

Section 3.3 How Introduced Species Affect Ecosystems

Comprehension

Introduced species

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1. Native species are plants and animals that naturally inhabit an area.
2. An invasive species are organisms that can take over the habitat of native species or invade their bodies.
3. Invasive species often have high reproduction rates, are aggressive competitors, and lack natural predators in their new habitat. Exploiting the new niche, an invasive species can dramatically change an ecosystem.
4. An introduced species can affect a native species through competition, predation, disease, parasitism, and habitat alteration.
5. Examples could include Eurasian milfoil, purple loosestrife, Norway rat, American bullfrog, European starling, Scotch broom, English ivy, and invasive grasses.
6. Scotch broom, English ivy, and invasive grasses are competing with Garry oak trees.
7. Scotch broom produces up to 18 000 seeds per plant. Its yellow flower attracts bees for pollination and it is well adapted for drought.

Applying Knowledge

The impact of introduced invasive species

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Answers could vary depending on the ecosystem. Answers given are referenced from textbook pages 140–141.

METHOD	INVASIVE SPECIES	EFFECT ON ECOSYSTEM
competition	carpet burweed	<ul style="list-style-type: none"> • burweed competes with four native plants • spiny tips pierce skin of animals and humans
predation	yellow crazy ants	<ul style="list-style-type: none"> • ants build supercolonies • devour all plants and prey on young of reptiles, birds, and mammals • ants killed 20 million land crabs on Christmas Island

METHOD	INVASIVE SPECIES	EFFECT ON ECOSYSTEM
disease and/or parasites	parasitic lampreys blister rust	<ul style="list-style-type: none"> • lampreys use sucker-like mouths to attach to fish, then suck the body fluids from prey • blister rust fungus weakens whitebark pine tree defenses making it more vulnerable to insect infestations
habitat alteration	wild boars	<ul style="list-style-type: none"> • damage environment by rooting and wallowing • spread weeds that interfere with natural succession • eat native birds, reptiles, frogs, soil organisms, fruit, seeds, and bulbs • boars are considered world's most invasive species

Extension Activity

Invasive species in British Columbia

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Answers may include:

SPECIES	METHOD OF INTRODUCTION	EFFECT ON ENVIRONMENT
purple loosestrife	seeds from Europe in 1800s	<ul style="list-style-type: none"> • destroys wetlands and chokes out other plants • too dense to effectively shelter wildlife
Eurasian milfoil	brought to North America in 1800s	<ul style="list-style-type: none"> • cuts off sunlight to organisms below • interferes with recreational activities
Norway rat	escaped from early European explorer and fur-trading ships	<ul style="list-style-type: none"> • feeds on any food source • eats eggs and young of ground-nesting sea birds, causing their decline
American bullfrog	brought to British Columbia in 1930s for frogs' legs in restaurants	<ul style="list-style-type: none"> • takes over habitats • eats native frogs • attacks ducks and small mammals
European starling	late 1800s, fifty pairs brought to North America	<ul style="list-style-type: none"> • outcompetes native birds for nesting sites • devastates fruit and grain crops
Scotch broom	Mid-1800s, introduced as decorative garden plant	<ul style="list-style-type: none"> • replaces native scrubs • ruins habitat for native birds and butterflies • creates an overload of nitrogen that interferes with growth of some native species