

Write one important fact from each paragraph in this space.

## Science Shorts -7

### Staying in Balance

An ecosystem is a community of plants and animals. They interact with each other and their environment. Since ecosystems are based on food chains, an ecosystem must stay in balance. When an ecosystem is in balance it is said to be in equilibrium. This means that the number of plants and animals stay pretty much the same. Why? Well if there are too many plant consumers, they will ruin the plant population by eating the plants faster than the plants can grow back. If there are too many animal consumers, they will run out of food.

Suppose a disease killed a lot of birds. The dead birds fall to the ground and rot. Bacteria feed on the dead birds until the number of bacteria is too large. Too many bacteria in the soil cause plants to die. Then mice (plant consumers) can't find enough food. They leave the area or starve. Now the snakes (animal consumers) that ate the mice are left without food. They too must leave the area or starve. The ecosystem is now out of balance and in disequilibrium. This imbalance ruined the community.

If humans do not interfere, ecosystems will eventually regain equilibrium on their own. What happened on Isle Royale in Lake Superior is a good example. In the 1920s a pair of moose swam out to Isle Royale. There were the only large animals there, so by 1930 their population had grown to 3,000! That many moose ate the plants faster than the plants could grow back. In 1933 the moose began to starve. As they died, their numbers dropped. With fewer moose on the island, the plants grew back. Overtime the moose population grew again.

In 1950 a pair of wolves swam out to the island. They ate the moose, and the number of wolves increased. When there got to be too many wolves, they started to starve. After many years a stable balance of 600 moose and 20 wolves lived on Isle Royale. There were just enough moose and just enough wolves to keep them both from starving.

In the space below draw the food chain found on the Isle Royale.

**1. In what year did the moose start to die?**

- (a) 1920
- (b) 1930
- (c) 1933
- (d) 1950

**2. On a historical time line, what happened third?**

- (a) Moose came to Isle Royale.
- (b) Wolves came to Isle Royale.
- (c) The moose didn't find enough to eat.
- (d) The wolves didn't have enough to eat.

**3. Which human activity would have the biggest effect on an ecosystem?**

- (a) paddling a canoe
- (b) building a campfire
- (c) flying a plane
- (d) building a road in a jungle

**4. *Imbalance* means**

- (a) perfection.
- (b) size.
- (c) disequilibrium
- (d) dirtiness

**5. What could happen if Isle Royale had 400 moose and 25 wolves?**

- (a) The number of wolves would increase.
- (b) The moose would eat too many plants.
- (c) The number of moose would increase.
- (d) The wolves would begin to starve.

**6. Picture a place with so many deer that they are starving. To rebalance the ecosystem, people may**

- (a) try to scare the deer away.
- (b) allow deer hunting.
- (c) put out food for the starving deer.
- (d) pass laws to protect deers from hunters.