Louie Psihoyos (Dir.), *Racing Extinction* (2015)  
 Shaul Schwarz and Christina Clusiau (Dir.), *Trophy* (2017)  
 Eric Walton (Dir.) *Ancient Futures: Learning from Ladakh* (1993)

### Evaluation

Active class participation: 5%  
 Mid-term: 15%  
 Final: 20%  
 Short assignments: 40%  
 Group project: 20%

The four short assignments include: one collaborative debate on policies related to sea level rise; one detailed analysis of a film scene; one collaborative debate on decarbonization; and a water or food consumption diary. Detailed descriptions of these projects, and instructions for the final group project, will be made available via Canvas.

### Schedule of Classes

[Group A: Tuesday Discussion Group; Group B: Thursday Discussion Group]



[Still from James Cameron (Dir.) *Avatar*].

**1. Tues 8/25, Thurs 8/27. Imagining Sustainability: a short history**

What is a “sustainable” lifestyle? “Utopia” and “Dystopia” in the representation of sustainability.

**2. Tues 9/1, Thurs 9/3. Industrialization: Two Versions of Alienation in the City**

Fritz Lang (Dir.), *Metropolis*. The classically dystopian analysis of industrialization, inequitable resource use, and alienation, and Ridley Scott’s (Dir.) *Blade Runner*

**3. Tues 9/8, Thurs 9/10. Living Lightly? Hunter-Gatherer Societies, Non-Bourgeois Families**

Do pre-industrial societies offer us models for more sustainable contemporary worlds? Marshall (Dir.) *The Hunters*; Anthropological case study: ritual, kinship structure, and resource use amongst the Ju//’hoansi. Peasants, Collectives, Collaborations. How does global commodity culture change resource use? *Ancient Futures: Learning from Ladakh*;

**4. Tuesday 9/15, Thurs 9/17. Food, Population, Waste**

Introduction to global population and consumption trends. Science fiction and the “population bomb.” Concepts of global metabolic rift, the waste stream, racial partitioning, red lining and food deserts. Films: *Cowtopia*.

**\*Assignment 1 due: film analysis**

**5. Tues 9/22, Thurs 9/24. Uneven Development and Resource Extraction**

Other cultures and resource extraction. Film: James Cameron (Dir.) *Avatar*.

**6. Tuesday 9/29, Thursday 10/1. High Water and Empty Oceans**

Sustainable Harvests? Catches and bycatch, coral bleaching, plastics; evidence of sea level rise. Film: *Chasing Coral*.

**\*Assignment 2: Debate (Reporting Sea Level Rise)**

**7. Tues 10/6, Thurs 10/8. Climate Change**

Introducing climate change: reliable facts and scientific consensus

Imagining an apocalyptic climate change future: Barbara Kingsolver, *Flight Behavior*

**8. Tues 10/13, Thurs 10/15. Consumption, Gender, Household Metabolism**

Kingsolver (contd.) Theories of consumption, household labor, household energy flows

**9. Tues 10/20, Thurs 10/22. Accounting for Sustainable Use**

How has science transformed the way we value nature? The rise of ecosystem services, and carbon accounting. (Introduction to food diary and water budgets auto-ethnography project.)

**\*\*Mid-term Exam**

**10. Tues 10/27, Thurs 10/29. Biodiversity, Complexity, Resilience, Extinction**

What do we mean by biodiversity? Resilience and complex adaptive systems.

Wicked problems, tradeoffs, and extinctions. Case study: Africa’s rhino and elephant populations, and different media versions of the problem. Films: *Trophy*, and *The Last Animals*

**11. Tues 11/3, Thurs 11/5. Energy: Technological Salvation?**

Coal, Gas vs Renewables. The future of wind and solar power.

**\*Assignment 3: Decarbonization and the “Green New Deal” [Written component due 11/6 at 5pm]**

**12. Tues 11/10, Thurs 11/12. Water and Inequality**

The Colorado River: water governance and equity. Water wars, and global environmental justice. Paolo Bacigalupi, *Waterknife*; Film: *Water and Power: A California Heist*.

**\*Assignment 4: auto-ethnography project due (water and/or food diary). Due Friday November 13 at 5pm.**

**13. Tues 11/17, Thurs 11/19. Direct Engagements**

Group project meetings; *The Water Knife* (final exercises)

**THANKSGIVING BREAK. [From now on, we will be in online mode only. The whole class meets together online for each of the remaining sessions.]**



#### 14. Towards Sustainable Cities?

- Tues 12/1. New Utopias: post-apocalyptic landscapes of film, videogames, and manga. Film: *Nausicaä of the Valley of the Wind*
- Thurs 12/3. Wrapping Up: Sustainable Cities?

#### 15. Agents of Change

- Tues 12/8.  
**FINAL EXAM**
- Thurs 12/10. Group (online) presentation of proposals for: art installations, land and site art, online campaigns, short films, government briefs, crowd sourcing campaigns, environmental causes, exhibitions, teaching materials, online game architectures.

**\*Final Group Project due December 10 5pm**

#### Library & Research Help

The CSU Libraries Help Desk provides basic research and technical assistance either in person at Morgan Library or by phone at 970-491-1841. Virtual assistance is also available via the Libraries' Ask Us chat and email services (<http://lib.colostate.edu/help/ask-us>). Jocelyn Boice is the librarian supporting the Ecosystem Science and Sustainability Department and this course. Contact her for in-depth assistance at: [jocelyn.boice@colostate.edu](mailto:jocelyn.boice@colostate.edu) / 970-491-3882.