Cowling Arboretum

Carleton College
Northfield, Minnesota

2008 Annual Report

Cowling Arboretum

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 education, conservation and recreational programs are supported by grants and funds that have been established through generous gifts:

- Arboretum Endowed Fund
- Arboretum Restoration Fund
- Richard S. Cole ’69 Memorial Fund
- Wright Arboretum Fund

Conservation Reserve Program of the U.S. Department of Agriculture (USDA)
Environmental Quality Incentive Program of the USDA

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

Academic Use in 2008
The Arboretum is utilized by many classes and independent projects.

Biology
- Entomology
- Population Ecology
- Introductory Biology: Genes, Evolution, and Development

English
- American Nature Writing
- The Four Dimensions of Nature Writing

Environmental and Technology Studies
- Junior Colloquium

Geology
- Geology in the Field
- Introduction to Geology
- Geomorphology
- Geology of Soils
- Geochemistry of Natural Waters
- Intro. to Environmental Studies

Math
- Sample Survey Design and Analysis

Studio Art
- Observational Drawing
- Field Drawing
- Advanced Photography: Digital Imaging

Classes in the Arb: Spotlight on Field Drawing
A beginning drawing course for science students and others who are interested in developing their skills in drawing from nature. Much of the class work is done outdoors and focuses directly on utilizing plant forms, geological sources, and the landscape as subjects. Emphasis is placed on the development of the technical skills needed for visual note-taking and the creation of journals. Problems deal with the analysis of space and objects through line, shape, volume, and tone.

Butterfly Milkweed by Sean Dickson ’08
Red-bellied Woodpecker by Kimberly Chang ’08
American Bellflower by Paul Pedtke ’09
Faculty Scholarship in 2008
The Arboretum is used by faculty members for their own scholarship. In 2008, these faculty drew inspiration and implemented research programs to address biological questions.

Daniel P. Bruggeman, Senior Lecturer in Art
The history of the settlement of North America has been the impetus for most of Dan’s work the past 20 years. The transformation of the landscape from wilderness to domesticated environment is the primary legacy of the North American narrative. The scenes in his recent paintings for the exhibition titled Compensation for a Permanent Loss depict mysterious vignettes of disharmony and hope in an intimate forest setting.

Mark McKone, Professor of Biology and Research Supervisor of Cowling Arboretum
Dr. McKone is an evolutionary ecologist whose research focuses on prairie succession and the interactions between insects and plants. The prairie restorations in the Arboretum offer a unique opportunity to investigate the time sequence of prairie succession. McKone’s primary research goal is to document the succession of grassland species as prairie develops on plots replanted with native species.

Susan R. Singer, Laurence McKinley Gould Professor of the Natural Sciences
Susan Singer works with colleagues from several other academic institutions on research involving the native prairie plant Partridge Pea, Chamaecrista fasciculata. This plant is a model organism to test key questions about the evolution of the pea plant family. The populations of this species in the Arboretum and McKnight Prairie are important collection sites for this species.

Arboretum Provides Wood Resource to Studio Art Department
While most of the wood in the Arboretum is left to decay naturally as part of the ecological system, some wood is now being harvested as part of a program to provide resources to Carleton sculpture classes.

Beginning in 2008, students can participate in a program that develops a sense of wood stewardship and sustainable use. A portable saw mill owned by the College is used to mill the wood, which is then stored for drying and future use.

The Arboretum and Carleton’s GIS Lab
Organized information about plant and animal species, restoration plantings and land use and management is critical to the long-term health of the Arboretum and supports Carleton’s academic utilization of the Arboretum. In 2008, Carleton’s Geographical Information Systems Lab worked collaboratively to build a geographic database for Arboretum resources. Initially part of the ENTS 2008 Junior Colloquium, the GIS Lab Arboretum project is now an ongoing effort.

Land Management and Restoration
Land management goals of the Arboretum and McKnight Prairie include improving habitat for native plants and animals and restoring College lands to native plant ecosystems. We focus on high diversity plantings and use of locally collected plant material whenever possible. Our strategy is to provide large blocks of habitat to allow for increased populations of native species and to provide for animals that require larger habitat areas. Ongoing management efforts include control of non-native invasive plants, management burns of prairie and savanna, an archery hunt for white-tailed deer management, and continued planting of native species to enlarge and enhance existing habitat areas.

In 2008 several new projects were initiated in the Upper Arboretum to restore native forest health and diversity along Spring Creek and expand high diversity grassland habitat. The floodplain and upland forests along Spring Creek have been greatly impacted by the non-native forest invaders European Buckthorn and Bush Honeysuckles. Work this year has focused on removal of those species and the inter-planting of native wildflowers, grasses, sedges and shrubs, primarily collected as seed from other locations in the Arboretum.
Environmental Education and Community Outreach

Outreach to the Carleton community and beyond is an important aspect of the work of the Arboretum staff. With the increase in staffing over the past two years, additional outreach initiatives have been possible.

Field trips and talks
As one might expect, audiences related to the College make up a large component of the users visiting the Arboretum. Field trips are hosted for prospective students, visiting alumni or other guests, reunion groups, faculty, staff and current students.

Twice a year, the Northfield Middle School seventh grade science class visits the Arboretum for programming and service projects. The Arboretum also welcomes user groups that provide their own programming such as other K-12 school groups, Scouts, and adult education classes. Arboretum staff also speak to groups locally about the Arboretum and related issues.

This year, a series of well received field trips were planned especially for members of the Northfield community. Other new outreach efforts included the installation of seasonal educational posters at the Arboretum Trail Head. These posters are updated quarterly and provide information on current natural events, arboretum management and recreational opportunities. This year, the Arboretum Web site also underwent significant updating, including the addition of detailed information on the academic uses of the Arboretum and the Cole Student Naturalist Program.

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<tr>
<th>Type of Group</th>
<th>Number of Field Trips or Talks</th>
<th>Total Number of Attendees</th>
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<tr>
<td>College Related</td>
<td>8</td>
<td>194</td>
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<tr>
<td>Youth (K-12 or Other)</td>
<td>5</td>
<td>445</td>
</tr>
<tr>
<td>Adult (Local Community)</td>
<td>6</td>
<td>122</td>
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Cole Student Naturalist Program

The Cole Student Naturalist Program is funded through an endowment created in memory of Richard S. Cole ’69. The program trains students in natural history and nature interpretation and provides opportunities to lead field trips and participate in other educational events for Carleton and the broader Northfield community. Student Naturalists meet each week during the academic year to share experiences and knowledge and learn from experienced naturalists. Field trip leaders are requested by various campus offices including admissions and alumni affairs, and groups like the Scouts, schools and garden clubs utilize the Naturalists as well. The Student Naturalists also write a weekly column for the Carletonian, the student newspaper. Meet two of our 2008 Cole Student Naturalists:

Amy Alstad ’09, Roseville, MN
Biology major

As a naturalist, Amy is extremely interested in ornithology, and as a student, she feels lucky to go to a school with such a great outdoor resource. Her favorite Arb activities include controlled burns on the prairies, night skiing in the winter, and swimming in the Cannon River in the spring.

Hannah Specht ’09, Shelburne Falls, MA
Biology major (ENTS concentrator)

Hannah grew up on an organic vegetable farm. Her broader interests in biology and conservation include increasing conservation practices throughout the world and getting kids of all ages outside to explore with their senses.

Hannah has an instinctual desire to try to understand the natural world around her. Her favorite Arb activities include running, skiing, birding and counting prairie plants!
Physical Education, Athletics and Recreation

The Arboretum is heavily used for many types of organized sports as well as for recreational activities.

The trail system is open to members of the local community as well as College users. Fifteen miles of trail provide endless opportunities for hiking, running, skiing and nature observation. The Men’s and Women’s Cross County Running teams use the Arboretum for practice and hosting meets.

The Nordic Skiing Club Sport team practices on the Arboretum trails and hosts a fun race each year. Beyond Carleton, the Northfield High School Cross Country Ski team also utilizes the Arboretum for practice and meets.

Volunteers

Volunteering on restoration projects has become a popular way to be involved in the environmental movement, and we are working to capitalize on this growing interest.

A student volunteer group, ARBOR, is part of the Carleton volunteer service program Acting in the Community Together (ACT). This group provides a ready source of volunteers for Arboretum projects several times each term.

During new student week, ACT introduced the incoming class of 2012 to the Arboretum and volunteer service, with the majority of students (350+) participating in a buckthorn pulling project! Monthly volunteer events provide an opportunity for students and community members to collect seeds, remove buckthorn and plant seeds and saplings.

Arboretum Staff

The staff has grown in recent years and demonstrates the continuing commitment of the College to manage and fully utilize the Arboretum.

The Director position was reconfigured in 2007 to full-time, and in 2008 the Manager position increased from a 10 month position to full-time. The Faculty Ecologist serves as Research Supervisor, and a half-time trails worker rounds out the regular staff.

Student workers provide the majority of labor for the restoration and habitat management programs. In 2008, 35 student workers provided 2,000 hours during the academic year. Six student workers provided 2,400 hours of assistance during the summer.