

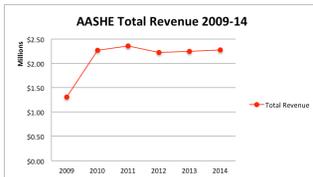
Teaching Sustainability: Ecologies that Matter

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INTRODUCTION

In October of 2010, at the groundbreaking of BrightSource Energy's Ivanpah Solar Electric Generating System, then governor Arnold Schwarzenegger stated, "Some people look out into the desert and see miles and miles of emptiness. I see miles and miles of gold mine." This statement was but the climax of an ongoing debate about the development of utility-scale solar facilities on public lands in the southwest deserts following the American Recovery and Reinvestment Act of 2009, which stated among its objectives investments in renewable energy technologies and environmental protection capable of providing long-term economic benefits.



Since 2009, The Association for the Advancement of Sustainability in Higher Education (AASHE) has seen a 74% increase in its total revenue, insuring that sustainability would become an important concept in any educator's curriculum. Yet, Schwarzenegger's determination of desert landscapes as either 'emptiness' or 'gold mine' draws attention to an interrelated set of questions: in our response to global climate change, which ecologies matter? That is, how do we determine the value of an ecosystem in questions of conservation, development, and disposability? How is 'sustainability' inflected by the rhetoric of 'green' and how does this affect public perceptions of the southwest deserts of U.S. when, traditionally, deserts have been understood as barren wastelands, almost uninhabitable by any form of life?

TEACHING 'THE DESERT' IN SUSTAINABILITY PEDAGOGY

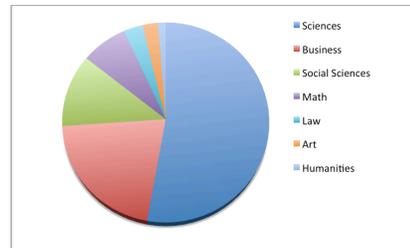
These are the questions I explore in an Argument & Research course titled "Ecologies that Matter." A majority of my students are international students with little to no familiarity with the southwest deserts of the United States. In fact, when asked what descriptors come to mind when they hear the word "desert," the words they use are not far off from Schwarzenegger's determination. Adjectives like "empty," "barren," "uninhabited," "alien," as well as iconography like cacti, tumbleweeds, Joshua trees, and vultures are often used. Furthermore, when asked what descriptors come to mind when they hear words like "sustainability" and "environmental conservation," students often reference the Amazonian rain forests, the California redwoods, and water-based ecosystems.



The purpose of the class is to get students to critically assess the discourse and politics of sustainability, and a complex, interdisciplinary engagement with desert ecosystems is an effective tool for such assessments.

ACCESSING STUDENT KNOWLEDGE

Writing 39C, Argument and Research, is the second of UCI's two required writing courses that together fulfill the Lower Division Writing Requirement for undergraduate students. The course focuses on critical reading and rhetoric and teaches students intellectual strategies for identifying, understanding, and using various genres and rhetorical situations for important communicative purposes. The purpose is to help students deepen their understandings of rhetoric and communication by teaching them how to conduct research and to evaluate and use various types of evidence. The reading, composing, and researching practices they learn in this course and the various intellectual strategies they develop prepare them for future course, while requiring that they engage in the university community and their respective disciplines, as well deepen their perspectives of current issues and problems, and the idea of social justice itself.



To most of my students, the questions, concepts, and requirements of the course can be overwhelming, especially as we deal with social, political, and economic terms and analytics that they might not be familiar with. In order to help mitigate student anxieties, the course is designed to access the knowledge students have prior to the course.

As the pie chart above indicates, a majority of 39C students come from the various disciplines within the sciences (53%), while still significant numbers come from the School of Business (21%) and the School of Social Sciences (12%) and, finally, Mathematics (7%). Students are asked to reflect on the impact the discourse and politics of sustainability has had on their respective fields of research, allowing them to both utilize their prior knowledge while collaborating with their peers in interdisciplinary modules designed for students to both share and translate their research to a more general audience.

Not only does this help build student confidence within the classroom, it also helps them to better understand the history of their disciplines, its critical limitations, and how they might intervene in future research.

SEEING THE DESERT

Because "Ecologies that Matter" is a course designed with particular attention paid to the southwest deserts of the U.S., especially as they factor into our collective visions of sustainable futures, many student projects use global desert ecosystems – in the U.S. but also in Central and South America, Africa, and China – as case studies to begin their analyses. Because students are often unfamiliar with desert landscapes, this means they have to develop not only the critical vocabulary for understanding their research topics, but, perhaps more importantly, skills for *seeing* the desert as more than either 'emptiness' or 'gold mine.' Here's an exercise I like to do with my students, and one I invite you to participate in now.



Both images, the first from a publication in support of utility-scale and the second from a publication opposed, are of the Ivanpah Solar Electric Generating Site in the Mojave Desert. Yet, both images use different photographic techniques. Consider the following questions:

- How does each image inform the way we think about desert landscapes and their relation to the development of utility-scale solar facilities?
- What photographic techniques are used in each of the images? How do these techniques appeal to the images' intended audiences?
- The first image is a long shot, while the second is a close-up shot. How does the juxtaposition of these two images draw attention to the role of scale when thinking about an ecosystem?
- How does the juxtaposition of these images draw attention to the role of representation, in general, and aesthetics, in particular, in questions revolving sustainability? What role might the arts have in informing publics about environmental conservation, development, and disposability?

CONCLUSIONS

As sustainability becomes a more and more important topic in the curriculum of higher education, questions about which ecologies matter in our visions of sustainable futures should continue to be addressed.



Because desert landscapes are often understood as irrelevant or even antithetical to problems of sustainability, the Steele/Burnand Anza-Borrego Desert Research Center will become even more valuable to the American public, in general, and UC researchers and California residents, in particular. The Anza-Borrego community, which in my time with Water UCI has been an inspiring example of collective engagement and activity, can use its partnership with UC Irvine to not only further research in the natural sciences, but to educate students of all levels about ways of *seeing* the biological and cultural complexity of its desert landscape.

ACKNOWLEDGMENTS

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