Sustainability Semester in Residence: 
Field Trips Prime Students to Face Environmental Challenges

When the seven undergraduates who signed on to pilot Merry Lea’s first Sustainability Semester in Residence (SSR) arrived at Rieth Village in early September, they received two gifts: an apron and a field journal. Both have been well used.

SSR students spend fifteen weeks living in a learning community at Merry Lea’s Rieth Village and taking a block of courses focused around sustainable lifestyles and the health of the local watershed. In this innovative program, the classroom is the entire watershed, the class is frequently a field trip, the cafeteria is strictly do-it-yourself, and if there is a textbook for the semester, the students have written it themselves by taking copious notes in their trusty, ever-present field journals.

The field journal component of the course underscores a grounding assumption of the semester: wisdom is found in local communities as well as in published sources. Hence, note taking was a skill that Dr. Laura Yoder, who directs the SSR, stressed during the orientation week. Since much of the semester’s input is lived reality without a rewind button, it is important for students to learn to capture learning opportunities in canoes and churches, in offices and on stream banks.

The SSR kicked off with a weeklong canoe trip through the St. Joseph River watershed. During orientation, students swam in Merry Lea’s High Lake, so named because it is at the top of the watershed. A week later, on a wild and stormy day, they watched

SSR Centers on Teamwork, Local Issues

Merry Lea’s Sustainability Semester culminates in an environmental problem-solving project. Students work together to tackle a hands-on, real-world problem. This year’s cohort is pursuing three different projects:

**Campus RainWorks Challenge**
Rose Geiser, Jonathan Mark and Emma Regier have chosen to investigate stormwater issues on the Goshen College campus. Their project was inspired by the Environmental Protection Agency’s

**Campus RainWorks Challenge**, which invites student teams to design an innovative stormwater infrastructure project for their campus. “We began by doing a lot of research on what had been done before,” Geiser explained. The team looked at maps to see where drainage problems had occurred in the past and compared infiltration rates between the campus’ turf lawn, ecolawns and prairies. They met with stakeholders on campus and in the city of Goshen.
Director's Desk

Sustainability and Renewal

by Luke Gascho

Over the past fifteen years, the term, sustainability, became a key word in the Merry Lea vocabulary. Designing and building Rieth Village increased the use of the term. The buildings and the landscaping provided a model that encouraged thousands of people to think about how we can use resources more sustainably. Visitors expressed appreciation for the way the Rieth Village project stirred their imaginations and inspired them to plan in more holistic ways.

During these exchanges, visitors often asked me about the meaning of sustainability and how the concept can improve the ways we work with resources and ecosystems. Periodically I would quote the architect, William McDonough, who says, “Sustainability is doing 100% less bad!” This refers to processes that stop the degradation of Earth’s systems, but do not lead to renewal.

In the past week, a person asked me to define sustainability. My response was that sustainability means choosing actions today that:

1) reduce our impact on the environment,
2) bring regeneration to regional ecosystems,
3) create healthy regional economies, and
4) make good conditions possible for future generations.

This definition broadens the understanding of sustainability by emphasizing the generative—or life-giving—aspects that are needed for healthy Earth systems. If we use these four statements as lenses to examine our work, we are likely to arrive at positive, multigenerational solutions to challenging environmental issues.

In this Merry Lealet, you will read about the inaugural year of the Sustainability Semester in Residence. Rieth Village was built to be the home for this undergraduate program, for the Agroecology Summer Intensive and for other programs that will emerge in the coming years. Students enrolled in these programs are prepared to become change agents. They learn to apply the concepts of sustainability and renewal in real life settings.

These students interact with complex problems from our regional watershed. Their interaction with people from agencies in the watershed who are working on challenging problems facilitates realistic learning. It also gives students an opportunity to help address a regional problem.

I am grateful that the planning for semester-long experiences for college students that began over a decade ago has come to fruition. The journey included insights gained through building Rieth Village, but buildings were not the ultimate goal. Rather, our vision for sustainability is described in the learning outcomes that are part of the programs that use Rieth Village as their home base. We strive to transform our students into people who can act on what they have learned about sustainability and renewal. Ω

According to Mark, older buildings on the west side of the Goshen campus have more stormwater issues than the newer buildings and will require landscaping solutions such as swales and rain gardens. He also has ideas for the water coming off of the physical plant.

This team’s project is competing for research funding. If the EPA selects their project next April, the college will be awarded $11,500 to move the proposal forward.

Farm to Fork:

Meanwhile, in Rome City, Ind., Karsten Hess, Krystel Pierre and Lydia Yoder are preparing a business plan for the Sower Farm, a state-owned property adjacent to the Gene Stratton Porter Home. The Noble County Convention and Visitors’ Bureau hopes to use the Sower property as a visitor center and garden related to its Farm to Fork program. Farm to Fork markets and coordinates tours to farms producing bison meat, lavender, maple syrup, apples and other local specialties.

“So far, we’ve visited the farm and talked with a representative from Farm to Fork,” Hess reported. The group has also compiled ideas from various stakeholders.

“We think we may be able to be most helpful in planning out the garden area,” Pierre adds.

Tree Guides:

Hannah Johnson is preparing guided hikes featuring trees. One of the hikes is designed for children at Wolf Lake Elementary School and the other follows trails between Merry Lea’s Rieth Village and the Learning Center Building.

Johnson is also developing a homeowners’ guide for tree planting in the Wolf Lake area. The guide will nudge homeowners toward native species. Ω
While the seven students in the Sustainability Semester in Residence have been many places this fall, the SSR faculty worked hard to ensure that the semester wouldn't just be a string of random activities. Six faculty met for nearly a year to wrestle with pedagogy and to design desired outcomes.

“I tried hard to make each stop a unique experience,” said Tom Hartzell, the SSR’s resident director, program assistant and trip planner. The result was a panoramic view of the ways a community interacts with its river.

Following the trip downstream, every Tuesday was reserved for field trips related to coursework. During the Faith, Ethics and Ecojustice class, students biked to neighboring churches to interview local pastors about creation care. During the Sustainability and Regeneration course, students prepared for their projects on a form of shelter by visiting a strawbale home, urban restorations and new energy-efficient buildings.

The policy course, meanwhile, included a visit to the Pioneer seed corn processing facility in Constantine, Mich., in order to learn what policies influence industrial farming and what policies farm lobbies influence.

Friday afternoons are much like field trips in that they are reserved for learning practical skills such as bread baking, bee keeping and butchering.

The following articles on pages 4 and 5 highlight a few favorite out-of-the-classroom adventures.

For more on the SSR, see [http://merrylea.goshen.edu/undergraduate-program/sustainability-semester](http://merrylea.goshen.edu/undergraduate-program/sustainability-semester).

**SSR: Backwards Design Yields Big Ideas**

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The SSR planning team included Dr. Laura Yoder, who directs the SSR, Dr. Luke Gascho, Merry Lea’s executive director, and four SEED faculty members: Dr. Dave Ostergren, Dr. Jonathon Schramm, Dr. Lisa Zinn and Jennifer Schrock.

The SSR team used a process known in educational circles as backwards design in their planning. They spent a lot of time trying to envision how students would change over the course of the program.

For example, one of the team’s desired outcomes is the ability to draw on expertise from multiple perspectives in order to solve a problem. This explains why 10% of students’ grades on the environmental problem-solving project are based on their use of multiple disciplines.

Another hope was that students would reflect on lifestyle decisions that are a part of living sustainably. Therefore, students were required to experiment with their choice of both lifestyle and spiritual practices. Several students tried out a vegan diet for two weeks. Limiting water usage, tracking transportation emissions and a variety of forms of prayer have also been part of daily life at Rieth Village.

Below, the lead instructor for each course describes the “big ideas” they hoped students would grasp.

**Environmental Problem Solving**

with Jonathon Schramm

- **Preparation is key** - Make sure you understand the situation as fully as possible, including the social, political and ecological issues. Then bring as many resources, allies and alternatives to the table as possible.

- **Local is often best** - Aim for solutions that delegate as much initiative and control as possible to those who will be most affected and who will be most invested in perpetuating the ongoing work of improving the situation.

- **Build bridges** - Even solutions that are primarily based in one discipline will be strengthened if participants think through how they could connect to other types of human endeavor and discourse.

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The idea behind my course is that freshwater ecosystems should not be studied in a vacuum because they both influence and are influenced by the surrounding landscape. It is important to understand that the landscapes we live on have been and continue to be shaped by water. Water has enormous power to change the landscape, and humans spend a great deal of energy and money trying to harness and control this force. Often the way in which we attempt to control water for one purpose—such as flood control—leads to a whole range of unintended consequences for both aquatic and human systems.

Water is the life-blood of this planet and its unique properties drive systems such as lake overturn and the water cycle that are critical to all life. Understanding the close relationship between human activity and aquatic systems can empower us to make decisions that benefit both ecosystems and human communities. —Lisa Zinn

Theology is what you do when the faith you inherited from the past is not working for your present reality,” I told our students on the first day of the SSR. I hoped that all of us would experience theology not as a dry, dense field for experts, but as a task to which all people of faith are called.

Our current environmental circumstances are different from those any previous generation has faced. This requires us to rethink the ways we read our sacred stories. What new Word might the Holy Spirit have for us today? For example, most of us grew up assuming that the creation of humanity was the focal point of Genesis 1. What happens if we read this text with a different set of questions? What happens if we focus on what we have in common with the rest of creation instead of emphasizing how we are different? I also hoped that students would see how each part of a coherent theology shifts when one part shifts. —Jennifer Schrock
**Environmental Policy and Politics**

Communication is a big idea in my course. Our focus for this unit is the way in which energy issues intersect with water. Water and energy have been inextricably linked since the first sailor hoisted a sail, the first waterway turned a grindstone, or the first farmer flooded a field for food.

Human water needs require sharing. This can include parsing out small amounts so there is enough for all; free access because there is so much; exclusionary ownership of waterways as in many Western U.S. states; and communal ownership of waterways in the Eastern U.S. We share by taxing individuals to provide money for the energy and infrastructure required to distribute or redistribute water. Any and all of these variants on water sharing require communication: in another word—politics. We have formal venues of communication such as legislatures and informal venues such as backyards and protests. It’s all politics; it’s all communication and when we do it well, things work.

—Dave Ostergren

**Sustainability and Regeneration**

This unit focused on shelter. We began with a hike around Merry Lea to observe the winter habitats of our animal residents. Students noted that just as an animal’s need for shelter changes seasonally, most people experience a variety of housing arrangements throughout different life stages. Different animals use different parts of a habitat: overlapping habitats have multiple uses, and territorialism depends on resource needs.

Our observations of public spaces reminded us that sharing space builds relationships, and having accessible public spaces encourages people to be outdoors. We discussed our “scale of notice,” and how living in one place allows us to observe environmental change over time. Several field trips showed us the steps and time frames needed to make environmental improvements. We also discussed various forms of homelessness, and how the mobility of our societies affects our abilities to make connections with a place.

—Laura Yoder

**SSR Favorites:**

**HOPE CSA Values Health Over Productivity**

While SSR students visited several farms, Jeff Hawkins’ HOPE CSA near Manchester, Ind., was unique in that it not only produced food; it also formed pastors.

Hawkins, a pastor himself, invites fellow clergy to retreat days on his farm to learn the ways of tending a flock by—tending animals. “Pastors are called to be shepherds of flocks, not CEOs of organizations,” Hawkins says. He believes both farming and pastoring require a focus on the health of the system rather than on maximum production.

SSR students joined Hawkins and his pastors for a day of farm work, rest and reflection during the Faith, Ethics and Ecojustice course. In the morning, they helped move a pig shelter and removed tomato stakes from a garden area. They also visited the farm’s free range chickens and turkeys and observed the way ducks weeded and fertilized the grapevines.

Hawkins challenged the group to see value in both waste products and in people who are sometimes viewed as waste. Because he raises animals on a scale that his land can handle, manure is a resource, not a burden at HOPE.

“What similarities are there between the way we treat our food and the way we treat people?” Hawkins asked the group during a coffee break. A discussion on fast food and fast relationships followed.

Hawkins’ probing questions and redefinition of success inspired students to list Hawkins’ farm as one of the most hopeful places they visited.

Krystel Pierre befriends a chicken at HOPE CSA near Manchester, Ind. Pierre hopes to work in the area of agriculture when she returns to Haiti, her native country.
The day described here was the second of five programs offered in Merry Lea’s Homeschool Series in the 2012-2013 school year. Merry Lea offers a different series every year, so that students can attend multiple years in a row and continue building on previous experiences. Upcoming programs focus on biodiversity, insects and winter nature.

On an afternoon with sun glinting off the wetlands and air chill with the oncoming autumn, seven adventurous tweens spend the day in curious exploration of the outdoors with their fearless leader, Paul Steury. Their younger and older siblings are exploring in different groups.

First stop is Kesling Wetland, with tall rubber muck boots on and nets in tow. Eleven-year-old Leeza’s favorite thing to do outside is catching frogs, so this adventure is for her. Despite getting stuck in mud up past her knees half a dozen times, she is successful in her frog catching, and even snags a painted turtle crawling through the cattails. Meanwhile, some of the older kids, a sister and brother duo, have spotted a large snapping turtle near the water’s edge. They call to the others and we rush to come see. Lifting it up carefully, we watch its monstrous face sneer and snap at the air. What a discovery!

Next Paul guides the group with loose instructions to “bushwhack our way” through the thick woods to the Learning Center by 1 o’clock. We find a large grove of trees uprooted by the latest windstorm, their giant roots exposed and sticking straight up into the air. Overhead we see a pileated woodpecker soaring. We make our way through the maze of thorny brambles, balancing on fallen logs and nibbling wild edibles along the way until we reach the creek. Here, the boys attempt to construct a make-shift bridge so that we can cross, but to no avail. Instead we continue on to where the creek has nearly dried up, and swing from wooden rungs under a bridge to where the trickling water meets Cub Lake.

We eat our lunches, sketch our observations, and marvel at the latest discovery: a huge clam shell halfway buried in the sand.

Before we move on from Cub Lake, Paul leads the group in some reflection time. Aldo Leopold, the famous American author, ecologist, forester, and environmentalist is the inspiration for this Land Ethic program. Everyone in the group decides on a favorite quote taken from the classic book, A Sand County Almanac, and we discuss why it is important to care for the land, how to deepen our connection to the earth and all of its inhabitants, and what to consider as we each make positive or negative choices that will affect the natural world around us.

One student chooses the quote, “There are two spiritual dangers in not owning a farm. One is the danger of supposing that breakfast comes from the grocery, and the other that heat comes from the furnace.” The group laughs at the humor in supposing our food originates in a box, a can or the produce aisle. Even on this hike we have tasted a variety of edible autumn plants growing wild.

Our simple interactions with the created world this afternoon have already helped these young students make the connection that the health of our communities depends on the health of our relationships and attitudes toward our environment.

We spent the entire day exploring outdoors and were fortunate to stumble across animals and plants in their natural habitat. We befriended them but we also learned to respect their wildness. By the time we met the children’s parents at the Learning Center, we were tired, happy and bursting at the seams with stories.

For more information on Merry Lea’s Homeschool Program, see http://merrylea.goshen.edu/teachers-k-12-programs/homeschool-series.
Nature Notes:
Pileated Woodpeckers
by Carli Thompson

During the past 100 years, over half of Indiana’s wetlands have been drained for agricultural use using ditches and tiles. Onion Bottom is one of several wetlands at Merry Lea that has been restored. It still bears the evidence of its history. Pin oak and black cherry trees stand their ground in this flooded pond. The water, now over four feet high in some places, has drowned the trees. Without their bark, twigs or leaves, they are hard to identify. Smooth gray trunks and their larger branches are all that remain.

This soft, rotting wood is perfect for pecking…if you are a woodpecker, that is. For the pileated woodpecker, Dryocopus pileatus, it is not the wood itself that is of interest but the carpenter ants who take up residence there. The pileated, at 16.5 inches in length and with a wingspan of 29 inches, is one of the largest woodpeckers. This large bird is fairly uncommon but widespread. Within its range, it is not uncommon to spot the distinct rectangular holes that it leaves in trees. Other woodpeckers leave circular or oval shaped holes. The trees in Onion Bottom bear holes of many shapes, some of which are large rectangular holes.

The first time that I spotted a pileated was on a morning walk around the pond at Onion Bottom. I was not seeking the bird and probably would not have noticed it had its raucous pecking not captured my ear. That hollow, knocking sound demanded my attention. It was the kind of noise you would expect from one of the Three Stooges knocking his brother on the head. The volume of his busy pecking and his enormous size made him easy to find. I have seen experienced birders use their keen ears and well-practiced calls to hone in on a bird of interest. None of those skills were necessary here. There he was, high on the side of the gray wood, wearing his great red crest like a mason’s cap. He continued his work even as I clumsily pawed through the cattails to get a better look at him. Only after 20 minutes of excavating a signature rectangle did he lose interest and fly away. During that time, he had been quite impervious to my curious gawking from 30 feet away.

He threw his head at the wood with such force that the repeating collisions reminded me of a jackhammer on city pavement. I remember thinking that it was a wonder that he didn’t knock himself out or at least give himself a concussion. His secret defense is three-pronged and reads like a list of safety features on a sports utility vehicle. One mechanism of brain protection is a brain that fills the skull completely. This tight fit prevents the skull from moving and colliding with the skull. The skull itself is made of porous spongy bone that absorbs shock well. The second method of defense is a disproportionately long lower beak. Most birds have a lower beak that fits inside of the upper beak, but the lower beak of the pileated extends past the upper beak. When the beak strikes a surface, it is not the upper part located in front of the bird’s brain which hits first, but the lower part which is not in direct contact with the brain. The third and most unbelievable defense mechanism is a cushion in the back of the head created by the bird’s tongue. The pileated has an extra length of tongue that stays coiled inside of its skull as an extra shock absorber.

Though none of these features revealed themselves to me that day in the cattails, I was impressed nonetheless. It was not the bird’s internal design that was interesting to me, but the perfect balance of an animal in its element. The bird worked diligently and without hesitation. His motives were as clear to him as the moment that his pursuit was exhausted. It is truly a pleasure to observe an animal in its environment, perfectly at home in Merry Lea’s wetlands.

Carli Thompson graduated from Merry Lea’s master’s program in environmental education in June 2012.
Winter Public Programs at Merry Lea

Please register in advance for all events by emailing jenniferhs@goshen.edu.

Politics and Environmental Education: Do they Mix?
Volunteer Training Series
Monday, December 10, 3 to 5 p.m., Farmstead Site
Ponder this question with Dr. Dave Ostergren, director of Merry Lea’s master’s program in environmental education. Visiting a volunteer training is a great way to meet others and decide if you’d like to join Merry Lea’s volunteer team. Free to volunteers; $5 others.

What is Creation Care?
Volunteer Training Series
Monday, January 14, 3 to 5 p.m., Learning Center Site
How does taking care of the planet relate to Christian faith? Is it central or a side issue? Merry Lea’s Executive Director Luke Gascho will examine faith-based ways to talk about caring for the earth. Free to volunteers; $5 others.

Women’s Spirituality Retreat
Friday & Saturday, January 25 & 26 at Rieth Village
An overnight getaway with input from Jackie Wyse-Rhodes, Hilary Scarsella and Janie Beck Kreider. You’ll also have time outdoors and time to yourself. The cost of $45 includes two meals and lodging; $25 students. Registration deadline: January 14.

Valentine Dinner and Night Hike
Friday, February 15, 6:30 to 9 p.m., Farmstead Site
Bring your Valentine to a night out at Merry Lea. Arrive anytime after 6:30 p.m.; dinner will be served at 7 p.m. followed by a crisp winter hike by lantern light. $20/couple.

The Bare Facts: Tree ID in Winter
Volunteer Training Series
Monday, February 11, 3 to 5 p.m., Learning Center Site
Leaves aren’t the only way to recognize a tree. Bark, twigs and overall shape are also important clues. Bill Minter, Merry Lea’s land manager and resident forester, will lead this hike. Free to volunteers; $5 others.

Friends of Merry Lea Dinner
Saturday, March 23, Farmstead Site
Plan now to attend; watch for details in January. Free to Friends of Merry Lea; $15 others.

Midwest Birding Expedition: Grayling, Michigan
May 16 to 19
This four-day trip to northern Michigan will feature the endangered Kirtland’s Warbler. Mark your calendar; watch for details in January.

For more details on public programs, see http://merrylea.goshen.edu/.