



Wavyleaf Basketgrass Ecology and Control

Dr. Vanessa B. Beauchamp
Department of Biological
Sciences

Towson University
vbeauchamp@towson.edu

Wavyleaf Basketgrass

- Taxonomy/Identification
- Invasion origins
- Habitats
- Seed dispersal
- Competition
- Food web impacts
- Control



Oplismenus undulatifolius ([\(Ard.\) P. Beauv.](#)) (finally!)



[Home](#) [About ITIS](#) [Data Access and Tools](#) [Get ITIS Data](#) [Submit and Update Data](#)

[Go to Print Version](#)

Oplismenus undulatifolius ([\(Ard.\) P. Beauv.](#))

Taxonomic Serial No.: 565334

[Download data](#) ([Download Help](#)) *Oplismenus undulatifolius* TSN 565334

Taxonomy and Nomenclature

Kingdom: Plantae
Taxonomic Rank: Species
Synonym(s): [Oplismenus coreanus](#) Nakai
[Oplismenus undulatifolius](#) (Ard.) Roem. & Schult.
[Orthopogon bolosii](#) Vayr.
[Orthopogon undulatifolius](#) (Ard.) Spreng.
[Orthopogon undulatus](#) Link
[Panicum undulatifolium](#) Ard.
[Oplismenus hirtellus ssp. undulatifolius](#) (Ard.) U. Scholz
Common Name(s): wavyleaf basketgrass

Taxonomic Status:

Current Standing: accepted

Data Quality Indicators:

Record Credibility Rating: verified - standards met

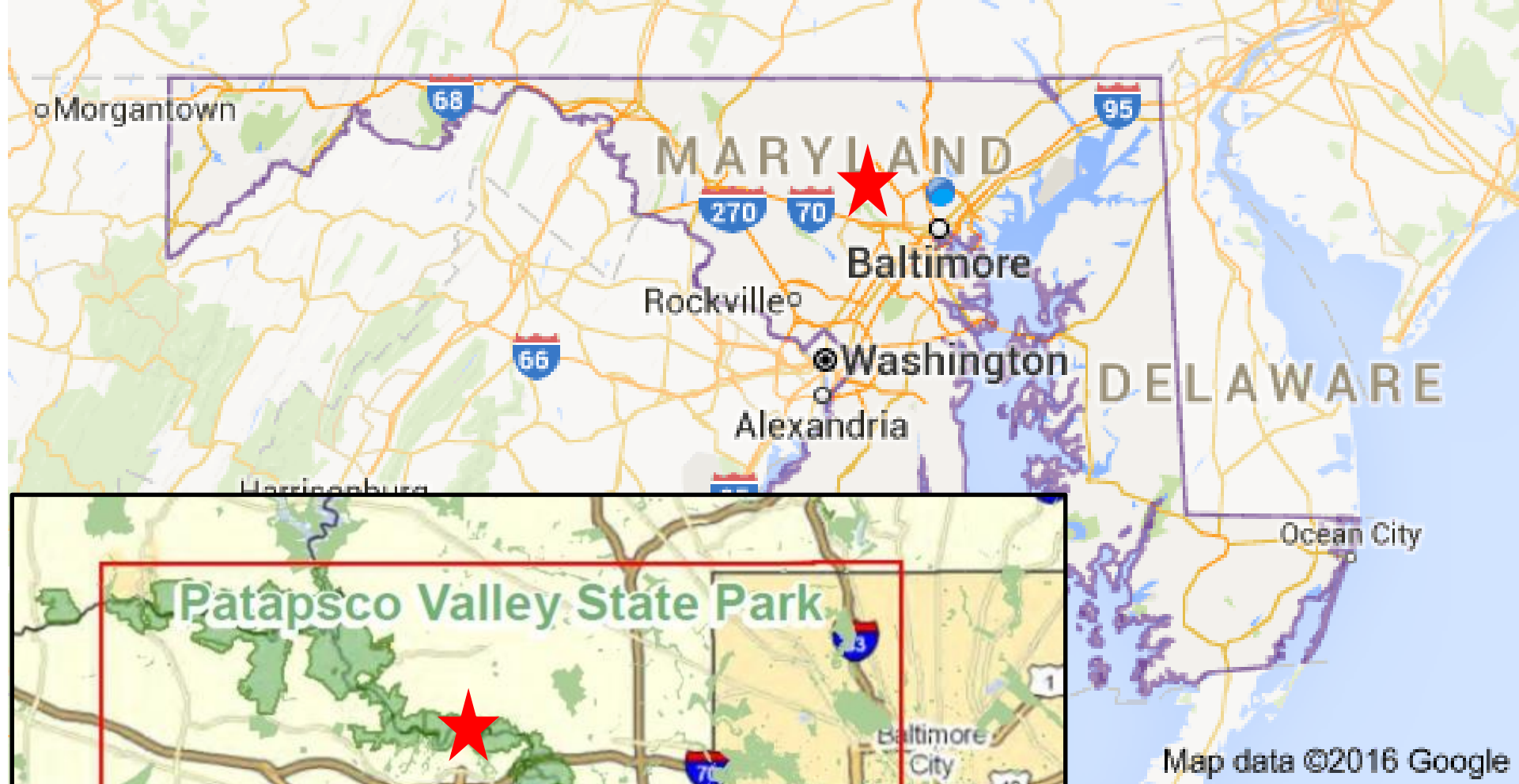
What it's not



An introduction to *Oplismenus undulatifolius*

- First discovered in Patapsco Valley State Park and near Liberty Reservoir
 - Edward Uebel in 1996





Map data ©2016 Google

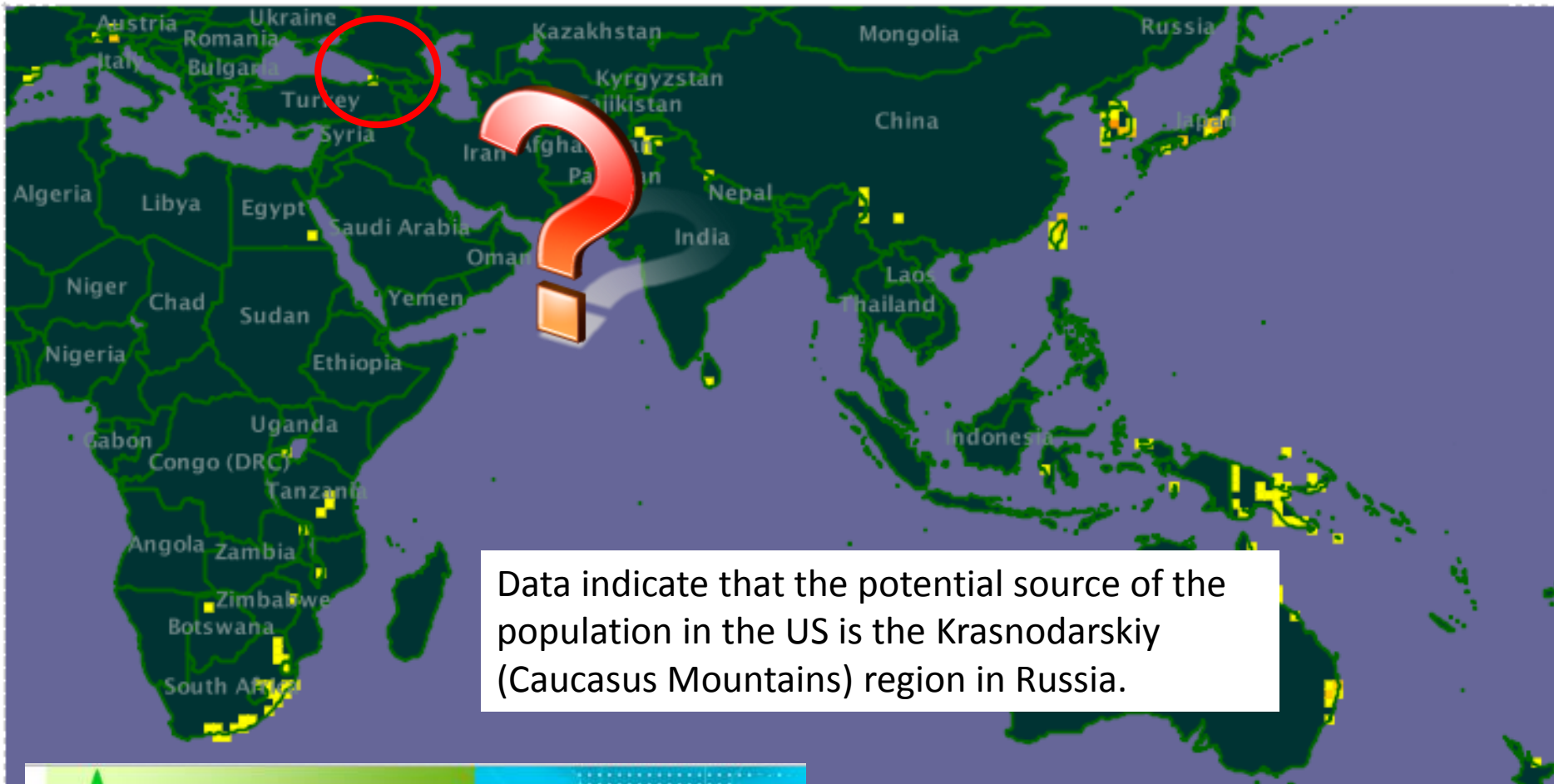


Origin of the Invasion

- Data from Sharon Talley and Craig Ramsey at USDA APHIS show that our wavyleaf is morphologically and genetically different from the variegated form.



Oplismenus undulatifolius



Data indicate that the potential source of the population in the US is the Krasnodarskiy (Caucasus Mountains) region in Russia.



So why do we care?



So why do we care?

- Characteristics of successful invasive plants
 - Tolerate a variety of habitat conditions
 - Grow and reproduce rapidly
 - Efficient method of seed dispersal, germinates easily
 - Able to reproduce sexually - by seed - or asexually by sending out aboveground or belowground “runners” (stolons and rhizomes)
 - Compete aggressively for resources
 - Lack natural enemies or pests in the new ecosystem
 - Resistant to grazing.

Habitats



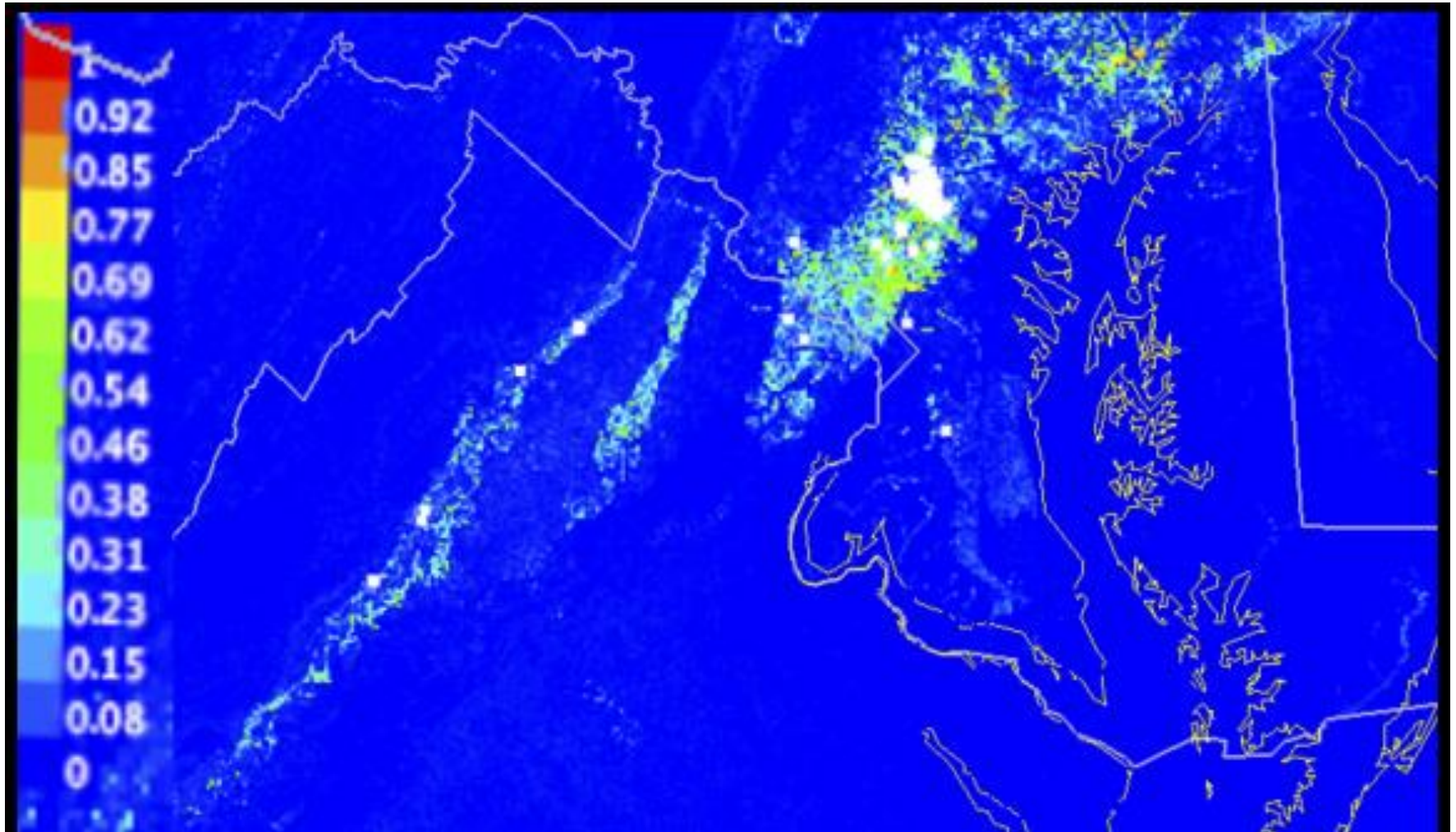
Japanese stiltgrass

wavyleaf basketgrass





NASA Observational Data and Habitat Suitability Modeling for Wavyleaf Basketgrass





Seed Dispersal



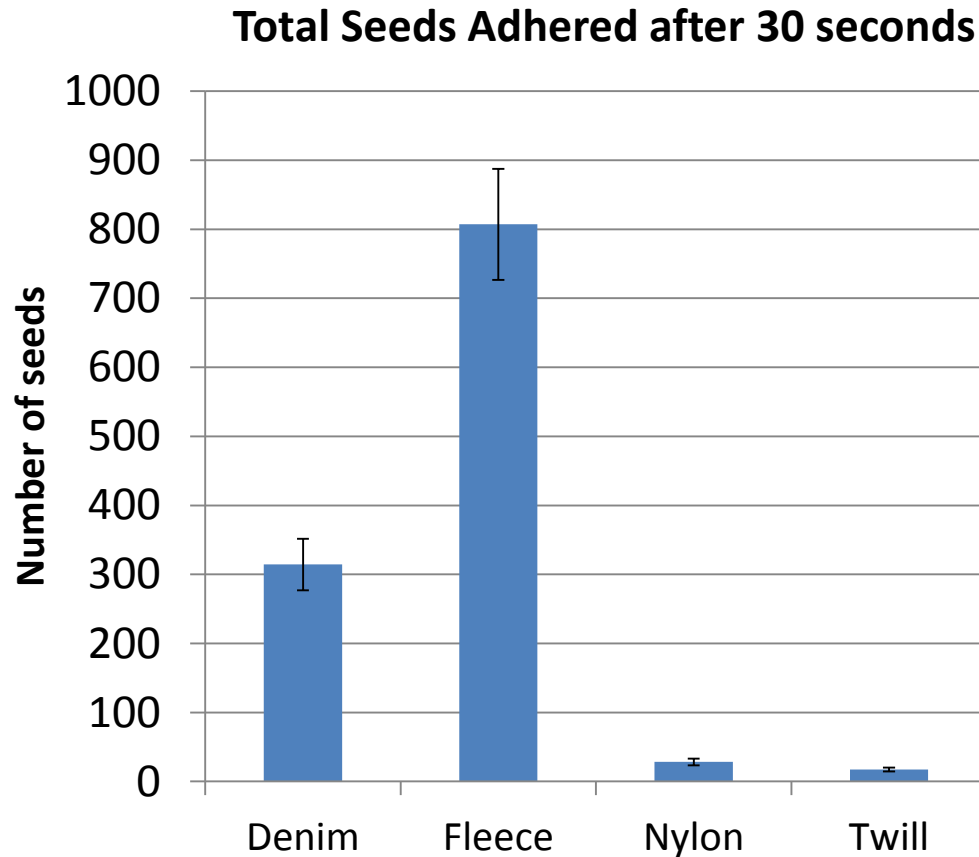
Seed production, dispersal and germination

- Seed is available for dispersal in August (possibly earlier)
 - remains on plant until senescence in winter.
- 900 – 6000 seeds per square meter
- + 80% germination when collected in October and planted the following spring



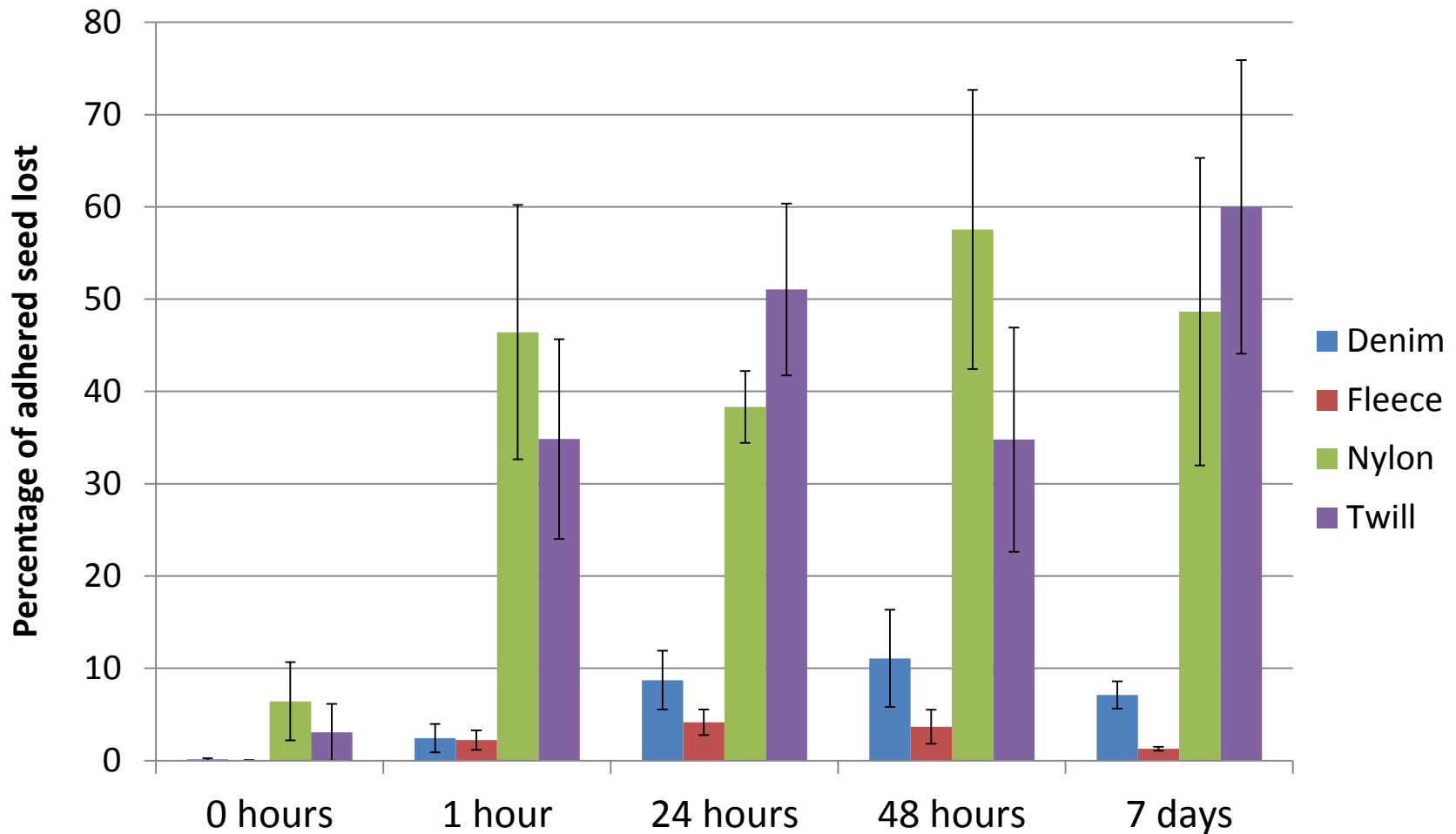
Seed production, germination and dispersal

Dispersal by people

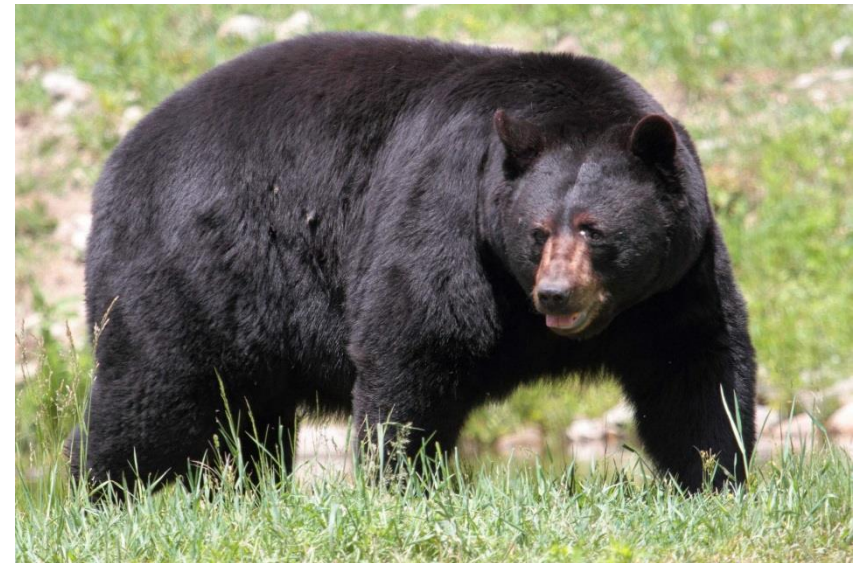
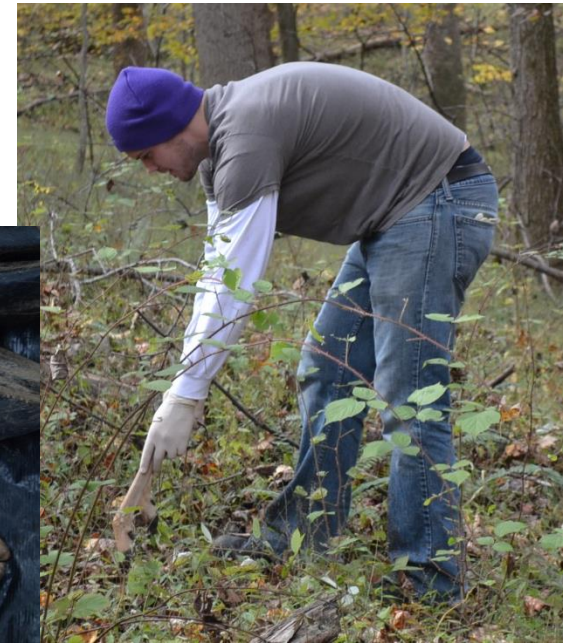


Seed production, germination and dispersal

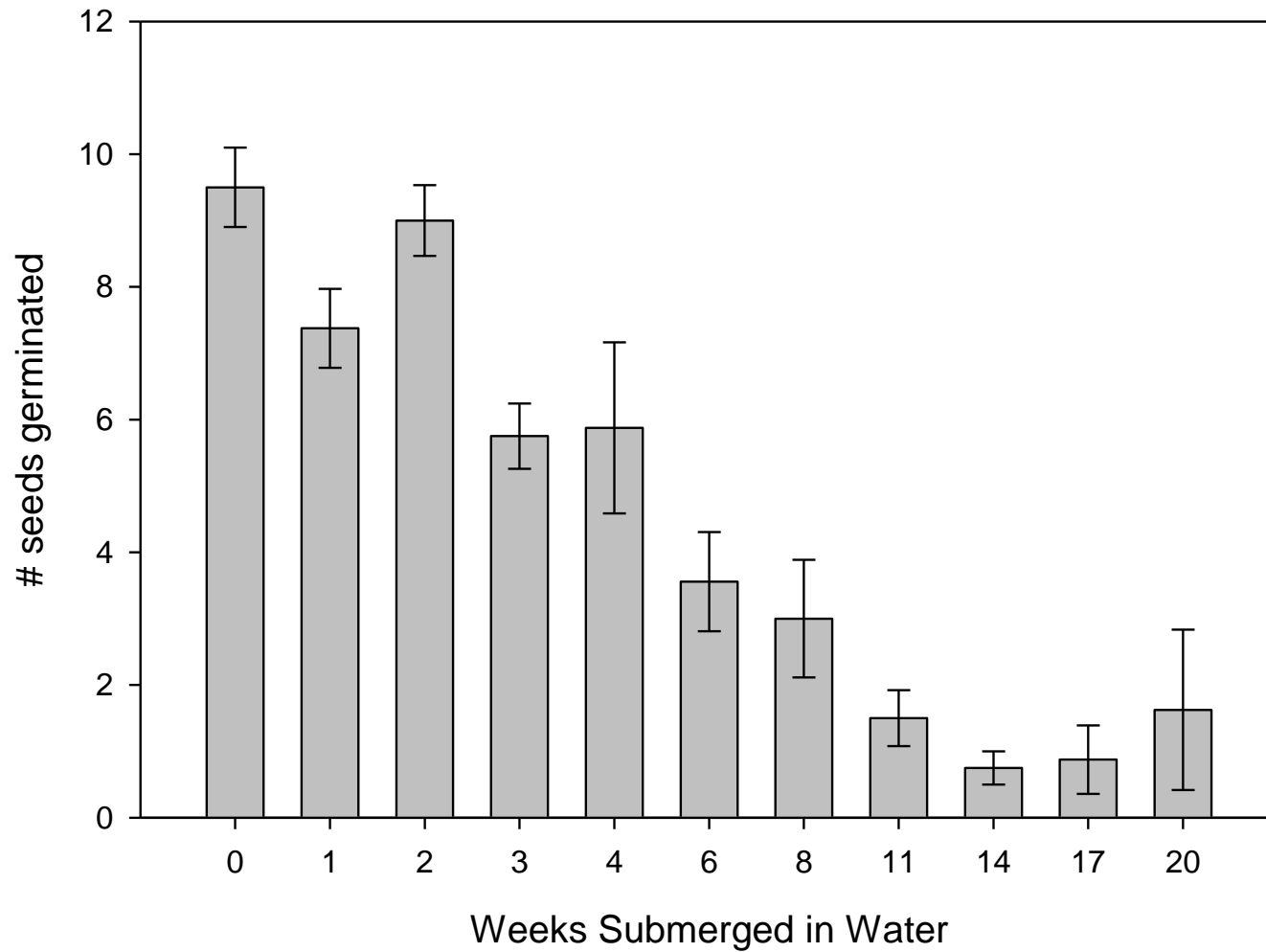
How long does it stay stuck?



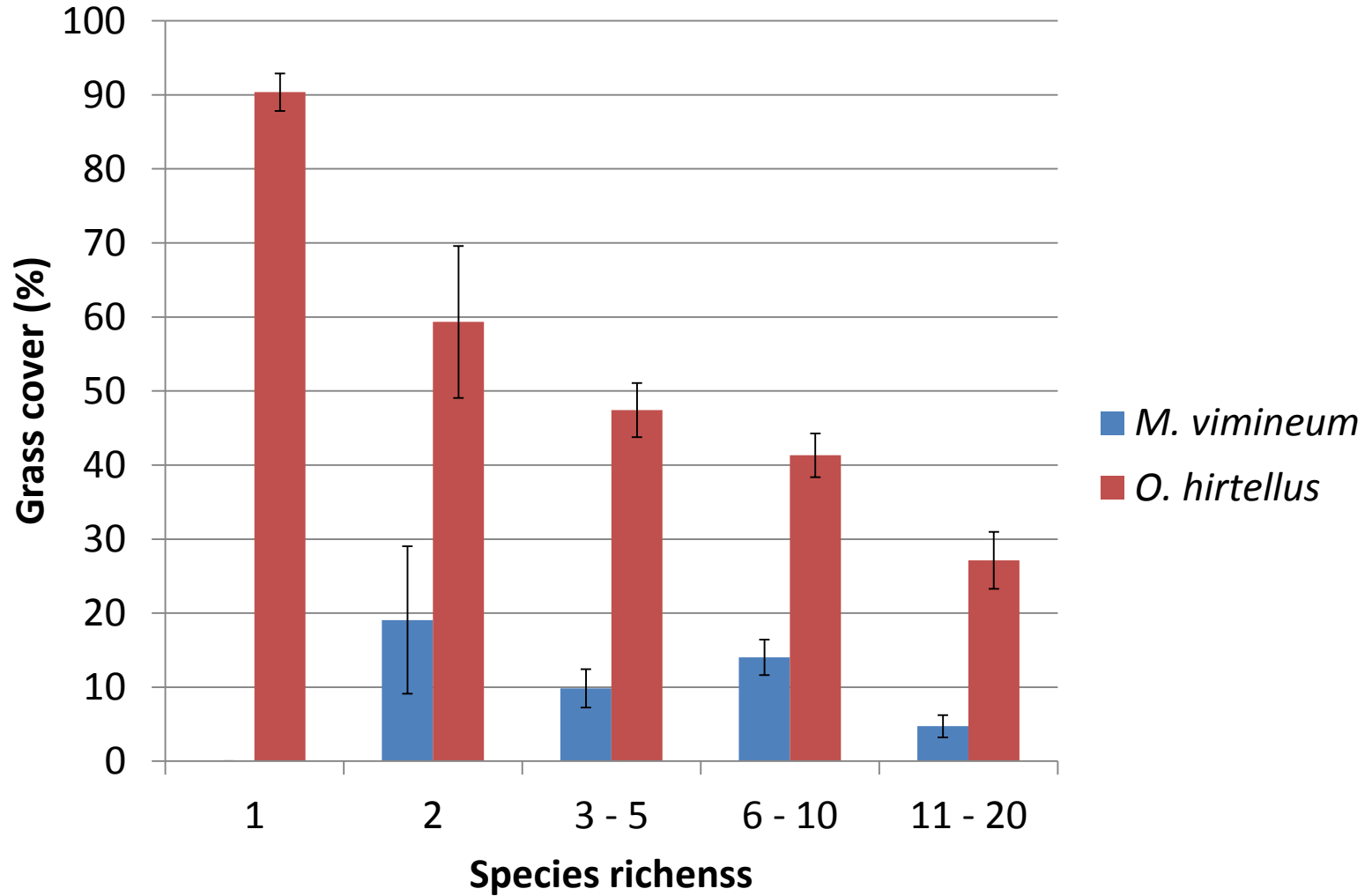
Seed production, dispersal and germination



Hydrochory



Competition for Resources



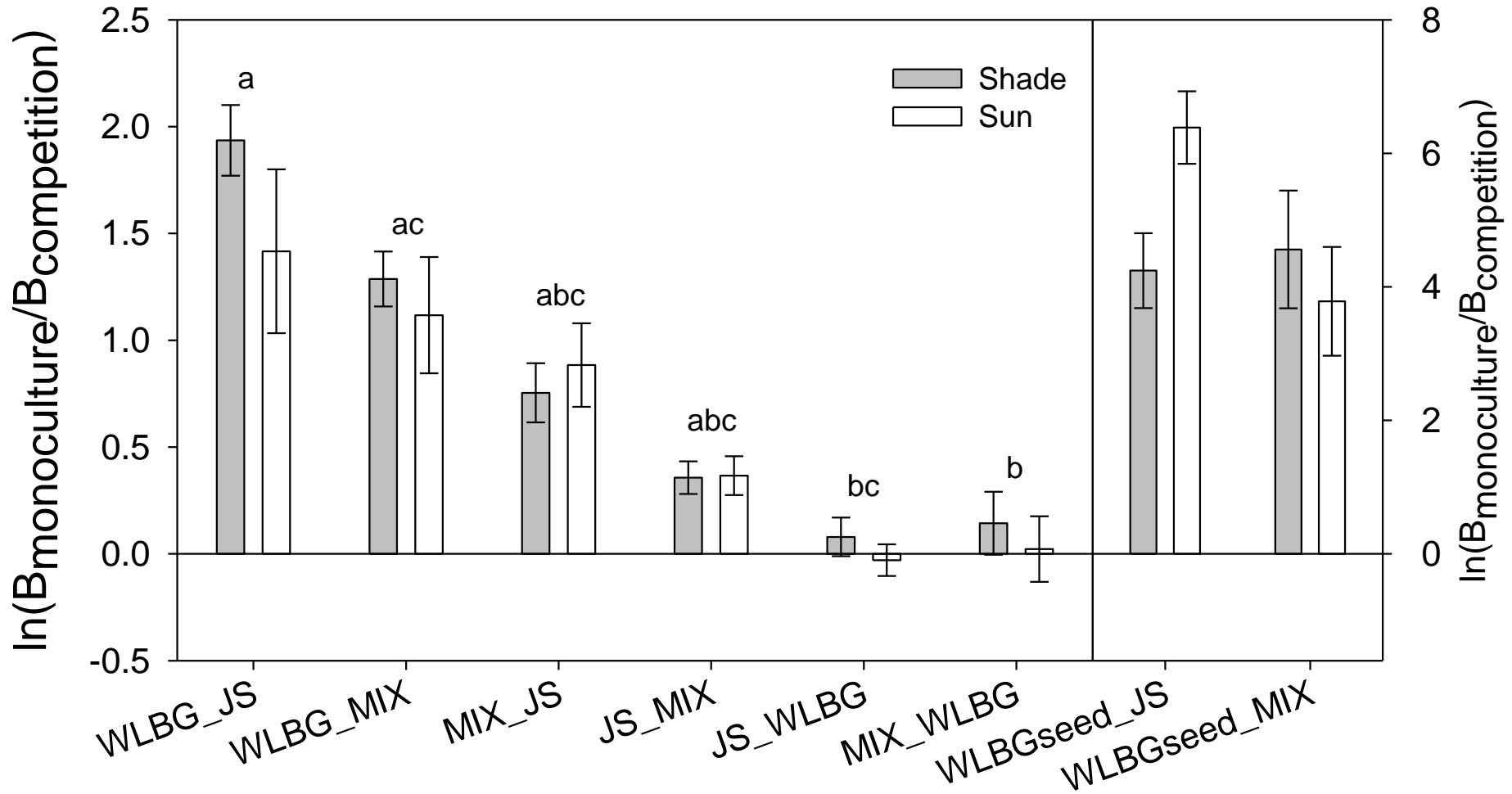
How competitive is it?

- *Oplismenus undulatifolius*
- *Microstegium vimineum*
- Native Mix
 - *Agrostis perennans* (autumn bentgrass)
 - *Elymus virginicus* (Virginia wildrye)
 - *Dichanthelium clandestinum* (deertongue dichanthelium)
- Grown in monoculture and in competition in sun and shade
- March – October 2012

How competitive is it?



How competitive is it?



Natural Enemies

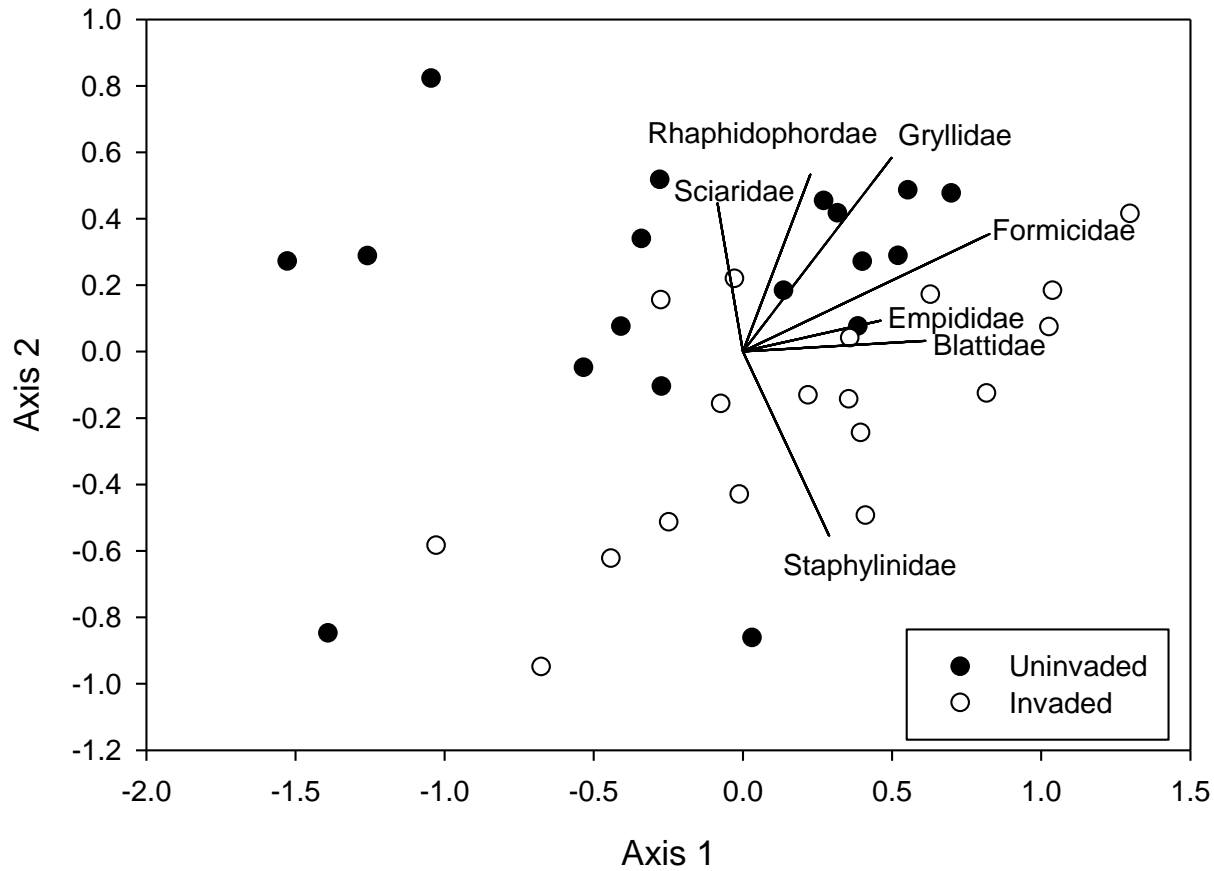


Leafhopper (*Tylozygus geometricus*)
on wavy leaf Courtesy of Richard Orr
Mid-Atlantic Invertebrate Field
Studies



What lives in it?


Pitfall Traps by Family



Cave crickets, crickets, scarab beetles and fungus gnats indicators of uninvaded plots

Cockroaches, rove beetles and ground beetles indicators of invaded plots

So why do we care?

- Characteristics of successful invasive plants
 - ✓ - Tolerate a variety of habitat conditions
 - ✓ - Grow and reproduce rapidly
 - Efficient method of seed dispersal, germinates easily
 - Able to reproduce sexually - by seed - or asexually by sending out aboveground or belowground “runners” (stolons and rhizomes)
 -  Compete aggressively for resources
 - ✓ - Lack natural enemies or pests in the new ecosystem
 - Resistant to grazing.

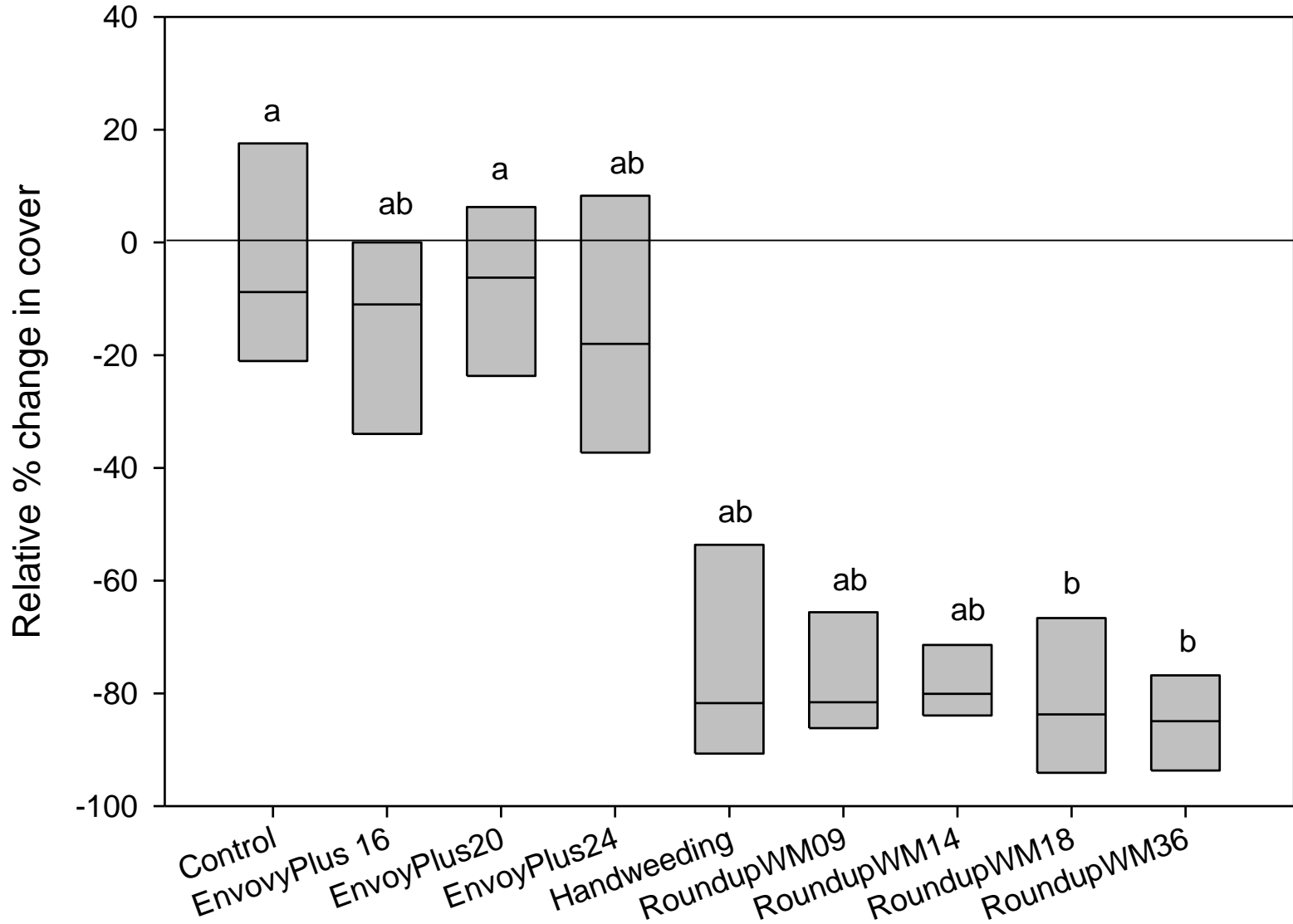
What kills it?

- Two sites at Patapsco Valley State Park
- Envoy Plus 16, 20 and 24; Roundup WM 9, 14, 18, 36, handweeding, control
- Three blocks per site
- Surveyed June 2014, treated July 2014, re-surveyed Oct 2014, June 2015 and Oct 2015

What kills it?

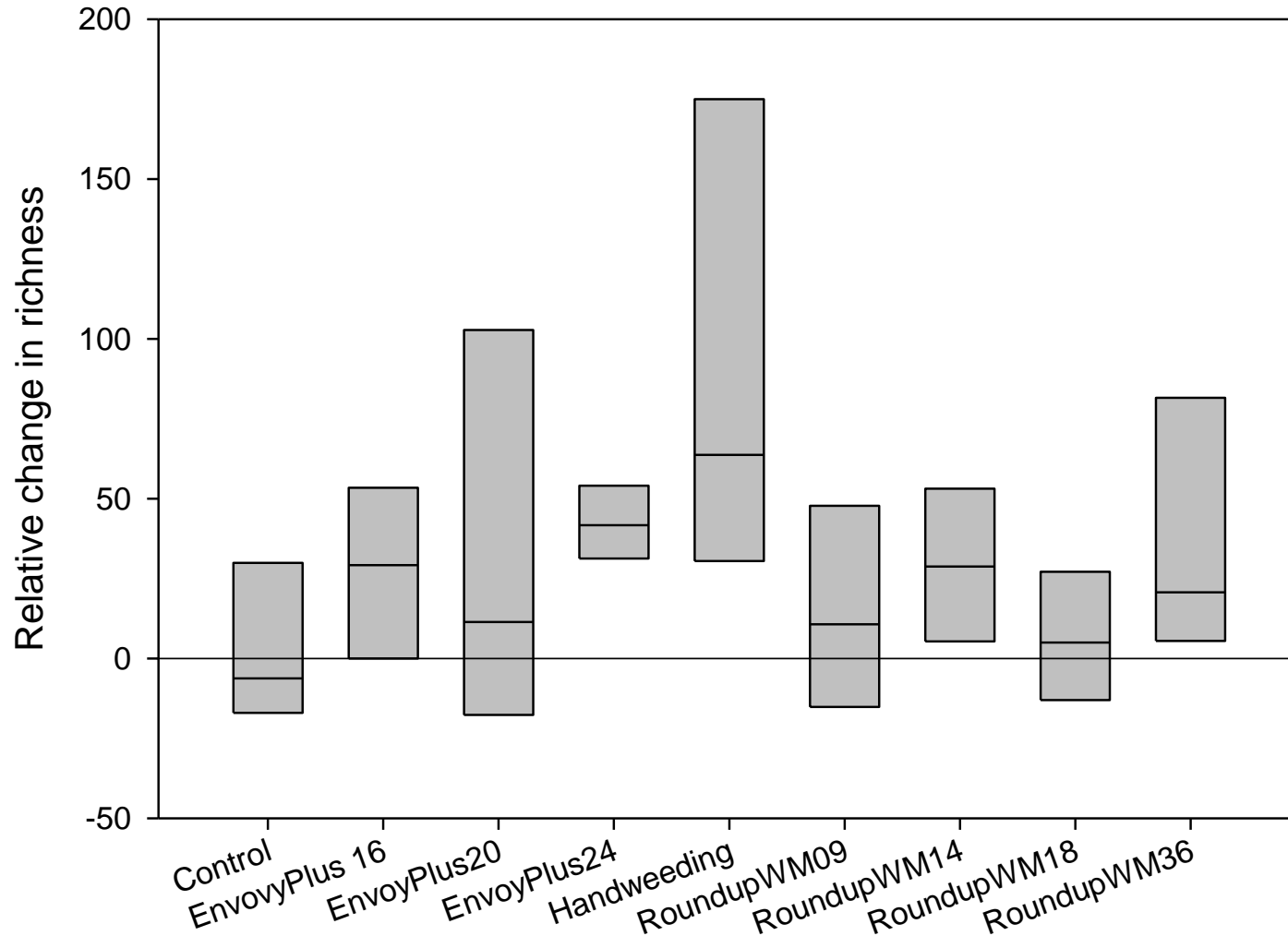


What kills it?



What else gets killed?

Richness June14_June15 both sites



Best Practices

- Wear clothes that can be easily cleaned
 - Rain pants and rain boots
- Have clothes and shoes exclusively for working in wavyleaf.
- Remove seeds from clothes with duct-tape
- Inspect boots and laces thoroughly
 - Budget at least 30 min for clean up after visiting dense patches in seed.
- Wrap seed covered tape in plastic bag and discard.

What you can do

- Report sightings
- Increase awareness
 - Involve the public
 - Survey trails for sprouts
- Treat as soon as possible