Flora of Rutgers Campus as an educational research project

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Graduate student April Jackson collecting plants for the project.

SUMMARY

Student participation in floristics at the university level is essential for the longevity and expansion of botany and associated fields, but floristic knowledge and college course options have been decreasing.

We created the Flora of Rutgers Campus, FoRC, through hands-on outdoor fieldwork as an engaging and effective way for students to experience botany first-hand.

This increased the students' knowledge of local plants, heightened their appreciation of the natural world and their university campus, opened their eyes to 'see' plants everywhere, and encouraged students to work cooperatively – all while having fun and being FoRCe-ful.

This is also the first floristic biodiversity inventory of the Rutgers campus, and we hope it can serve as a model for other universities.

METHODS

During the fall of 2011, we challenged 32 graduate and undergraduate students to create a campus-wide floristic survey of all wild and naturalized plant species on Cook and Douglass campuses (317 acres, Rutgers University, NJ, USA).

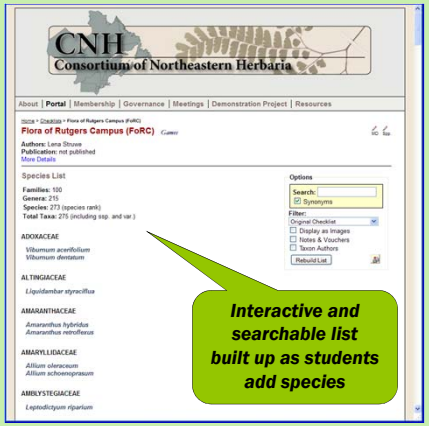
Students used both traditional tools (floras, hand lenses, and rubber boots) and high-tech equipment (phones with instant GPS, cameras, and internet).

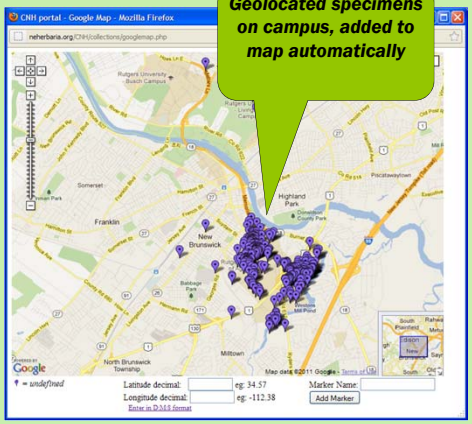
The data was uploaded by students to an online web portal housed by Consortium of Northeastern Herbaria (cnh.org), and stored as part of the Symbiota database.

The students' resulting herbarium specimens, field observations, and photos formed a species list, image bank, and maps of species locations now online.

Included in the inventory were all vascular plants (flowering plants, conifers, ferns, lycopods, and horsetails), as well as lichens, mosses, liverworts, and algae. Obviously cultivated species were not counted.

Students were rewarded with donated prizes for most species, most families, and for new species found.





RESULTS

Four months and one giant October snowstorm later:

- 100 plant families
- 216 genera
- 276 species

= more than 10% of New Jersey's plant species biodiversity, on our little campus

- Most reported species: *Trifolium repens* (white clover), 15 times.
- Most species-rich family: Asteraceae, 29 species

= more than 10% of all species were in the sunflower family

- Most species-rich genus: *Polygonum* (Polygonaceae), 9 species.
- Habitats visited: mixed hardwood forest, abandoned meadows, conifer plantations, patchy wood lots, weedy parking lots, ponds, campus lawns, ditches, wetlands, mossy rock walls, and fallow garden plots.

BROADER IMPACTS and CONCLUSIONS

- the campus becomes a living laboratory
- creates a long-term data set if ongoing classes continuously collect data, useful for other classes
- students gained essential botanical skills in field identification, inventorying, and data management
- students **loved** finding new species and exploring the botanical diversity outside the classroom

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FoRC logo designed by Clayton Leadbetter; Photos taken by Lena Struwe.