

Backyard Habitat Restoration  
ESM 450/ UNST 421  
Fall 2012

Overview: This class will involve students in monitoring the ecological impacts of backyard habitats that are near Portland parks. This class is collaborative; you will work in teams on several projects; in particular targeted neighborhoods monitoring native and non-native plants, birds, and insects. You will learn about the ecology behind backyard restoration, the procedure for establishing backyard habitats, and assist in implementing new habitats. By participating actively and genuinely, you will not only gain an awareness about the ecological contribution made by backyard habitats, but also confidence in your ability to work in the community and communicate to others. You may gain a sense of empowerment in helping bring about positive ecological functioning in urban settings.

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Course Goals: Learn about the ecological and social benefits of backyard habitat restoration, work to investigate additional ecological and social impacts, develop communication pieces to disseminate these results, help promote backyard habitats through farmers market venues, help inaugurate new habitats.

**Course Activities:**

- 1- Learn about community ecology, beneficial insects, relationship between native plant diversity and insect and bird diversity, conducting urban ecology research, communicating scientific results to non-scientists, measuring attitude and behavior change towards sustainable personal actions.
- 2- Develop outreach material: PNW native plants with wildlife value, benefits of using native plants in yards
- 3- Work in backyard habitats to help develop new yards, assess impact of existing yards
- 4- Work with diverse populations to increase participation in backyard habitat program.

**Community Partner:**

Portland Audubon Society; Nikkie West 503-292-6855

**Service Learning:** Adult service learning integrates intentional community service with instruction and reflection. It is designed to enhance your undergraduate learning experience via applied hands-on learning activities and promote civic responsibility. By thinking, discussing, writing and reflecting on your experience, you can your learning more personally meaningful. Service learning exposes you to the complexities of human experience, and develops your ethic of professional responsibility.

Course Reading Materials:

Bringing Nature Home: How you can sustain wildlife with native plants, Tallamy, 2010. "Aliens" by Doug Tallamy. Xerces Society, Spring 2011

"Impact of Native plants on birds and butterfly biodiversity in suburban landscapes, by Burghardt, Tallamy, and Shriver. Conservation Biology Vol 23 (1): 219-224. 2008

"Frontiers in Ecology and the Environment" Special Issue on Citizen Science

"Ecology of Cities and Towns" McDonnell, Hahs, Breuste (eds) 2009 (several chapters)

Redesigning the American Lawn, Borman, Balmori, Geballe. 2001

"Overcoming Barriers to effective communication of ecology" Hobbs, R. Frontiers in Ecology and Environment, 2006

Learning from Education to communicate science as a good story. Negrete, A. and Lartigue, C. Endeavour Vol 8(3) 2004.

Introduction to Restoration Ecology, Chapter 4; Adaptive Restoration

<http://www.xerces.org/announcing-the-publication-of-attracting-native-pollinators/> (read first 32 pages online at Google books website)

**Course Projects:**

Work in neighborhoods to understand ecological and social impacts (neighborhoods; Hillsdale near Markham park, Johnson Creek near 39<sup>th</sup>, bordering Forest Park). Help establish yard habitat program in Hispanic neighborhood.

**Ecological questions:** How does connectivity between yards and natural areas matter? For which taxa? What configuration of clusters of yards begins to make an ecological difference? What particular species of native vegetation are most beneficial? Which moth and flying insect species are either beneficial or good indicators of ecological value? Is pollination services or food web diversity better ecological research strategies?

**Social Questions:** What are the social motivations and impacts from participation in backyard habitat improvement? What are the most effective means of increasing participation? Does targeted outreach increase participation? Is word of mouth via opinion leaders more effective?

Diversity: Does developing backyard habitats attract the Hispanic community through beneficial pest management approach compared to biodiversity approach?

**Other specific tasks:** You will be expected to keep a Work Log for your out of classroom community work) Help develop a backyard habitat. Develop outreach program for backyard habitat program in Hispanic neighborhood.

Three Mini-papers about your work, including reflections on efficacy of communication pieces, insights into impacts, participation will be assigned.

Communication pieces will be developed and used in outreach

Final Paper will be written examining your experiences over the term, with recommendations to the community partner. Include your work logs

**Grading:**

Class participation and attendance 20% Mini papers 15% Final paper 35%  
Quiz on backyard ecology 15% Communication pieces 15%

Code of Conduct: Please remember to be respectful of homeowners' opinions and physical property while visiting yards. Please come to class prepared with reading assignments, written assignments, and project work accomplished. Be prepared to go out into the field even in inclement weather. Plagiarism: Please note that plagiarism will not be tolerated in this course. If you are quoting or relying on another's work, you must acknowledge the source appropriately.

**University Studies Goals:**

**Inquiry and Critical Thinking:** Students will learn various modes of inquiry through interdisciplinary curricula—problem-posing, investigating, conceptualizing—in order to become active, self-motivated, and empowered learners.

**Communication:** Students will enhance their capacity to communicate in various ways (writing, graphics, numeracy, and other means) to collaborate effectively with others in group work, and to be competent in appropriate communication technologies.

**The Diversity of Human Experience:** Students will enhance their appreciation for and understanding of the rich complexity of the human experience through the study of differences in ethnic and cultural perspectives, class, race, gender, and ability.

**Ethics and Social Responsibility:** Students will expand their understanding of the impact and value of individuals and their choices on society, both intellectually and socially, through group projects and collaboration in learning communities.

**Weekly Schedule:**

*As you know this is a 6 credit class. You will be expected to participate during each week for 2-4 hours in class, and 4-6 hours on projects (more class time the first 2 weeks, decreasing class time, increasing project time over ensuing weeks), with an additional 2-4 hours spend on homework (readings and report writing) each week.*

**Weeks 1-2** we will meet Tues, Thurs, Friday as appears in the course schedule

**Week 1:** What is a capstone. Class introductions and warm-up activities. Ecology of backyard habitats, urban systems, and designing experiments. Inquiry. How do we know

what ecological impacts planting natives has? Meet with community partner. Visit Hillsdale and Laurelhurst sites.

Readings Week 1 (for Thursday): "Aliens" by Doug Tallamy. Xerces Society, Spring 2011 electronically delivered "Impact of Native plants on birds and butterfly biodiversity in suburban landscapes, by Burghardt, Tallamy, and Shriver. Conservation Biology Vol 23 (1): 219-224. 2008 electronically delivered

For Friday: How to conduct comparative urban ecological research AND Preservation of original natural vegetation in urban areas; from Ecology of Cities and Towns (handout)

**Week 2:** Meet with community partner. Practice vegetation sampling. Visit Hillsdale and Laurelhurst sites.

Readings Week 2: Tuesday: Redesigning the American Lawn, Bringing Nature Home Ch. 1-4. First Mini-paper due

Thursday: Vegetation composition and structure of forest patches from Ecology of Cities and Towns (handout) Bringing Nature Home ch 5-8

Introduction to Restoration Ecology, Chapter 4; Adaptive Restoration (handout)

**Weeks 3-4** we will meet on Tuesday and Thursdays. You are expected to meet outside of class time for an additional 4 hours on your project.

Week 3: Begin work in (Markham?) site. Begin developing communication pieces. Begin tabling at Farmer's market. Critique of communication pieces Tuesday: Quiz on backyard ecology. Discuss Citizen Science paper Thursday, pollination and backyard habitat conservation Readings: "Communicating Nature" (2 short articles) electronically delivered and <http://www.xerces.org/announcing-the-publication-of-attracting-native-pollinators/> (read first 32 pages online)

Week 4: Reading: Bringing Nature Home chap 9-11. Bring printed copy of your Communication pieces to class for peer editing. Continue work in neighborhood, farmers market tabling.

**Week 5-6** we will meet 2 hours in the classroom (Tuesday), with 6 hours expected for work on projects.

Week 5 and 6: Continue work in Markham site, Outreach to a site with diverse population. Farmer's market visits on Saturdays.

Reading for Tuesday: "A framework for engaging diverse communities in citizen science in the US" from Frontiers in Ecology and the Environment" Special Issue on citizen Science. Second mini-paper due.

**Weeks 7-8** we will meet 2 hours in the classroom (Tuesday), with 6 hours expected for work on projects. Continue work on projects Week 8, Tuesday third mini-paper due. Students will lead discussion on appropriate papers of their choosing.

**Week 9** Meet on Tuesday only (Thanksgiving) for discussion on progress;

**Week 10:** Wrap up Final reports, presentations to Community partner.