



Invasive Species – Understanding the Problem:

(Vincent Piselli, Land Mgr. Mill River Park, Stamford Ct. 2009)

I. The “Bad News” about Alien species:

1. Alien Invasive species reduce biodiversity – the “Glue” that stabilizes ecosystem health and are one of the greatest threats to natural ecosystems around the world.
2. These unwelcome plants, insects and other organisms tend to be especially destructive because they usually enter adopted ecosystems without their native controls (such as insects or other predators) that originally evolved with them to keep them in check.
3. Most native insects cannot eat Alien plants because they did not evolve with them and have not adapted their life cycles, digestive systems or physical mechanical body parts to feed on them.
4. Energy for ecosystems begins with the sun, continues to plants, then to insects and onward up the food chain. Since Alien invasive plants tend to monopolize ecosystems, they aggressively displace primary food sources for native insects, effectively starving them out. When insect populations crash higher order life forms which depend on them for food crash as well. The effects of population crashes destroy the foundations of ecosystems and erase global natural history and identity.
5. Alien invasive plants are “Habitat Bullies.” They reduce the amount of light, water, nutrients and space available to native species, alter hydrological patterns, soil chemistry, moisture-holding capacity, and erodibility, and change fire regimes.
6. Many Alien invasive plants thrive not only in native plant communities but on disturbed sites, such as abandoned fields and construction sites.”
7. The seeds of some exotic invasive species can lie dormant in the ground for many years. For example, garlic mustard seed can remain viable for up to ten years. When conditions are right for growth, the seeds germinate. Suddenly, many exotic invasives appear where there had been none for years.
8. Most introductions of exotic plants are intentional and usually relate to aquaculture, horticulture, or conservation purposes. When problems occur later, exotics are not as economical as they first seemed.

9. In the United States, invasive species cost at least \$120 billion a year in economic losses. That's about four times the average annual cost from all U.S. natural disasters in recent years – and we've had some very bad years recently. The breakdown looks like this:

🏠 **U.S. Annual economic losses due to invasive species (approx.):**

- a. Invasive plants – \$30 billion
- b. Invasive animal species – \$90 billion

🌐 **World Annual economic losses due to invasive species (approx.):**

- a. \$1.4 Trillion

II. The “Good News” about Alien species:

10. Most alien species don't survive in their adopted homes. Of the 50,000+ U.S. alien species introductions since European colonization, less than 10% & have established free-living populations in the United States.
11. Not all alien species are bad. In the united states about 15 alien plant species (corn, wheat, rice, soy...) and 8 alien animal species (pigs, cows, poultry...) make up about 98% of our daily diets.
12. Awareness of the problem caused by Alien Invasive species is the first step in preventing their continued widespread use. Public awareness will increase responsible landscaping practices. Awareness by resource managers will help prevent introductions on public lands and preserve our natural heritage.

“Characteristics of Alien Invasive plants are that they:

- 1. Grow and mature rapidly
- 2. Have prolific reproductive capacities
- 3. Are highly successful in seed dispersal, germination, and colonization
- 4. Rampantly spread and outcompete native plants
- 5. Are difficult and costly to remove and control”
- 6. Originate from similar climate as the ecosystems they invade
- 7. Quickly colonize open spaces
- 8. Have few natural consumers present in the ecosystems they invade