



Unit 3 Ecosystems

High School Environmental Science

Unit Length and Description:

6 Instructional Weeks

Students will use representations to support explanations of factors that affect carrying capacity and biodiversity in populations of ecosystems and support claims for the cycling of matter and energy among organisms in ecosystems. They will also evaluate claims that complex interactions in ecosystems maintain consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem. Students will also refine a solution for reducing human activity impacts on the environment and biodiversity.

Science Standards:

- HS-LS2-1** Use mathematical and/or computational representations to support explanations of factors that affect carrying capacity, biodiversity and populations of ecosystems at different scales.
- HS-LS2-4** Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.
- HS-LS2-6** Evaluate the claims, evidence and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
- HS-LS2-7** Design, evaluate, and refine a solution for reducing the impacts of human activities on the environment and biodiversity.

Enduring Understandings- Unit Anchor Phenomenon:

Wolves were absent from Yellowstone National Park for approximately 70 years. In 1995, wolves were reintroduced to the park and as result, the behaviors of rivers changed.

Essential Questions- Reflective Summaries:

- Use mathematics and computational data to describe how the removal of wolves from Yellowstone National Park impacted the cycling of matter and flow of energy in the park.
- Use mathematical and computational representations to explain how the removal of wolves from Yellowstone National Park impacted its carrying capacity, biodiversity and populations.
- Make a claim supported by evidence that the complex interactions in Yellowstone National Park maintain relatively consistent numbers and types of organisms in stable conditions.

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| | <ul style="list-style-type: none">• Communicate information supported by evidence that geographical changes in Yellowstone National Park affected its ecosystem.• Evaluate and/or refine the Endangered Species Act to reduce the impact of human activities on the environment and biodiversity. |
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