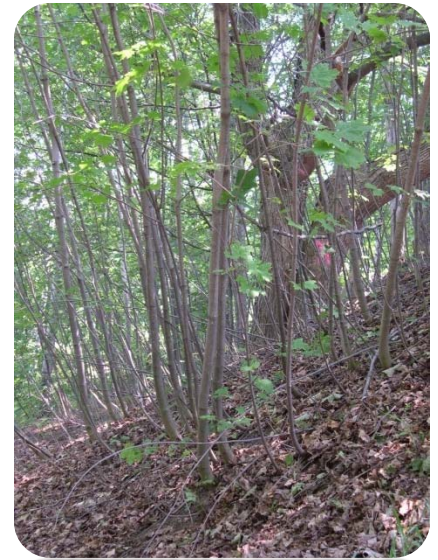


Christopher R. Webster

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Research Projects

1. Invasion Biology of Norway Maple

- Wangen, S.R., and **C.R. Webster**. 2006. Potential for multiple lag phases during biotic invasions: reconstructing an invasion of the exotic tree *Acer platanoides*. *Journal of Applied Ecology* 43: 258-268.
- **Webster, C.R.**, K. Nelson, and S. Wangen. 2005. Stand dynamics of an insular population of an invasive tree, *Acer platanoides*. *Forest Ecology and Management* 208: 85-99.

2. Herbivore-Invasion Interactions

- **Webster, C.R.**, J.H. Rock, R.E. Froese, and M.A. Jenkins. 2008. Drought-herbivory interaction disrupts competitive displacement of native plants by *Microstegium vimineum*, 10 year results. *Oecologia* 157: 497-508

3. Risk Assessment

- Co-investigator with Andrew Storer, Linda Nagel, and Mike Hyslop. Project examines invasion, establishment, and spread risk in the Great Lakes Network of National Parks for several invasive plants.

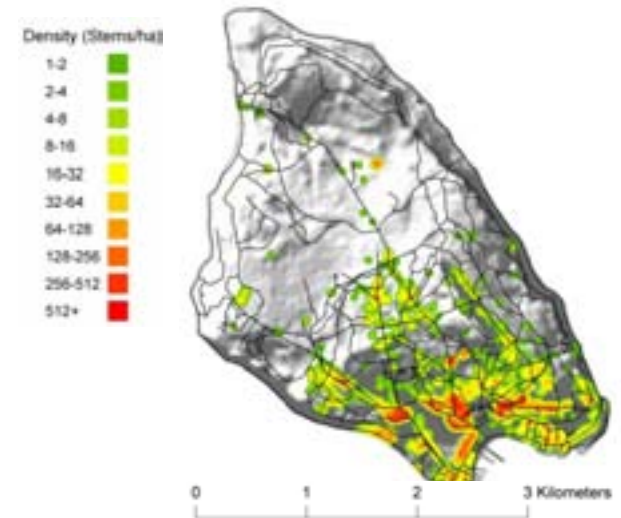
Research Interests

- Spread of invasive plants
- Mechanisms underlying invasion success
- Control techniques
 - **Webster, C.R.**, M.A. Jenkins, and S. Jose. 2007. Invasion biology and control of invasive woody plants in eastern forests. *Native Plants Journal* 8(2): 97-106.
 - **Webster, C.R.**, M.A. Jenkins, and S. Jose. 2006. Woody invaders and the challenges they pose to forest ecosystems in the eastern United States. *Journal of Forestry* 104 (7): 366-374.



Tools

- We use a number of tools in my lab to investigate biological invasions, including:
 - Dendroecology (tree ring analysis)
 - Spatial statistics
 - Ordination
 - Experimental and field studies



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Research Projects - EAB

1. Detection tools for emerald ash borer

- Marshall, J.M., A.J. Storer, I. Fraser, J.A. Beachy, and V.C. Mastro. 2009. Effectiveness of differing trap types for the detection of emerald ash borer (Coleoptera: Buprestidae). *Environmental Entomology* 38:1226-1234.
- Marshall, J.M., A.J. Storer, I. Fraser, and V.C. Mastro. 2009. Efficacy of trap and lure types for detection of *Agrilus planipennis* (Col., Buprestidae) at low density. *Journal of Applied Entomology*, in press.
- Risk based ground survey techniques, non-destructive trap tree techniques.

2. Emerald ash borer management strategies

- Ash phloem reduction models.
- SLow A.sh M.ortality (SLAM): A multi-agency, multi-tool approach to managing emerald ash borer populations.

Research Projects – EAB (cont.)

3. Impacts of emerald ash borer

- Development of emerald ash borer populations in northern areas.
- Evaluation of tree mortality resulting from emerald ash borer
- Survival of ash trees following an emerald ash borer invasion.

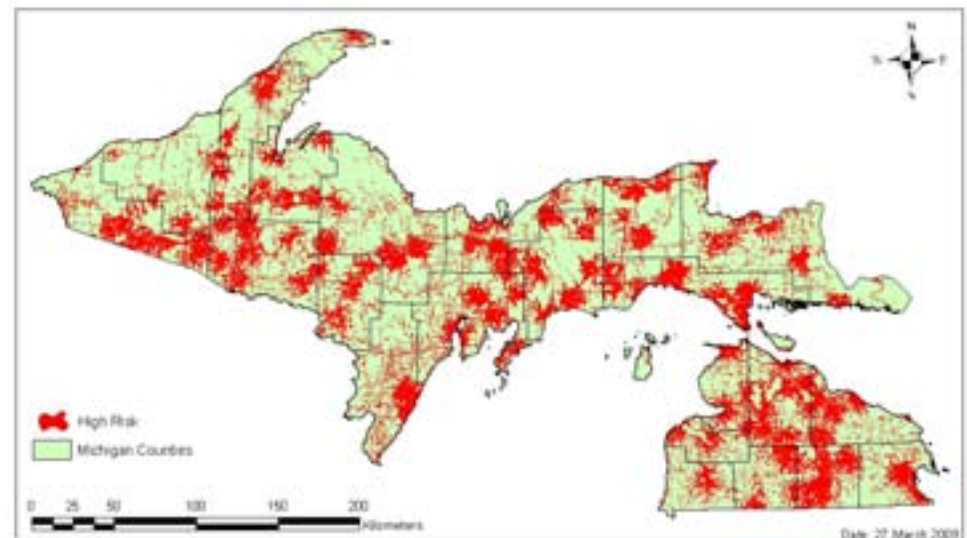


Other Research Projects Relating to Exotic Species

- Impacts of, and tree resistance to, beech bark disease (USDA Forest Service)
- Risk modeling and management of exotic weeds (National Park Service)
- Impacts of exotic earthworms



Preliminary Risk Assessment for Emerald Ash Borer
Upper Peninsula and Northern Lower Peninsula, Michigan



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Research Projects

1. Pennsylvania Sedge Mats

- Native “invasive” that out-competes natural tree regeneration
- Interactions with deer browse, exotic earthworms, and forest management
- Powers, M.D. and L.M. Nagel. 2009. Pennsylvania sedge cover, forest management, and deer density influence tree regeneration dynamics in a northern hardwood forest. *Forestry* 82(3):241-254.
- Powers, M.D. and L.M. Nagel. 2008. Disturbance dynamics influence Pennsylvania sedge abundance in a northern hardwood forest. *Journal of the Torrey Botanical Society* 135(3):317-327.

2. Glossy Buckthorn – control methods

- Nagel, L.M., R.G. Corace and A.J. Storer. 2008. An experimental approach to testing the efficacy of management treatments for glossy buckthorn at Seney National Wildlife Refuge, Upper Michigan. *Ecological Restoration* 26:136-142.

Research Projects

3. Multi-criteria Risk Modeling

- Three phases: introduction, establishment, spread
- Garlic mustard across the UP of Michigan
- Great Lakes Network of the National Park Service – 10 target invasive plants

Other On-going Research Projects

- Risk modeling and management of exotic weeds (National Park Service, with Storer)
- Emerald ash borer phloem reduction (with Storer)

