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Pollinators, Nature, and the Arts!!

2016 Partner School Student Art Show

Join us as we celebrate our pollinators through art! Throughout the month of June, our partner school students will present their pollinator-themed artwork in our Bloomington Visitor Center Art Gallery.

We'll kick off the month with the Partner School Student Art Show Reception on **Saturday June 4th** with a host of professional artists providing demonstrations, leading interactive activities, photography hikes, and more! All are welcome for this family-friendly event—we hope to see you , your students, and families there! Please see our Facebook event page for more specific information.



Return and Renew

Spring is the season to welcome back the migrators and hibernators of winter. It's also a time to watch plants emerge and turn green, white and yellow.

Bloomington Education and Visitor Center Current Hours are:

Tuesday - Saturday

9 am - 4 pm

Beginning in June, hours will be expanded.

Traveling Winter Wildlife Signs Mural

Sophia Crosby, an Environmental Education Practicum Interns, has completed a three panel travelling wildlife mural in our Bloomington Visitor Center. The mural features the Minnesota River Valley in winter! This mural is packed with wildlife, native plants and wildlife signs that could be found on the refuge.



The mural will be used as a teaching tool for students, especially before they venture out on their snowshoeing "I Spy" hike. The 6 x 12 foot mural will be taken to events, conferences, libraries and even schools!

Looking Ahead: Citizen Science Along Our Phenology Trail



If you've spent much time in Minnesota, you're certainly well aware of our dramatic seasonal shifts. Much of our wildlife hibernates or finds new refuge in our colder months, while our trees and other plants undergo impressive transformations. Springtime serves as a homecoming for many migrating birds, hibernating animals and emerging plants. Each species has found its own unique way to survive the weather patterns and no two seasons are ever *exactly* the same. So what can we learn from studying these species over many years?

This is where phenology, the study of life through the seasons, and you, the citizen scientist - come in hand! Here at the refuge, we're really excited to be planning our own phenology trail in collaboration with the National Phenology Network's citizen science program known as Nature's Notebook.

Our staff, along with partner organizations, volunteers and local students will be teaming up to collect *real data* that biologists all over the country can access to gain a better understanding of our native plant and animal life and their reaction to a changing climate. Getting involved is literally a walk in the park (or the refuge)! Just grab a data sheet and record a few notes on our highlighted plant and animal species.

Our phenology trail is being field-tested this spring with official implementation this fall. We hope you'll join us on this exciting venture to help us all better understand life in the Minnesota River Valley!

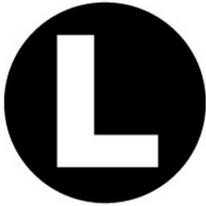


"Many of the events of the annual cycle recur year after year in a regular order. A year-to-year record of this order is a record of the rates at which solar energy flows to and through living things. They are the arteries of the land. By tracing their response to the sun, phenology may eventually shed some light on that ultimate enigma, the land's inner workings."

—Aldo Leopold, A Phenological Record for Sauk and Dane Counties, Wisconsin, 1935-1945

CITIZEN SCIENCE CORNER

With phones and tablets at our fingertips, students easily become citizen scientists. Here are our favorites for teachers and students !



Litterati: Collect, identify and map litter near your school!

- Iphone Litterati app or Instagram-based program for data entry with analysis through the Litterati website. Join the campaign to eradicate litter from the planet! Students photograph each individual piece of litter before picking it up then hashtag the photo with a keyword. When the photos are uploaded, they are added to the “digital landfill”. Want to take it to the next level? A 4th and 5th grade class in California used their findings to propose solutions to the school’s litter issues. Check it out at <http://www.litterati.org/cause.php>

mPing (Meteorological Phenomena Identification Near the Ground): Learn about and report on weather in your area

- App-based program for data entry, the map can also be viewed on the website platform

The mPing app asks citizen scientists to report on precipitation! Monitor the weather on a daily or weekly basis with your students and submit a report reflecting the current precipitation. Options include rain/snow, hail, wind damage, flooding, or reduced visibility. It also asks users to make observations of “none,” at times when precipitation is impending or has recently stopped. Your students can also “View Reports” and see what others around them are reporting.



Along with keeping tabs on the weather, your students will be aiding meteorologists at the NOAA National Severe Storms Laboratory.



iNaturalist: Make observations and record sightings

- App or web-based program for data entry and analysis

Perfect for beginning naturalists, this generalist app allows students to make observations of any plant or animal that they see! Students can report sightings to the best of their ability. A report of “butterfly” is enough, no need to know the species. In fact, use the “Help Me ID this Species” option and a local expert will assist with identification. You can view all of your observations within the “Explore” tab on the app or the “Observations” tab on the website.

eBird: Compile checklists of bird sightings

- App or web-based program for data entry, further data analysis and tools are available from the website platform

Each day begins a new bird checklist! Enter when, where and how you were birding, then fill out a checklist for the birds seen or heard. You can view and analyze your data on the website platform by adding your location to a Patch List—which will automatically compile the relevant checklists.

This app is managed by the Cornell Lab of Ornithology and the National Audubon Society. eBird is amassing one of the largest and fastest growing biodiversity data resources in existence.



Bee-Friendly Your Garden: Get to know the pollinators in your school yard

- App-based program for data entry and data analysis

Pick a garden plot and monitor it weekly! Whether the size of a sheet of paper or as large as a picnic blanket. Insect experts are not required! If you can tell a beetle, from a bee/wasp, a butterfly/moth or a fly you are ready to go.

Once you input your observations (which includes a photo if you can snap one), you can easily view your entries in a color-coded bar graph by opening the app, going to “My Data” and selecting the “Data” tab.

Staff Updates

Please join us in welcoming three new members of the MN Valley staff!

I was raised in west central Minnesota and have always had an appreciation for nature. After receiving my undergraduate degree in biology, I decided to transition into education and have enjoyed leading a wide range of students as a supervisor for the Mississippi River Green Team and as a canoe/trail guide for Wilderness Inquiry. I enjoy getting outside for any reason, whether it be canoeing, camping, hiking, or biking. Learning what it takes to be a quality educator through the MVNWR is an amazing opportunity and I look forward to reaching many students through their partner school/partner teacher programs.



Peter Swan, Practicum Teaching Intern



Amber Taylor, Practicum Teaching Intern

I have taught students of all ages as a science teacher in a formal classroom setting and as an environmental educator at a nature center. As a new teacher in the EE program at MVNWR, I am excited to have the opportunity to work with children as they explore and learn about their natural surroundings. For me, exploring the outdoors with kids enriches my own sense of wonder and excitement about the beauty that is nature. A few of my favorite outdoor activities include hiking, exploring rivers and streams, morel mushroom hunting, and searching endlessly throughout the summer and fall for agates and other unique rocks for my collection.

I am the Community Outreach Corps member for the Urban Wildlife Conservation Program. My job is mainly to coordinate activities with the local community and teach about the Refuge. One of the most rewarding experiences for me is creating strong bonds with the community. My hobbies include hiking, fishing, and playing tennis.



May Yang, Community Outreach Intern



Practicum Intern Winter Highlights



Favorite Field Trip:

“I really loved teaching the *Winter Under a Microscope* fieldtrip! The students all found so many neat natural items to look at under their field microscopes. Lots of the students found owl pellets with mouse bones in them. Back in the classroom they got to dissect the pellets and study the bones!” *Sophia*

“*Winter Birding Hike*: I really enjoyed being able to share my passion for birding with 4th and 5th graders from Poplar Bridge Elementary. During the field trips we were able to get close-up views of several fluffy, bright-red cardinals, listen and watch two bald eagles fly overhead and investigate a recent turkey kill!” *Alaina*

“The most elaborate and enjoyable field trip that I was involved in was *Tracking Wildlife*. Not only did the students learn about all the fascinating ways that biologists track and observe wildlife, they also used real radio telemetry equipment in a big game of hide and seek on the refuge.” *Peter*



Favorite Experience:

“During the month of March, I appreciated witnessing how both the wetland refuge and visitor center transition from winter into spring. Seeing the open water, migrating birds and green buds of spring is wonderful, but its also great to see how dynamic and creative the staff is to keep up with the seasonal shift.” *Peter*

“I really enjoyed exploring the Bell Museum at the University of Minnesota for the first time. It was great to see their interactive exhibits and get ideas for how the Refuge could incorporate different displays. Additionally, it was neat to see the variety of specimens that they have collected over the years!” *Alaina*

“Our resident pair of barred owls came back to nest again this winter in Bloomington! Many of our students got to see them on their fieldtrip and practice their owl hoots! It was so much fun showing the students a unique bird that is so very rarely seen in the daytime and in the middle of the city!” *Sophia*

Favorite Opportunity:

“I enjoyed visiting the Prairie Wetlands Learning Center up in Fergus Falls, Minnesota! The local 4th and 5th grade students get to come out to their classrooms every day to learn about various school subjects outdoors and are very hands on! It was so neat to see students being immersed in an environmentally focused classroom! We also go to see their burrow program! Students create a “fort style” maze out of boxes to simulate an underground ecosystem and the animals that live there!” *Sophia*

“I was invited to join our staff for a collaborative celebration of the 100th year of our National Parks at the Science Museum of Minnesota. It was a great chance to meet people from other



Start your summer off right! Join Refuge staff in . . .

Explorer's Camp!



- ◆ Explore and play outside on the Refuge!
 - ◆ Discover the joy of nature play.
- ◆ In this camp, **CAMPERS** choose the activities (with Refuge staff as your guide).

This camp is **ONLY** for 8-12 year olds and space is limited.

Bloomington Education and Visitor Center

Monday, June 20—Friday, June 24

9:00 a.m.—12:00 p.m. each day

To register, follow this link,

<https://www.surveymonkey.com/r/2016Explorers>



Minnesota Valley National Wildlife Refuge



**If you enjoy getting your hands dirty and learning about biology,
join Refuge staff in . . .**

Biology Camp: 2016 BioBlitz!



- ◆ Use hip waders, dip nets, microscopes, binoculars, cameras, compasses and more to explore the wetlands, prairies, and forests of the Refuge.
- ◆ Become a Citizen-Scientist collecting and inputting your own observation data into the newest and most exciting nature apps out there.
 - ◆ Explore parts of the Refuge you may have never seen before.

This camp is **ONLY** for students who just completed Grades 4, 5, or 6 in the 2015-2016 school year.

Bloomington Education and Visitor Center

Tuesday, July 12th—Thursday, July 14th

9:00 a.m.—3:00 p.m. each day

To register, follow this link,

<https://www.surveymonkey.com/r/2016BioCamp>

Minnesota Valley National Wildlife Refuge



If you love being out in the great outdoors and are a good naturalist, join Refuge staff in . . .

Refuge Recreation Camp!



- ◆ Explore parts of the Refuge you may have never seen and participate in recreational activities like archery, GPS, and canoeing! Refuge staff will be your guide.
- ◆ This camp is for students who have completed Grades 4, 5, or 6 in the 2015-2016 school year.

This camp is **ONLY** for students who just completed Grades 4, 5, or 6 in the 2015-2016 school year.

Bloomington Education and Visitor Center
Tuesday, August 16th –Thursday August 18th
9:00 a.m.–3:00 p.m. each day

To register, follow this link,
<https://www.surveymonkey.com/r/2016RecCamp>



Minnesota Valley National Wildlife Refuge



EE Cohort: Teachers Sharing Ideas About the Outdoor Classroom

Find this Group On Facebook

<https://www.facebook.com/EECOHORT>

We are currently assembling a list of *Environmental Education Mentors* willing to share their expertise with a local teacher looking for help incorporating EE into their classroom teaching.

Call Suzanne Trapp at (952) 361-4502 for more information, to register as a mentor, or to register as a mentee.



The Blue Goose Bus Fund Update

Winter 2016

Student visits: 3,391 Chaperone visits: 718
Over \$10, 200 in busing reimbursement!!

THANK YOU REFUGE FRIENDS INC!



If you know of an organization that might be interested in supporting the Blue Goose Bus Fund, please contact:

President Steven Sutter, Refuge Friends Inc
3815 American Blvd. East
Bloomington, MN 55425
952-858-0737

Please consider donating any used or broken **TRADITIONAL** snowshoes to Refuge Friends Inc



Minnesota Valley National Wildlife Refuge

Rapids Lake Education and Visitor Center
15865 Rapids Lake Road
Carver, MN 55315
(952) 361-4500

Bloomington Education and Visitor Center
3815 American Blvd. East
Bloomington, MN 55425
(952) 854-5900

www.fws.gov/refuge/minnesota_valley

Thanks for reading our Spring Newsletter!

Mention this newsletter on your refuge field trip and receive a FREE nature poster for your classroom!

Check in with Service social media:

[Facebook](#)

[Twitter](#)

[Flickr, USFWS Midwest Region](#)

[YouTube, USFWS Channel](#)