It’s a Krill, Krill World

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Summary

In this introduction to the scientific process, students will be following college student Jackie through a research project involving the humpback whale populations in the Southern Ocean of Antarctica. Students will analyze near real time data and answer questions as they follow the evidence and reach a conclusion.

*[TAGS: data analysis, humpback whales, Antarctic ecosystems.]*

Key Concepts

* Baleen whale distribution and foraging behavior changes over time and is related to the environment
* Disturbances of global change affects baleen whale distribution and behavior
* Data can be obtained regarding changing distribution and behavior through various means
* Data can be analyzed to predict distribution and behavior and such data can be used to enhance conservation and policy

Objectives

* Quantify the movement patterns and behavioral ecology of baleen whales
* Relate foraging behavior to dynamic environmental features
* Understand population growth and health
* Evaluate the effects of disturbance (e.g. climate migration) on baleen whales
* Use knowledge to promote education and enhance conservation/policy measures

Materials

* Powerpoint case study
* “Clicker” classroom response system (optional)
* Teaching notes
* Answer key

Procedure

1. Read through the teaching notes.
2. Using the “clicker style” powerpoint case study, lead the students through the research on humpback whale populations in the Antarctic ecosystem.
3. Have students use their classroom response system to answer data analysis questions throughout the presentation.

Assessment

* **Formative assessments**—15 multiple choice questions answered throughout the presentation
* **Summative assessments**—AP biology style long free response question (in progress)
* Answer key and further information provided for multiple choice questions (in progress)
* 10 point AP style rubric provided for free response question (in progress)

Additional Resources

* Oregon State University Marine Mammal Institute: <http://mmi.oregonstate.edu/home>
* Ari Friedlaender on life in Antarctica: <https://www.youtube.com/watch?v=8le3BPlZJoY>

Extensions or adaptations

AP biology style long free response question coming soon