



# ENVIRONMENTAL SCIENCE

## Merit Badge Requirements

- 1) Make a timeline of the history of environmental science in America. Identify the contribution made by the Boy Scouts of America to environmental science. Include dates, names of people or organizations, and important events.
- 2) Define the following terms and describe the relationships among them: population, community, ecosystem, biosphere, symbiosis, niche, habitat, conservation, threatened species, endangered species, extinction.
- 3) Do ONE activity in EACH of the following categories (using the activities in this pamphlet as the bases for planning and carrying out your projects):
  - A) Ecology
    - 1) Conduct an experiment to find out how living things respond to changes in their environments. Discuss your observations with your counselor.
    - 2) Conduct an experiment illustrating the greenhouse effect. Keep a journal of your data and observations. Discuss your conclusions with your counselor.
  - B) Air Pollution
    - 1) Perform an experiment to test for particulates that contribute to air pollution. Discuss your findings with your counselor.
    - 2) Conduct a study to test the effects of acid rain on plants. Discuss your findings with your counselor.
  - C) Water Pollution
    - 1) Conduct an experiment to show how living things react to thermal pollution. Discuss your observations with your counselor.
    - 2) Conduct an experiment to identify the methods that could be used to mediate (reduce) the effects of an oil spill on waterfowl. Discuss your results with your counselor.
  - D) Land Pollution
    - 1) Conduct an experiment to illustrate soil erosion by water. Take photographs or make a drawing of the soil before and after your experiment, and make a poster showing your results. Present your poster to your patrol or troop.
    - 2) Perform an experiment to determine the effect of an oil spill on land. Share your journal and discuss your conclusions with your counselor.
  - E) Endangered Species
    - 1) Do research on one endangered species found in your state. Find out what its natural habitat is, why it is endangered, what is being done to preserve it, and how many individual organisms are left in the wild. Prepare a 100-word report about the organism, including a drawing. Present your report to your patrol or troop.
    - 2) Do research on one species that was endangered or threatened but which has now recovered. Find out how the organism recovered, and what its new status is. Write a 100-word report on the species and discuss it with your counselor.