



BUILDING A SUSTAINABLE FUTURE

by Patrick Thibaudeau, HGA Vice President & Project Leader and Shannon Walz, Wolf Ridge Education Director

Forty-five years ago inspiration for Wolf Ridge sprung out of the first Earth Day and a need – a need to shape a future where humans live sustainably on this planet. For forty-five years we have been working hard to meet this need through modeling and education. That is why when we decided to build a new naturalist house and renovate the West Dorm we knew we had an opportunity to carefully consider how the built environment impacted the natural world and educate about it in the process.

We considered LEED Certification which is a well-respected standard for environmentally conscious building; however, in our search process we learned about the Living Building Challenge (LBC). LBC's mission is "to encour-

age the creation of Living Buildings, Landscapes and Communities in countries around the world while inspiring, educating and motivating a global audience about the need for a fundamental and transformative change." We knew we had found a standard that resonated perfectly with our mission and quest to shape a sustainable future.

A Transformative Experience and New Thinking

Wolf Ridge connects people with an experience in the natural world so impactful they are deeply transformed. LBC is working to transform the impact buildings have on the planet in a way that is also transformative to the people interacting with the buildings. Through the LBC principles, Wolf Ridge is going to use the renovated West Dorm and the new naturalist house as an integral part

of the environmental learning process with visible, interactive sustainability features that help change attitudes and behaviors.

New, challenging experiences spark new thinking. LBC has forced us to change the questions we ask when designing and building. LBC asks, "What if every single act of design and construction made the world a better place?" For example, instead of asking how to end at net zero energy we asked what if we started at zero and worked toward net positive. This idea is called Zero-Plus. Three guiding principles of Zero Plus include: human experience, target performance and financial value. Seven goal areas were developed within these principles. Below are preliminary goals for the project to be supported by seeking Living Building Challenge Certification.



as “teaching tools of sustainability,” one of the themes the HGA Architects and Engineers used to design the new and renovated residences.

If you're wondering what are those standards of sustainability? How does one assess a building for how it supports equity? How does one assess beauty? Or the more straightforward questions of how you design for net zero energy? In June, join us for the kick-off of our public campaign to get Wolf Ridge to the fundraising finish line on this project. Dozens of leadership gifts have been made and we will need thousands of gifts to complete the project. Our capital campaign, **Making Waves**, is the biggest, boldest move Wolf Ridge has made since our move from Isabella to Finland in 1988. Join fellow wave makers and help us make big Lake Superior size waves of impact on future generations and the planet. We want students to spend at least a few days living in a building that teaches and every Minnesotan child to get a little bit of Lake Superior in their heart. To get these projects accomplished action by the entire Wolf Ridge community is needed now! Please consider how you can help Wolf Ridge.

Join us on the evening of June 15 for the kick-off of **Making Waves**. Bring a friend, tell others about our campaign, and help Wolf Ridge set a strong path for education, sustainability, and Lake Superior. ♦

JOIN US IN CELEBRATION!

Learn about the **Making Waves** capital campaign and how you can help.



June 15th, 2016
5:30-7:30

at HGA Architects



420 North 5th Street
Minneapolis, MN 55401

- hors-d'oeuvres
- cocktails
- music



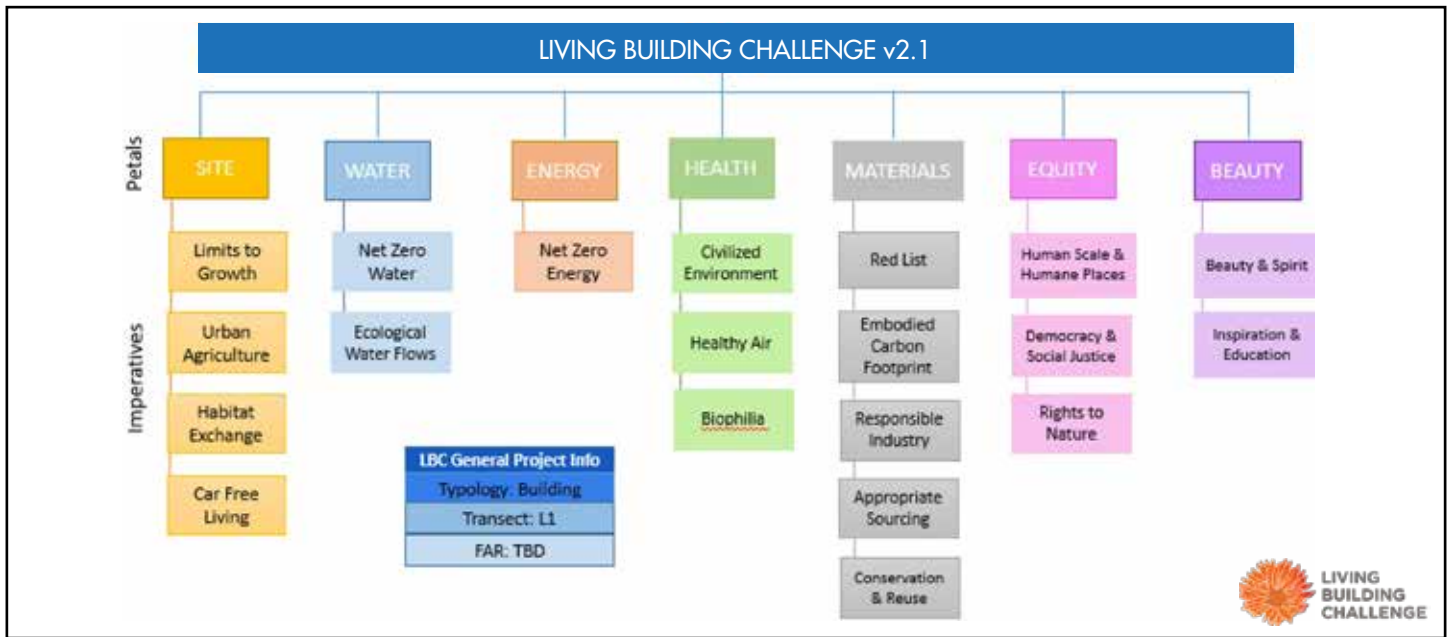
 **WOLF RIDGE** ENVIRONMENTAL LEARNING CENTER **CALENDAR 2017**



Jim Brandenburg

The 2017 Wolf Ridge calendar features the photography of Jim Brandenburg. Jim traveled the globe as a photographer for National Geographic magazine for several decades. His photography has won a multitude of awards including the “World Achievement Award” from the United Nations in recognition of using nature photography to raise public awareness for the environment. More of Brandenburg’s work can be seen at jimbrandenburg.com. Calendars will be available this summer for \$14.00 for donor members and \$18.95 for non-donor members, including shipping. They are also available at special prices, in lots of 25 for school fundraising and retail resale. Proceeds of all calendar sales directly support children attending Wolf Ridge school programs. Call Wolf Ridge at (218) 353-7414 for more information and to order. ♦

LIVING BUILDING CHALLENGE continued from page 1



To help achieve these overarching goals the project is pursuing Living Building Challenge (LBC) 2.1 certification.

Living Building Challenge Overview

So WHAT exactly is Living Building Challenge? It is the new international sustainability certification system and perfect fit with the world-class aspirations of Wolf Ridge. LBC certification consists of earning seven Petals – site, water, energy, health, materials, equity and beauty – and focuses on regenerative design rather than doing “less bad” as other environmen-

tal certifications do. One key difference from other third party certifications is that LBC certification focuses on actual building performance verification rather than accumulating a checklist of features in a building.

Living Building Challenge is focused on establishing behaviors that lead to a living future rather than an incremental reduction compared to existing building or a theoretical baseline. LBC is very rigorous in its performance requirements. Instead of optional points and various certification levels, in order to get LBC certified everything must be done. All actions are considered imperatives. A building receives LBC certification once it performs according to LBC standards for twelve consecutive months.

Educating People and Industry

With Living Building Challenge, Wolf Ridge has an opportunity to educate not only the participants that come to our campus each year but the building industry as well. An important part of the LBC philosophy is transformation of the marketplace so advocacy is integrated into each imperative. If there is a policy barrier LBC requires advocacy for the policy to be changed. If a material does not

meet the requirements then advocacy with the manufacturer to get them to change it is required. Whenever a barrier is encountered in the process, steps must be taken to advocate for a living futures approach to help accelerate change.

Already Wolf Ridge’s choice to pursue LBC is making ripples in the building industry. PVC is a material that is not allowed by LBC due to toxic qualities. Currently, there are no vinyl clad windows available to Wolf Ridge that meet the PVC-free LBC Materials Petal requirements. Wolf Ridge is currently in conversations with Andersen Windows to see if changing their product line to support LBC requirements is an option.

We are still in the early stages of the building process and meeting LBC requirements has already required lots of hard work. We have encountered some bumps in our road; however, we are committed and excited to embrace the CHALLENGE of Living Building Challenge. As Patrick Thibaudeau, HGA Vice President and Project Leader, routinely says: “It isn’t called a challenge for nothing.” We will embrace challenge in pursuit of modeling and educating for a sustainable future. ♦



Living Building Challenge petals.

GRADUATE PROGRAM EVOLVES

by Joe Walewski, Wolf Ridge Director of Naturalist Training



Student naturalists from the fall of 1974: Susan Klein, Paul Wehrwein, Gretchen Neuman, John Pearson, Barbara Schummer, and Terry Monette.

As one of Wolf Ridge's core programs, the Naturalist Training Program has served nearly 1000 adult learners of all ages and backgrounds. While changes and growth have happened every year and contributed immensely to the overall story, four moments stand out with significant advancements: 1974, 1996, the early 2000's, and 2016. We are very excited about the possibilities being realized in 2016; let's look at these advances in the context of other key moments.

The program began in 1974 with six eager learners. With a focus on experiential learning in community, those first naturalists set the foundation for everything we do today. What began as a 3-month experience, grew into long term opportunities lasting an entire school year. Young people looking to explore the field of environmental education were given the chance to practice teaching in the outdoors with focused feedback through personal evaluations. They were also set in an ideal situation to learn about the outdoors through personal experience - howling with wolves, canoeing on pristine lakes, and watching the northern lights illuminate the sky.

In 1996, a team of very thoughtful educators from the U of MN-Duluth and Wolf Ridge built a collaboration to provide necessary skills and knowledge to the future leaders of environmental ed-

ucation. Naturalists in the training program would continue enjoying all the wonderful adventures that served as the foundation. They would also participate in focused coursework designed to help them develop more intentionally as professionals. Earning graduate credits and a post-baccalaureate Certificate in Environmental Education, naturalists explored more than just the environment and education; they also dedicated time to understanding their leadership potential.

In the early 2000's, three new focused opportunities began. Students could remain as mentor naturalists for a second year to learn about and practice mentoring with beginning naturalists. The student teacher naturalist program began as a way to provide education students the opportunity to earn a teaching license in a hybrid year - beginning at Wolf Ridge, spending several weeks in a formal classroom, and then returning to Wolf Ridge for the remainder of the school year. We also began offering an opportunity for interested students to learn how to care for and educate using our wild captive animals.

Beginning fall 2016, Wolf Ridge will join forces with Antioch University New England (AUNE). Together, we will continue to provide powerful learning experiences outdoors and we will build upon the foundations set in place to study the environment, education, and leadership. The new certificate will begin to emphasize a fourth pillar in our program - sustainability. Graduate students in our training program will earn a Certificate of Environmental Education and Sustainability. Building upon all the great successes with our renewable energy installations and organic farm, Wolf Ridge is now constructing new naturalist housing under Living Building Challenge

standards. Naturalists will literally live and learn surrounded by the concepts of sustainability. As a result of generous contributions from both AUNE and WR, the cost for this certificate is significantly lower than comparable programs. Students who choose to continue their graduate studies at one of the Antioch Universities will benefit from additional tuition support because of their Wolf Ridge relationship.

The Wolf Ridge Naturalist Training Program continues to grow and diversify. It began in 1974 with six students in three-month internships. In 2016 we will welcome 23 students who will live and learn here from 9 months to 3 years. They will explore aspects about the environment, education, leadership, and sustainability. Together they will collectively experience and study organic farming, citizen science, adventure education, environmental ethics and issues, formal classroom education, live animal care and training, natural history studies, and much more.

Though the core remains the same it's really quite amazing how complex the program has become. As we know from the science of ecology, diverse and interconnected systems are key for stability. Building year after year upon the successes and inspirations from previous Wolf Ridge alumni, we can only marvel at what must be in store for us in the coming years. Thank you to everyone who has contributed to these amazing developments. ♦



Program and graduate naturalists 2016.

ON THE NATURE OF LEARNING:

An Ecological Perspective

by Joe Walewski, Wolf Ridge Naturalist

Only fluency across the boundaries will provide a clear view of the world as it really is..." from *Consilience: The Unity of Knowledge* by Edward O. Wilson

This simple quote has had the most lasting impact on me of any words I have ever read. It didn't change my direction or vision. Rather, it focused my vision and put into clear language what I had believed in my heart.



Where some may only see a rock, a naturalist sees marvelous worlds to explore.

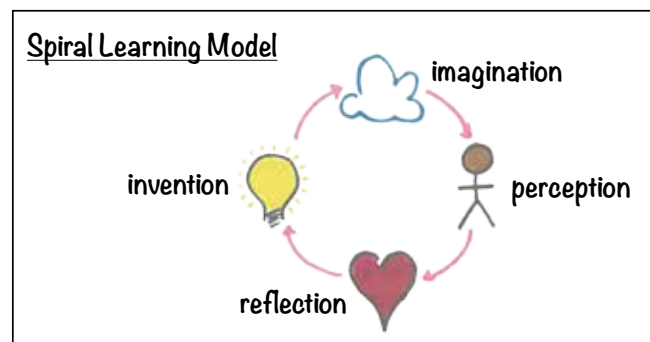
As a naturalist, I enjoy identifying birds, ferns, animal tracks, or lichens. Really, anything. A student asks, "what's that?" I glory in responding. "Oh, that's called powdered sunshine...it's a lichen." It could all stop there for some. Naturalists, however, have an innate need to continue the story and move on beyond the boundary of a superficial name. Deeper. We have a need to go deeper.

"There are lots of lichens on this tree. What do you see? Let's count the different kinds." Or I might take a different tack, "have you ever seen such a brilliant yellow? Look at the colors of these lichens over here." Still another, "that's a funny name, isn't it? Here is another species; what would you call it?"

Names are only one part of learning. Gerund, mathematical model, ecosystem, Industrial Revolution, probability, time signature, and experiential learning. Consider those terms. Can you define any of them? Did any of the terms make you feel either anxious or curious? How do they apply to real-world situations? What role could they possibly play in any "purpose" we could establish...uh, beyond the obvious "memorize these terms for the multiple choice test on Friday."

Is learning mere memorization of terms?! Of course not.

Over the past two years, I have done my very best to share stories and an abstract model to capture some of the details of the learning process. I introduced the Spiral Learning Model in the Fall 2014 *Wolf Ridge Almanac*. Each of the four learning phases were covered in more detail in articles two through five. This is the sixth and final article in that series.



Let's review. The model isn't reality, but it's a useful tool for thinking about and responding to reality. Teaching begins anywhere on the spiral. Learning begins with a personal experience in the perception phase. A learner attaches an emotional tag (fear, joy, surprise, disgust, anger, or sadness) to the experience in the reflection phase. Next, in the invention phase, a story is invented

as an abstract way to give meaning to and provide recall of the experience. Finally, a purpose or goal develops in the imagination phase providing the learner with a possible direction or focus for the next perception phase. And so it continues.

Though each phase in the spiral appears isolated, singular, and bound to its own space, a great deal of learning occurs outside each of the boundaries as each phase connects to the next. Let's consider the arrows (the connections) of the Spiral Learning Model. Fluency with these arrows, I believe, "will provide a clear view of the world as it really is..." They represent the ecology of learning.

Ecology serves as the science dealing with relationships of organisms to each other and their surroundings – the science of community. In 1971, Barry Commoner took a stab at defining the basic "laws of ecology" in his bestselling book *The Closing Circle*. Commoner's "four laws of ecology" apply to the ecology of learning:

1. *Everything is connected to everything else.* There is one ecosystem for all living organisms and what affects one affects all. Each phase of the Spiral Learning Model is actually connected to

all other phases. Though the reflection phase and the imagination phase appear separated in this model, reality is not isolated and simple.

2. *Everything must go somewhere.* There is no "waste" in nature and there is no "away" to which things can be thrown. Everything that happens during a learning process is necessarily part of that process. "Throw away"

comments, the smell of a place, random distractions, and the look on a teacher's face all play part in the learning process.

3. *Nature knows best.* Humankind has fashioned technology to improve upon nature, but such change in a natural system is "likely to be detrimental to that system." Our efforts to simplify and codify the learning process in order to control and manage the desired outcomes – in short, the industrialization of education – oftentimes conflict with the natural way of learning.

4. *There is no such thing as a free lunch.* Everything that we do or choose not to do has consequences. If we desire a particular outcome, it won't come freely. Energy and patience are required. Each component or player in the ecosystem of learning has a distinct role that cannot be taken for granted.

The Spiral Learning Model is divided into 4 unique phases. Each of the phases is connected to the whole by arrows. The arrows serve as an integral part of the entire process. They represent the ecology of learning. Each phase might be examined in isolation, but they each act as an integrated whole.

We know a maple/basswood forest is more than mere maple and basswood trees. Insects, wildflowers, amphibians, mosses, fungus, and much more are connected in one whole system. The Spiral Learning Model is no different. A powerful, thorough invention phase without proper contributions from each of the other phases may not lead to learning. Only when all the parts come together as a unified whole will deep learning emerge.

Finally, I'd like to share one of my leading lessons on how to form powerful learning experiences: begin with the end in mind. Though there are many ways to integrate this into the learning process, let's focus on two. First, it's vital that we identify a clear purpose and an "end" that serves to direct every step and intention. Successful educators help learners understand and



"Everything is connected to everything else." That's the first law of ecology.

contribute to the learning purpose both at the start of a class and as the class unfolds. Second, it can be powerful to end a learning experience in the same "spot" that it all began. Arriving at the "beginning" completes the circle. But, since neither the learner nor the "spot" are the same anymore, the circle doesn't close. Rather, a spiral emerges.

You may recall in the first article (October 2014) that I introduced an eighteen-month old girl. I watched as she grabbed a smartphone, manipulated it to select the camera app, and then took a picture. Dumbfounded, I asked, "how did she do that?"

I may be able to answer that now. This little girl showed me, all too clearly, that the answers to some of education's dilemmas are quite natural. Possibility, exploration, community, and story are all natural parts of the ecology of learning.

We don't have to "force" students to learn. Though all learners approach learning and integrate that learning differently, they all have a natural need to make meaning of experience. And, though it's far from simple, educators can and should use intentional

models (the Spiral Learning Model is just one example) as they develop curriculum and make the just-in-time decisions that need to be made hundreds of times in a class.

All learners demand purpose. All learners thrive on experience. All learners respond to emotions. All learners develop story. We all connect in complicated, social, and personally meaningful ways. Somewhere deep inside, we know this. Rather than dictating a one-size-fits-all learning routine, powerful educators are fluent across the apparent boundaries as they find unique ways to help learners tap in to the learning process.

Every naturalist knows the mantra "diversity is the key to stability". Unwritten in this statement is the fact that diversity in an ecosystem leads to diverse connections. Every school system, every classroom, every teacher, and every learning opportunity contributes to a healthy system. It takes all kinds. Diversity is, indeed, the key to stability. Equally important are the connections made between diverse parts and the "fluency" developed across boundaries. Making connections is key to the nature of learning. ♦

2016 SUMMER STAFF

Academic Program Coordinator - Kim Swanson

Director of Counselors - Dylan Kelly

Director of Health Services - Colleen Foote

Registered Nurse - Melody Schreiner

Directors of Programming - Marie Fargo & Haley Marks

Farm Field Manager - Anne DeSutter

Naturalist at Bluefin Bay - Rosie Hesla

On-site Program Coordinator - Emma Spoon

Summer Naturalist Supervisor - Shane Steele



Farm & Animal Care Interns

Samuel Anstett

Annie Johnson

Julia Kloehn



Wilderness Trip Leaders and/or Naturalists

Nils Anderson

Jessie Austin

Megan Carter

Caitlin Coghlan

Brinda Dewan

Morgan Erickson

Nova Miller

Eoghan O'Neill

Megan Quirk

Luciana Ranelli

Sonja Smerud

Danielle Tikalsky

Sarah Waddle

Asst. Trip Leaders and/or Counselors

Kyler Abercrombie

Taylor Birkelo

Chelsea Brown

Ben Butler

Louis Goodall

Andy Humphreys

Iva Johnson

Olivia Kinziger

Calvin Leitch-Lodge

Ariane Massey

Connor McCormick

Kaitlyn Miller

Lydia Moran

Ramona Myers-Cohen

Anna Nagel

Brandon Neill

Sonja Nord

Collette Sarver

Callm Skeffington

Toby Sweeney

Xeehluue Vang

Monika Weimer

Kate Young

Lynden Gerdes (76) and **Lawson Gerdes (77)** retired this spring after working for the Minnesota Biological Survey since 1999. Lynden performed botanical surveys of the Laurentian Mixed Forest Province. Lawson was the Northern Coordinator and plant ecologist. Wolf Ridge wishes them exciting new adventures. **Judy Gibbs (86)** was honored as part of Duluth's Women's History Month for her many contributions to Duluth's Parks and Trails. **Kerri McAllister (02)** was selected as a 2016 Grosvenor Teacher Fellow by National Geographic and Lindblad Expeditions. She will be traveling to the Arctic, Svalbard, and Norway to study Arctic climate change and marine science for 17 days on this amazing professional development opportunity. Learn more about these adventures at education.nationalgeographic.org. **Margaret (Woodward) Roush (04)** had a baby boy, Guthrie James in February. **Sarah (Towne) Erikson (05)** had another baby girl, Alice. **JoJo Zhu (10)** completed her Ph.D. in Science Education in FL and moved back to China. She is in Shanghai working for a private education company. **Andrea Doerr (10)** and Brian **Minor (11)** are section hiking the Pacific Crest Trail this year. They are on their way north from southern CA. **MJ Bach (12)** is working for the MN County Biological Survey this summer studying native bees. **Claire Runquist (12)** has relocated to Baltimore, MN where she is the Greening Facilitator at Reduction in Motion. ♦



WOLF RIDGE ECOSYSTEMS

by *Luciana Ranelli, Wolf Ridge Naturalist*

Imagine Sawmill Creek, a meandering creek studded with old and new beaver ponds and some big spruce trees growing in the stream bank grasses. Voles make it possible for spruce trees to be part of this riparian community. At first glance, it appears that voles eat spruce seeds in the forests and disperse those seeds in scat near the creek. In this case, the web of ecology and relationships in this ecosystem are more complex than simple seed dispersal. If just seeds landed on the bank, no trees would make it. Voles disperse something else in their travels between the forest and meadow—a fungi from the forest soil that is necessary for spruces to grow.

Connection is a theme in ecology. Take Barry Commoner's first Law of Ecology, "Everything is connected to everything else." In the vole snapshot, the link between voles and seed or fungi dispersal seems more evident than a link between voles and large-scale stream landscape patterns. When Chel Anderson, a prominent North Shore naturalist, visited Wolf Ridge and shared the vole story, she added that, "Relationships between organisms at the small scale make the potential of the landscape." Connection, and the complexities and surprises in ecosystems, is also a theme in the success of Wolf Ridge as an organization.

Participants at Wolf Ridge return home with piles of stories—about place, the ropes course, lichens, the stairs, and dormitory life. Families and broader communities are committed to sharing the experience. Programs like our Road Scholar Grandparent/Grandchild program set the stage for passing on love of lifelong learning and being outdoors across generations.

In the school year months, when I ask parents if they have been here before, sometimes their response is, "Yes, but twenty years ago when I was in 6th grade!" One chaperone postponed her family's move to a new community so her daughter could attend Wolf Ridge

for a week with the same school she came with as a child. Another chaperone saved thank you notes from fifth graders in his group.

Strong stories and connections exist among people who visit Wolf Ridge, maybe once, or perhaps, one week a year for forty years as a lead teacher. There are also both parallel and entwined connections with staff at Wolf Ridge, those who see patterns over a whole year or much more, (think Peter Harris and John Kohlstedt who have been Wolf Ridge naturalists for 30 plus years).

Generational connections exist between many Wolf Ridge staff. Sonja Smerud and Emily Richey, who are currently both graduate students this year, parents' were student naturalists together in '88-'89. Pete Smerud, Sonja's dad, is currently Wolf Ridge's executive director. Beth Ruark, Emily's mom worked several seasons coordinating the preschool program for Wolf Ridge's family programs. Colby Abazs, food service staff, is the son of David and Lise Abazs, interns in '89, who run the Wolf Ridge farm and store, respectively. Not surprisingly, it seems that any staff at Wolf Ridge who has school-aged children has been a chaperone, their kids attended and/or worked summer programs, and as in Sonja and Emily's case are now graduate naturalists here. My connections to the Wolf Ridge community do not include my biologic family, but at the same time, my blue staff coat and shared experience pull in past naturalists to form my Wolf Ridge family.

Far-reaching relationships develop within the Wolf Ridge community and surprising things spring from these relationships. The letters saved by a chaperone? They recently returned to Wolf Ridge in our contractor's proposal for the

upcoming building projects. The lasting impression of his Wolf Ridge experience inspired him to augment our educational community by turning the future construction project into an interactive learning opportunity where students can don hardhats and learn about the building in progress.

"Relationships between organisms at the small scale make the potential of the landscape." How are you a part of the Wolf Ridge ecosystem? Are you a vole, a spruce tree, or surprising fungi? ♦



Pete Smerud and his daughter, Sonja in their Wolf Ridge bluecoats.



During Winter Family Vacation 1995, Beth Ruark helps her daughter, Emily with her first experience on cross-country skis.

PROFILE: JORDON MIDDLE SCHOOL

Jordon Middle School (JMS)

- Jordan, MN, population 6,000
- grades 5-8, brings 6th grade
 - 175 participants
- attending Wolf Ridge over 30 years
 - comes in late March

Why does your school come to Wolf Ridge? We come for team and relationship building, as part of our social studies and environmental education standards, and to participate in outdoor activities that many of our students have not experienced.



How does your school use the Wolf Ridge experience in the classroom? Minnesota history and science classes. It's a bonding experience and students develop lifelong friendships.

How does your school share the Wolf Ridge experience pre and post trip with students/parents/community? Middle school paper. Tradition that is well known in town. Student journals.

What is the biggest challenge for your school in coming to Wolf Ridge? Raising money for the trip.

How does your school raise money for this trip? Students sell candy bars and poinsettias.

Please give a tip to other schools about attending Wolf Ridge. Pack extra clothing for the kids. Bring active chaperones. Stick to an organized schedule.

Tell our readers about a favorite memory from a student and/or adult about the Wolf Ridge experience pre or post trip. An intense game of Spoons. Our very competitive principal diving across kids and a table to grab the last spoon.

Something that surprise(s)d you/your school about coming to Wolf Ridge. Student behavior - our students are typically very well behaved and great participants much to our joy while at Wolf Ridge. Students who do not thrive in the classroom come out of their shells. While at Wolf Ridge, students see their teachers/parents/peers in a different setting/clothes/role. This allows richer relationships to form and all become more supportive of each other back home in the classroom.

Tell us about a class that is important for your students to take and why. Ropes and Rocks classes - it pushes the students to try something they might fear.



What is a favorite class of your students'? Winter Survival.

What is a favorite meal of your school's at Wolf Ridge? Cinnamon rolls at breakfast.

Please inform our readers some of things your students learn as a result of their Wolf Ridge trip. They learn about themselves. They gain independence, push themselves to try new things, and develop new friendships. The 7th and 8th graders want to return to the 6th grade and go on the trip again.

Does your school do any special activities at Wolf Ridge outside of the regular Wolf Ridge curriculum? If so, what? The JMS teachers lead an outdoor cooking class which has become a tradition. Also, we organize the teaching groups at Wolf Ridge so that students are with different kids each class allowing them to get to better know more of their peers. ♦

SCHOOLS & GROUPS

July 1, 2015 - June 30, 2016

Afton-Lakeland Elementary
 Andersen Elementary
 Andersen United School
 Annandale Middle School
 Arcadia Charter School
 Arete Academy
 Assumption School
 Badger School
 Bancroft Elementary
 Barnum Elementary
 Beacon Academy
 Benilde-St Margaret's
 Bethlehem Academy
 Birch Lake Elementary
 Blue Earth Area Middle School
 Boy Scout Troop 569
 Breck School
 Carlton High School
 Cavalier Middle School
 Central Cass Middle School
 Central Lutheran
 Central Middle School
 Chisago Lakes Middle School
 Churchill Elementary
 Congdon Park Elementary
 Cooper Elementary
 Cowern Elementary
 Cumberland Middle School
 Diamond Path Elementary
 Dugsi Academy
 North Star Academy
 Minnesota New Country School
 Emanuel Lutheran
 Engineering, Cool
 Epiphany
 Face To Face Academy
 Fast Track Scholars
 First Lutheran School
 Fisher Public School

Five Hawks Elementary
 Fond du Lac
 Fox West Academy
 Franklin Elementary
 Frassati Catholic Academy
 Friends School of MN
 Girl Scouts of MN & WI Lakes & Pines
 Girl Scouts Troop 4054 & 4055
 Glen Lake Elementary
 Glendale Elementary
 Grace Fellowship Home School
 Grainwood Elementary
 Great Expectations School
 Gioventu Studentesca Program
 Heilicher Mpls Jewish Day School
 Hennepin Elementary School
 Hibbing Community College
 Hilltop Primary
 Hinckley-Finlayson Elementary
 Holy Name of Jesus School
 Holy Rosary School
 Holy Trinity School
 Homecroft Elementary
 Hopkins Summer Field Biology
 Imhotep Science Academy
 Int'l Spanish Language Academy
 Inver Hills Community College
 Jeffers Pond Elementary
 John Ireland
 Jordan Middle School
 Kelliher Public School
 King Of Grace Lutheran
 Lake Superior Youth Chorus
 Lakewood Elementary
 Laura MacArthur Elementary
 Lester Park School
 Lowell Elementary School
 Loyola Catholic School
 Manvel Public School
 Maple Lake Elementary
 Marcy Open School
 Marquette Catholic School
 Marshall County Central HS
 McGuire Middle School
 Midway School
 Miliona Science Magnet School
 Minneapolis Academy
 Minnetonka Middle School East
 Murray Middle School
 Nawayee Center School
 New London/Spicer MS
 Niigaane Ojibwemowin
 Norman County West Elementary
 North Shore Community School
 Northern Lights Community School
 Nyquist School
 Oak Crest Elementary
 Oak Grove Middle School
 Oak Park Elementary
 Odyssey Academy
 Onamia Junior High



ONE Program
 Our Lady of Grace Catholic School
 Our Lady Of The Lake
 Park River Area School
 Peace United Church of Christ
 Piedmont Elementary
 Pine Island High School
 Prairie Creek
 Presentation Of Mary
 Providence Academy
 Raleigh Edison School
 Redtail Ridge Elementary
 Richard R Green Central Park School
 Rogers Middle School
 Sacred Heart - E Grand Forks
 Sacred Heart - Robbinsdale
 Sawtooth Mountain Elementary
 Schoolcraft Learning Community
 Shell Lake School District
 Shirley Hills Elementary
 Simley High School
 Sojourner Truth Academy
 South Ridge Elementary
 St Anne's School
 St Anthony Park
 St Bridget Parish School
 St Charles Borromeo
 St Cloud HEY Group
 St Croix Catholic
 St Croix Montessori
 St Croix Preparatory Academy
 St James School
 St John The Baptist
 St John the Evangelist
 St John's School
 St Marks' School
 St Mary's School - Breckenridge
 St Mary's School - Morris
 St Michael's Lakeside School
 St Pascal Baylon School
 St Patrick School
 St Peter's School

St Stephen's School
 St Thomas More Catholic School
 St Vincent de Paul
 Stowe Elementary
 STRIDE Academy
 Superior Cathedral
 Superior Hiking Trail Association
 Todd Cty Health & Human Services
 TrekNorth High School
 Trinity Lutheran/
 Our Lady of the Prairie
 Triton High School
 Two Harbors 6th Grade
 UMD Cultural Diversity
 UMD Pre-service Teachers
 UMD Elem Ed Candidates
 UMM Int'l Student Success
 Valley Middle School
 Valley View Middle School
 VandenBerge Middle School
 Warroad Middle School
 Memorial Middle School
 Watershed High School
 Watertown-Mayer Middle School
 Wayzata Central Middle School
 Wayzata East Middle School
 West Central Area Schools
 West Fargo High School
 Westwood Elementary
 William Kelley Elementary
 Willow River
 Winterquist Elementary



THE CHATTER AROUND US

by Sarah Waddle, Wolf Ridge Naturalist



Ttsrrrchrstchrrrrrrrr. What is that noise? I'm cozied up around the bird feeders at chickadee landing with my bird class. Each student is waiting patiently with bird seed on their outstretched hand, hoping and wishing for a chickadee to come down and choose a seed off their mitten. I ask them to look around, "What could be making that loud chatter?" One student is mid-whisper, "Is it a chickadee-?", when all of a sudden another student shouts "SQUIRREL!"

The heads of fifteen 5th graders all covered in earflaps and caps start whipping wildly around looking for the source of the aggressive chatter. It doesn't take them long to see the red squirrel crouched on a tree branch nearby, it's tail curled up over its body, it's eyes staring us down, limbs poised on the jagged branch, body low. "Squirrel! Squirrel!" The gleeful chant goes up amongst the students. I smile to remind myself that as a naturalist I am here to foster curiosity about the natural world, the whole of nature... including squirrels.

Living in the north woods, red squirrels are everywhere and I tend to find squirrels mildly annoying. Yet, children are enamored with the creatures. A squirrel can enter a child's field of view in any class at Wolf Ridge and immediately all attention is vacuumed into the furry little ball of energy that is chattering and

running about. As a naturalist I seek to learn from children since their senses and imaginations are often more immediate than mine. So if students are excited about squirrels, I also need to show my enthusiasm.

As I've looked for reasons to care about squirrels, they've started popping up in the most interesting places. Recently, at a staff seminar, we were learning about tapping maple trees. Several naturalists shared stories of seeing red squirrels nibbling the ends off of maple twigs then licking the sap as it dripped out. A little research led me to a scientific study conducted by Bernd Heinrich to observe the maple sugaring of squirrels in Vermont and Maine. The study found that rather than just licking sap from twigs, squirrels will actually cut into the tree bark with their teeth, let the sap flow out, and return to the same trees later to eat the sap once most of the water has evaporated. This way the squirrels increase the amount of energy gained from eating the sugar without having to drink all the water that comes along with the sap as it first flows out. What an amazing adaptation!

And why do squirrels make that annoying chirping trill anyways? I spent some time perusing John Gurnell's comprehensive book, *The Natural History of Squirrels* to find out. That sound

so often heard when we humans approach the bird feeders or even as we walk down a trail, is likely an alarm call. The squirrel is making lots of noise to tell other squirrels a potential threat is in the area, and also to tell us that it knows we are there. Squirrels, as prey animals, don't want their potential predators to have any advantage of surprise. Gurnell also suggests the vocalizations may be squirrels actually trying to annoy intruders to get them to go away.

Something else Gurnell writes about that has me thinking about encouraging students to observe squirrels is the social hierarchy between squirrels. Even though they are generally solitary animals, they defend their home territories and interact with neighboring squirrels. Aggression towards one another determines hierarchy and dominance amongst squirrels. So the next time a squirrel noisily enters a learning moment, perhaps observing eyes should watch it longer with questions in mind like, "Is it's behavior aggressive or submissive towards other squirrels? Does it notice us? What sounds is it making? What is it eating?" Squirrels ignite children's curiosity and imaginations, so let's nurture their inquisitiveness with questions and prompts to look closer. Indeed, sometimes the most common, and even annoying creatures are the most interesting of all. ♦

WOLF RIDGE NEWS BRIEFS

On March 5, Wolf Ridge opened the Forestry Building for a **Winter Community Day** of cross-country skiing and snowshoeing. Individuals enjoyed a beautiful day in the snow skiing on our groomed ski trails and exploring on snowshoes along Sawmill Creek.

- Wolf Ridge hosted an 8-day **Wilderness First Responder Course (WFR)** as well as a 2-day **WFR Re-certification Course** in conjunction with Wilderness Medical Associates International (WMAI). Twenty-four individuals from the Midwest and Canada gathered to learn the essential principles and skills required to assess and manage medical problems in isolated and extreme environments for days and weeks if necessary. Wolf Ridge requires this certification for our wilderness trip leaders.



- **Lise Abazs** is trading her Wolf Ridge vest for a sunhat. After 20 plus years as the Wolf Ridge store manager, one will now be able to locate Lise managing production at the Wolf Ridge organic farm.

- After 9 years of leading our food service, **Barret Stavseth** will be leaving Wolf Ridge for new adventures. Barret brought our food service forward leaps and bounds supporting our mission, rais-

ing the food quality, managing through a period of major dietary changes with our clients, and embracing the idea and implementation of the farm. He demonstrated a tremendous work ethic. Wolf Ridge has been fortunate to have him here for such a good run.

- **Lucy Rogers**, our development director for the past 8 years has moved onto other endeavors. She took our fledging program and built a successful effort annually providing tremendous financial benefit to Wolf Ridge. The entire set of SEAK/academic programs is a tremendous legacy she leaves as her fundraising abilities helped those ideas become a reality. In the course of the past year she has helped shape the capital campaign which is off to a very strong start. We all wish her well on her next adventure. ♦

NEW SUMMER YOUTH PROGRAMS

Wolf Ridge has four new exciting summer youth programs.

Credit Academy: Freshwater Ecology

If you are interested in exploring what it is like to be a field scientist, this is the camp for you. Conduct fish surveys alongside natural resource professionals. Paddle from lake to lake researching aquatic habitats of the

Boundary Waters (BWCAW). Gain confidence as you present your findings to fellow campers. Leave Wolf Ridge with a better understanding of Minnesota's waterways and how people can work together to manage and sustain them. Earn college (3 semester credits) or high school credit (1 semester course).

Credit Academy: Wilderness Ethics

While backpacking the wilderness trails of Isle Royale share spectacular views of Lake Superior, tranquil beach walks, a chance to see moose in their natural habitat, and stories of wild places with friends around the campfire. Investigate society's evolving views of wilderness through it's depiction by artists, writers, and ecologists. Create personal art or writing that represents your current environmental and wilderness ethic. Earn college (2 semester credits) or high school credit (1 semester course).

Voyageur Harvesters Farm Camp

Explore the world of food and farming

on the new Wolf Ridge Organic Farm with other young farmers. Along with learning about bugs, critters, soils, vegetables, and pollinators like butterflies, birds and bees: participants learn how to cook, grind flour and bake home-made pizzas in the stone pizza oven. Farm campers build community through swimming, games, exploring, and while camping overnight on the farm with campfire, stories, skits and tall tales under the dark northern skies.

Adventures Farm Camp

Develop leadership skills, responsibility, and self-esteem as you explore, harvest, and cook at the new Wolf Ridge Organic Farm. Join your fellow teen farmers as you learn about growing vegetables, cook farm-fresh meals together, swim, canoe, climb rocks, hike, play whiffle-ball, study soil arthropods, build a solar food dryer and go on adventures like an overnight farm camp-out complete with campfires, games and stories.

See page 14 for dates, ages, and costs. ♦



PROGRAMS

YOUTH

Summer Sampler: (2nd-5th gr) Aug 10-13: \$370

Discoverers: (4th-5thgr) July 10-16, July 17-23, July 24-30, July 31-Aug 6, Aug 7-13, Aug 14-20: \$580

Voyageurs: (6th-7thgr) July 10-16, July 17-23, July 24-30, July 31-Aug 6, Aug 7-13, Aug 14-20: \$580

Adventurers: (8th-9thgr) July 24-30, July 31-Aug 6, Aug 7-13: \$595

Day Camp: (1st-7thgr) June 27-July 1: \$185

Voyageurs 2-wk Ultimate Survival: (6th-7thgr) Aug 7-20: \$1260

Angling to Archery: (6th-7thgr) July 31-Aug 6: \$630

Wildlife Camp: (6th-7thgr) Aug 7-13: \$580

NEW

Camp Fish: (4th-5thgr) July 10-16: \$630

Voyageurs Harvesters Farm Camp: (6th-7thgr) Aug 14-20: \$580

NEW

Adventurers Farm Camp: (8th-9thgr) July 10-16: \$580

Camp Rock Climbing: (8th-9thgr) Aug 14-20: \$630

Counselor-in-Training: (10th-12thgr) July 31-Aug 13: \$1260

Credit Camp-Freshwater Ecology: (10th-12thgr) July 10-30: \$1910

NEW

Credit Camp-Wilderness Ethnics: (10th-12thgr) July 31-Aug 13: \$1590

BWCAW Canoe 5-day: (7th-8thgr) Aug 14-20: \$600

Adventurers 2-wk BWCAW Canoe: (8th-9thgr) July 24-Aug 6: \$1340

Adventurers 2-wk Isle Royale Backpack: (8th-9thgr) July 10-23: \$1340

Apostle Islands Kayak 5-day: (9th-10thgr) Aug 7-13: \$700

Isle Royale Kayak Expedition: (10th-12thgr) June 26-July 9: \$1470

Jr Naturalists 2-wk Quetico Canoe: (10th-12thgr) July 10-23: \$1410

Jr Naturalists 2-wk Apostle Islands Kayak: (10th-12thgr) July 24-Aug 6: \$1410

Camp Shuttle:

Ride from the Twin Cities or Duluth to camp and back. Twin Cities, one way \$100, round trip \$175. Duluth, one way \$50, round trip \$100. Reservations required.

Our youth camp programs offer unparalleled opportunities to explore clear lakes and streams, develop life-long connections to the natural world, make friends, create memories, and grow in self-confidence. With a wonderfully diverse campus and variety of activities, campers can return year after year for new experiences.

ALL AGES

Bird Banding

June 1, 15, 22, July 6, 13, 20, & Aug 3
7:00-11:00am

Free and open to all ages

Since 1993, Wolf Ridge has been a site for a long-term international study to learn about the lives and health of migratory song-bird populations. Participants can observe and sometimes participate in the banding process. Meet at the Forest Ecology Building on any one of seven summer mornings.



Open House

June 18, 2016 9:00-4:30

Free and open to all ages

Join us for a day of outdoor fun and adventure. Members, local community folks, and curious passers-by are all welcome to enjoy a day of indoor rock climbing, adventure ropes, meeting our live raptors and porcupine, hiking, and canoeing.

Family & Group Canoe & Kayak Trips June 26-July 2, July 3-9, July 24-30. **Fee:** Starting at \$1,900. There's exploring the trails near your house. Then there's exploring the great outdoors in a setting you can't find anywhere else. From the Boundary Waters to Split Rock and the Apostle Islands, our Wilderness Trips provide adventure for families who love to be outdoors together.

Summer Family Camp July 17-23, July 31-Aug 6 **Fee:** Starting at \$425/person.

Love vacationing as a family? How about something that combines an outdoorsy experience with a warm meal, a place to rest your head and many different activities for you and yours? All you need to pack is your sense of adventure and an excitement to learn.

FULL - Call to be put on the waiting list.

Road Scholar Intergenerational (8-12 yrs) June 26-July 1, July 10-15, Aug 7-12 **Fee:** Starting at \$579.

What's more rewarding than passing on your love of lifelong learning and being outdoors? Teaching a younger adventurer to love it, too. Share your passion for educational travel with your grandchild and create memories that will last for a lifetime.

Call Road Scholar at 1-800-454-5768 to register.

Adv. & Beg. Bird Banding Courses

Adv June 20-24, Beg June 26-July2 **Fee:** Adv \$834, Beg \$2020
 Wolf Ridge hosts the Institute for Bird Population's beginning and advanced workshops for seasoned and new banders. The seven-day introductory class provides both amateur birders and professional biologists with the skills necessary to participate in monitoring and research programs. The four-day advanced class is designed for experienced banders who wish to improve their sexing and ageing skills.

Natural History Weekend

Sept 30-Oct 2 **Fee:** \$325
 Feed your inner nature nerd. Join us during fall colors for a weekend dedicated to adult learners. Sign up for a topic of your choice and learn from the experts - owl banding, fall phenology adventure, agates of the North Shore, raptor migration, harvesting the bounty, wildlife photography. For more information check our website under visit, adult learner.



Facebook, Twitter, YouTube, blog, & shop on-line at wolf-ridge.org.

Program Title _____
 Program Dates _____
 Name _____ M / F
 Parent/Guardian Name _____
 Address _____
 City/State/Zip _____
 Phone (home) _____
 (cell) _____
 E-mail _____

FAMILY PROGRAM ATTENDEES

Names and ages

CAMPERS & YOUTH TRIPS

Birthdate _____ Grade entering _____
 T-shirt size: Child S M L Adult S M L XL
 Roommate request _____

Do we have permission to include your camper's name, age and primary phone number on a carpool list sent to other registered participants? YES NO

BECOME A DONOR MEMBER

\$35 \$50 \$120 \$250 \$1000 \$ _____

Your gift supports the Wolf Ridge mission.

PAYMENT

Registrations must be accompanied by a \$150 non-refundable deposit, family programs \$150/person. Program fee minus deposit due two weeks prior to program start.

Payment Enclosed: Donor Member	\$ _____
Program Deposit	\$ _____
Program Fee	\$ _____
Calendar	\$ _____
Total Enclosed	\$ _____

- MasterCard Discover Visa American Express
 Check (payable to Wolf Ridge ELC)

Card # _____ - _____ - _____ - _____
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 ENVIRONMENTAL LEARNING CENTER
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donor member*

IN THIS ISSUE

Building a Sustainable Future 1 & 4



*View
from the
Ridge* 2 & 3

2017
Wolf Ridge
Calendar 3



Graduate Program Evolves 5

*On the Nature of Learning:
An Ecological Perspective* 6 & 7

Welcome Summer Staff 8



*Wolf Ridge
Staff Update* 8

Wolf Ridge Ecosystems 9

*Profile:
Jordan Middle School* 10

Schools & Groups 11

*Nature Notes:
The Chatter Around Us* 12

Wolf Ridge News Briefs 13

New Summer Youth Programs 13

*Upcoming
Programs* 14 & 15



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MAKING WAVES
capital campaign



WOLF RIDGE™
ENVIRONMENTAL LEARNING CENTER

**JOIN US IN
CELEBRATION!**

Learn about the *Making Waves* capital
campaign and how you can help.

**June 15th, 2016
5:30-7:30**

at *HGA Architects, Mpls, MN*



Wolf Ridge is an accredited residential environmental school for persons of all ages. We offer immersion programs which involve direct observation and participation in outdoor experiences. Wolf Ridge programs focus on environmental sciences, human culture and history, personal growth, team building, and outdoor recreation.

Our mission is to develop a citizenry that has the knowledge, skills, motivation, and commitment to act together for a quality environment.

We meet our mission by:

- Fostering awareness, curiosity, and sensitivity to the natural world.
- Providing lifelong learning experiences in nature.
- Developing social understanding, respect, and cooperation.
- Modeling values, behaviors, and technologies which lead to a sustainable lifestyle.
- Promoting the concepts of conservation and stewardship.