Cowling Arboretum

50th Anniversary of Earth Day—1970-2020

The first Earth Day on April 22, 1970 included over 20 million people worldwide. At Carleton, Katie Ligare ’72 and Joe Foran ’71 led the way, supported by faculty such as Ed Buchwald, Paul Jensen, and Norman Vig. Northfield residents, including educator Eric Johnson ’68, were influential throughout the process as well.

The first Earth Day was part of a larger movement for environmental stewardship. From national legislation such as the Clean Air Act to the implementation of a local recycling program in Northfield, people were beginning to think differently about their relationship to the land. At Carleton, Earth Day 1970 was celebrated with Cannon River clean-ups, environmentally-focused speeches, town hall meetings, tree plantings, marches, and hands-on educational opportunities for 6th graders. Within the Arboretum, the first fields were taken out of agriculture in 1970 as the Arboretum shifted its objective from cultivating a botanical garden to restoring natural landscapes. Earth Week at Carleton was planned for the entire Northfield community. Its intention, as Joe Foran articulated, was to “plant the religion of ecology” deep in people’s minds and hearts. Carleton’s Cowling Arboretum was, and remains, an ideal place for people to engage with their natural environment.

Excerpted from an article by Clara Haslett-Norman ’18. Contact Arboretum Director for full article.

Cowling Arboretum Mission

Provide opportunities for education and research.
Preserve and restore native plant and animal communities on College natural lands.
Provide opportunities for outdoor recreation and nature appreciation.

Special Funding

In addition to operating support provided by Carleton College, the Arboretum’s programs are supported by grants and funds that have been established through generous gifts (listed alphabetically):

- Arboretum Endowed Fund
- Arboretum Restoration Fund
- The Cole Family Memorial Arboretum Fund
- George W. Megeath Fund for the Cowling Arboretum
- The Nunatak Fund (honoring Jason Mulvihill-Kuntz ’01)
- The Puzak Family
- U.S. Department of Agriculture (Conservation Reserve Program)
- The Louise ’51 and Frank ’50 Wright Endowed Arboretum Fund

We wish to thank the Arboretum’s many benefactors who help make our work possible.

Arboretum Academics

Not all classes are offered each year.

Archaeology
- Archaelogical Methods

Biology
- Ecosystem Ecology
- Entomology
- Grassland Ecology
- Introductory Biology
- Plant Biology
- Population Ecology

Cinema and Media Studies
- Digital Foundations

Educational Studies
- Methods of Teaching Science

English
- American Nature Writing

Environmental Studies
- Environmental Ethics
- Introduction to Environmental Studies
- Introduction to Geospatial Analysis
- Research Methods

Geology
- Introduction to Geology
- Geology of Soils

Geochemistry of Natural Waters
- Geomorphology
- Hydrology

Math
- Sample Survey Design and Analysis

Physical Education
- Nordic Skiing
- Outdoor Skills—Adventure
- Winter Sports Fitness
- Trail Running

Political Science
- Measuring and Evaluating Social and Ecological Systems

Religion
- The Sacred Body

Sociology/Anthropology
- Environmental Anthropology

Studio Art
- Advanced Ceramics
- Advanced Photography
- Field Drawing
- Intro to Digital and Film Photography
- Sculpture: Form and Context
- Table Making
- The Digital Landscape
- Woodworking

By Hannah Marty ’17

By Seth Snyder

Geochemistry of Natural Waters

By Seth Snyder

By Hannah Marty ’17

By Seth Snyder

2020 Annual Report
Endangered Plant Discovered in the Arboretum

An exciting discovery was made in the Arb this year! The state-endangered *Iodanthus pinnatifidus*, or Purple Rocket, was previously known from only one location in Minnesota. Welby Smith, botanist with the state of Minnesota, said: “I’ve found it only once in my career. You’ve made a very significant discovery.” While we tend to think of the Arb as very well explored, it’s exciting to realize that new discoveries may be waiting for us any day.

Recent Publications & Research

Two recent papers resulting from research in the Arboretum were published in 2020. Daniel Hernández, Associate Professor of Biology, worked with Cameron Shorb ’15, Laur Freymiller ’15, and Jordan Pruszenski ’16. Shorb, who is now Deputy Director at the nonprofit The Wild Animal Initiative, stated: “The Arb provided me with opportunities many of my friends didn’t get until grad school. By giving me a scientific perspective to contribute to teams with other specialties, my Arb research experience opened the door to roles ranging from food tech hiring to environmental policy to wildlife nonprofit management.”

Projects by outside researchers include the University of Minnesota’s Bee Atlas. Bees were collected at McKnight Prairie and the Arboretum. In addition to learning about bees on College property, we contributed to a project that documented over 25,000 bees of approximately 400 species state-wide! Students from the University of Minnesota studied honeybee use of Arboretum restorations, and a multi-country research team looked at chemicals used by gall-making insects to manipulate their host plants, using goldenrod gallflies collected from the Arboretum.


Interview with Summer Research Assistant: Alec Leonetti ’22

Alec Leonetti ’22, a biology major interested in ecology, was our summer research assistant, working on plant surveys, invasive species removal, and our trail camera project. “If invasive plants get established, native plants get crowded out and the local diversity decreases,” Leonetti said, explaining why we need to control plants like wild parsnip. “It isn’t feasible to restore our area exactly back to the way it once was—this work is more about keeping in mind the future of the ecosystem.”

When asked why he saw the work he was doing as important, Alec responded: “In a lot of indirect ways, all of our ecosystems are connected. I think people have a really deep, intrinsic desire for natural spaces, and having a natural space in their community.” This underscores the Arb’s power to bring people closer to their environment—a crucial reason why we work to restore its habitats.

Cole Student Naturalist Program

Student Naturalist Featured Seniors:

For Samara Kroeger ’21, wilderness trips in northern Minnesota and beyond, as well as several history projects focusing on events of the modern environmental movement, shaped her interest in environmental justice, the inaccessibility of the outdoors community, and environmental remediation and restoration efforts. As a student naturalist, she works to deepen her understanding of the fundamental interconnectedness of all living things.

Reed Ebbinghaus ’21 grew up in Yuma, Arizona, a border city along the Colorado River and surrounded by the Sonoran Desert. Since childhood, he was always drawn to exploring the desert—he started out with day hikes and family camping trips, and now embarks on lengthy solo expeditions, sleeps under the stars, and visits remote canyons and mountain ranges. He is especially interested in understanding ecology and learning to identify native species whether at home or during travels and research internships. Reed hopes to channel his enthusiasm for bringing people closer to the natural world into his work as a student naturalist, and learn as much as possible about what the Arb has to offer.
Environmental Education and Community Outreach

Even with the challenges of the pandemic, we were able to utilize volunteer assistance to complete critical land management this year. Our volunteers stepped up, working on independent projects and small group seed collecting with masks and appropriate distancing. Some volunteers helped remove invasive plants from McKnight Prairie and the forests of the Upper Arb; others did roadside trash pick-up, monitored bluebird house success, or worked on tree planting maintenance.

Jay and Kristen Johnson adjusted and replaced tree tubes that protect our young trees from deer browse, and removed old tubes and plastic mulch mats from established plantings where they were no longer needed. Eric Diersks watered newly planted trees that had been installed by our student workers. Glenn Lee ‘80 continued his work of keeping track of the Arboretum bluebirds, installing and maintaining the bird boxes and monitoring the birds during the nesting season. All of these contributions are so appreciated! In addition to our volunteers getting out in the Arboretum, Northfield community members and our students continued to find solace and rejuvenation in nature, using our trail system in even greater numbers than usual.

The Arboretum Restores in the Age of COVID-19

The Arboretum has been a critical resource in this challenging year of COVID-19, remaining open throughout the entire year. The Recreation Center provides cross-country skis and snowshoes for visitors, and their programming includes ski, snowshoe and walking classes. New this year, a for-credit PE course was offered called Introduction to Trail Running.

Associate Professor Tammy Metcalf-Flizen commented: “The course takes advantage of the extensive trail system and variety of terrain to teach students the basic techniques of trail running while encouraging them to become familiar with the entire Arboretum that awaits them!”

Class member Anna Schumacher ‘21 agrees. "Moving back to Carleton during a pandemic and taking classes over Zoom was difficult for me, but being able to get out into the Arb during the week for a run was really helpful for my wellbeing,” she said. “With all of us doing our best to stay safe and distanced, the Arb has been an incredible resource for students during this pandemic.”

Druids in the Arboretum

The Arboretum has been a critical site for Carleton’s Druids since 1963. The group, called the Reformed Druids of North America, originally formed as a humorous protest against the college's required attendance of religious services. Since then, the group has developed a more serious intent and has continued to maintain a quiet but positive presence on campus. Many sites in the Arb such as the Druid Circle are essential locations for Druid gatherings.

Carolyn Fure-Slocum, the college’s chaplain, acknowledges the importance of accommodating all religions on campus. "Since the Druids are nature-based, being in the Arb is central to their traditions,” she said. “The Reformed Druids were founded in the Carleton Arb, so the various Druid sites in the Arb are very important for Druids across the country. We are the Mother Grove.”

While certain sites are reserved for religious gatherings, the Druid Circle is a familiar spot to most Arboretum users and is meant for everyone who enjoys the Arb.
Deer Management in the Arboretum

White-tailed deer, while native to Minnesota, can cause problems for our native plant communities when populations are too high. We protect nearly every new tree by fencing certain areas (called “exclosures”) or by adding an individual hard plastic sleeve or paper “bud cap” for the winter. While these latter techniques save the trees, they leave many wildflowers and shrubs available for deer dining. Since 1999, we have also hosted a December archery hunt, primarily aimed at making deer feel uncomfortable. While we generally welcome all Arboretum visitors, these four-footed herbivores often gather in large numbers in the winter when hunting pressure is absent. With our students away from campus in December and Arboretum use lower at that time, the hunt has proven a useful tool in our work to restore high quality habitat.

Trail Cameras Reveal All

Beginning this year, a series of trail cameras were installed in the Arboretum at five locations to monitor animal use, especially large mammals. We had seen otter tracks and had a few reports of possible fishers, but had not confirmed either of these species with staff observations or photographic evidence. Photo sorting is also a big part of the project, with 17 species each of mammals and birds, 6,559 images of wild animals, and many images of users and their dogs!

White-tailed deer make up the bulk of the observations, but we had some interesting surprises: coyotes are more abundant and wide-ranging than expected, and domestic cats roam the interior of the Arb more than we hoped. A few relatively uncommon species were detected—grey fox and striped skunk—and the elusive river otter was seen in one photo! No sign of the fisher, however. Now that we have collected a full year of data, we will review our protocols and determine any adjustments to better monitor Arboretum animal use and provide a robust data set to be used in future projects.

An Unconventional Introduction

When they arrive on campus, many new students are curious about their sprawling 800-acre backyard. During New Student Week (NSW), the Center for Community and Civic Engagement (CCCE) typically collaborates with the Arb to facilitate a tree-planting event for new students to bond with their NSW group, do some community engagement, and become acquainted with Arb resources.

While the COVID-19 pandemic made group gatherings more difficult this year, the CCCE rose to the challenge, planning a series of mask-required walking tours led by Student Naturalists. The tours ran daily for four weeks—due to high demand and a desire to reach more students (over 60 new students signed up!), extra tours were added.

CCCE Fellow Anna Schumacher ‘21 headed the endeavor. “The Arb has been many things to me: an escape, a playground, a workspace and a classroom,” Schumacher said. “It was an absolute joy to share my love of the Arb with new students.” While their introduction may have looked different this year, for many new students meeting the Arboretum was love at first sight!