

Biological Invasions



Biological Invasions

Outline

- What they are?
- Why study // be concerned?
 - Significant ecological and economic impacts
 - Numbers are many and are increasing

What Are Biological Invasions

Biological Invasions

Native Species

A species in an area whose presence is the result of only **natural processes**, with **no human intervention**.

Non-Native

Any organism that is **found outside their normal and historic geographic range**. Not native to that ecosystem.

Invasive Species

A **non-native** organism whose introduction to an area has or is likely to **cause economic and/or environmental harm**.

Biological Invasions

What Are Biological Invasions

cont.

Introduced Species:

A species living outside its native distributional range, which has **arrived there by human activity**, either deliberate or accidental.

Naturalized Species

An intentionally or unintentionally **introduced species** that has adapted to and reproduces successfully in its new environment **and has no apparent negative effect on the ecosystem and on our economics.**

Biological Invasions

What Are Biological Invasions

cont.

Weed

Economic Definition:

Reduces value of a crop

Anthropocentric Definition:

Plant is unattractive

Ecological Definition:

Plant with a physical and genetic traits that allow it to exploit disturbed patches in the landscape.



Why Study/Why Concerning

Biological Invasions

Exert strong negative ecological and economic impacts



Why Study/Why Concerning

Biological Invasions

Exert strong negative ecological and economic impacts

Economically – USA estimate of 140 BILLION dollars is spent in indirect and direct impacts of invaders.

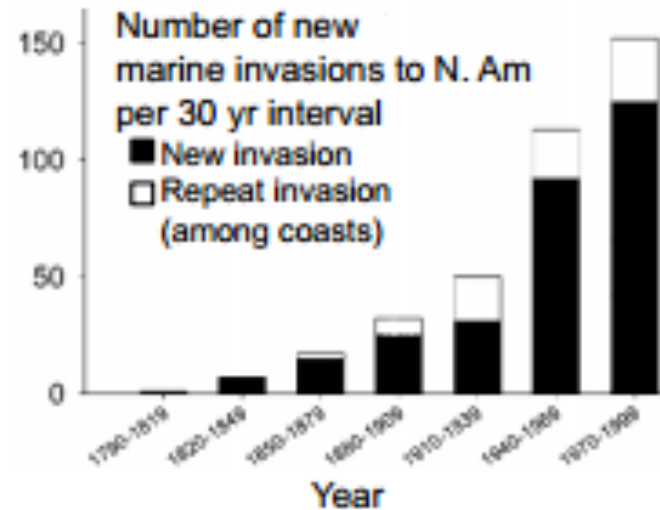
Ecologically - Invaders can be vectors of disease, outcompete native species and alter the landscape

Why Study/Why Concerning

cont.

There's been an increase in invasions over time

- Increased rates & effects
- **Why the increase?**
- Expect more w/ climate change



From Ruiz et al. 2000 ARES

- Increasing rapidly in number
- Widespread (50,000 NIS in US alone)

Biological Invasions

Oregon Invasive Species



English Ivy



Purple Loosestrife



Himalayan Blackberry



Giant Hogweed

Biological Invasions

Oregon Invasive Species



Japanese Knotweed



Milk Thistle



Reed Canary Grass



Scotch Broom