

NOVEL LANDSCAPES

Challenges and Opportunities for Design Education

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Lower Ninth Ward, NOLA. Source: <http://www.nytimes.com/imagepages/2012/03/25/magazine/25jungleland3.html>

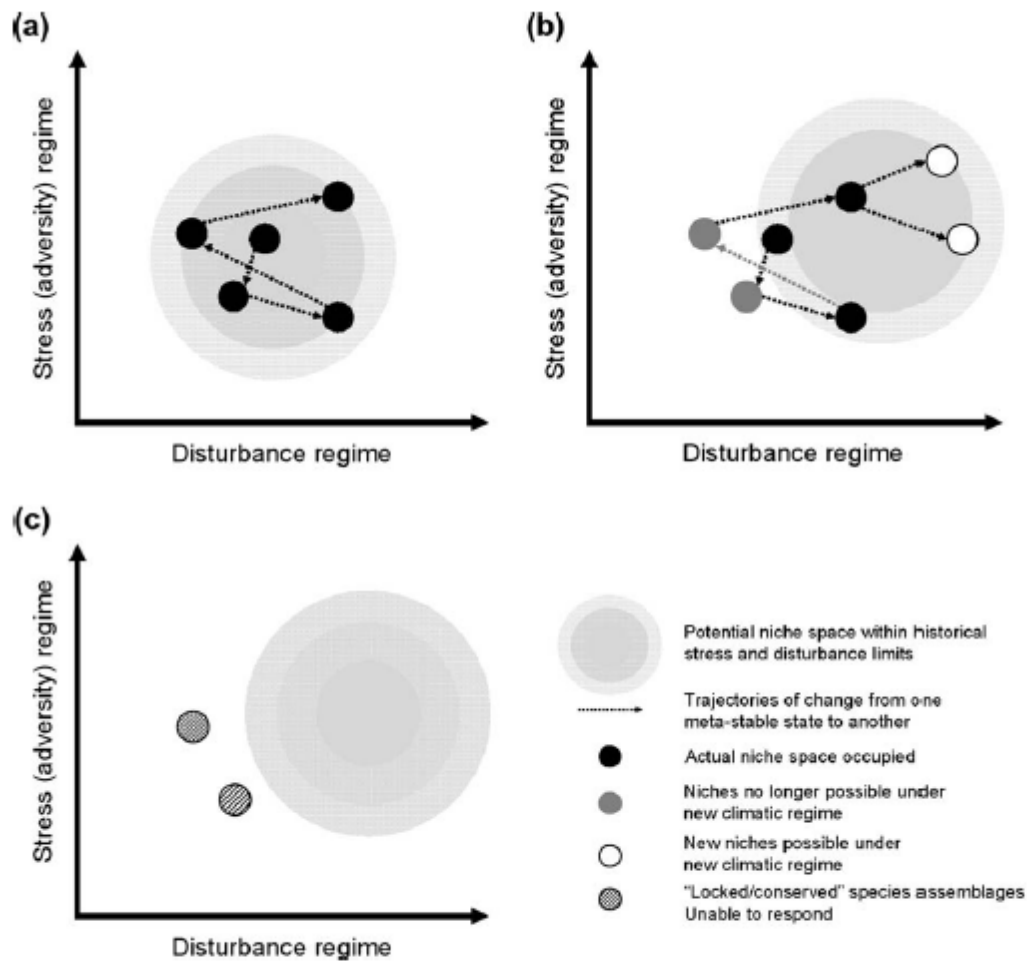
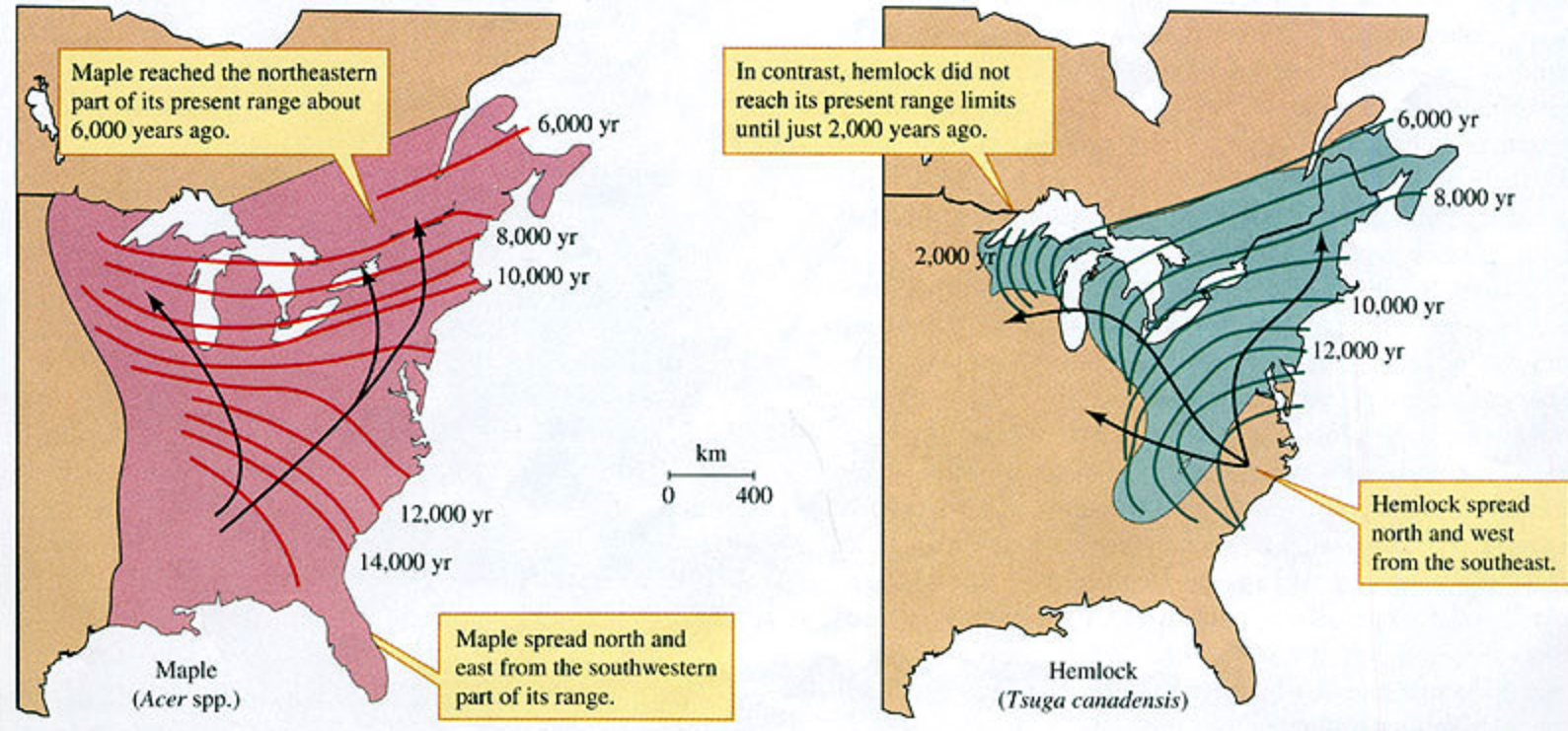


Figure 1. (a) Impact of normal climatic shifts on available niche space; (b) change in available niche space in response to changing climate; (c) "locked" assemblages unable to change in response to changing climate.

A novel system is a system of abiotic, biotic and social components (and their interactions) that, by virtue of human influence, differs from those that prevailed historically, having a tendency to self-organize and manifest novel qualities without intensive human management. Novel ecosystems are distinguished from hybrid ecosystems by practical limitations (a combination of ecological, environmental and social thresholds) on recovery of historical qualities

Range expansions have occurred, but....



Preserving Native Species

Versus

Intervening to Maintain Ecological Functions

....adherence to native species in restoration practice is a form of 'biological bias' – an ideology grounded in nostalgia that ignores the evidence of rapid and intense change and the positive effects of invaders.

E. LANTIER/AT DE GOR.



A forester engages in efforts to eradicate the velvet tree *Miconia calvescens* in Hawaii.

Don't judge species on their origins

Conservationists should assess organisms on environmental impact rather than on whether they are natives, argue **Mark Davis** and 18 other ecologists.

3 key questions

1. What is role of design education in the context of novel landscapes?
2. How can design educators and students begin to understand landscapes not previously encountered?
3. How can design educators mentor and direct students towards acquiring knowledge and skills to be successful practitioners in non-analog communities?

Role of design education

Design re-configures:

- the flow of photosynthetic energy and water;
- alters a site's slope; and
- creates opportunities for new trophic connections

Role of design education:

- Translate uncertainties into research questions and collaborations
 - Create opportunities for field-based research experiences
 - Project sites become learning nodes for research and teaching purposes

How to understand landscapes not previously encountered

1. Ecological literacy
 2. Research-based design education
 3. The political and ethical contexts of novel landscapes
1. Extending temporal scale
 2. Exposing students to research analyzing novel components and landscape function
 3. Recognizing functional equivalents resulting from novel species assemblages
 4. Understanding not all traits in species functional groups are redundant

How to understand landscapes not previously encountered

1. Ecological literacy
 2. Research-based design education
 3. The political and ethical contexts of novel landscapes
- Creating research opportunities between landscape architects and ecologists:
 - vegetation response to changing climatic conditions;
 - functional capacity of introduced species related to specific landscape performance metrics; and
 - the cultural dimensions of novel landscapes, including aesthetics.
 - Development of a broader, interdisciplinary research agenda

How to understand landscapes not previously encountered

1. Ecological literacy
 2. Research-based design education
 3. The political and ethical contexts of novel landscapes
- Discussions with designers, ecologists, social scientists and ethicists could address:
 - What political processes are effective in deciding how future public landscapes will function;
 - What are the ethical implications of prioritizing one function (for example, flood control) over another (for example, carbon sequestration) for future generations; and
 - How might environmental justice concerns become a key component for restoring, designing and managing landscapes that are fair and just?

Thank you!

Comments and questions appreciated

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Paper available upon request