Enough is Enough

Real World Ecosystems
Learner Worksheet Answer Key
Grade Level: 5-8

Name:

After reading the Enough is Enough Backgrounder, answer the following questions.

1. **Write a definition of population, and provide an example.**
   A population is defined as the number of animals or plants living in an ecosystem or habitat. Examples: Answers may vary, but learners should be clear about providing a description of the habitat or ecosystem, which could be a delineated geographic area, such as a valley or an island, or a discrete habitat, such as a lake, stream, meadow, or log.

2. **Can you think of examples of animals besides frogs and grasshoppers that reproduce rapidly?**
   Answers may vary. They should be able to name an organism that reproduces by producing large numbers of eggs or offspring, more often which are unattended and suffer high mortalities.

3. **What are the main reasons why the population of house mice "exploded" in Australia?**
   Mouse populations reached biblical plague proportions because of several factors: suitable climate, abundant food, few predators, few diseases, and an abundance of favourable human-built habitat (farms).

4. **What is emigration and how does it affect the population of animals?**
   Emigration is when animals leave a population and go elsewhere to live. Emigration has the effect of reducing a population over time.

5. **A biologist is studying a species of fish that lives in a shallow lake. She uses a net to capture 220 fish, which she marks using a harmless fin tag. She then releases the fish back to the lake. A month later, she returns and uses the same net to catch more fish. She gets a total of 464 fish, 13 of which have her fin tag. Based on this information, how many fish live in this lake?**
   The answer is approximately 7,900 (rounded from 7,852.3). It is calculated as follows: 464 x 220 ÷ 13 = 7,852.3.

6. **The same biologist knows that the lake covers an area of 1,500 hectares. Based on the population estimate she made earlier, what is the density of this fish species on a per hectare basis?**
   The answer is 7,852 ÷1550 = 5 fish per hectare.

7. **What is the difference between "extinction" and "extirpation"?**
   Extinction refers to the complete removal of a species from the Earth, by natural causes or by humans. Once a species is extinct, it is gone forever. Extirpation means the removal of a species from a habitat or ecosystem. The species continues in other areas, just not in their original place.

8. **Describe the work of a wildlife manager. What do wildlife managers do, and what methods do they use?**
   Wildlife managers are responsible for maintaining the populations of important animal and plant species in the wild. They use many techniques for estimating their populations and help design regulations that restrict the number of plants or animals that can be harvested. They also set aside habitat so species have a place to live.

9. **What happened to the once plentiful northern cod off of Canada's east coast, and what will have to happen before this species can be fished again?**
   The northern cod was seriously over-fished to the point where harvesting greatly exceeded its ability to reproduce and replace the numbers of fish harvested. Cod stocks will return only when fishing is reduced to the point where populations can recover through reproduction.