

Chapter 2

Incorporating Place-Based Education to Cultivate Watershed Literacy: A Case Study

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ABSTRACT

This chapter explores the theoretical underpinnings and practical application of Place-Based Watershed Education. More specifically, it describes an experiential approach to teaching about stormwater and sustainable stormwater management while working to advance the “watershed literacy” of students in an Auburn University Honors Introduction to Sustainability undergraduate course. The value of learning about watersheds (and specifically stormwater) from direct encounters is explored. Also, the importance of cultivating a hydrological sense of place will be discussed in conjunction with an effort to provide a point of entry for educators of diverse disciplinary backgrounds to consider the value of using a form of place-based watershed education in their local bioregion.

ORGANIZATION BACKGROUND

The course discussed in this chapter is an Auburn University Honors College symposium course entitled *Sustainability and the Modern World I* (HONR 1027), which has an emphasis

on exploring food and water issues pertaining to sustainability. This course is housed in the Auburn University Honors College and coordinated by the Director of the Auburn University Academic Sustainability Program. *Sustainability and the Modern World* was first offered in the fall of 2010, and it is a 3 credit team-taught course that embraces an active pedagogy incorporating

DOI: 10.4018/978-1-4666-5856-1.ch002

lecture, discussion, on-campus field trips, and in-class learning exercises. The course is highly interactive which helps to foster critical thinking and build communication skills in the students in the class (King, 1993).

Sustainability and the Modern World I introduces students to the interdisciplinary study of sustainability with an emphasis on local, national, and global food and water systems. Students learn about the environmental and societal impacts of the industrialization of these systems and explore solutions to problems associated with modern patterns of use of food and water. The course exposes students to systems thinking and invites students to think critically about the interconnectedness of natural, technological, cultural, and economic issues of sustainability. Ideally students will develop an understanding of how individual and societal actions may work toward achieving sustainability. To help facilitate a more tangible focus on sustainable solutions, a number of hands-on learning exercises take place in both the field and the classroom. This chapter will explore one of the field trips that occurs in conjunction with a lecture that explores stormwater mitigation practices.

Sustainability and the Modern World is a part of the Auburn University Honors College Interdisciplinary Symposia courses. Students in the Honors College are eligible for these courses, as are students who are not in the Honors College but have maintained a 3.7 GPA. These courses are “highly unique team-taught classes...They are distinguished from traditional coursework by qualitatively different expectations and an emphasis not on memorization but on learning how to think and communicate” (AU Honors College, 2013).

In order to help foster critical thinking and to build communication skills, the *Sustainability and the Modern World I* course embraces an experiential teaching and learning approach that will be discussed later in this chapter. The class meets for 75 minutes two days a week. Tuesdays

are dedicated to lectures and Thursdays are dedicated to discussions, field trips, and other forms of active learning. The discussion sections are small (25 students or less) and pair up faculty representing multidisciplinary backgrounds. All field trips occur within the allotted class time of 75 minutes.

Setting the Stage

The health of our waters is the principal measure of how we live on the land. -Luna Leopold

Often, when I am teaching about how water moves on and through the land, students are not familiar with this concept, nor with the concept of a watershed. Simply, a watershed is an area of land that drains into a common body of water. Vazquez and Uribe (2013) observe that “most people do not even know they live in a watershed” (p. 6). The concept of a watershed is marginalized or simply non-existent in most formal education settings. Vazquez and Uribe add that

The concept of a watershed is not widespread and usually has no relevance within school curricula. We are seldom taught to ‘see’ a watershed. We have road maps, political maps, vegetation maps, but we seldom see a watershed map. Thus, we seldom understand that [inextricable] link among those who live in a watershed. (p.6)

Through class discussions, I have found that many students agree that water is the most important resource on the planet. The United States Environmental Protection Agency concurs, stating that “[c]lean water is the nation’s most valuable natural resource and is relied on for drinking, recreation, manufacturing, energy development, agriculture, commercial fishing, tourism, and many other purposes that are essential to public health and the economy” (EPA, 2013). The significance and scope of maintaining clean water is easily

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