

Notes for “Introduction to Invasive Species” PowerPoint

Slide #	Notes
5	<p>Non-native species are organisms that originated from a completely different ecosystem They have been introduced from some place else</p> <p>Now occur outside their native range in established, breeding populations Also called exotic, introduced, weedy, non-indigenous</p> <p>Not all non-native species survive EPA estimates that only 10% of introduced species survive and of these, only 10% become invasive</p> <p>No/few predators, competitors or diseases in new environment Populations may grow very rapidly Take over habitats, out-compete native species</p> <p>Introductions involve human activities, either accidental or deliberate</p>
6	<p>Experts estimate that 50,000 alien species have been introduced to the U.S. Threaten natives --typically as predators or competitors for food or habitat Alien species implicated in 68% of all fish extinctions that occurred between 1900 and 2000</p> <p>From left: Princess Tree, Tree of heaven (upper), and Norway maple (lower, leaf and samara) – highly invasive, yet commonly planted street trees; Lower Right – American Chestnut – native; populations decimated by an invasive fungus that was transported here along with a cultivated variety of Asiatic chestnut</p>
7	<p>One key way that invasive species degrade ecosystems is by decreasing biodiversity.</p> <p>If one looks closely at the image of the mugwort (left), you can see goldenrod (yellow arrows) trying to grow underneath the large canopy of mugwort. Sometimes goldenrod may get to be tall enough to reach the light, but it is still fighting with mugwort for nutrients and space. While the image at right shows goldenrod in abundance, it is easy to see other species (colored arrows) readily growing nearby and beneath it, since it does not form a dark canopy like mugwort.</p> <p>Other ways invasives damage ecosystem health:</p> <ul style="list-style-type: none"> --Decrease habitat value for wildlife – provide food (and sometimes shelter) for fewer species of animals --sometimes directly harm native animals (e.g. black swallow wort/monarch butterflies); --often change soil chemistry to be less favorable for native plants --aquatic ones can severely damage fish habitats, ultimately causing tremendous economic damage for fishing industries
8	<p>Invasive species introductions cost you money.</p> <p>Pimentel ‘s study estimated it costs the U.S. \$137 billion/year to “fix” or at least mitigate</p>

	<p>their negative impacts and in attempts to control these species</p> <p>Brown marmorated stink bugs are a relatively recent threat to NY (and other northeast & midwest) orchards. They cause tremendous damage to fruit tree crops, though they also attack other fruit and vegetable crops.</p>
9	<p>A species that nearly anyone who has visited shallow waters along the Hudson River has seen is the invasive water chestnut. This species grows to such densities, that even kayaks often cannot get through the plant beds. It harms other forms of recreation on the Hudson River as well. Other impacts of this species are explored more in future lessons.</p>
10	<p>Ask students: What tends to make invasive species so successful? They should remember some of the characteristics in the game that either helped or hurt them, depending on whether they were invasive or native.</p>
11	<p>Review the characteristics, adding to the students' answers anything they missed, or adding correct answers to this incomplete list.</p> <p>** Remember that this list is more of a guideline of <u>tendencies</u>. Most invasive species demonstrate some-many but not all of these characteristics.</p>
12	<p>Invasive species in the Hudson Valley and around the world will be explored further in future lessons.</p> <p>(Clockwise from top left – mile-a-minute vine, common reed, zebra mussels, kudzu)</p>