“Rediscovering Emma J. Cole’s 19th-century Grand Rapids Flora”
Jenna Van Donselaar, Devani Antuma, Peter Quakenbush M.S., Dr. Garrett Crow, Dr. David Warners
Calvin College, Grand Rapids, Michigan.

Project History
In 1901, renowned botanist and teacher Emma Cole published *Grand Rapids Flora: A Catalogue of the Flowering Plants and Ferns Growing Without Cultivation in the Vicinity of Grand Rapids, Michigan*. 116 years later, Emma Cole’s book is still the most comprehensive floristic study of the Grand Rapids area, despite immense changes in land use for the area.

Our Project
In the third year of our 5 year project, we continue to repeat Cole’s work, botanizing the greater Grand Rapids area. The aim of our project is to revisit the sites that Emma Cole visited, or similar sites, and see how the plant life of Grand Rapids has changed over the past 116 years.

Methods

General

• The flora of seven localities were inventoried in detail.
• Species flowering or fruiting were collected and identified.
• Habitats were described, and species lists were prepared
• Floristic Quality Assessments were made for each site to ascertain the floristic and ecological value of the sites, which is useful for conservation and preservation efforts.

FQI

Each plant native to Michigan has a number assigned to it called the coefficient of conservatism (C), which reflects the plant’s fidelity to undisturbed habitat. The Floristic Quality Index (FQI) is a quantitative measurement, obtained by multiplying the average C for each site by the square root of the total number of plant species. We used the program found at universalfqa.org to assess our sites. FQIs are helpful in comparing the overall ecological integrity of various locations.

Locations

Site specifics

Sites inventoried across the greater Grand Rapids area:

- Dead-lake Bog (Sphagnum Bog)
- Grand Ravines Park (Ravine Forest/Field)
- Hager Park (Forest/Field)
- Grand River Park (Forest/Field)
- Hillbrand’s property (Deep Ravine Forest)
- Indian Creek (Regenerating Forest/ Swamp)
- Marne Bog (Swamp forest/ Cattail Marsh)

Throughout the summer, we:

• Collected 1420 voucher specimens documenting flora
• Compiled species lists for 7 different sites
• Determined floristic quality indices (FQIs) for all 7 sites
• Discovered several species that were New County Records
• Rediscovered 3 species not collected in Grand Rapids area since 1890s

Results

Acknowledgements

We would like to thank Calvin College for offering herbarium space and the summer fellowship, Tony Reznechik, who assisted with carex identification at the University of Michigan, the University of Michigan Herbarium, and Brendan Murphy for assistance with identification and overall help.