Chapter 17

***The Nature of Science Textbook 2nd Edition***

**PAGE 171**

**Knowledge**

1. Biodiversity is the variety of living things.
2. Natural ecosystems can have a large number of different species that interact with each other.
3. Three things that humans rely on the environment for are food, oxygen and useful substances.
4. Sustainability of ecosystems means protecting ecosystems for the future.
5. Four human activities that can have a negative impact on biodiversity are agriculture, mining, deforestation and burning fossil fuels.
6. Conservation is the wise management of natural resources.
7. Humans must find ways to produce enough food for a growing population while conserving biodiversity.
8. Land is cleared for agriculture and housing.
9. National parks protect biologically diverse areas from being cleared for agricultural land.
10. Monoculture is where land is used for one species.
11. In agriculture, overuse of fertilisers, herbicides and pesticides can post a threat to biodiversity.
12. Ways of conserving biodiversity within agricultural practices include: planting trees, maintaining hedgerows and careful use of fertilisers.
13. Overfishing is when too many fish are taken from the sea.
14. Fish quotas are used to control the numbers of fish caught by EU countries every year.
15. Illegal hunting can reduce the numbers of a species and lead to extinction.

**Understanding**

1. We need bees to pollinate crops. We need plants for food. We need animals to produce dairy products and honey.
2. Humans threaten biodiversity by reducing the numbers of species by hunting and overharvesting and destruction of habitats by deforestation and pollution.

**Thinking**

1. Possible ecological impact: Reduction in plants and then consumers. Pollution added to the environment. Danger of vehicles for animals. Noise pollution.
2. Slurry can affect biodiversity in rivers and lakes because it leads to the growth of algae which are then decomposed by bacteria which reduce the oxygen concentration of the water.

**PAGE 172**

**Exam-style questions**

1. (a) Mining, hunting building, farming, deforestation.

(b) (i) In all countries there is an overall increase in meat consumption.

(ii) China and the US had the greatest change in meat consumption.

(iii) Increase in meat consumption leads to land clearing and deforestation and an increase in emission of greenhouse gases. All of these would decrease biodiversity.

(iv) Costa Rica, Ireland and New Zealand can be directly compared because they all have a population of 5 million people.

**PAGE 173**

(c) (a) The overall trend in fertiliser consumption is an increase.

(b) Europe does not follow this trend.

(c) The EU has been successful because it decreased from

approximately 30 million tonnes in 1990 to 15 million tonnes in 1995.

(d) An increase in agriculture adds more pollution to the environment, clears land and produces greenhouse gases which all decrease biodiversity.