



The ALMANAC

A newsletter of Wolf Ridge Environmental Learning Center

May 2018 Volume 50 Number 2

MAC LODGE GRAND OPENING

On Saturday, May 5, 2018, Wolf Ridge opened a new chapter of learning with the ribbon cutting ceremony for the Living Building Challenge (LBC) renovated Margaret A. Cargill (MAC) Lodge. Over 200 people attended the event on a picture perfect spring day.

The celebration kicked off with a Cinco de Mayo themed family-style meal. Guests gathered in community to mingle and eat representing the complete gamut of players: visionaries, architects, fundraisers, donors, bankers, construction companies, trades workers, board members, program, maintenance, custodial, kitchen, administration staff, Wolf Ridge alumni, teachers, students, Finland area residents and the just plain curious from near and far.

Following lunch, a series of speakers told the story that has culminated in the MAC Lodge being renovated to LBC standards, the most rigorous international standards to date. These sustainability standards not only applied to construction but also certification will only be awarded after twelve months of net zero and healthy living conditions are documented.

Christine Morse, chair of the Margaret A. Cargill Foundation board spoke of Margaret's love of the outdoors and the fact that most of Margaret's donations are usually given anonymously. The Foundation was so inspired and impressed with the vision and learning potential of the LBC renovation, Wolf



Ridge has become one of the few to be able to honor her support by naming the building after her.

Then, keynote speaker, meteorologist Paul Douglas, addressed the group sharing his journey regarding his understanding climate change. He sees the MAC Lodge LBC as an important way to educate kids, campers and adult chaperones, noting that all of us are students. "Believing in climate change is being literate." The MAC Lodge is a step towards this literacy.

Other speakers included Russ Bierbaum, Wolf Ridge board chair, Pete Smerud, Wolf Ridge executive director, Tom Berg, Making Waves capital campaign co-chair, Patrick Thibaudeau, HGA architects vice president, and Bob Gardner, CEO of Gardner Builders. Emo-

tions ran high as Peter reflected on what we have achieved. Tom Berg announced an anonymous matching dollar for dollar donation of \$125,000 that had been made earlier in the day. Tears filled eyes, as attendees began to fully grasp the impact this LCB renovation has had on the construction industry and lives both locally and nationally.

Following the presentations, the group trooped over to MAC Lodge for the ribbon cutting and tours. Previously the dorm had bedrooms with group bathrooms down the hall and one large meeting space. Now each bedroom has its own shower, toilet, and sink. There are five

common spaces, each with kitchenettes. The largest space, Weesner Commons, is on the first floor and includes a large fireplace and will hold 186 people. The second largest commons is directly above. It also has a fireplace, and is named for past board member and Wolf Ridge architect, Michael Plautz. His family donated a number of prints of Michael's artwork, some of which was used in the 2009 Wolf Ridge calendar. The new lodge design better accommodates the contemporary needs of schools, families, and adult learning groups.

As our guests explored MAC Lodge, the building pulsed with enthusiastic conversations of the positive change initiated by the Living Building Challenge. One could feel the page turning to an exciting new chapter. ♦

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ENVIRONMENTAL LEARNING CENTER

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VIEW FROM THE RIDGE

by Pete Smerud, Executive Director



Wow, what a day we had on May 5th, the grand opening of the new Margaret A. Cargill Lodge. It was a day where you could see on the faces and feel the positive energy and momentum of Wolf Ridge. Two hundred plus people shared our interest in how we live on this planet and the optimism for the future generations of environmental learners and leaders that will come to and grow at Wolf Ridge. With our organic farm and Living Building Challenge projects Wolf Ridge has become the premier destination in Minnesota to help children and adults learn to live more sustainably.

The organic farm is thriving with greenhouses, fields, and year round vegetable additions to our dining hall menus. Three new buildings on the main campus are now complete, built with construction methods that were state-of-the-art. Both the Margaret A. Cargill Lodge and the Lakeview Staff House have won environmental awards. The final wave of our Making Waves set of projects is focused on water and Lake Superior.

At the beginning of the Making Waves projects, in the pre-design phase, our design team, together with the U of California Berkeley's Center for the Built Environment, surveyed hundreds of the Wolf Ridge community members to assess what our teachers, students, campers, families, alums, and donors felt were the "most im-

portant environmental issues to address as we look to the future." Climate change, the wealth gap, connection to the natural world, and renewable energy were top responses. But, the number one issue that far outdistanced the field in responses - freshwater access and awareness.

As the largest accredited residential learning center in America, Wolf Ridge will soon be offering learning experiences at the shoreline of the largest (by surface area) freshwater lake in the world. With



our long history of scientific research relationships with several different agencies we will strengthen and build new associations that supports more freshwater and Lake Superior research that we can bring

into programs at Wolf Ridge. In turn we will provide students, from 6th grade to high school to graduate students, the opportunity to learn alongside science professionals about the greatest and most important of resources and the ecology along its shoreline. What a powerful and important connection to build for future generations of this region.

A favorite thing that came out of the May 5th Celebration and Grand Opening was a question posed as to what is the real impact of learning experiences at Wolf Ridge. "What does Wolf Ridge really do?"

The answer I heard was, "for me, Wolf Ridge supplies hope!" I loved that response and feel it to be so true. When there are so many negative messages and stories coming our way, by joining together, Wolf Ridge and our community of supporters are collectively supplying hope for a better future, of human interrelationships with the environment and behaviors that will

better sustain us on this planet.

We need your help to spread the word of what Wolf Ridge is achieving and to find more people, corporations, and foundations to join us. Help us find people to organize school groups to spend a week here learning, a family looking to create greater connections and environmental understanding

with their children, future educators to learn Wolf Ridge techniques and take their skills to more people of the world. Please tell our story. Let me know of ideas or connections you feel may help Wolf Ridge. Together we can take the energy, momentum, and hope that was palpable on May 5th and keep it moving forward in even stronger ways.✦

These Wave Makers have raised \$7,144,499 as of April 30th



\$1,000,000+

Margaret A. Cargill Foundation

\$500,000-\$999,999

Fred C & Katherine B Andersen Foundation
Donald Weesner Charitable Trust
State of MN

\$100,000-\$499,999

Tom & Margit Berg
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Wells Fargo Foundation

\$5,000-\$24,999

In Memory of Clifton Anderson
- Anonymous
John Anderson
Ken & Shirley Anderson
Anonymous (s)
Athwin Foundation
In Recognition of John Daniels
- Dale & Ruth Bachman
Barr Engineering
Tom & Kay Becken
David & Meghan Blodgett
Elizabeth Burke
Doug Connell & Gail Murton
John & Gwen Daniels
In Memory of Edward Datko

- Andy Datko & Lisa Hesse
Mike Dickson
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George & Sylvia Roman
Gary & Sue Schiess
Al Schrader Family Foundation
Aaron & Jennifer Smith
Bill & Judy Walter

\$1,000-\$4,999

Student Naturalist's SY 03-04
In Memory of Darian Willette
- Joan & Nicholas Olson
- Will & Margaret Rousch
- Brittany Bennett
- Beth Bockes
- Shannon Walz
American Legion Post 550
Bloomington Lions Club
Tom & Christina Blum
Bill & Patricia Burns
Cannon Family Foundation
Harriet & Edmund Chute
Dennis Confer
Pat Coppo & Susan McCabe
The Dietz Family Fund
John & Bette Demars
Donald Heian Fund
Esterbrooks, Scott, Signorelli
Rachel Friberg
Toby Grabs & Jen Kobylecky
Donna Hill

Sandy Jensen & Samuel Broaddus
Sam & Kate Knuth
John & BJ Kohlstedt
Scott & Sarah Kuhl
Donn & Donna Larson
Kris Larson
Charles & Hope Lea
Thomas & Diane Lentz
Medtronic
Michael Menzel & Kathryn Iverson
James & Franchelle Mullin Fund
Kristen Nelson
Tim Norman
Dan & Sallie O'Brien Fund
Robert O'Hara
Ronald & Lynn Olson
Jack & Genea Pichotta
Richard & Janet Putnam
Patricia Rogowski
Jim Rustad Charitable Fund
Lambert Smeets
Pete & Sue Smerud
Philip H & Barbara Strom
Charitable Fund
Terhuly Foundation
US Bank Foundation
Gregory & Donnette Wheelock
Wolohan Family Foundation

UP TO \$999

Student Naturalist's SY 93-94
- David Mackey
- Doug Sandok
- Michael Wehling
Student Naturalist's SY 14-15
- Grace Theisen
- Caitlin Cleary
- Marie Fargo
- Larissa Giebner
- Dylan Kelly
- Luciana Ranelli
- Shane Steele
Kristi Achor Pursell Family
Mark & Tess Ahlborn
Tom & Sandra Ahlstrom
Ben Ahrens
Bruce Albrecht
Kelly Amoth
Evan & Nancy Anderson
James Anderson
Michael Anderson
Terry & Vicki Anderson
Thomas Anderson
*Andren Paint Company
Anonymous (4)
Pete & Margie Ankeny Fund
Karen Asphaug
Braden Barber
Ken Brown
Wilma Buhl
John & Mary Ann Callahan
Wendy Campbell
Chris & Sheri Camper
Annie Champeau
Christine Champeau
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Sarah Champeau
John & Pamela Chandler
Katharine Chute
Jeanmarie Cook
Leslie Cook
Juan & Renee' Cristiani
Sheldon & Carol Damberg
Peter Daniels
Diadra Decker
Kathleen Eagle
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Ann Ellis & Clayton Francis
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Gretchen Anderson Hanson
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Gaylen & Julie Harms
Peter Harris & Carrie Anderson
Kyle & Eileen Heitkamp
Nancy Holmgren
Laura & Paul Holmes
In Recognition of Aki Yada
- Elizabeth Hoover
Jan Horak
Lisa Huntley
Jennifer Edlund Johansen
Brad Johnson & Gail Buhl
Gregory Johnson
Jeff Johnson & Beth Peter
In memory of Erika Jones Massie
- C Eugene & Judith Jones
Kenneth & Donna Jones
Nathan Jones
Kathryn Keller-Miller
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Tom & Lynn Osborn
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Kirby & Cathy Wood
David & Diane Wright
Jeff Yost
Dan & Michelle Young

Thank you for the outstanding commitment!

*In-kind donors

SOLAR POWER: OUR FUTURE IS SO BRIGHT

by Carrie Anderson, Wolf Ridge Naturalist



Under the clear February sun we flipped the switch on the new solar panels for the first time. Electrons jumped right into action, creating almost 40 kW of electricity for the newly renovated Margaret A. Cargill Lodge. This will enable our goal to make the MAC Lodge net-positive for energy, and towards meeting the Living Building Challenge requirement that all electricity in the dorm be made from renewable energy.



Flipping a switch to turn on the solar was a simple move; behind that action is a trail of decisions and lots of planning. Each new solar installation presents unique challenges to consider. How much power is needed? Where will the panels be located so they can gather the most energy? What path will the creat-

ed electricity follow as it travels from the panels? Which system design and components are most efficient? Which will have the smallest impact on ecosystems?

Here in northern Minnesota, studies show that reliable renewable power systems incorporate a variety of strategies. The best plans begin by examining ways to reduce the demand for electricity. A smaller system will cost less. In the case of MAC Lodge, architects incorporated daylighting through window locations with the strategic placement of solar light tubes to bring sunlight into the interior hallways and larger group spaces. When purchasing appliances like washers, dryers, and refrigerators, we chose those with the best energy ratings. All lighting is LED and low voltage.

Next, we made the decision to enlist the help of every student living in the dorm. Each person will be challenged to help reduce the dorm's need for electricity through their actions and choices — and they will have evidence of the difference those actions make. Energy use data is displayed near the light switch in each dorm room. When a light is turned on or off, there will be an immediate change on the display. Out in the dorm's main gathering space, people will be able to compare use from room to room and day to day, and adjust their choices to reduce their personal use of electricity, establishing conservation habits they can bring back to their home communities.

After taking measures to reduce the size of the system, proper siting of the solar panels makes a big difference in its efficiency. Brand new buildings have the luxury of designing the structure to support roof installations or to keep clear areas where ground panels can access consistent sunlight all year round. In the case of the MAC Lodge, which was an interior remodel with small additions, we chose to locate the solar panels about 200 yards away, near the Science Center parking lot.

Lastly, consider how power will travel through the system and be either shared or stored for future use. Storing created power in an on-site bank of batteries gives total local control over the power, but does not allow for high electricity demand during long cloudy periods or spikes in use. Special electric fixtures and appliances that run on direct current (DC) must be purchased, or alternately, inverters that can change the solar DC power to AC. Batteries themselves are environmentally intensive to produce.

Another possibility, grid-tied power, made the most sense for Wolf Ridge's system. This choice allows us to use existing wires laid by our local power company, Cooperative Light and Power of Lake County, to move electricity from the new panels to the MAC Lodge. The extra power can be distributed to other buildings on site. In rural situations, solar power grid tie-ins can also



help stabilize local surges and dips, so-called brown power, which in turn helps pumps and electronic appliances last longer.

Cooperative Light and Power was a key player in making this all work. They helped us tie into the local power grid and facilitated ways to help us measure the power we produce and the electricity we use. Interestingly, Wolf Ridge is now the largest renewable energy producer for their system and in Lake County, and our tiny Crystal Bay Township has the highest per-capita solar PV installed in the continental USA!

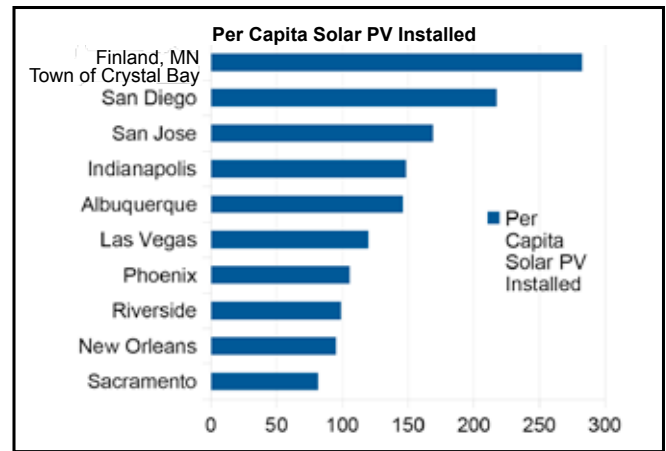
Solar electric power is now considered more cost effective to produce than coal or nuclear in most markets, and it is usually on par with natural gas.

Solar technology advances every day. A kilowatt hour of solar power created today costs less than half as much to produce as it did just 10 years ago. Large-scale power producers are turning more and more to renewables because they are cheaper than other methods.

Meanwhile, fresh snow sparkles as a class skis across Raven Lake. A student stops to rest and soak in the view and sunshine. They look up to the sky, breathe in, then their shoulders relax down, mesmerized by the warmth and view. Maybe you've

done this too – caught yourself in a moment outdoors, face warmed by the sun, breathing it all in while time stands still.

Solar is powerful.♦



WOLF RIDGE NEWS BRIEFS

- Twelve animals have been added to the Wolf Ridge Farm. These swine will work to rut up the soil in new fields and then become part of our locally produced meals.



- A new crop was planted at the Farm in March. About 90 logs were inoculated with mushroom spores. Maple logs were seeded with Shiitake and aspen logs with Oyster mushrooms. Carleton College students and visiting students were on hand to learn from and help graduate naturalist Calvin Leigh Lodge and his dad. Some of the logs will start producing mushrooms next year and some will continue producing mushrooms for 3 to 5 years, once they start producing.



- The dining hall has implemented family style dining at lunch and dinner. The goal is to shorten waiting lines, reduce food waste, and increase a sense of community.

- New paint colors are appearing on Summit Lodge's (formerly the East Dorm)



walls. The custodial staff is working hard to create a warmer ambience in the dorm.

- Wolf Ridge recently hosted a set of workshops in the Twin Cities and at Wolf Ridge. "Creating Transgender Inclusive Environments" with Meg Bolger from Venture Out was sponsored by the North American Association for Environmental Educators (NAAEE). The "Community Engagement Guidelines" workshop written by NAAEE was presented by a team from Antioch University of New England including professors and graduate student, Wolf Ridge alumnus, Luciana Ranelli. The seminars were open to everyone and attended by environmental education professionals, school districts, Wolf Ridge staff, and community engagement organizations. Both workshops were well received and participants came away having learned a lot.

- With support from the Donald Weesner Foundation, Wolf Ridge has been working on updating the posters used in classes. The results are very classy.♦

SCHOOLS & GROUPS

Sept. 1, 2017-Aug. 31, 2018



1854 Tribal Youth Camp
Annandale Middle School
Arete Academy
Assumption School
Badger School
Barnum Elementary
Beacon Academy
Oak Crest Elementary
Benilde-St Margaret's
Bethlehem Academy
Birch Grove Community School
Birch Lake Elementary
Blue Earth Area Middle School
Boeckman Middle School
Breck School
Bug O Nay Ge Shig
Camera Club - Taylor Falls
Carleton College
Carlton High School
Cavalier Middle School
Cedar Riverside Community School
Central Cass Middle School
Central Middle School
Chisago Lakes Middle School
Circle of Nations School
Cloquet Middle School
Community of Saints
Coon Rapids Middle School
Cooper Elementary
Cown Elementary
CSS Youth Theology Institute
Cumberland Middle School
Dakota County Upward Bound
Dragonfly Society of Americas
Duluth Edison Charter School
El Colegio Charter School
Ely Memorial Middle School
Emanuel Lutheran
Epiphany
Face To Face Academy
First Lutheran School
Five Hawks Elementary
Fox West Academy
Franklin Elementary

Frassati Catholic Academy
Friends School of MN
Girl Scouts Troop 4054 & 4055
Girl Scouts Troop 50020
Glendale Elementary
Glen Lake Elementary
Grace Fellowship Home School
Grainwood Elementary
Great Expectations School
Gustavus Adolphus Education Students
Heilicher Mpls Jewish Day School
Hennepin Elementary School
Hertz Duluth Homeschool
Hibbing Community College
Hilltop Primary
Hinckley-Finlayson Elementary
Holy Name of Jesus School
Holy Trinity School
Homecroft Elementary
Hope Community Academy
Hopkins Summer Field Biology
Intl Spanish Language Academy
Jeffers Pond Elementary
JEM Yoga & Massage
John Ireland Catholic School
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
LSS One Program
Manvel Public School
Many Rivers Montessori
Maple Lake Elementary
Marcy Open School
Marquette Catholic School
Marshall County Central HS
Midway School
Miltona Science Magnet Elementary
Minnehaha Elementary

Minnesota Life College
Minnesota New Country School
Minnetonka Middle School East
Minto School
Murray Jr. High
Nerstrand Elementary School
New City School
New London/Spicer Middle School
New Millennium Academy
Norman County West Elementary
Northern Lights Community School
Northland College
North Shore Community School
North Star Academy
Nyquist School
Oak Grove Middle School
Onamia Junior High
Open World Learning Community
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
Rockwood Community Education
Rogers Middle School
Sacred Heart - East Grand Forks
Sacred Heart - Robbinsdale
Sawtooth Mountain Elementary
Schoolcraft Learning Community
School of St Philip
Shell Lake School District
Shirley Hills Elementary
Sierra Club
Soaring Eagles - The Lake Bank
Sojourner Truth Academy
South Ridge Elementary
St Anthony Park

St Bridget Parish School
St Charles Borromeo
St Croix Catholic
St Croix Montessori
Stella Maris
St Francis De Sales
St John School of Little Canada
St John the Baptist
St Marks School
St Mary's School - Morris
St Marys School - Breckenridge
Stowe Elementary
St Pascal Baylon School
St Patrick School
St Peter's School
St Stephen's School
St Thomas More Catholic School
St Vincent De Paul
Superior Cathedral
Superior Hiking Trail Association
Todd County Health & Human Services
Trinity Lutheran/Our Lady of the Prairie
Triton High School
Two Harbors High School
UMM International Student Success
Valley Middle School
VandenBerge Middle School
Vintage Sport Camp LLC
Warroad Middle School
Watch Homeschool
Watershed High School
Watertown-Mayer MS
Wayzata Central MS
Wayzata East Middle School
West Central Area Schools
Westwood Elementary
William Kelley Elementary
Willow River Elementary
Winterquist Elementary
Woodbury Leadership Academy
World Ki Gong Clinic
Youth Outdoors - Duluth
Youth Participatory Evaluation



PROFILE: LESTER PARK ELEMENTARY SCHOOL



Lester Park Elementary School

- Duluth, MN, population 86,293
- grades K-5, brings 5th grade
 - 128 participants
- attending Wolf Ridge for 8 years as a parent led school group
- comes in March on a weekend

Lester Park is one of four parent led school groups attending Wolf Ridge. Parent, Tom Westrum has been in charge of arranging Lester Park's visits to Wolf Ridge over the last several years. *If you are a parent interested in bringing a school group to Wolf Ridge, Tom would be happy to share his wisdom with you.*

Please give a tip to other schools about attending Wolf Ridge. Since we are a parent run school, I advise other parents to not underestimate how easy it can be to bring students up here on a weekend. We do have school support with communication between parents and with reflecting on experiences. We can truly see the impact it has on our students and it is well worth the effort of

organizing a trip. I am surprised at how consistently seamless it is; it basically runs itself! The kids really step up and do a great job with the continuous activity at Wolf Ridge.

How does your school raise money for this trip? We have found successful ways to fundraise for Wolf Ridge such as hosting school dances, teaming up with local businesses and selling the Wolf Ridge calendar. It is important to us that every student can experience Wolf Ridge so a lot of our fundraising profits go to scholarships for students. We have a bit of a nest egg from year to year now and our motto is to leave it bigger than you found it.

Why does your school come to Wolf Ridge? Attending Wolf Ridge is a tradition our students look forward to. It is a wonderful experience to immerse in nature, gain self-confidence and grow as leaders. Their time at Wolf Ridge teaches them respect and how to support each other through challenges. They get to know different sides of each other than they see in the classroom; they let their hair down a bit and feel able to let loose and be themselves.

How does your school share the Wolf Ridge experience pre and post trip with students/parents/community? It is our tradition to take many pictures during the weekend we are at Wolf Ridge and one generous parent volunteers to create a 30 minute slideshow video that is typically ready in May. We invite the parents, younger siblings and school community to come to the gym one evening and we show the video.

Tell our readers about a favorite memory from a student and/or adult about the Wolf Ridge experience pre or post trip. Several years ago in our group we had some rowdy, active boys who had difficulties being focused and productive in school. When we came to Wolf Ridge I stayed in a dorm and learning group with the boys to keep an eye on them and we honestly had the greatest weekend together. Prior to attending Wolf Ridge, one of the boys spent hardly anytime outside and at the end of the weekend he looked at me and said, "I don't want to leave." After the last class they had a real "Stand by Me" moment and had a big team hug and then made a pact to be friends at school.

Tell us about a class that is important for your students to take and why. A class that is really important to us is the night hike that our parents lead. At the beginning the students view it as "just another hike," but then we walk out on the lake and lay down in the complete darkness to look at the bright stars. The students don't believe how neat it is. It's a lot more than just a hike. We come up here for team building so we value the classes that involve a lot of teamwork such as Ropes Course, Team Games and Winter Survival.

Is there anything else you would like to share with our readers about your Wolf Ridge experience? The teaching at Wolf Ridge provides students a lot of leeway to explore their own interests within the topic of the class. The naturalists are great in creating opportunities for students to go out, explore and reflect. ♦

WELCOME SUMMER STAFF



Academic Program Coordinator - Kim Swanson

Director of Counselors - Callum Skeffington

Director of Health Services - Nicole Talbot

Directors of Programming - Sean Henkenius & Brooke Piepenburg

Farm Field Manager - Tori Dahl

On-site Program Coordinator - Erin Baumann



Wilderness Trip Leaders and/or Naturalists

Mikki Brevig
Hannah Eckbald
Hannah Edstrom
Peter Hastings
Barbara Heerkens
Olivia Kovacs
Claire Laurenz
Calvin Leitch Lodge

Ariane Massey
Connor McCormick
Makaila Miller
Charlie Pavlisich
Anthony Porter
Emma Rohleder
Allie Silverman
Kaelyn Williams

Asst. Trip Leaders and/or Counselors

Hannah Brogdon
Nick Console
Darrah Cutter
Tyler Dardis
Erin Davies
Luke Davies
Krzysztof Dobosiewicz
Megan Frame
Magdalena French
Omena Giles
Seth Goldstein
Paige Guthrie

Emily Hartwell
David Jackson
Samantha Jugasek
Jon Kaufmann
Wren Leith
Kurt Nystuen
Magda Ringwelska
Noah Shea
Cristin Sickmann
Sophie Stanchfield
Emma Terwilliger
Nathan Wagner

Farm & Animal Care Interns

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Jacob Ney
Brandon Neill
Connor Padden

Volunteer

Deanne Trottier

Ryan Pennesi is the feature photographer for the 2019 Wolf Ridge calendar. He grew up in central MA and spent lots of time catching frogs. Discovery in the outdoors led him to work as a forestry and wildlife technician. Ryan lives in Finland, MN. Ryan first began experimenting with photography in college by using trail cameras to monitor wildlife. The first setup was on a deer carcass and Ryan was amazed at the number of critters that showed up. "Technology can give us a profound window into the lives of wild creatures; for me it has fostered a greater appreciation and respect for the wild." Ryan's photography has won a variety of photo contests. Most recently he placed 2nd in Lake Superior Magazine's 2017 photo contest, nature category. Calendars are available 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. Email mail@wolf-ridge.org or call Wolf Ridge at (218) 353-7414 for more information and to order. ♦



RYAN PENNESI

PHOTO © RYAN PENNESI

2019

FORESTRY IN ACTION

by David Stieler, Wolf Ridge Naturalist

A forest can seem very constant, immovable, and unchanging. It is easy to get lulled into a sense that a specific forested area has always been here and will always be here. However, this is actually far from the truth. A forest is a living system, and like any living thing, there is constant movement, change, and growth.



In minute detail, you will find trees fallen over in windstorms with smaller trees of either the same or different species growing up underneath. You may see underbrush growing under the canopy of sun-loving trees. On any given day, you might see a red squirrel grab a pinecone and move it from under its parent tree to another area much farther away from where it could have possibly reached on its own.

There are also longer, larger scale changes that are happening. Forest succession is a constant process, allowing new forest types to take over the currently existing ones. An ice storm could come through and destroy or bend hundreds of trees at a time. Climate change is also affecting

the survivability of new seedlings and the species of trees that will be able to grow in the forests throughout the world.

There are also changes that happen due to human intervention. There are two different interventions Wolf Ridge has done in the past; one, remove trees; two, plant trees. Enter our most current forestry project, which includes both of these interventions.

We are about to begin a project that is grant funded by the National Resource Conservation Service (NRCS) and based off of the Wolf Ridge forest stewardship plan created in 2015. When the plan was developed, there were two stands of aspen trees identified as being over-mature and not matched well with the soil type. These stands are labeled as Stand 5 and Stand 17 in our forest stewardship plan. Stand 5 consists of 9 small groupings of aspens amongst thick brushland. Stand 17 is a stand that is completely connected in one large triangle.

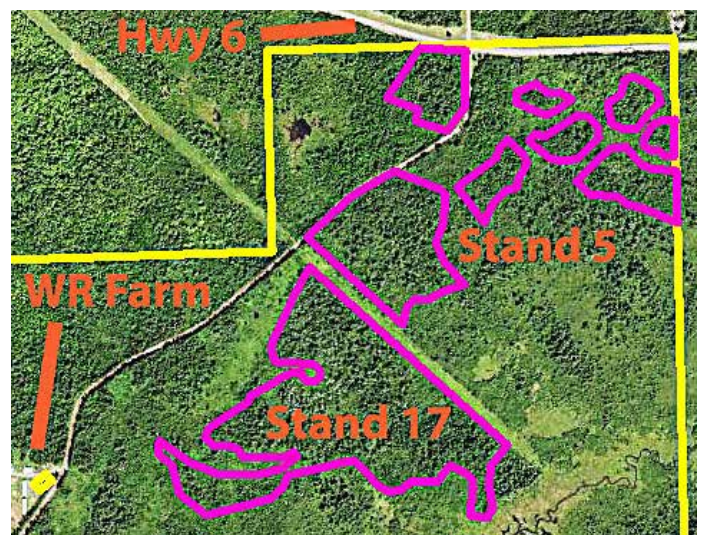
The concern with just leaving these two stands alone is that as the aspens die, they are going to be replaced almost solely by the brush growing up underneath them and become a meadow area. This is problematic because it is a good golden-winged warbler area right now, with stands of trees adjacent to meadowland, where as an area covered only in meadow and brush is not great habitat for these birds. Therefore, with grant funded support from the Natural Resource Conservation Service of the USDA, Wolf

Ridge is hiring a logger to take about half of the trees out of these areas in strips, allowing mature trees to stay in the stands while letting a younger class of trees continue to grow up so there is not an interrupted period without trees.

The two stands will be dealt with in different ways. Stand 5, will be cut in smaller, 30-60' strips that will allow room for planting of new trees, but should not allow full sun on the forest floor in order to reduce the number of new aspens sprouting up. This stand will then be planted with a variety of hardwood trees. The hardwoods being planted include basswood, sugar maple, red oak, and yellow birch. These are climate-adaptive trees that were chosen to create a more robust and resilient forest as the climate changes.

In Stand 17, we are trying to encourage a new class of aspens to grow by cutting larger, 60-100' strips, so sun can reach the forest floor. Again, this will prevent the current mature class from all dying within too short of a time and the whole area being taken over by meadow.

This project is planned for next winter and spring when the last trees will be planted.◆



PROGRAMS 2018

YOUTH

Summer Sampler: (2nd-5th gr) Aug 15-18: \$380

Discoverers: (4th-5thgr) June 24-30, July 8-14, July 15-21, July 22-28, July 29-Aug 4, Aug 5-11, Aug 12-18: \$597

Voyagers: (6th-7thgr) June 24-30, July 8-14, July 15-21, July 22-28, July 29-Aug 4, Aug 5-11, Aug 12-18: \$597

Adventurers: (8th-9thgr) July 15-21, July 22-28, July 29-Aug 4, Aug 5-11: \$597

Day Camp: (1st-5thgr) June 25-29: \$190

Green Energy Camp: (4th-5thgr) Aug 12-18: \$597

Voyagers 2-wk Ultimate Survival: (6th-7thgr) July 8-21: \$1300

Wildlife Camp: (6th-7thgr) July 22-28: \$597

Angling to Archery: (6th-7thgr) Aug 5-11: \$650

Girls Rock the Ridge Leadership: (6th-7th) Aug 12-18: \$597 **NEW**

Farm, Feast, & Fire Camp: (8th-9thgr) July 29-Aug 4: \$597

Camp Rock Climbing: (8th-9thgr) Aug 5-11: \$670

Counselor-in-Training: (10th-12thgr) July 22-August 4: \$990

Credit Camp - Freshwater Ecology: (10th-12thgr) July 15-28: \$1630

Credit Camp - Wilderness Ethics: (10th-12thgr) July 29-Aug 11: \$1630

Superior Service Learning Camp: (10th-12thgr) Aug 12-18: \$597

Superior Hiking Trail 5-day Backpack: (7th-8th) July 8-14: \$618 **NEW**

BWCAW Canoe 5-day: (7th-8thgr) Aug 12-18: \$618

Adventurers 2-wk BWCAW Canoe: (8th-9thgr) July 8-21: \$1390

Adventurers 2-wk Isle Royale Backpack: (8th-9thgr) July 15-21: \$1399

Adventurers Northwoods Kayak: (8th-9thgr) Aug 12-18: \$721

Isle Royale Kayak Expedition: (10th-12thgr) July 1-21: \$1529

Jr Naturalists 2-wk Quetico Canoe: (10th-12thgr) July 22-Aug 4: \$1462

Jr Naturalists 2-wk Apostle Islands Kayak: (10th-12thgr) July 29-Aug 11: \$1462

BWCAW Traverse Canoe Expedition: (10th-12thgr) July 1-22: \$2050

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.



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.

ALL AGES

Grandparent/Grandchild Summer Grand Adventure

(adults & ages 6-11 yrs) Aug 5-9 **Fee:** Starting at \$565 per family

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 the natural world with your grandchild and create memories that will last for a lifetime.

Open House

June 23 9:00-4:00

Free: Open to all ages.

Join us for a tour of the newly renovated MAC Lodge at 9:00 followed at 10:00 with a day of indoor rock climbing, adventure ropes, meeting our live raptors and porcupine, hiking, and canoeing. Bring close-toed shoes.

Bird Banding

June 6, 13, 20, July 6, 18, 25, & Aug 1
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 songbird populations. Participants can observe and sometimes participate in the banding process. Meet at the Forest Ecology Building on any one of seven summer mornings.



Summer Family Camp

July 1-7, July 22-28, July 29-Aug 4

Fee: Starting at \$950/2 people.

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.

Family & Group Wilderness Trips

Call David Butcher for available dates.

Fee: Starting at \$1,900.

There's exploring near your house. Then there's exploring in the Boundary Waters, Isle Royale or the Apostle Islands. Our wilderness trips provide adventure for families who love to be outdoors together.

Adv. & Beg. Bird Banding Courses

Adv. June 16-20, Beg. June 22-29

Fee: Adv. \$1200, Beg. \$2195

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.



Fabulous Fall Nature Geek-Out

Sept. 28-30 adults **Fee:** \$325

Spend a glorious fall weekend in the company of fellow nature geeks! Workshops include wildlife photography, agate finding, saw-whet owl banding, storing the harvest, and more. Expect a weekend of laughter, learning, and beauty.

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	\$ _____
	Total Enclosed	\$ _____

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

Card # _____ - _____ - _____ - _____
 Exp. Date. ____ / ____
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 **WOLF RIDGE™**
 ENVIRONMENTAL LEARNING CENTER
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*Complimentary Issue
Please consider becoming a
donor member*

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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.