

Strategies to Raise Populations of Endangered Animals (Research Paper)

Subject: AP Biology

Grade Level: 12th Grade

Rational or Purpose: The purpose of this activity is to train students to discover scientific knowledge through research. Students will choose a specific method to increase populations of endangered animals and provide a detailed explanation with strong supporting evidence. This activity will help raise students' awareness of environmental issues and what should be considered in the creation of a conservation plan for an endangered species.

Materials:

- Access to science journals
- Topic related books

Project Duration: 3-4 weeks

Source of Lesson: *Hot Science – Cool Talks* CD-ROM # 45: “The History and Future of Whales”

This activity covers the following major themes under AP Biology:

Organism and Populations: Ecology

- Population Dynamics
- Communities and Ecosystems
- Global Issue

Background Information:

Many species have been overexploited by humans. Whales are an excellent example. In Dr. Stephen Palumbi's presentation on “The History and Future of Whales” (see www.esi.utexas.edu/outreach/prevlectures.html), he shows evidence that the historic population of whales is much greater than previously believed. In recent years, some organizations and governmental departments and agencies have increased efforts to save marine populations. Examples of management strategies to increase populations of marine species include creating and enforcing laws against whaling and overfishing, restricting emissions of harmful pollutants into to the ocean, and establishing marine reserves.

Activity:

Imagine you are on a committee of an environmental conservation organization trying to stop the decline of the population of endangered species. Write a proposal (research paper) to support a specific method that will help raise the population of certain species. Only use the encyclopedia to equip yourself with background information. Your proposal will be much stronger if you use multiple references from scientists and/or specialists.

Procedure:

In two weeks, you will submit a draft outline with references of your proposal. The outline requires you to do thorough research on resources. You will submit your final research paper one to two weeks after your outline has been reviewed. During the course of research, you can find more resources from a source by looking at the works cited or bibliography. For scientific journals, references are always cited and listed at the end of the articles. For books, bibliographies usually appear by the end of chapters or books.

An additional suggestion for researching information is that sometimes scientists and specialists have published a series of papers related to the same or related topic. Browsing the particular persons' websites or reading their publication will definitely help. Google Scholar offers an excellent platform for you to search scientific journals. Also, your school library may have already subscribed some online database services.

Useful Websites:

Google Scholar:

www.scholar.google.com

The Palumbi Lab, Stanford University:

www.stanford.edu/group/Palumbi/index.html

The Lubchenco/Menge Lab, Oregon State University:

lucile.science.oregonstate.edu/people/lubchenco.php

The Coastal Marine Institute, University of California at Santa Barbara:

www.coastalresearchcenter.ucsb.edu/cmi/Main.html

The International Whaling Commission:

www.iwcoffice.org/

MPA Management Effectiveness Initiative:

effectivempa.noaa.gov/welcome.html