**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  
- Richard S. Cole ’69 Memorial Fund  
- Conservation Reserve Program of the U.S. Department of Agriculture  
- Environmental Quality Incentive Program of the U.S. Department of Agriculture  
- George W. Megeath Fund for the Cowling Arboretum  
- The Louise ’51 and Frank ’50 Wright Endowed Arboretum Fund  
- Xcel Energy Foundation–Natural Science in Natural Lands: Improving the Carleton Arboretum  

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

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**Academic Use in 2010**

The Arboretum is used by many classes and students working on independent projects.  
*Not all classes are offered each year.*

**Biology**  
Entomology  
Ecosystem Ecology  
Population Ecology  
Introductory Biology: Genes, Evolution, and Development  
Grassland Ecology

**Environmental and Technology Studies**  
Introduction to Geospatial Analysis  
Environmental Ethics

**Geology**  
Geology in the Field  
Introduction to Geology  
Geomorphology  
Geology of Soils  
Geochemistry of Natural Waters  
Introduction to Environmental Studies

**English**  
American Nature Writing  
Writing the Great Plains

**Math**  
Sample Survey Design and Analysis

**Studio Art**  
Field Drawing  
Advanced Ceramics  
Advanced Photography  
Woodworking

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**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 trails provide endless opportunities for hiking, running, skiing and nature observation. The men’s and women’s cross county teams use the Arboretum for practice and hosting meets.

The Nordic ski club team practices on the Arboretum trails and hosts a race each year. Beyond Carleton, the Northfield High School Nordic ski team also utilizes the Arboretum for practice and meets. In 2009/2010 ski season, the parents of the high school team began a collaboration with the Arboretum staff to groom the trails in both the Upper and Lower Arboretum.

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**Population Ecology Laboratory**

**Chris Marshall running for the Men’s Cross Country team**
Classes in the Arboretum: Spotlight on Outdoor Skills for the Backcountry

In the fall and spring of 2010, students in the “Outdoor Skills for the Backcountry” physical education course spent the term learning the ins and outs of wilderness safety and survival. They met once a week in the Arboretum office to receive instructions before setting off into the Arboretum to complete challenges such as building shelters, starting fires, orienteering, and identifying plants.

Faculty Scholarship in 2010
Faculty members use the Arboretum for their own scholarship. These are two of our faculty who drew inspiration and implemented research programs.

Dan Hernandez, Assistant Professor of Biology
Professor Hernandez is an ecosystem ecologist interested in the role of aboveground-belowground interactions on carbon and nutrient cycling. His lab currently works in serpentine grasslands in California and restored tallgrass prairies in Minnesota to investigate the role of nitrogen deposition and herbivory on plant community composition, nutrient cycling, and carbon storage. This year Hernandez established a major project in the Arboretum with biology professor Mark McKone.

Linda Rossi, Art and Art History Chair and Professor
Linda Rossi teaches photography, digital photography and the junior seminar “Critical Issues in Contemporary Art.” A recent focus of Rossi's work is the role biological and evolutionary factors play in our perception of beauty. If a photograph is of an invasive species, but it looks beautiful, is it still a beautiful photograph even though the subject is unpleasant? Not only does Rossi use the Arboretum as the subject of her work, she also uses it for inspiration and encourages students to do the same. This year Rossi’s “Advanced Photography” class hosted an exhibit of their projects that focused on native trees of the Arboretum.

Archiving Project
Work has continued this year on the archiving of historic and contemporary materials related to the Arboretum. To date over 100 items have been added to the digital collection of the Gould Library. The collection includes student papers, historic maps, biological surveys, photographs and more. Students, faculty and alumni may access the collection online at www.carleton.edu/digitalcollections.

Inventory and Monitoring
Monitoring continued in 2010 with the annual spring bird count, the frog and toad survey, a grassland breeding bird survey, and counts of the federally listed plant, the Prairie Bush Clover, which has been included in our prairie restorations.

The Minnesota Odonata Survey Project is a volunteer effort to document the ranges and distributions of Minnesota’s dragonfly and damselfly populations. The Arboretum participated in the survey in 2010 providing a research permit to a local volunteer and encouraging one of our student naturalists with an interest in dragonflies to contribute to the project.

Arboretum Long-Term Planning
Arboretum staff and the Arboretum Committee updated the long term plan for the Arboretum. Working with past plans, survey and file information, and current knowledge of the Arboretum, a new long-term plan was drafted and input solicited from current students, staff, faculty, and community members. The draft plan will be shared in early 2011 with local alumni and alumni working as conservation professionals, and then put into practice for the 2011 field season.
Environmental Education and Community Outreach
Outreach to the Carleton community and beyond is an important aspect of the work of the Arboretum staff.

Field trips and talks
Field trips are hosted for prospective students, visiting alumni or other guests, reunion groups, faculty, staff, current students, and members of the general public. This year, more than 950 people took part in Arboretum programs.

Arboretum staff collaborated with the Minnesota Department of Natural Resources (MNDNR) to host a workshop for private landowners on creating and managing wildlife habitat; 75 members of the public participated in sessions designed to assist them with planning and implementing habitat restoration practices on their land or participating in work on land owned by conservation agencies. Topics included invasive plant management, sources of technical and financial assistance, and management of specific natural plant communities.

In response to 2009’s success, the Arboretum, in collaboration with the MDNR, again hosted a prescribed burn workshop. Fifteen private landowners and volunteers learned the basics of prescribed burning in grassland situations.

### Type of Group

<table>
<thead>
<tr>
<th>Type of Group</th>
<th>Number of Field Trips, Talks or Workshops</th>
<th>Total Number of Attendees</th>
</tr>
</thead>
<tbody>
<tr>
<td>College–Related</td>
<td>9</td>
<td>226</td>
</tr>
<tr>
<td>Youth (K–12 or Other)</td>
<td>3</td>
<td>555</td>
</tr>
<tr>
<td>Adult (Local Community)</td>
<td>8</td>
<td>181</td>
</tr>
</tbody>
</table>

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, scouting groups, schools and garden clubs. The student naturalists also write a weekly column for the Carletonian, the student newspaper. Meet two of our 2010 Cole Student Naturalists:

**Mira Alecci, ’11**
Minneapolis, MN
History/Archaeology major

Mira Alecci grew up in a household of recreational naturalists and learned to recognize her first species of birds and trees from her father, who teaches junior high school. She was introduced to student naturalists during her student job on Arboretum Crew, where she learned to identify and collect seeds from prairie plants. She then decided to cultivate an interest that, until that point, had had little opportunity for expression.

**Adrienne Wilber, ’11**
Sitka, AK
Geology major

Adrienne Wilber is from Sitka, Alaska. Her favorite forest is the Tongass National Forest which surrounds her home. She wishes the Arboretum had more totem poles, but she thinks it makes up for it in flowers. She is especially interested in the different types of forest that make up the Arboretum and in finding new and interesting places within it.
Land Management and Restoration

In 2010 land management and work continued to promote the Arboretum’s long-term mission of restoration to support native plant ecosystems. Restoration focused on the development of large areas of high-quality habitat that will increase plant and animal diversity, as well as create ample opportunities for the property to be used as an outdoor laboratory for students and faculty. Work to enhance forest and grassland habitat by clearing non-native invasive trees and shrubs continued throughout the year. This year we collaborated with the Minnesota Department of Transportation and the Minnesota Department of Natural Resources to plant a section of highway right-of-way to a native prairie planting. Also, an 800 foot section of trail in the Upper Arboretum was graded, widened, and reseeded. This section of trail is used for cross country meets and should improve the quality of the race course.

Volunteers

Over the past year, both students and community members have participated in monthly volunteer events that include a variety of activities like buckthorn removal, seed collecting and planting, and trash clean up. Community members also volunteered with the prescribed fire management program, provided guidance to students during volunteer activities, and helped groom the cross country ski trails in the winter months. A tree planting service project hosted during reunion weekend was attended by 35 alumni and family members.

For the third year Carleton’s Acting in the Community Together program introduced the incoming class to the Arboretum and volunteer opportunities. New students helped with buckthorn removal and cleared an overgrown section of trail.

Arboretum Staff

During the 2009-2010 academic year, 42 students worked in the Arboretum, assisting restoration and habitat-management programs. These students provided more than 2,700 hours of work. Six summer student workers assisted with the restoration and management programs of the Arboretum and McKnight Prairie.

Geographic Information System (GIS)

In collaboration with the Carleton’s Spatial Analysis Lab, we have continued to develop the Arboretum GIS. Spatial information such as fire management units, planting areas, trails, and rare plant locations are linked to data such as fire management history, tree species planted, trail management actions, and rare plant monitoring data. This information can be used both for planning management actions as well as developing and implementing research projects. Plans for the Arboretum GIS include making it available on-line to facilitate its use.

For additional information, contact the Arboretum director or visit our Web site:

www.carleton.edu/campus/arb

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