



Essential Questions

Video

<https://www.youtube.com/watch?v=F98YL66wxFg>

★ Human activities threaten Earth's biodiversity


Three Levels of Biodiversity

Genetic Diversity	Species Diversity	Ecosystem Diversity

Biophilia:

<https://www.youtube.com/watch?v=hly0ZlyPPDg>

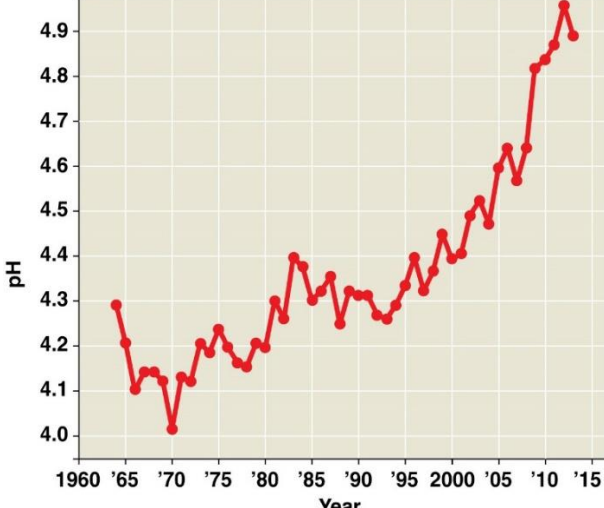
Video

	“A hundred heartbeats from extinction...” To document that a species has actually become extinct, what factors would you need to consider?

Benefits of Species and Genetic Diversity:

Ecosystem Services

Threats to Biodiversity

Habitat Loss	Introduced Species	Overharvesting	Global Change
 <p>Changes in the pH of precipitation at Hubbard Brook Experimental Forest, New Hampshire.</p>		<p>Describe the relationship between pH and acidity.</p> <p>Overall, is the precipitation in this forest becoming more acidic or less acidic?</p>	

INQUIRY 43.12

What caused the drastic decline of the Illinois greater prairie chicken population?

What If?



43.14 How is habitat disturbance absolutely necessary for the long-term survival of the woodpecker?

Concept Check 43.2

1.

2.

3.

★ Landscape and regional conservation help sustain biodiversity

Landscape structure—

Fragmentation and Edges:



43.15
What edges between ecosystems do you see in the photo?

movement corridor—


Establishing Protected Areas:

biodiversity hot spot—

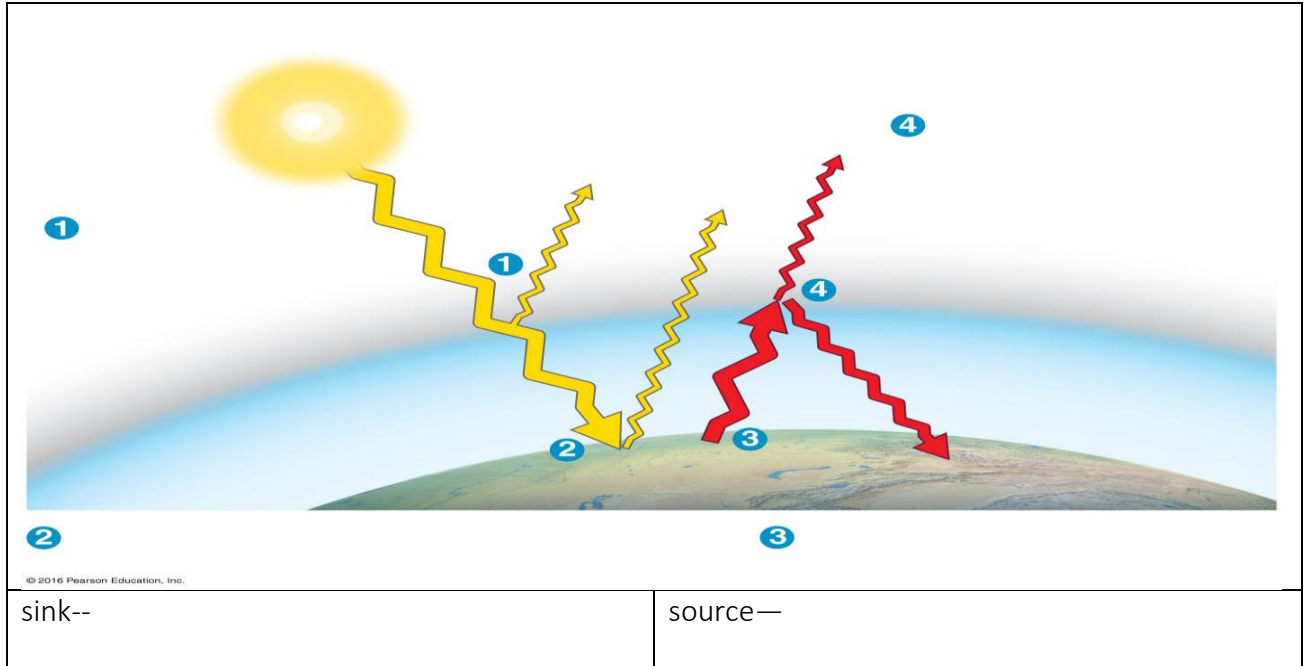
Philosophy of Nature Reserves—

Zoned Reserves

Concept Check 43.3**1.****2.****3.**★ **Earth is changing rapidly as a result of human actions**

Nutrient Enrichment	Toxin Accumulation	Climate Change
critical load—	biological magnification—	greenhouse effect—
	43.22 Calculate how much the PCB concentration increased at each step in the food web.	

Label:



Biological Effects of Climate Change:

	43.27 The predicted range in each scenario is based on climate factors alone. What other factors might alter the distribution of this species?

Climate Change Solutions:

Concept Check 43.4

1.


2.

★ The human population is no longer growing exponentially but is still increasing rapidly

Data Trends:

Global Carrying Capacity:

ecological footprint—

	43.31 Earth has a total of 11.9 billion global hectares of productive land. How many people could Earth support sustainably if the average ecological footprint were 8 global hectares per person (as in the United States).

Concept Check 43.5

1.

2.

★ Sustainable development can improve human lives while conserving biodiversity

sustainability—

Sustainable Development:

Case Study: Costa Rica

Biophilia revisited:

Concept Check 43.6

1.

2.

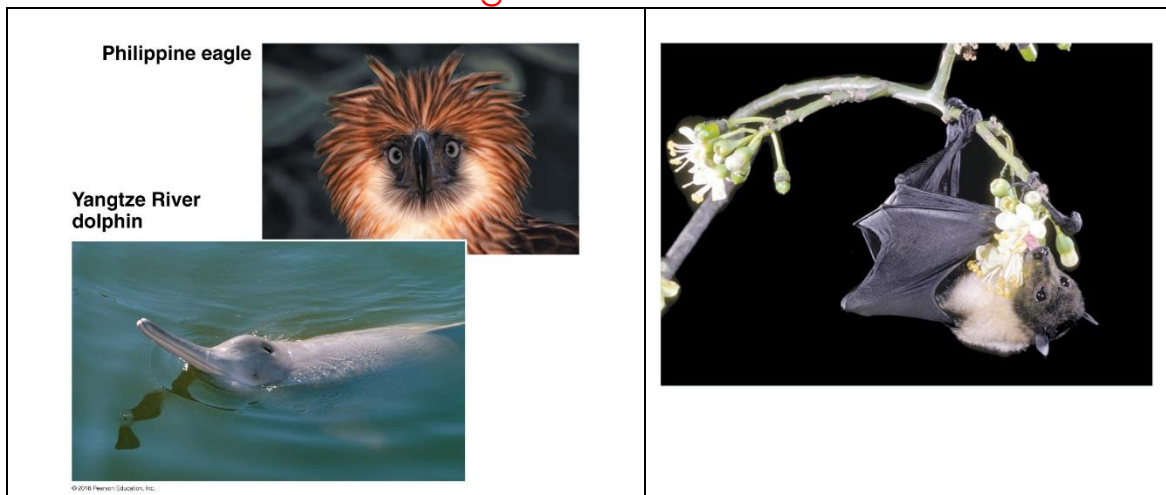
3.

Illustrative Examples

43.2: Loss of genetic diversity in crop species
Human impact on ecosystems and species extinction rates
Deforestation



43.4: Endangerment and extinction



43.6: Habitat fragmentation



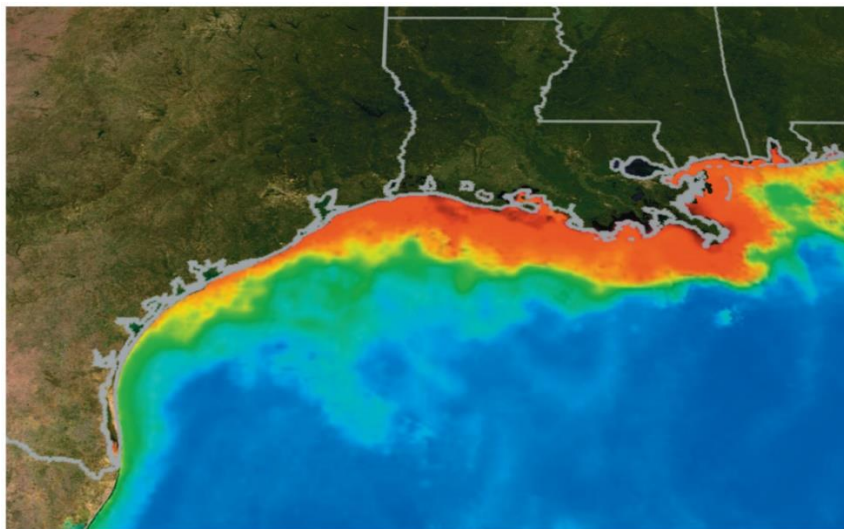
43.7: Introduction of species (Kudzu)



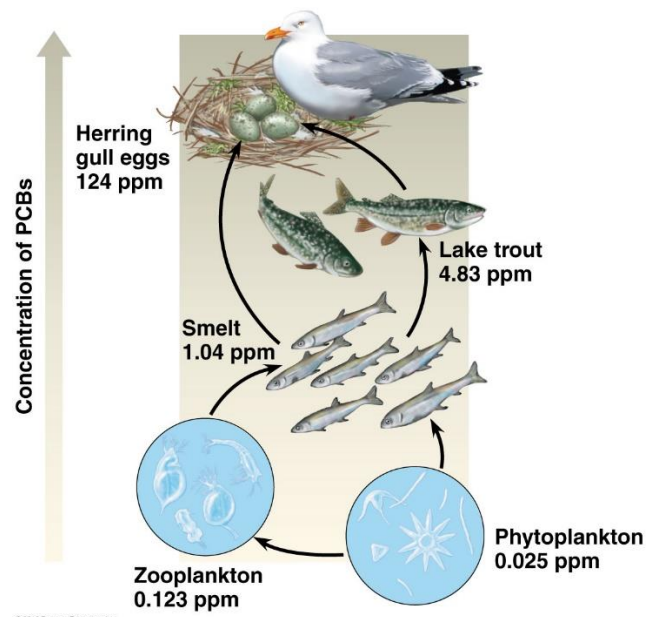
43.11: Loss of genetic diversity

<p>Extinction vortex</p> <pre>graph TD; A[Small population] --> B[Inbreeding, genetic drift]; B --> C[Loss of genetic variability]; C --> D[Lower individual fitness and population adaptability]; D --> E[Smaller population]; E --> F[Lower reproduction, higher mortality]; F --> A;</pre> <p>© 2014 Pearson Education, Inc.</p>	<p>Prairie chickens</p> A photograph of a prairie chicken standing in a field. The bird has distinctive black and white striped feathers and a prominent orange patch on its neck. It is shown in profile, facing left.
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43.21: Algal blooms



43.22: Biological magnification



43.28: Flowering time in relation to global climate change

Effects on Individual Organisms	
 <p>An American pika</p> <p><small>© 2016 Pearson Education, Inc.</small></p>	

43.32: Sustainability

Paste your picture here...PLEASE!!!