

The Concept of Pollution

Any change in the physical, chemical, or biological characteristics of the air, water, or soil that can affect the health, survival or activities of humans or other forms of life in an undesirable way.

Terms and Concepts:

biodegradable

to break down some types of pollution
to acceptable forms

rapid: sewage and livestock wastes

slow: DDT and other chemical pesticides

non: toxic mercury and lead compounds

Types of effects:

acute: occurs shortly after exposure, such as
a burn, illness or death

chronic: a condition that lasts a long time and
takes a long time to appear

synergistic: pollutants, acting together, produce a
harmful effect greater than the sum of their individual effects. (eg., asbestos workers who smoke)



Population, Resource Use, Technology, Environmental Degradation

The environmental impact of a population depends upon:

Number of people
amount of resources each person uses
environmental degradation and pollution that results

Overpopulation

People overpopulation

Consumption Overpopulation

Some say technology is the culprit

What Should The Roles of Humans Be in The World?

Two views:

Neo-Malthusians - the world will become more crowded and more polluted. The Earth contains finite space and resources whose life-support systems are being severely stressed.

Cornucopians - economic growth and technological advances will produce a less crowded, less polluted world. The frontier and throwaway ethics.

"What is the use of a house if you don't have a decent planet to put it on?"

Henry David Thoreau (1817-1862)

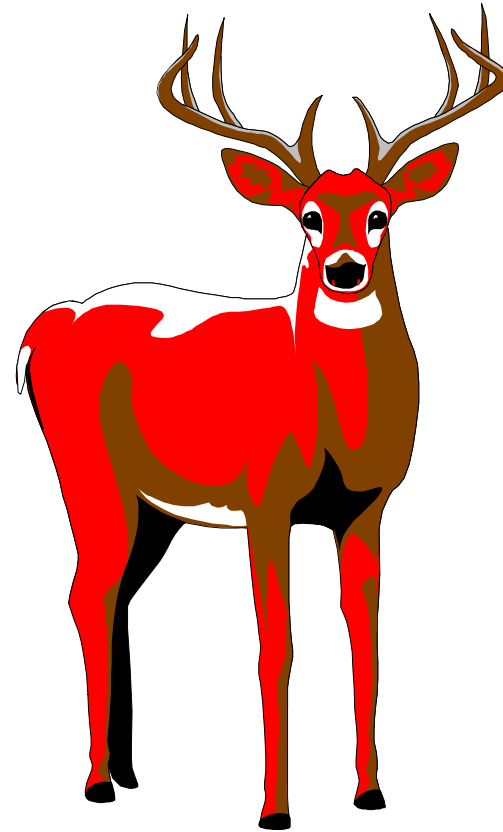
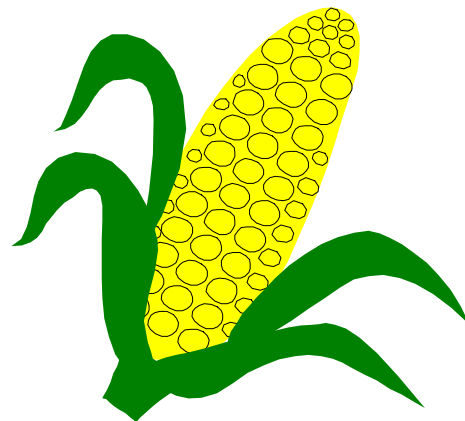
Overview-Human Impacts on the Earth

Hunting-Gathering Societies

Obtained food by gathering wild, edible materials and occasional hunting.

Population size kept down by high infant mortality and spacing of births caused by the suppression of ovulation during the 3 to 4 years a woman would breast-feed their children.

Minimum environmental impact?



Agricultural Societies

A change that began 10,000 years ago

Discovery that animals could be domesticated for food, clothing, and carrying loads.

Cultivation of plants

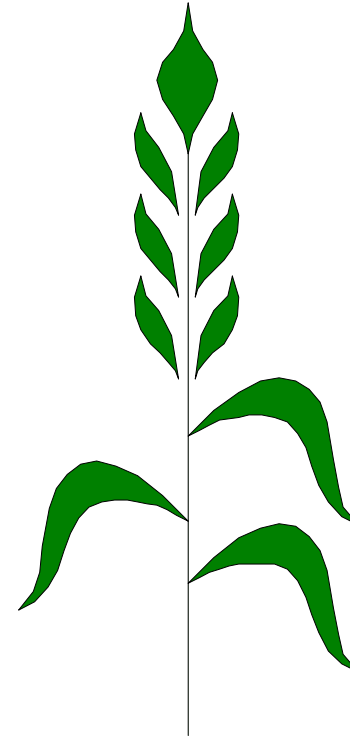
Around 5000 B.C., the invention of the metal plow literally changed the face of the Earth for all time.

Population began to increase because of the larger supply of food

People cleared increasingly larger areas of land and began to control and shape the surface of the Earth to suit their needs.

Urbanization began

Specialized occupations and long-distance trade developed.



Environmental Impact of Agricultural Societies

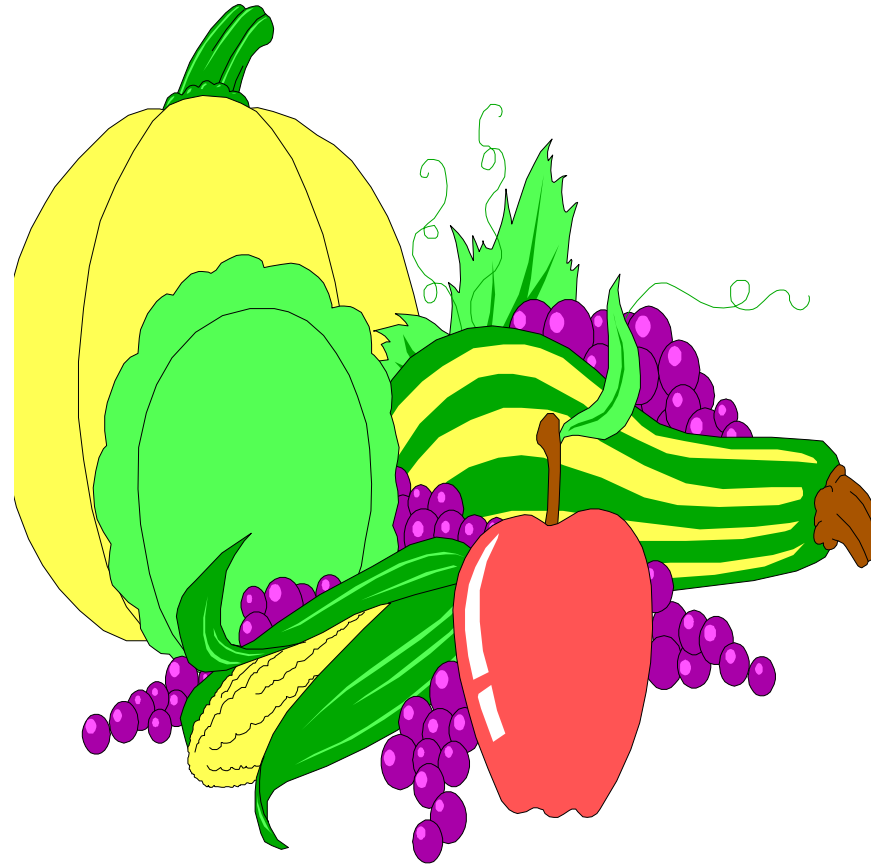
deforestation

soil erosion

over grazing

pollution of streams, rivers,
lakes, irrigation canals

spread of infectious human diseases and parasites



Industrial Societies

Industrial Revolution - England in the mid-eighteenth century

Exponentially increased environmental impacts locally, regionally, and globally.

Agriculture: non-organic fertilizers and pesticides