

# Natural Lands News

*The mission of the St. Olaf Natural Lands is to promote education, conservation, and recreation in our local ecosystems.*

## Natural Lands Manager

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Calling Northfield home from birth I learned about native plants from a young age, working with my father Tom and his native wildflower rescue plant business. I graduated with a biology degree from Augsburg College '09 and soon after was hired by Prairie Restorations Inc. There I learned how to efficiently use integrated plant management, lead teams, and among other things to, control prairie burns. As the Natural Lands Manager at St. Olaf I work to maintain the diverse ecology of the forests, wetlands and prairies located on campus. Invasive species removal plays an important role in management, as does native seed collection and distribution. It is my pleasure to work with students on projects in the natural lands, acting as a resource in the field for student lead initiatives as well as spearheading projects such as restoration of oak savanna in the Heath Creek Woods. I am excited to work on the Natural Lands and enjoy replying to questions or concerns from the community at large.



Nic Nelson

Contributors to this newsletter include Wes Braker '18, Auste Eigirdes '18, Andrew Hallberg '18, Kiersten Koerth '19, Nic Nelson, Nick Partington '19, Kathy Shea.



## Spring 2018 Prairie Burn

Yellow burn suits protected faculty, staff and students managing the burn, and a southeast wind kept the fire moving

On April 26, we conducted a prescribed burn on a little over 20 acres of the Natural Lands prairie, including the area north of Big Pond and south of the Big Pond Loop, as well as a portion of the oak savanna west of Big Pond Loop and south of Prairie Loop. For the majority of this land, the most recent burn took place about five years ago.

Burning provides many advantages to the different plants found in a prairie. It eliminates invasive species--which hinder the growth and success of natural prairie plants--and discourages them from returning. It also reduces the duff layer, decomposing organic material that limits the amount of sunlight reaching

lower parts of the plants, and releases nutrients, allowing plants to come back healthier than they were prior to the burn. Burning also offers a great opportunity for seeding. Following the burn, we planted many native plants in the burn area in hopes of increasing plant diversity and to discourage invasive species.

### Bluebird Trail Update

In 1992, St. Olaf College established a nestbox trail within the Natural Lands in an effort to help protect and restore the eastern bluebird population in southern Minnesota. Gene Bakko, Curator of the Natural Lands until his retirement in 2009, originally began with 15 nestbox sites and in 2005 expanded the trail. During the breeding season, students monitor 64 nestboxes, recording the nest type, native bird species, number of eggs and chicks, and instances of predation. Tree swallows and house wrens also prefer habitats within open woodlands, forest edge, and shrubland and will compete with bluebirds for nestbox space. To combat interspecific competition, nestboxes are placed in pairs to allow cavity-nesting species to coexist. Overall, eastern bluebird restoration has been positive and the proportion of total fledglings has significantly increased from 1992 to 2017. The continuous efforts in bluebird restoration at St. Olaf College were recently featured in the Star Tribune, <http://www.startribune.com/walking-among-the-bluebirds-of-northfield/435702593/>. If you are interested in walking the trails in the Natural Lands, keep an eye out for bluebird mothers, who are often perched at branches nearby nestboxes.



# Forest Restoration by Tree Seeding

Former Natural Lands Curator Gene Bakko, Natural Lands Manager Nic Nelson, and Professor and Natural Lands Curator Kathy Shea led tree seeding project on former farm land near Heath Creek.



In the fall of 2017, students led by Professor and Natural Lands Curator Kathy Shea, retired Natural Lands Curator Gene Bakko, and current Natural Lands manager Nic Nelson planted a 10 acre section of farmland owned by St. Olaf to restore the area first to oak woodland and eventually to maple-basswood forest. After the corn harvest and turning of the soil, the group planted swamp white oak, white oak, bur oak, Kentucky coffee, black walnut, bitternut hickory, black cherry, and basswood tree seeds. They also planted a cover crop of winter wheat on the. The cover crop was planted to avoid leaving the ground bare, which would give a better opportunity for invasive species to take over the area.

The field is located adjacent to Heath Creek, a local stream in the Cannon River watershed that is home to many old-growth trees and a plethora of herbivorous plants. It can be accessed on foot by paths that lead through the Heath Creek section of the Natural Lands.

Many people do not know that the Heath Creek (including the new planting) area is part of the St. Olaf Natural Lands because it is separated from campus by Highway 19.

From February to May, the Natural Lands Technician students and the Student Naturalists removed buckthorn and honeysuckle from the area in an effort to prevent invasive plants from taking over the new planting. Previously buckthorn and honeysuckle threatened the established oaks, hackberry, slippery elm, and numerous spring ephemerals. To remove the buckthorn and honeysuckle, student workers, supervised by Land Manager Nic Nelson, cut invasives down using a brush saw, and treated the stumps with herbicide to ensure that the plant would not grow back. Larger plants were cut by Nic using a chainsaw. The plants were then burned to destroy remaining berries on the plants and to clear the area. This process took several months over the winter of the 2017-2018 and the surrounding forest still

has buckthorn, ensuring student work for the next few years.

With each new seeding, the Natural Lands becomes home to new habitat for native



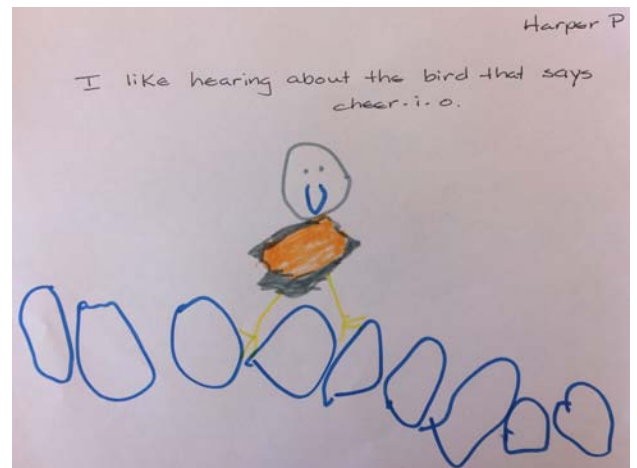
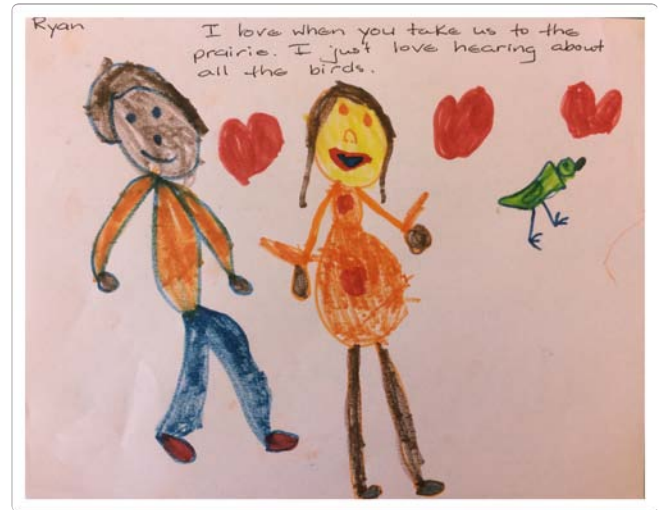
*Student Naturalists Wes Braker and Annika Fredrickson planting oak seeds.*

Minnesotan species. Restoring land from agriculture also helps prevent nutrient runoff into lakes, streams, and ultimately the ocean, where it can ultimately cause eutrophication.



# Open Door Preschool

This year the Student Naturalists continued their partnership with Open Door Preschool, working with two classes of children to teach about the St. Olaf Natural Lands and promote environmental awareness. Naturalists visited the preschool classroom once a month to teach about a seasonally relevant environmental topic, bringing hands-on props and coming up with creative activities to keep the children engaged. Topics from this year included plant seeds, animal fur, bird migration, hibernation and maple tapping. In addition, the children visited the Natural Lands three times throughout the year: once in the fall, once in the winter and once in the spring. Tours were led by Student Naturalists who emphasized features of the Natural Lands unique to each season. Seeds and migrating birds were observed in the fall, animal tracks in the snow were the highlight in the winter and emerging plants and animals were a big hit in the spring. Altogether, this collaboration generated learning experiences for children and Student Naturalists alike and we are excited to continue the partnership into the future.



## Conservation Reserve Program

The college has received federal support through the Conservation Reserve Program (CRP), U.S. Department of Agriculture. This program supports the conversion of erodible farmland into permanent cover and provides cost sharing for plantings as well as paying a small yearly subsidy for the farmland retired from agriculture. The 30 acres west of the wind turbine have been

in CRP since 1998 and the current program lasts until 2027. Trees have been planted to create several native plant communities from northern coniferous forest, to oak woodland and oak savanna and can be seen as you walk on the Windmill Trail.

Local DNR forester Jacob Froyum visited the planting to help with our Mid-Contract Management as we are expected to manage this land according to our original plan. Based on his analysis the plantings have

largely been a success and Natural Lands Manager Nic Nelson will follow up on his suggestions to manage invasive woody species, release desirable planted trees that are receiving heavy competition, and prepare for future planting of seedlings where tree populations are low. Over the next two years you will see additional tree plantings as well as a dramatic 'opening' of the woodland along the Windmill Trail.

## Featured Plant: Meadow Blazing Star, *Liatris ligulistylis*

Known as a monarch magnet, Meadow Blazing Star is a top butterfly nectar source. This *Liatris* is found in abundance on either side the Big Pond Loop in the Natural Lands. If you have the time to go walking August/September are great months to see *Liatris* and possibly monarch butterflies stopping on their migration south. It is heartfelt moment when you see monarch butterflies frolicking in the restored prairie.



### A note from the Curator...

As Curator of Natural Lands I am pleased to welcome Nic Nelson to the position of Natural Lands Manager. He and students hired to work on the Natural Lands as technicians do the day-to-day work, from invasive species removal to mowing and seed collection. The Natural Lands provide a valuable resource for teaching and recreation, as well as providing a green belt that maintains local habitat and enhances species diversity.

It is my privilege to work with students as student naturalists, researchers and technicians on Natural Lands Projects. Watch for announcements this fall from our Student Naturalists for 2018-19: Ella Doud, Rachel Gessner, Henry Henson, Claire Hinthier, Kirsten Koerth, Andrew Larson and Nic Partington. Two students working on summer research this summer, Allie Raduege and Carly Charlgren, studied the progress of forest restoration using tree seeds planted in areas restored in 2002, 2003, 2005, 2009 and 2017. They also worked with Dave Legvold, a local farmer, to compare growth and yields from three different corn varieties. The research done in 2017 by Robert Holmes and Kirsten Koerth on the 1990 forest restoration led to the presentation of their work on a poster at the Ecological Society of America Meeting in New Orleans in August 2018.

Fall is a beautiful time in the Natural Lands and we hope you take a walk in the forest and prairie areas. We welcome your comments, suggestions.



To help people locate entrances to the Natural Lands, signs like this are posted at the entrance to Heath Creek Woods along Armstrong Road across from Sechler Park, and on the south side of Hwy 19 across from the St. Olaf entrance, as well as on North Ave., Cedar Ave. and Greenvale Ave. See map at

<https://wp.stolaf.edu/naturallands/>

***Let us know about your experiences using the Natural Lands!***

***Go to: <https://wp.stolaf.edu/naturallands/>***

Contacts us:

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