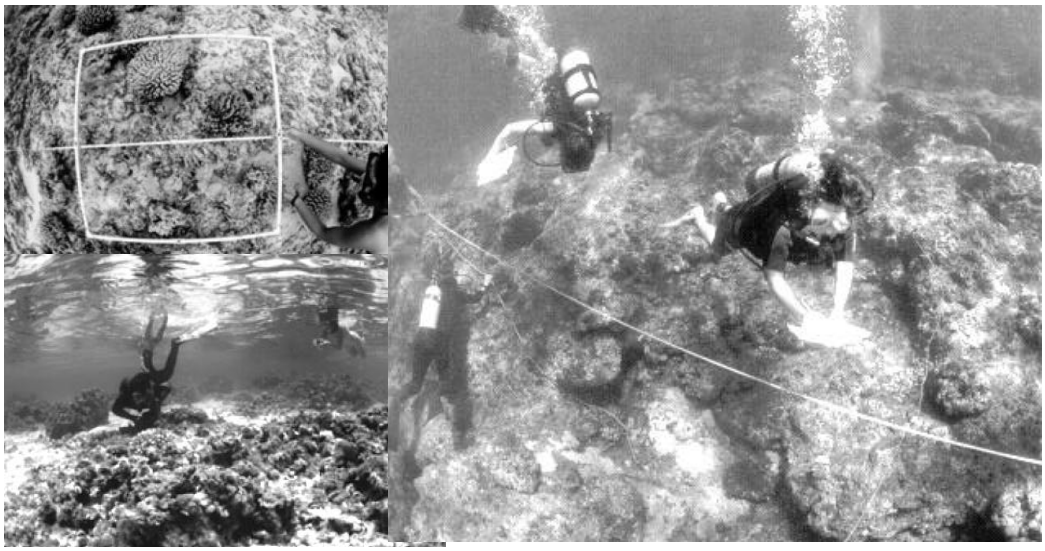
Rapid Ecological Assessment



Photos by Jim Maragos and USFWS

Grades:	3 – 8
Focus Question:	How can researchers examine a small a small area and apply those findings to a larger area?
Lesson at a Glance:	Students will conduct an ecological assessment of a small area on school property and apply findings to the greater area.
Key Concepts:	From the findings of a small area generalizations can be made to a greater area. Time and energy is a factor when evaluating a large area.
Objectives:	Students will be able to: Inventory the plant and animal population of a sample area and extrapolate results to a larger area.
Time:	One class period
Materials:	One metal coat hanger for every two students, notebook or journal to record findings in, map of school grounds. Bug boxes and plant presses are optional.
Teacher Background:	Scientists in the field rarely have the opportunity to evaluate the whole environment in which the animal or plant they study lives. Instead they need to look at a smaller area and apply the findings to the whole area. This type of representative sampling can be very scientific and accurate.

One of the challenges that the scientists face is setting up an accurate sample area. This is a key factor in getting the correct count of a species and tracking their progress. On the research expedition to the NW Hawaiian islands the longest stay on a particular island will be 2 – 3 days on Kure Island. On other islands scientists will only have a few hours to gather information. The time is well planned and documented. Scientists use meter squares in which they will concentrate their efforts. The process of replacing the meter square and evaluating a new area is repeated until a good sampling of the larger area is conducted.

Preparation and Procedure

1. Have the students pair up. Each pair will be given a coat hanger. The top and bottom of the hanger will need to be pulled to create an 8 inch square. These squares will give the students an area in which to focus.
2. Look at a map of the school grounds to determine where good sampling will occur. For a true representative sampling draw a grid over a map of the school grounds choosing 15 (for a class of 30)evenly spaced spots to explore.
3. Assign each pair a location to explore. Each group should have a notebook to record their findings.
4. Give the students 15 minutes to examine the area. Draw a grid to keep track of each plant and animal that is encountered. If a bug box is available for each group, students can take bugs back to classroom for identification. Plants can also be pressed or collected, (within reason) for identification and reporting purposes.
5. When the students return to the classroom have each group report their findings. Record findings on the board.
   Was there a plant or animal whose presence was surprising?
   What plants/insects are native and which are introduced?
   What conclusions about the schoolyard can you draw from the rapid ecological assessment?