

Native versus Invasive Strains

Phragmites



upload.wikimedia.org

What is a species?

- **Definitions:** A group of organisms which can interbreed to form fertile young
- A class of individuals having some common characteristics or qualities; distinct sort or kind¹



← Different Species
of Plants

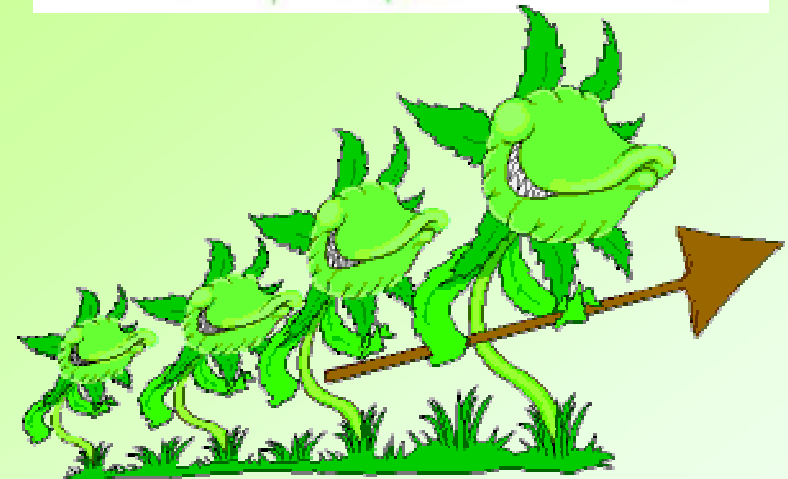
[http://content.answers.com/main/content/wp/en-commons/thumb/7/72/400px-A dozen species growing in the shade.jpg](http://content.answers.com/main/content/wp/en-commons/thumb/7/72/400px-A_dozen_species_growing_in_the_shade.jpg)

What is the importance of native species?

- It is important to remember that every species in an ecosystem is there for a reason
- Native species are a vital part of the food web²
- Plants and animals native to the same area have adapted to one another so that animals can eat the plants, but plants can defend themselves enough to be able to reproduce successfully

Definition: Invasive Species

- A species considered to be alien or non-native to an ecosystem, which can cause environmental harm or harm to human health



<http://www.grida.no/geo2000/pacha/images/alien.jpg>

<http://www.eppo.org/PUBLICATIONS/EPPONews/images/alien.gif>

Problems invasive species may cause

- Economic harm³
- Environmental harm³
- Harm to human health³

Invasive *Phragmites* invading a wetland →



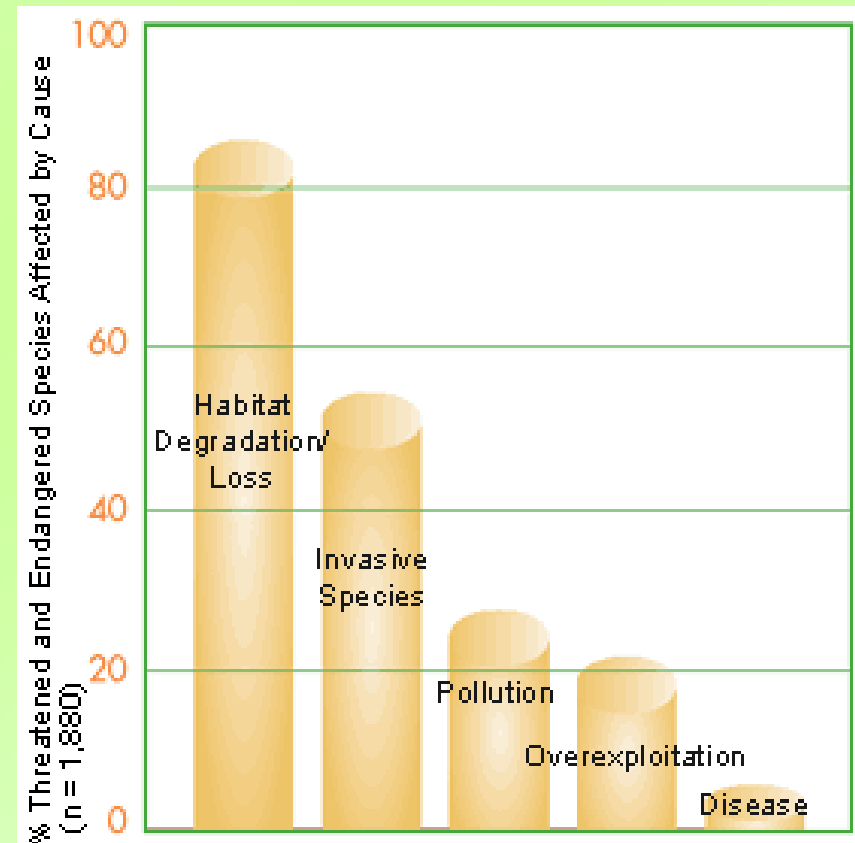
Invasive organisms



- 50,000 species introduced into US in past 500 years
- Not all invasive
- Out of 4200 “weed” species, 630 cause excessive harm

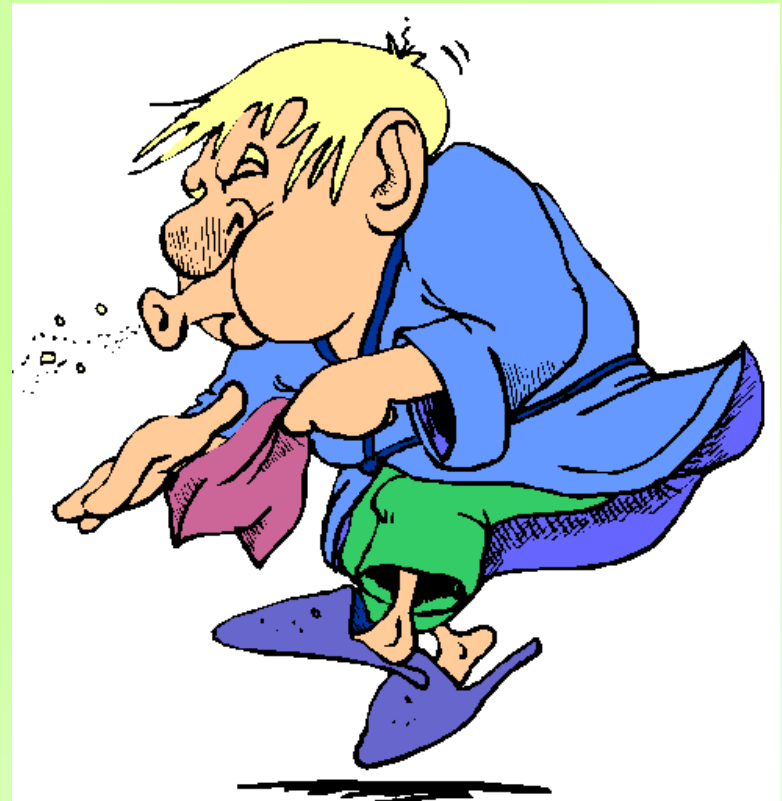
Ecological Effects of Invasive Species

- Outcompete native and endangered species
- Less survival of native species
- Lower diversity of native species
- Reduce hunting and fishing potential
- Habitat aesthetics diminished



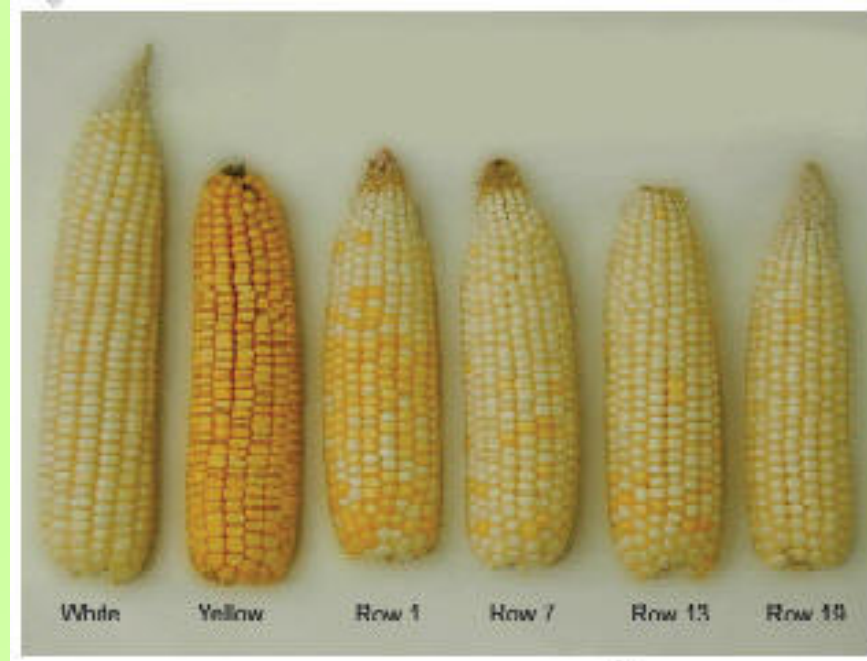
What is a strain?

- **Definition:** a group of genetically related organisms within a species with distinctive characteristics
 - E.g. Each year different flu strains affect humans, so you never quite get immune because there's always another strain that can make you sick



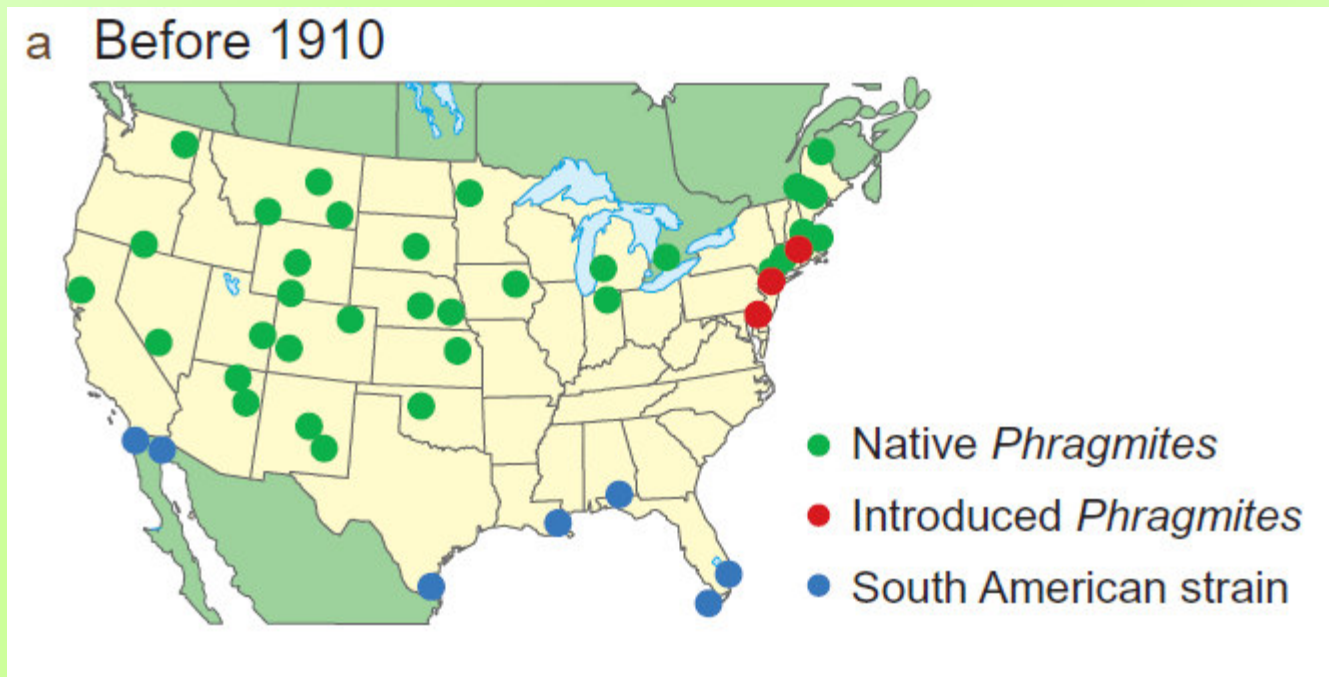
What is a strain?

- Different varieties of plant within the same species are also called strains (or “haplotypes”)
 - E.g. yellow, white and mixed corn



Phragmites strains

- There are many known strains (haplotypes) of *Phragmites* that look different and grow differently in their habitats



Comparing *Phragmites* Strains: What is different?

Native



Invasive

What is different?

Native

- Lighter Color
- More bugs



Invasive

- Darker Green
- Bug free

What is different?

Native



Invasive



What is different?

Native



Native

- Fewer Leaves
- Lighter Color Leaves
- Less bushy flowers

Invasive



Invasive

- More Leaves
- Darker Leaves
- Denser Growth
- Bushier flowers

What is different? Blade Color and Texture

Invasive



Native

What is different?

Blade Color and Texture

Invasive

- Thicker (sturdier) Leaves
- Darker Green
- White line down middle



Native

- Thinner Leaves
- Light Green
- No center ridge

What is different? Leaf Collar

Native



Invasive

What is different? Leaf Collar

Native

- Purple leaf collar
- Thin Vein



Invasive

- White leaf collar
- Thick Vein

What is different? Stem Color-Winter

Invasive



Native

What is different? Stem Color-Winter

Invasive

- Light Color Stem



Native

- Darker Stem

What is different? Stem Color-Spring



What is different? Stem Color-Spring



What is Different?

Native



Invasive



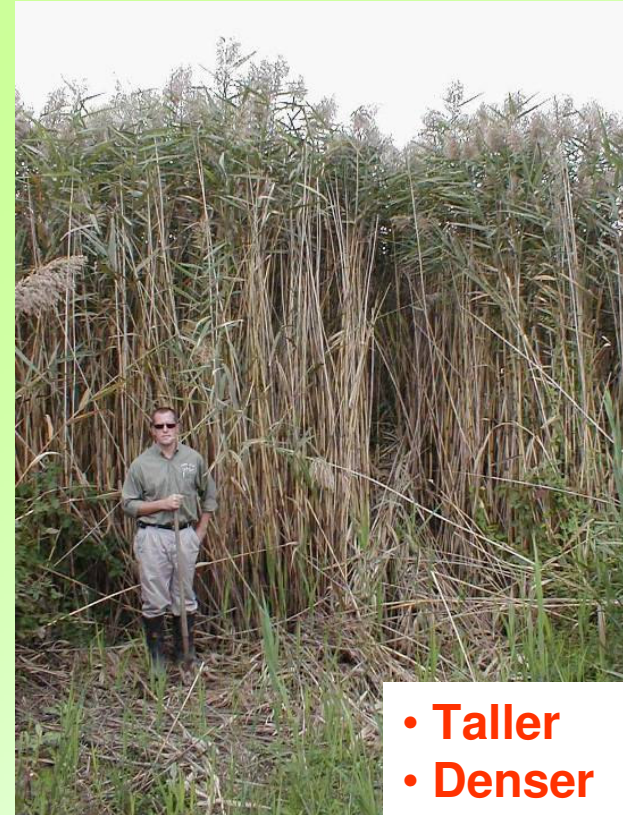
What is Different?

Native



- Shorter
- Less dense

Invasive

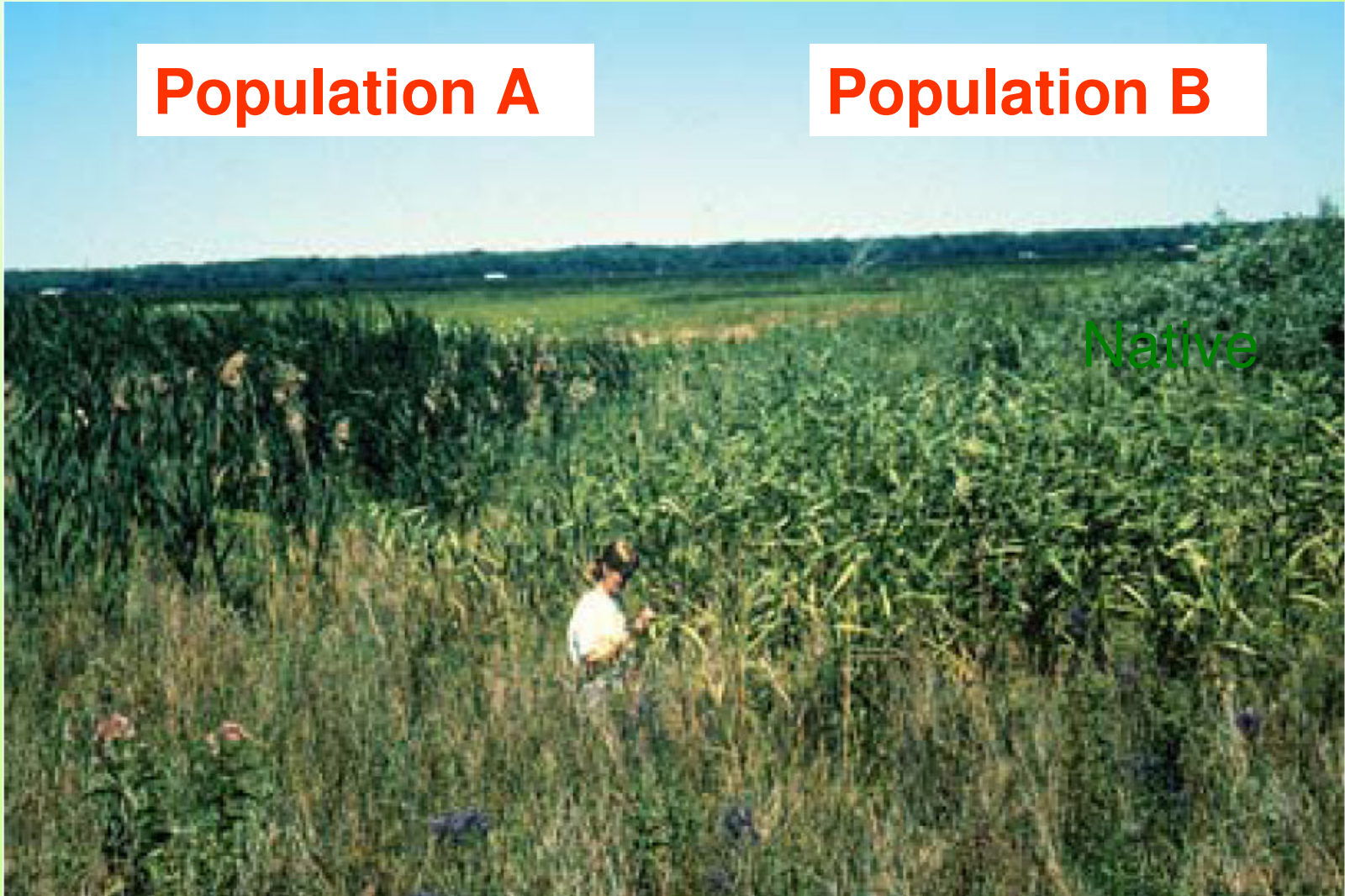


- Taller
- Denser

Which is Which?

Population A

Population B



What is different? Height

Invasive

Native

Native

Invasive

- Taller
- More Dense
- Darker Leaves
- Bushier Flowers

Native

- Shorter
- Less Dense
- Pale Yellow-Green Leaves
- Less Bushy Flowers

What is Different? Density



Native



Invasive

What is Different? Density



Invasive

- More Dense (more stalks of *Phragmites* for the same given area)

References

- ¹ species. (n.d.). *Dictionary.com Unabridged (v 1.1)*. Retrieved July 23, 2008, from Dictionary.com website:
<http://dictionary.reference.com/browse/species>
- ² *Native Species*. Retrieved July 23, 2008 from www.greentreks.org:
<http://www.greentreks.org/documentaries/biodiversity/nativespecies.asp>
- ³ *What is an invasive species?* Retrieved July 23, 2008 from www.invasivespeciesinfo.gov:
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- Meadows and Saltonstall 2003. *Native Phragmites*. Personal Communication