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Lesson Plan Title: The Impact of Commercial Fisheries on Marine Life	State: GA
Lesson Time Frame: 2 class periods	Inspired by an Earthwatch Expedition: New Zealand Dolphins
Student Level: High School	

Narrative: The following lesson plan is designed to engage students in becoming an active part in community awareness of conservation issues effecting marine life. The students will identify endangered species and the regulations which exist to help prevent over fishing and incidental/by-catch. They will develop a community survey for local citizens and restaurant owners to ascertain their knowledge of the species endangered and the regulations which govern the seafood industry.

Lesson/Unit Title: Conservation of Marine Life

Time Allotment: 2 class periods, 90 minutes each, plus additional time outside of class for community surveys.

Academic Standard Addressed: Georgia Quality Core Curriculum: Oceanography 9-12
Standard 14: Distinguishes the major characteristics of marine biozones.
14.6 – Evaluates man’s influence on the marine environment.

Abstract: The dramatic increase in the world’s fish catches due to improved technology and increased fishing efforts have caused a rapid decline in the population of many species of marine life. Over fishing and problems with by-catch could actually result in extinction of some species. Students will research which species are endangered and the conservation regulations set for those species. They will create a community survey for restaurant owners to poll their knowledge and response to the information they find.

Performance Indicators (objectives & measurement): Students will identify species of marine life which are endangered due to over fishing and by-catch, the degree to which each is endangered, and the regulations which set guidelines for commercial fishing industries and restaurants. Students will analyze community knowledge of the guidelines and provide information on the effects that over fishing and by-catch have on the marine environment.

Background Information: Students will need to have a basic understanding of the marine ecosystem and the importance of maintaining a proper balance. They will need to know how commercial fishing disturbs that balance and the agencies which serve to regulate and protect it.

Materials: Text – Fundamentals of Oceanography, McGraw-Hill

*other text books can provide background information based on subject taught.

Online resources – website based research (see below under technology).

Visual – Discovery Video on Marine Ecology

Technology: *VCR/DVD for introduction to marine ecosystems

*Use of computer lab for on-line research.

*The following websites:

Food and Agriculture Organization of the United Nations

www.fao.org/default.htm

Go to fisheries

National Coalition for Marine Conservation

www.savethefish.org

Welcome to FIS – Fish Information Service

www.fish.com

Ocean Planet Overfishing

www.seawifs.gsfc.nasa.gov/OCEAN_PLANET/HTML/peril_fishing.html

Go to Atlantic Cod, Salmon, Bluefin Tuna, bycatch, ect.

Office of Protected Resources – List of Sites

www.nmfs.noaa.gov/prot_res/prot_res.html

Instructional Procedure:

Introduction: Show Discovery video on marine ecosystems and discuss mans influence on the ecosystem and possible solutions to the problems that result.

Activities: Give students a list of the websites listed above and an information data sheet to take to the computer lab for on-line research. Students will research species of marine life which are threatened due to human consumption and the regulations which guide restaurant owners and consumers. They will identify problems and solutions mapped out by the Department of Conservation and come up with a survey for restaurant owners and citizens within their community to poll public awareness of the endangered/threatened species and the guidelines which govern them.

Closure: Students will share results of surveys, analyze their findings as a group, and discuss possible solutions to assist in promoting public awareness of conservation issues effecting marine life.

Assessment: Students will be graded for identifying problems and solutions to conservation issues effecting marine life, research, survey construction, and the sources they used to develop their project. * see attached rubric.

Connection to Other Content Areas: This project can easily be used for all core class. Social Studies - as a poll of public awareness, history of conservation, supply and demand, governmental regulations ect. Math – data collection, statistics, graphing and analyzing data. English – research and writing to create community awareness.

Extensions: To continue with this project students could generate a program dedicated to promoting consumer awareness of conservation issues effecting marine life. They could generalize information to assist in changing their community’s outlook on conservation as a whole. This could help promote good stewardship of the land in which we live.

Acknowledgements:

Duxbury, Duxbury and Sverdrup. Fundamentals of Oceanography. New York: McGraw-Hill, 2002

“Rubistar.” Rubistar4teachers. 2005. Advanced Learning Technologies in Education. Consortia. 11 Sept. 2005. (<http://rubistar4teachers.org>)