ENVIRONMENT

ПРАКТИКУМ

Навчально-методичне видання з практики усного та писемного мовлення

Маріуполь – 2017

ББК 83я73

УДК 82(075.8)

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Практикум призначено для студентів освітньо-кваліфікаційного рівня «Бакалавр» спеціальностей «Мова та література (англійська)», «Переклад», «Англійська мова як іноземна». Навчально-методичне видання має на меті забезпечити практичне оволодіння студентами лексичними та мовленнєвими моделями, необхідними для вільного спілкування англійською мовою. В посібнику наведено тексти з сучасних англомовних джерел, передтекстові та післятекстові завдання різних типів, комплекс вправ для опрацювання лексико-граматичного характеру та перекладу.

Затверджено на засіданні кафедри англійської філології МДУ від 16.05.2017, протокол № .

Затверджено на засіданні кафедри теорії і практики перекладу МДУ від 16.05.2017, протокол № .

Затверджено на засіданні Вченої Ради факультету іноземних мов МДУ від 2017, протокол № .

ЗМІСТ

ПЕРЕДМОВА

«Практика усного та письмового мовлення» являє собою багатопланову навчальну дисципліну, предметом якої виступає словниковий склад іноземної мови, органічно зв'язаний з усіма рівнями мови. Методичне завдання даної дисципліни полягає не тільки в тому, щоб забезпечити оволодіння студентами вміннями й навичками з усіх чотирьох видів мовленнєвої діяльності у їхньому тісному зв'язку з функціонально-мовним розшаруванням мови, але й інтегрувати їх застосування в галузі перекладу. Переклад застосовується в нашому випадку як двобічний процес − він виступає, по-перше, як мета навчання, і по-друге − як засіб навчання.

Робота над темою “Environment” передбачає оволодіння студентами необхідним обсягом інформації з різних аспектів теми та набуття мовленнєвого досвіду її використання. В посібник включено інформаційно насичений текстовий матеріал, який уможливлює отримання достатньої кількості загальнолюдських екологічних знань, необхідних для адекватного сприйняття, розуміння та перекладу іншомовних текстів, а також обговорення «зелених проблем». Тексти посібника запозичені з сучасних англомовних джерел і подані з незначними скороченнями.

Посібник складається з шести розділів: “Types of Pollution”, “Recycling”, “Conservation Movement”, “Global Environmental Problems”, “Ecological Situation in the Azov Coastal Area”, “Wild Life”.

Мовний матеріал, що відпрацьовується в завданнях, спрямований на закріплення навичок вживання лексико-граматичних конструкцій, властивих науковому стилю мовлення та загальнолітературній російській мові. Система роботи над текстом на основі програмного лексико-граматичного матеріалу визначається завданням досягнення у студентів необхідного рівня мовленнєвих навичок і вмінь. Це завдання визначає організацію і характер роботи над кожним текстом підручника. Передтекстові завдання включають роботу над лексикою, необхідною для розуміння й осмислення змісту тексту. Післятекстові

завдання носять системний характер і ставлять своєю метою: а) перевірку розуміння змісту тексту; б) відтворення інформативного змісту тексту, а також побудову власного монологічного висловлювання за аналогією з вивченим текстом; в) вироблення навичок конспектування; г) вивчення засобів зв'язку речень і частин висловлювання; д) складання різного роду планів і анотацій.

Завдання посібника діляться на три типи: 1) завдання, метою яких є перевірка правильності розуміння прочитаного тексту; 2) завдання, що розширюють рамки тексту і узагальнюють його проблемний матеріал; 3) завдання, що стимулюють непідготовлені монологічні висловлювання студентів з пропонованих питань.

Завдання до текстів також навчають коментувати, аргументувати та контраргументувати отриману інформацію, стимулюють до ведення бесіди та дискутування проблем.

Матеріали посібника також можуть бути використані в позааудиторній роботі.

UNIT 1. TYPES OF POLLUTION

ENVIRONMENTAL POLLUTION

Environmental pollution is a term that refers to all the ways by which people pollute their surroundings. People dirty the air with gases and smoke, poison the water with chemicals and other substances, and damage the soil with too many fertilizers and pesticides. People also pollute their surroundings in various other ways. For example, they ruin natural beauty by scattering junk and litter on the land and in the water. They operate machines and motor vehicles that fill the air with disturbing noise. Nearly everyone causes environmental pollution in some way.

Environmental pollution is one of the most serious problems facing humanity today. Air, water, and soil − all harmed by pollution − are necessary to the survival of all living things. Badly polluted air can cause illness, and even death. Polluted water kills fish and other marine life. Pollution of soil reduces the amount of land that is available for growing food. In addition, environmental pollution also brings ugliness to our naturally beautiful world.

Everyone wants to reduce pollution. But the pollution problem is as complicated as it is serious, it is complicated because much pollution is caused by things that benefit people. For example, exhaust from automobiles causes a large percentage of all air pollution. But the automobile provides transportation for millions of people. Factories discharge much of the material that pollutes air and water, but factories provide jobs for people and produce goods that people want. Too much fertilizer or pesticide can ruin soil, but fertilizers and pesticides are important aids to the growing of crops.

Thus, to end or greatly reduce pollution immediately people would have to stop using many things that benefit them. Most people do not want to do that, of course. But pollution can be gradually reduced in several ways. Scientists and engineers can work to find ways to lessen the amount of pollution that such things as automobiles and factories cause. Governments can pass and enforce laws that require businesses and individuals to stop, or cut down on, certain polluting activities. And − perhaps

most importantly − individuals and groups of people can work to persuade their representatives in government, and also persuade businesses, to take action toward reducing pollution.

People have always polluted their surroundings. But throughout much of history, pollution was not a major problem. Most people lived in uncrowded rural areas, and the pollutants (waste products) they produced were widely scattered.

People had no pollution-causing machines or motor vehicles. The development of crowded industrial cities in the 1700's and 1800's made pollution a major problem. People and factories in these cities put huge amounts of pollutants into small areas. During the 1900s, urban areas continued to develop, and automobiles and other new inventions made pollution steadily worse. By the mid-1900s, pollution had affected the water in every major lake and river and the air over every major city in the United States and other industrial countries. Since the late 1960s, millions of people have become alarmed by the dangers of pollution, and scientific studies have improved our understanding of the problem. Large numbers of people are now working to reduce environmental pollution.

Glossary

environment − навколишнє середовище

pollution − забруднення

surroundings – середовище, оточення

fertilizer − добриво

pesticide − пестицид

scatter – розкидати, розсипати

junk − мотлох утиль

litter – сміття

persuade – зменшувати, скорочувати

reduce – зменшувати, скорочувати

available – придатний

benefit – приносити користь

percentage – процентний вміст

exhaust – вихлопні гази

discharge – випускати, викидати, виливати

lessen – зменшувати

enforce – упроваджувати в життя

Exercise 1. Tick the correct completion.

1. People pollute

a) air.

b) water and soil.

c) surroundings.

2. Today environmental pollution

a) is not a serious problem.

b) is a complicated problem.

c) is as complicated as it is serious.

3. The pollution is a complicated problem because

a) people don't want to reduce pollution.

b) much pollution is caused by things that benefit people.

c) people don't care about their surroundings.

4. Pollution can be reduced by

a) not using many things that benefit them.

b) passing and enforcing new laws and taking action toward reducing pollution.

c) discussing the pollution problem.

5. Pollution became a major problem

a) as a result of the development of crowded industrial cities.

b) when people lived in uncrowded rural areas.

c) as soon as automobiles were invented.

Exercise 2. Answer the questions.

1. In what way do people pollute their surroundings?
2. Why is environmental pollution such a serious problem?

3. Why is the pollution problem not only serious, but also complicated?

4. In what way can people reduce pollution?

5. When and why did pollution become a major problem?

Exercise 3. Define whether sentences are True (T) or False (F):

1. Environmental pollution is one of the most serious problems facing humanity today.

2. Pollution cannot be gradually reduced.

3. Governments cannot pass and enforce laws that require businesses and individuals to stop polluting.

4. People have always polluted their surroundings.

5. The development of crowded industrial cities in the 1700's and 1800's made pollution a major problem.

6. Large numbers of people are now working to reduce environmental pollution.

Exercise 4. Find English equivalents for the following words and word combinations:

a) зменшувати забруднення

b) добрива

c) вихлопи автомобілів

d) навколишнє середовище

e) забруднюючий агент

f) основна проблема

g) переконувати

h) спричиняти забруднення

Exercise 5. Replace the expressions in bold with a word or expression from the box which has the same meaning.

unleaded petrol	erosion
fossil fuels	contaminated
recycle (things)	environmentalists
organic	emissions
genetically modified	biodegradable packaging
greenhouse	acid rain
rain forest	Green Belt
global warming	ecosystem

1. In Britain, building is restricted or completely banned in the ***area of farming land or woods and parks which surrounds a town.***
2. Many companies are developing ***boxes, cartons and cans which can easily be decomposed by organisms such as bacteria, or by sunlight, sea, water, etc.***
3. The burning of some fuels creates ***carbon dioxide, carbon monoxide, sulphur dioxide, methane and other*** gases which rise into the atmosphere.
4. Farmers have cleared hectares of ***thick wooded land in tropical regions where the precipitation is very high.***
5. Planting trees provides some protection from ***gradual wearing away*** of soil.
6. We should all try to ***process waste material so that it can be used again***.
7. These potatoes ***are cultivated naturally, without using any chemical fertilizers and pesticides.***
8. This bread is made from wheat which has been ***altered at a molecular level so as to change certain characteristics which can be inherited***.
9. More and more cars are built to use ***fuel which has been made without lead additives.***
10. ***Polluted precipitation which kills trees*** falls a long distance away from the source of pollution.
11. Human beings have had a devastating effect on the ***living things, both large and small,*** in many parts of the world.

12. The ***gases and other substances*** which come from factories using oil, coal and other ***fuels which are the remains of plants and animals*** can cause serious damage to the environment.
13. Don't drink that water! It's been ***made dirty by something being added to it.***
14. Friends of the Earth, Greenpeace and other ***people concerned with protecting the environment*** are holding a forum in London next month.
15. ***The heating up of the earth's atmosphere by pollution*** is threatening life as we know it.

KINDS OF POLLUTION

There are several kinds of environmental pollution. They include air pollution, water pollution, soil pollution, and pollution caused by solid wastes, noise, and radiation.

All parts of the environment are closely related to one another. The study of the relationships among living things, and between living things and other parts of the environment, is called ecology. Because of the close relationships, a kind of pollution that chiefly harms one part of the environment may also affect others. For example, air pollution harms the air. But rain washes pollutants out of the air and deposits them on the land and in bodies of water. Wind, on the other hand, blows pollutants off the land and into the air.

Air pollution turns clear, odorless air into hazy, smelly air that harms health, kills plants, and damages property. People cause air pollution both outdoors and indoors. Outdoor air pollution results from pouring hundreds of millions of tons of gases and particulates (tiny particles of liquid or solid matter) into the atmosphere each year. One of the most common forms of out-door air pollution is smog. Indoor air pollution results from many of the same substances found outdoors. But indoor pollutants can present a more serious problem because they tend to build up in a small area from which they cannot easily escape. Cigarette smoke is a familiar indoor air pollutant.

Most air pollution results from combustion (burning) processes. The burning of gasoline to power motor vehicles and the burning of coal to heat buildings and help manufacture products are examples of such processes. Each time a fuel is burned in a combustion process, some type of pollutant is released into the air. The pollutants range from small amounts of colorless poison gas to clouds of thick black smoke. Weather conditions can help reduce the amount of pollutants in outdoor air. Wind scatters pollutants, and rain and snow wash them into the ground. But in many areas, pollutants are put into the air faster than weather conditions can dispose of them. In crowded cities, for example, thousands of automobiles, factories, and furnaces may add tons of pollutants to a small area of the atmosphere each day.

At times, weather conditions cause pollutants to build up over an area instead of clearing them away. One such condition—called thermal inversion— occurs when a layer of warm air settles over a layer of cooler air that lies near the ground. The warm air holds down the cool air and prevents pollutants from rising and scattering. A serious pollution problem results when a thermal inversion occurs over a city that is pouring tons of pollutants into the air.

One serious result of air pollution is its harmful effect on human health. Both gases and particulates burn people's eyes and irritate their lungs. Particulates can settle in the lungs and worsen such respiratory diseases as asthma, bronchitis, and pneumonia. Studies have shown that particulates help cause such diseases as cancer and emphysema. In cities throughout the world, long periods of heavy air pollution have caused illness and death rates to increase dramatically.

Air pollution also harms plants. Poisonous gases in the air can restrict the growth of, and eventually kill, nearly all kinds of plants. Forests in Tennessee, citrus groves near Los Angeles, and vegetable gardens in New Jersey have all been seriously damaged by air pollution.

Most materials get dirty and wear out more quickly in polluted air than in clean air. Polluted air even harms such hard and strong materials as concrete and steel. In some cities, statues and other art objects that stood out-doors for centuries have been moved indoors because air pollution threatened to destroy them.

Air pollutants may also affect climate. Both gases and particulates can cause changes in the average temperatures of an area. Particulates scatter the sun's rays and reduce the amount of sunlight that reaches the ground. Such interference with sunlight may cause average temperatures in an area to drop. Some gases, including carbon dioxide, allow sunlight to reach the ground, but prevent the sunlight's heat from rising out of the atmosphere and flowing back into space. The warming of the earth's surface that results is called the greenhouse effect. The burning of fuel and other polluting activities are increasing the amount of heat-trapping gases in the atmosphere. This development may intensify the greenhouse effect, causing average temperatures to rise.

In addition, air pollutants may damage the layer of ozone (a form of oxygen) in the earth's upper atmosphere. The ozone layer protects animals and plants from much of the sun's harmful ultraviolet light.

Glossary

pollutant – забруднюючий агент

waste – відходи

solid – твердий

liquid – рідкий

hazy – затуманений

particle – частка

substance – речовина

vehicle – транспортний засіб

combustion – згоряння

fuel – паливо

scatter – розсіювати, розвіювати, розкидати

dispose of – позбавитися

furnace – піч

layer – прошарок

restrict – стримувати, обмежувати

grove – гай

greenhouse effect – парниковий ефект

Exercise 1. Complete the gaps with the words from the list.

environmental, average, reduce, scatters, liquid, hazy, solid, particles, restrict

1. Hundreds of millions of tiny ____ of liquid or solid'matter pour into the atmosphere each year.
2. Both gases and particulates cause changes in the __ temperatures of an area.
3. Air pollution turns clear, odorless air into ____, smelly air that harms health.
4. Air pollution is one of the most dangerous kinds of ____ pollution.
5. Particulates scatter the sun's rays and ___ the amount of sunlight that reaches the ground.
6. Some kinds of pollution can be caused by ____ and ___ wastes added to the atmosphere.
7. Wind ____ pollutants, and rain and snow wash them into the ground.
8. Poisonous gases in the air can _____ the growth of all kinds of plants.

Exercise 2. Answer the questions.

1. What does environmental pollution include?
2. All parts of the environment are closely related. How can their pollution affect each other?
3. What are "particulates"?
4. What does most air pollution result from?
5. How do weather conditions influence pollutants?
6. How does air pollution harm human health?
7. Why is air pollution so harmful for plants?
8. How does air pollution affect climate?

Exercise 3. Define whether sentences are true (T) or False (F).

1. All parts of the environment are closely related to one another.
2. The study of the relationships among living things, and between living things and

other parts of the environment, is called ecology.

3. Air pollution does not harm the environment.
4. Air pollutants may affect climate.
5. Air pollutants do not damage the layer of ozone.

Exercise 4. Find English equivalents for the following words and word combinations:

1) переповнене місто
2) шкодити здоров'ю
3) забруднюючий агент
4) спричиняти захворювання
5) парниковий ефект
6) частинки
7) зв'язок
8) поверхня землі
9) процес окиснювання
10) двоокис вуглецю

Exercise 5. Read the text and translate the Ukrainian words:

Повітря_____ is essential to life. Humans and other animals use the кисень _____ they breathe along with the food they eat to produce енергія. Increased physical activity raises the body's energy demand, increasing споживання of oxygen and nutrients. When we exert ourselves we notice an increase in breath rate. This is our respiratory system's response to increased energy demand.

More air flowing in and out of our легені __ _____ increases our exposure to air pollution. As a result, active children, дорослі _____, and athletes are more уразливі_____ to the unhealthy impacts of air pollution. During episodes of unhealthy levels of air pollution, public health officials advise reducing vigorous outdoor activities (e.g., soccer, бігання).

Exercise 6. Complete using the correct form of the words in capitals.

DANGER SOURCE IMPORTANCE SUCCEED PRODUCE

VARY DIFFERENCE CYCLE MIX USE

Nowadays, more and more people are becoming aware of the (1) ..... situation threatening their environment and gaining consciousness about it. At last, we have started to take precautions for the world's natural (2) ..... which are decreasing day by day. The most important step taken is re-using materials – in other words, recycling. It has become more (3) ..... that we reduce waste which pollutes the environment. Recycling paper has been the biggest (4) ..... . Paper can be used six times over, then be burnt for the (5) ..... of energy. Plastic is the hardest material to recycle because there are (6) ..... kinds which need to be treated (7) ..... . Metal is another material. The production of an aluminium can is moredifficult than (8) ..... it. Glass can be used again in a (9) ..... of asphalt and cement to pave streets. As a result, we should think for a while before we throw things away as they may still be (10) ..... .

WATER POLLUTION

Water pollution reduces the amount of pure, fresh water that is available for such necessities as drinking and cleaning, and for such activities as swimming and fishing. The pollutants that affect water come mainly from industries, farms, and sewerage systems.

Industries dump huge amounts of wastes into bodies of water each year. These wastes include chemicals, wastes from animal and plant matter, and hundreds of other substances. Some of the wastes may be hazardous (harmful to human health). Industries dispose of much hazardous waste in dump sites on land. But improperly managed sites may leak the wastes into underground water supplies that people use.

Wastes from farms include animal wastes, fertilizers, and pesticides. Most of these materials drain off farm fields and into nearby bodies of water.

Sewerage systems carry wastes from homes, offices, and industries into water. Nearly all cities have waste treatment plants that remove some of the most harmful wastes from sewage. But even most of the treated sewage contains material that harms water.

Natural cycles work to absorb small amounts of wastes in bodies of water. During a cycle, wastes are turned into useful, or at least harmless, substances. Bacteria called aerobic bacteria use oxygen to decay natural wastes such as dead fish and break them down into chemicals, including nitrates, phosphates, and carbon dioxide. These chemicals, called nutrients, are used as food by algae (simple organisms) and green plants in the water. The algae serve as food for microscopic animals called zooplankton. Small fish, such as minnows, eat the zooplankton. The small fish, in turn, are eaten by larger fish, which eventually die and are broken down by bacteria. The cycle then begins again.

The same natural cycles work on wastes poured into water by people. Bacteria break down chemicals and other wastes and turn them into nutrients, or else into substances that will not harm fish or sea plants. However, if too much waste matter is poured into the water, the whole cycle will begin to break down, and the water becomes dirtier and dirtier. The bacteria that work to decay the wastes use up too much oxygen during the decaying process. As a result, less oxygen is available for the animals and plants that live in the water. Animals and plants then die, adding even more wastes to the water. Finally, the water's entire oxygen supply is used up.

Nutrients in water cause a similar process — called nutrient enrichment, or eutrophication — to take place. Nutrients that people add to water, such as nitrates from agricultural fertilizers and phosphates from detergents in sewage, greatly increase the growth of algae in water. As larger amounts of algae grow, larger amounts also die. The dead algae become wastes, and, as they decay, they use up the water's oxygen supply. The addition of heated water to a body of water also upsets cycles. Heated water can kill animals and plants that are accustomed to living at lower temperatures. It also reduces the amount of oxygen that water can hold. The

addition of heated water is called thermal pollution. Most heated water comes from industries and power plants that use water for cooling.

Another major pollutant is fuel oil, which enters oceans mainly from oil tankers and offshore oil wells. Such spills ruin beaches and kill birds and marine life.

Glossary

body of water – водоймище

sewerage – каналізація

hazardous – шкідливий

dump – звалище; викидати

leak – пропускати, давати течу

fertilizer – добриво

sewage – стічні води

nutrient – поживна речовина

algae – морські водорості

minnow – мілька

detergent –миючий засіб

upset – порушувати

thermal – термічний, тепловий

offshore – у відкритому морі

well – свердловина

spill – потік, розлив

Exercise 1. True or False? Correct the false facts.

1. Water pollution increases the amount of pure, fresh water.
2. Chemicals, wastes from animal and plant matter, fertilizers, pesticides and
3. hundreds of other substances may be hazardous for the environment of our planet.
4. Sewerage systems carry wastes from homes, industries into the dump sites on
5. land.
6. Natural cycles work to absorb great amounts of wastes in bodies of water.

7. Bacteria decay wastes and break them down into nutrients.
8. Nutrients from agricultural fertilizers and phosphates from detergents slightly reduce the growth of algae in water.
9. Heated water added to a body of water is also hazardous.

Exercise 2. Answer the questions.

1. Why is water pollution so harmful for different people's necessities and activities?
2. Which wastes do industries and farms produce?
3. How do natural cycles work to absorb small amounts of wastes in water?
4. What does the process of eutrophication mean?
5. What is "thermal pollution"?

Exercise 3. Fill in the gaps using the words from the text.

1. Water pollution _____ the amount of pure, fresh water.
2. The pollutants that affect water come mainly from industries, farms, and _____ systems.
3. Industries _____ huge amounts of wastes into bodies of water each year.
4. Sewerage systems carry _____ from homes, offices, and industries into water.
5. Bacteria called aerobic bacteria use oxygen to _____ natural wastes.

Exercise 4. Find in the text the English equivalents for the following words and word combinations:

1) водорості
2) електростанція
3) каналізаційна система
4) шкідливі відходи
5) добрива
6) очисний завод
7) миючий засіб
8) процес гниття

9) хімікати

10) охолодження

Exercise 5. Complete the sentences using the Present Perfect, Present Perfect Continuous, Future (will/going to) or Future Perfect form of the verbs in brackets.

1. The population of the rare mountain gorilla ..... (increase) in the last few years largely so the government ..... (open) the area for the tourism industry.
2. About 30 years later, the Pacific Ocean ..... (rise) to a dangerous level.
3. The leaking chemicals ..... (spread) over the surrounding area by the time officials take measures
4. Marine pollution ..... (kill) large numbers of plants and animals unless some strict precautions are taken.
5. I read in a magazine that a car which runs on water and petrol ..... (design). There is no doubt that thousands of people ..... (drive) this environmentally friendly car.
6. The villagers ..... (organize) a demonstration against the
7. timber company for some time.

A : Have you prepared your project on Caretta carettas yet?

B : No, not yet. But I think I ..... (start) tomorrow.

A : When ..... (you / hand it in)?

B : Next week. I ..... (collect) some photographs of Caretta carettas in the afternoon.

A : I have got some documents on them. I ..... (give) the to you if you want.

B : Thanks. That ..... (be) great!

Exercise 6. Read the text and choose the best answer:

Animals and plants are becoming extinct day by day at a greater (1) ..... than ever before. People are cutting down forests and this (2) ..... to dramatic changes in the climate. There should be more (3) ..... to work for conservation. In order to protect species in danger, people should examine wild places carefully and (4) ..... the animals and plants. Another aspect of conservation is to increase the number of laws which (5) ..... the extinction of endangered species. There should also be more programmes for reproduction. This may lead to the (6) ..... of national parks and protected areas. Today, there are internationally (7) ..... wildlife protection areas worldwide. Another precaution may be to (8) ..... the threats of extinction by educating people. We shouldn't forget that the problem of endangered species is global and we should leave a better world to our children.

1. amount	rate	proportion	grade
2. leads	guides	show	influences
3. arrangement	federations	organizations	companies
4. identify	pick up	distinguish	find out
5. forbid	discourage	ban	prevent
6. invention	establishment	institution	organization
7. recalled	allowed	discovered	recognized
8. publicize	promote	report	announce

Exercise 6. Виразіть свою точку зору з проблеми скорочення можливих шляхів забруднення навколишнього середовища великих міст, використовуючи ключові слова:

to control pollution, to prevent, restrictions, to recycle, to reuse, to melt down, to sort the tresh for recycling, to dump, to burn, filters, to trap the particulates, to wash with chemical sprays.

SOIL POLLUTION

Soil pollution damages the thin layer of fertile soil that covers much of the earth's land and is essential for growing food. Natural processes took thousands of years to form the soil that supports crops. But, through poor treatment, people can destroy soil in a few years.

In nature, cycles similar to those that keep water clean work to keep soil fertile. Plant and animal wastes, including dead organisms, accumulate in the soil. Bacteria and fungi decay these wastes, breaking them down into nitrates, phosphates and other nutrients. The nutrients feed growing plants, and when the plants die the cycle begins again.

People use fertilizers and pesticides to grow more and better crops. Fertilizers add extra nutrients to the soil and increase the amount of a crop that can be grown on an area of land. But the use of large amounts of fertilizer may decrease the ability of bacteria to decay wastes and produce nutrients naturally.

Pesticides destroy weeds and insects that harm crops. But pesticides may also harm bacteria and other helpful organisms in the soil.

Solid wastes are probably the most visible forms of pollution. People throw away billions of tons of solid material each year. Much of this waste ends up littering roadsides, floating in lakes and streams, and collecting in ugly dumps. Examples of solid wastes include junked automobiles, tires, refrigerators, and stoves; cans and other packaging materials; and scraps of metal, paper, and plastic. Such solid pollutants are most common in the heavily populated areas in and near cities. Slag and other wastes from mining processes pollute much land away from cities.

Solid wastes present a serious problem because most of the methods used to dispose of them result in some type of damage to the environment. When the wastes are put into open dumps, they ruin the attractiveness of the surrounding areas. Dumps also provide homes for disease-carrying animals, such as cockroaches and rats. Some solid wastes can be destroyed by burning them. But burning produces smoke that causes air pollution. When wastes are dumped in water, they contribute to various forms of water pollution.

In the mid-1980's, more than 2 billion short tons (1.8 billion metric tons) of solid wastes were produced in the United States each year. Solid wastes include mining, industrial, and agricultural wastes, in addition to household wastes. Most solid wastes are buried in large, open areas called landfills. But in many places, especially near large cities, the land available for dumping is running out. In the meantime, the production of solid wastes is increasing rapidly. In addition, more and more wastes that are difficult to dispose of are being produced. Tin and steel cans that rust and can be absorbed by the soil have been replaced by aluminum cans that stay in their original state for many years. Paper and cardboard packaging that can decay and burn easily is being replaced by plastics that will not decay and that give off harmful gases when burned.

Glossary

fertile – родючий

bacteria – бактерії

fungi – пліснява

decay – розкладати, гноїти

nitrate – нітрат

phosphate – фосфіт, фосфат

nutrient – поживна речовина

litter – засмічувати

dump – звалище, викидати (на звалище)

junked – викинутий

plastic – пластмаса

slag – шлак

cockroach – тарган

cardboard – картон

tin – олово

steel – сталь

rust – іржавіти

Exercise 1. Choose the correct answer.

1. What damage is most dangerous for growing food?

a. soil pollution

b. air pollution

c. water pollution

2. What accumulates in the soil?

a. plant and animal wastes

b. gases

c. plastics

3. What do people use to grow more and better crops?

a. new machines

b. fertilizers

c. weather forcast

4. What do pesticides harm?

a. insects

b. bacteria

c. roots of plants

Exercise 2. Answer the questions.

1. What layer of fertile soil essential for growing plants suffers greatly from soil pollution?
2. How long does the soil accumulate?
3. What does the soil accumulate?
4. What makes plant and animal wastes break down into nitrates, phosphates and other nutrients?
5. How does fertilizer affect crop growing?
6. What do pesticides harm?
7. What are the most visible forms of pollution?
8. Where does much of these wastes end up?
9. What are examples of solid wastes?

10.In what area is solid pollution most common?

11.What methods can be provided to solve the problem of solid wastes pollution?

12.What are the disadvantages of such methods as open dumps /burning/ dumping in water?

13.Where are the most solid wastes buried?

14.What wastes are difficult to dispose of?

15.Why can't aluminum cans be absorbed by the soil?

Exercise 3. Complete the gaps with the words from the list.

Solid wastes are the most visible forms of (1). People throw away billions of tons of (2). Examples of solid wastes include junked automobiles, tires, refrigerators and stoves; cans and other packaging materials; and (3), paper and plastic. Such solid pollutions are most common in the heavily populated areas in and near (4). Solid wastes present a serious problem because most of the methods used to dispose of them result in some type of damage to the (5). When the wastes are put into open (6), they ruin the attractiveness of the surrounding areas. Dumps also provide homes for disease-carrying animals, such as (7) and rats. Some solid wastes can be destroyed by them. But burning produces (8) that causes air pollution. When wastes are dumped in water, they contribute to various forms of (9). Most solid wastes are buried in open areas called (10). In the meantime, more and more wastes that are difficult to (11) are being produced. Tin and steel cans that (12) and can be absorbed by soil have been replaced by aluminium cans that stay in their original state for many years.

a − cities	e − landfills	i − environment
b − dumps	f − solid material	j − cockroach
c − pollution	g − smoke	k − dispose of
d − rust	h − scraps metal	1 − water pollution

Exercise 4. Define whether sentences are true (T) or false (F).

1. Soil pollution damages the thin layer of fertile soil.

2. Plant and animal wastes accumulate in the soil.
3. Pesticides destroy weeds and insects that harm crops.
4. The use of large amounts of fertilizer may increase the ability of
5. bacteria to decay wastes and produce nutrients naturally.
6. Solid wastes are probably the most visible forms of pollution.
7. Solid wastes cannot be destroyed by burning them.
8. Most solid wastes are buried in large, open areas called landfills.

Exercise 5. Find English equivalents for the following words and word combinations:

1) урожай
2) грибок
3) поживні речовини
4) шлаки
5) спалювати
6) позбуватися чогось
7) звалище сміття
8) сталеві банки
9) виробництво
10) прилегла ділянка

Exercise 6. Rewrite the sentences using the words in brackets.

1. We can help the environment by recycling, but most people ignore it. (although)
.....
2. Every time we go to the country, we enjoy watching wildlife. (whenever)
.....
3. Some aerosols have been banned because they harm the ecosystem. (in order not to) .....
4. Many species of wildlife may become extinct yet some organizations try hard to protect them. (however)

.....

5. People chopped down the rainforests to cut timber and make land for their plantations. (so as to)

.....

6. We may ban cars from the city centres on certain days and as a result we can prevent pollution. (so that)

.....

7. Everywhere in the world, there are organizations that work for the benefit of our planet. (wherever)

.....

8. She provides grants for the endangered species because she wants to protect them. (so as to) .....

9. Although there is international pressure for not using nets, in some countries fishermen still go on using them. (despite)

.....

10. Even though light and noise are disturbing Caretta carettas, more and more hotels are being built in their environment. (in spite of)

.....

Exercise 7. Match the words with their definitions:

1. industry	a) the process of being gradually destroyed by rain, wind and the sea
2. erosion	b) including the whole world
3. to deplete	c) to kill an animal, especially for food
4. flood	d) a form of energy coming from nuclear reactions which is harmful to living things
5. global	e) the process of making air, water and soil dangerously dirty

6. radiation	f) to reduce the amount of something that is available
7. pollution	g) the act or process of destroying something
8. destruction	h) containing poison or caused by poisonous substances
9. toxic	i) a very large amount of water that covers an area that is usually dry
10.to slaughter	j) the production of goods especially in factories

AIR POLLUTION

There are several kinds of environmental pollution. They include air pollution, water pollution, soil pollution, and pollution caused by solid wastes, noise, and radiation.

Air pollution turns clear, odorless air into hazy, smelly air that harms health, kills plants, and damages property. People cause air pollution both outdoors and indoors. Outdoor air pollution results from pouring hundreds of millions of tons of gases and particulates (tiny particles of liquid or solid matter) into the atmosphere each year. One of the most common forms of out-door air pollution is smog. Indoor air pollution results from many of the same substances found outdoors. But indoor pollutants can present a more serious problem because they tend to build up in a small area from which they cannot easily escape. Cigarette smoke is a familiar indoor air pollutant.

Most air pollution results from combustion (burning) processes. The burning of gasoline to power motor vehicles and the burning of coal to heat buildings and help manufacture products are examples of such process. Each time a fuel is burned in combustion process, some type of pollutant is released into the air. The pollutants

range from small amounts of colorless poison gas to clouds of thick black smoke. Weather conditions can help reduce the amount of pollutants in outdoor air. Wind scatters pollutants, and rain and snow wash them into the ground. But in many areas, pollutants are put into the air faster than weather conditions can dispose of them. In crowded cities, for example, thousands of automobiles, factories, and furnaces may add tons of pollutants to a small area of the atmosphere each day.

At times , weather conditions cause pollutants to build up over an area instead of clearing them away. One such condition – called thermal inversion- occurs when a layer of warm air settles over a layer of cooler air that lies near the ground. The warm air holds down the cool air and prevents pollutants from rising and scattering. A serious pollution problem results when a thermal inversion occurs over a city that is pouring tons of pollutants into the air.

One serious result of air pollution is its harmful effect on human health. Both gases and particulates burn people`s eyes and irritate their lungs. Particulates can settle in the lungs and worsen such respiratory diseases as asthma, bronchitis, and pneumonia. Studies have shown that particulates help cause such diseases as cancer and emphysema. In cities throughout the world, long periods of heavy air pollution have caused illness and death rates to increase dramatically.

Most materials get dirty and wear out more quickly in polluted air than in clean air. Polluted air even harms such hard and strong materials as concrete and steel. In some cities, statues and other art objects that stood out-doors for centuries have been moved indoors because air pollution threatened to destroy them.

Air pollutants may also affect climate. Both gases and particulates can cause changes in the average temperatures of an area. Particulates scatter the sun`s rays and reduce the amount of sunlight that reaches the ground. Such interference with sunlight may cause average temperatures in an area to drop. Some gases, including carbon dioxide, allow sunlight to reach the ground, but prevent the sunlight`s heat from rising out of the atmosphere and flowing back into space. The warming of the earth`s surface that results is called the greenhouse effect. The burning of fuel and other polluting activities are increasing the amount of heat-trapping gases in the

atmosphere. This development may intensify the greenhouse effect, causing average temperatures to rise.

In addition, air pollutants may damage the layer of ozone (a form of oxygen) in the earth`s upper atmosphere. The ozone layer protects animals and plants from much of the sun`s harmful ultraviolet light.

Exercise I. Translate into Ukrainian:

1. Indoor air pollution *results from* many of the same substances *found* outdoors.

2. Each time a fuel *is burnt* in a combustion process, some type of pollutant *is released* into air.

3. But in many areas pollutants *are put* into the air *faster* than weather conditions can dispose of them.

4. A serious pollution problem *results* when a thermal inversion *occurs* over a city that *is pouring* tons of pollutants into the air.

5. *Both* gases *and* particulates burn people`s eyes and irritate their lungs.

6. In cities long periods of heavy air pollution *have caused* illness and death rates to increase dramatically.

7. Some art objects that stood outdoors for centuries *have been moved* indoors because air pollution threatened to distroy them.

8. The burning of fuel and other polluting activities *are increasing* the amount of heat- trapping gases in the atmosphere.

9. This development *may intensify* the greenhouse effect *causing average temperatures to rise.*

CAUSES OF POLLUTION

New inventions and processes have been continuously developed to improve our way of life. Such developments are called technological advances. Technological advances help us, but many of them also bring about harm to the environment. In addition, there are economic and social causes of pollution.

Technological causes. Many environmental pollution problems are a result of the rapid advances in technology that have been made since about the end of World War II (1945). Technological advances in agriculture, industry, and transportation have greatly improved our way of life. But most of the advances were made without consideration of the effects they would have on the environment.

The automobile engine is an example of a very useful technological development that harms the environment. Through the years, automobiles have been made more and more powerful. Many cars being built today have two to three times as much power as most cars built during the 1940s. Because of this, the new cars produce much more polluting exhaust than the older ones did. In order to make engines more powerful, automobile manufacturers increased the pressure and − as a result − the temperature at which combustion takes place in the engines' cylinders. The higher temperatures during combustion cause chemical reactions that put large amounts of nitrogen oxide gases into the engines' exhausts. In addition, high compression engines require special gasolines that burn evenly to prevent "knocking" noises. Mechanisms called catalytic converters now remove some of the polluting materials produced by automobile engines. Also, the gradual elimination of the lead from gasoline has helped make automobiles less polluting. However, there is still much to do to eliminate pollution from automobiles. An increase in their number may cancel gains from using catalytic converters and unleaded gasoline.

The sewage treatment plant is an example of a technological development that was designed to protect the environment, but which can cause pollution nevertheless. Most treatment plants prevent dangerous organic wastes (wastes from animal and plant matter) from upsetting the natural cycles in water. The treatment plants use bacteria and oxygen to break down the organic wastes and turn them into inorganic nutrients. But when the nutrients are put into the water, they upset natural cycles by increasing the growth of algae. Scientists and engineers are working to develop sewage treatment plants that will also remove inorganic nutrients from sewage.

Some products of advanced technology contribute to environmental pollution in more than one way. For example, plastics are a troublesome solid waste because

they will not break down and cannot be absorbed by the soil. Plastics also indirectly cause pollution when they are produced. Large amounts of electricity are required in order to produce plastics. As a result of this need for electricity, the production of plastics helps create a demand for more electric power plants. Electric power plants that burn fuel, such as coal, are a major source of air pollution.

Glossary

invention – винахід

advance – прогрес, поліпшення

exhaust – вихлопні гази

combustion – згоряння

nitrogen – азот

oxide – окис

gasoline – бензин

converter – перетворювач

lead – свинець

cancel – зводити нанівець

sewage treatment plant – завод/обладнання для очистки стічних вод

nutrient – поживна речовина

algae – морські водорості

troublesome – який спричиняє тривогу

Exercise 1. Find out information about

a. the technological development in transportation that harms the environment.
b. the mechanisms which help make automobiles less polluting.
c. the development for protecting the environment, but which can cause pollution nevertheless.
d. a troublesome solid waste.
e. a major source of air pollution.

Exercise 2. Answer the questions.

1. What developments do we call technological advances?
2. Are environmental pollution problems a result of the rapid advances in technology?
3. How does the automobile engine harm the environment?
4. What do high compression engines require to prevent "knocking" noises?
5. What do the treatment plants use to break down the organic wastes?
6. Are plastics a troublesome solid waste? Why?
7. What is a major source of air pollution?

Exercise 3. Read and translate these sentences and then use the words in bold to complete the sentences below.

1. Many factories still allow **pollutants,** such as toxic waste, to flow into our rivers.
2. We should put our old newspapers and bottles in **recycling** bins.
3. Organisations like Friends of the Earth are often referred to as **green** organisations.
4. Scientists are concerned about the size of the hole in the **ozone layer,** as ozone helps stop harmful radiation entering the Earth's surface.
5. People who live in towns and cities live in an **urban** environment.
6. People who live in the countryside live in a **rural** environment.
7. Dinosaurs became **extinct** millions of years ago; there will never be dinosaurs again.
8. **Global warming** is the theory that the world's average temperature is increasing.
9. **Ecology** is the relationship between plants, animals, people and their environment.
10. **Exhaust fumes** from cars are responsible for much of the air pollution in cities.
11. People who live near airports often suffer from **noise pollution**.
12. An animal's **natural habitat** is the place where it usually lives.
13. Some animals are **endangered** and need protection.
14. The blue whale **faces extinction** unless we act quickly.
15. When an animal is **in captivity**, it lives in a place like a zoo and isn't free.
16. This **species** of tiger is very rare.

17. The Mediterranean monk seal is **protected**, which means you can't hunt them.

18. In the West, we rely on **fossil fuels** such as oil and coal.

19. You can help the environment by using more **solar energy**, especially in countries that have a lot of sunshine.

20. Many **conservationists** are working hard to save animals which are under threat.

/ / /

1) If we don't protect endangered species, they may become _____ .

2) _____ is important because it means factories have to produce less new plastic, glass and paper.

3) The filter prevents dangerous _____ from entering the atmosphere through the chimney.

4) Some children in _____ environments don't realise that milk comes from cows!

5) I'm a very _____ person; I recycle, use public transport, and care about the environment.

6) Electric cars don't produce any _____ , so they are much cleaner.

7) Until the Industrial Revolution, most Europeans had a very _____, agricultural way of life.

8) If _____ continues, the polar ice caps will start melting and the sea level will rise.

9) Some aerosol cans give off CFC gases which enter the atmosphere and destroy the _____ .

10**)** The _____ of rainforests changes when trees are cut down.

11) Eventually, the world will run out of _____ and we will have to find other energy sources.

12) The _____ in the town centre is terrible and you have to shout to have a conversation.

13) It was exciting to go to Africa and see elephants in their _____ .

14) Many people in Spain heat their water using _____ in the summer.

15) Unless we do something to help those animals which are _____ , we could lose many animals forever.

16) Expert _____ say that pollution seriously threatens this area.

17) The zoo announced that it was the first time a panda had had a baby _____ .

18) The Indian elephant is a different _____ from the African.

19) Because there are so few in the wild, the golden eagle is _____ by law.

20) The Siberian tiger _____ and could disappear in a very short time.

UNIT 2. RECYCLING

CONTROLLING POLLUTION

Some lakes and rivers may already be so badly polluted that they may not be able to regain their health even if all pollution is stopped. Some soil has been too badly eroded to support crops any more. But in most areas, effective programs to prevent pollution could greatly improve environmental conditions.

Several different approaches can be used to control pollution. Waste products can be saved and used again. New technological developments can help prevent pollution from older ones. Restrictions can be placed on the use of materials that pollute. These approaches may result in less convenience and higher costs, however.

Recycling. The reprocessing of waste products for reuse is called recycling. Many kinds of wastes can be recycled. Some, including cans and newspapers, can be used over and over again for the same purposes. Cans can be melted down and used to make new cans. Old newspapers can be turned into pulp and then made into clean newsprint. Other materials, such as glass bottles and automobile tires, can be reused for other purposes. Ground-up glass can serve as an ingredient in road-building materials. Old tires can be melted down in a special process in which they give off valuable chemicals, such as oil and gas. Many communities have introduced

programs that encourage households to sort their trash for recycling. Recycling programs can reduce the amount of solid wastes that must be dumped or burned.

New technological developments do much to control pollution caused by older technology. For example, several types of devices have been developed to prevent particulates from leaving industrial smokestacks. These devices include filters that trap particulates that would otherwise be released into the air with waste gases. Other devices use static electricity to keep particulates from escaping into the air. Still other devices wash out particulates with chemical sprays.

Various methods of reducing pollution from automobile engines have been developed. Examples include new additives to replace tetraethyl lead in gasoline, and devices to remove pollutants from exhaust and make combustion processes more complete.

An important development in agriculture is the use of biological controls instead of pesticides. Biological controls involve the use of various types of insects and bacteria to control pests. Other new developments have improved the effectiveness of water treatment facilities and provided new ways to dispose of solid wastes.

Restrictions on the use of materials that pollute can be extremely effective in controlling pollution. But the restrictions may also cause inconvenience and require changes in ways of life.

The use of some harmful materials has been stopped or reduced without major problems resulting. For example, most industrial countries have banned the use of the dangerous pesticide DOT for all except essential purposes. Farmers have found other, less harmful pesticides to replace DDT. Oil companies now produce unleaded gasoline because lead was found to be a major pollutant in automobile exhausts. Auto-mobile manufacturers have modified engines so that the engines can run properly on unleaded gasoline.

Glossary

erode – руйнувати

approach – підхід

restriction – обмеження

recycling – вторинна переробка

pulp – м’яка речовина

newsprint – газетний папір

tire – шина

ground-up – розмолотий

household – домашнє господарство; домочадці

trash – сміття, мотлох

solid – твердий

dump – викидати (на звалище)

particulate – частка

smokestack – димар

trap – поглинати

escape into the air – попадати в повітря

additive – домішка

remove – усувати

exhaust – вихлопні гази

combustion – згоряння

pesticide – пестицид

insect – комаха

pest – шкідник

dispose – ліквідувати, позбавитися

ban – забороняти

Exercise 1. Find out information about

a) different approaches that can be used to control pollution;
b) the reprocessing of some waste products for reuse;
c) new devices that prevent participates from leaving industrial smokestacks;
d) methods of reducing pollution from automobile engines;
e) the use of biological controls instead of pesticides;

f) the ways of the use of harmful materials.

Exercise 2. Answer the questions.

1. Can environmental conditions be improved if all pollution is stopped?
2. What approaches can be used to control pollution?
3. What process is called "recycling"?
4. What kind of wastes can be recycled and how?
5. How can new technological developments help to control pollution?
6. What methods of reducing pollution from automobile engines have been developed?
7. What new development in agriculture have been most effective?
8. What restrictions can be useful in controlling pollution?

THE THROW-AWAY SOCIETY

Many countries bury and forget millions of tonnes of rubbish every year. But we don't have to throw away all our waste paper, glass, metal and plastic. We can also burn or recycle a lot of it. In fact waste can be wonderful stuff.

- The Problem

Rubbish

- The average person in Los Angeles throws away 7 kilos of rubbish every day.
- The average person in the Third World throws away only 1 kilo of rubbish every day. O Britain throws away 7 million tonnes of paper every year. That's the same as 80 million trees.
- In one year, a European family with two children throws away...
  - 50 kilos of paper (that's six trees)
  - 60 kilos of metal
  - 45 kilos of plastic (that doesn't sound like a lot of plastic, but it is.

  You need 300,000 supermarket carrier bags to make one tonne).

- In one year, the average person throws away... 71 food cans, 34 cans of pet food and 68 drinks cans.
- Britain produces 8.5 billion cans per year. Half are for food and half
- are for drinks.
- That's enough to go to the moon and back and half-way to the moon
- again.
- England and Wales produce 500 tonnes of rubbish every year. This
- costs J600 million to collect and bury.

Packaging

Almost all supermarket food today comes in paper or plastic containers. Some of this 'packaging' is necessary. It keeps the food clean and fresh. It also makes it last longer. But some packaging isn't necessary at all. It's just there to make the food look better.

- In Britain, over 75,000 people work in packaging factories.
- The UK packaging industry sells J4 billion of paper and plastic containers every year.
- 28% of domestic rubbish is packaging.
- 5% of all Britain's energy goes into making packaging.

➢ The Solution

Here are three ways to beat the throw-away society. All of them are cleaner and cheaper than burying rubbish.

1. Throw Away Less Rubbish

In Denmark, for example, it's illegal to sell drinks in cans. And it's not just governments which can produce less rubbish. It's ordinary people, too. For example, anyone can decide to

✓ buy products with as little packaging as possible .

✓ use and throw away fewer carrier bags

✓ waste less paper.

1. Turn Rubbish into Energy

How? By burning it. This is a good idea because it...

- saves fossil fuels
- means burying less rubbish
- cuts pollution. (Energy from rubbish is cleaner and cheaper than energy from fossil fuels.)

At the moment, most countries only turn between 5% and 10% of their rubbish into energy.

3. Use Rubbish Again

A lot of what we throw away is still useful. It's possible, in fact, to recycle 80% of domestic rubbish. This includes most kinds of paper, glass, metal and plastic. But there's a problem. Recycling is expensive. That's why (at the moment) we only recycle about 15% of glass, 20% of plastic and 30% of paper. But it's getting cheaper and easier to recycle all the time. One reason for this is the growing number of recycling centres. (For example, there are more 'bottle banks' today than ever before.)

Also, some countries now have recycling laws. These mean that super¬markets pay customers to return tins and bottles.

Recycling ... saves trees.
...saves energy.
...saves money.
...cuts pollution.

- Your opinion

Which of the three ways is most effective to your mind?

Read the article and comment on the importance of the issue discussed.

The World's Rubbish Dump

A “plastic soup” of waste floating in the Pacific Ocean is growing at an alarming rate and now covers an area twice the size of the continental United States, scientists have said. The vast expanse of debris − in effect the world's largest rubbish dump − is held in place by swirling underwater currents. This drifting “soup”

stretches from about 500 nautical miles off the Californian coast, across the northern Pacific, past Hawaii and almost as far as Japan. Charles Moore, an American oceanographer who discovered the “Great Pacific Garbage Patch” or “trash vortex”, believes that about 100 million tons of flotsam are circulating in the region: “The original idea that people had was that it was an island of plastic garbage that you could almost walk on. It is not quite like that. It is almost like a plastic soup. It is endless. Marine detritus includes plastic bottles, golf balls, plates, knives, forks, toothbrushes, helmets, tubes, beach toys, syringes and fishing tackle”.

Curtis Ebbesmeyer, an oceanographer and leading authority on flotsam, has tracked the build-up of plastics in the seas for more than 15 years and compares the trash vortex to a living entity: “It moves around like a big animal without a leash. When that animal comes close to land, as it does at the Hawaiian archipelago, the results are dramatic. The garbage patch comes up, and you get a beach covered with this confetti of plastic”, he added.

The Mediterranean suffers more pollution from discarded plastics than any other sea, especially the north-west sector that washes up on holiday resorts in Spain, France and Italy, an ecological study has found. Around б.5millioп tons of rubbish lie below the surface of the world's oceans. The highest concentration by far − including almost 2,000 pieces of plastic per square kilometre − is in the Mediterranean. A separate Spanish study also predicts global warming will bring hurricanes to the Mediterranean, whipping usually tranquil waters into cyclones. This means the garbage may not remain on the seabed for long. Most of the human rubbish in the seas consists of plastic containers and bags. These present a serious environmental problem if you bear in mind that their average life, before they disintegrate, is around 450 years. The non-biodegradable pieces of rubbish that wash oп to the beaches of southern Europe form only 15 per cent of the total. “Most of it we never see, since 70 per cent sits on the sea bed. And another 15 per cent floats suspended in the water”, said Mario Rodriguez, Greenpeace's campaigns director. “Our perception that the Mediterranean is clean is false. During the holiday season the beaches are cleaned

constantly. But, if you stroll along a beach between September and May, you find plastic rubbish all over the place".

Greenpeace's report "Plastics Debris in the World's Oceans", produced last year, compiles all current data on the matter. Yesterday was the first time they focused on the Mediterranean. "It's clear we are drowning in a sea of plastics", − Mr. Rodriguez said. − The pollution is due to the sea being enclosed, surrounded by industrialized countries, and with high levels of tourism and commercial traffic. A recent study of the endangered loggerhead turtle off Spain's Mediterranean coast found that 75 per cent of them had swallowed plastic bags. Mr Rodriguez added: "We have to understand the sea is not a tip; it will constantly return to us what we throw in"'. Plastic debris compounds an already serious pollution situation in the Mediterranean. (CNN NEWS, 12.04.08)

Exercise 1. Answer these questions as fully as you can, in conversation or in writing.

What is your greatest environmental concern, and why?

What can the individual do to reduce pollution of the environment?

What should governments do to tackle pollution?

Are you optimistic or pessimistic about the future of our planet? Explain why.

What sources of energy are most environmentally-friendly? Discuss their pros and cons.

Is there a need for a world population policy and, if so, what would you like to see included in it?

HOW WE BECAME A THROW-AWAY NATION

The British throw away 22,5 million tons of domestic rubbish every year. Why are we so wasteful, and where does it all go?

How big is the waste problem?

The British throw away enough rubbish to fill the Albert Hall every two hours: that's 430 million tons of waste a year, from industry, commerce, quarrying, construction, household Dins and litter. Most domestic rubbish ends up in landfill sites − which, apart from being ugly and finite (Britain, is rapidly running out of space for Landfills) are ecologically unsound. Around two-thirds of land fill waste is organic, biodegradable matter. As it decomposes it produces methane − a powerful greenhouse gas. Landfills released 25 % of the UK's methane emissions in 2001 − around 2 % of our total greenhouse gas emissions.

What is all this organic matter?

Paper, garden rubbish − and above all, food. Between 30 % and 40 % of British food ends up in the bin (the highest proportion in the world), of which 25% could quite safely be eaten by people or animals, or turned into compost. Part of the problem, is that we have come to expect fruit and vegetables to look uniformly perfect, which means that farmers and consumers end up discarding perfectly edible but blemished produce. Moreover, unnecessarily tight sell-by and use-by dates encourage us to throw away food long before it goes off. The fundamental problem, though, is the way we shop.

How have our shopping habits changed?

In previous generations the woman of the house would do the shopping in her local high street or marker, carrying one basket. She was, therefore, careful not to buy more than she could carry and use. Now we take our cars to huge supermarkets and load up the shopping trolley to excess. And because we have more disposable income, we can afford to be profligate. Fifty years ago, thrifty housewives made sure that nothing went to waste: scraps went on to the compost heap to fertilize the vegetable patch; leftovers were cooked up in new ways night after night and children were obliged to sit at the table until they cleared their platers.

What else do we throw away?

Mountains of packing. The British use 460,000 tons of plastic bottles, 32,000 tons of plastic trays, and eight billion carrier bags a year. We also get through 2.1

million cons of glass, only 30 % of which is ever recycled. The trouble is, much of this packaging is original to modern methods of food supply which depend on centralized producing, long distribution chains and long shelf-lives.

Glossary

rubbish – сміття

waste – відходи

quarrying – розробка кар'єрів

bin – відро для сміття

litter – сміття (яке залишають на вулицях, у громадських місцях)

landfill site – звалище сміття

finite – обмежений

unsound – нездоровий

decompose – розкладатися

methane – хімічний метан

greenhouse gas – болотний газ

release – випускати

emission – виділення газів

uniformly – однаково

consumer – споживач

discard – викидати

edible – їстівний

blemished – зіпсований

sell-by date – дата, після якої продукти не підлягають продажу

to excess – більш ніж потрібно

disposable income – доход, що залишається після сплати податків

profligate – марнотратний

thrifty – бережливий

scraps – залишки, недоїдки

fertilize – удобрювати

patch – ділянка землі

left-overs – залишки їжі

recycle – переробляти

process – обробляти

shelf life – час, протягом якого продукт підлягає зберіганню в магазині

UNIT 3. CONSERVATION MOVEMENT

The **conservation movement**, also known as **nature conservation**, is a political, environmental and a social movement that seeks to protect natural resources including animal and plant species as well as their habitat for the future.

The early conservation movement included fisheries and wildlife management, water, soil conservation and sustainable forestry. The contemporary conservation movement has broadened from the early movement's emphasis on use of sustainable yield of natural resources and preservation of wilderness areas to include preservation of biodiversity. Some say the conservation movement is part of the broader and more far-reaching environmental movement, while others argue that they differ both in ideology and practice. Chiefly in the United States, conservation is seen as differing from environmentalism in that it aims to preserve natural resources expressly for their continued sustainable use by humans. In other parts of the world conservation is used more broadly to include the setting aside of natural areas and the active protection of wildlife for their inherent value, as much as for any value they may have for humans.

How would you express the following quotations in your own words? Do you agree with them? Why or why not? Do they relate to anything you have read or seen? Are there any quotations that relate to your personal experience? How?

“The only thing we have to fear on this planet is man”. (Carl Yung).

“The deer, the horse, the great eagle, these are our brothers... the earth is our mother ... all things are connected like the blood which unites one family”. (Chief Seattle in a letter to U.S. President Franklin Pierce, 1854).

“Mother Planet is showing us the red warning light – “be careful” − she is saying. To take care of the planet is to take care of our own house” (The Dalai Lama).

“Never doubt that a small group of thoughtful committed citizens can change the world; indeed, it is the only thing that ever has” (Margaret Mead).

“Woe to those who add house to house, who join field to field, until there is no more room and they are the sole inhabitants of the land” (Isaiah 5: 8).

Choose the correct word or phrase from the pair in brackets to complete each sentence.

1. There are very few unexplored areas left in the ___. (world/cosmos)

2. Barnaby spent all his life working on the ___, like his father and grandfather before him. (earth/land)

3. After a long day in the town, you really appreciate the fresh air of the ___. (nature/countryside)

4. Some market gardens find labour costs for casual workers so high that they allow the public to ___ the produce themselves. (pick/pick up)

5. The children watched open-mouthed as the meteor blazed across the evening ___. (heavens/sky)

6. From the helicopter the navigator could see the red cliffs of the Devon ___. (coast/shore)

7. It is hoped that recent advances in medical research will enable us to ___ many of the diseases which currently kill a large number of people in Third World countries. (devastate/eradicate)

8. The travellers gazed in awe at the ___, a beautiful stretch of clear, fresh water surrounded by snow-capped mountains. (lake/sea)

9. South Africa is a country of immense natural ___, which could eventually provide a comfortable standard of living for all its inhabitants. (sources/resources)

10. The air in the centre of town was thick with ___ from the hundreds of cars in the traffic jam. (smoke/fumes)

GLOBAL CHANGES

The bird of paradise alights only
upon the hand that does not grasp.
John Berry

Today the world faces an unprecedented level of changes in the global environment. For the last several decades people's activities around the globe have been undermining the fundamental life-support .systems. Conservation of the global environment is a challenge of all people in all countries of the world.

Over the past 30 years the number of extreme weather events, such as floods, droughts, storms and heat waves has trebled world wide.

These dramatic changes have also caused the sea levels to rise, threatened wildlife, reduced the amount of safe drinking water and increased the spread of disease.

Global Warming is sometimes referred to as the greenhouse effect. The greenhouse effect is the absorption of energy radiated from the Earth's surface by carbon dioxide and other gases, in the atmosphere, causing the atmosphere to become warmer. Each time we burn .gasoline, oil, coal, or even natural gas, more carbon dioxide is-added to the atmosphere. The greenhouse effect is what is causing the temperature on the Earth to rise, and creating' many problems that will begin to take place in the coming decades.

Today, however, major changes are taking place. People are conducting an unplanned global experiment by changing the face of the entire planet. We are destroying the ozone layer, which allows life to exist on the Earth's surface. All of these activities are' unfavorably changing' the composition of the biosphere and the Earth's heat balance. If we do not slow down our use of fossil fuels and atop destroying the forests, the world could become hotter than it has been in the past million years. Average global temperatures have risen 1 degree over the last century, If carbon dioxide and other greenhouse gases continue to spill into the atmosphere, global temperatures could rise five to 10 degrees by the middle of the next century.

Some areas, particularly in the Northern Hemisphere, will dry out and a greater occurrence of forest fires will take place. At the present rate of destruction, most of the rain forests will be gone by the middle of the next century. This will allow man-made deserts to invade on once lush areas. Evaporation rates will also increase and water circulation patterns will change. Decreased rainfall in some areas will result in increased rainfall in others. In some regions, river flow will be reduced or stopped all together completely. Other areas will experience sudden downpours that create massive floods.

If the present arctic ice melting1 continues, the sea could rise as much as 2 meters by the middle of the next century. Large areas of coastal land would disappear. Plants and other wildlife habitats might not have enough time to adjust to the rapidly changing climate. The warming will rearrange entire biological communities and cause many species to become died out.

The greenhouse effect and global warming both correspond with each other. The greenhouse effect is recalled as incoming solar radiation that passes through the Earth's atmosphere but prevents much of the outgoing Infrared radiation from escaping1 into outer space, It causes overheat of the air and as a result, we have the global warming1 effect. As you see, greenhouse effect and global warming1 correspond with each other, because without one, the other doesn't exist.

Glossary

to face − стояти перед (ким-небудь − про завдання, проблему)

unprecedented − безпрецедентний, безприкладний

to undermine − підривати, розмивати

challenge − виклик

flood − повінь

to treble – влаштуватися, збільшитися в три рази

to threaten − загрожувати

to reduce − послаблювати, знижувати, скорочувати, зменшувати

amount – кількість, результат, сума

spread – поширення, розширення, простір

the greenhouse effect – парниковий ефект

absorption − поглинання

to radiate − випромінювати (світло, тепло)

carbon dioxide – вуглекислий газ

gasoline − газолін, бензин

oil − нафта

coal − (кам'яне) вугілля, деревне вугілля

the ozone layer − озоновий шар

surface − поверхня, земна поверхня

the Earth's beat balance – тепловий баланс Землі

to slow down − уповільнити, пригальмувати, призупинити

fossil fuels − викопне паливо

average − середній, нормальний, звичайний

to spill (spilt, spilt) − розливати, розхлюпувати

the Northern Hemisphere − Північна півкуля

occurrence − інцидент, подія, випадок, епізод

rate − норма, ставка, тариф, ціна

destruction − руйнування, знищення

evaporation rate – рівень / швидкість перетворення

circulation – круговорот, циркуляція, круговий рух

pattern – зразок, модель, система, структура, принцип

decreased rainfall – зменшення кількості опадів

flow – перебіг, рух, потік, хід

sadden − раптовий, несподіваний

downpour – злива

massive floods – великі повені

to melt − танути, плавитися, розчинятися

habitat − батьківщина, місце поширення, ареал

to adjust − пристосовуватись, звикати

to arrange – влаштовуватись, організовувати, приймати заходи

entire − повний, цілий, досконалий, єдиний

to correspond − відповідати, співвідноситися, збігатися

to prevent − запобігати, попереджати, оберігати

outgoing − минаючий, залишаючий

infrared − інфрачервоне випромінювання

outer space – відкритий / глибокий космос

overheat − перегрів

Exercise 1. Answer the following questions.

1. What was the .main result of people's activities for the last several decades?
2. Did the weather change over the last 30 years? What changes can you give as examples?
3. What is the difference between greenhouse effect and global warming?
4. What will happen to rain forests if the present rate of destruction − is not decreased'?
5. What might happen if carbon dioxide and other greenhouse gases continue to spill into the atmosphere?
6. What human activities do unfavourable changes in the composition of the biosphere and the Earth's heat balance?
7. Does greenhouse effect and global warming correspond with each other? Why?
8. What can help man-made deserts to Invade on once lush, areas?
9. How much has the average temperature changed over the last century?
10. What will .happen if the present arctic ice melting continues?

Exercise 2. Read and translate the introductory text from English into Ukrainian.

Exercise 3. Translate from Russian into English.

1. Глобальное потепление иногда соотносят с парниковым эффектом.

2. Парниковый эффект — это поглощение энергии, излучаемой с поверхности Земли, углекислым и другими парниковыми газами, которые находятся в атмосфере и заставляют ее нагреваться.
3. Парниковый эффект — это то, что заставляет температуру на Земле повышаться и создает много проблем для экологии.
4. За последнее столетие средняя общемировая температура повысилась.
5. Если углекислый газ и другие газы продолжат попадать в атмосферу, к середине следующего столетия температура может повыситься на пять − десять градусов, что приведет к необратимым климатическим изменениям.
6. Некоторые области, особенно в Северном полушарии, станут засушливыми, будет больше лесных пожаров.
7. Если существующее таяние арктического льда продолжится, уровень Мирового океана к середине следующего столетия может повыситься на целых 2 метра.
8. Из-за повышения уровня Мирового океана могут исчезнуть обширные прибрежные районы.
9. У растений и диких животных не будет достаточно времени, чтобы приспособиться, к быстро изменяющемуся климату.
10. Нагревание перестроят целые биологические цепи, что станет причиной вымирания многих видов животных.
11. Парниковый эффект обусловлен поступлением в атмосферу Земли солнечной радиации, при этом большей части инфракрасного излучения земная атмосфера не дает уйти в космос. Это становится причиной перегрева воздуха, и как результат мы имеем эффект глобального потепления.
12. Люди проводят незапланированный глобальный эксперимент по изменению облика целой планеты.
13. Уменьшение количества осадков э одних областях становится причиной увеличения количества осадков в других.
14. За последние 30 лет число экстремальных погодных катаклизмов, таких как наводнения, засухи, штормы и суховеи, утроилось.

15.Мы разрушаем озоновый слой, который защищает все живое на Земле.

Exercise 4. Complete the passage with some of these words. Do not use any word or phrase more than once.

environmental, ozone, developing countries, acid rain, chemicals, rainforests, planet, preventable, climate, conservation, resources, renewable, pollution

Many 1) ___ experts are pessimistic about the future of our 2) ___. They say that in the next few years harmful 3) ___ will further damage the 4) ___ layer, there will be more losses of irreplaceable tropical 5) ___, and serious air 6) ___ will cause the 7) ___ itself to change. They also warn us that Third World countries will continue to suffer 8) ___ disasters, while the rich countries consume the vast majorities of the world's 9) ___. Projects for 10) ___ and protection of the environment are, unfortunately, not yet achieving their aims.

Exercise 5. Give derivatives of: environ-, prevent, conserve, new, pollute, research, campaign, exhaust, recycle, protect.

Exercise 6. Answer these questions as fully as you can, in conversation or in writing.

What is your greatest environmental concern, and why?

What can the individual do to reduce pollution of the environment?

What should governments do to tackle pollution?

Are you optimistic or pessimistic about the future of our planet? Explain why.

What sources of energy are most environmentally-friendly? Discuss their pros and cons.

Is there a need for a world population policy and, if so, what would you like to see included in it?

Translate the text into Ukrainian:

ABOUT GREENPEACE

Greenpeace exists because this fragile earth deserves a voice. It needs solutions. It needs change. It needs action.

Greenpeace is an independent global campaigning organisation that acts to change attitudes and behaviour, to protect and conserve the environment and to promote peace by:

- **Catalysing an energy revolution** to address the number one threat facing our planet: climate change.
- **Defending our oceans** by challenging wasteful and destructive fishing, and creating a global network of marine reserves.
- **Protecting the world's ancient forests** and the animals, plants and people that depend on them.
- **Working for disarmament and peace** by tackling the causes of conflict and calling for the elimination of all nuclear weapons.
- **Creating a toxic free future** with safer alternatives to hazardous chemicals in today's products and manufacturing.
- **Campaigning for sustainable agriculture** by rejecting genetically engineered organisms, protecting biodiversity and encouraging socially responsible farming.

Greenpeace is present in more than 55 countries across Europe, the Americas, Asia, Africa and the Pacific.

To maintain its independence, Greenpeace does not accept donations from governments or corporations but relies on contributions from individual supporters and foundation grants.

Greenpeace has been campaigning against environmental degradation since 1971 when a small boat of volunteers and journalists sailed into Amchitka, an area north of Alaska where the US Government was conducting underground nuclear tests. This tradition of 'bearing witness' in a non-violent manner continues today, and our ships are an important part of all our campaign work.

We exist to expose environmental criminals, and to challenge government and corporations when they fail to live up to their mandate to safeguard our environment and our future.

In pursuing our mission, we have no permanent allies or enemies. We promote open, informed debate about society's environmental choices. We use research, lobbying, and quiet diplomacy to pursue our goals, as well as high-profile, non-violent conflict to raise the level and quality of public debate.

And we believe that the struggle to preserve the future of our planet is not about us. It's about you. Greenpeace speaks for 2.8 million supporters worldwide, and encourages many millions more than that to take action every day.

We take the name of our flagship, the Rainbow Warrior, from a North American Cree Indian legend. It described a time when humanity's greed has made the Earth sick. At that time, a tribe of people known as the Warriors of the Rainbow would rise up to defend her.

As one of the longest banners we've ever made summed things up, "When the last tree is cut, the last river poisoned, and the last fish dead, we will discover that we can't eat money..."

UNIT 4. GLOBAL ENVIRONMENTAL PROBLEMS

The Earth is our home, but much of it is dirty or dying. Why?

Our planet is 4,600 million years old − but imagine for a moment that it's only 46.

O Life began in the oceans 4 years ago.

O Dinosaurs appeared (and disappeared) last year.

O Modern man arrived 4 hours ago.

O One hour ago he learned how to farm.

O One minute ago machines and industry began.

O In the last 60 seconds man has...

* polluted the air, sea, and land
* used most of the Earth's oil, gas and coal
* completely killed more than 500 kinds of animals, birds and plants
* made and used atomic bombs
* grown in numbers from I billion (in 1830) to nearly 6 billion today.

It's a disaster and it's still happening. But not all the news is bad. In the last 30 years there has been a Green revolution. Today, many scientists and world leaders realise that the Earth is in danger.

It's really very simple. Either we stop killing the Earth or we will kill ourselves. We need a cleaner, healthier planet. Millions of ordinary people — both young and old — understand this too. Some of them belong to Green organisations in countries all over the world.

Let's look at the environmental problems and solutions more closely.

1. ACID RAIN

Modern industry produces a lot of dangerous gases. Two of the most dan¬gerous are sulphur dioxide and nitrogen oxide. To stop pollution near fac¬tories and power stations, these gases enter the atmosphere from tall chim¬neys. Then they mix with water in the air. After that the wind carries them for hundreds or even thousands of kilometres. Finally, the mixture of water and chemicals falls back to earth as acid rain.

Acid Rain Pollution

Here are some facts and figures on acid rain pollution in Europe.

* Seven million hectares of European forest are dead or dying because of acid rain.

Country	% of Forest Dead or Dying
West Germany	54 %
Switzerland	50 %
Netherlands	50 %
Poland	27%
Austria	25 %

Belgium	4.5%
Denmark	2.9 %

- 80% of the lakes in south Norway have acid pollution.
- 50% of that pollution comes from Britain.
- Sweden receives 6 times more sulphur dioxide from other countries than it produces itself.
- 60% of Britain's sulphur dioxide comes from power stations which use coal.
- Britain produces 3.6 million tonnes of sulphur dioxide every year. 75% of it falls in other countries as acid rain.
- The soil in parts of Scandinavia is now 10 times more acid than 50 years ago.
- In Britain there are dangerously high levels of acid in 120 Welsh rivers and 57 Scottish lakes. When scientists tried to put new fish into one lake, all the fish died in less than two days.
- Acid rain doesn't just kill trees and lakes. It's also attacking many of Europe's most famous buildings — Notre Dame in Paris and St. Paul's in London, for example. Also, doctors now think that acid rain can harm people, too. Figures show more lung and kidney illness in coun¬tries with high levels of acid pollution.

Is it Possible to Stop Acid Rain?

The short answer is «yes», but not quickly or easily. That's because money is at the centre of the acid rain problem. It's not cheap to make power stations or factories cleaner. In other words, less acid rain means more expensive electricity. Even so, that's a price which some countries are ready to pay. In 1983 a group of European nations, «The 30% Club», agreed to produce 30% less acid rain pollution by 1993. (Britain didn't join the club. Instead it agreed to spend £770 million on the fight against acid rain.) The cost of their plan was $1.4 billion − an extra 4% on the average electricity bill.

It's a start, but many scientists believe it's not enough. In parts of Norway, for example, the acid level needs to be 80% lower, not 30%, to save the environment.

Many young people are worried about the acid rain problem, too. In fact, several British and Norwegian schools are now twinned and send each other information about acid rain. Also, there's a project called «Acid Drops» in Britain. This helps science classes to study the problem. In 1986 (European Year of the Environment) there was even an international «Acid Drops» project. Students all over Europe produced information and sent it to scientists, politicians and environmental groups like «Friends of the Earth».

- Your opinion

State your view on the acid rain problem. Are you worried about it? Can you give any examples of the acid rain effects on the environment and people? What do you do to stop acid rain?

THE GREENHOUSE EFFECT

125,000years ago there were lions and elephants in Europe. At that time the climate was 3°C hotter than today and forests covered Greenland. Soon, it may be 3°C hotter again. But this time the change isn't happening naturally. It's happening because of pollution and very, VERY quickly.

- The problem

The atmosphere is a blanket of gases around the Earth. For thou-sands of years these gases have kept the planet's temperature at about 15°C. How? By trapping some of the sun's heat. But now, because of pollution, there are more and more gases in the atmosphere. This means that the Earth is getting hotter. A greenhouse becomes hot for the same reason. Its glass lets the sun's heat pass through, then stops some of it from leaving. That's why scientists call the problem of Earth's rising temperature "The Greenhouse Effect".

Why is it Happening?

Pollution sends 4 main "greenhouse gases" into the atmosphere. These are:

1. Carbon dioxide (CO_2)
2. CFCs (Chloro-fluoro-carbons)
3. Methane

4. Nitrous Oxide

CO_2 — The most important greenhouse gas, CO_2, causes half of the problem. Nearly 6 billion tonnes of it enters the atmosphere every year. How? From the burning of fossil fuels (coal, gas and oil). An extra 1.5 billion tonnes every year comes from the burning of rainforest trees. This makes the problem worse in another way, too. Normally, trees absorb CO_2. Today there are fewer and fewer trees. That means more and more CO_2. In fact 50% of all carbon burned since 1850 is still in the atmosphere.

CFCs —These gases are in...

...Aerosols (Britain alone used 800 million aerosols in 1988).

...Refrigerators (the CFCs are in the liquids which keep fridges cold).

...Plastic boxes (for hamburgers, pizzas, etc.).

CFC molecules are very dangerous. Each one can trap 10,000 times more heat than a molecule of CO,. And they don't just stay in the air — they destroy it. Because of CFCs the top level of the atmosphere (the ozone) is now getting thinner.

Methane and Nitrous Oxide — these gases come from...

...fertilizers

...cows'stomachs

...rubbish

What Will it Do?

Most scientists agree that the Greenhouse Effect will add between 1.5°-4° to the Earth's temperature by 2030. (It's already 1/2° hotter than in 1900.) This will change the weather everywhere. For example, the ice at the North and South Poles will start to melt. And when that happens the level of the sea will rise. If it rises one metre by 2030 there will be serious floods in many countries. Eighteen million people will lose their homes in Bangladesh and 8 million in Egypt. A rise in sea level will have other effects, too. Holland, for example, already spends more on seawalls (as a %) than America spends on military defense. Experts think that in 50 years, the Greenhouse Effect will cost 3% of every country's money each year. Then there's the problem of food. When the climate changes there will be less food in the world. At the moment, areas like the mid-west of America and central Russia grow a lot of

wheat. In the future that may change when the USA and Russia become too dry for farming. Other countries (like Canada and Sweden) will become wetter, but that won't help. The soil there isn't as rich. It won't be possible to grow the same amount of food as before.

- The Solution

We can't stop the Greenhouse Effect, but we can slow it down. There are several ways to do this:

1. Conserve Fossil Fuels - Some countries have already begun. Each person in Japan, for example, uses only 50% as much coal, gas and oil as the average American.
2. Conserve Rainforests -The Earth needs more trees; not fewer. South American, Asian and African countries must protect their rainforests, not cut them down.
3. Use Natural Energy - 20% of the world's energy already comes from the sun, sea and wind. To slow down the Greenhouse Effect, that number must rise to 50% in the next 20 years.
4. Ban CFCs -This is beginning to happen. Many companies have already banned CFCs. Others plan to stop using them in the next few years. If they do there may be 85% fewer CFCs by the year 2000.

- Your opinion

Can you think of other ways of stopping the Greenhouse Effect?

STATE OF THE PLANET

Exercise 1. Read the text and render it into Ukrainian

After nearly 50 years of groundbreaking natural history broadcasting, David Attenborough takes stock of the state of the planet and assesses why the Earth needs our help.

Pollution can be local or widespread. Substances dumped into a river will often end up in the sea. The biggest pollution problem is global warming. This happens when greenhouse gases, such as CO2 are released into the atmosphere, trapping heat

and causing the planet to warm up. Since species are adapted to particular climates, when the Earth warms up they have to move to keep comfortable. This can be difficult if natural habitats are isolated by human settlements and agriculture.

Chemical pollutants have been responsible for affecting the reproductive organs of fish, alligators and polar bears, preventing them from producing babies. Chemical pollution in the environment also affects humans - 46 US states have issued warnings against eating local fish because of dioxin contamination, and in Europe, human breast milk passes on more dioxin to our babies than is legally allowed for cow's milk. Despite this, the amount of pesticide sprayed on our crops around the world has increased 26 times in the last 50 years.

Species living in water are often most strongly affected because water spreads pollution easier than land, and because we often dump our pollution into water. Global warming will affect every species on Earth to some extent, and although some species will thrive in warmer climates, many will not. Coral reefs have already been very hard hit by climate change, and polar bears have received the double-whammy of climate change and chemical pollution.

Most human activities produce some waste products, but it is important to make sure that we have as little pollution as possible. Many people are switching to ``clean technology''. That means having the same benefits from our modern life-style without the pollution. Electric cars, environmentally sensitive washing powders and solar-powered energy are examples. Less pollution is not only good for wildlife and nature - human health benefits from less pollution as well. That means lower medical bills, and a better quality of life.

Every living thing needs a place to live, find food, and reproduce. When we take over natural areas for our own use, we take away those areas for other living creatures. Habitat loss is the greatest threat to the natural world. We are taking over habitat at an alarming rate to provide ourselves with homes and agriculture as well as resources from forests, and other natural areas. All habitat-types are affected by human activity to different extents. Around half of the forests that once covered the Earth are now gone. Although forests can recover, and even be harvested sustainably,

the rate of loss is 10 times higher than the rate of regrowth. Around 60 % of Europe's wetlands are damaged even though they are often essential for providing clean drinking water.

Recent estimates suggest that at least 120 out of 620 living primate species (apes, monkeys, lemurs and others) will go extinct in the wild in the next 10 to 20 years, at current rates of habitat loss. Large animals are often hit hardest by loss of habitat because they need large areas in which to have a healthy breeding population. Examples include tigers, mountain gorillas, pandas, Indian lions, tropical orchids and spotted owls. The only species not truly affected by habitat loss are those which benefit from human activity, such as cockroaches, rats and house-finches.

We are to become more sensitive to where we go about our business as well as how. Everyone needs space and that includes the other creatures of this planet. Restoring damaged habitats is also an important step. Allow forests to regrow, clean up rivers, lakes and seas, and help to protect what still remains. There are things to be done at all levels: from using less power and being more modest about the demands that we put on the environment; to not using CFCs; voting for the right politician, who you think is supporting these ideals; and giving a few pence, every now and again, to appeals. It's about cherishing the woodland at the bottom of your garden or the stream that runs through it. It affects every aspect of life.

Exercise 2. Summarize the text in four paragraphs.

Energy Gap: Crisis for Humanity?

The reason for concern can be found in a set of factors which are pulling in glaringly different directions:

Demand for energy, in all its forms, is rising.

Supplies of key fuels, notably oil and gas, show signs of decline.

Main-stream climate science suggests that reducing greenhouse gas emissions within two decades would be a prudent thing to do.

Meanwhile the Earth's population continues to rise, with the majority of its six billion people hankering after a richer lifestyle − which means a greater consumption of energy.

Underlying the growing concern is the relentless pursuit of economic growth, which historically has been tied to energy consumption as closely as a horse is tethered to its cart. The immediate question is whether the crash comes soon, or whether humanity has time to plan a comfortable way out. Even if it can, the planning is not necessarily going to be easy, or result in cheap solutions. Every energy source has its downside; there is no free lunch, wherever you look on the menu.

The International Energy Agency (IEA) predicts a rise in global energy demand of 50-60 % by 2030. If all else remained equal, that rising demand would be accommodated principally by fossil fuels, which have generally been the cheapest and most convenient available. But oil supplies show signs of running down; this, combined with concerns about rising demand and political instability, conspired to force prices up from $40 a barrel at the beginning of 2005 to $60 at its close. The oil-producing countries and companies are prone to exaggerate the size of their stocks.

Natural gas stocks - in recent times the fuel of choice for electricity generation are also showing signs of depletion, and there is growing concern in Western capitals about the political instability associated with oil and gas supplies from the Middle East and Russia. Coal, the fuel of the industrial revolution, remains relatively abundant; but here the climate issue raises its provocative head most volubly, because of all fuels, coal produces more greenhouse gas emissions for the energy it gives. Based partly on the predicted availability of cheap coal, the IEA forecasts a 50 % rise in greenhouse gas emissions by 2030. Mainstream climate science, meanwhile, indicates that to avoid dangerous consequences of climate change, emissions should fall, not rise, by 50 %. The economic and environmental horses are clearly pulling in mutually incompatible directions.

Nuclear fission is at the head of the queue. According to the World Nuclear Association, there are now about 440 commercial reactors in the world, providing 16 % of its electricity. But concerns over waste have set other countries such as

Germany on a determinedly non-nuclear path. Waste apart, nuclear faces another potential obstacle; stocks of uranium are finite. Analysts differ over how soon a uranium deficit might emerge; some believe that a significant ramping up of nuclear capacity would exhaust economic reserves on a timescale of decades. That could be extended by adopting ``fast breeder'' reactors, which create more fissile material as they go. Too good to be true? Perhaps, because there is a major downside: the creation of plutonium, with its attendant dangers of proliferation. The other nuclear technology, fusion, is full of hope but even its most ardent supporters admit it is decades away.

Most of the energy we use on Earth comes directly or indirectly from the Sun. It is the Sun which stirs winds and the great water cycle, depositing rain on highlands, grew plants which decayed to form the coal and oil that we have extracted so determinedly in our industrial age. Is it now time, then, to use its energy directly. Certainly it could be done, but at costs up to five times that of coal and gas, it is not going to be soon. Wind, wave and tidal power are all fine technologies, but their potential is limited, not least by the fact that they do not generate continuously. That could be overcome by storing energy. Hydrogen, meanwhile, is touted as the great climate-friendly hope. But hydrogen is just a carrier of energy. It must be created, for example by using electricity to split water molecules, in which case replacing petrol-driven cars with hydrogen vehicles would vastly increase the global demand for electricity. No free lunch, indeed - but a desperately tortuous and risk-laden menu and a kitchen where political or environmental fires could flare up at any moment. (BBC NEWS, 14.01.06.)

Exercise 3. Read the following article and comment on its content.

Burial for Nuclear Waste

Proposals on how to safely dispose of Britain's nuclear waste have been published.

Nuclear waste comes not only from the process of generating electricity by nuclear power stations, but from the manufacture and decommissioning of nuclear

weapons and submarines, and the use of nuclear technology in hospitals, laboratories, and industry. Over 100 years, the UK will have produced 470,000 cubic metres of radioactive waste, enough to fill the Albert Hall five times. A recent study found that on average people live about 26 miles from one of more than 30 waste sites in the UK.

The nuclear industry is a millstone that hangs around Britain's neck. Plans to allow foreign nuclear waste to be permanently stored in the UK have been branded ``deeply irresponsible'' by the Liberal Democrats. Norman Baker accused ministers of turning Britain into a ``nuclear dumpsite''. In future, only highly-radioactive waste will be sent back to its country of origin, normally Germany or Japan, under armed guard. Intermediate waste from countries such as Japan, Germany, Spain, Italy, Switzerland and Sweden will be stored permanently in the UK. At the moment, this waste is stored at Sellafield in the form of glass bricks, untreated liquid waste or solid material in drums. In a statement, the Department of Trade and Industry said the new policy meant there would be a ``sixfold reduction in the number of waste shipments to overseas countries''.

The Committee on Radioactive Waste Management was set up to advise Government on the best long-term solution to how to deal with it. But the committee excluded from its shortlist blasting waste into space, storing it on ice sheets or below the sea. In fact, sea disposal was banned by international treaty 20 years ago.

The committee came up with four options, taking into account health risks, the environment and the security of waste. They are: 1. Deep disposal is the process of permanently burying the waste between 300 metres and 2 km underground where suitable rocks act as the protective chamber. 2. Phased deep disposal is the same process as deep disposal except the waste will be retrievable if something goes wrong. 3. Shallow burial of short-lived waste refers to burying waste with short-lived radioactivity just below the surface for which thirty sites have been suggested. 4. Interim storage is not permanent storage. It is a temporary management solution. Waste could be stored above the ground or just below the surface but it must be out of the biosphere. (THE HERALD, 4.04.2015.)

Exercise 4. Read the following article and prepare 10 questions to the key points.

Fuel Explosion Throws a Giant Shadow

Analysts were last night trying to assess the environmental impact of a fuel depot explosion that caused the biggest industrial fire since the end of the Second World War as a vast cloud of smoke threatened to dump oil residues over large tracts of south-east Britain. The explosion at the Buncefield fuel terminal yesterday morning ignited millions of gallons of fuel and sent a thick plume of smoke across southern England and towards the Channel.

The fires could burn for days and the cost of the disaster and the subsequent clean-up operation is expected to run into hundreds of millions of pounds. The Environment Agency said the main areas of concern involved the potential for pollution to groundwater, rivers and streams and also damage to land quality which could occur if any of the substances, including kerosene, diesel, gas oil and gasoline, were to escape. Meteorologists also warned that soot falling in rainfall could contaminate grazing land. Peter Kidds, a forecaster at the Met Office, said it could result in milk from the south-east of England being un-usable. ``This is going to affect grazing animals because the grass could be contaminated", he said.

The explosion happened shortly after 6 am, ripping through the fuel terminal in Leverstock Green, close to Junction 8 of the M1. Despite the severity of the blast, which sent flames shooting hundreds of feet into the sky, only two people were seriously injured among 43 casualties. The force of the blast was such that it could be heard up to 100 miles away, prompting fears of a terrorist attack or a plane crash, but Hertfordshire Chief Constable Frank Whiteley said police were treating the incident as an accident, despite the appearance on the internet four days ago of an al-Qaeda videotape calling for attacks on facilities carrying oil.

A security guard working at a nearby building reported smelling fumes moments before the blast. Raheel Ashraf said: ``It was really bad. I had popped my head outside and smelled it there too, then it was difficult to tell if the smell was

coming from inside or outside the building". He said that moments later there was a massive explosion. ``It was awful. It was like you were in hell. The flames were as high as 200ft and kept rising. You could literally see the fire growing".

The depot - which holds millions of gallons of various fuels - also supplies Heathrow and Luton airports. About 2,000 people living nearby were evacuated, while police advised others to keep windows and doors closed because of the thick plume of smoke rising, clearly seen by satellite pictures as a thick blob dispersing east, west and southwards. Experts believe that the explosion may have occurred after fuel leaked from one of the tanks and vaporised. Hans Michels, professor of safety engineering at Imperial College London, said that although a malicious act, including terrorism, could not be ruled out, it was most likely to have been caused by either a crack in the wall of a tank or a computer problem with the oil pipeline. Each of the 20 tanks on the site is believed to hold three million gallons of fuel, worth an estimated J10 million. (BBC NEWS, 14.12.05.)

Exercise 5. Render the following passages into English. What source of energy, do you think, is the safest, most reliable, the cheapest?

(1) **Экология. Экономика. Энергетика.** Экономисты в США подсчитали, что перевод всего автомобильного парка страны на экологически чистое водородное топливо практически нереализуем на практике. Водород и кислород, которые планируется использовать в таком двигателе, получаются с помощью электролиза воды. Мощности электролитических производств, необходимых для этого, потребуют электричества, для выработки которого понадобится построить около тысячи атомных электростанций. Но ``зеленым" не нравятся атомные электростанции. Эквивалентное количество энергии могли бы дать экологически чистые источники энергии - например, ветряки. Но их потребовалось бы установить миллион штук, и они заняли бы половину площади Калифорнии. Великобритания могла бы обойтись вдесятеро меньшим количеством − всего 100 тысячами, однако они заняли бы площадь,

сопоставимую с Уэльсом (NTR.RU // Экология. Культура. Общество. Журнал ИСАР ДВ. − № 6. − 2004).

(2) **Топливо начали выращивать.** Одна из крупнейших европейских энергетических компаний − германская RWE − готовится перевести свою электростанцию в Дидкоте на древесину. Каждый год до 30 тыс. тонн такого топлива будет производиться на специальных ивовых плантациях и до 10 процентов древесной щепы добавляться к углю. Это решение позволит владельцам выполнить ограничения на выбросы парниковых газов, становящиеся все более строгими. Аналогичные пробные работы сейчас идут и на крупнейшей британской угольной станции Дракс. Если они окажутся успешными, поставки топливной древесины с быстрорастущих ивовых плантаций будут обеспечивать до 5 процентов потребностей этой станции в топливе (REUTERS // Экология. Культура. Общество. Журнал ИСАР ДВ. − № 6. − 2004).

(3) **Энергосберегающие проекты Финляндии.** Четыре года назад в окрестностях Турку на территории завода по переработке мусора была построена очень «продвинутая» станция сжигания древесных отходов. Древесный мусор − негодные для производства опилки, кора, ветки и хвоя − собирают с окружающей территории радиусом 60 км. В день на станцию приходят 10-12 машин с общим объемом груза 1500 кубометров. Конечно, на производстве внедрены самые современные системы очистки газов. Что касается CO^2, то в тех объемах, которые станция все же «производит», он легко усваивается окружающей растительностью.

По соседству с новым предприятием действует единственный в Финляндии мусоросжигательный завод, построенный еще в 1975 году. Но и он соответствует жестким экологическим нормативам Евросоюза. От сжигания бытового мусора Турку получает тепло и горячую воду для 8 процентов своих домов.

В местечке Ямяссуо расположен крупный полигон бытовых отходов. Здесь энергию добывают, очищая воздух от газов, образующихся в процессе гниения. Под небольшим давлением метан откачивают на станцию, расположенную поблизости. Здесь его давление повышают и распределяют газ по трубопроводам, ведущим к жилым кварталам. Пока таким образом отапливают около 10 процентов домов, а в недалеком будущем их количество удвоится. «Свалочная газодобыча» окупится и станет рентабельной тоже нескоро − лет через семь.

Follow-up:

1. Make a report in English on nuclear energy and its effect on ecology. Use the given articles.

2. Discuss the future of nuclear energy. Think of arguments in favor and against it. What alternative means can be used?

KYOTO PROTOCOL

Exercise 1. Read the text and retell it using the questions in bold type as a plan. Write out words and word combinations to add to your vocabulary list on the topic "Environment".

What Is the Kyoto Protocol?

The Kyoto Protocol is an international agreement setting targets for industrialised countries to cut their greenhouse gas emissions. These gases are considered at least partly responsible for global warming - the rise in global temperature which may have catastrophic consequences for life on Earth. The protocol was established in 1997 in Kyoto, Japan, based on principles set out in a framework agreement signed in 1992.

What are the targets? Industrialised countries have committed to cut their combined emissions to 5 % below 1990 levels by 2008 − 2012. Each country that signed the protocol agreed to its own specific target. EU countries are expected to cut their present emissions by 8 % and Japan by 5 %. Some countries with low emissions

were permitted to increase them. Russia initially wavered over signing the protocol, amid speculation that it was jockeying for more favourable terms. But the country's cabinet agreed to back Kyoto in September 2004.

What does it mean when the Kyoto Protocol comes into force? The Kyoto Protocol became a legally binding treaty on 16 February 2005. It could only come into force after two conditions had been fulfilled:

It had been ratified by at least 55 countries.

It had been ratified by nations accounting for at least 55 % of emissions from what the Treaty calls "Annex 1" countries − i.e. those given specific targets for reducing emissions. These are the richer nations of the world, members of the OECO and the former Soviet Union.

The first target was met in 2002. But following the decision of the United States and Australia not to ratify, Russia's position became crucial for the fulfilment of the second condition. It finally did ratify on November 18th 2004, and the Kyoto Protocol comes into force 90 days later − on February 16th 2005. Its targets for reducing emissions then become binding on all Annex 1 countries which have ratified − and 34 of the 38 have, the exceptions being Australia, Croatia, Monaco and the USA.

Why did Russia decide to back the treaty? The deciding factor appears to be not the economic cost, but the political benefits for Russia. In particular, there has been talk of stronger European Union support for Russia's bid to join the World Trade Organization, when it ratifies the protocol. But fears still persist in Russia that Kyoto could badly affect the country's economic growth.

Have the targets been achieved? Industrialised countries cut their overall emissions by about 3 % from 1990 to 2000. But this was largely because a sharp decrease in emissions from the collapsing economies of former Soviet countries masked an 8 % rise among rich countries. The UN says industrialised countries are now well off target for the end of the decade and predicts emissions 10 % above 1990 levels by 2010. Only four EU countries are on track to meet their own targets.

Is Kyoto in good health? Before Russia's backing, many feared Kyoto was on its last legs. But Moscow's decision has breathed new life into the protocol. The agreement stipulates that for it to become binding in international law, it must be ratified by the countries who together are responsible for at least 55 % of 1990 global greenhouse gas emissions. The treaty suffered a massive blow in 2001 when the US, responsible for about quarter of the world's emissions, pulled out. The additional uncertainty over Russia's position was seen as another nail in the coffin, but observers are now hopeful the 55 % threshold can be reached.

Why did the US pull out? US President George W. Bush pulled out of the Kyoto Protocol in 2001, saying implementing it would gravely damage the US economy. His administration dubbed the treaty ``fatally flawed'', partly because it does not require developing countries to commit to emissions reductions. Mr. Bush says he backs emissions reductions through voluntary action and new energy technologies.

How much difference will Kyoto make? Most climate scientists say that the targets set in the Kyoto Protocol are merely scratching the surface of the problem. The agreement aims to reduce emissions from industrialised nations only by around 5 %, whereas the consensus among many climate scientists is that in order to avoid the worst consequences of global warming, emissions cuts in the order of 60 % across the board are needed.

This has led to criticisms that the agreement is toothless, as well as being virtually obsolete without US support. But others say its failure would be a disaster as, despite its flaws, it sets out a framework for future negotiations which could take another decade to rebuild. Kyoto commitments have been signed into law in some countries, US states and in the EU, and will stay in place regardless of the fate of the protocol itself. Without Kyoto, politicians and companies working towards climate-friendly economies would face a much rougher ride.

What about poor countries? The agreement acknowledges that developing countries contribute least to climate change but will quite likely suffer most from its effects. Many have signed it. They do not have to commit to specific targets, but have

to report their emissions levels and develop national climate change mitigation programmes. China and India, potential major polluters with huge populations and growing economies, have both ratified the protocol.

What is emissions trading? Emissions trading works by allowing countries to buy and sell their agreed allowances of greenhouse gas emissions. Highly polluting countries can buy unused "credits" from those which are allowed to emit more than they actually do. After much difficult negotiation, countries are now also able to gain credits for activities which boost the environment's capacity to absorb carbon. These include tree planting and soil conservation, and can be carried out in the country itself, or by that country working in a developing country.

Are there alternatives? One approach gaining increasing support is based on the principle that an equal quota of greenhouse gas emissions should be allocated for every person on the planet. The proposal, dubbed "contraction and convergence", states that rich countries should "contract" their emissions with the aim that global emissions "converge" at equal levels based on the amount of pollution scientists think the planet can take. Although many commentators say it is not realistic, its supporters include the United Nations Environment Programme and the European Parliament. (THE ENVIRONMENT, 16.02.06.)

Exercise 2. Render the following article into English.

Киотский протокол: компромисс или пиррова победа?

Независимо от того, какие еще поправки будут внесены в измененный вариант Киотского протокола, принятый на конференциях по глобальному изменению климата в Бонне (июнь-июль 2001 г.) и Марракеше (ноябрь-декабрь 2001 г.), главный вопрос остается открытым: станет ли этот компромисс хотя бы небольшим шагом вперед или его последствия будут противоположны ожидаемым? Цель глобального снижения уровня выброса парниковых газов к 2012 г., что и без того относится только к развитым странам, превратилась из цели-минимума (наряду с различными природоохранными мероприятиями) в единственную и главную цель, заменившую собой все остальные.

Государства, где эмиссия мала, получают, благодаря «подвижным инструментам», даже экономический стимул. Они могут продавать свою квоту государствам, где эмиссия велика. При этом совершенно непонятно, как достичь глобального сокращения выбросов, тем более что на развивающиеся страны вообще не распространяются ограничения на выбросы CO_2.

Киотский протокол обязывает лишь к незначительному сокращению эмиссии к 2012 г., требуя взамен отсутствие альтернативы подобного рода политике в области окружающей среды. Это не что иное, как капитуляция перед существующей сегодня угрозой окружающей среде. Несправедливо было бы сравнивать Киотский протокол с другими проектами, которые, в отличие от него, никогда не претендовали на применение в столь широких масштабах.

Но есть и другие возможности. Например, немецкий закон об использовании альтернативных источников энергии обеспечивает самые большие в мировом масштабе темпы прироста электроэнергии из возобновляемых источников и создает новые отрасли промышленности. Принятие подобных законов другими странами и стремление руководствоваться ими при развитии новых мощностей энергетики, возможно, оказалось бы эффективнее Киотского протокола. Но к подобным решениям готовы только те, кто не ослеплен достоинствами достигнутых компромиссов и не собирается действовать в дальнейшем, опираясь только на них.

Итак, ныне решающее значение приобретает увеличение числа сторонников альтернативных источников энергии. Первые шаги к этому уже предприняты Европейской ассоциацией ВИЭ «ЕВРОСОЛАР». Это − создание Международного агентства ВИЭ (IRENA), разработка международного Договора о расширении использования альтернативных источников энергии, образование Всемирного совета по использованию альтернативных источников энергии и Всемирного объединения по использованию энергии ветра и т. д. Но мы отчетливо сознаем, что для заметного изменения ситуации в мире предстоит

сделать неизмеримо больше. Впрочем, любой самый далекий путь начинается с первого шага (*Германн Шеер* on-line, дата обращения 6 февраля 2005).

Follow-up: Look through the given article and single out arguments pro-Kyoto and against-. Discuss them with your fellow students.

Exercise 3. Translate the text into Ukrainian in writing.

US "blocks environment progress"

Germany's environment minister, Sigmar Gabriel, says the United States has blocked progress on two key issues to protect the global environment by cutting emissions of carbon dioxide. He was speaking after a two-day meeting of environment ministers from the Group of Eight leading industrialized nations in the German city of Potsdam. The issues were carbon emissions trading and rewarding developing nations for protecting their natural assets, he said. But disagreements surfaced over specifics such as extending the global system of carbon trading, one of the central planks of any proposed deal to curb emissions. Mr. Gabriel said the US opposition was "not a surprise. I would have been disappointed if I'd expected something different. We find this regrettable". (TIME, 7.03.07)

Exercise 4. Render the following into English. Discuss what negative impact cold weather might have. Comment on the opinion of the author. Give your arguments.

Холод съедает озоновый слой

Рекордно низкие температуры над Северным полюсом приводят к уменьшению толщины озонового слоя, что может сказаться на здоровье людей, проживающих в странах Северной и даже Центральной Европы, передает агентство Associated Press.

По словам комиссара ЕС по науке и исследованиям Янеша Потоцника, если холодные температуры сохранятся, то истончение озонового слоя продолжится. Ученые зафиксировали резкое сокращение толщины защитного

слоя и связали его с чрезвычайно холодной зимой на Северном полюсе. Согласно наблюдениям, температура воздуха на высоте 12 километров составляла минус 80 градусов, что является рекордным показателем за последние 50 лет. Исследователи напомнили, что недостаточная толщина озонового слоя приводит к повышению заболеваемости раком кожи и изменению биологического разнообразия природы. В течение месяца жители северных стран должны особенно внимательно относиться к защите кожи от ультрафиолетового излучения, предупредили ученые.

В докладе ЕС выражается озабоченность тем, что условия в Арктике приближаются к антарктическим, поэтому уровень ультрафиолетовой радиации в ближайшее время, скорее всего, повысится. В Антарктике озоновый слой становится все тоньше с конца 80-х годов прошлого века, напоминает агентство Associated Press (based on ASSOCIATED PRESS on- line Feb 2015).

GLOBAL WARMING

Read the article and say to what extent you agree with Sir Nicholas Stern's point of view.

Doomsday Vision of Global Warming

In 600 pages, Sir Nicholas Stern spells out a bleak vision of a future gripped by violent storms, rising sea-levels, crippling droughts and economic chaos unless urgent action is taken to tackle global warming. His heavyweight review − which is broken down into six parts containing 27 separate chapters − stresses that any delay will leave the world in “dangerous territory”'. There is now “overwhelming”' evidence that shows “climate change is a serious and urgent issue”' and has been created by man's actions. It now “threatens the basic elements of life for people around the world − access to water, food production, health and use of land and the environment”. Temperatures are expected to rise by between 2 C and 5 C − an increase on the same scale as the last Ice Age − though the increase could be as high as 10 C by 2100 if greenhouse gas emissions continue at current levels.

The changes will see the area affected by “extreme drought” soar from one per cent of the world's land mass to around 30 per cent. In other areas, there will be widespread flooding and more intense storms. “The risk of abrupt and large-scale changes in the climate system will rise”. Sea levels could rise by up to 12 metres over the next few centuries. The severity of the impact requires “strong and urgent global action to reduce greenhouse − gas emissions”. There will also need to be “major action to adapt to the consequences that now cannot be avoided”. By 2100, an extra 250 000 children a year will die in the poorest countries as a result of climate change, while up to 220 million more people could fall below the $2 a day poverty line. A temperature rise of just 1 C to 2 C could lead to the extinction of between 15 and 40 per cent of all species.

Rising sea levels will threaten countries like Bangladesh but also some of the biggest cities, including London, New York, Tokyo and Shanghai. Ocean acidification could destroy fish stocks, crop failure will leave hundreds of millions at risk of starvation and up to 200 million people will be displaced by rising sea levels, floods and drought. It is already too late to avoid many of the problems facing people in the Third World. ``Strong and early migration is the only way to avoid some of the more severe impacts'', the report warns. The world's richest countries will suffer with more hurricanes and floods. Climate change could cost between five and 20 per cent of global GDP.

Greenhouse gas levels have increased steadily since the Industrial Revolution from 280 parts per million CO2 to 430 ppm but the process has accelerated in recent years. “Very strong reductions in carbon emissions” are needed to ensure they are cut by 25 per cent by 2050 and “ultimately to less than one fifth of today's levels”. The goal is to stabilise levels at 550 ppm, though existing fossil fuel stocks could take CO2 levels beyond 750 ppm, “with very dangerous consequences”. Early action is vital to stabilise greenhouse gas levels. This will require moves to ensure the price of goods and services reflect their “full costs” to the environment, as well as the greater use of new low-carbon technologies.

Carbon pricing must be at the core of any policy. Governments must put an "appropriate price on carbon, through taxes, trading or regulation" − and encourage people to buy low-carbon goods and services. There must also be an expansion of carbon trading schemes to give industry and business financial incentives to reduce emissions. At the same time, governments and the private sector need to step up investment in new technology to reduce greenhouse gas emissions. The report calls for a five-fold increase in incentives for "low emission technologies". This will involve alternative ways to produce electricity, new forms or transport and other low-carbon energy sources. Increases in greenhouse gases mean countries must adapt to cope with the "unavoidable impacts of climate change to which the world is already committed". This could include, for example, farmers switching to more climate-resistant crops. However, this type of adaptation will only have a limited effect and "mute the impacts" of global warming. It must exist alongside strong and ambitious policies to reduce emissions. (THE NEWSDAY, 14.03.07)

UNIT 5. ECOLOGICAL SITUATION IN THE AZOV COASTAL AREA

Read the article and comment on the importance of the issue discussed

Pollution in Ukraine

Pollution is the contamination of the environment, including air, water, and land, with undesirable amounts of material or energy. Such contamination originates from human activities that create waste products. An industrial and intensively farmed country, Ukraine contains some of the most polluted landscapes in Eastern Europe. Pollution became evident in Ukraine with industrial development in the 19th century.

Air pollution is especially severe in many of the heavily industrialized cities and towns of southeastern Ukraine, notably in Kharkiv, Luhansk, Donetsk, Dnipropetrovsk, Zaporizhia Mariupol. Coal-using industries, such as metallurgical coke-chemical plants, steel mills, and thermal power plants are major sources of high levels of uncontrolled emissions of sulphur dioxide, dust, unburned hydrocarbons, and other harmful substances. Other Ukrainian cities with air pollution problems include Kyiv, Komu-narsk, Makiivka and Odesa.

Over one-third of the emissions into the atmosphere originate, from automobile transport. That source, which attains overwhelming proportions in cities with little industry, such as Uzhhorod, Yalta, Poltava and Khmelnytskyi, is aggravated by the use of leaded gasoline and inefficient engines as well as a lack of catalytic converters.

Almost all surface waters of Ukraine belong to the Black Sea and the Sea of Azov basins. The high population density, heavy industrial development, and relatively low freshwater endowment of those basins, and the low governmental priority placed upon environmental protection until very recently, have given rise to chronic and serious levels of water pollution throughout Ukraine. The Dnister and the Danube are included among the most polluted bodies of water in the territory of the former Soviet Union. Hundreds of small rivers supply water for three-quarters of the villages and half of Ukraine's cities. Widespread fear is growing in Ukraine that a substantial fraction of those water arteries are so polluted as to pose fatal health risks to the people who depend on them. About half of the chemical fertilizers, herbicides and pesticides applied in the fields are washed off into rivers. Moreover, surface runoff from industrial territories is highly contaminated.

One of the areas suffering most from serious and chronic coastal water pollution is the sea of Azov. That previously biologically rich and commercially productive body of water has experienced serious problems of industrial wastewater contamination and increased levels of salinity since the early 1970s. A primary cause

of the sea's ecological deterioration has been the diversion for purposes of irrigation (up to 80 per cent) of fresh, but not necessarily pure, water inflow from the Don and the Kuban rivers. As a result the seas salinity has increased by more than 40 percent since the 1950s. Despite repeated warnings and special government antipollution resolutions, the conditions in the Sea of Azov continue to deteriorate.

Read the following article and prepare 10 questions to the key points.

STOLEN AIR

2 December, 2012 ▪ Natalia Kommodova ▪ Vesti

The half-million population of Mariupol in Eastern Ukraine

is standing for its right to breathe safely

Over 10,000 people recently took to the streets, demanding an end to the emission of the poisonous smog that covers Mariupol virtually every day from the Azovstal and MMK Illich Steelworks, both owned by billionaire Rinat Akhmetov's Metinvest Holding. Despite reports by the plants and the authorities of reduced emissions, locals claim that the industrial giants continue to blatantly poison the oxygen they inhale and that Mariupol is gradually dying, at the same time, killing the Sea of Azov with its unique flora and fauna. Meanwhile, regulators are turning a blind eye to the environmental abuse and its devastating effect.

Thousands of people signed an anti-smog resolution and presented it to the president, the government, the ombudsman and even the Green faction at the European Parliament. Discouraged protesters were prepared to block the work of the city hall and the major polluters for as long as it takes them to implement modern air cleaning solutions and for municipal authorities to report accurately on what people inhale. The unprecedented scale of the rally pushed plant owners to make concessions.

THE GAS CHAMBER BY THE SEA

Mariupol, a city on the sea shore, has the worst air pollution in Ukraine. It is home to the biggest steel and coke plants in Ukraine. They generate 25% of all emissions in Donetsk Oblast. “It is possible to touch as well as see what you inhale in Mariupol”, the locals joke.

The annual share of industrial pollution per citizen is 800 kg. This is almost eight times as much as the average pollution per person in Ukraine. Lung cancer kills every fifth citizen of Mariupol, while the local cemetery is reportedly the biggest in Europe. Sociologists report a massive migration out of the city and a steep devaluation of real estate. Meanwhile, neither the governor nor environmental watchdogs think that the situation in Mariupol is disastrous.

Azovstal and MMK Illich steelworks produce 98% of all emissions. They also support the city, since they own stores, food producers and drug stores, while the plants employ nearly 40,000 local residents. People patiently grew used to the dust and char that cause eyes to burn and dizziness before things got much worse this fall. The caustic “smell of money” – this is how the locals refer to smog – has spread to districts remote from the plants, while the suffocating mist now covers the city every day.

Mariupol is the only city in Ukraine where citizens are not officially warned about bad weather conditions that make it dangerous to be outside or even open windows. On windless or foggy days, industrial emissions do not diffuse fast enough, concentrating in residential districts near the plants instead. Whenever that happens, the streets turn into gas chambers. The most damaging effect is on children.

“Our district was previously considered to be clean, because it’s far from the plant,” says Inna Dmytryshyna, mother of Maryana, 2, and Daryna, 4. “Now, even shut windows no longer protect us from dust and smoke. My daughter has chronic bronchitis and she can’t breathe without an inhaler. Local pulmonology units are all packed with patients. “What’s going on there? We seem to run out of inhalers before we deliver them,” wondered a supplier from Donetsk when I bought one for my daughter.”

Over a period of 10 months, Mariupol was engulfed in thick smog for 187 days – more than six months. In September, 23 of 30 days were dangerous for breathing. Mid to high levels of pollution were announced three times in October alone. These are the periods when people are officially recommended to wear special protective masks and clothes outdoors.

"It only takes seconds for smog to cover an outdoor sports ground where school kids have their PE classes in warm seasons. The children begin to suffocate. It is common now to "evacuate" them immediately back to school if this happens," says Eleonora Haivoronska, a PE instructor at School 53 and activist in the local environmental protection campaign. "Sometimes we have to provide first aid to children who don't feel well." She says that children get sick on a massive scale, especially during these smog attacks. Doctors diagnose them with acute respiratory viral infections as opposed to chemical bronchitis caused by toxic emissions. As a result, parents cannot prove that local industry has damaged their child's health in court.

In fact, the Sanitary Service has been reporting that the levels of dust and toxic substances, such as hydrogen sulfide, carbon monoxide, phenol and formaldehyde, exceed the acceptable level in 25% of all air samples. They claim that sanitary areas which are supposed to protect people from poisonous emissions are no longer effective, and pollution has reached residential areas. However, when environmental activists requests measurements of pollution levels to find out what people really inhale when smog covers the city, the Sanitary Service finds excuses not to do it, such as an ongoing reform or the lack of petrol for the car.

LICENSED TO POISON?

The reconstruction of a sinter plant and reduction in emissions from Azovstal by 2012-2013 were the requirements for the plants to be granted licenses by the Ministry of Environment. In September 2012, the local authorities along with Akhmetov's Metinvest passed a new Health Improvement Programme in Mariupol that postponed modernization for four years. After 4 November, a decision was taken to suspend it altogether. As a result, the next smog attack pushed a record-breaking

10,000 protesters onto the city's main square. Wearing respirators, they stormed City Hall, demanding the resignation of the inactive mayor, Yuriy Khotlubey, and other officials. Several days later, the management of Azovstal announced a stoppage in operations in order to conduct renovations, declaring smoke from the processing of recoverable resources containing peat, as a possible source of the suffocating smog. Plant employees claim that the real cause is spending cuts. With obsolete purification facilities and production techniques that are over 100 years old, steelworks cannot but violate emission requirements. If they try to meet them, steel and coke will become too expensive.

"Unfortunately, Ukrainian industrial plants do not take environmental risks into account when doing their financial calculations," says Pavlo Khazan, leader of the sustainable development and energy campaign at the Green World Ukrainian Environmental Association. "Paradoxically, Ukrainian environmental legislation is considered to be one of the most advanced in Europe, but it's not working. Regulators have essentially given the green light for big industrial plants to emit levels of poisonous chemicals into the air and water that pose a threat to people's health. Environmental officials and local authorities put Mariupol citizens under threat, saying that the city's steelworks cannot curb emissions because of current technological processes."

According to Mykola Afanasiev, ex-Director of the now disbanded State Inspection for the Protection of the Sea of Azov, the plants have been postponing important environmental measures every year. As a result, the level of the least harmful and visible chemicals in the air in Mariupol has declined while that of barely noticeable yet extremely toxic gases in emissions remains unchanged.

Experts propose several solutions, including a significant increase in fines and stricter punishment – including criminal – for breaching environmental protection laws. Plants would no longer benefit from violating requirements, while authorities will not be able to pretend that problems do not exist.

A RED FLAG FOR THE SYSTEM

Over 13,000 people signed the resolution before the Stop Smog rally. On 4 November, protesters urged the MPs representing their city to initiate necessary legislative changes, having considered the situation in the new parliament. They made it clear that they are not demanding the closure of the plants, but transparency and responsibility, compliance with environment protection laws and respect for the right to a safe and healthy life.

"Our rally is a red flag, warning the system that our patience is running out," says the anti-smog resolution. "Driven to boiling point, the public is demanding that the authorities solve the problem here and now. We no longer trust sham pretence measures taken by the government and the plant's administration!"

Protesters urge the Verkhovna Rada to amend the Law "On Environmental Emergency Zones" so that a relevant status is designated for cities and towns that are environmentally dangerous as a result of both disasters and long-term damage to citizens' health.

Metinvest, in turn, promises to invest over USD 620mn to improve the environmental situation in Mariupol by 2020, while issuing a reminder that the local steelworks operate at huge losses. "In spite of our losses, we continue to finance reconstruction at a scale unseen in the past 50 years," the holding's press service said.

The Health Improvement for 2012-2020 Programme, drafted with Metinvest experts and approved by the city council, provides for a 40% reduction on emissions, "provided that the market situation is sufficiently favourable". However, steelworks are facing a grim future as the crisis unfolds again, thus people in Mariupol have good reason to mistrust official pledges.

Currently, the residents of Mariupol are getting used to open windows, walking in parks and inhaling air without char as long as the operation of Azovstal's toxic sinter plant is suspended. Activists say that they will not attend rallies as long as the air remains unpolluted. The anti-smog protest in Mariupol signaled asurge of civic activity never before seen in Donbas. Experts assume that it could serve as a model for other environmentally dangerous cities.

Render the text into Ukrainian.

Deballasting problems in Ukraine

in “Ballast” 3 June 2015

The Swedish P&I Club has issued alert regarding deballasting problems in the ports of Ukraine.

The situation concerning the segregated ballast control now existing in the Ukrainian ports is still rather dubious. Despite the new law of Ukraine which cancels segregated ballast quality control on board the ships, local (regional) ecological inspections are trying to go on with their “ecological racketeering”. On May 20, 2015, the Cabinet of Ministers of Ukraine dismissed the acting Head of Ecological Service of Ukraine, Mr. Vasiliy Sinegub, from his office for his failure to ensure compliance with the new law and failure to exercise due control of ecological inspections in the ports of the country.

Ecological inspection officials, using lies and various insinuations, continue their successful attempts to exact bribes from the ships’ masters.

Special instructions were given to the Immigrations Service of Ukraine not to include the representatives of the ecological inspections into the list of those official bodies who are to carry out inward clearance of the ship. Thus, they are a kind of moved away from control functions.

Nevertheless, the ecological inspectors may appear on board on their own during discharging operations and take samples of the ballast taking advantage of the Master’s lack of knowledge of the Ukrainian laws. In such cases we would strongly recommend the masters not to follow the inspectors’ instructions: and not to allow them to take any ballast samples. A master can offer the inspectors to visit the ship next day to speak to them in the presence of a P&I Correspondent or a lawyer.

Extract from main Ukrainian present-day ecological regulations

On April 03 2015 there came into force Order 82 dd. 18.03.2015 (filing No. 343/26788) of the Ministry of Ecology and Natural Resources of Ukraine "on introducing changes into some state ecological control regulations". By virtue of this Order chemical control of segregated ballast is cancelled. The said Order is aimed at improvement of the ecological control service activity and also it is intended to bring certain Ukrainian normative and legal acts in conformity with the international law.

For example, some changes were made in the regulations related to ecological control of ships at the national frontier check-points and areas covered by the regional customs. In particular, Item 1.4 of the said regulations gives a definition of the notion of "segregated ballast" in accordance with MARPOL Convention 73/78. Besides, paragraph 7 of Item 1.12 of the said regulations was also amended – in the new redaction authority of the state ecological inspectors to make analysis of the segregated ballast water is annulled. In the same way their authority to take samples and carry out laboratory analyses of the segregated ballast for its contents and characteristics is withdrawn by force of the amended Item 6.9 of the marine ecological inspections regulations.

Render the following text into English.

КОМПЕНСАЦИЯ ЗА ПЛОХУЮ ЭКОЛОГИЮ

Сначала была Конституция…

Если быть точным, статья 50 Основного Закона Украины, которая гласит:

«Каждый имеет право на безопасные жизнь и здоровье, окружающую среду и на возмещение нанесенного нарушением этого права вреда». Учитывая тот факт, что Конституция страны была принята 28 Июня 1996 года, выходит, законные основания для выплаты компенсации людям, страдающим от загрязненной окружающей среды, имеются у нас вот уже девять лет. Другое дело − что только на бумаге. У власти же неработающая статья 50 не вызывает особого душевного расстройства. Ну, одна она у нас, что ли, не работает?

Это затяжное молчание «верхов» конституционно- компенсационных правах «низов» могло бы продлиться долго (оно и понятно, денег в госказне всегда не хватает), если бы не одно «но»: не замечать эту проблему, все равно, что сорвать с гранаты кольцо и накрыть ее подушкой − авось, не рванет. Еще как рванет! Уже сегодня информация об экологии регионов свидетельствует: окружающая среда так интенсивно вредит жизни и здоровью миллионов людей, что об их безопасности и речи быть не может.

Ради эксперимента экологи взяли промышленную карту страны, наложили на нее карту состояния здоровья населения, и... ужаснулись. На тех территориях, где отмечена высокая техногенная нагрузка на окружающую среду, состояние здоровья населения значительно (на несколько порядков) хуже, чем, в среднем, по Украине. Это и хронические, и онкологические заболевания, и уровень общей заболеваемости, и уровень смертности.

В Донецкой области, напомним, накоплено 22 миллиона тонн токсичных отходов − больше половины всех отходов Украины, 2/3 из них − 14 млн. тонн − относятся к 1-му классу опасности, возле которых категорически недопустимо проживание людей или размещение, какого - либо производства. Постоянный уровень техногенной нагрузки на один квадратный километр территории области - с разными опасными факторами − в 5-7 раз выше среднеукраинского. Суммарный выброс в атмосферу всех предприятий региона составляет около 2 млн. тонн токсичных веществ в год, или более 60 тонн на один квадратный километр территории и 321 кг на каждого жителя − от пенсионера до грудного ребенка. «Экономический потенциал Донецкой области отличают огромные масштабы и беспрецедентная концентрация, −подчеркивает главный врач Донецкой областной клинической больницы профзаболеваний, заслуженный врач Украины Евгений Гладчук. − Нагрузка основных промышленных фондов на единицу территории в 4 раза превышает среднюю по стране. Более чем на три четверти этот конгломерат обеспечивают такие отрасли индустрии, как угледобыча, металлургия, электроэнергетика, машиностроение и химическое производство. Здесь занято свыше 80 процентов промышленно-

производственного потенциала. Отсюда − то неблагополучие экологической обстановки а области, которое можно характеризовать как поистине угрожающее для здоровья жителей края.

UNIT 6. WILD LIFE

VANISHING ANIMALS

Vinzenz Ziswiler, a Swiss ecologist, in his book Extinct and Vanishing Species, lists about 150 species known to have vanished in the past three centuries. The list ranges from the aurochs (1627) and the dodo in the seventeenth century, to the Indian pink-headed duck in 1944. The reasons why animals vanish from the earth are various: the Tahitian parakeet went because its habitat was altered by drainage. The New Zealand quail succumbed to diseases introduced by settlers. The Tasmanian wolf was hunted because it was ignorantly believed to be a predator - actually it is not a carnivore, but a marsupial like the kangaroo.

The nocturnal kiwi or apteryx was wiped out by weasels introduced to 'enrich' the fauna of New Zealand. Schomburgk's deer was persecuted in Siam for religious reasons.

It is too late to do anything about these 150 vanished species, but we could do something about the 240 further species currently threatened with extinction. These include the Bactrian camel (400 left), the oryx (200), the Sumatra rhinoceros (170), the Cape zebra (75), the whooping crane (50), the Japanese crested ibis (12), the Everglades kite (15), the Bali tiger (3 or 4) and others for which the numbers are not known.

Not only animals but many plants are becoming extinct: about 300 species are in grave danger of being lost in Britain alone. The situation is most serious in islands where species found nowhere else in the world exist. In the Hawaiian islands, for

instance, 95 per cent of the native plants are unique, and many are on the verge of extinction. It is now possible to spend a vacation in Hawaii without ever seeing a native plant.

Philip Island in the western Pacific is now completely eroded, with only a few plants remaining in the valleys. When Capt. Cook discovered it in 1774 it was completely covered with vegetation. There were three unique species here, of which one. the glory pea, has not been seen since 1805; a couple of years ago only one of the other two species could be found, and of this there were only a few bushes left.

Collectors are probably the worst menace, especially in the case of orchids and succulents: many rare African orchids are on the point of extinction. In England, the lady's slipper orchid remains only in one secret locality. Unlike Czechoslovakia and Austria, Britain has no legislation to limit picking rare plants.

Does it matter that man is wiping out whole species from the planet? Evolution is capable of many quirks, and its variants are, some might say, of only museum interest. But apart from the aesthetic values of maintaining a richly varied flora and fauna there are practical reasons for doing so...Plants often turn out to have unique medical or other properties.

Animals also still have much to teach. Thus the vanishing oryx can live indefinitely without drinking: hence it might become of great importance as a protein source in arid areas, as the growing world population expands into them. Who knows what future peoples will want?

Glossary

vanish – зникати

extinct – вимерлий, вимирати

aurochs – зубр

dodo – дронт (вимерлий птах)

parakeet – довгохвостий папуга

habitat – середовище проживання

drainage – дренаж

quail – перепел

succumb to – загинути від

predator – хижак

carnivore – плотоядна тварина

marsupial – сумчастий

nocturnal – нічний

apteryx – безкрил (нелітаюча птаха)

wipe out – знищувати

weasel – ласка

oryx – сернобик

crane – журавль

crested – з чубком

kite – коршун

vegetation – рослинність

fauna – фауна

menace – загроза

orchid – орхідея

succulent – суккулент

quirk – примха

arid – посушливий

Exercise 1. Fill in the missing words.

1. The ... why animals vanish from the earth are various.
2. The Tahitian parakeet went because its habitat was altered by ...
3. The New Zealand quail succumbed to ... introduced by settlers.
4. In the Hawaiian islands 95 per cent of the native plants are ...
5. When Capt. Cook discovered the Philip Island it was completely covered with ...
6. Collectors are probably the worst..., especially in the case of orchids and succulents.
7. Does it matter what man is ... out whole species from the planet?
8. Both animals and plants have unique medical and other ...

Exercise 2. Answer the questions.

1. How many species known to have vanished in the past three centuries does Vinzenz Ziswiller list?
2. How many species are currently threatened with extinction?
3. What animals and plants are becoming extinct?
4. Where is the situation most serious?
5. What countries have/do not have legislation to limit picking rare plants?
6. What values do plants and animals have?

THE ANIMALS WE MIGHT LOSE FOREVER

1 Disaster did not strike **the tiger** until a post-war demand for hard-wood triggered a massive onslaught on tropical forests. Vast areas, which had stood for 60 million years, disappeared at the rate of 50 acres a minute. Deprived of shelter and prey, the tiger was doomed. In 1972, its population had dropped from 40,000 to less than 2,000 in 40 years. It's now doubled on WWF reserves.

2 **The blue whale**, the largest animal ever to have lived on earth − reaching lengths of 100 feet and weighing up to 150 tons. The whale was exploited as a source of meat, fats and oils. Its food-sieving plates (baleen) were used to make whalebone corsets. Despite repeated warnings from scientists, whalers continued to slaughter blue whales until their number was one thirtieth of its original level.

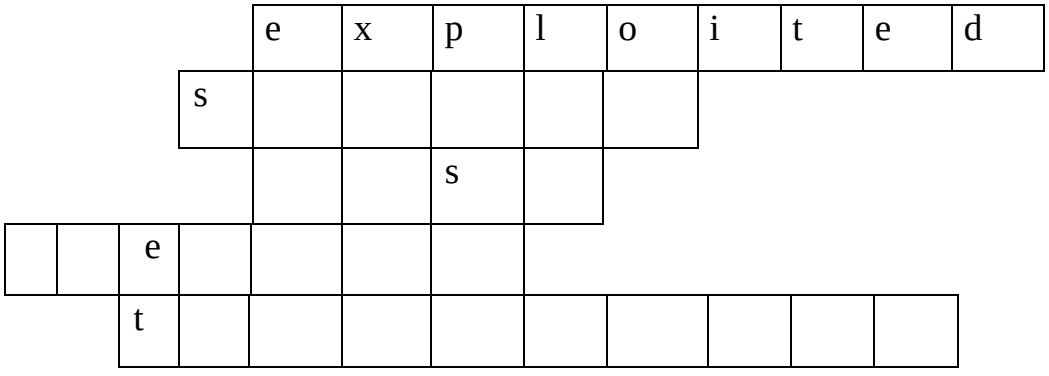
3 **Wild black rhinos** have become the ultimate symbol of threatened African wildlife. Thirty years ago there were more than 100,000 of them. Today they have dwindled to fewer than 4,000. In Kenya, Zambia and Zimbabwe, poaching rhino horn is still the way to a fortune.

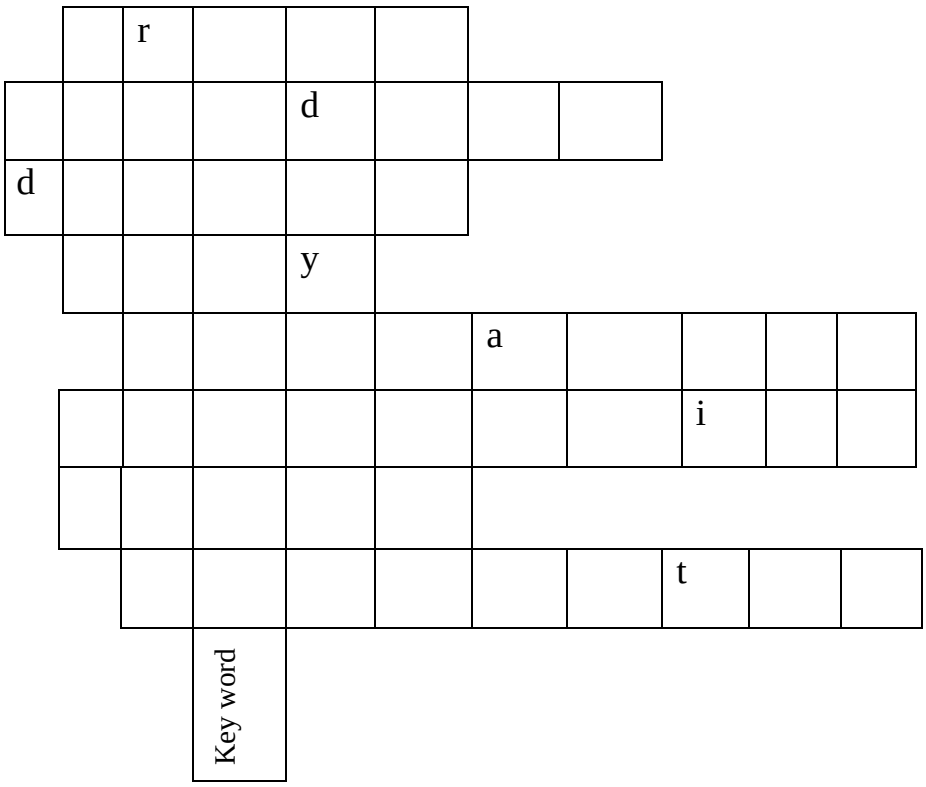
4 There used to be 300 species of **elephant**, today there are just the African and Indian. In Africa, where an estimated 75.000 still survive, 10,000 a year are shot by poachers for their tusks. The trade has a street value of $1 billion. Herds return to the best places to find crops and gardens and are killed by farmers.

5 Emblem of the World Wildlife Fund, **the giant panda**, faced extinction by the end of the century until, ironically, man stepped in. For it was man's destruction of the forest which had left the pandas in small, isolated pockets. Leopards occasionally kill the younger ones, and pandas can be accidentally snared in the traps set to snare musk deer. Occasionally giant pandas are shot: their skins are prized as trophies, or used as rugs and wall hangings.

Exercise 1. Complete the gaps in the word puzzle with words from the text which match the definitions given (the paragraph number is given). If you complete it correctly you will make a word connected to the topic to fit in the box.

1 used(unfairly) for profit (2)
2 caught in a trap (5)
3 very big (1)
4 a group of animals of the same kind that can breed together (4)
5 in danger (3)
6 plants produced by farmers (4)
7 less in quantity (3)
8 sure to die (1)
9 an animal that is hunted and eaten by other animals (1)
10 fierce attack (1)
11 state of being no longer in existence (5)
12 buying and selling of goods (4)
13 killing on a big scale (2)





Exercise 2. Answer the questions.

1. What first started the disappearance of tigers, and why?
2. When did this happen?
3. Which animal reaches 100 feet in length?
4. Why was the blue whale hunted?
5. In which countries is rhino horn taken illegally?
6. Are black or white rhinos in more danger?
7. What part of the elephants does ivory come from?
8. Which kind of elephant is most at risk?
9. How many species of elephant did there use to be?
10. Why are giant pandas shot?
11. What is being done to save them?

HUMAN IMPACTS ON LAKES

Lakes on several continents are shrinking because of human activity. They range from the slightly to the highly saline and from the small and relatively shallow to the large and deep. The one feature they have in common is the type of human

impact that has affected them, namely water diversion. The examples discussed below provide a good sense of the global extent of the phenomenon of shrinkage, the variety of the lakes involved and the nature of the impacts.

The Aral Sea located in Central Asia is perhaps the best known of lakes in this category. Considerable international attention has been focused on the Aral Sea because of the scale of humanity's impact there and the magnitude of its effect. What happened to the Aral Sea offers a clear and unambiguous message of what befalls salt lakes and their environs in dry regions when people divert the inflowing rivers and streams.

Before 1960, the Aral Sea was the fourth largest lake in the world. After 1960, following massive diversions of water for irrigation from its two major inflowing rivers, the Amu and Syrdar'ya, the water level of the lake began to drop dramatically and its area to decrease. From a height of 53 meters above sea level in 1960, the water level dropped some 15 meters over the next 30 years, reaching a level of 38 meters above sea level by 1990. Today, the water level countinues to fall. The area of the lake halved and its volume decreased by two-thirds between 1960 and 1990. Simultaneously, the water's salinity tripled, jumping from 10 grams per liter in I960 to 30 grams per liter in 1991. These changes have spawned a succession of detrimental environmental effects. The receding water exposed large expanses of the salty lake bed. Dust and salt particles blown from this bed have affected human health, increasing the incidence of emphysema and other respiratory diseases, and led to decreases in agricultural productivity in adjacent regions. The local commercial fishery industry has collapsed. Soil salinization has increased significantly, the continental climate has become even more extreme, and deltas and islands that once supported a wealth of wildlife and waterfowl have simply disappeared.

Sadly, further regression of the Aral Sea is inevitable. Several other salt lakes in Central Asia have also shrunk but not to the same extent as the Aral Sea. In these cases, scientists also point to the diversion of inflowing rivers for irrigation purposes as the primary cause for the lakes' decline. Lake Balkhash is divided by a low ridge into two basins, only the eastern basin is saline. The basins' differential salinities can

he easily explained. The southwestern basin receives 80 percent of all the water coming from the inflowing rivers and thus maintains a positive water balance, the eastern basin receives only 20 percent of all inflows and as a result has a negative water balance. Since 1970, the salinity of the water in the eastern basin has risen from 4 to 5.2 grams per liter. The water level has fluctuated some 3 meters during the past 100 years, but the general drop that has been observed since 1960 is expected to continue.

The Dead Sea provides almost as striking an example of dramatic regression as the Aral Sea, even though the environmental impacts in this region have not been as severe. The water level of the Dead Sea has continued to drop ever since large amounts of water began to be diverted from the River Jordan in the latter part of this century. In the last decade alone, the water level has fallen some 10 meters. This has had a more obvious impact in the southern, shallower basin, but even in the northern basin shoreline terraces have formed in the wake of the water's retreat. The lake's salinity has also risen as the water level has declined. In 1910, the Dead Sea had 200 grams of salt per liter of water; today, it has more than 340 grams per liter.

Glossary

shrink – міліти

saline – солоний, соляний

diversion – відведення

magnitude – важливість

unambiguous – недвозначний

befall – траплятися

triple – потроювати

spawn – породжувати, викликати

detrimental – шкідливий

recede – відступати

incidence – випадки захворювання

waterfowl – водяні птахи

fluctuate – коливатися

Exercise 1. Tick the correct completion.

1. Lakes of several continents are shrinking because of

a) human activity.

b) dry climate.

c) their geographical location.

2. Over the next 30 years the water level of the Aral Sea dropped

a) 53 metres.

b) 15 metres.

c) 38 metres.

3. The Aral Sea's salinity

a) halved.

b) tripled.

c) did not change.

4. Several salt lakes in Central Asia

a) have absolutely shrunk.

b) have shrunk but not to a larger extent.

c) have never changed their water level.

5. The differential salinities of Lake Balkash's basins are explained by

a) different amounts of inflowing rivers.

b) difference of human impact on them.

c) their natural structure.

6. The drop of the water's level of the Dead Sea is caused by

a) climatic conditions.

b) diverting large amounts of water.

c) severe human impacts.

Exercise 2. Answer the questions.

1. Why do lakes on several continents shrink?
2. What type of human impact has affected the lakes?
3. What has happened with the Aral Sea?

4. What are the after-effects of the Aral Sea's regression for climate, human health and agricultural productivity?
5. Has Lake Balkach shrunk to the same extent as the Aral Sea? Why? Why not?
6. What environmental impacts are causing the Dead Sea's decline?

ANIMALS IN DANGER

Perhaps the most famous rare animal is the panda. Twenty years ago it was nearly extinct. Now, its numbers are growing again. It's even become a symbol for wildlife conservation. But many other species have been less lucky than the panda. Some are already extinct. Today, many more are in serious danger. This is because man (a) hunts them (b) destroys and pollutes their habitat.

Is it too late to save animals like these?

Habitat

There is a serious habitat problem because ...

1 After pollution or destruction, habitats take many years (sometimes hundreds or even thousands) to grow again.

2 Pollution and destruction change the balance of nature. Each species in a habitat (for example, wood, jungle, marsh or forest) needs and helps the rest. If one animal, bird or insect disappears, all the others suffer, too.

This is what's happening in the rainforests of South America, Africa and Asia. These are some of the world's oldest habitats. Or they were. Man is destroying an area of rainforest as big as Switzerland every year.

But the problem doesn't stop there. Habitats and animals are disappearing in Europe, too. Since 1947 in Britain, for example...

- 50% of the woods have disappeared
- 50% of the marshes have disappeared
- 95% of the meadows have disappeared.

And what has taken the place of these green, natural places? Houses, farms, cities, streets, roads and factories. Because of this (and pollution, too) several British

species are dying. In fact scientists believe that 30 British animals, fish and birds may become extinct by the year 2000.

- The solution

There is only one way to save wild animals and wild habitats-conservation. That means...

• protecting animals in danger by law
• opening more national parks
• building fewer new roads
• planting more new forests
• cutting pollution

If this doesn't happen, many wild animals will soon have just one habitat — the zoo.

OILED BIRDS

Oil pollution is like a recurring nightmare. When the giant tanker Amoco Cadiz broke up off the Breton coast in 1978,227,000 tonnes of oil flooded into the sea, wrecking the local environment. New safety regulations were introduced and experts promised that such a disaster could never happen again. Unfortunately they were wrong. It's true that major incidents are unusual, there have only been 5 disasters world-wide in the last 30 years. However, the size of modern oil tankers means that if one gets into trouble, serious environmental damage is inevitable.

In 1996 the tanker Sea Empress ran aground off the coast of Milford Haven in Wales. Over 70,000 tonnes of oil escaped into the sea. As soon as they heard that the Sea Empress was in trouble, local volunteers and members of environmental groups rushed to the area to see what they could do to help. Sea-birds like gulls and guillemots are always the most common victims. Covered in a thick black coating of oil, such birds are unable to fly or feed themselves. Cleaning them is a painstaking business and volunteers sometimes have to spend 40 minutes or more cleaning one bird.

Sadly, all of this might be in vain. Two of Britain's leading ornithologists. Chris Mead and Dr Kenny Taylor, claim that trying to help oiled birds is actually a waste of time. A US report shows that few birds live for more than ten days once they've been released. It's not cost effective to clean the birds and release them. Chris Mead told reporters: "I can understand the desperate feelings of the rescuers that they should do something to help the birds, but realistically, it may be kinder to put them to sleep immediately."

An RSPB spokesperson said: "It is depressing news when you con-sider the amount of effort, dedication and pure blood and sweat which goes into cleaning oiled birds." Many volunteers claim that it is still worth cleaning the birds, even if only a few of them survive.

Surely the best way to solve the problem is to prevent accidents from happening in the first place. Pressure groups are still calling for changes to safety regulations. They also want oil tankers to be made much smaller. When the Exxon Valdez spilt 37,000 tonnes of oil into Prince William Sound, the US oil company Exxon was hit with a $2.5 billion clean-up bill. Since cleaning up the mess after such disasters is so expensive, perhaps the oil companies should start listening.

Glossary

recurring – який повторюється

wreck – руйнувати

run aground – сісти на мілину

guillemot – кайра

painstaking – кропіткий

sound – вузька протока

Exercise 1. Put the events in the correct order.

a) 70,000 tonnes of oil escaped into the sea.

b) Members of environmental groups spent 40 minutes cleaning one bird.

c) New regulations were introduced.

d) 227,000 tonnes of oil flooded into the sea.

e) the US company was hit with a $ 2.5 billion clean-up bill.

f) pressure groups are calling for changes to safety regulations.

Exercise 2. Answer the questions.

1. How often do incidents with oil tankers happen?
2. What damage did the disaster in 1996 cause?
3. What is the best way to solve the problem of oil pollution?

SAVE THE BADGERS, PLEASE!!

Badgers, loved by the British, are under the gun in southwest Britain. The reason is that some of the 80,000 badgers carry bacteria that cause a dangerous disease called tuberculosis, in cows. In spite of protests by the National Federation of badger groups, 20,000 badgers have been killed.

Recently, a new strategy has been proposed − blood-testing the badgers. Ironically, the tests show that the badgers carrying bacteria actually got them from cows who contracted the disease a long time ago. So now, not only the badgers but also the cows are being tested. The moral: appearances can be deceiving!

Glossary

badger – борсук

blood-testing – аналіз крові

contract – підхопити (хворобу)

deceiving – обманливий

QUARTER OF PARROT SPECIES FACE FIGHT AGAINST EXTINCTION

"Jewels of the rainforest" are being wiped out: before anything is known about them.

The New Caledonian Lorikeet, a small green bird with violet-blue thighs and a yellow-tipped tail, may be the Latest of the world's parrots to become extinct.

The latest findings show that some 90 of the remaining 3.50 species are under threat of extinction with at least nine on the verge of extinction if not, like the New Caledonian species, already lost. Most of the losses over the past few centuries have been on islands in the Caribbean, Indian Ocean and, to a lesser extent, in the Pacific.

But extinctions now also threatening the large continents such as South America, as the tropical rainforests are felled for agriculture, timber and development.

Some of these birds are captured for the pet trade. It is not only damaging to individual birds but the species as a whole. Often trappers cut down trees to get: at the babies. In the Caribbean in particular it is known that Jamaica's Amazonian Parrot is being hammered by the progressive Joss of nesting, holes which they traditionally use for years and years. So when some old bloke goes up there to chop down the trees, to get birds for a few dollars and a bottle of rum, these nesting holes are lost forever.

Many of these parrot species are rapidly declining and lost before they could be properly studied by science. Some of these are little birds, smaller than budgies, which are elusive. These little jewels live and feed on fruit and nectar in the roof of the forests and virtually nothing is known about them. Yet they are being wiped out before they have been much, more than named.

Traders and illegal importers often used tricks to smuggle pets into countries like Britain. They get a bird box full of common species and then pop a. few rare ones in. Some poor customs official, whose normal job is to try to spot someone with a crate of cocaine in. his suitcase, is suddenly confronted with 300 screaming parrots. Without a proper reference, lie is going to be unable to "tell them, apart.

Other tricks are to use hair dyes to change the colours of rare birds to look like common ones in which trade is permitted.

Exported birds can die in traas.it and. when you get a wild one home, it is often as mad as a bat, never been tamed, doesn't eat properly and dies within weeks or months, Whereas a captivebred one can be a charming companion. You may get them to speak and live for 100 years,

Under the Convention on the International Trade - in Endangered Species, it is illegal to trade in rare parrots and their eggs.

Glossary

parrot – папуга

species – вид

face – стикатися

extinction – зникнення, вимирання

wipe out – знищувати

New Caledonia – острів Нова Каледонія

lorikeet – полінезійський папуга

thing – стегно

threat – загроза

on the verge – на межі

Caribbean – Карібське море

to a lesser extent – меншою мірою

fell – рубати ліс

timber – лісоматеріал

capture – ловити

trapper – мисливець, що ставить капкани

hammer – нищити

bloke – п’яниця

chop down – зрубати

decline – зменшуватися

budgy – хвилястий папуга

elusive – невловимий

smuggle – перевозити контрабандою

pop in – всунути

spot – знайти

crate – упаковка

reference – компетенція

tell apart – відрізняти

dye – фарба (для волосся)

as mad as bat – той, що ошаленів

tame – приручати

captive-bred – виведений у неволі

endanger – загрожувати

HIDDEN TREES

Find the name of a tree hidden in each sentence. Sample: It's sad to see a man **grove**l when he should really stand up for his rights (гай).

1. Many people would rather use cash than credit cards.
2. The treasure map led us to the secret hiding place.
3. If the deal goes through, Tim will own his dream house.
4. There was a tiny top in Eddie's Crackerjack box.
5. Down near Oyster Bay. berry bushes were in blossom.
6. I knew there would be echoes in the empty house.
7. I told Mimi mosaics are small tiles.
8. On Ohio, Akron is the center of rubber manufacturing.
9. The asp entered the cabin through a crack in the wall.
10. The new baseball cap pleased Andy.
11. Mr. Griff ignored his son's tantrums.
12. Since Darwin's time people have been intrigued by the theory of evolution.

THE GREEN GAME

Test your knowledge of the word Green. There are 12 expressions or phrases containing the word GREEN.

1. To be jealous.
2. Prickly climbing shrub.
3. Proverb regarding a resentment comparison.

4. Slang for U.S. money.
5. A vegetable vendor.
6. A gardening virtuoso.
7. Danish island.
8. Advocacy group.
9. New York City's Bohemia.
10. City in North Carolina.
11. Revolution War General.
12. Someone new on the job, or a novice.

THE SENTENCE – BUILDING GAME

1. Begin with a word: *RAIN FOREST*
2. Add a color or pattern: *BRILLIANT GREEN*
3. Add a touch word: *HOT*
4. Add an action word or phrase: *RAINY*
5. Put them all together: *THE BRILLIANT GREEN RAIN FOREST IS HOT AND RAINY*
6. Create several sentences in this way and then choose one to illustrate.

SENTENCE STAIRCASE

1. Begin with a simple declarative statement: THE MACAW FLIES
2. Describe the macaw: THE BLUE AND GOLD MACAW FLIES
3. Tell when: THE BLUE AND GOLD MACAW FLIES AT THE FIRST LIGHT OF DAY
4. Name a sound: THE SCREAMING BLUE AND GOLD MACAW FLIES AT THE FIRST LIGHT OF DAY
5. Tell where: THE SCREAMING BLUE AND GOLD MACAW FLIES AT THE FIRST LIGHT OF DAY OVER THE JUNGLES OF PERU

6. Use other descriptive words: THE SCREAMING BLUE AND GOLD MACAW FLIES AT THE FIRST LIGHT OF DAY OVER THE JUNGLES OF PERU BEFORE SETTLING DOWN TO A BREAKFAST OF BANANAS

TOPICAL GLOSSARY

Natural resources and attractions. – природні ресурси та визначні пам'ятки:

minerals − мінерали; корисні копалини;

(fresh) water supplies (reservoirs) − запаси (прісної) води;

reservoir ['rezavw a:] – водосховище;

flood − 1) повінь; водопілля; розлив; 2) потік;

rainfall – опади;

vegetation – рослинність;

greenery − зелень; рослинність; листя;

woodland − лісовий масив, лісиста місцевість;

woodlands − лісові масиви;

forestry − лісівництво, лісове господарство;

wildlife – дика природа;

animal kingdom − тваринний світ;

animal population − популяція тварин;

flora and fauna − флора і фауна;

arable land (soil) (also ploughland) − орна земля;

cultivated land – оброблена земля;

open land − відкритий грунт; вільний простір;

"green" belts − зелені пояси (навколо міст);

recreation areas – зони відвочинку;

coastal areas − прибрежные районы;

country (national) parks – національні парки;

clear landscapes − відкриті ландшафти;

public open spaces − відкриті простори для загального користування.

Environment and man. - Навколишнє середовище і людина.

to link man to nature − встановлювати зв'язок людини з природою;

to adapt to environment − пристосувати (ся) до навколишнього середовища;

to be preoccupied with economic growth − піклуватися про економічне зростання;

unrestricted industrialization − нестримна індустріалізація;

the sprawl of large built-up areas − безладне розширення районів забудови;

to upset the biological balance − порушити біологічну рівновагу;

to abuse nature − по-хижацьки експлуатувати природу, нераціонально використовувати природні ресурси;

to disfigure (litter) the landscape − спотворювати (засмічувати) місцевість;

ecology – екологія;

ecosystem − екосистема;

to be environment-conscious − розуміти необхідність охорони навколишнього середовища;

to be environment-educated − бути екологічно освіченим.

Environmental destruction and pollution − Руйнування і забруднення навколишнього середовища:

land pollution – забруднення грунту;

derelict land − покинута земля;

industrial waste − промислові відходи;

the by-products of massive industrialization − відходи масової індустріалізації, придатні для використання в інших галузях, побічні продукти масової індустріалізації;

to dump waste (products) on land − вивалювати / виливати / висипати відходи на землю;

extensive use of agrochemicals − екстенсивне використання агрохімікатів / отрутохімікатів;

the denudation of soil − денудация / оголення грунту;

the toxic fall-outs of materials – токсичні опади;

water pollution − забруднення води;

a dropping water level – знижений рівень води;

to face the fresh water supply problem – боротися з проблемою зменшення запасів прісної води;

depletion of water resources − виснаження ресурсів / джерел води;

the disruption of water cycle − порушення кругообігу води в природі;

marine pollution − забруднення морської води;

oil spillage − розлив нафти;

air (atmospheric) pollution − забруднення повітря (атмосфери);

the air pollution index − рівень забруднення повітря воздуха;

to produce foul air – забруднювати повітря;

to exhaust toxic gases (fuel) − викидати токсичні гази (паливо);

combustion of fuel − згоряння палива;

concentrations of smoke in the air − рівні концентрації диму в повітрі;

dust content in the air − вміст пилу в повітрі; забруднення повітря пилом;

radiation – радіація;

high (low) radioactivity − висока (низька) радіоактивність;

to store (disperse) radioactive waste − зберігати (поширювати) радіоактивні відходи;

noise offenders (pollutants) − джерела шуму, що перевищує норми; порушники граничних рівнів шуму;

merciless killing of animals − безжалісне вбивство тварин;

destruction of animals habitats − руйнування природного місця існування тварин.

Nature conservation and environment protection − охорона природа та захист навколишнього середовища:

a global imperative for environment − найважливіше завдання охорони навколишнього середовища;

global environmental security − всесвітня екологічна безпека;

to preserve ecosystems − зберігати екосистеми;

to create disaster-prevention programs − створювати програми із захисту від катастроф / стихійних лих;

to harmonize industry and community – гармонізувати діяльність промислових підприємств і життя населення;

plants and people − рослини і люди;

conservation movement − екологічний рух;

to preserve woodlands − зберігати лісові масиви;

to protect and reproduce animal (fish, bird) reserves − зберігати і відтворювати популяцію тварин (риб, птахів);

to fight pollution − боротися із забрудненням навколишнього середовища;

to install antipollution equipment − створювати очисні споруди;

to minimize noise disturbance − зводити до мінімуму шумове забруднення;

to reduce pollution − зменшувати забруднення навколишнього середовища;

to dispose of garbage (litter, waste) − викидати сміття (відходи).

Important environment issues, natural environmental disasters and other environment vocabulary

Acid rain − rain which contains large amounts of harmful chemicals as a result of burning substances such as coal and oil.

Biodegradable − able to decay naturally and harmlessly. Biodegradable packaging helps to limit the amount of harmful chemicals released into the atmosphere.

Biodiversity − the number and variety of plant and animal species that exist in a particular environmental area or in the world generally, or the problem of preserving and protecting this. A new National Biological Survey to protect species habitat and biodiversity.

Carbon monoxide − the poisonous gas formed by the burning of carbon, especially in the form of car fuel.

Carbon dioxide − the gas formed when carbon is burned, or when people or animals breathe out.

Climate − the general weather conditions usually found in a particular place. The Mediterranean climate is good for growing citrus fruits and grapes.

Climate change − there has been a growing concern about climate change.

Deforestation − the cutting down of trees in a large area; the destruction of forests by people. Deforestation is destroying large areas of tropical rain forest.

Desertification − the process by which land changes into desert.

disposable products − describes an item that is intended to be thrown away after use. Disposable nappies

Drought − a long period when there is little or no rain. This year (a) severe drought has ruined the crops.

Earthquake − a sudden violent movement of the Earth's surface, sometimes causing great damage.

Endangered birds/plants/species animals or plants which may soon not exist because there are very few now alive.

Energy − the power from something such as electricity or oil, which can do work, such as providing light and heat. There are different types of energy: solar, nuclear, hydroelectric... The energy generated by the windmill drives all the drainage pumps.

Energy conservation − the process of conserving energy

Environment − the air, water and land in or on which people, animals and plants live. Certain chemicals have been banned because of their damaging effect on the environment.

Extinction − many species of plants and animals are in danger of/threatened with extinction (= being destroyed so that they no longer exist)

Flood − a large amount of water covering an area that is usually dry.

Fumes − strong, unpleasant and sometimes dangerous gas or smoke. Petrol fumes always make me feel ill.

Natural resources − things such as minerals, forests, coal, etc. which exist in a place and can be used by people. Some natural resources, such as natural gas and fossil fuel, cannot be replaced.

Global warming − a gradual increase in world temperatures caused by polluting gases such as carbon dioxide which are collecting in the air around the Earth and preventing heat escaping into space.

Greenhouse effect − an increase in the amount of carbon dioxide and other gases in the atmosphere which is believed to be the cause of a gradual warming of the surface of the Earth.

Green peace − an organization that fights for the protection of the environment.

renewable energy − describes a form of energy that can be produced as quickly as it is used.

Oil slick − a layer of oil that is floating over a large area of the surface of the sea, usually because an accident has caused it to escape from a ship or container.

Ozone layer − a layer of air high above the Earth, which contains a lot of ozone, and which prevents harmful ultraviolet light from the sun from reaching the Earth.

Scientists believe that there is a hole in the ozone layer.

Pollution − damage caused to water, air.... by harmful substances or waste.

Recycle waste − to collect and treat rubbish to produce useful materials which can be used again.

Sustainable development − a development that is causing little or no damage to the environment and therefore able to continue for a long time. A large international meeting was held with the aim of promoting sustainable development in all countries.

Tsunami − an extremely large wave caused by movement of the earth under the sea, often caused by an earthquake (= when the Earth shakes)

Unleaded petrol − describes a type of petrol or other substance that does not contain lead.

Use up natural resources – the degradation of natural resources because of human pressure

Volcano − a mountain with a large circular hole at the top through which lava (= hot liquid rock), gases, steam and dust are or have been forced out. Erupting volcanoes discharge massive quantities of dust into the stratosphere.

Waste − unwanted matter or material of any type, often that which is left after useful substances or parts have been removed.

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