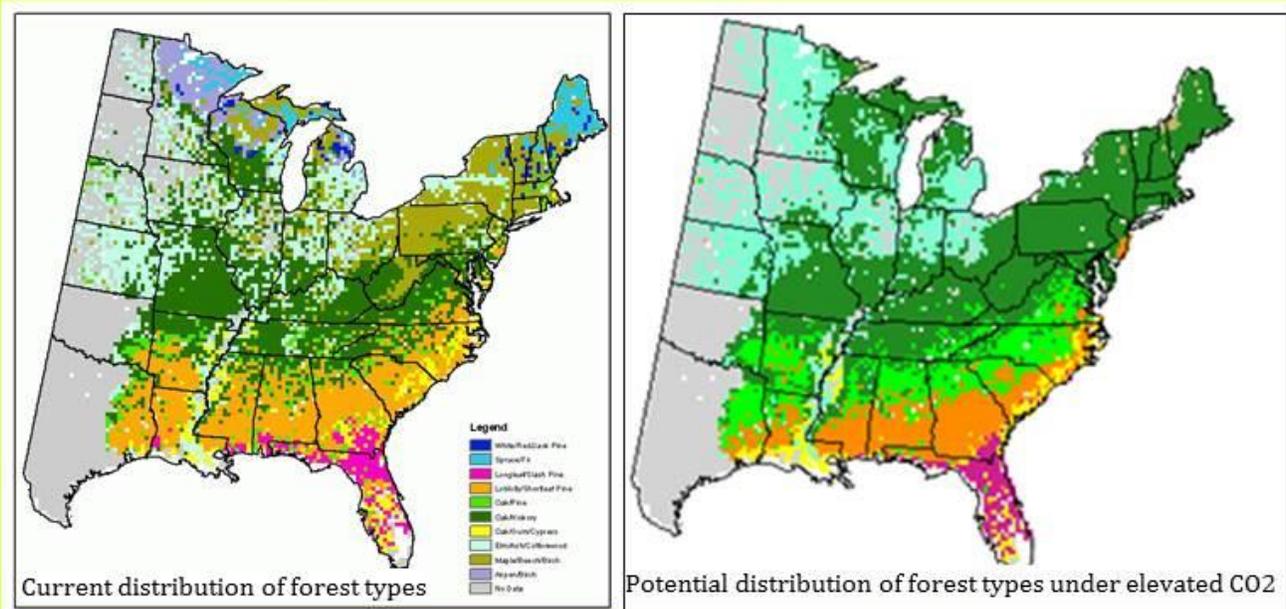


Global Change Ecology Graduate Seminar

EFB 797 (section 12), 1 credit

Coordinator: Dr. Martin Dovčiak (mdovciak@esf.edu)

Class meets once a week for 55 minutes on Thursdays at 2:00-2:55 pm in Illick 334.



Readings and discussions of advanced papers in Global Change Ecology, focusing on the effects of global change on World's ecotones and biomes.

We will consider what evidence there is for actual observed changes, what are the predictions of potential future changes, and what are the mechanisms and consequences of these changes.

Course set-up and expectations:

Each week, students are responsible for reading and discussing 1 to 2 papers selected by students and approved by the course instructor. All readings should be selected from primary literature, ideally published within the last few years in a higher impact journal, and include a quantitative data analysis or modeling to support their conclusions. Participants must attend all seminars (or make prior arrangements to compensate for their absence) and actively participate in them. The activities and grade will be structured as follows:

1. Discussions of the selected papers (30% of the grade).
2. Weekly selection of readings; each participant selects at least one reading (20% of the grade)
3. Presentation (25 min.) of a selected reading in the context of other papers (25% of the grade)
4. Leading seminar discussion at least once (25% of the grade).

Ideally two students will be assigned to each paper to lead and facilitate group discussions. All students will be expected to have read the paper thoroughly and have a good understanding of the methods, results and importance of the paper. All students will prepare at least five significant questions/discussion points about the paper.

Global Change Ecology Graduate Seminar – Schedule

Seminar meets on Thursdays at 2-2:55 pm in Illick 334 unless otherwise advised. Additional information is available from seminar coordinator, Dr. Martin Dovčiak (mdovciak@esf.edu).

Sept. 1 Seminar information & introductions.

Sept. 8 Discussion of readings below. Sign-up for presentation and discussion leadership.

- Frelich LE, Reich PB. (2010). Will environmental changes reinforce the impact of global warming on the prairie-forest border of central North America? *Frontiers in Ecology and the Environment* 8: 371-378.
- Frelich LE, Eisenhauer N, Reich PB, Holdsworth AR, Peterson R, Dovčiak M. (invited paper, abstract). Interactions among trophic levels and invasive species influence the response to climate change of the temperate-boreal forest ecotone in eastern North America.

Sept. 15

- Davis & Shaw (2001). Range shifts and adaptive responses to Quaternary climate change. *Science* 292: 673-679.

Sept. 22

- Perry et al. (2005). Climate change and distribution shifts in marine fishes. *Science* 308: 1912-1915.

Sept. 29

- Paradis et al. (2008). Role of winter temperature and climate change on the survival and future range expansion of the hemlock woolly adelgid (*Adelges tsugae*) in eastern North America. *Mitig Adapt Strat Glob Change* 13: 541-554.

Oct. 6

- Bradley et al (2009). Climate change and plant invasions: restoration opportunities ahead? *Global Change Biology* 15:1511-1521.

Oct. 13

- Honnay et al. (2002) Possible effects of habitat fragmentation and climate change on the range of forest plant species. *Ecology Letters* 5:525-530.
- Opdam & Wascher (2004). Climate change meets habitat fragmentation: linking landscape and biogeographical scale levels in research and conservation. *Biological Conservation* 117: 285-297.

Oct. 20

- Bellon et al. (2011). Assessing the vulnerability of traditional maize seed systems in Mexico to climate change. *PNAS* 108: 13432-13437.

Oct. 27

- Galatowitsch et al. (2009). Regional climate change adaptation strategies for biodiversity conservation in a midcontinental region of North America. *Biological Conservation* 142: 2012-2022.

Nov. 3

- Mullins et al. (2011). Holocene climate and environmental change in central New York (USA). *Journal of Paleolimnology* 45:243-256.

Nov. 10

- Suttle et al. (2007). Species interactions reverse grassland responses to changing climate. *Science* 315, 640-642.

Nov. 17

- DeFrenne et al. (2011). Temperature effects on forest herbs assessed by warming and transplant experiments along a latitudinal gradient. *Global Change Biology* 17, 3240-3253.

Nov. 24 Thanksgiving (no class)

Dec. 1

- Ashcroft and Gollan (2011). Fine-resolution (25 m) topoclimatic grids of near-surface (5 cm) extreme temperatures and humidities across various habitats in a large (200 × 300 km) and diverse region. *Int. J. Climatol.* DOI: 10.1002/joc.2428.

Dec. 8

- Frelich et al. (invited paper, outline). Interactions among trophic levels and invasive species influence the response to climate change of the temperate-boreal forest ecotone in eastern North America.

Footnotes: Papers selected by students after the discussion with the seminar coordinator.