



The Evergreen State College
Olympia, WA

MASTER OF
ENVIRONMENTAL
STUDY

“It’s a job that’s never started that takes the longest to finish.”

- J.R.R. Tolkien

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MESsages

The Newsletter of the Graduate Program on the Environment

VOLUME 3, ISSUE 2

SPRING 2009

Greener RecycleManiacs Participate in National Competition

By Lindsay Raab- MES Student

The goal of the Office of Sustainability on campus is for Evergreen to be at zero landfill waste by 2020. Based on the results of RecycleMania waste audits and surveys on campus, it is clear we have a long way to go. In order to better address waste issues on campus, a group of students and faculty entered Evergreen into a 10 week national recycling competition called RecycleMania. RecycleMania served more as an educational opportunity and benchmarking tool than anything competitive here at Evergreen. MES students Lindsay Raab and Natalie Pyrooz, along with ARAMARK Sustainability Intern Halli Winstead, coordinated RecycleMania activities at Evergreen. In addition to representing MES, Lindsay serves as the Waste Reduction and Sustainable

Purchasing Work Group Coordinator in the Office of Sustainability and Natalie works as a Sustainability Intern for Residential and Dining Services. The RecycleMania action team consisted of a core group of about ten students and several faculty members.

Our main goal was to get people on campus “talkin’ trash.” It was not surprising to hear there is a lot of uncertainty revolving around disposal of waste on campus. Out-of-date signage and confusing labels are two of the main culprits for this confusion. Updating signage has been an on-going task. Halli and another intern, Breezy Medina, surveyed campus waste disposal areas by

taking pictures, looking at signage, bin orientation and talking to



Halli Winstead and Breezy Medina sort waste found in trash receptacles during the main campus waste audit held on February 19th.

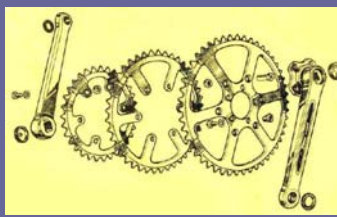
people to get an idea of their issues with trash. Together they compiled the Waste Site Collection Assessment Report and will share their findings with the Facilities staff after its completion in spring quarter. Our plan is
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The World of Transportation Demand Management

By Travis Skinner– MES Student

For the last two quarters I have had the opportunity to inspire inspirational change. I have been working with the Parking Services office as the Student Coordinator of Alternative Transportation. During this time I have been researching what the Commute Trip Reduction program has done in the past and brainstorming what moves we can make in the future. The Washington State Legislature passed the Commute Trip Reduction (CTR) Law in 1991, incorporating it into the Washington Clean Air Act. The goals of the program are to reduce traffic congestion, air pollution, and petroleum consumption through employer-based programs that decrease the number of com-

mute trips made by people driving alone. With the help of grants and money from Parking Services we have funded a student position to spearhead our institution’s actions



to deter single occupancy vehicles and promote alternative commuting behaviors.

What does this entail? A lot of my job is uncovering the idiosyncrasies of Evergreen. In order to un-

derstand any department it takes several months just to get to know the people. I have learned a lot about the political process of passing policy change and researching viable options. At the end of the Winter quarter I helped pass a grant from the Clean Energy Committee to pay for 200 Evergreen community members to sign up for the Thurston County Bicycle Commuter Contest. The grant also funded us to sell subsidized bicycle helmets and lights on Red Square. This grant has acted as a means for me to communicate with the larger college community about cycling. The month of May is the Thurston County Bicycle Commuter

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Frogs, Plants, and Prisoners: Evaluation of Science Education in Prisons

By Sarah Clarke—MES Student

Six months ago I thought science education was about getting muddy in a salmon stream with kids. But after Dr. Nalini Nadkarni, a faculty member at Evergreen, met with my MES cohort, I realized that science has another home: in prison. This began my adventure in the Sustainable Prisons Project.

What is the Sustainable Prisons Project? Conceived and implemented by Dr. Nadkarni in 2004, its pilot phase included the moss-in-prisons project, visiting scientist lecture series, and sustainable practices implementation at the Cedar Creek Corrections Center. The pilot program was so successful that The Evergreen State College was awarded a two-year, \$300,000 grant from the Department of Corrections (DOC) to expand on the pilot activities.



Sarah Clarke—MES Student and Sustainable Prisons Graduate Assistant

Now called the Sustainable Prisons Project, activities are being implemented at four correctional facilities, including Cedar Creek. The goals of the project are to facilitate cost-effective, environmentally sound practices for prison facility operations, educate and train the prison community in science, sustainability and skills for the emerging green economy, and conduct and share ecological research that links prison staff and offenders with scientists and conservation partners who need help with projects such as restoring endangered species.

When I received an announcement that the Prisons Project was hiring graduate assistants, I jumped at the chance to apply and was privileged to be offered a position.

My personal interest for the potential of hands-on science education and endangered species projects to positively influence the lives of offenders and the health of the environment led to my thesis project:



Kale balls are prepared by prison staff specifically to feed the frogs.

conducting evaluation of hands-on science education in prisons.

In collaboration with partners including the Washington State Department of Fish and Wildlife, Northwest Trek, The Nature Conservancy, and Fort Lewis, offenders at Cedar Creek Corrections Center (CCCC) are raising the endangered Oregon Spotted Frog and offenders at Stafford Creek Corrections Center are raising endangered Puget Sound prairie plants.

I expect to answer three questions in my evaluation of these projects: Will there be positive changes in offender goals for education? Will there be positive changes in attitudes and behaviors toward other offenders and the community? Will knowledge and interest in conservation and biodiversity result as an effect of working on these projects?

To answer the above questions I am conducting “before” and “after” surveys, as well as interviews and focus groups under the guidance of David Heil and Associates, a Portland, Oregon-based research firm.

These data are valuable for a number of reasons. Firstly, the answers will allow scientists to understand how to better communicate science to non-traditional audiences, particularly audiences who have very limited contact with nature. These data

are important to the DOC as an agency that is concerned with rehabilitation of offenders. Any project that may positively influence offender behaviors and educational goals and provide green collar job skills is of great interest.

This evaluation cannot provide data on recidivism (habitual relapse into criminal behavior) rates as a potential result of working on this project. Such a study would take approximately five years to conduct. However, the evaluation is helpful in assessing immediate improvement in the behaviors, goals, and skills of offenders.

Who knew, when I was sitting in a lecture hall listening to Dr. Nadkarni’s talk, that several months later I would be standing in a prison yard examining eggs side-by-side with the people we call offenders. This is an experience I would not miss for anything.

To me, a personal connection with nature is not only healing for the individual on a personal level, it is also vital to sparking a desire to steward the environment. When more people care about themselves and the environment, the practice of sustainability becomes a reality.



Just a few of the tadpoles that are raised for the Sustainable prisons Project.

For more information, visit our website: <http://acdrupal.evergreen.edu/greenprisons/>

Long-Standing Evergreen Faculty, Rob Knapp, Joins MES

By Rob Knapp—MES Faculty



The author Rob Knapp—
Evergreen Faculty since 1972.

I'm some kind of Evergreen fundamentalist. I came here in 1972, when the college was just getting started, and I had a nearly fresh Ph.D. in physics. I was attracted by the idea of truly interdisciplinary studies, with teaching teams centered on significant themes. When I got here, and saw what remarkable things were possible if students and faculty just did a single full-time class together (the "learning community" idea), I was hooked. My first program was called Human Ecology. Since then I've frequently been in programs with "ecology" or "nature" in the titles, as well as teaching the technology, politics, and sociology of energy off and on over a 15 year period.

For most of the last 10 years, my focus has been on sustainable design of buildings, where technology, economics, human needs/wants, and a full range of environmental effects come together. Buildings account for about 39% of US energy use right now, and 40% of total materials, not to mention their drinking water, waste water, and stormwater effects. These are big issues, but this is also a time of rapid change, potentially very much for the better. The Seminar II building on campus is a good example. It uses natural light and air, rooftop plantings and ground level swales, recycled flooring,

water conserving fixtures, and other techniques, integrated by clever design. The result does a good job at its main function, sheltering and enhancing teaching and learning, and has much reduced impacts—at no additional cost. I was closely involved with designing Seminar II, back in 1999-2001, and it made me aware of how "green" building was poised for takeoff at that time. The past ten years have seen a truly exciting spread of ideas and techniques, and some thousands of green buildings completed. This is not the place for all the facts and figures, or for the buts and not-yets and new issues coming over the horizon. The point is that buildings are now a major growing point for new kinds of relation between humans and the rest of Nature.

Teaching about buildings, on teams with architects, ecologists, and economists, has also got me excited about design as a mode of thinking and learning. I grew up with the idea that analysis was the center of learning about something. Take an issue apart, gather the relevant facts, generate conclusions about what is going on—that was the core activity. Now I think, yes, but we also want to make things better, and for that we need to learn about design. Design is imagining how to intervene in the world to make changes, but not just that. It is

also about representing the changed world, to get an idea what the actual effects would be. This sounds abstract, but it is what architects do with their drawings, and planners can do with the right kinds of GIS, and ecologists are beginning to do with population models and other kinds of simulation. Again, this isn't the place to run on about this, though I'm very excited by its possibilities.

The past year, my first in MES, has gone by quickly and very enjoyably. Case Studies in Fall Quarter (with Peter Dorman) was an eye-opener about good ways to teach research. Then Ecological and Social Sustainability (ESS), the second quarter core class (with Alison Styring and Jeff Morris), found interesting ways to talk about how trees, birds, cities, and life-cycle analysis connect with each other. And now, in Spring, I'm teaching a favorite topic, Public Works (with Cheryl Simrell King of MPA), and working with several thesis students. My own research got a big boost from the award of an Abe Fellowship to make case studies of exemplary US and Japanese green buildings over the next two years, with special attention to the design process. This spring, I've been busy starting the Northwest cases (there will also be some from the Northeast); I'll spend next fall in Japan with a colleague at Tokyo's Waseda University. Then I'll be back teaching MES next winter (ESS again) and spring (an elective on guess what? green buildings).



An example of green building found at a Nursery School in Tokyo.

Graduate Program on the Environment Master of Environmental Study

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Graduate Study at Evergreen

- MES integrates the study of the biological, physical and social sciences with public policy.
- The core curriculum explores the interactions among environmental problems, policy responses and environmental science.
- Electives and a thesis project allow students to develop skills and knowledge in areas of their choice.
- The program is focused on evening and weekend classes that accommodate full or part-time students.

Transportation Demand Management (continued)

Contest and it helps track the miles our community bikes in a month. We can then compare Evergreen's bicycle commuting behaviors with other Washington State institutions and see how we compare.

During the Winter quarter I took John Pumillio's "Current Topics in Environmental Studies: Climate Action Planning" class. This elective worked collaboratively with MPA and MES students to write Evergreen's plan for mitigation strategies to reduce our carbon footprint. I worked with the Transportation group and focused on carbon emissions from air travel, our campus fleet, deliveries and commuting. Transportation alone makes up ¼ of our campus carbon emissions. We created a list of several potential methods to reduce single occupancy commuting and increase alternative commuting. I then presented the issues to the Parking Services office and to the Sustainability Committee for feedback. Our short term goals have been to search for seed money to fund some incentives programs. For example, one incentive program we would like to pass for the college is an

expanded passport program. Right now the Passport program is only available for staff and faculty, but it offers 36 days of free parking for using an alternative method to commute 60 percent of the time. If expanded, this program would allow students to use



Travis enjoying a bike ride through Golden Gate Park.

the bus or bike or carpool for the majority of their commuting, and rewards them with free parking for 12 days a quarter.

Transportation is a sustainability issue that is vexed with behavioral change. Now I am

researching further incentives programs to help reinforce this change. In order to pay for the incentive programs I have been brainstorming potential funding options. With the support of the Campus Master Plan and Climate Action Plan, Parking Services and the Sustainability Committee, we would like to increase daily and two-hour parking fees and parking permit prices to create seed money for the incentive programs. These price increases have been written into our Campus Master Plan because the price of a parking permit should reflect the price of a bus pass. Currently a bus pass is 240 dollars a year, while a parking pass is only 120 dollars. In order to make the bus more alluring it should be priced competitively with parking.

While the issues of transportation are solidly rooted in our cultural norms, change is inevitable. I have had the opportunity with this campus position to help manifest that change. If you have any questions or comments about transportation, please do not hesitate to email me: stuctr@evergreen.edu.

"Now that I have completed the MES Program, I am excited to..."

Congratulations to the MES Graduates of 2009! We asked them to complete the above quote, and some chose to share what they were excited about doing after graduation.

Sarah Boyle

...drink beer and go sailing!

Jesse Cantin

...travel the world.

Jeremy Epstein

...alter the course of history, leave my mark, pay off debt, see the sun, and go climbing.

Lucienne Guyot

... embark on a new career.

Michelle Holmes

...continue finding ways to increase efficiency and connect abundance with those in need to help create a more healthy and peaceful planet.
... take a vacation!

Kyle Murphy

...spend more time with my wife and daughter.

Chelsie Papiez

...continue my work on climate change adaptation to sea-level rise by accepting a 2-year

NOAA Coastal Management Fellowship in Annapolis, Maryland.

Nicole Stotts

...apply to the Urban Design and Planning Ph.D program at UW to study urban ecology.

Lindsay Wright

...contribute to society's quest for environmental solutions, and to rest during my time off!

In addition to those above, congratulations to our other graduating MES students!

Patricia Brommer

Spence Cearns

Sara del Moral

Stephanie Dressel-Gowing

Jeffrey Fisher

Terry Grytness

Steven Hollis

Christina Iverson

Kristina King

Natalie Kopytko

Su-Miao Lai

Catherine Langenfeld

Anne Lindberg

Douglas Littauer

Jeremy Lucas

Ashley Lyon

Jothan McGaughey

Stephen Moon

Jill Politsch

Natalie Pyrooz

Jora Rehm-Lorber

Kathleen Saul

Adam Schapaugh

Stephanie Sparks

Faith Taylor-Eldred

Laura Todis

Trisha Towanda

Charley Waters

MES Thesis Projects Presented During the 2008-2009 Year

- * *The Effects of Elevated Co₂ and Reduced Ph on the Intertidal Sea Anemone Anthopleura Elegantissima and its Algal Symbionts*
by Trisha Towanda
- * *Effects of Salinity and Temperature on Metabolic Rates and Intragel Oxygen Concentrations of Aurelia Labiata (Cnidaria, Scyphozoa) from the Southern Puget Sound Estuary*
by Patricia Brommer
- * *Biological Responses of Juvenile Tridacna maxima Clams to Increased Atmospheric Carbon Dioxide (CO₂) and Ocean Acidification*
by Charley Waters
- * *Fishery Management Past and Present: Updating the Management of Impacts on ESA Listed Fish Species Using Genetic Stock Identification Tools In-Season to Validate Pre-Season Fishery Model Predictions*
by Christina Iverson
- * *Climate Change Implications for Quileute and Hoh Tribes of Coastal Washington: A Multidisciplinary Approach to Assessing Climatic Disruptions to Coastal Indigenous Communities*
by Chelsie R. Papiez
- * *Community Composition and Influence of Forest Structure on Birds in the Evergreen State College Forest Reserve*
by Jora Rehm-Lorber
- * *The Adaptation Dilemma: Is Nuclear Power A Practical Solution For Climate Change?*
by Natalie Kopytko
- * *Patterns of Mineral Element Retranslocation in Four Species of Tropical Montane Forest Trees in Monteverde, Costa Rica*
by Scott Hollis
- * *The Value of Ecological Restoration Volunteer Programs: A Case Study in Western Washington State*
by Catherine Langenfeld
- * *A Comparative Policy Analysis of Washington and Oregon's Management of the Zebra Mussel within the Columbia River*
by Jesse Cantin
- * *Working Towards Effective Environmental Education for All: A Case Study of the Friends of Tyron Creek State Park*
by Laura Todis
- * *The Dynamics and Viability of the Endangered Streaked Horned Lark (Eremophila alpestris strigata)*
by Adam Schapaugh
- * *An Investigation of the Efficiency of Improved Cookstove Technology and Barriers to Implementation: A Case Study in Tanzania, East Africa*
by Michelle Holmes
- * *Farmland Preservation in Thurston County*
by Jeffrey Fisher
- * *Deconstruction in the city of Tacoma, WA: A case study*
by Stephanie Gowing
- * *Watershed-based planning: Importance of city and county planners implementation for collective success*
by Stephanie Sparks
- * *Water reclamation in Thurston County: A review of LOTT's planned class-A water expansion*
by Kathryn Smith
- * *Status of air pollutant PM₁₀ from a human health perspective in Taichung City, Taiwan*
by Su-Miao Lai
- * *Curricular integration between outdoor environmental education program and conventional classrooms: A Camp Colman case study*
by Annie Lindberg
- * *Providing environmental health services following earthquakes and/or tsunamis: A feasibility study for rural health jurisdictions*
by Faith Taylor-Eldred
- * *Oil spill response equipment caching: A Washington State case study*
by Sarah Boyle
- * *Feeding ecology of "southern resident" Killer Whales (Orcinus orca): Benthic habitat and spatial distribution*
by Jeremy Lucas
- * *Blue Whale (Baleanoptera musculus) ship strike threat assessment in the Santa Barbara Channel, California*
by Daniel Laggner
- * *Mechanism for incorporating ecological knowledge into policy: A case study of salvage logging*
by Jothan McGaughey
- * *Dam Removal and Stream Restoration*
by Steve Moon
- * *Washington State Attorney General's Office green house gas inventory: An inventory case study*
by Jeremy Epstein
- * *Combining post-occupancy evaluation with the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) rating system*
by Lucienne Guyot
- * *The status of combined heat and power in Washington State energy policy*
by Terry Grytness

Recyclemania (continued)

to have uniform signs for recycling, compost and trash available on the Sustainability website for anyone to download and print.



Recycling enthusiasts visit Silver Spring Organics

Our educational tactics on waste reduction and proper disposal included email trivia questions, waste surveys, group discussions, waste audits and more. During the weeks of RecycleMania, several students volunteered to stand by waste areas outside the Market to both sort trash and educate others about what goes in each bin. Residents came together on several occa-

sions in the Housing Community Center with numerous ideas for creating art from discarded items. Projects included: plastic bag crocheting, dryer-lint clay, paper beads, scrap-paper books, and more. We added compost bins to several shared areas on campus and many volunteers began managing compost within their own office or staff area. Interested students and faculty had opportunities to tour Silver Springs Organics composting facility. Those who went were able to observe the composting process, ask staff members questions, and smell that wonderful scent of compost!

Evergreen students, staff and faculty report that they recycle properly, yet we continually found more recyclables and compostables than landfill waste in trash bins (measured by weight). The results of the first waste audit in Red Square were discouraging. Trash made up only 15% of the materials in garbage bins! Compostables made up 60% of the materials, and recyclables were the remaining 25% of materials. The second waste audit's numbers were a little better, but not by much. In the trash bins outside of Housing, trash made up 30% of the materials, compostables 29%

and recyclables 41%. This is obviously frustrating and shocking, considering Evergreen is well known for our green practices.

In order for things to change on campus,

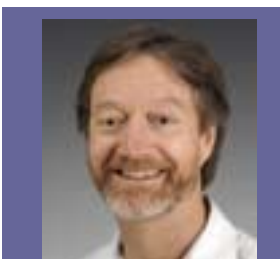


During the waste audit, data were recorded on a chalkboard so that onlookers could see the amount of compostable and recyclable materials ending up in the trash.

everyone needs to do their part by staying educated and following through with proper recycling practices. RecycleMania was a great way to start to address these issues; however it is important for these trash conversations to continue. For more information on Evergreen's involvement in RecycleMania please visit <http://www.evergreen.edu/sustainability/recyclemania.htm>.

Letter from the Director

As we enjoy a glorious spring here in Olympia, following the snowiest winter in recent memory, MES students are rejoicing about having survived one of the *busiest* winters they can remember. As roads were blocked with snow and trees were falling on power lines, first-year MES students found themselves scaling mountains of books, cranking out seemingly endless papers, and swimming in confounding statistics. Meanwhile, second-year students were learning that a thesis is about ten times bigger than any project they had ever encountered as students. And yet, the end of spring quarter has arrived at last, with scores of students ready to move on, either to complete their studies in the coming year, or to receive their Master of Environmental Study degree this spring, so they can use their education to engage in a lifetime of environmental service.



Ted Whitesell, Program Director

share with their communities and the world at large. Environmental study is, by definition, a field that integrates tools from many disciplines, in order to understand and resolve critical environmental problems. Just take a look at the wide-ranging thesis titles from this academic year alone. Or read the profile of Faculty Member Rob Knapp, to see but one example of how MES faculty integrate disciplinary knowledge and skills to address their passions in the

This issue of MESsages illustrates the tremendous range of environmental knowledge and skills that our students have been equipped to

environmental arena. One can't help but be impressed with the power of such a holistic approach to understanding and solving environmental problems.

Best Wishes,

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