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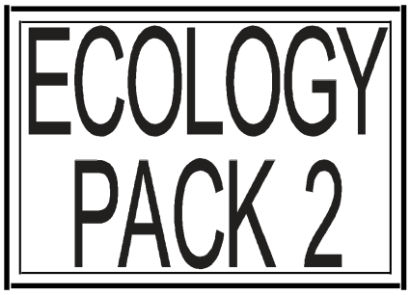


By Harry Jivenmukta

OZONE LAYER - HISTORY

The importance of the stratospheric ozone layer in shielding the Earth's surface from the harmful effects of solar ultraviolet radiation has been recognized for several decades. It was not until the early 1970s, however, that scientists began actually to grapple with the fact that even relatively small decreases in the stratospheric ozone concentration can have a serious impact on human health, an increased incidence of skin cancer, particularly among fair-skinned peoples. Plans in the United States, Great Britain, and France to build a commercial fleet of supersonic aircraft triggered much heated discussion over the potential reduction of the ozone layer by the exhaust gases (e.g., nitric oxide) emitted by such high-altitude planes. The debate in turn stimulated intensive scientific research on the stratosphere, which resulted in new findings and new concerns.

By the mid-1970s, various US investigators had determined that chlorofluorocarbons (CFCs), widely employed as propellants in aerosol spray cans, could reduce the amount of stratospheric ozone significantly. A temporary ban was imposed on the use of certain CFCs in the United States, but only after much emotional debate among environmental and industrial scientists, reports by the National Academy of Sciences, and the development by industry of economically viable substitutes for spray-can propellants.

Questions...

1. What is the ozone layer?
2. Why is it being depleted?
3. How can the ozone layer be protected?
4. Can the ozone layer recover if conditions became favourable?

OZONE LAYER - OPINION

2

The amount of ozone over Antarctica decreases, sometimes greatly, at the end of the winter there. A similar thing happens some years over the Arctic, but the thinning isn't as great as over the Antarctic. Saying that we should be talking about a 'thinning' of the ozone layer instead of about a 'hole' does not mean the problem is any less serious than those who study the issue say it is. In fact, I suspect that talking about a 'hole' supplies ammunition to those who want to deny the clear scientific evidence that the conditions in the extremely cold air over Antarctica and sometimes over the Arctic help man-made substances destroy ozone.

Anyway, you don't have to worry about heat or anything else escaping from the Earth though the 'ozone hole,' but there are legitimate concerns about a thinner ozone layer allowing more ultraviolet radiation to reach the Earth's surface where it can harm living things.

I prefer to call it an ozone thinning, rather than 'hole', but whatever you want to call it, the thinning of ozone over the Antarctic, and sometimes the Arctic, is still with us. The amount of ozone over Antarctica thins greatly each year in September and October and then recovers during the rest of the year. This is the 'ozone hole'. Part of this thinning is from natural causes, but substances that humans have been adding to the air makes it worse.

In September and October of 1996, levels of ozone over Antarctica reached levels close to those of the record lows of 1993. The 'hole' also lasted into early December 1996, an unusually long time. But, scientists say this doesn't mean the amounts of ozone-destroying substances have necessarily increased. Natural forces made 1996 a bad year for Antarctic ozone

In brief, during the coldest part of the year in both the Antarctic and in the Arctic, 'polar stratospheric clouds' form high above the earth. Over the Antarctic, winter is June, July and August. The man-made substances that destroy ozone concentrate on the ice crystals that make up these clouds. Then when spring arrives, which begins in September in the Antarctic, and the air begins warming up, the ozone-destroying substances go to work. The colder the winter high above the South Pole, the more ozone destroyed in the spring. Since the area around the North Pole isn't as cold as in the Antarctic, less ozone destruction goes on in the Arctic.

The good news is that the international treaties that restrict use of ozone-destroying substances seem to be working. Scientists have measured smaller amounts of them in the air at lower levels. Over the next few years, as this lower-level air works its way upward, the amounts of ozone-destroying substances in the upper air will decrease. Scientists expect to see smaller Antarctic ozone holes beginning some time in the next few years.

Questions...

1. What is the difference between talking about ozone layer thinning and an ozone hole?
2. Who does the ozone layer affect most? Why?

GLOBAL WARMING AND THE GREENHOUSE EFFECT

3

The sun supplies the energy that keeps the Earth warm enough for life. Once this energy reaches Earth, it follows complex paths. Some solar energy is reflected back into space and the rest absorbed by the atmosphere and the Earth's land and oceans. The absorbed energy warms the earth, which in turn radiates heat back towards space as infrared energy. Water vapour, carbon dioxide and other gases in the atmosphere absorb some of the outgoing infrared energy, which heats them. These molecules then radiate the energy in all directions, including back to Earth. In effect, some of the energy remains trapped in our atmosphere, warming the planet. This process is often called the 'greenhouse effect', but it doesn't work quite like a greenhouse. A greenhouse stays warm because the glass roof allows solar energy in. But it doesn't allow heated air to rise and mix with cooler air aloft as warmed outdoor air would.

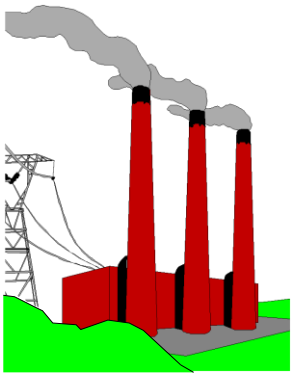
A real global warming of 0.4 C has occurred in the 20th century and it accelerated in the 1980s after a three-decade hesitation. If the responsible agent is the greenhouse effect the warming is at the lower end of the model-predicted range; higher temperatures might have been expected from the increase in greenhouse gases observed since the 19th century. Greenhouse heating might also have been expected to be concentrated in polar and subpolar latitudes, while, in fact, temperature increases in the Northern Hemisphere have been greatest in a high mid-latitude belt. Many large regions, including much of North America, so far show little or no upward trend of temperature.

Questions...

1. What is global warming?
2. Why is it important to know about the temperature of the planet?
3. How can people prepare for the consequences of global warming?
4. What is the greenhouse effect?

POLLUTION

4



Air pollution involves the release into the atmosphere of gases, finely divided solids, or finely dispersed liquid aerosols at rates that exceed the capacity of the atmosphere to dispose of them through incorporation into the biosphere. Air pollution results from a variety of causes, not all of which are within human control. Dust storms in desert areas and smoke from forest and grass fires contribute to chemical and particle pollution of the air. Forest fires that swept the state of Victoria, in Australia, in 1939 caused observable air pollution in Queensland, more than 2,000 miles (3,000 kilometres) away. Dust blown from the Sahara has been detected in West Indian islands. The discovery of pesticides in Antarctica, where they have never been used, suggests the extent to which aerial transport can carry pollutants from one place to another. Probably the most important natural source of air pollution is volcanic activity, which at times pours great amounts of ash and toxic fumes into the atmosphere. The eruptions of such volcanoes as Krakatoa, in the East Indies, Mt. St. Helens, in Washington, and Katmai, in Alaska, have been related to measurable climatic changes.

Air pollution may affect humans directly, causing a smarting of the eyes or coughing. More indirectly, the effects of air pollution are experienced at considerable distances from the source, as, for example, the fallout of tetraethyl lead from urban car exhausts, which has been observed in the oceans and on the Greenland ice sheet. Still less directly experienced are the possible effects of air pollution on global climates.

The emissions from car exhausts are responsible for between 60-90% of chemical pollutions in industrialized countries.

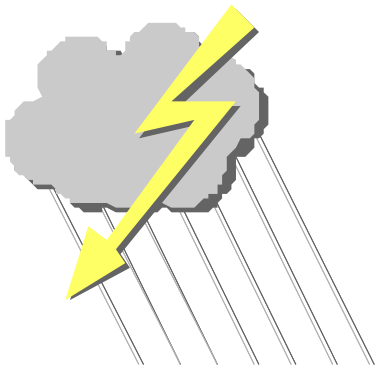
Questions...

1. Has there always been air pollution?
2. What types of air pollution are there?
3. How does air pollution affect individuals in remote regions?
4. How does it affect industrialized nations in particular?

ACID RAIN

The increased use of cars, emissions from industry, and other emissions cause there to be acidity in the atmosphere. This acidity is caused by the chemicals sulphur and nitrogen oxide Winds can disperse these emissions great distances and so the acid rain which falls can fall a long way from the place it was emitted. The acidity which falls in rain affects the water and soil on which it falls. Small organisms start dying, and as the acidity increases fish and other creatures die.

When rain falls to the surface, it is highly acidic, frequently with a pH value of less than 4. The pH scale ranges from 0 to 14, with lower numbers representing greater acidity. The consequent acidification of surface and subsurface waters is widely believed to have a detrimental effect on the ecology of the affected areas. Such regions as the Canadian Shield in Quebec and the Adirondack Mountains in New York are especially susceptible to contamination, because the snowpack buildup in winter allows a deadly pulse of acidic meltwater to occur during spring. As highly acidic water is toxic to many aquatic organisms, many lakes in these regions are biologically damaged. It also has been found that acid precipitation is harmful to trees and other forms of vegetation, causing foliar injury and reduction in growth



Questions...

1. What is acid rain?
2. What are the effects of acid rain?
3. How can the incidence of acid rain be reduced?

DESERTIFICATION

6

This is a spread or encroachment of a desert environment into arid or semiarid regions, caused by climatic changes, human influence, or both. Climatic factors include periods of temporary but severe drought and long-term climatic changes toward aridity. Human factors include the artificial alteration of the climate, such as degradation of the biological environment in arid regions by;

- removing vegetation (which can lead to unnaturally high erosion),
- excessive cultivation,
- the exhaustion of surface-water or groundwater supplies for irrigation, industry, or domestic use.

Desertification drains an arid or semiarid land of its life-supporting capabilities. The process is characterized by;

- a declining groundwater table,
- salinization of topsoil and water,
- diminution of surface water,
- increasing erosion,
- the disappearance of native vegetation.

Areas undergoing desertification may show all of these symptoms, but the existence of only one usually provides sufficient evidence that the process is taking place. Desertification usually begins in areas made susceptible by drought or overuse by human populations and spreads into arid and semiarid regions.

Desertification is not limited to nondesert regions and can occur in areas within deserts where the delicate ecological balance is disturbed.

Questions...

1. What is desertification?
2. When is desertification **not** caused by humans?
3. What are the practical effects of desertification on national economies of countries affected?
4. How can desertification be reversed? Write a proposal of the things which need to be done to turn a desert region into a fertile area.

DEFORESTATION

7

Tropical rain forests play an important role in the exchange of gases between the biosphere and atmosphere. Significant amounts of nitrous oxide, carbon monoxide, and methane, for example, are released into the atmosphere from these forests. This metabolism is being changed by human activity. More than half of the carbon monoxide derived from tropical forests comes from their clearing and burning, which is reducing the size of such forests around the world.

In the upper Amazon basin of South America, the rain forest recycles rains brought primarily by easterly trade winds. Surface transpiration and evaporation supply about half the rainfall for the entire region. In basins of dense forest cover far from the ocean, these local processes can account for most of the local rainfall. Should the Amazon Rain Forest, which accounts for 30 percent of the land area in the equatorial belt, disappear, drought would likely follow, and it might well affect the global energy balance. All around this equatorial belt, including Africa and the South Pacific islands, 'forest farmers' are clearing portions of the rain forests each year. In some areas, it is being done to provide grazing land for more cattle with which to feed, at least in part, the nations of the Northern Hemisphere. In others, the deforestation is a survival response; that is to say, increasing population and uneven distribution of food supplies force the populace to expand their fields. Unfortunately, the soils in many parts of these cleared lands are not suitable for sustained agricultural use.

Questions...

1. Is deforestation inevitable?
2. Why is deforestation bad for the planet?
3. How can people secure wood without cutting down ancient forests?
4. Why do people cut down forests? Think of purposes other than for wood collection.

TOXIC CHEMICALS AND WASTE

8

Among the most serious chemical pollutants are the chlorinated hydrocarbon pesticides, such as DDT, aldrin, and dieldrin; the polychlorinated biphenyls (PCBs), which are used in a variety of industrial processes and in the manufacture of many kinds of materials; and such metals as mercury, lead, cadmium, arsenic, and beryllium. All of these substances persist in the environment, being slowly, if at all, degraded by natural processes; in addition, all are toxic to life if they accumulate in any appreciable quantity.

The persistent pesticides have created serious ecological problems. As they move through successively higher organisms in food chains, they accumulate in increasingly concentrated forms at each level, causing damaging effects to the predators at the end of the chains, i.e., they are present in low quantities in simple organisms but become more concentrated as these organisms are consumed by more complex ones, which are themselves consumed by predators. Among the species known to be adversely affected are such meat-eating birds as falcons, hawks, and eagles and such fish-eating birds as pelicans, petrels, cormorants, and egrets. The reproduction capacity of all of these birds has been affected by an accumulation of DDT or a similar compound in their tissues. This is manifested by an impairment in the ability of the females to form eggshells properly. As a result, some species lay soft-shelled or shell-less eggs that cannot be hatched, and there has been a general decline in the numbers of these birds in Europe, Japan, and North America. Although the effects of the same chemicals on mammals is less obvious and still a matter for investigation, some studies suggest that DDT can reduce the productivity of plant plankton, upon which all other marine life depends.

There also is substantial evidence that pesticides lose the ability to control the pests they were designed to kill. Many insect species have developed immunity to a wide range of synthetic pesticides, and the resistance is inherited by their offspring. It has also been observed that repeated use of such chemicals creates pest populations in areas in which none previously existed. This happens because the pesticides destroy populations of carnivorous, predatory insects that had in the past kept the plant-eating insects in check.

Among other materials that are harmful to most forms of life are such metals as mercury, lead, and arsenic. The increasing release of these substances into the biosphere by industrial processes has created conditions that are now generally viewed as harmful to human welfare. Studies have been conducted on metallic pollutants to determine the normal environmental levels, the levels that are toxic to humans, and the extent to which industrial processes are responsible for the problem.

Questions...

1. What does toxic mean?
2. How do we know if chemicals are dangerous or not?
3. Make a list of common chemicals used in your home. How many of them do you think are dangerous?
4. Can we live without using some chemicals? Which ones?

INTERNATIONAL DEBT

9

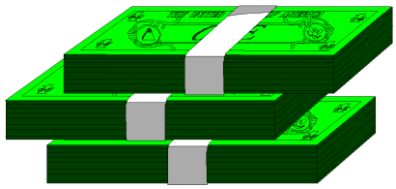
After World War II it was thought that developing countries would require foreign aid in their early stages of development. It was expected that their reliance on official sources of additional capital would continue until their economies had progressed enough to gain them access to private international lending markets.

Until the 1980s this pattern seemed to evolve as predicted. In the 1950s almost all money flows to developing countries were from official sources, in the form of foreign aid from developed countries or of resources from institutions, the World Bank and the International Monetary Fund. In the 1960s some of the export-oriented, rapidly growing countries began to rely on private international capital markets. Some, such as Singapore, attracted direct private foreign investment; others, such as South Korea, relied more on borrowing from commercial banks. In the 1970s many oil-importing developing countries were able to turn to borrowing from private sources when their economies were hit by the severe oil price increase of 1973.

Some other countries borrowed in order to offset higher oil prices and in order to maintain an excess of expenditures over consumption, without developing the highly profitable investments with which to finance the debt-servicing obligations they incurred. Balance-of-payments crises and debt-servicing difficulties had been experienced by a few countries in most years since the 1950s, but with the second oil price increase and the worldwide recession of the early 1980s, developing countries increased their borrowing and total indebtedness sharply increased.

For many indebted developing countries, the consequence of borrowing money are very serious including:

- not being able to support its own populations properly because money has to be made available to pay debts rather than buy food,
- develop in certain ways so that lending countries would continue to support them,
- remain politically loyal.



Questions...

1. What sort of countries find themselves in debt?
2. Why do some countries find it difficult to pay back their debts?
3. What effect do large debts have on ordinary people living in these countries?
4. Why is it in the interest of lending nations to encourage poorer nations to take on loans?

RECYLCLING

10

Recycling is:

the recovery and reuse of materials from spent products.

The principal motives for recycling have been the increasing scarcity and cost of natural resources, such as oil, gas, coal, mineral ores, and trees, and the pollution of air, water, and land by waste materials.

There are two types of materials salvage operations: internal and external.

- Internal salvage or recycling is the reuse in a manufacturing process of materials that are a waste product of that process. Internal recycling is common in the metals industry. The manufacture of copper tubing results in a certain amount of waste in the form of tube ends and trimmings; this material is remelted and recast.
- External salvage or recycling is the reclaiming of materials from a product that has been worn out or rendered obsolete. An example of external recycling is the collection of old newspapers and magazines for the manufacture of newsprint or other paper products.

Average Americans each contributed about 700 kilograms of solid garbage and 1600 kilograms of sewage to the world's waste in 1997. These numbers add up to big trouble for the environment. Americans are generating waste products faster than nature can break them down and using up resources faster than they can be replaced.

How can people find ways to meet their current economic and social needs without compromising the ability of their children, and their children's children, to do the same? Success will depend on understanding the difference between

- Sustainable practices: practices that provide ongoing economic and social benefits without degrading the environment.
- Unsustainable practices: 'quick fixes' that fill an immediate need for resources. Over time, however, these practices deplete or damage natural resources so they cannot be used or enjoyed by future generations.

Questions...

1. What is recycling?
2. What happens to rubbish which cannot be recycled?
3. Which nations create most rubbish?

Once glass, plastics, and metals have been removed from domestic refuse, what remains is essentially organic waste that lends itself to one of two main salvage operations:

- burial or composting, the biological action of the earth degrades the residue and returns its elements to the soil,
- incineration permits recovery of certain fuel gases and chemicals. Incineration appears especially promising in the light of two environmental dilemmas: a worldwide demand for more electric energy which can be produced from the liberated heat and the need to dispose of growing mountains of organic wastes and garbage.

Plastic containers and other household products are increasingly recycled, and, like paper, these must be sorted at the source before processing. Though enormous numbers of glass containers are used throughout the world, most are not recycled. Even those that are returned by consumers in their original form sooner or later become damaged or broken. The chief problems in recycling glass are separating it from other refuse and sorting it by colour. About 15 percent broken or refuse glass is used in new glass production, but because the raw materials are so inexpensive there has been scant economic motive to see how much glass could be recycled. By running molten waste glass into cold water, finely divided, glass can be formed. It is used as landfill or a soil conditioner, or it can be mixed with asphalt for the surfacing of roads; it may be substituted in a number of building materials that have been based on sand.

Questions...

Find out how the following products can be recycled:

- paper,
- plastic,
- metal,
- electrical or computer equipment,
- clothing.

ECOLOGY BEGINS AT HOME

How much recycling do you do at home? To reduce rubbish do you:

- use glass returnable bottles rather than tins or plastic bottles,
- recycle newspapers,
- avoid products with too much packaging?

When you buy food do you think where it comes from? The further the food you eat comes from the more pollution is involved in getting it to you.

When you eat meat products do you think how the animal was treated? Was it a factory animal? Did it have a reasonable life?

Eggs - free range or factory?

Are the vegetables you eat naturally grown or forced by artificial methods? What about genetically altered food - do you know whether you eat it or not?

How do you travel? Could you walk or ride a bicycle instead of getting a bus, or getting someone to drive you, or drive yourself?

Are you a fashion junkie? Buying clothes which only last for a short time, or replacing clothes for fashion reasons means that you are using up resources unnecassarily. What do you do with old clothes? Recycle or bin?

Smokers should realise that it is not only their health that they are destroying but also the potential of growing more productive and healthier produce in the fields that presently grow tobacco.

Questions...

1. Summarise your level of environmental friendliness by writing about how you live. Use the points above to help you, if they are relevant, and add your own categories.

POSITIVE AND NEGATIVE GROWTH

13

All countries are growing and this involves an increased use of resources and an increase in pollution. Whilst growth is inevitable, ecologists are trying the encourage governments to go for positive growth. They argue that it is possible to grow without inevitably causing damage to the environment. A good example of this is in transport. Instead of building more roads and simply continuing on the same old path of more cars, more roads, more cars, it would be possible to start reducing the burden on cars if people started using trains or buses. A positive government strategy, therefore, would be to spend money on better trains and buses and offer cheaper fares which could be subsidised from the money saved if there was no need for more roads.

There are many other ways of turning negative growth into positive growth.

Questions...

1. Consider how you could make the following strategies into more positive options which would both serve the nation and preserve the environment. Try to develop strategies which would work, be popular, and be cost effective. For instance if you said that for population control you would simply make it illegal for people to have children then obviously it wouldn't be popular or effective.

Choose from the topics listed:

- power generation,
- population control,
- energy efficiency in the home,
- transport,
- recycling,
- noise pollution,
- air pollution,
- conservation of woodland.

SCARCITY

14

Scarcity is a well known phenomenon in economics. Basically it means that there are only a limited number of resources in the world, and too many people who want them. This means that some things are scarce. Scarcity happens for many reasons including:

- the resource is naturally in short supply,
- to get the resource is difficult and so only limited amounts can be recovered,
- it is not economically viable to get the resource.

Sometimes the resource is plentiful but because it is managed or owned by a limited number of people it means that some other people will not get any of it. Food is a good example of this. There is enough food in the world to make sure that no one starves, but because it is owned by countries, some people do not get any because they belong to the wrong country. The rich countries can afford more food than they need. One third of Americans are clinically obese. This means they weigh more than a third over the maximum recommended weight for their height ratio. Other people, especially in some 'developing' countries regularly face starvation.

The utilisation of resources is determined not by governments but increasingly by large multinational companies. Some of these companies have so much money that they have more than entire countries and so can put pressure on government to let them do things as they like.

Many people in the world feel that their needs are not being met and wonder why, when there are so many resources in the world, they don't get what they feel is their fair share. One problem is that businesses are faceless. This means that they think only of profit and do not see the hardship or problems they may be causing others. For people who want to complain there is no one to complain to because the organisations are so big and impersonal.

Questions...

1. What is scarcity?
2. How does scarcity occur?
3. Are some things scarce because of the way they are owned and used? Write a few paragraphs on your opinions about this.
4. Can scarcity ever be ended?

Technology provides the opportunity for better standards of life for everyone by reducing the burden on people. But instead of doing this technology seems to be increasing the burden. Machinery which replaces workers might lead to greater prosperity for businesses but what price does the nation have to pay? Unemployment leads to people who are wasted, depressed and sometimes law breakers. Poverty is in no one's interest.

For people at work, machinery has also led to increased uniformity with people doing the same task over and over again, getting more and more bored. Technology could be used to free the creative potential of people instead. By decentralising the workplace people could work in a different way. Some people already do. In some factories people are responsible for producing the goods by working together, sharing the tasks and getting more satisfaction because they see the end result of their labour rather than just one bit of the process. But this type of working is still very rare.

Technology has been used to increase the potential for destruction by making even better bombs and missiles but what about positive uses for technology?

Questions...

1. How has technology helped the environment?
2. In what ways does technology threaten the environment?
3. Draw a plan to show how technology could be used to improve the way people work and live.
4. How do you think technology will develop as a protector of the environment?

ECO-POLITICS

Also called Green politics, these comprise any of the various environmentalist or ecological- oriented political parties formed in European countries and various countries elsewhere beginning in 1979. An umbrella organization known as the European Greens was founded in Brussels, in January 1984 to coordinate the activities of the various European parties, and Green representatives in the European Parliament sit in the Rainbow Group.

The parties sought to organise public support for the control of nuclear energy and of air and water pollution. Today eco-politics includes groups who pressure for change in many different areas of ecology. In the UK the mainstream political parties generally undermined the eco-politicians by emphasising their own green credentials. Although the Greens are a small political movement they have made sure that all politicians sit up and take notice of green issues.

By the end of the 1980s almost every country in western and northern Europe had a party known as the Greens or by some similar name (e.g., Green List in Italy, Green Alliance in Ireland and Finland, Green Alternatives in Austria, Green Ecology Party in Sweden, Ecologist Party in Belgium). Green parties developed across the world including; Canada, Australia, New Zealand, Argentina, and Chile. After 1989, Green parties or groups also began to emerge in eastern Europe.

Today, the greens concentrate on being pressure groups more than fighting for political office. They have found it difficult to win political power mainly because people think that their agenda is too narrow and limited. The Greens, however, argue that green issues affect every area of policy making.

Questions...

1. Is it important for environmental campaigners to get involved in politics? Why?

2. Find out about the pressure groups and political parties in your area. Ask them about their policies for the environment.

3. Is the environment too limited a topic to justify a political party to fight for it or do we need a political party to highlight these issues?

THE AMAZON

The Amazon region covers a territory of approximately 2,700,000 square miles in South America. The climate of the Amazon is warm, rainy and humid. The tropical rain forest can be divided into three main parts:

- the forest is the ground level which is not inundated with rain in the rainy season.
- the second one is the swamps which are the areas that are regularly inundated.
- the river banks are the areas that are occasionally inundated.

Most of the Amazon is covered with vegetation, grass, and trees. Closer to the streams, the trees grow taller until they reach to the top of the forest. The amazon carries an enormous amount of water and is of extraordinary depth. The Amazon Valley is like an immense canyon opening into the Atlantic Ocean with a mouth of over 250 miles wide. Some depths have been recorded at 330 feet. As a result of this, the soil is very fertile. Which makes the appearance of the vegetation extremely exotic.

The soil produces healthy vegetation, except in some areas where essential elements are not found. There are 117 species of enormous trees in the Amazon. The most frequently found are the rosewood, myrtles, laurels, and rubber trees.

There are more than 8,000 species of insects living in the Amazon rain forest. The most hated are the mosquitoes, because they can transmit malaria. The Leaf Cutting ants destroy large parts of plantations and are the most troublesome insects. The small black insect bites can itch for days.

There are over 2,000 species of fish. Other water animals are the fresh water dolphins, manatee, turtles, and anacondas.

Birds are the majority ranging from parrots to toucans to doves and ducks. The most frequent are the hummingbirds. They sometimes prefer higher altitudes than the valley.

The population of tribes in the Amazon does not exceed that of the animals. It has been recorded to be about 3,000,000. The number of Indians can be measured along lines of about 100,000. They have learned to trade their natural resources, which consists the heart of palms, the vanilla bean and black pepper. Sometimes oil is a good trade. The Amazon River has been one of the most important parts of the trade, stretching 4,000 miles across Brazil. The easy route of the river allows all tribes to trade, making Brazil one of the worlds leading trade contenders.

Questions...

1. Why are forests important?
2. What types of life rely on rainforests?
3. How can rainforests be exploited by people without threatening their existence?

MAHOGANY IS MURDER - OPINION

Britain is the world's second largest importer of Brazilian mahogany. Almost all the mahogany sold here, about 80 per cent of it, is logged in Brazil's Amazon Rainforest. Most of this mahogany is stolen by gangs who plunder the forests, bringing disease and destruction with them. Those who get in their way are driven off their land and even shot. Logging mahogany also seriously threatens the environment. Huge tracts of virgin rainforest are destroyed to extract one mahogany log.

The problem is not unique to Brazil. Forests across the world are under threat. In Ghana, for example, loggers will have exhausted some species of wood known as African mahogany in less than 20 years. Tropical rainforests are the richest source of life on Earth, home to over half of the world's species of plants and animals. Yet, each year an area covering the size of England and Wales is destroyed. Time is running out, forests are disappearing, people are dying.

- **The human cost**: In 1988, over 100 Ticuna Indians were attacked and gunned down by timber cutters. 14 Indians, children included, were killed and 22 wounded. Forced to flee their lands and suffering from imported diseases, the number of Arana Indians has fallen by 75 per cent.
- **Species extinction**: Rainforest destruction has already driven many species to extinction. An estimated 50 species of rainforest plants and animals become extinct each day.
- **Illegal logging**: Campaigners in Brazil have obtained a Federal Court Injunction, banning logging companies from cutting in legally protected Indian reserves. Four major suppliers to the UK have been caught logging illegally.
- **Unsustainable logging**: The logging industry brings mass destruction into the heart of the forests, through road-building, the transportation of logs and construction of sawmills. Only 0.2 per cent of the world's tropical timber is sustainably produced.

Campaigners believe that there should be:

- A halt to the exploitation and trade in mahogany, until proper environmental and social safeguards are installed. Over 100 environmental and human rights groups in Brazil support this demand.
- The introduction of international legislation to control the timber trade.
- Consumers, industry and governments to reduce levels of consumption of timber from the world's natural forests.

Questions...

1. Why do people demand wood like mahogany rather than other easily available wood?
2. Design a campaign to alert people to the issue of dwindling forests and wood resources.

PLANT A TREE

Planting a tree is a good way to declare your support for the environment because it is visible and it will actually grow into a large living and breathing useful contributor to the community. Trees are being cut down every hour of the day. Planting your own tree is like saying NO! There are many other ways of helping the environment as well and you should quietly get on with the job of doing those. It is important, however, to make a strong statement, and this is an ideal way of doing it. Below you can read about what's going on in the USA, just one of the tree saving campaigns presently under way throughout the world.

The "Plant the Future" campaign, a new phase of a Global ReLeaf 2000 campaign to plant 20 million trees and expand urban and community forests by the year 2000 and beyond. Plant the Future is a public service campaign designed to enlist individuals' support in tree-planting for the millennium. Through advertisements that magazines and newspapers will run, AMERICAN FORESTS hopes to raise individual consciousness on the need to plant trees. A radio and television campaign is also in development.

'Plant the Future reaches out and challenges everyone to plant a tree for the year 2000, we must form a variety of partnerships worldwide to plant trees for the campaign. People want to directly help improve the environment, especially when they see damage from fire, and deforestation. Global ReLeaf 2000 offers a way for people to lend a helping hand.'

The program also provides information to help individuals plant the right trees in the right places, the right way. Global ReLeaf's rural and urban efforts have provided more than $4 million in grants to support more than 400 projects in 50 states and 17 countries.

Questions...

1. Is it a good idea to have 'plant a tree' type initiatives? Why?
2. Can artificial woodlands replace ancient forests or rainforests?
3. Design an advertising campaign to encourage people to look after the trees in their area and to plant more.

CORAL REEFS

20

The latest in a long series of warnings about the devastation of the world's coral reefs came from the World Resources Institute. The new study shows more than half of the reefs are suffering from human activities: coastal development, overfishing, fishing with dynamite and cyanide, marine and inland pollution.

The study reports that even though reefs provide millions of people and hundreds of countries with food, tourism revenue, coastal protection and new medications for increasingly drug-resistant diseases they are among the least monitored and protected natural habitats in the world.

Using a Geographic Information System, more than 14 types of global maps, information on 800 sites known to be degraded, and input from top coral reef scientists from around the world to model areas where reef damage is predicted to occur, "Reefs at Risk" documents the threats from human activity.

Some key findings of the report:

- Coral reefs of Southeast Asia, the most species-rich on earth, are the most threatened of any region. More than 80 percent are at risk, primarily from coastal development and fishing.
- Most United States reefs are threatened. Almost all of the reefs off Florida are at risk from a range of factors, including runoff of fertilizers and pollutants from farms and coastal development.
- Almost two-thirds of Caribbean reefs are in jeopardy. Most of the reefs on the Antilles chain, including the islands of Jamaica, Barbados, and the US Virgin Islands, are at high risk. Reefs off Jamaica, for example, have been ravaged as a result of overfishing and pollution.
- One fifth of all animal protein consumed by humans comes from the sea. For instance, reefs provide fish and seafood for one billion people in Asia alone, many of them among the planet's most impoverished citizens.
- Coral reef species hold promise for scientists seeking new drugs to combat disease. For instance, according to one estimate, marine species are a major focus of new cancer research.
- Overexploitation and coastal development pose the greatest potential threat of the four risk categories considered in this study.

Questions...

1. What are coral reefs?
2. Why are they important to people?
3. How can governments protect coral reefs?