

Details



Completion Time: Not applicable

Permission: Download, Share, and Remix

Biodiversity of the Antarctic Region: Is it a Losing Battle?

Overview

Case studies provide a brief overview or examination of events that impact or alter the way people function and live day to day within the human and physical environment. They help by providing students with “real world” examples that relate to the theoretical content they are studying.

Objectives

Students will prepare a case study illustrating the impact of invasive species in the Antarctic realm. The students will present their study to class members.

Lesson Preparation

Students will be expected to prepare for the class discussion by analyzing the background data and presenting the facts and data to explain the situation in an environmental and anthropogenic perspective. A good case study provides several key elements:

- It tells a story.
- It focuses on a conflict within the human environment.
- It is timely, recently occurring or on-going.
- It creates a human sentiment of volunteerism and sympathy.
- It includes cited commentary from all parties.
- It is relevant to the reader and the area of study.
- It presents a conflict provoking discussion.
- It is short, concise and to the point.

Procedure

1. In groups of 2, select one of the topics and define your focus.

Topic A: Challenge to biodiversity – shift in species, loss or abundance of native species causing an imbalance in a biome, specific place, specific biome. This can

Materials

- Computer
- Internet access

come about as a result of human interaction presently or historically.

Topic B: Invasive Species: specific species not native to the Antarctic region; spider crabs, blue grasses, mites, lichens, seeds,....

2. Locate and develop a quick and concise understanding of the topic you selected. Use the following questions:

1. What is the conflict and who are the parties involved?
2. What is the cause of the challenge/ invasive species? What is the relevant historical context?
3. How long has the situation existed? Is it uncontrollable?
4. Who is affected? Impact of the species? What is the effect?
5. Where is this species most prevalent? And what is the spatial extent? What is the geographic perspective?
6. What is the scale of the impact? Local, Regional, National, Global
7. Why does the situation continue and are there any contrary opinions?
8. Are there any legal or governmental actions/ laws/ enforcements/penalties
9. Economic impact of the species or loss of the species
10. What is the world response? and by whom?
 - a. Governments?
 - b. NGO/ environmental advocacy groups?

3. Design the case study presentation. The idea is to be concise and to the point- maximizing the space with the most important VISUAL information on the topic, without losing content and implications.

4. Pictures of the impact, species, loss of species, action activities are essential.

5. Map of spatial impact is required.

What to do:

Power Point Slide Case-Study

Construct a 6-8 slide page in a Power Point type format. Each group will make a presentation to the class. The slide presentation should illustrate the conflict, effects, responses and governmental legislation.

1. Slide 1: introduces the conflict, the parties involved and presents the geographic setting with a map in a relative setting.
2. Slides: 2,3,4 respond to the causes, historical context, type of conflict, impact, effects, contrary opinions,
3. Slide 5: addresses the scale of the conflict, applicable data, government and world re-

sponses, legislation, prediction for the future of this conflict and relevant photos.

4. Slide 6: a situational map of the impact area labeled with a legend
5. Slide 7: images of the impact of the loss of species/ invasive species
6. Slide 8: references, and group members

About your Power Point:

1. Pictures are essential and must be abundant. You are to show images of the species, the locations, the causes of the environmental threat, and the environment itself.
2. Any words should be in bullet form and not detailed. You know the information and the details are part of your verbal presentation.
3. All references and credits are on the last slide.

Logistical Issues:

1. Your presentation will be to the class. None of the topics will be duplicated, therefore, if you are passionate about a topic get it in to me ASAP!! And it is yours.
2. There is a presentation group grade and a project grade.
3. You will not read from scripted notes- outlines are fine, hand outs are wonderful, tangible items are great. No mumbling or talking at the floor!
4. Creativity is encouraged... I suggest Sting, Bono and Enya for some input.
5. Email your Power Point to me or bring it in on a CD/ jump drive.

Extension

N/A

Resources

Potential References:

- <http://www.wwf.org.au/ourwork/oceans/antarctica/>
- <http://news.bbc.co.uk/2/hi/science/nature/5101790.stm>
- <http://www.earthportal.org/news/?p=839>
- <http://www.abc.net.au/news/stories/2008/01/28/2148000.htm>
- <http://www.reuters.com/article/environmentNews/idUSL2431326620080129>
- <http://www.fws.gov/invasives/volunteerstrainingmodule/bigpicture/onthemove.html>

Assessment

Evaluation should be based on coverage of the threat to the biodiversity or the impact of the invasive species. Consideration should be made for following directions, degree of coverage, understanding and verbal explanation.

Credits:

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National Science and Education Standards (NSES):

Content Standards, Grades 9-12

Content Standard A: Science As Inquiry

- a. Abilities necessary to do scientific inquiry
- b. Understandings about scientific inquiry

Content Standard C: Life Science

- c. Biological evolution
- d. Interdependence of organisms
- e. Matter, energy, and organization in living systems
- f. Behavior of organisms

Content Standard E: Science and Technology

- a. Abilities of technological design
- b. Understandings about science and technology

Content Standard F: Science In Personal and Social Perspectives

- a. Personal and community health
- b. Population growth
- c. Environmental quality
- d. Natural and human-induced hazards
- e. Science and technology in local, national, and global challenges

Content Standard G: History and Nature of Science

- a. Science as a human endeavor
- b. Nature of scientific knowledge
- c. Historical perspectives

Other Standards:

N/A