



the Meadowlark

A PUBLICATION FROM THE BELWIN CONSERVANCY

FALL 2016 / WINTER 2017

Inside This Issue

- Director's Message 2
- Children In Nature 3
- Arts Initiatives 4
- Unveiling an Endangered Ecosystem 4
- Research Roundup 5
- Calendar of Upcoming Events . . . 6
- Members and Supporters. 7
- Research Roundup (continued) . . 8



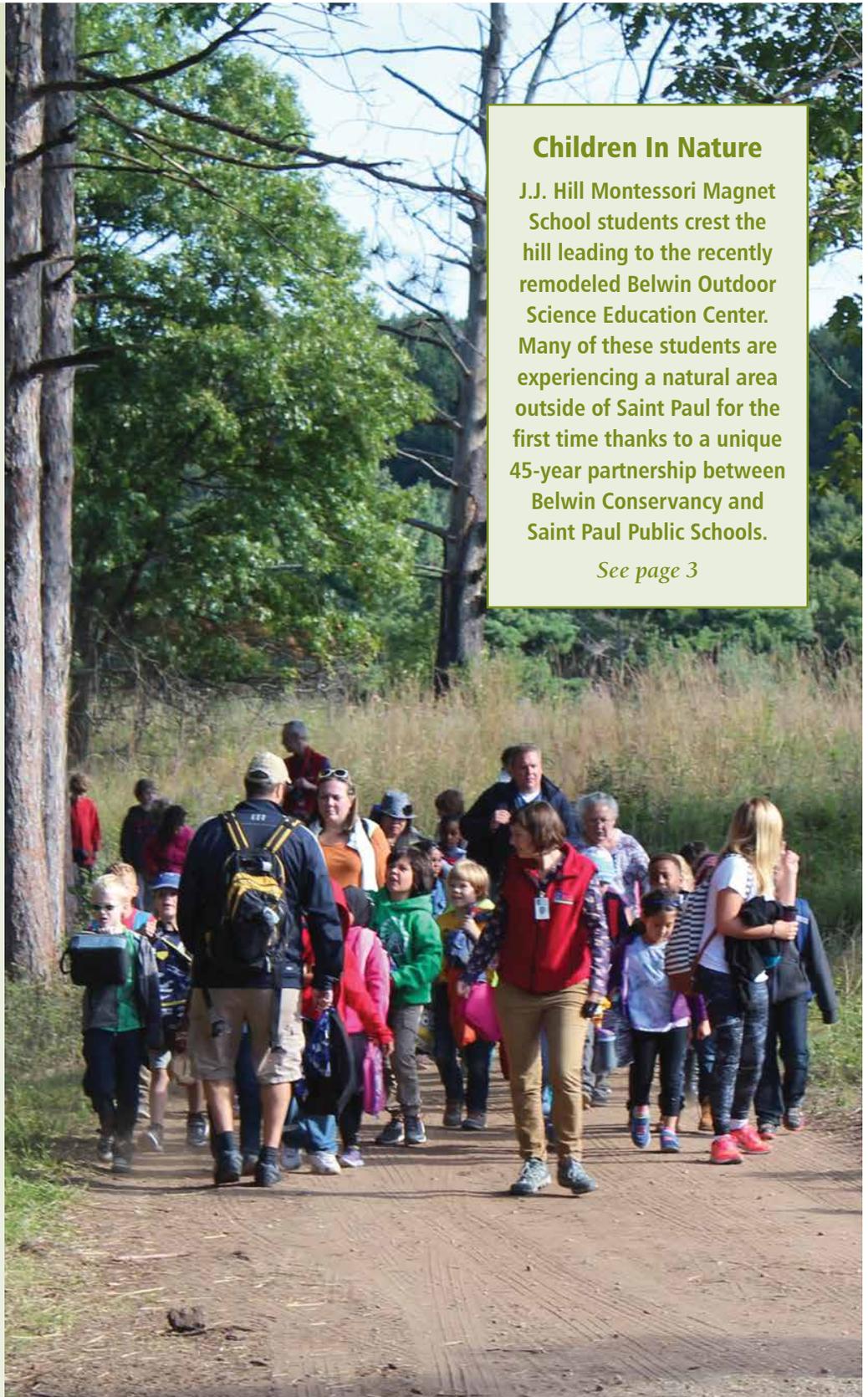
●

After a five-year hiatus, two juvenile Red-headed Woodpeckers were spotted this fall across the street from the Bison Observation Tower parking lot! Juvenile markings include white inner wing patches and white underbelly; adults have the characteristic red head, as seen in this photo.

Read more about this endangered species and its habitat needs on page 4.



BELWIN CONSERVANCY
Inspiring through Nature



Children In Nature

J.J. Hill Montessori Magnet School students crest the hill leading to the recently remodeled Belwin Outdoor Science Education Center. Many of these students are experiencing a natural area outside of Saint Paul for the first time thanks to a unique 45-year partnership between Belwin Conservancy and Saint Paul Public Schools.

See page 3



More Than Expected



45 YEARS AGO, the Bell family put an idea in motion that is going strong today: Learn about the natural environment by being in the natural environment.

Good ideas almost always sound simple. For example, putting a person on the moon. That idea started with a focus on science. NASA, Boeing, Unisys, Honeywell, 3M and hundreds of other companies focused on the technology needed to actualize a module travelling 240,000 miles (one way!), carrying a flag, a time capsule and three astronauts. We had a president who wanted to be first to land humans on this reflecting light source we see in the sky.

A whole generation got fired up by newly emerging ideas. Science was exciting! Things were happening! We were trying to send people to the moon and that could only happen with an intense focus on science and an immense encouragement of curiosity. From that one initiative came more questions – What is out there? What can we learn? – and more discoveries.

The Belwin Outdoor Science program asks the same questions albeit from a Minnesota location – what is out there and how can students learn credible science while exploring the 225 acres of land we have dedicated to this program? *(Read more on page 3.)*

Questions lead us on journeys. Journeys take us to new places.

Look closely enough and you will see things differently.

The other week I was listening to an audio book where one of the lead characters was talking about how he could see emotion represented by color. Anger was a turquoise blue. That character took the listener/reader on a journey about the nature of all things with a premise that nature shows us. Look closely enough and you will see things differently.

That describes perfectly what Belwin is all about. We are preserving oak savanna, tallgrass prairie, woodlands, wetlands, uplands, lowlands, forest and streams as a way of showing all of us what these systems are all about. The solar structure at the Lucy Winton Bell Athletic Fields shows visitors

how a tree works (exactly how the solar panels function). Bison at Croixview Prairies show how prairies were managed historically. Annual burns are performed to show the role of fire in managing land. We attempt to control invasives to demonstrate how it can be done.

What really matters though, is the experience of doing. Paraphrasing what our board president David Hartwell says, the car doesn't get fixed by reading how to fix it; it only gets fixed when you get in there and do the actual work of fixing.

My friend Danette Olsen shared a quote by Senegalese environmentalist Baba Dioum, which I think sums up our work perfectly: "In the end, we will conserve only what we love; we will love only what we understand; we will understand only what we experience or are taught."

At Belwin, we are doing all of this and more. And we'd love to have you join us!

Nancy Kafka
Executive Director, Belwin Conservancy
(651) 436-5189
nancy.kafka@belwin.org



Dr. John Thein (left), Saint Paul Public Schools interim superintendent, David Hartwell, Belwin Conservancy board president, and students from J.J. Hill Montessori Magnet School commemorate the completion of the exterior remodel to Belwin Outdoor Science's Education Center with a ribbon cutting. The cost of the remodel was generously funded by Belwin members, the Donald Weesner Foundation and a matching grant from the James Ford Bell Foundation.

Children in Nature

As the partnership between Saint Paul Public Schools and Belwin Conservancy enters its 45th year, we reflect on the unique program and highlight its importance in the age of “nature deficit disorder.”

“The human child in nature may well be the most important indicator species of future sustainability.”

—Richard Louv, author of *Last Child in the Woods*



THE YEAR WAS 1970 and issues facing conservationists then were strikingly similar to what we face today: over-development of ecologically important land and children spending less time in the outdoors.

It was at this time that Charles Bell and Lucy Winton Bell found themselves in a unique position to do something to help address those challenges. They had recently acquired more than 200 acres of land in Afton and were looking for a partner with whom to bring outdoor education to children.

When Charlie learned that leaders from Saint Paul Public Schools (SPPS) were looking for an East Metro location for an outdoor education laboratory, the parties came

together and formed Belwin Outdoor Science, a program that is still in effect today. Belwin manages 225 acres of land, 6 miles of trail, facilities and roads; SPPS sets the curriculum, manages the staff and transports the students.

The outdoor learning environment

What Charlie and Lucy knew, in the 1970s, is something that many people today are just coming to appreciate: that children need time immersed in nature to fully understand the interconnectedness of the world, and that the time is beneficial to overall health and well-being.

In his 2006 book, *Last Child in the Woods*, Richard Louv explored the connection

between the time children spend outdoors and the rise in the rates of childhood obesity, attention disorders and depression, calling it “nature deficit disorder.”

“At the very moment that the bond is breaking between the young and the natural world, a growing body of research links our mental, physical, and spiritual health directly to our association with nature – in positive ways,” said Louv.

Long-term investment

Belwin Outdoor Science gives every third- and fifth-grader in SPPS a day spent out of doors, connecting with a unique natural environment less than 30 minutes from home. The SPPS program is based on Minnesota Science Standards and specializes in life science and nature of science standards.

Belwin’s commitment to the SPPS program remains strong. It recently completed phase one of a multi-phase project to remodel the Education Center, at a cost of more than \$60,000. The next phases of investment in Belwin Outdoor Science include a new lower classroom (the original was brought to the site in the 1980s), and maintaining the partnership with SPPS.

“While it’s been 45 years, the partnership has remained strong because both parties respect the unique qualities that each brings to the table. The school system has the expertise to run an educational program, Belwin manages the property,” says David Hartwell, Belwin Conservancy board president and grandson of Charles Bell and Lucy Winton Bell. “We’re delighted the school system uses the land and sees value in it.”

Read a complete version of this article online at www.belwin.org.

A Program that Gets Results

- 1971** Belwin Outdoor Science Laboratory opened
- 500K+** Number of children in the program since its inception
- 10K** Children who attend each year
- 13** Life science and nature of science classes offered (unique, tailored classes are written at teacher’s request)
- 10%** Increase in science contact time for SPPS elementary students

The Screen-Time Effect

- 1 in 3 children in the U.S. are obese
- The U.S. is the largest consumer of ADHD medications in the world
- 1 hour of TV viewing by school-age kids = 167 additional calories
- 56% of at-risk youth reported never having spent time in a natural setting

When children do get outside, the results in the classroom are astounding:

- 27% increase in measured mastery of science concepts
- Gains in positive environmental behaviors
- Gains in problem-solving, motivation to learn and classroom behavior

An Investment in Our Future

\$60K

Cost of 2016 Phase 1 Education Center remodel.

Sources

- *Last Child in the Woods*, Richard Louv. (<http://richardlouv.com/books/last-child/excerpt/>)
- “The School of Nature: Greening Our Schools May Be The Real Cutting Edge of Education” (<http://richardlouv.com/blog/the-school-of-nature-greening-our-schools-may-be-the-real-cutting-edge-of-e/>)
- American Institutes for Research “Effects of Outdoor Education Programs for Children in California”
- Screen-Time Reduction Toolkit for Childcare Providers, www.michigan.gov
- www.nwf.org/What-We-Do/Kids-and-Nature/Why-Get-Kids-Outside/Health-Benefits.aspx
- <http://childmind.org/article/why-kids-need-to-spend-time-in-nature/>

Arts Initiatives

Reflecting on a year of inspiring programs

By Susan Haugh, Belwin Program Manager

NATURE IS ART – color, sound, shape, movement – which humans use to make their art. So how can we use art to inspire humans to see, hear and feel nature? Using both visual and performing arts on Belwin's incredible land, we want to immerse our visitors in nature; we want to thrill and challenge them as they discover the story of the land and her species in new and creative ways.

With this in mind, we invited our first two Artists in Residence to spend three months visiting and exploring Belwin.

Laurie Allmann, poet and environmental writer, led a group writing workshop that walked the newly restored Lake Edith Oak Savanna property, exploring its wetlands, open water stream and oak savanna via microscope, binoculars and the naked eye to focus on visual impressions of the land. In September, Allmann presented her final work of poetry, *Savanna Spring*, at Chilkoot Cafe in Stillwater.

Steve Heitzeg, environmental composer, led a silent walk near the Belwin Outdoor Science education center and encouraged participants to begin a listening journal.

At Belwin Conservancy's Night in Nature program, Heitzeg presented *Ecosongs I: Marshland Mix*, which he composed for and dedicated to Belwin. We look forward to hearing this new work at an event in the coming year.

Our fall/winter resident is Tamsie Ringler, an internationally commissioned installation artist and sculptor. Her most recent projects explore our relationship with land and the environmental impact of our hunger for natural resources. Ringler's accompanying workshop will be announced in the Upcoming Events section of www.belwin.org.

The Phipps Center for the Arts

Belwin partnered again with **The Phipps**, focusing this year on the families that use the Lucy Winton Bell Athletic Fields. A grant from the St. Croix Valley Arts Initiative sponsored five artists who worked with Belwin restoration assistant/naturalist **Lynette Anderson** to create Pop-Up Art Discovery Kits. More than 300 youth participated, creating scientifically relevant art with an environmental message. Phipps photography instructor Deanna Grigus also engaged a group of youth in photographing the area around the Lucy Winton Bell ball fields.



Ecosongs 1: Marshland Mix includes a recording of sandhill cranes made by Steve Heitzeg at Belwin last May.

Unveiling an Endangered Ecosystem

Members explore the Lake Edith Oak Savanna at July premiere



ON A WARM SUMMER EVENING, a crowd of about 75 Belwin members attended the Lake Edith Oak Savanna premiere, eager to explore trails and view the well-known but seldom-seen Lake Edith.

Belwin Conservancy staff were equally eager to show off the 233-acre property, which they and volunteers have spent the past eight years clearing of invasive species like buckthorn.

Between 2002 and 2010, Belwin Conservancy acquired land from Barton Sand and Gravel, the Science Museum of Minnesota and the estate of George and Mary Metcalf, at a cost of more than \$1.5 million. The restored Lake Edith property is one of the largest oak savannas in Minnesota.

Lynette Anderson, Belwin Conservancy restoration assistant/naturalist and frequent bird hike guide, spotted a juvenile Red-headed Woodpecker on the property in 2011 and a juvenile pair this September.

Today, less than 0.01% of original oak savanna remains.

This is a species that has been in decline by 60 percent over the past 50 years, but restored oak savanna could be one key to the birds' comeback. "We are hoping the Red-headed Woodpecker will come here and call this place home," she said. "They like very specific types of oak savanna and we think they'll like ours!"

Belwin and its members and partners have put more than \$200,000 toward restoration work so far, clearing buckthorn and other invasives. And that work is paying off, with Henslow's sparrow, lark sparrow, sedge wren, indigo bunting and eastern kingbird spotted on the Lake Edith property. These are among the largest declining bird populations in North America, not just in Minnesota.

While research on oak savannas and their importance to bird populations and other endangered species is still being conducted, one fact is certain: the Lake Edith property will require continuous maintenance to ensure invasive plants are controlled and the oak savanna remains as it was, pre-settlement. That's why long-term membership support is so critical to Belwin Conservancy's work.

Read more about the Lake Edith Oak Savanna at www.belwin.org



University of Minnesota bee researchers report their Summer 2016 findings

Counting the Bees

Bee Lab Technician Joel Gardner has spent two years researching at Belwin Conservancy, with a goal of determining the species and number of bees living in the Belwin Conservancy, the St. Paul/Baldwin Plains and Moraines eco-region, and the state of Minnesota. This past summer, Gardner, PhD candidate Elaine Evans, undergraduate assistant Michelle Vohs and others on his team took eight collecting trips to the property and looked for high-quality flower patches with abundant bees.

“The most exciting finds of the year were two individuals of *Bombus affinis*, the rusty-patched bumblebee, which is considered a species in greatest conservation need,” says Gardner. One *B. affinis* worker was found in Kettelkamp Prairie on July 12, visiting *Verbena stricta*. The other was found on the roadside east of the main office on August 9, visiting *Agastache foeniculum*. The bees were marked, recorded and released (collection was not necessary).

B. affinis was once one of the most common bumblebee species in the eastern U.S., but

suffered a sudden decline in the 1990s and is now seldom seen. Recent sightings in the area suggest that the population may be stabilizing. Whether *B. affinis* will ever regain its former range and abundance is uncertain.

“In order to best complete our research objective, we plan to use the University of Minnesota Insect Collection’s several 70- to 80-year-old bee specimens from the Saint Croix Valley region as a frame of reference for which bee species used to be common and which ones might be of the most conservation concern now,” Gardner says.

“The partnership with the Belwin Conservancy is a very valuable asset for this,” he continued, “as it gives us access to the largest swath of native or restored prairie land in the Saint Croix Valley, similar to what the land might have looked like 70-80 years ago. And if future researchers want to conduct more surveys to compare with our results, they will be able to work in the exact same place.”

– Continue reading “Research Roundup” on page 8.

Editor’s Note

Belwin supports University of Minnesota bee research by providing year-over-year land and facility use.



Bombus affinis – found at Belwin last summer – is a bumblebee species considered in greatest conservation need.

A Night in Nature

Annual event welcomes new and old friends to Belwin

As the sun went down on a clear September evening, 175 Belwin Conservancy members and their guests walked into the Belwin Outdoor Science Education Center, pausing to be welcomed by Belwin staff under the Center’s new gabled roof.



The annual Night in Nature event has grown to include more attendees each subsequent year that it has been held, attracting everyone from Afton residents who have never visited the property to friends from Minneapolis and Saint Paul to others in communities along the Saint Croix River.

As a way of introduction to Belwin, it’s unparalleled in making a lasting impression. Guests noshed on small bites and beverages donated from local vendors, and gathered behind the Education Center as the setting sun washed the hillside in its warm late-summer light.

Nancy Kafka, Belwin Conservancy Executive Director, introduced the Belwin team and praised each person for their contributions to the organization. Then it was Artist in Residence Steve Heitzeg’s turn to speak, as he presented Belwin with an ecoscore that was inspired by his three-month residency last summer. Naturalist Lynette Anderson wrapped up the remarks by expressing her gratitude for Belwin in preserving important lands and the species that call these places home.

Guests explored the trails near the Center, bid on silent auction items, met Belwin staff and climbed the observation tower to watch the nearly full Harvest Moon rise. It was a memorable evening and an important event as Belwin works to connect more people with our natural world. Thank you to everyone who attended, contributed and became members. Welcome to the Belwin family!

Maximize Your Giving on November 17

Thinking about making a gift to Belwin? Thank you! Want to double your gift without any extra effort? Participate in Give to the Max day on November 17!

GiveMN connects people with nonprofit organizations working to make Minnesota an even better place to live, work and play. Last year, 62,000 donors raised \$18 million on Give to the Max day for Minnesota schools and nonprofits.

As one of the biggest giving days of the year approaches, please keep us in mind! Any donations or memberships to Belwin made between November 1 and November 17 will help us earn a generous matching grant.



What	Give to the Max event
When	November 1–17, 2016
How	Go to www.givemn.org/organization/Belwin-Conservancy and make a donation.
Why	Your donation will be matched, doubling your impact and helping us further our mission of <i>Inspiring through Nature!</i>
Follow the movement #GTMD16	

CALENDAR OF EVENTS

2016 Events

October 29: Stargazing with MAS
7:00 p.m. – 9:00 p.m.
An experienced Minnesota Astronomical Society (MAS) member will help us explore the cosmos at the Joseph J. Casby Observatory (located at Education Center). In the event of overcast conditions, event will be cancelled.

November 12: Renew Yourself
9:00 a.m. – 12:00 p.m.
Yoga and nature walk with Lynette Anderson. RSVP required.

November 19: Open Third Saturday
11:00 a.m. – 1:00 p.m.
Joseph J. Casby Observatory (located at Education Center) open for viewing the sun.

11:00 a.m. – 3:00 p.m.
Trails open at Education Center.
Hot drinks available.

December 17: Open Third Saturday
11:00 a.m. – 3:00 p.m.
Trails open at Education Center.
Hot drinks available.

December 20: Solstice Celebration
7:00 p.m. – 9:00 p.m.; 7:45 p.m. program
Bonfire, local food and libations, night hikes and more.

About Open Third Saturdays
Trails open 11:00 a.m. – 3:00 p.m. at Education Center.
Participate in programs, meet Belwin staff, explore the trails, and connect with nature.

2017 Events

January 20: Owl Prowl
7:00 p.m. – 9:00 p.m.
RSVP required.

January 21: Open Third Saturday
11:00 a.m. – 3:00 p.m.
Trails open at Education Center.
Hot drinks available.
7:00 p.m. – 9:00 p.m.
Owl Prowl. RSVP required.

February 18: Open Third Saturday
11:00 a.m. – 3:00 p.m.
Trails open at Education Center.
Hot drinks, desserts and s'mores.
All are welcome.

6:00 p.m. – 9:00 p.m.
Open house, bonfire and sky viewing.

March 18: Open Third Saturday
11:00 a.m. – 3:00 p.m.
Trails open at Education Center.
Master Gardener workshop.
Hot drinks available.

April 11: Sunset Hike Series – Stagecoach Prairie Natural Area
6:00 p.m. – 7:30 p.m.

April 15: Open Third Saturday
7:00 a.m. – 9:00 a.m.
Early morning bird hike. RSVP required.
11:00 a.m. – 3:00 p.m.
Trails open at Education Center.

April 25: Frog and Woodcock Walk
7:00 p.m. – 8:30 p.m.
RSVP required.

April 29: Invasive Species Workshop
9:00 a.m. – 12:00 p.m.
All are welcome.

All Belwin members are invited to participate for free in any of the events listed. Some events require pre-registration or have limited space. Check website for most up-to-date information.

Visit www.belwin.org/events for the complete list of events and to register.

Stay connected with Belwin online!





MEMBERS AND SUPPORTERS

Thank you!

TO EVERYONE who became members of the Belwin Conservancy or made contributions so far this year, thank you!

Your support ensures that 10,000 students each year have the opportunity to study science in a beautiful and inspiring natural environment, and helps us to preserve, restore and maintain nearly 1,400 acres of ecologically important land in the Saint Croix Valley.

Individual Donors

Maureen Acosta & John Milton
 Viki Ailport
 Bruce Albrecht
 Gary Albrigtson
 Jerry & Georgiana Allan
 Ines Alonso & Clayton Lindsey
 Dennis Amoth
 Craig Anderson in honor of students and staff at Battle Creek Elementary School
 Penny Anderson
 Anonymous
 Nick Arth
 Heinrich Bantli
 Douglas & Rene Barclay
 Jacob Behm
 Johanna Bell
 Edwin & Tracie Bernard
 Mrs. & Mr. G. C. Bird
 Debra Brantingham
 Jeanne Brausen
 Karen Buggs
 Alberta Burns
 Robert & Susan Burns
 Earl Bye
 Gary Caldwell
 Lori Callahan in memory of Jerry J. Colburn
 Bonnie & Tom Carroll
 Sue Casement
 Derik Casper & Amanda West
 Jeanne Caturia
 Julia & Christopher Charlsen
 Danley & Dianne Christensen
 Cara Clark
 Carol Clark
 Eileen & Gary Clason
 Rose Collova Bussjaeger
 Ann Conzemius
 Jim Cox
 Pat & Steve Cox
 Mary Croft
 John & Lou Cunico
 Barbara Dacy & Jodie Belknap
 Susan & James Davis
 David & Diana Dawkins
 Kathleen Delaney
 Ann Dieperink
 Marianne Diericks
 Katie & Branko Djurich
 John & Bev Dochniak
 Kevin & Minda Donahue
 Joseph & Lois Duffy
 Kristin Dykstra Thompson
 Rebecca Enos & Patricia Walker
 Georgia Entenza
 Renee & Duane Fearing
 Peter & Colleen Findlay

Marion Finegan
 David Fortney
 Caroline & Dutton Foster
 Eric Foster & Daniela Bell
 Robert French
 Lynn Gallandat
 Pat Gannon
 Rick Gardner & Susan Taylor
 Roger Gay
 Cathy Geist & Carol Schoenecker
 Anna Gerenday & Ann Fallon

Lindsay Halleckson
 Shari & Tom Hamilton
 Karen & Craig Hansen
 Greg & Colleen Hayne
 Michael Jones & Elizabeth Heegaard
 Steve Heitzeg & Gwen Pappas
 Melanie Henricksen
 Paul Herzog
 Susan & Charles Hipp
 Greg & Diana Hipple
 Christy & Douglas Hlavacek

Sherwood Johnston & Laurie Maher
 Susan Johnson
 Thomas & Connie Johnson
 Andrew Jones
 Michael Jones
 Tim Jopek
 Dr. Arthur & Martha Kaemmer
 Nancy Kafka
 Heidi Kassenborg
 John Kaul & Gloria Gunville
 Kathleen Kelley
 Kathryn Kent
 Cindy Kinde
 George & Julie Kinney
 Renee Kinney & Christine Marier
 Bradley & Joanne Kletscher
 Jennifer & Derek Knox
 Erin Kohn
 Jill & Chuck Koosmann
 Mary & Chris Kristensen
 Jill Krueger
 Valerie Kubal
 Barbara Kuzmak & Lawrence VanLieshout
 Betsy & Douglas Lake
 Russell Lake
 Tadd Landry
 LeeAnn Landstrom
 Richard & Linda Law
 Charles & Hope Lea
 Ann Ledy
 Vickie & Richard Lemancykafka
 Erica Lepp & Wiley Buck
 Jeanne & Mitch Leppicello
 Sarah Lilja
 Richard Loe
 Bill & Maureen Lundquist
 Laurel March
 Anita Martin & Paul Sinclair
 Sheila Maybanks & Jerry Doherty
 Nadine & Stew McKenna
 Beth McLaughlin
 Jill McLean Odegaard in honor of Barbara Heitzeg
 Dick & Karen McMullen
 Donna McNamara
 Joan & Rick Meierotto
 Alida Messinger
 Lavonne Michaud
 Bruce Miller
 Mary Miller
 Roger Miller
 Sharon Miyamoto & Tom Reiter
 Lori Moilanen
 Rebecca Montgomery
 Rebecca Morris
 David & Sharon Mrozinski
 Alice & Stan Musiak

Tony Mutter
 Dennis Nelson
 Mr. & Mrs. Richard Newmark
 Colleen Niebuhr
 George Niehaus
 Daniel O'Neill & Nancy Etwiler
 Mitsi O'Neill
 Randy Okan & Dennis Kearney
 Beth Olfelt-Nelson & Jon Nelson
 Danette Olsen & Bill McCarthy
 Debbie & Richard Palmen
 Heidi & Chris Parton
 Annie & Mary Perkins
 Mike Perry
 David Peterson
 Debbykay & Steve Peterson in celebration of 38 years of marriage
 Rebekah Peterson
 Kristy & Bill Petrich
 Susan & Donald Place
 John Pundsack & Joe Briol
 Patrick & Lori Rafferty
 Kate & Paul Rasmusson
 Deena & Steve Reisman
 Todd & Anne Ringgenberg
 Donald Ringrose
 Timothy & Diane Rivas
 Lucy Rogers & Larry Grant
 Will & Deborah Rogers
 Stan & Laurel Ross
 Darcy Rowe & Char Greenwald
 Jim Rue & Susan Nelson
 Bob & Matilda Rupp
 Heather & Andrew Rutledge
 Kathy & Ted Saltzman
 Tom Schmidt
 Nicholas & Karen Schmit
 Sherrill & Paul Schottler
 Dan & Sue Schultz
 Kay Scow
 Kate & Greg Seitz
 Julian Sellers
 Beth & John Sevenich
 Anne Simpson
 Connie & Charles Simpson
 Dick & Ella Slade
 Erin & Steve Smillie
 Chris Smith
 Jeremy & Melissa Snell
 Robert Snyder

Susan St. John
 LeaAnn Stagg
 James Stahnke
 Susan Stanton
 Tom & Patty Steback
 Sue Steinwall
 The Steury Family
 Jean Stewart
 Carol Stiteler
 Court Storey & Pam Neary
 Susan Strand Penman & Roger Penman
 Jerome Stransky
 Kristen Suro
 Lori Swanson & Daniel Anderson
 Jill Tammen & Dave Long
 Rita & David Thofern
 Jason Thompson
 Lisa Thompson
 John Thoresen
 Hal Tiffany
 Kelleen Tope & Luke Edward Thoreson
 Lonnie Turner
 Bill Tyra
 Jean Marie & Peter Ulland
 Gail & Bob Ulrick
 Michelle Vaillancourt
 Kevin Vang
 Caroline Vernon & Bruce Holcomb
 Dave Vinz
 Joanna Vinz
 Dana Vogen
 John & Sue VonDeLinde
 Doris Wambach
 Tina Wanner
 Laurie Waterman
 Colleen Watson & Mary McDougall
 Laura Weber
 Kristin Wermus
 Darald & Patti Wieneke
 Grant & Carol Wiessner
 Mary & Thomas Wihren
 Paul & Joann Wolner
 Dana & John C Wood
 Lucia & Jen Wroblewski
 David Zanussi & Susan Winsor
 Brian Zeller
 Jeanne & Jeff Zlonis



Volunteers from Urban Roots pulled thousands of invasive Spotted Knapweed plants last summer.

Many Hands Make Light Work

Hundreds of volunteers each year donate their time to Belwin Conservancy, doing everything from restoration work and trail maintenance to bird surveys and rare-plant monitoring. Thank you to everyone who volunteered their time at Belwin this year – your contributions make a difference and are appreciated!

Mary Beth Gilmore
 Cynthia & John Gilpin
 Sharon Glasrud
 Elizabeth Gordon
 Randy & Kathy Graham
 Susan Green & Armand Cohen
 Deanna Grigus
 Maria Guion
 Howard Guthmann
 Georgia Haft
 Theodore & Noelle Haland

Phil Holladay
 Beth Honetschlager
 Philip Hoversten
 Martha Huizenga
 Joe Hunt
 Jeffrey Jeanetta-Wark
 Joel & Laura Jensen
 John Jensen & Sheila Thomas
 Lynne Johnson
 Sarah Johnson & Jill Dawe
 Sheila & Ron Johnson

Companies, Foundations & Organizations

Afton Old Bank
 Arts Midwest
 Baillon Family Foundation
 Carpenter Nature Center
 David Winton Bell Foundation
 First State Bank and Trust
 Holz Real Estate Group
 Hugh J. Andersen Foundation
 Lumberyard Pub
 Mantyla Well Drilling, Inc

Native Sun Seeds and Plants, LLC
 Navigator Search Advisors, LLC
 Open Door Foundation
 Prairie Restorations, Inc.
 Salesforce
 St. Croix Valley Bird Club
 St. Croix Valley Foundation (Valley Arts Initiative Grant)
 Tropical Wings, Inc.
 Wilde Cafe & Spirits

In-Kind Donations

Jerry Allen
 Bauhaus Brew Labs
 Café Latte
 Flat Earth Brewing
 Great Harvest Bread Co.

NorthStar Bison
 Pitchfork Brewing
 Squire House Gardens
 The Wedge & Wheel
 Vera Ming Wong



BELWIN CONSERVANCY

1553 Stagecoach Trail South
Afton, Minnesota 55001-9703
P: (651) 436-5189 F: (651) 436-2899
www.belwin.org

Non-Profit Org.
U.S. Postage
PAID
Afton, MN
Permit No. 2

Inspiring through Nature

The mission of the Belwin Conservancy is inspiring our connection to the natural world.



RESEARCH ROUNDUP – continued from page 5

Watching the Waggle Dancers

In 2015, PhD Student Morgan Carr-Markel, undergraduate researcher Cora Demler, research assistant Phoebe Koenig and other researchers started videotaping waggle dance communications between honey bee foragers in glass-walled observation hives at Belwin. They finished at the end of June this year. Their goal is to answer questions about how honey bees forage in and around prairies.

“Honey bee foragers only use the waggle dance to advertise high-quality patches of flowers, so their dances can indicate whether they prefer flower patches within prairies,” Carr-Markel says. “The recordings give us a snapshot of the communications going on in the colonies.”

The team also caught honey bee waggle dancers with pollen on their back legs, chilled those bees, took their pollen loads and let them back to their hive. “By looking at the pollen under the microscope we can link the locations of high-quality flower patches to the type of flowers, giving us a better sense of what resources honey bees prefer,” Carr-Markel says.

“The size of the prairies managed by Belwin provides an opportunity to see how honey bees behave when they have access to large numbers of native prairie flowers,” Carr-Markel says. “Our preliminary results indicate that our honey bees did visit and advertise many patches of flowers within the Belwin prairies, including patches of native flowers in the mint family.”



From inside the observation hive shed, the researchers' camera records the “dance floor,” or area of comb, near the entrance where honey bees are most likely to communicate using waggle dances.