

Birds Now or Later



Section 3 Wetland Activities WETLAND INHABITANTS

Grade: 7 - 12

State Standard: Math A-3, A-4

NGSS: MS-LS2-4, MS-LS2-5,
MS-ESS3-3, MS-ESS3-4, HS-LS2-7,
HS-LS4-6.

Subjects: science, mathematics,
social studies

Skills: computation, interpreting
data, problem-solving,
synthesis

Duration: one class session

Group size: whole class or half
class.

Setting: classroom

Vocabulary: population,
management

Objectives:

Students will learn that limiting the allowable harvest of migratory birds helps to ensure that populations remain viable into the future.

Teaching Strategy:

Participants make decisions about how many pennies or crackers (representing birds or bird eggs) they take from a common source. By adjusting their “take” each turn, the students find the highest number they can take each time and still increase the total number of pennies.

Background

See **INSIGHTS, Section 3 Wetland Inhabitants** “*Amphibians in Alaska*” and “*Summary of Animal Adaptations for Wetland Living*” fact sheets.

Materials:

About 500 small duck-shaped crackers, popcorn or pennies, pencil and paper for each student.

Procedure:

1. Form a circle around a table or on the floor.
2. Explain that pennies or crackers are birds and the students are hunters of the birds.
3. Place 45 birds in the middle of the group.
4. Explain to the students that they will hunt the birds every year for several years. They can hunt as many birds as they want in the first year. Pick a student to start the take, and go around the circle, with each student taking birds. Have students keep a tally on their paper of the birds they take.
5. At the end of the year, any birds that are remaining reproduce. For this game, every pair produces one young (not a realistic birth rate, however other factors other than hunting may affect the survivability of young). So if 10 birds remain in the circle, 5 young are produced and the starting population for the next year will be 15.
6. In the first year, unrestricted hunting will likely greatly reduce or eliminate the population, leaving none for future



years. At the end of the round, discuss with the students ways that they could ensure there are birds left each year. Students should come up with some kind of hunting restriction or bag limit.

7. Try several more years, using the students' suggestions for bag limits. Students may want to experiment with different limits to maintain a sustainable population.

8. Try to reach the goal of keeping as many birds as the habitat can support (250), while at the same time allowing hunters to take as many birds per person each year.

Discussion Questions

1. Did you get more birds after 10 years by hunting heavily the first years, or by waiting for the population to increase? What are the benefits of waiting to take eggs and birds for a few years? (Population increases, everyone gets more geese) If one person takes all the birds now, will there be any for the future? If we take no birds now, we can all take many later. Discuss the concept of delayed gratification.

2. If there were no hunting of birds, would the population increase beyond the limits of the habitat? (Natural predators, bad weather, etc. would likely limit the populations).

3. If you were a refuge manager and wanted to increase the size of the bird population, how would you do it? (Restore or improve wetland habitat, transplants, reduce predators, reduce bag limit etc.)

4. As human populations increase, what happens to hunting? (Must increase regulation in order to sustain yield and maintain populations. With more hunters, regulations go from voluntary to mandatory compliance.) Why do we have regulations? What happens when towns grow larger? (More traffic problems, crime, need more streetlights, laws, and regulations, more people want to hunt wildlife for food).

5. What if there were no hunting regulations and everyone could catch anything at any time?

6. How do you think traditional knowledge has been used to determine harvest levels?

7. How should bag limits and regulations be determined

if there are only a limited number of birds and a larger number of people who want them? (Biggest person takes all, absent kids don't get any, use as a reward for behavior or inherent characteristics such as tallest person or shortest hair?)

8. How does the State of Alaska or federal government set sport and subsistence hunting regulations today? Contact a state or federal wildlife manager to learn more.

Evaluation:

- Students present graphs showing changes in bird populations with different management techniques.
- Students write a proposal to the Alaska Board of Game with suggestions for how to manage the upland bird hunting in their area. (See Alaska Wildlife Curriculum: Wildlife for the Future activity I Propose! page 179).

