

INVESTIGATING NORTHWOODS MAMMALS

by Shannon Walz, Wolf Ridge Naturalist



Wolf Ridge naturalist, Ryan Pennesi examines a White-tailed Deer skull with students.

Take a minute and bring to mind your mental image of a scientist. Was your scientist a man? a woman? light skinned? dark skinned? young? middle aged? old? When kids are asked, many describe an older, white man in a lab coat. Educational institutions around the country are working hard to change this stereotype. The new face of science is you, me...everyone!

Words like curiosity, adventure, exploration, discovery, exciting, passion, argument, and fun are the words we want students to use when talking about science. Instead of science being something that transpires in a lab, it is being reframed for students as a way of understanding the world on a daily basis.

This new image and definition of science is making science accessible to people of all ages, gender, race, and ethnicity. The Next Generation Science Standards released nationally in 2013 support this redefinition as well. The standards take a three-strand approach to teaching science: science practices, crosscutting concepts throughout science, and science content. Through this holistic approach it is intended to develop a scientifically literate society.

Wolf Ridge is the perfect place for young scientific minds with 2000 acres that are intended for exploration and investigation. Our classes are all about DOING - going off trail, out into the woods and water, and getting their hands wet and dirty. With this new emphasis in the science education community on doing science and making their own discoveries through scientific

investigation, Wolf Ridge developed a new class - Investigating Northwoods Mammals.

As students pile into the classroom, they find pictures of common mammals found in northern Minnesota on their chairs and an intriguing mix of skulls artfully arranged around the room. So starts the adventure of discovering and researching the mammals found at Wolf Ridge. Kids dive into exploring the skulls of herbivores, omnivores, and carnivores. Skulls hold clues about different animal adaptations and roles that the different mammals play in the ecosystem.

After spending some time learning about the animals found at Wolf Ridge, it's time to do some research outside.



Checking tracks in a track box.

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VIEW FROM THE RIDGE

by Peter Smerud, Executive Director



How does Wolf Ridge know or assure we're at the leading edge of educational practices? How can we be more effective educators? Does our instructional design match contemporary research findings and the associated development of new educational standards? How do we judge our leadership ability within the environmental education community?

These types of questions are routinely discussed at Wolf Ridge by our education faculty team. I take great pride that at Wolf Ridge no matter where you turn you'll find people always working to better meet the needs and changing environments of learners both young and old. The answers to these questions typically take some investigation. The values that drive these questions at Wolf Ridge, along with our strong reputation resulted in a recent invitation for Wolf Ridge education staff to participate in the BEETLES National Leadership Institute, hosted by the University of California Berkley. (As mentioned in Oct. 2014 Almanac.) The BEETLES (Better Environmental Education Teaching, Learning Expertise and Sharing) project

is an effort to provide professional development modules for environmental education centers based on current education and learning theory. Wolf Ridge's vision and goals fit perfectly with the BEETLES's goals so we were excited to be asked to participate.

UC Berkeley invited national leaders from 18 residential outdoor education schools across the country for an intensive week-long retreat. The institute challenged us to reflect and consider the design and methods used in our instructional experiences; how and what we train our staff; and where our organizations should go as we look to the future.

Through work alongside the other leaders in the country, Wolf Ridge was able to step outside our own curriculum and pedagogy, viewing what we do through the lens of others. Looking at peers whom you hold in esteem, then your own reflection, is a very good way to judge your performance. We began this endeavor a few months ago in sunny California, and continued the work into the cold days of winter at Wolf Ridge.

We implemented some new and upgraded trainings for staff on topics such as: nature and practices of science, questioning, promoting discussion, assessment and nature journaling. Self-reflection followed, leading to experimentation and stronger more robust teaching.

And as one considers a word such as curriculum or pedagogy many often think it only applies to us as a "school". This would be a natural response as Wolf Ridge is accredited as a school and serves over 10,000 students in our school program



The BEETLES Leadership Institute sessions were filmed to be used as training tools.



Wolf Ridge naturalists test run a BEETLES activity during a training session.

each year. Yet, Wolf Ridge is also a camp for youth and families.

At Wolf Ridge we blend a traditional camp experience with a robust educational program about the environment, and set the experiences in the context of development of an outdoor ethic for young people. Thus, learning and developing a stronger educator team who uses the most contemporary practices also brings our camp programs to the highest levels. Ultimately we're improving the learning experiences for all the children, in all our programs, no matter the time of year.

Through the BEETLES project our education team began our work to embrace and use the Next Generation Science Standards (NGSS). Wolf Ridge

strives to work with and be a partner in education with the schools that use our campus and coursework as field campus for their students. In that endeavor, we will be a more effective partner when our instructors are facilitating experiences that match well with the NGSS standards and that of current pedagogical practices. These are the standards Wolf Ridge will begin to use and address with our curriculum development. The standards work very well with outdoor-based

environmental education and have a pragmatic nature to them in that they contain strong focus toward science literacy for an educated society, and focus toward essential career preparation for a modern workforce.

It is important to Wolf Ridge that we are good leaders. "Having a pulse" on the environmental education industry is requisite if one is to contribute at the highest of levels. The processes set-up by UC Berkeley allowed the highly experienced Wolf Ridge education staff to provide feedback and perspective on best practices in education at a national level

and contribute to this effort in a meaningful way.

At Wolf Ridge we're using what we learn to develop better resources that support the content of all our programs and increasingly effective means for our instructors to facilitate student learning. It's a joy to look in the mirror and evaluate your organization's work, see that you're proud of what our instructors accomplish on a daily basis, but still set your goals for even higher achievements. Similarly valuable is to affirm and reinforce that your work is at the leading edge, and then learn from your peers in that same venue how you can improve, and help them to do the same. Onward!♦



Five of the thirty-six attending the Institute are Wolf Ridge alumni. They included Steven Streuffert (85), Jen Kidder (04), Shannon Walz (04), Gretchen Engstrom (00), and Joe Walewski (89).



Anna Shallman (88) is now the owner of the Sisu Designs Yarn Shop in Ely, MN. **Joe Walewski (89)** received honorable mention in a contest for \$5,000 of bike gear for his bike-to-work entry. Check it out at <http://www.reliance-foundry.com/bike-storage/pedals-4-professionals-bike-to-work-contest-2014>. **Bruce Pichotta (92)** is teaching 2nd grade at Dugsi Academy in St. Paul, MN. **Katya Navarro (93)** is living in Miami, FL and recently visited Wolf Ridge with her husband and son. She is tutoring in math & science. **Emily Bowman Graf (96)** has opened a shop, Juneberry Studio and Marketplace, in Madison, WI that sells and teaches artisan crafts with over 50 contributors. Her husband, **Dave Graf (96)** completed his schooling and is now employed at Prairie Clinic in Sauk City, WI as a Physician Assistant. **Nora**

(Morse) Bateman (06) recently joined the McKnight Foundation's new Midwest Climate and Energy program as Strategy Analyst. **Cory Erikson (09)** got married and is working as a massage therapist at Bodywork Bistro in Boulder, CO. **Tiffany Smith (06)** has returned to Minnesota. She is now working as the Education Director at Hartley Nature Center in Duluth. **Sonja Smerud (11)** is currently in Germany as a Fulbright Scholar doing research involving the environmental policy making practices of Germany. **Angie Ziobro (11)** is working for Hennepin County Environmental Services in Minneapolis doing environmental education and outreach. **Mark Harris (13)** is an engineering student at U of MN-Duluth and has a job managing climbing equipment. **Heather (Lepinski) Merewood (03)** and **Sean (Buse) Merewood (04)** have relocated from Anchorage, AK to Metairie, LA. Sean is a photography manager for Lifetouch and Heather is taking care of their daughter, Kestral. **Margaret Woodward (04)** teaches 3rd grade in Aspen, CO. **Francis Van Sloun (14)** landed a position at The Works Museum of Science and Technology in Bloomington, MN. She is working with **Martha Hotchkiss (91)**.

Investigating Northwoods Mammals *continued from page 1*

How many different ways of researching wildlife can you come up with? The last list I generated with students had fifteen different ways from radio collars and bird counts to camera traps and scat sampling! Depending on the season the students participate in a different method of data collection. In the spring, summer, and fall the class does a track box survey and in the winter when there is snow on the ground they do animal track transects. The goal is to determine the presence or absence of northwoods mammal species at Wolf Ridge. Both procedures are based on research methods currently used by the Minnesota DNR to survey animal populations.

The last class I taught was right after a fresh snowfall. We started out by learning to read tracks. Many kids were familiar with some of the most common animal tracks. With careful observation, we were able to identify ways to tell different tracks apart. Since we are doing scientific research, we discuss the importance of data accuracy.

With the aid of fresh snow, our transect survey was fantastic! You could hear the excited exclamations as the students found fresh squirrel, mouse, deer, and even fox tracks. After collecting data, we returned to the classroom to analyze our findings. Each group shared what animal tracks had been observed and talked about the significance of their presence at Wolf Ridge.

As class drew to a close, we took some

time to reflect on the science process. We revisited a question from the beginning of class, "What does it mean to be a scientist?" In a few short hours the answers changed from "a scientist is someone who does research projects in a lab" to "I did science today." It is about making observations, recording data, trying to make sense of our data." Wolf Ridge aims to inspire the next generation of curious scientists with its Investigating Northwoods Mammals class. ♦



Looking at animal "selfies" on the trail cam.

The WOLF RIDGE mission DISSECTED: Fostering awareness, curiosity, and sensitivity to the natural world. Animal Edition!

Animals... a perfect gateway to the natural world. They can seem... majestic, mysterious, or cute.

But, rarely are they seen with 20 4th graders in tow.

... can frustrate the best naturalist's efforts. Poor timing... or... foul weather...

Recently, with its promise of 10,000+ images, the trail camera has added another tool to the naturalist's tool kit. A class's astute observation can lead to setting up a camera...

... and an exciting email two weeks later!

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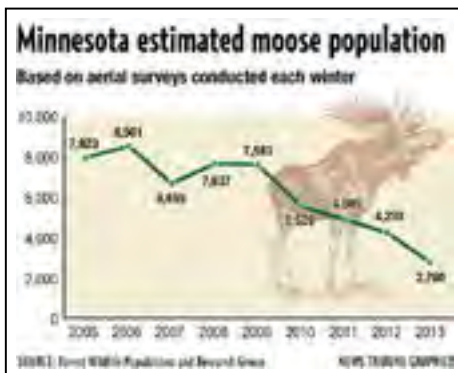
October 7,

MINNESOTA MOOSE

by John Kohlstedt, Wolf Ridge Naturalist

The moose is a big deal. They are the largest member of the deer family. They average over 800lbs. Moose have sustained the Ojibwe people for hundreds of years and sustained wolves for tens of thousands. Moose are a tourism promoter's dream animal.

Therefore, the recent moose population decline is a big deal.



Minnesota has the biggest population in the lower 48. But recently our herd is dwindling and we don't really know why. The population of the NW Minnesota herd is now down to around 4,000 according to the the 2014 survey. Since 2004 the population of the NE Minnesota herd has fallen by half; from over 8,000 to 4,350. Looking at the slope of that population graph, you would be very nervous to take your bicycle, skateboard or cross-country skis down it! The DNR is nervous too. So much so they are spending over a million dollars to do an intensive multi-year study to find out the problem. They want to avert a crash, if such a thing can be averted by human intervention.

What is the cause of this precipitous decline? Take the quiz!

- A. Disease
- B. Habitat loss
- C. Global climate change
- D. Wolf predation
- E. Sport hunting
- F. Cellular tower emissions
- G. Sugary soft drinks
- H. All of the above

I suppose if you worked all angles, then "H. All of the above", could be the correct answer. But the DNR is only seriously considering the top four; disease, habitat loss, global climate change and wolf predation to be the prime suspects. At a steady 2,500, the overall Minnesota wolf population hasn't gotten appreciably larger lately nor the wolves appreciably hungrier, yet studies show a wolf population increase in the moose study area that may be contributing to higher moose calf mortality. Sport hunting for moose, strictly regulated for the last 42 years, and suspended in 2013, doesn't add up to being an important factor. Cellular emissions and sugary drinks?well... ah, studies are ongoing, and for security reasons remain classified. Knowing how complex nature is, I'm thinking the answer will be: A, B, C, and a bit of D.

So a big study is underway.

Where do I get the authority to write to you regarding the moose? Well, in Boy Scouts I was in the Moose patrol, a dangerous collection of 10 neighborhood kids from Bloomington in the late 60's. One day Billy and I tried to intercept a swimming bull moose in a canoe. The plan was to jump on its back and ride it to shore. Never caught up with



Minnesota Department of Natural Resources photo

it, thankfully. Ever since then I have dedicated my life to the appreciation of the moose.

In recent years, my wife BJ and I have, had a moose sleeping in our woodshed, a moose on the front doorstep, a moose trotting through the backyard, and moose calves being born and raised on the island we own on the Gunflint Trail. Ask me sometime about the day I followed a wolf who was following a moose on the Banadad Ski trail. BJ puts moose poop pellets in jars and auctions them off for big bucks at The Superior Hiking Trail Association Annual Get-Together here at Wolf Ridge. Hikers will buy anything.

Yes, I know the moose from tip to tail, but the real authority these days is Glenn DelGiudice. He is the moose project leader for the Minnesota Department of Natural Resources. His study, now in its second year, is using secret agent type technology to capture and GPS radio collar adult and baby moose. Not all has gone smoothly. There have been problems with mothers abandoning the collared calves and collars falling off, but the latest techniques involve stealthy and quicker (one minute max) handling and some new type collars. The goal is to get 100 calves and several hundred adults on the "radar". A snoop for "Minnesota moose research" on the internet gets you the DNR website and will provide you with all of the study results to date. Then you too can be an authority. ♦

PROFILE: Terry McLaughlin & Vern Gersh

What is your connection to WRELC? Terry first came to Wolf Ridge when it was called the Environmental Learning Center (ELC) in Isabella, Minnesota in 1986 as a Student Naturalist. At the end of her year, Terry was hired as Intern Coordinator. She served in that role for a year and then the Student Naturalist and Intern programs were combined under Terry's management. These programs were subsequently evolved by Terry into the Graduate Training Program with the U of MN - Duluth. Vern joined Terry in 1987 and lived in Isabella, MN. When the ELC moved to Finland, Terry and Vern moved down to the shore of Lake Superior, where they lived in Little Marais. Vern was hired at Wolf Ridge as a nighttime cleaning person and eventually promoted to head of building maintenance.



Terry teaching at the telescope deck in the early '90's.

What are your current occupations? Both Terry and Vern worked in interpretation at Yosemite National Park before moving to the eastern Sierra Nevada mountains where they are both involved with the Mono Lake Committee, which works for the preservation and restoration of Mono Lake, CA. They are looking forward to retiring on Feb. 14, 2015.

Tell our readers about something you have learned from your WR experiences. Terry and Vern learned an amazing amount about environmental education at Wolf Ridge, which has affected their entire life's course.

Please share a favorite WR memory. For Vern it was working at night and seeing the northern lights light the midnight sky so brightly that birds would sing their morning songs. Terry's favorite memory was walking Cree, the education wolf, on Christmas day in knee-deep new snow in the silence of the northern forest.

What are your favorite hobbies? Terry's first love is hiking through the High Sierra mountains. She dedicates much of her summers backpacking, exploring the nooks and crannies above tree line in the Sierra. Vern is an avid bird watcher, having traveled the reaches of the planet in search of rare and beautiful species. Yet, his favorite place to bird is Northern Minnesota in early spring as the warblers are returning and the trees haven't fully leafed out (though the Serengeti plain isn't too bad for Secretary Birds at dawn).

Can you give us a travel tip? Vern and Terry are avid world travelers and love to explore foreign cultures and ecosystems. Their best travel tip is to travel light, travel with an open mind and a kind heart.



Tell us about your family. Their immediate family consists of a wonderful ancient dog Utah (named for the red cliffs above the Green River of Utah) and Sera (full name Serendipity because she was picked up, abandoned in an orchard in Merced California).



What book would you recommend? Terry is currently tearing through all of the works by Toni Morrison. Toni weaves her intimate perception of human nature into compelling stories through enrapturing prose. Her stories weigh heavy on the heart, but are impossible to put down. Also read anything by Haruki Murakami or Craig Childs.

What is your favorite place at WR? Terry's favorite place at Wolf Ridge remains Marshall Mountain. Travel there alone, silently, in fall. Enjoy the Lake Superior vista, tinged with the reds and oranges of maples in fall.

Terry summing one of the world's most active volcanoes in Villarrica, Chile. Vern hanging out at Indian Arch, Yosemite, CA.

Anything else you would like to share with our readers? Wolf Ridge has an amazingly positive influence on its staff and students. *WE BOTH LOVE WOLF RIDGE SO MUCH WE HAVE PUT IT IN OUR WILL!* ♦

WOLF RIDGE NEWS BRIEFS

A stair section, completed in September, on the Marshall Mountain trail is protecting the environment and keeping the kiddies safe. This feat was engineered by Wolf Ridge staff Gary Olson and Robert Cunningham.

•Everyone was very excited by the **fifty Saw-whet owls** banded during the October owl and raptor weekend.

•Staff and students from attending schools had a great view of the total **lunar eclipse observed** in the early morning on October 8th from the Wolf Ridge telescope deck before it clouded over in an instant.

•Our custodial staff extraordinaire have been **busy painting** the town. Well, not the town but you'll find fresh paint and colors such as suntan yellow, chocolate pudding, cocoa butter, and in the East Dorm and Office.

•Wolf Ridge is **servicing up snacks** with classes. Currently cheese sticks and delicious seasoned pretzels are offered. The ingredients for this closely guarded recipe are now revealed here for the first time: pretzels, butter-flavored oil, dry ranch seasoning, dill, garlic powder. They taste even better when you make a donation to Wolf Ridge.

•This year's **ice-on date** was November 14. John Kohlstedt and Betsey Mead led staff on the first ice skate of the season across Wolf Lake.

•A **media kit** can now be found in the resource section of the Wolf Ridge website. It is for schools to help promote the value of the WR experience in their local communities. It contains news release samples, logos, and high-resolution photos.

•Wolf Ridge can now be found posting fun photos of learning on **instagram** #WolfRidgeELC.



•**Duluth authors**, Carl Gawboy and Ron Morton, presented a seminar for WR staff. Their books (*Talking Rocks: Geology and 10,000 years of Native American Tradition in the Lake Superior Region* and *Talking Sky: Ojibwe Constellations as a Reflection of Life on the Land*) integrate natural sciences and the culture and heritage of Native Americans. Stories and information shared were quickly incorporated into several classes at Wolf Ridge.

•Popular demand has expanded our Frozen Lake Study to two classes. Additional **ice house halves** were snaked through the woods from the drainfield to the lake. How many staff did it take? Well, at least one to think up the plan and others to sacrifice their bodies for the grunt work. Mission accomplished sans injuries.

•The hoops are set for two more high tunnel greenhouses at the farm. Grants for deer enclosure fencing, processing equipment, and educational outreach continue to help our farm program grow. Five hundred pounds of **carrots have been harvested** and eaten by program participants.

•**Biomass energy** from the Energy Center pellet stoves now heats all the domestic hot water used in the West Dorm eliminating the use of propane in the building.

•The Team Games class has a **new element, The A-Frame**. Working together, using ropes attached to a giant "A" made out of 2" x 6's", participants raise the frame and walk a person riding on the cross bar across the volleyball court. ♦



ON THE NATURE OF LEARNING:

Knowledge, Habits, and Goals

by Joe Walewski, Wolf Ridge Naturalist

In 1911 France, Doctor Claparede published findings of a woman suffering from severe amnesia after sustaining a major brain injury. Despite repeated meetings with his patient, she was unable to recall who he was or why they were meeting. Doctor Claparede might introduce himself, leave for a few moments, and then return. She was completely unable to recall ever meeting him.

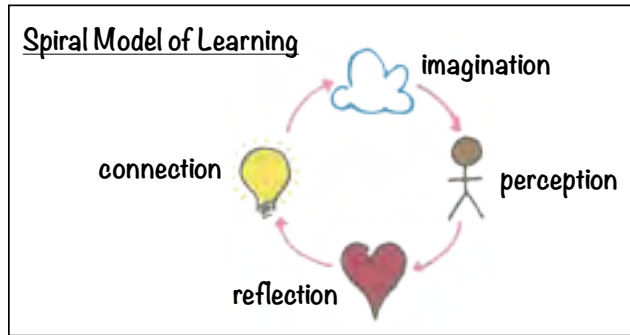
As an experiment one day he introduced himself and offered to shake hands. She accepted and was shocked to find that the doctor had hidden a sharp tack in his outstretched hand. It was painful!

The doctor left and returned a few moments later. She had no memory of the doctor or the event. And yet, when the doctor offered to shake hands, she refused but could not explain why. Never again was he able to convince her to shake hands though she had no idea why she would always refuse.

Mysterious influences play havoc with all our choices. *Habits of thought* guide how we process experiences and then “choose” to respond. We may be aware of some of our habits, but not all. What we “know” may not be apparent to us even though it affects our choices of action. Decisions are always affected by habits of thought. Choosing how we respond to anything is much more complex than we might assume.

In the Fall edition of the *Wolf Ridge Almanac* (Sept 2014), I introduced the “Spiral Learning Model”. It’s a never-ending cycle including 4 key phases – Imagination, Perception, Reflection, and Connection. This model serves as a guide to promote and sustain learning. With practice, it can become habit. That’s the goal.

Spiral Model of Learning



But where shall we begin?

“If I had to reduce all of educational psychology to just one principle, I would say this: The most important single factor influencing learning is what the learner already knows. Ascertain this and teach accordingly.” David Ausubel, a leader in educational psychology, suggested this in 1968. It’s good advice. So let’s focus on three questions all anchored in the **Imagination Phase**: Where have we been? Where are we now? Where shall we go?

We understand that “what the learner already knows” is influenced by apparent knowledge (correct and incorrect facts) and habits of thought (the not-always-apparent influencers of how we synthesize our knowledge and experience). And while it’s true that learners can learn without assistance, teachers can have a profound influence on the outcomes. The TEACHER’S habits of thought can influence the LEARNERS outcomes. It’s easy to be fooled by the illusion that teachers must TEACH in order for learners to learn. The art of teaching is only one way to influence learners. Consider this story.

The Spanish farmer Eduardo Sousa proudly produces foie gras. You may know it as goose liver pate. Then again, you may have never heard of it before. It’s against the law to produce this in many parts of the world using the traditional method known as “la gavage.”

“La gavage” is at the heart of this story. In a way, it’s at the heart of our educational system too, but I’m getting ahead of myself.

Sousa produces foie gras of such high quality that he once won a prestigious award in a French foie gras competition. The French committee didn’t like it – not only was he a Spaniard, but he hadn’t used “la gavage”. “La gavage” has

become so basic to foie gras production that the French pre-figured without the practice the product couldn’t be possible. Eduardo was disqualified.

What is “la gavage?” Force-fed through a funnel, the geese grow livers three times natural size. Remove the funnel then place a ring on the beak to insure the goose doesn’t regurgitate its meal. It’s extreme force-feeding.

As Sousa says, “I just provide the geese what they need.” Figs, olives, and other produce grow on his farm. The geese eat as much as they want. Sousa doesn’t even try to feed the geese. Instead, he provides them a safe place to live and eat. They are motivated to eat and eat and eat without force-feeding. He doesn’t force them to live there either. They choose to stay. And they even call to migrating geese above who occasionally circle and land...to stay.

The entire story is true! The metaphor is powerful – farmer is teacher, goose is learner, eating is learning, and liver size is amount of learning that occurs. “La gavage” teaching? I think not.

Learning-as-exploration is another powerful metaphor. We use maps to explore new terrain. Seasoned explorers know the importance of answering three questions with their maps: Where have we been? Where are we now? Where shall we go? (Aha! There are those questions again.)



Teachers help learners explore their apparent knowledge and habits of thought and then discover answers to the first two questions by using effective assessment techniques. The **Imagination Phase** is all about making action plans. Those plans are influenced by apparent knowledge and habits of thought. Once the first two questions are answered, the third question comes to the fore – “Where shall we go?” It’s then time to simply provide the learners what they need – clear, meaningful goals connected to their current understanding.

Some example assessments you may see at Wolf Ridge include:

Directed Paraphrasing – Learners describe concepts using language that might be more appropriate for a young child, a parent, grandparent, or professional in the field. Explaining anything to others increases personal learning. Listening to language different from

what was used by the teacher helps clarify and expand potential understanding. Learning from peers is a powerful routine any time.

Metaphor Analysis – Presented verbal or visual metaphors, learners consider strengths and weaknesses inherent in the metaphor. While analyzing and comparing to reality they can point out flaws, inaccuracies, limitations, or discrepancies in the representation. While teachers can learn about their depth of understanding, the students slowly become teachers.

Paint the Picture – Learners are charged to illustrate a concept with or without a few words. This is a valuable routine for anyone. Visual thinkers thrive with this activity.

Mind Mapping – Learners begin with simple ideas or descriptive words and then visually represent links to related information. Mapping relationships helps students to see connections as they explore and expand upon their understanding. Teachers can also see themes of understandings and misunderstandings.

As with these four examples, dozens

of other assessment routines can be adapted and modified to discover apparent knowledge and habits of thought. Teachers can modify plans as necessary. Maybe more importantly, learners will explore their own apparent knowledge and habits of thought as they respond together to the challenges.

First help learners discover what they think they know and how they think about it (where have we been and where are we now?). Then clearly establish class goals (where shall we go?). These are some of the first keystone habits powerful teachers employ as they practice their art. They are the first steps to take when acting on the nature of learning. ♦



Powerful assessment routines provide information valuable to teachers and students. Everybody benefits.

WOLF RIDGE ENVIRONMENTAL LEARNING CENTER **CALENDAR 2016**



PAUL SUNDBERG

The 2016 Wolf Ridge calendar features the photography of Paul Sundberg. For 28 years, Paul worked as the manager of Gooseberry Falls State Park before retiring. From his home in the Grand Marais, MN area, Paul continues to pursue his passion for photographing the North Shore, Lake Superior, and the Boundary Waters Canoe Area Wilderness. He has been taking photos since the early 1970’s. You can see more of Paul’s work on his website, PaulSundbergPhotography.com. Calendars will be available in late spring 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. ♦

PROGRAMS

ADULTS

Phenology Adventures with Jim Gilbert

April 24-26, June 26-27, Oct. 2-4, Dec. TDB

Fee: \$325

Explore Wolf Ridge and Grand Marais through the seasons with Jim Gilbert, one of Minnesota's foremost naturalists. Return each new season for new adventures, explorations, and stories unfolding before your eyes. Wolf Ridge is partnering with North House Folk School for this class.



Leave No Trace Master Educator Course

May 27-31 **Fee: \$450**

This is the highest level of education training in NOLS/LNT training. One of the only courses offered in the Midwest, coursework focuses on how to teach others about ethical camping and outdoor recreation practices. Graduates are certified to offer and teach LNT Awareness Workshops and Trainer Courses. A great opportunity for outdoor professionals, scout leaders and anyone interested in teaching outdoor ethics. See nols.edu/lnt for more details.

Adv. & Beg. Bird Banding Courses

Adv June 15-19, Beg June 21-28

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 aging skills using the *Identification Guide to North American Birds* by Peter Pyle.

Fall Raptor Banding Weekend

October 8-11

Fee: \$355

Wolf Ridge sits high above Lake Superior, a natural flyway for the fall raptor migration. Learn field techniques in migration monitoring including banding owls, identifying and counting diurnal raptors.

YOUTH



Summer Sampler: (2nd-5th gr) June 24-27, Aug 19-22: \$352

Discoverers: (4th-5thgr) June 21-27, July 12-18, July 19-25, July 26-Aug 1, Aug 2-8, Aug 9-15, Aug 16-22: \$552

Voyagers: (6th-7thgr) June 21-27, July 12-18, July 19-25, July 26-Aug 1, Aug 2-8, Aug 9-15, Aug 16-22: \$552

Adventurers: (8th-9thgr) July 19-25, July 26-Aug 1, Aug 2-8, Aug 9-15: \$567

Day Camp: (1st-7thgr) June 22-26: \$177

Voyagers 2-wk Ultimate Survival: (6th-7thgr) Aug 9-22: \$1200

NEW

Angling to Archery: (6th-7thgr) Aug 16-22: \$602

Camp Fish: (7th-8thgr) July 12-18: \$602

NEW

Camp Rock Climbing: (8th-9thgr) Aug 9-15: \$602

Ecology Credit Camp: (10th-12thgr) July 12-Aug 8: \$2000

BWCAW Canoe: (7th-8thgr) July 5-11, Aug 16-22: \$572

Sailing Lake Superior: (7th-8thgr) July 12-18: \$800

NEW

Counselor-in-Training: (10th-12thgr) Aug 2-15: \$1200

Adventurers 2-wk BWCAW Canoe: (8th-9thgr) July 12-25: \$1278

Adventurers 2-wk Isle Royale Backpack: (8th-9thgr) July 26-Aug 8: \$1278

Apostle Islands Kayak: (9th-10thgr) July 26-Aug 1: \$668

Isle Royale Kayak Expedition: (10th-12thgr) June 28-July 11: \$1400

NEW

Jr. Naturalists 2-wk Quetico Canoe: (10th-12thgr) July 19-Aug 1: \$1343

Jr. Naturalists 2-wk Apostle Islands Kayak: (10th-12thgr) Aug 2-15: \$1343





ALL AGES

Open House: June 13, 2015 9:00-4:00 **Free**

Bird Banding Drop-in days: June 3, 17, & 24, July 8, 15, & 22, & August 5 7:00-11:00am **Free**

Family & Group Wilderness Trips: Call for ages, dates, & prices

Summer Family Camp: (all ages) July 26-Aug 1, Aug 2-8: \$390 5yrs-adult, \$195 2-4yrs, 1& under free

Road Scholar Intergenerational: (8-12yrs) July 5-10, July 19-24, Aug 9-14: Starting at \$579.

Register by calling Road Scholar at 1-800-454-5768.

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

Program Title _____
 Program Dates _____
 Name _____ M / F
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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

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IN THIS ISSUE

*Investigating Northwoods
Mammals* 1 & 4



*View
from the
Ridge* 2 & 3

*Wolf Ridge
Staff Update* 3



Wolf Ridge Dissected 4

*Nature Note:
Minnesota Moose* 5



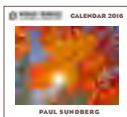
*Profile:
Terry McLaughlin
& Vern Gersh* 6



Wolf Ridge News Briefs 7

*On the Nature of
Learning* 8 & 9

*2016
Wolf Ridge
Calendar* 9



*Upcoming
Programs* 10 & 11



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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.