



Plastic Trash and Wildlife

Activity E.k

GRADE LEVEL: 4-6

OBJECTIVE: Students will learn the negative effects of plastic solid waste on wildlife and consider what each can do to avoid adding to this problem.

RATIONALE:

“The pollution of oceans and beaches with plastic materials is on the rise, and sea birds, marine turtles, whales, and seals are suffering as a result.”¹

TEACHER BACKGROUND:

Since the early 1970s, the amount of plastic in the marine environment has increased dramatically. Plastic negatively affects wildlife in a number of ways. Some animals, mistaking plastic for food, eat it. For example, approximately 15 percent of the world’s 280 species of sea birds are known to have eaten plastic in the form of pellets, bits of styrofoam, even plastic toy soldiers. In addition, sea turtles, apparently regarding plastic bags as jellyfish upon which they regularly feed, have been found with balls of plastic in their stomachs. (One such ball, when unravelled, measured 9 feet wide and 12 feet long). Other animals found to have eaten plastic in one form or another are: whales, dolphins, bottom fish, a manatee, sea snails and worms, and plankton. Another damaging effect of plastic trash on wildlife is the entanglement of animals in everything from six-pack holders to plastic rings, discarded fishing line, and nets. “Some government officials estimate that about 50,000 northern fur seals currently die in North Pacific waters each year as a result of entanglement in fishing gear.”² “In 1975, the National Academy of Sciences estimated that commercial fishing fleets alone dumped more than 52 million pounds of plastic packaging material into the sea and lost approximately 298 million pounds of plastic fishing gear, including nets, lines and buoys.”³ Nondegradable beverage six-pack holders are reported to have a life expectancy of 450 years in sea water.⁴

An estimated 2 million sea birds and 100,000 marine mammals are killed every year by lost or discarded plastics.⁵

PRE- AND POST-TEST QUESTIONS:

1. What nonrenewable natural resource is plastic made from?
2. Why is plastic litter even more of a problem than other kinds of litter?
3. What is biodegradation?
4. In what ways do plastic waste and litter endanger wildlife?

MATERIALS: Article: "Plastics At Sea," Natural History

PROCEDURE:

1. Have each student pick up or record all items of plastic litter and trash found in a 50-yard stretch along a beach, lake, river, or stream near his/her home. Bring lists or bags of litter to class.

2. Weigh and record the various types of plastic products found. Using the coding chart from the Solid Waste Fact Sheet: Plastics, try to identify the plastic items by type.

3. Discuss what nonrenewable natural resource plastic is made from (petroleum). Ask: "What uses other than making plastics can you think of for this resource?" Referring to the collected plastic litter, ask the following questions:

What other material or container could have been used in place of this piece of plastic?

Which plastic items collected are recyclable?

Why is plastic litter even more of a problem than many other kinds of litter?

Where did all this plastic come from?

Is all litter discarded directly by people?

Why do people litter?

Do you litter?

It costs an estimated \$1.11 a pound to pick up litter.⁶ Using this figure, what would it cost to clean up all the plastic debris found by the class?

4. Have students make a list of the wildlife commonly found in the area where the plastic litter and trash were recorded or collected. Ask the following questions:

How will this plastic affect the wildlife we have listed?

In what ways might this plastic litter endanger wildlife?

Show accompanying pictures and share some of the information from the Teacher Background section. Ask:

Why is so much of this material, with its negative effect on wildlife, manufactured?

What can each of you do to lessen the negative impact of plastic trash on wildlife?

1 D.H.S. Wehle and Felicia C. Coleman, "Plastics at Sea," Natural History, February 1983, Vol. 92, No. 2, p. 21.

2 Ibid., p.25.

3 Ibid., p. 22.

4 Daniel Keith Conner and Robert O'Dell, "The Tightening Net of Marine Plastics Pollution," Environment, January-February, 1988, Vol 30, No. 1, p. 17.

5 Ibid., p. 16.

6 Don Duncan, "Litter's Bugging Washington," Seattle Times, August 13, 1989, p. A1.

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Conner, Daniel Keith and Robert O'Dell. "The Tightening Net of Marine Plastics Pollution." Environment. January-February 1988, Vol. 30, No. 1.

Fine, Susan. "The Nine Lives of Plastic." Worldwatch. May-June 1989, Vol. 2, No. 3, p. 43.

Wehle, D.H.S., and Felicia C. Coleman. "Plastics at Sea." Natural History. February 1983, Vol. 92, No. 2, p. 21-26.