Extension Activities

This section contains a list of additional activity ideas that are appropriate for grades 6 – 12. These activities are extensions or long term projects that you and your class might take on as a group or for individual science projects.

Scientific Method – Have your students create their own bird study in their own schoolyard using the scientific method. What are your questions? How do hummingbirds stay in place? How do birds fly for hours without getting tired? Why did a particular bird develop such a long beak? Factors that albatross scientists think affect how far the albatross flies to feed include lunar cycles, length of day, El nino conditions, age of chick, storms, etc. Write a technical paper including a hypothesis, study methods, and results, take photos, create graphs to show results, and present it orally to the class. Use this as a group project to promote teamwork or assign as an individual science project.

Ecology – Have students do research in the library, at a local college, or on the Internet to determine the differences in the nesting ecology of Laysan albatross (Hawaii) and their feeding ecology (Alaska, California). Why would birds go that far? Where do they go when they aren't nesting in Hawaii? What kinds of ecological differences, such as temperature and rain, would affect the birds on their journey and how? You could combine this activity with an activity on adaptations to discuss what allows them to make such long journeys to a variety of ecosystems.

Evolution – One reason that scientists study the nesting behavior of the albatross is their slow reproductive rates. Some kinds of animals have a faster life cycle and therefore can adapt to changes in their environment more quickly. Why have the albatross adapted to breed slowly vs. quickly? Have the students find organisms in a park or around your schoolyard. Look up their reproductive cycle and compare it to the albatross. Use the scientific method to study an organism with a faster life cycle and compare with the albatross. What conclusions can you make about evolution?

Technology – This study is made possible by the technological advances of this decade. Have the students research how a satellite works and find out exactly what the Argos System satellite does. Build a scale model satellite using art and technology.
The lightweight transmitters allow the albatross to carry on with their daily activities and allow us to follow them on those adventures. Are there other types of transmitters that could be used? How would we attach them? Have students build a bird out of creative materials and try to build a better transmitter with a longer life battery, lighter weight, better attachment method, etc.

SeaWiFs uses satellite imagery in scientific investigation. There are extensive teacher resources to use this imagery in your classroom. Have your students investigate the SeaWiFs satellite imagery at different times of year. When is chlorophyll abundant and how can you tell from the images? http://seawifs.gsfc.nasa.gov/SEAWIFS/TEACHERS/

The U.S. Fish and Wildlife Service protects atolls and islands in the Northwestern Hawaiian Islands where albatrosses breed. To learn about the islands and its inhabitants go to the website: http://www.fws.gov/midway/ or http://www.hawaiianatolls.org/index.html

Calculate flight distance using the flight distance calculator on the Albatross Project website http://www.wfu.edu/albatross/gcircle/calcfull.html

Food Web – The albatross has an amazing digestive system that concentrates the fats and oils from their food. A food storing lab activity is on this website: http://www.wfu.edu/albatross/atwork/food_storing.htm Discuss its tendency to pick up garbage, which in turn takes up space in the digestive system, reducing the bird's ability to transfer energy from more substantial food sources.

Evidence has shown that the feeding behavior of the Laysan and black-footed albatrosses is related to phytoplankton concentrations in the ocean. What is that relationship? Show the energy transfer from phytoplankton to zooplankton on up the food chain to the albatross. It takes approximately 10 lb. of phytoplankton to create 1 lb. of zooplankton, and 10 lb. of zooplankton to make 1 lb. of squid, etc. The adult Laysan albatross weighs approximately 5 lbs (approaching 3 kg). How much phytoplankton does one albatross need? Look at the map of phytoplankton concentrations in the ocean on the web site to determine the places that albatross would be most likely to feed.

English/Literature – Have students read "Rime of the Ancient Mariner" (http://etext.lib.virginia.edu/stc/Coleridge/poems/Rime_Ancient_Mariner.html), a poem by Samuel Taylor Coleridge. The albatross have been the subject of sailor's legends for many years. Discuss legends and how they begin. Discuss what activities albatross participate in, such as following boats that might be the cause of such legends.

Visual Arts – Albatross Adaptations – Have some fun with your students and "turn" a student into an albatross using props to introduce students to their adaptations. (Salt extraction, food concentration, long stiff wings, webbed feet, strong olfactory sense, visual feeders, life long pair bond, etc.)

Source: http://www.wfu.edu/biology/albatross/index.htm