Not All Alien Invaders Are From Outer Space

Somewhere out there, in a remote part of the world, a creature waits…

The Unknown Invader
Scaryus eatumpis

Scaryus eatumupis

- Over past 200 years, several thousand foreign plant & animal species have become established in the US!

1 in 7 has become INVASIVE

- Pushes aside native species
- Causes economic or environmental harm or harm to human health
- Reduces economic productivity & ecological balance

Where do they come from??

- Enter the United States by:
  - Cowering in crates
  - Moping in machines
  - Snuggling in ships
  - Hiding inside fruits, vegetables, & meats
  - Being carried on clothing
- "Hitchhiking Pests and Diseases"

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These twin terrors could eat their way clear across America…

Gypsy Moth and Asian Gypsy Moth
Lymantria dispar (Linnaeus)

Where did it Come From?

- In 1869, a French Monk brought some Gypsy Moths to the U.S. from Europe in order to experiment with them. Some escaped.
- In 1993, a ship docked in North Carolina, opened its cargo hold, and out flew dozens of Gypsy Moths

Where did it Invade?

- The first Gypsy Moths invaded Massachusetts finding the climate excellent for their survival. Descendents of these first moths inhabit 15 states.
- The 1993 invasion originated in NC and has spread through the South Eastern U.S.

Niche?

- The moth eats the leaves of trees.
- The female moth can fly making it easy for it to spread.
- It has four life stages: egg, larva (caterpillar), pupa (cocoon), and adult.
- The moth spends its day foraging for food.
- It has no known predators in the U.S.

Effect on Environment It Invaded

- The current U.S. Gypsy Moth population could eat all of the leaves on 13 million acres of trees in one season.
- This has devastating effects on the forest ecosystem.
- It is economically dangerous to commercial tree-farms.
- Caterpillars crawl on homes and fall in pools making outdoor activities hard to enjoy.
- Ability to fly makes it easy to spread quickly!!

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This tiny pest may prove powerful enough to damage the entire food web in America's inland waterways.

Spiny Water Flea
Bythotrephes cederstroemi

Where did it come from?

- Scientists believe that the flea was brought over by a cargo ship from Europe.

Where did it invade?

- The European cargo ship emptied its ballast in Lake Huron in 1984. It accidentally let loose the water flea that was trapped in the ballast.
- By 1987, it could be found in all five Great Lakes.

Niche?

- Spiny water fleas reproduce rapidly. Females can give birth to up to 10 babies every 2 weeks.
- Females lay eggs in the winter and they hatch in the summer.
- Water fleas eat plankton.
- Predators cannot eat the flea because the barbs on its tail choke the fish and it has to spit it out.
- Note: the Spiny Water Flea is actually a crustacean related to the shrimp and not a flea.

Effect on the Environment it Invaded?

- The threat posed by the flea is not completely understood and therefore very scary!
- Their high reproductive rate makes them incredibly dangerous!
- The water flea in large numbers can devour native plankton.
- The loss of plankton can damage a lake's ecosystem causing harm to other species in the food chain.
- These other animals may move elsewhere or die off!!

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Through their excretions, nutria can pass paratyphoid and parasites to people. Basically, nutria are bad news no matter how you look at them.

South American Nutria

Myocastor coypus

Where is It From?

- Nutria are native to Argentina, Bolivia, Chile, Paraguay, and Uruguay.
- They were brought to the US in 1899 to be used in the fur trade.

Where Did It Invade?

- In 1930, a furrier released nutria on an island in Louisiana to start a commercial breeding farm. Several animals escaped.
- Eventually, nutria spread throughout the Southern U.S.
- Currently, they can be found throughout the entire U.S.

Niche?

- The animals can be found in streams, lakes, ponds, and swamps.
- They eat both water and land plants.
- Nutria reproduce rapidly. They often have 2 or 3 litters a year with 5 to 8 young per litter.
- The animals swim and have buck teeth like beavers.
- They are hosts for many parasites.

Effect on Environment It Invaded

- These pests will clear an area of its plants leaving nothing but mud.
- They out compete native species for food.
- They have an economic impact as they often dine on agricultural crops like cabbage and lettuce.
- Nutria are hosts to many parasites and can spread these to native wildlife and humans leading to outbreaks of disease!

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Scientists consider the Giant African snail to be one of the most damaging land snails in the world…

Giant African Snail
Achatina fulica (Bowdich)

Where Is It From?

- The snail is native to the Sahara in East Africa.
- In 1966, a boy smuggled 3 African snails into the U.S. as pets.

Where did it Invade?

- The boy brought the snails home to Miami, Florida. His grandmother eventually released the snails into her garden.
- 7 years later more than 180,000 snails were found in Florida.
- It took the state of Florida 10 years and over $1 million to get rid of these pests!

Niche?

- The snail is much larger than native snails and therefore out competes them.
- It can hibernate to survive the cold months.
- It reproduces incredibly fast. Every mated adult lays about 1,200 eggs per year!
- It eats 500 types of plants! It is not a picky eater!
- It is a host for many parasites!

Effect on Environment it Invaded

- Can pass on diseases to humans and wildlife.
- It reproduces very fast and lives a long time (9 years).
- It can out-compete native snails for food.
- It has an economic impact as it eats agricultural crops like melons and papaya.
- The ability to hibernate means it could survive almost anywhere in the U.S.

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Occasionally, they even sneak into homes and bite sleeping adults and children…

Brown Tree Snake
Boiga irregularis

Where Is It From?

- The Brown Tree Snake is native to Australia.
- It was brought over concealed in a WW II military transport plane.

Where Did It Invade

- So far, it has only invaded the island of Guam (a U.S. territory)!
- Since WW II, the snake has taken over almost all of the island!
- There are as many as 12,000 snakes per mile on Guam!!

Niche?

- The snake is mildly venomous and kills its prey by injecting venom.
- It is a very good climber as it forages for food and water.
- It is nocturnal.
- Its prey includes lizards, birds, and small mammals.
- It lays 12 eggs at a time 2 times each year.

Effect on Environment it Invaded

- It is too late to save Guam's wildlife from the snake. It has decimated the native population of birds, mammals, and amphibians.
- The snakes climb along electric wires causing power outages every 6 days! They raid homes killing pet birds!
- They have reached carrying capacity on Guam and are searching out habitat elsewhere! They have climbed aboard ships and made it to Hawaii 6 times. (Luckily they were caught…it would only take one pregnant female…….)

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This pest is a plague and shows that even pint-size invaders can cause big trouble.

Zebra Mussel
Dreissena polymorpha

Where Is It From?

- The Zebra Mussel is native to Europe's Black and Caspian Seas.
- It was brought to the U.S. in 1988 in a ships ballast tank.

Where Did It Invade

- It was introduced to Lake St. Clair in 1988.
- Since then, it has spread throughout the Great Lakes and the waterways of at least 19 states!
- It is currently spreading west!!

Niche?

- One adult female produces 3,000 young each mating season and there are 2 mating seasons per year!
- They attach themselves to any hard surface (rock, pipe, or even the shell of another animal)
- They are competition for native clams.
- It is a filter feeder and eats plankton.

Effect on Environment it Invaded

- The species is very dangerous because of its reproductive rate and ability to stick to anything!
- It out competes native clams for space.
- It sticks to the shells of other hard shelled animals. These animals often die as the mussel completely covers them preventing them from breathing, feeding, moving, and reproducing.(2 years after their introduction in Lake St. Clair, all hard-shelled native species were encrusted with the Zebra Mussel!)
- They block intake pipes to factories and water treatment plants.

Local Connection: The Quagga Mussel

- Zebra Mussel's "cousin" from Eastern Europe
- Invaded Lake Pleasant and the lower Colorado River
  - Can lay up to 1million eggs per year!
  - Messing up machinery & the ecosystem (food chains)
- Campaign to stop their transportation
  - Boat checks at CA/AZ border
  - It's the LAW!

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This is one ant you don't want to see at your picnic!

Red Imported Fire Ant
Solenopsis invicta Buren

Where Is It From?

- The Red Imported Fire Ant is native to South America.
- It came to the U.S. in soil that had been used for ship ballast.

Where Did It Invade

- The ship carried the ant to Mobile, Alabama in 1930.
- The ants spread and now infest 14 Southern and Western States.

Niche?

- They aggressively defend their nests swarming to attack whatever disrupted it.
- Their nests are mound-shaped.
- They clamp onto their target with powerful jaws and sting it repeatedly.
- They are opportunistic feeders eating meat and plants!

Effect on Environment it Invaded

- These ants attack and kill newborn domestic animals, pets, and wildlife.
- They destroy seedling corn, soybeans, and other crops.
- They remove bark from trees, often killing them.
- Their venomous stings cause burning, itching, and blisters that can become infected.

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This noxious weed quickly cuts off native vegetation from water in the soil and then moves into the natives' space after they die.

Spotted Knapweed
Centaurea maculosa

Where Is It From?

- The spotted knapweed was introduced to the U.S. in the late 1800s from Asia Minor.
- It was most likely brought over accidentally in a shipment of alfalfa.

Where Did It Invade

- It began its invasion on the East coast and has since established itself throughout the country.

Niche?

- It is mostly found in meadows, pastureland, and the plains of rivers.
- It likes to grow in light textured soils that receive summer rain showers.
- It produces a large number of seeds which it drops in the late summer.
- The seeds are carried by wind, animals, and even people.
- Seeds can lie dormant for up to 8 years until conditions are right!
- Animals avoid eating it because it tastes bitter!

Effect on Environment it Invaded

- It hogs moisture and nutrients from native plants.
- It cuts off native vegetation from water until it dies off. Then, it moves into the natives' space displacing them permanently!
- It causes chewing disease in horses!
- It is taking over rangeland and does not provide nutrition for wildlife or cattle!

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Although it is very attractive, this plant is deadly to American wetlands because it crowds out the native plants that support bird and animal populations in marshy areas.

Purple Loosestrife
Lythrum salicaria

Where Is It From?

- It is native to wetland areas in Europe.
- It was brought to the U.S. in the early 1800's for use in landscaping because of its beauty.

Where Did It Invade

- It got its start in New England in the 1800's.
- From there, it spread rapidly into Canada, Virginia, and the Great Lakes region.
- Currently, it can be found throughout the U.S. and is damaging wetlands in the Northeast and Midwest.

Niche?

- Each mature plant produces more than a million seeds.
- The seeds are carried by wind and water.
- The plants can re-grow from roots or parts of stems.
- It provides food for bees from its sweet nectar.
- Currently, they have not found any species of wildlife that can eat it.
- It thrives in marshlands and wetlands.

Effect on Environment it Invaded

- Purple Loosestrife displaces native plants that are useful to wildlife.
- It can take over wetlands and out-compete native plant species (some of which are endangered).
- After only a few summers, the "purple plague" can grow to thousands of acres, virtually eliminating marsh and wetland habitats!

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Everybody loves sunflowers, but nobody loves yellow starthistle. It is a noxious, and obnoxious, cousin of the sunflower…

Yellow Starthistle
Centaurea solstitialis

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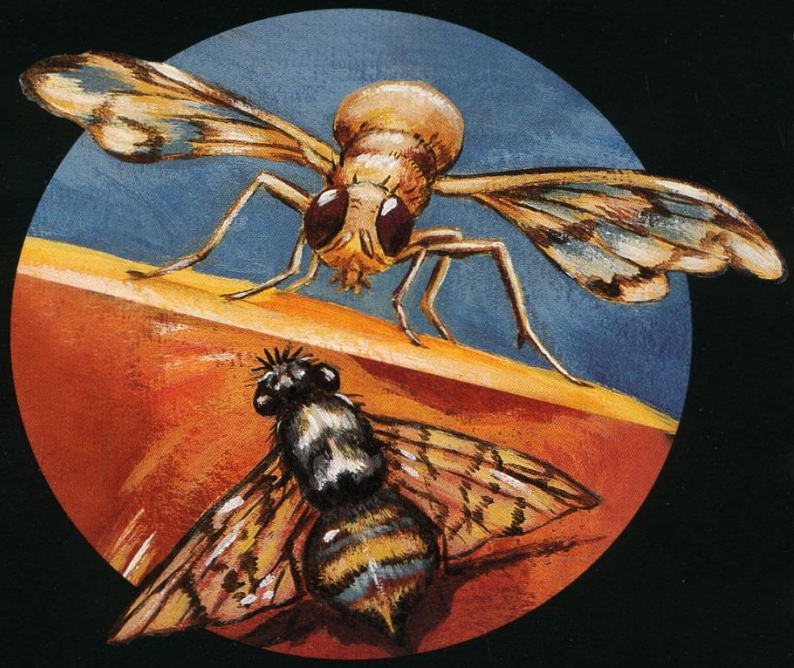

The scariest thing about these fruit flies is that you often can't see their damage until you bite into a piece of fruit....

Mexican Fruit Fly
Anastrepha ludens (Loew)

Mediterranean Fruit Fly
Ceratitis capitata (Wiedemann)

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Leafy spurge presents a threat to pastures and rangeland for cattle.

Leafy Spurge
Euphorbia esula

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This beetle's appetite for hardwood could spell destruction for America's trees and could change landscapes for generations to come.

Asian Longhorned Beetle
Anoplophora glabripennis

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This crab is a mean, green, eating machine…

European Green Shore Crab

Carcinus maenas

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Tropical bont ticks could come to this country. Heartwater and related diseases would follow, damaging the cattle industry and driving up the price of your next hamburger…

Tropical Bont Tick
Amblyomma variegatum