

Biology/ENEC 669-001
Plant Conservation Science and Practice
and the Conservation Garden
Fall 2019

Meeting time: 1-2 hrs once/week. Tuesdays 4-6 pm. This is a 2 credit course. Some weeks we will meet for 1 hour in order to accumulate time for field trips to the North Carolina Botanical Garden.

Meeting location: 217 Wilson Hall.

Instructor: Peter White
406 Coker Hall
919-962-6939
peter.white@unc.edu

Office hours: by appointment

Damon Waitt, Director of the Garden, will serve as our liaison to Garden staff members who will participate in some class meetings. This class is a collaboration with the University's own North Carolina Botanical Garden and has two main goals: to examine the state of plant conservation science and to discuss the changing role of botanical gardens given the challenges of climate change, environmental sustainability, and threats to biodiversity. Students will also be exposed to research and career opportunities in the world of conservation and public gardens.

Course goals: Weekly topics will include seed and germplasm banks, reintroduction of species to the wild, using climate change forecasts to determine appropriate genetic material, assisted migration, invasive species, natural area restoration, conservation management, regional conservation planning, gardening to support pollinator populations and wildlife, the UNC Herbarium as a center of biodiversity research and information, educational programs, citizen science, gardening in the context of water use, fertilizers, pesticides, and other issues of sustainable environmental practices.

Class format: The class is for 2 credit hours. We will meet one day a week. Our usual format will include an introduction to each week's focus led by the instructor Peter White, who served as Director of the North Carolina Botanical Garden for 28 years, and Garden staff and discussion of readings from the text and from the primary literature. Some class hours will be used for field trips to the Garden itself. The Garden includes the main Garden site on Fordham Boulevard, Mason Farm Biological Reserve, Coker Arboretum, Battle Park, the Carolina Campus Community Garden, the UNC Herbarium (Coker Hall), and other tracts and programs.

Text: *Blackmore, S., and S. Oldfield (editors). 2017. Plant Conservation Science and Practice: The Role of Botanic Gardens. Cambridge University Press.*

Readings in the primary literature will be selected for many of the topics.

Class evaluation:

60% Participation in class discussions and activities, including discussions of readings supplemental to the text

You must keep a journal or diary giving a narrative of class discussions and activities, and your own reflections!

30% Term project in the form of a letter of application to a job you define

10% Final exam

Provisional Class schedule (adjustments will be made during the semester):

Week Topic and Text Book Readings (papers from the scientific literature will also be assigned)

- 1 Organizational meeting; overview of the class; grading and expectations
Definition and brief history of botanical gardens; botanical garden values; the extinction crisis
Blackmore and Oldfield 2017, Chapters 1 and 3
- 2 Saving rare plants 1, Ex situ conservation, seed and germplasm banks, conservation genetics
Blackmore and Oldfield 2017, Chapter 5, NCBG Staff: Randall, Kunz
- 3 Saving rare plants 2, Reintroduction
Blackmore and Oldfield 2017, Chapter 6, NCBG Staff: Kunz
- 4 Climate change, seed sources, assisted migration
Blackmore and Oldfield 2017, Chapter 7
- 5 Natural area protection and restoration
Blackmore and Oldfield 2017, Chapter 4, NCBG Staff: Adams
- 6 Regional conservation planning
Julie Tuttle, NCBG Staff: Randall, Weakley
- 7 Invasive species 1, impacts and management
NCBG Staff: Waitt
- 8 Invasive species 2, risk assessment of new introductions; Sentinel Plant project
NCBG Staff: Stern
- 9 The sustainability score card
NCBG Staff: Starr
- 10 Home and landscape gardening
NCBG Staff: Stern
- 11 Conservation through propagation; Seed lists and exchange programs
NCBG Staff: Summer
- 12 Herbaria, databases, and publications
Blackmore and Oldfield 2017, Chapter 2, NCBG Staff: Weakley
- 13 Public education, citizen science
Blackmore and Oldfield 2017, Chapter 8, NCBG Staff: Lelekacs
- 14 Careers in plant conservation and public gardens
NCBG Staff: Randall, Waitt
- 15 Class summary
Blackmore and Oldfield 2017, Chapters 9 and 10, NCBG Staff: Waitt