

Human Impact

9-12 Grade Standards targeted:

BIG IDEA : Interdependence	
SC.912.L.17.8	Recognize the consequences of the losses of biodiversity due to catastrophic events, climate changes, human activity, and the introduction of invasive, non-native species.
A	The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.
B	Energy and nutrients move within and between biotic and abiotic components of ecosystems via physical, chemical and biological processes.
C	Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.
SC.912.L.17.16	Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gasses, ozone depletion, and surface and groundwater pollution.
A	The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.
B	Energy and nutrients move within and between biotic and abiotic components of ecosystems via physical, chemical and biological processes.
C	Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.
SC.912.L.17.18	Describe how human population size and resource use relate to environmental quality.
A	The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.
B	Energy and nutrients move within and between biotic and abiotic components of ecosystems via physical, chemical and biological processes.
C	Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.
SC.912.L.17.20	Predict the impact of individuals on environmental systems and examine how human lifestyles affect sustainability.
A	The distribution and abundance of organisms is determined by the interactions between organisms, and between organisms and the non-living environment.
B	Energy and nutrients move within and between biotic and abiotic components of ecosystems via physical, chemical and biological processes.
C	Human activities and natural events can have profound effects on populations, biodiversity and ecosystem processes.

Set Up: Present the powerpoint. Computers will need to be reserved for the activity.

Introduction: – Material will be introduced using the powerpoint presentation.

Activity: Divide students into four groups. Each group will be assigned one of the four categories of human impact discussed in the PowerPoint; 1) overexploitation of natural resources, 2) habitat modification, degradation & fragmentation, 3) introduction of exotic species, and 4) pollution. The groups will be a part of a task force assigned to present ideas to mitigate, prevent, or reconstitute these problems. The students will brainstorm, research, and

create a presentation. At the end of the first day, the groups will submit a list with each student's name and what idea they will be researching. This will ensure each student is accountable for doing their part of the project. The groups will have two weeks to complete the projects before presenting them to the class. They will be given 10 minutes to complete the presentation.

Review

1. **What are the four major categories of human impact?**
 - a. **Overexploitation of natural resources**
 - b. **Habitat modification, fragmentation, and conversion**
 - c. **Introduction of exotic species**
 - d. **Pollution**
2. **What organization started as a way to reduce flooding and now works to protect and conserve water?**
 - a. **Water Management Areas**
3. **How might sea level rise affect housing in the future?**
 - a. **Populations will migrate inland.**
4. **Urban sprawl has caused drastic increases in the population. What measures may need to be implemented to provide housing for a growing population?**
 - a. **High density housing solutions**
5. **How does phosphate mining negatively impact the environment?**
 - a. **Plant reduction, drainage disruptions that affect the recharge of the aquifer, alterations in soil profile, habitat destruction, and excessive water use that has led to drainage of springs.**