ДЕПАРТАМЕНТ ОБРАЗОВАНИЯ ГОРОДА МОСКВЫ

ГОСУДАРСТВЕННОЕ БЮДЖЕТНОЕ ОБРАЗОВАТЕЛЬНОЕ УЧРЕЖДЕНИЕ СРЕДНЕГО ПРОФЕССИОНАЛЬНОГО ОБРАЗОВАНИЯ ГОРОДА МОСКВЫ КОЛЛЕДЖ СВЯЗИ № 54

# ECOLOGY / ЭКОЛОГИЯ

Английский язык: специальный курс

Сборник текстов с упражнениями

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## Дмитрий Записной

Английский язык, специальный курс: Ecology / Экология. Сборник текстов с упражнениями. Учебное пособие для студентов средних профессиональных учебных заведений / Д. В. Записной. – 1-е изд., 2015. – 37 с.

Данное учебное пособие рекомендуется автором наряду с другими учебными пособиями к использованию в качестве основного курса в профессиональных учебных заведениях по специальности Эколог до выпуска стабильных учебников по данной тематике.

Учебное пособие, нацелено на развитие у студентов навыков современной английской устной и письменной речи, в соответствии с программой курса состоит из 24 тем, каждая из которых содержит тематически подобранный текст или ситуативно-ориентированный диалог, англо-русский словарь, лексические и прочие упражнения.

Для самостоятельной работы, в начале текста идет задание на поиск информации по теме. Соответственно, в качестве домашнего задания можно использовать упражнение 1 и упражнение 2 – активная лексика. Ответы на вопросы и задания на пересказ текста помогут в развитии монологической речи. Так же, разнообразные задания помогут студентам глубже разобраться в проблеме, поднятой текстом, и закрепить новую лексику, а несколько диалогов поспособствуют развитию диалогической речи.

Для студентов профессиональных учебных заведений. Может быть полезно также учащимся школ, преподавателям.

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# CONTENTS

# PART I

١.	THE PROBLEM OF ENVIRONMENTAL PROTECTION	4
П.	ECOLOGICAL PROBLEMS	6
III.	ENVIRONMENTAL POLLUTION	8
IV.	WATER POLLUTION	10
۷.	THE HOLE IN THE OZONE LAYER	
VI.	ECOLOGY	
VII.	DIVERSITY	
	TEXT A	
	ТЕХТ В	
Х.	TEXT C	
XI.	DEPLETION OF THE OZONE LAYER	-
XII.	HOW ECOSYSTEMS WORK. ECOSYSTEM MANAGEMENT	.20

# PART II

XIII.	ECOLOGY & ENVIRONMENT	
XIV.	TEXT D	.22
XV.	THE CRISIS OF ECOLOGY IN THE DEVELOPING WORLD	. 23
XVI.	TEXT E	. 24
XVII.	ENVIRONMENTAL PROBLEMS (dialog)	. 25
XVIII.	ENVIRONMENTAL PROTECTION – PART I	.27
XIX.	ENVIRONMENTAL PROTECTION – PART II	28
XX.	ENVIRONMENTAL PROBLEMS: AIR, LAND AND WATER POLLUTION AND PROTECTIO	
	OF ENDANGERED SPECIES	29
XXI.	THE ECOLOGICAL SITUATION IN YOUR CITY (dialog)	31
XXII.	TEXT F	. 34
XXIII.	TEXT G	. 35
XXIV.	GREENPEACE HISTORY	.37

# I. THE PROBLEM OF ENVIRONMENTAL PROTECTION

1. Internet Research. Search for the up-to-date information about problems of environmental protection. Prepare a one-minute talk to the class.

## 2. Study the vocabulary

humanity — человечество firmly established — укорениться majority — большинство soil — почва drought — засуха to contaminate — заражать, инфицировать (в том числе отравляющими и радиоактивными веществами) chemicals — химические вещества to be concerned about — беспокоиться drastic — радикальный, глубокий; резкий devastating — опустошительный, разрушительный to be rare occurrence — происходить редко to create — создавать industrial facilities — промышленные предприятия to be of vital importance — быть необычайно важным to cut down — сокращать the release of gases — выброс газов to contribute to — содействовать, способствовать fairly —довольно deterioration —ухудшение to tell on — сказываться на to solve — решать to raise safety standards — поднимать требования к технике безопасности to adequately process by-products of industry — хорошо перерабатывать промышленные отходы an international centre for emergency environment assistance — международный центр по оказанию срочной экологической помощи to prevent — защищать, предохранять

## 3. Read and translate the text

Environmental protection is the main problem facing humanity nowadays. The image of a sick planet has become firmly established in the public mind lately.

Ten years ago the word 'ecology' hardly meant anything for the majority of people, but today we can't help bearing it in our minds. It has happened because of the growing effect of the rapid industrial development of the natural world which has negative features of its own. As a matter of fact the state of environment has greatly worsened of late.

There is no doubt that soil, water and air are contaminated with toxic wastes. Over the past few years we have been constantly speaking about ozone holes, droughts, high level of radiation, about food contaminated with chemicals. Scientists in many countries are very much concerned about drastic changes in weather patterns. The worst drought, the mildest winter and the most devastating hurricanes have become typical in those parts of the world where they used to be a rare occurrence.

Weather patterns have been changing recently due to the global warming-up process and its major reason — the greenhouse effect. The greenhouse effect is created by carbon dioxide emissions, released by industrial facilities and a constantly increasing number of cars. Thus it is of vital importance that the world should start cutting down the release of gases that contribute to the greenhouse effect. What is the reason for people getting so much worried about the state of environment? The answer to this question is fairly simple. The thing is the deterioration of the environment is telling heavily on people. They are paying for this with their health. And it is obvious what all people need is a healthy environment.

To solve this burning problem it is necessary for people to combine efforts, to raise safety standards at all industrial facilities, to adequately process by-products of industry, to set up an international space laboratory to monitor the state of environment and set up an international centre for emergency environmental assistance. All these measures will help us in solving these important problems and prevent us from dangerous illnesses and diseases.

### 4. Translate the following sentences (use your active vocabulary):

- 1. Люди создают новые машины.
- 2. Мы используем химические вещества в повседневной жизни.
- 3. Человечество должно решить проблему защиты окружающей среды.
- 4. Почва загрязнена токсическими отходами.
- 5. Промышленные предприятия загрязняют окружающую среду.

## 5. Find English equivalents:

- токсичные отходы
- двуокись углерода
- контролировать
- парниковый эффект
- защита окружающей среды
- опасные заболевания
- ученые

# 6. Put the letters into correct order:

- renhoguese eectff
- geroudans nesseills
- xtoic steswa
- tistsscienboncar xdioide
- tormoni
- ementalnviron ptionrotec

## **II. ECOLOGICAL PROBLEMS**

# 1. Internet Research. Search for the up-to-date information about ecological problems. Prepare a one-minute talk to the class.

## 2. Study the vocabulary

ancient — древний harmony — гармония environment — окружающая среда riches — богатства unlimited — неограниченный to interfere — вмешиваться to increase — увеличиваться, возрастать smoky — дымный enterprises — предприятия by-product — побочный продукт activity — деятельность to pollute — загрязнять

substances — вещества oxygen — кислород rare — редкий destruction — разрушение ozone — озон layer — слой interaction — взаимодействие horrible — ужасный disaster — катастрофа onward - дальше to befall — пасть (на что-то)

### 3. Read and translate the text

Since ancient times Nature has served Man, being the source of his life. For thousands of years people lived in harmony with environment and it seemed to them that natural riches were unlimited. But with the development of civilization man's interference in nature began to increase.

Large cities with thousands of smoky industrial enterprises appear all over the world today. The by-products of their activity pollute the air we breathe, the water we drink, the land we grow grain and vegetables on.

Every year world industry pollutes the atmosphere with about 1000 million tons of dust and other harmful substances. Many cities suffer from smog. Vast forests are cut and burn in fire. Their disappearance upsets the oxygen balance. As a result some rare species of animals, birds, fish and plants disappear forever, a number of rivers and lakes dry up.

The pollution of air and the world's ocean, destruction of the ozone layer is the result of man's careless interaction with nature, a sign of the ecological crises.

The most horrible ecological disaster befell Ukraine and its people after the Chernobyl tragedy in April 1986. About 18 percent of the territory of Belarus was also polluted with radioactive substances. A great damage has been done to the agriculture, forests and people's health. The consequences of this explosion at the atomic power-station are tragic for the Ukrainian, Byelorussian and other nations.

Environmental protection is a universal concern. That is why serious measures to create a system of ecological security should be taken.

Some progress has been already made in this direction. As many as 159 countries — members of the UNO — have set up environmental protection agencies. Numerous conferences have been held by these agencies to discuss problems facing ecologically poor regions including the Aral Sea, the South Urals, Kuzbass, Donbass, Semipalatinsk and Chernobyl.

An international environmental research centre has been set up on Lake Baikal. The international organisation Greenpeace is also doing much to preserve the environment.

But these are only the initial steps and they must be carried onward to protect nature, to save life on the planet not only for the sake of the present but also for the future generations.

## 4. Translate the following sentences (use your active vocabulary):

- 1. Озоновый слой разрушается.
- 2. Исчезновение лесов нарушает кислородный баланс.
- 3. Чернобыльская трагедия это ужасная катастрофа.
- 4. Человечество должно жить в гармонии с окружающей средой.
- 5. Люди думают, что природные ресурсы неограниченны.

### 5. General understanding:

- 1. How did people live for thousands of years?
- 2. What cities appear all over the world today?
- 3. What pollutes the air we breathe?
- 4. What is the result of the pollution the atmosphere?
- 5. Why is environmental protection of a universal concern?
- 6. What are the initial steps in this direction?

# 6. Match the parts:

Many cities suffer Environmental protection The by-products of their activity the forests and people's health. pollute the water we drink. cut and burn in fire. A great damage has been done to Vast forests are

from smog. is a universal concern.

# 7. Put the letters into correct order:

mentdevelop civiltioniza nationalinter hereatmosp environtalmen proiontect ppdisaearance

## **III. ENVIRONMENTAL POLLUTION**

# 1. Internet Research. Search for the up-to-date information about environmental pollution. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

environment pollution - загрязнение окружающей среды uncrowded — слабозаселенный rural — сельскохозяйственный pollution-causing — вызывающий загрязнение crowded — густонаселенный pollutants — отходы invention — изображение soil — грунт, земля existence — существование goods — товары fertilizer — удобрение pesticide — пестицид to grow — выращивать crops — сельскохозяйственные культуры to ruin — портить immediately — сразу, немедленно to reduce — уменьшить gradually — постепенно to pass a law — принять закон enterprise — предприятие to take measures — принять меры to persuade — убедить activity — деятельность

### 3. Read and translate the text

People have always polluted their surroundings. But until now pollution was not such a serious problem. People lived in uncrowded rural areas and did not have pollution — causing machines. With the development of crowded industrial cities which put huge amounts of pollutants into small areas, the problem has become more important.

Automobiles and other new inventions make pollution steadily worse. Since the late 1960's people have become alarmed with the danger of pollution.

Air, water, and soil are necessary for existence of all living things. But polluted air can cause illness, and even death. Polluted water kills fish and other marine life. On polluted soil, food can not be grown. In addition environmental pollution spoils the natural beauty of our planet.

Pollution is as complicated as serious problem. Automobiles are polluting the air but they provide transportation for the people. Factories pollute the air and the water but they provide jobs for people and produce necessary goods. Fertilizers and pesticides are important for growing crops but they can ruin soil.

Thus, people would have to stop using many useful things if they wanted to end pollution immediately. Most people do not want that of course. But pollution can be reduced gradually.

Scientists and engineers can find the ways to reduce pollution from automobiles and factories. Government can pass the laws that would make enterprises take measures for reducing of pollution. Individuals and groups of people can work together to persuade enterprises to stop polluting activities.

## 4. Translate the following sentences (use your active vocabulary):

- 1. Загрязнение окружающей среды серьезная проблема современного мира.
- 2. Люди жили в слабозаселенных сельскохозяйственных областях.
- 3. Удобрения и пестициды могут разрушать почву.
- 4. Правительство должно принимать законы по защите окружающей среды.
- 5. Предприятия загрязняют окружающую среду.

## 5. General understanding:

- 1. Why wasn't pollution such as a serious problem earlier?
- 2. When have people become alarmed with the danger of pollution?
- 3. What can environmental pollution cause?
- 4. Why is pollution a complicated problem?
- 5. Can pollution be stopped immediately?
- 6. What can government and individuals do to reduce pollution?

## 6. Match the parts:

Since the late 1960's people have become But until now pollution was not Automobiles are polluting the air But pollution can be People lived in uncrowded rural areas reduced gradually. and did not have pollution. such a serious problem. alarmed with the danger of pollution. but they provide transportation for the people.

## **IV. WATER POLLUTION**

# 1. Internet Research. Search for the up-to-date information about water pollution. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

pollution — загрязнение to occur — происходить, случаться, совершаться mostly — главным образом» но большей части environment — окружение, окружающая обстановка; окружающая среда stream — река, ручей underground water — подземные воды bay – - залив» бухта harmful — вредный living beings — живые существа to contain — содержать в себе, включать, иметь в своем составе; вмещать to require — требовать moderately — умеренно, сдержанно to survive — выдержать, пережить, перенести quantity — количество shellfish — моллюск, ракообразное to harvest — проводить массовые охоты to ingest — глотать, проглатывать to lessen — уменьшать (ся), сокращать(ся) petroleum products — нефтепродукты fuel — топливо, бензин lubrication — смазка, смазывание (машины) accidental — случайный

to spill — проливаться), разливать(ся), расплескивать(ся) herbicides - гербициды tanker truck — грузовой танкер leak — течь, протечка, утечка underground storage tank — подземные хранилища (резервуары) poisonous — ядовитый to penetrate — проникать внутрь, проходить сквозь, пронизывать to remain — оставаться to absorb — всасывать, впитывать; абсорбировать, поглощать tissue — ткань contaminated — зараженный, загрязненный to suffer — страдать; испытывать, претерпевать lethal form — летальный исход exhausts — выхлопные газы to cause damage — причинять ущерб, вред liver — печень kidney — почка nutrient — питательное вещество sewage — сточные воды, нечистоты storm drains — дренажи circumstance — обстоятельство, случай; условие

#### 3. Read and translate the text

Water pollution occurs mostly, when people overload the water environment such as streams, lakes, underground water, bays or seas with wastes or substances harmful to living beings.

Water is necessary for life. All organisms contain it, some drink it and some live in it. Plants and animals require water that is moderately pure, and they cannot survive, if water contains toxic chemicals or harmful microorganisms. Water pollution kills large quantity of fish, birds, and other animals, in some cases killing everything in an affected area.

Pollution makes streams, lakes, and coastal waters unpleasant to swim in or to have a rest. Fish and shellfish harvested from polluted waters may be unsafe to eat. People who use polluted water can become ill, if they drink polluted water for a long time, it may develop cancer or hurt their future children.

The major water pollutants are chemical, biological, and physical materials that lessen the water quality. Pollutants can be separated into several different classes:

The first class is petroleum products: oil, fuel, lubrication, plastics. The petroleum products get into water by accidental spills from ships, tanker trucks and when there are leaks from underground storage tanks. Many petroleum products are poisonous for animals. Spilled oil damages the feathers of birds and the fur of animals, often it causes death.

The second class is pesticides and herbicides. There are chemicals used to kill harmful animals and plants. If they penetrate into streams, rivers, lakes, these chemicals can be very dangerous. The chemicals can remain dangerous for a long time. When an animal eats a plant that's been treated with it, the poisons are absorbed into the tissues and organs of the animals.

When other animals feed on a contaminated animal, the chemicals are passed up to them. As it goes up through the food chain, the chemical becomes more harmful, so animals at the top of the food chains may suffer cancers, reproductive problems, and death. Nitrates can cause a lethal form of anaemia in infants.

The third class is heavy metals. They get into the water from industries, automobile exhausts, mines, and natural soil. Heavy metals also become more harmful as they follow the food chain. They accumulate in living being's cells and when they reach high levels of concentration in the organism, they can be extremely poisonous, or can result in long-term health problems. They can sometimes cause liver and kidney damage.

The fourth class is fertilizers and other nutrients used to promote plant growth on farms and in gardens.

The fifth class is infectious organisms and pathogens. They enter water through sewage, storm drains, runoff from farms, etc.

The last one is thermal pollution. Water is often taken from rivers, lakes or seas to be used in factories and power plants. The water is usually returned to the source warmer than when it was taken. Even a small temperature change in a body of water can drive away the fish and other species that were

originally there, and attract other species in place of them. It breaks a balance and can cause serious circumstances in future.

# 4. Translate the following sentences (use your active vocabulary):

- 1. Загрязнение делает воду непригодную для использования.
- 2. Загрязняющие вещества вредны для живых существ.
- 3. Нефтепродукты ядовиты для морских обитателей.
- 4. Удобрения используются для поддержки роста растений.
- 5. Отравленные рыба и моллюски могут быть несъедобны.

## 5. General understanding:

- 1. When does water pollution occur?
- 2. Why do plants and animals require pure water?
- 3. What are the major water pollutants?
- 4. How can pollutants be separated?
- How do petroleum products affect the animals?
  Why can pesticides and herbicides be dangerous if they penetrate into streams, rivers and lakes?
- What do heavy metals result in?
  How do fertilizers penetrate to water?
- 9. What damage can thermal pollution cause?

## V. THE HOLE IN THE OZONE LAYER

# 1. Internet Research. Search for the up-to-date information about the ozone layer. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

discovery — обнаружение, открытие ozone layer — озоновый слой to bring (past brought, p.p. brought) about — вызывать, причинять impact — влияние, воздействие damage — вред, повреждение surface — поверхность widespread — широко распространенный harmless — безвредный to occur — случаться, происходить to absorb — поглощать ultraviolet radiation — ультрафиолетовая радиация cell — клетка to cause — вызывать, причинять cataract — катаракта skin cancer — рак кожи to affect — воздействовать chlorine — хлор

bromine — бром CFC (chlorofluorocarbon) - фреон appliance — прибор, приспособление aerosol spray can — баллончик для аэрозоля fire extinguisher — огнетушитель wind systems — воздушные массы to enclose — замыкать, окружать to destroy — разрушать to destroy — разрушать to contribute — способствовать, содействовать to increase — увеличиваться breakdown — разрушение greenhouse effect — парниковый эффект gradual — постепенный effort — усилие, старание to protect — защищать to decrease — уменьшать, сокращать eventually — в конечном итоге

### 3. Read and translate the text

Discovery of the hole in the ozone layer showed that human activity has a major impact on the Earth. The damage of ozone in the stratosphere high above the planet's surface has been brought about as the result of the widespread use of chemicals, which under normal conditions are chemically inert and harmless.

Ozone occurs at all levels in the atmosphere, but most of it is found in the stratosphere, between about 15-50 kilometres above the Earth's surface, where it plays a very important role. Ozone absorbs harmful ultraviolet radiation which is produced by the Sun-Ultraviolet radiation can damage cells of living things — plants, animals and people. Whereas small doses result in nothing worse than sunburn, larger amounts may cause cataracts or skin cancer, and can affect the growth of plants.

The damage of ozone has been caused by complex chemical reactions involving chlorine and bromine. Large amounts of gas called CFCs were produced in twentieth century for use in everyday appliances like fridges, aerosol spray cans, and fire extinguishers. At ground level, these compounds are chemically non-reactive. However they are carried on wind systems up into the high atmosphere, where the ozone layer is. CFCs can be broken up by the intense sunlight, but before their destruction CFCs gases become reactive and damage the ozone layer.

The hole in the ozone layer is formed over the Antarctic continent each spring. During the long dark Antarctic winter, the atmosphere becomes colder than anywhere else on the Earth. Strong winds enclose the cold air above the Antarctic, allowing ice clouds to form. The ice crystals provide the sites where chlorine reacts with ozone when sunlight returns in the spring, and results in the ozone hole.

In early summer the ozone hole mixes with the rest of the air mass of the stratosphere. Over the past years, the concentrations of chlorine in the atmosphere have been steadily increasing, and as a result — more ozone has been destroyed.

Ozone itself is a useful protective layer high above our heads, but in the cities is pollutant agent. The CFCs have other effects too. As well as contributing to the breakdown of ozone, CFCs are also very effective in providing «greenhouse effect», contributing to a gradual warming of the atmosphere. However, the possible change in climate resulting from increases in various greenhouse gases might actually make the stratosphere colder, not warmer.

Governments of many countries agreed in 1987 to the Montreal Protocol in an effort to reduce the amount of CFCs, and so protect the ozone layer. Since then, more countries have signed it, and more substances included for control. As a result, the amount of chlorine and bromine in the atmosphere is decreasing. With less chlorine in the atmosphere the ozone hole should become smaller, and eventually close up, but it might take 20-30 years.

### 4. Translate the following sentences (use your active vocabulary):

- 1. Ученые обнаружили дыру в озоновом слое.
- 2. Разрушение озонового слоя большая проблема современного мира.
- 3. Правительства многих стран согласились с сокращением фреона.
- 4. Ультрафиолетовая радиация может повреждать клетки живых организмов.
- 5. Парниковый эффект это постепенное увеличение температуры атмосферы.

### 5. General understanding:

- 1. What did the discovery of the hole in the ozone layer show?
- 2. Why did the hole in the ozone layer appear?
- 3. What can ultraviolet radiation damage?
- 4. What caused the damage of ozone?
- 5. How are CFCs produced?
- 6. Why do CFCs become reactive and damage the ozone layer?
- 7. What does greenhouse effect contribute to?
- 8. What is the essence of the Montreal Protocol signed in 1987?
- 9. How long can it take to close up the ozone hole in the atmosphere?

## VI. ECOLOGY

1. Internet Research. Search for the up-to-date information about Ecology as a science. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

ecology – экология relationship – взаимоотношение carbon dioxide – углекислый газ moisture – влажность nutrients – полезные вещества disparate – разный taxonomy – таксономия awareness – осведомленность misuse – неправильное использование, злоупотребление contribute – вносить вклад, способствовать vegetation – растительность distribution – распространение

### 3. Read and translate the text

Ecology is the study of the relationship of plants and animals with their physical and biological environment. The physical environment includes light and heat or solar radiation, moisture, wind, oxygen, carbon dioxide, nutrients in soil, water, and atmosphere. The biological environment includes organisms of the same kind as well as other plants and animals.

Because of the diverse approaches required to study organisms in their environment, ecology draws upon such fields as climatology, hydrology, oceanography, physics, chemistry, geology, and soil analysis. To study the relationships between organisms, ecology also involves such disparate sciences as animal behavior, taxonomy, physiology, and mathematics.

An increased public awareness of environmental problems has made ecology a common but often misused word. It is confused with environmental programs and environmental science. Although the field is a distinct scientific discipline, ecology does indeed contribute to the study and understanding of environmental problems.

The term "ecology" was introduced by the German biologist Ernst Heinrich Haeckel in 1866; it is derived from the Greek "oikos" ("household"), sharing the same root word as "economics". Thus, the term implies the study of the economy of nature. Modern ecology, in part, began with Charles Darwin. In developing his theory of evolution, Darwin stressed the adaptation of organisms to their environment through natural selection. Also making important contributions were plant geographers, such as Alexander von Humboldt, who were deeply interested in the "how" and "why" of vegetation distribution around the world.

The thin mantle of life that covers the earth is called the biosphere. Several approaches are used to classify its regions.

### 4. Find English equivalents:

биологическая среда гидрология химия почвенный анализ таксономия природная организация несколько подходов

### 5. General understanding:

What does ecology study? What fields are connected with ecology? Who introduced the term "ecology"? What is biosphere?

# 6. Match the parts:

Ecology does indeed contribute to The biological environment includes Darwin stressed the adaptation of organisms to Plant geographers were deeply interested in Ecology also involves such disparate sciences vegetation distribution. their environment through natural selection. organisms of the same kind. as animal behavior, taxonomy and so on. the study of environmental problems.

### VII. DIVERSITY

1. Internet Research. Search for the up-to-date information about species diversity. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

community – сообщество dominance – доминирование diversity – разнообразие to influence – влиять evidence – характеристика, признак

layering – разбитие на уровни stratification – стратификация shrub – кустарник oxygen – кислород

### 3. Read and translate the text

The community has certain attributes, among them dominance and species diversity. Dominance results when one or several species control the environmental conditions that influence associated species. In a forest, for example, the dominant species may be one or more species of trees, such as oak or spruce; in a marine community, the dominant organisms frequently are animals such as mussels or oysters. Dominance can influence diversity of species in a community because diversity involves not only the number of species in a community, but also how numbers of individual species are apportioned.

The physical nature of a community is evidenced by layering, or stratification. In terrestrial communities, stratification is influenced by the growth form of the plants. Simple communities such as grasslands, with little vertical stratification, usually consist of two layers, the ground layer and the herbaceous layer. A forest has up to six layers: ground, herbaceous, low shrub, low tree and high shrub, lower canopy, and upper canopy. These strata influence the physical environment and diversity of habitats for wildlife. Vertical stratification of life in aquatic communities, by contrast, is influenced mostly by physical conditions: depth, light, temperature, pressure, salinity, oxygen, and carbon dioxide.

### 4. Find English equivalents:

- доминирование
- многообразие
- вид
- сообщество
- стратификация
- травяной
- навес
- среда обитания
- физические условия

### 5. Put the letters into correct order:

- pcanyo
- ancemindo
- tyversidi
- speesci
- couitynmm
- tificaiontstra
- habatsit
- usherbace

6. Match a word with its definition:

7. Make up five questions on the text.

external – внешний biotic – биотический, живой abiotic – абиотический, неживой ecosystem – экосистема interaction – взаимодействие human-induced – вызванный человеком pattern – условие concerned – заинтересованный citizen - гражданин advocate – защитник, сторонник impact – влияние

## 2. Read and translate the text

Environment comprises all of the external factors affecting an organism. These factors may be other living organisms (biotic factors) or nonliving variables (abiotic factors), such as temperature, rainfall, day length, wind, and ocean currents. The interactions of organisms with biotic and abiotic factors form an ecosystem. Even minute changes in any one factor in an ecosystem can influence whether or not a particular plant or animal species will be successful in its environment.

Organisms and their environment constantly interact, and both are changed by this interaction. Like all other living creatures, humans have clearly changed their environment, but they have done so generally on a grander scale than have all other species. Some of these human-induced changes – such as the destruction of the world's tropical rain forests to create farms or grazing land for cattle – have led to altered climate patterns. In turn, altered climate patterns have changed the way animals and plants are distributed in different ecosystems.

Scientists study the long-term consequences of human actions on the environment, while environmentalists-professionals in various fields, as well as concerned citizens-advocate ways to lessen the impact of human activity on the natural world.

## 3. Find English equivalents:

- живой
- неживой
- окружающая среда
- климатические условия
- ученые
- специалист по проблемам окружающей среды
- последствия

# 4. Match a word with its definition:

- 1. impact
- 2. biotic
- 3. interaction
- 4. abiotic
- 5. citizen
- A. Produced by life or living organisms.
- B. A significant or strong influence.
- C. A person who is legally recognized as a member of a state.
- D. Nonliving, characterised by the absence of life.
- E. Exchange between two or more objects.

# 5. What is the best title for this article?

- 1. Tropical Rain Forests
- 2. Environment
- 3. Humans

## 6. Make up five questions on the text.

root – источник virtually – фактически to increase – увеличиваться crowding – перенаселенность habitat – среда обитания The Population Division of the United Nations – подразделение занимающееся вопросами роста населения в Организации Объединенных Наций to estimate – оценивать to assume – допускать, предполагать conservation – охрана, защита alter – изменять literacy – грамотность reproductive - репродуктивный

## 2. Read and translate the text

Human population growth is at the root of virtually all of the world's environmental problems. Although the growth rate of the world's population has slowed slightly since the 1990s, the world's population increases by about 77 million human beings each year. As the number of people increases, crowding generates pollution, destroys more habitats, and uses up additional natural resources.

The Population Division of the United Nations (UN) predicts that the world's population will increase from 6.23 billion people in 2000 to 9.3 billion people in 2050. The UN estimates that the population will stabilize at more than 11 billion in 2200. Other experts predict that numbers will continue to rise into the foreseeable future, to as many as 19 billion people by the year 2200.

Although rates of population increase are now much slower in the developed world than in the developing world, it would be a mistake to assume that population growth is primarily a problem of developing countries. In fact, because larger amounts of resources per person are used in developed nations, each individual from the developed world has a much greater environmental impact than does a person from a developing country. Conservation strategies that would not significantly alter lifestyles but that would greatly lessen environmental impact are essential in the developed world.

In the developing world, meanwhile, the most important factors necessary to lower population growth rates are democracy and social justice. Studies show that population growth rates have fallen in developing areas where several social conditions exist. In these areas, literacy rates have increased and women receive economic status equal to that of men, enabling women to hold jobs and own property. In addition, birth control information in these areas is more widely available, and women are free to make their own reproductive decisions.

## 3. Translate the following sentences (use your active vocabulary):

- 1. ООН оценивает, что рост населения стабилизируется в 2200 году.
- 2. Женщины свободны в выборе права иметь детей.
- 3. Перенаселенность приводит к загрязнению окружающей среды.
- 4. Уровень грамотности возрос и женщины получили равные права с мужчинами.
- 5. Рост населения не только проблема развивающихся стран.

## 4. Match the word with its definition:

- 1. root
- 2. crowding
- 3. increase
- 4. conservation
- 5. habitat
- A. A specific place or natural conditions in which a plant or animal lives.
- B. The primary source.
- C. The act by which somebody is crowded.
- D. The act of preserving, guarding, or protecting.
- E. To become larger.

## 5. What is the best title for this article?

- 1. Population Growth
- 2. Population Decrease
- 3. World's Population

## 6. Make up five questions on the text.

greenhouse – парник to permit – пропускать to retard – задерживать nitrous oxide – закись озота to insulate – изолировать maintain – поддерживать devastating – разрушительный, поразительный to inundate – затоплять to disrupt – разрушать hurricane – ураган drought – засуха

## 2. Read and translate the text

Like the glass panes in a greenhouse, certain gases in the Earth's atmosphere permit the Sun's radiation to heat Earth. At the same time, these gases retard the escape into space of the infrared energy radiated back out by Earth. This process is referred to as the greenhouse effect. These gases, primarily carbon dioxide, methane, nitrous oxide, and water vapor, insulate Earth's surface, helping to maintain warm temperatures. Without these gases, Earth would be a frozen planet with an average temperature of about -18 °C (about 0 °F) instead of a comfortable 15 °C (59 °F). If the concentration of these gases rises, they trap more heat within the atmosphere, causing worldwide temperatures to rise.

Within the last century, the amount of carbon dioxide in the atmosphere has increased dramatically, largely because people burn vast amounts of fossil fuels – coal and petroleum and its derivatives. Average global temperature also has increased – by about 0.6 Celsius degrees (1 Fahrenheit degree) within the past century. Atmospheric scientists have found that at least half of that temperature increase can be attributed to human activity. They predict that unless dramatic action is taken, global temperature will continue to rise by 1.4 to 5.8 Celsius degrees (2.5 to 10.4 Fahrenheit degrees) over the next century. Although such an increase may not seem like a great difference, during the last ice age the global temperature was only 2.2 Celsius degrees (4 Fahrenheit degrees) cooler than it is presently.

The consequences of such a modest increase in temperature may be devastating. Already scientists have detected a 40 percent reduction in the average thickness of Arctic ice. Other problems that may develop include a rise in sea levels that will completely inundate a number of low-lying island nations and flood many coastal cities, such as New York and Miami. Many plant and animal species will probably be driven into extinction; agriculture will be severely disrupted in many regions, and the frequency of severe hurricanes and droughts will likely increase.

# 3. Translate the following sentences (use your active vocabulary):

- 1. Эти газы изолируют поверхность Земли.
- 2. Многие виды растений и животных возможно исчезнут.
- 3. Этот процесс называется парниковым эффектом.
- 4. Определенные газы в атмосфере Земли задерживают солнечную радиацию.
- 5. Сельское хозяйство серьезно пострадает во многих регионах.

# 4. Match the parts:

Average global temperature also has increased Many plant and animal species will This process is referred to These gases A 40 percent reduction was detected as the greenhouse effect. in the average thickness of Arctic ice. insulate Earth's surface. by about 0.6 Celsius degrees. probably be driven into extinction.

## 5. What is the best title for this article?

- 1. Sun's Radiation
- 2. Average Earth's Temperature
- 3. Global Warming

6. Make up five questions on the text.

## **XI. DEPLETION OF THE OZONE LAYER**

# 1. Internet Research. Search for the up-to-date information about ozone layer. Prepare a one-minute talk to the class.

# 2. Study the vocabulary

ozone layer – озоновый слой band – слой ultraviolet rays – ультрафиолетовая радиация chlorofluorocarbons (CFCs) – фреон extended – длительный depletion – уменьшение cataract – катаракта decline – снижение photosynthetic – фотосинтетический to ban – запрещать emission – выделение, выброс stringent – строгий prohibition – запрет to implement - выполнять

## 3. Read and translate the text

The ozone layer, a thin band in the stratosphere (layer of the upper atmosphere), serves to shield Earth from the Sun's harmful ultraviolet rays. In the 1970s, scientists discovered that chlorofluorocarbons (CFCs) – chemicals used in refrigeration, air-conditioning systems, cleaning solvents, and aerosol sprays-destroy the ozone layer. CFCs release chlorine into the atmosphere; chlorine, in turn, breaks down ozone molecules. Because chlorine is not affected by its interaction with ozone, each chlorine molecule has the ability to destroy a large amount of ozone for an extended period of time.

The consequences of continued depletion of the ozone layer would be dramatic. Increased ultraviolet radiation would lead to a growing number of skin cancers and cataracts and also reduce the ability of immune systems to respond to infection. Additionally, growth of the world's oceanic plankton, the base of most marine food chains, would decline. Plankton contains photosynthetic organisms that break down carbon dioxide. If plankton populations decline, it may lead to increased carbon dioxide levels in the atmosphere and thus to global warming. Recent studies suggest that global warming, in turn, may increase the amount of ozone destroyed. Even if the manufacture of CFCs is immediately banned, the chlorine already released into the atmosphere will continue to destroy the ozone layer for many decades.

In 1987, an international pact called the Montreal Protocol on Substances that Deplete the Ozone Layer set specific targets for all nations to achieve in order to reduce emissions of chemicals responsible for the destruction of the ozone layer. Many people had hoped that this treaty would cause ozone loss to peak and begin to decline by the year 2000. In fact, in the fall of 2000, the hole in the ozone layer over Antarctica was the largest ever recorded. The hole the following year was slightly smaller, leading some to believe that the depletion of ozone had stabilized. Even if the most stringent prohibitions against CFCs are implemented, however, scientists expect that it will take at least 50 more years for the hole over Antarctica to close completely.

## 4. Translate the following sentences (use your active vocabulary):

- 1. Фреон это химикат, используемый в охлаждении.
- 2. Фотосинтетические организмы разрушают углекислый газ.
- 3. Озоновый слой служит щитом Земли от губительного ультрафиолетового солнечного излучения.
- 4. Продолжающее уменьшение озонового слоя.
- 5. Снижение выбросов химических веществ ответственных за разрушение озонового слоя.

# 5. Match the word with its definition:

- 1. prohibition
- 2. ray
- 3. emission
- 4. ozone
- 5. depletion
- A. A beam of light or radiation.
- B. It protects life on Earth from ultraviolet radiation.
- C. The act of sending or throwing out.
- D. The consumption of a resource faster than it can be replenished.
- E. An act of forbidding, disallowing something.

## 6. Make up five questions on the text.

### XII. HOW ECOSYSTEMS WORK. ECOSYSTEM MANAGEMENT

1. Internet Research. Search for the up-to-date information about ecosystem. Prepare a one-minute talk to the class.

# 2. Study the vocabulary

ecosystem – экологическая система to comprise – включать в себя to coin – придумывать interchange – взаимный обмен dominant – доминирующий vegetation – растительная жизнь biome – биом mangrove – мангровое дерево matter – вещество subsequent – последующий

### 3. Read and translate the text

Ecosystem comprises organisms living in a particular environment, such as a forest or a coral reef, and the physical parts of the environment that affect them. The term ecosystem was coined in 1935 by the British ecologist Sir Arthur George Tansley, who described natural systems in "constant interchange" among their living and nonliving parts.

The ecosystem concept fits into an ordered view of nature that was developed by scientists to simplify the study of the relationships between organisms and their physical environment, a field known as ecology. At the top of the hierarchy is the planet's entire living environment, known as the biosphere. Within this biosphere are several large categories of living communities known as biomes that are usually characterized by their dominant vegetation, such as grasslands, tropical forests, or deserts. The biomes are in turn made up of ecosystems. The living, or biotic, parts of an ecosystem, such as the plants, animals, and bacteria found in soil, are known as a community. The physical surroundings, or abiotic components, such as the minerals found in the soil, are known as the environment or habitat.

Any given place may have several different ecosystems that vary in size and complexity. A tropical island, for example, may have a rain forest ecosystem that covers hundreds of square miles, a mangrove swamp ecosystem along the coast, and an underwater coral reef ecosystem. No matter how the size or complexity of an ecosystem is characterized, all ecosystems exhibit a constant exchange of matter and energy between the biotic and abiotic community. Ecosystem components are so interconnected that a change in any one component of an ecosystem will cause subsequent changes throughout the system.

## 4. Put the letters into correct order:

- etatvegion
- maertt
- ectemosys
- sequesubnt
- bime
- terangechin
- donamint

### 5. Match the word with its definition:

- 1. comprise
- 2. ecosystem
- 3. biome
- 4. dominant
- 5. vegetation

A. A system formed by an ecological community and its environment that functions as a unit.

- B. Ruling; governing; controlling.
- C. Plants, taken collectively.
- D. To consist of.
- E. Any major regional biological community such as that of forest or desert.

### 6. Make up five questions on the text.

# XIII. ECOLOGY & ENVIRONMENT

# 1. Internet Research. Search for the up-to-date information about your region's environment. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

reaffirm – вновь подтверждать awareness – сознание, осведомленность perseverance – настойчивость, упорство sustenance – поддержка usher – представлять, вводить integrity – чистота, целостность cherished – желанный value - смысл overgrazed – истощенный (пастбище выбито скотом) degradation – ухудшение deforestation – вырубка леса tremendous – ужасный imbalance – дисбаланс

## 3. Read and translate the text

The three elements namely earth, water and space constitute the whole cosmos therefore it reaffirms to work with people towards creating awareness and as a movement for perseverance, sustenance of flora and fauna and cosmic elements and to usher ecology and environment of this earth where integrity of creation will be a cherished value.

### AIR

- Air pollution has now become a major killer with three million people dying of it every year.
- Carbon emissions doubled in three decades. Global warming is now a serious threat.
- US Carbon emissions are 16 % above 1990 levels making it a major polluter.

# WATER

• Forty percent of world population now faces chronic shortage of fresh water for daily needs.

• Half the world's wetlands have been lost and one-fifth of the 10,000 freshwater species is

extinct.

Contaminated water kills around 2.2 million people every year.

### LAND

• Since 1990, 2,4 % of the world's forests have been destroyed. The rate of loss is now 90,000 sq. km. every year.

• Now two-thirds of the world's farmlands suffer from soil degradation.

• Half the world's grasslands are overgrazed. India is 25 % short of its fodder needs.

### WILDLIFE

• 800 species have become extinct and 11,000 more are threatened.

• Almost 75 % of the world's marine captures is over fished or fully utilized. In North America, 10 fish species went extinct in the 1990s.

• Of the 9,946 known bird species, 70 % has declined in numbers.

### PEOPLE

• The world added 800 million people since 1990. In 2000, global population was 6 billion, up from 2.5 billion in 1950.

• In 10 years, the world will have to feed and house another billion

### CARING FOR THE NATURE

"Nature has everything for man's need but not his greed", – said once Mahatma Gandhiji. A largescale deforestation that is taking place around the globe is causing tremendous ecological and environmental imbalances throughout the world. The resultant fury of the nature is witnessed all around through drastic change in the climate, flash, floods, failure of rain and many more, causing damage to thousands of lives throughout the world.

## 4. Put the letters into correct order:

- nancesuste
- ustremend
- rfirmeaf
- detionforesta
- awnessare
- degtionrada
- vgrazeder

## 5. Make up five questions on the text.

trend – тенденция contrary – наоборот prophecy – предсказание efficient – эффективный tendency – тенденция inconsiderately – необдуманно hazard – опасность

## 2. Read and translate the text

"The Economist", the famous magazine of the United Kingdom, has analyzed the trend of the world in the twentieth century. The environment of the past 100 years has not been as bad as the people have thought. On the contrary, the environment of the world has been good and will be so until the next century. Although the population of the world has been increasing quickly during the last century, it has not caused any serious problems as world production has also been highly increased. The environment of the world has not been a disaster (like the prophecy of many others) because of the changes of many factors. There is the change of resource prices and society. The development of democracy and the planning of environment are to meet the pressure from the people.

It is seen that when there are more people, more consuming, more production, the use of natural is increasing. The price goes up when there is the need. There is then the force of being economical in use, the need to find new resource sites, new kinds of resources, new technology, and new ways for humanity. The mechanism of prices has been quite efficient in solving the problems of natural resource.

However, we need to accept that marketing mechanisms have not been quite satisfactory in solving environmental problems, particularly, where there is something in nature, which does not belong to any one. Therefore, there is the tendency that resources will be used inconsiderately. There is no one to care for conservation. There is the example that resources in the sea and the ocean will continue being in hazard in the next century.

## 3. Match the word with its definition:

- 1. tendency
- 2. prophecy
- 3. efficient
- 4. population
- 5. hazard
- A. The people living within a political or geographical boundary.
- B. Making good, thorough, or careful use of resources.
- C. The chance of suffering harm.
- D. A likelihood of behaving in a particular way or going in a particular direction.
- E. A prediction, especially one made by a prophet or under divine inspiration.

# 4. What is the best title for this article?

- 1. The Way Of The World
- 2. The Famous Magazine
- 3. The Development Of Democracy

# 5. Make up five questions on the text.

## XV. THE CRISIS OF ECOLOGY IN THE DEVELOPING WORLD

1. Internet Research. Search for the up-to-date information about the ecological crisis in your country. Prepare a one-minute talk to the class.

## 2. Study the vocabulary

analysis – исследование to regard – рассматривать incidence – охват, процент to pile up – скапливаться emphasize – подчеркивать short-term – краткосрочный impoverished – бедный deterioration – ухудшение to heighten – усиливать affected – находящийся под влиянием ratio – коэффициент

### 3. Read and translate the text

In the analysis, "The Economist" may be too positive in assessing the environmental problem and regarding only one aspect like pollution in industry. There is the conclusion that the incidence of pollution in the air has been decreasing. Nothing is said about the pollution of toxic waste, which has been left, and keeps piling up in the environment for so long in the world of industry. This tendency will continue until the next century as the government in industrial countries like America, Japan and Germany have not been successful in solving the problems of toxic waste, which has been accumulating for so long. It is because the main environmental policy emphasizes only the problems, which are visible and can be felt. The emphasis is on short-term pollution, which has an immediate effect to on people's health. The accumulating pollution cannot be seen easily, it is then neglected.

Besides, the analysis of the population of the world overlooks one main fact – although the growth rate is not as high as before the population of the world in this turn of the century will increase by approximately 80 million a year. (The amount is equal to the number of people in Germany.) It means that this amount of population among the impoverished and the deterioration of rural environment will heighten the environment crisis, which will have an effect on the production system and the ways of living of the people in developing countries. The very high increase of the population has affected the development in city and the living in urban areas. At present, there are 2.6 billion people living in cities. 1.7 billion of that amount live in the cities of developing countries. There is the prediction that the ratio will accelerate until the year 2015. Three quarters of the world population is in developing countries, which are very crowded, and the health problems are serious.

### 4. Match the parts:

This amount of impoverished populationin solving theThere is the conclusion that the incidence of pollutionis in developThree quarters of the world populationthe developAmerica has not been successfulwill heighteThe increase of the population has affectedin the air has

in solving the problems of toxic waste. is in developing countries. the development in the living in urban areas. will heighten the environment crisis. in the air has been decreasing.

## 5. Make up five questions on the text.

1. Study the vocabulary assume – допускать, предполагать innovation – инновация, новшество encouraging – поддержка regard – забота to regard – считать

respond – реагировать enhance – увеличивать, улучшать entire – целый emphasize – подчеркивать, предавать особое значение conscience – (о)сознание

## 2. Read and translate the text

Among the rich countries, it is assumed that it is not so hard to solve environmental problems of the 21<sup>st</sup> century. These countries will compete with each other in improving the quality of their products. There is always the search for innovation, environmental innovation, in particular, is an important instrument in encouraging the progress of the industrial world. At present, the rich countries have already had the high potentiality of developing new technology for the production process with the regard for environmental quality.

The innovative analyst regards that the ability of industry in responding to the environmental problems is the main indicator if that kind of industry can compete at the world level. Those who want to succeed must integrate the main idea with the production system. It means the protection of the environment, solving the problem of pollution, increasing the efficiency in using natural resources and power. The strict standard of the environment will enhance the thinking of production method, which will benefit the environment.

At present, the governments of the industrial world, like Sweden, agree with "Environment Innovation Ways". There is a conclusion in the latest report of the national environment that "The policy on environment of the Swedish government is very important in enhancing the modernity in industrial business sectors. The improvement of the environment has turned out to be the main factor in accelerating the competition in this industry."

This is the entire new western concept, which emphasizes "How to bring about Ecological Modernization." It is the new concept on new environmental technology and every step is used for the industrial production process. However, there needs to be adaptation of the whole production structure, which needs systematic «environmental planning», and the adapting of world vision and the conscience of the environment of the people in every field. The concept of "Ecological Innovation" does not emphasize only the technology but also regards the importance of "Environmental management" which needs to be done in both the governmental and private sectors. This can be seen in countries like Sweden, Denmark, Holland and Germany, which are regarded as the leaders in "Environmental Innovation".

# 3. Match the word with its definition:

- 1. encouraging
- 2. entire
- 3. emphasize
- 4. respond
- 5. innovation
- A. To stress, give extra weight to (something).
- B. Whole; complete.
- C. To do something in response.
- D. The introduction of something new.
- E. Supporting by giving encouragement.

### 4. What is the best title for this article?

- 1. Environmental Problems
- 2. Environmental Innovation
- 3. Environmental Pollution

### 5. Make up five questions on the text.

## XVII. ENVIRONMENTAL PROBLEMS (dialog)

1. Internet Research. Search for the up-to-date information about environmental problems in your region. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

concerned – озабоченный, беспокоящийся circulation – круговорот delicious – очень вкусный luxurious – дорогой

mankind – человечество vital – жизненный officials – власти

### 3. Read the dialog and do the exercises

**a. Fill** water environment harmful ocean environmental substances pollution treasure peoples in: - Why are people all over the world so much concerned about ... problems?

- The first thing to be said is that they are the problems of all ... and nations. If land belongs to the countries and certain people, the air and water of the ... do not belong to any country or man but used by everybody. It is our common .... Then I must say that ... is not only our life, but also the future of the Earth.

- Why is water ... so dangerous?

- There are many reasons to be troubled by the ... pollution. The first reason is that water is life for the whole planet. Life appeared in the water and depends even now on its quality. We drink only fresh water, but the circulation of the water on the Earth is such that the quality of fresh water and the quality of salted water of the World Ocean are closely connected. The second reason is richness of the water in food supplies. Sea products such as crabs and lobsters are rich in vitamins and good for health, they are considered to be delicious, luxurious food. Fish is rich in many important .... Water weeds are used as food by both people and animals, they also take part in the oxygen restoring. If the water is polluted, we will run out of such good food and there will be less oxygen produced, which can be very ... for the planet and mankind.

## b. Translate the dialog and retell it using your translation (act it out)

- How does water get polluted?

- Ships let trash into it, sometimes oil flows from broken ships. The temperature of the World Ocean grows slightly but it results in enormous growth of some water weeds which absorb oxygen and pollute the water with the trash of their vital activity.

- Is air pollution dangerous?

- Yes, it is. Breathing polluted air causes many diseases, damages buildings and forests.

- Can a man in the street help Nature somehow?

- Yes, there are many ways to help Nature. Every man's work will be little but there are many of us and together we can help a lot.

- What can you do to help Nature?

- I can reduce the usage of gas, electricity and drinking water, I can reuse many things (clothes, for example), I can recycle paper, cans and bottles. At the same time I can help birds feeding them in winter and also I can stop picking flowers and damaging trees.

- How can the state help to protect Nature?

- The state makes laws which protect the nature, the state regulates the use of land and water, the state prohibits harming the nature. Officials check the usage of filters and purifying processes.

- Is it important to protect plants and animals?

- Yes, it is. Plants produce oxygen and vitamins which people and animals can not live without. Plants and animals are one big ecological system. If we harm one part of it, we can destroy our own life. The main area producing oxygen is in the Amazon region. The second in importance is Siberia in Russia.

- Is it dangerous to pollute land?

-Yes, very much. We eat plants, but if the land is polluted, the plants become poisonous. If we eat them, we ruin our health. It is the same as with fish. If we pollute water, the fish become ill and poisonous. If we eat bad fish, we can get sick.

- What is greenhouse effect?

- The greenhouse effect means that the temperature and the humidity of the Earth atmosphere grow up year by year, like in a greenhouse, because thick polluted air does not let the warmth out into space. - What does Green Peace do?

- Green Peace organizes campaigns to protect Nature. This organization monitors the protection of environment when plants, ports and roads are built.

- What can happen if we do not stop the pollution?

- The life on the Earth will die out.

## **XVIII. ENVIRONMENTAL PROTECTION – PART I**

1. Internet Research. Search for the up-to-date information about environmental protection in your country. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

to disappear – исчезать according – соответственно contradiction – противоречие, конфликт dramatic – существенный anxious – беспокоящийся exhaust fumes – выхлопные газы dump – сливать disruption – разрушение

### 3. Read and translate the text

Many centuries ago people lived in harmony with nature because industry was not much developed. There was no ecological problem until people built lots of plants and factories which sent wastes into the air, water and land where they didn't disappear but lasted forever in one form or another. Nowadays people live only according to their wants and requirements, they ignore the laws of nature. That's why today the contradictions between man and nature are dramatic.

People are slowly destroying the nature environment around them. Today we are anxious about the state of the air we breathe because every year world industry throws out into atmosphere about 1 000 million tons of dust, smoke and other harmful substances and people of many cities suffer from smog.

Another reason why there is such high level of air pollution in large cities is because of car exhaust fumes from very intensive transport. A great number of plants get used to dump poisonous chemical wastes in rivers, lakes and seas that has led to polluting water and killing fish life.

At present time pollution from sinking ships and tankers with oil is increasing and there is a strong destruction of sea life.

We face the fresh water supply problem today because of the depletion of water resources and the disruption of water cycle.

### 4. Match the word with its definition:

- 1. dump
- 2. contradiction
- 3. disappear
- 4. disruption
- 5. anxious
- A. A continuing act of disorder.
- B. Being in painful suspense.
- C. To vanish.
- D. A logical incompatibility among two or more elements.
- E. To release, especially in large quantities and chaotic manner.

## 5. Make up five questions on the text.

## **XIX. ENVIRONMENTAL PROTECTION- PART II**

# 1. Internet Research. Search for the up-to-date information about Chernobyl disaster. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

to mention – упоминать to lead – приводить disaster – трагедия to affect – наносить ущерб contaminated – зараженный fund – фонд humankind – человечество universal – всеобщий concern – забота

## 3. Read and translate the text

Speaking about atmosphere we should mention ozone holes which are result of air pollution and their increase can lead to the destruction of the whole great chain of life of our planet. The pollution of the air, oceans, seas, rivers and lakes and the destruction of the ozone layer could lead our planet to a global catastrophe. But the most terrible catastrophe of our age is the Chernobyl disaster which has resulted not only in atomic explosion but has brought death to 300 thousands hectares of farm lands and has affected the lives of millions of people. The radiation doses have affected and will continue to affect the health of people living in contaminated areas.

The Earth is our home that's why we must take measures to fight land pollution and keep our environment clean; we must plant trees and flowers and take care of animals, we must not throw our wastes into the rivers.

In many countries environmental protection organizations such as "Green Peace", "Friend of the Earth", "World Wild Life Fund" are set up which try to put pressure upon the governments that don't care for ecology in their countries. The humankind will be able to survive only if we all realize that environmental protection is our universal concern.

## 4. Match the word with its definition:

- 1. disaster
- 2. humankind
- 3. contaminate
- 4. fund
- 5. universal
- A. To corrupt by contact; to pollute.
- B. An unexpected natural or man-made catastrophe.
- C. Common to all members of a group or class.
- D. The human race; Homo sapiens.
- E. An organization managing such money.

# 5. Make up five questions on the text.

## XX. ENVIRONMENTAL PROBLEMS: AIR, LAND AND WATER POLLUTION AND PROTECTION OF ENDANGERED SPECIES

1. Internet Research. Search for the up-to-date information about air, land and water pollution in your country. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

disaster – беда, катастрофа harmful – неблагоприятный acid – кислота chimney – труба, дымоход ray – излучение common – общий unhealthy – нездоровый, вредный, опасный elimination – уничтожение whale – кит to hunt – охотиться tusk – бивень jewellery – ювелирные изделия conservation – сохранение to cut – прекращать to avoid – избегать renewable – возобновляемый источник топлива solar – солнечный to advocate – пропагандировать violence – насилие to violate – нарушать

### 3. Read and translate the text



The statistics shows that men have 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 1 billion (in 1830) to nearly 6 billion today. It's a disaster and it's still happening. But not all the news is bad. You can imagine what happens to a living thing if its environment is polluted or changed in a harmful way.

There are several problems concerning the environment: water pollution, air pollution, land pollution and defence of animals.

The first problem is water pollution in the country. Most big cities pour their waste into seas and rivers. We love rain. Rain helps our plants to grow big and strong. But sometimes the rainwater is not as clean as it could be. Man-made chemicals get into the air and mix with the rainwater, making acid rain. The acid water runs into rivers and lakes. The rivers and lakes become so acid that fish cannot live there.

We like to go to the river, lake or sea to swim. But if there are chemicals in the water, it is not safe enough for swimming. If the water is polluted, it can make us sick.

The second problem is air pollution. When there are too many harmful things in the air, it is polluted.

People and animals need clean air with plenty of oxygen in it. Oxygen is added to the air by plants. So you understand how important it is to have a lot of trees, bushes and grass.

Fume from the chimneys of factories, gases which are in refrigerators and sprays pollute the air. They damage the ozone layer that covers the earth. This layer of gas protects us from the dangerous rays of the sun. There are now holes in the ozone layer because there are too many gases in the air. One is over the North Pole and the second over the South Pole, over Antarctica. It is very dangerous for people as it can make them sick. Some people pollute the air by smoking. Too much smoke in the air can hurt our lungs.

The wind blows a lot of the air pollution out to sea. Sometimes the rain helps to clean the air, but sometimes the rain water mixes with the gases in the air. Then the air pollution also becomes land and water pollution?

Air and water pollution is one of the problems millions of people are worried about today.

The planet Earth is our common home. Everything is connected on the earth. If something goes wrong in some part of the world, everybody suffers. People's activities can make the environment unhealthy.

People are producing too many gases and because of that the earth is getting hotter. These gases hold heat. Plants and trees help to take gases, such as carbon dioxide, from the air, but we have now destroyed too many trees. There are not enough trees and plants to do this job.

Because the earth is getting hotter, the ice is melting. Because the ice is melting, the level of the sea is slowly rising.

Another problem of land pollution is making large piles of trash. Trash is made of boxes, bags, paper, cans, plastics, clothing and bottles. It is also made up of old food called garbage.

Some trash gets burned. When plastics and some other man-made things are burned, gases are given off. Too much of these gases can make people and animals sick.

Another problem of land pollution is using too many chemicals to grow vegetables and fruit. Too many chemicals in the ground can harm the soil. If our vegetables, fruit and meat are grown without chemicals, they will be safer for us to eat.

One of the serious problems is elimination of species all around the world. There are five billion people in the world and they live in all different corners of it. They live on the snow and ice of the Poles and in the tropical jungles on the equator. They have climbed the highest mountains and walked on the sea bed. Some of them have even been the earth and visited the moon. Their life depends on the world around them.

The human species is the most numerous and the most powerful of all the animals on the earth. Many animals and birds on the Earth are disappearing nowadays. Many of them are in danger of becoming extinct. This is because man hunts them, destroys and pollutes their habitat. Pollution and destruction change the balance of nature.

I would like to tell you about animals in danger of extinction.

The blue whale is the largest animal which has ever lived. It is three times heavier than the biggest dinosaur. Once there were over 200000 of these creatures living in the Atlantic and Pacific oceans. However, since the seventeenth century they have been hunted for their oil and meat. In fact, so many of them were killed that by 1963 their population had been reduced to just 1000. Today it is even less than that. This animal is protected by international law, but it is still being hunted. Many people believe that it will soon be extinct.

The African elephant is the world's largest land animal. In 1970 there were about 3.3 million of them living in the wild. Since then enormous numbers of them have been killed for their tusks, which are used to make ornaments and jewellery. Today there are fewer than one million of these animals left. Even though they are now protected, they are still being hunted. Between 50000 and 150000 of them are killed every year. 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.

Most scientists carrying research on climate change agree that human activities are causing an increase in "greenhouse gases" in the Earth's atmosphere. As a result, global temperatures are rising. The most important greenhouse gas is carbon dioxide, which is released when we burn fossil fuels, such as oil, gas or coal. Heating our homes, generating electricity in power stations and driving our cars all contribute to climate change.

We can avoid the worst impacts of climate change by starting to reduce carbon dioxide emissions now. Some forms of energy, such as renewables, are carbon free. Hydro-electricity is a familiar form of renewable energy. Solar power, which can involve placing photovoltaic cells on roofs, and other suitable locations, is far less developed. Solar power is currently expensive, but the costs are dropping rapidly. Britain has excellent wind energy resources, which can be exploited through offshore windfarms as well as turbines located on hilltops.

Cutting energy use is the key to reducing carbon emissions, and could have a big effect on our lives.

Another problem concerning ecology is the defence of animals. There are different organizations in the world protecting their rights. For example, there is a terrorist organization advocating violence. Two extreme groups, the Animal Rights Militia and the Justice Department, make lists of targets and threaten those who are guilty, as they believe, of violating animals' rights. A website of the ALF says: "The Earth is not dying, it is being killed. And those that are killing it have names and addresses. What are you doing for animals and Earth tonight?"

Today, many scientists and world leaders realize that the Earth is in danger. It's really very simple. Either we stop killing the Earth or we will kill ourselves.

## 4. Make up five questions on the text.

# XXI. THE ECOLOGICAL SITUATION IN YOUR CITY (dialog)

# 1. Internet Research. Search for the up-to-date information about the ecological situation in your city. Prepare a one-minute talk to the class.

## 2. Study the vocabulary

awful – ужасно sorry state – плачевное состояние admissible – допустимый lead – свинец to install – устанавливать to produce – вырабатывать undrinkable – непригодный для питья illegal – нелегальный to consume – потреблять purifying – очистительный to recycle – перерабатывать landfill – мусорная свалка litter – мусор to dispose – размещать to get used to – привыкать psychic – психический disorder – расстройство to sum up – подводить итог

### 3. Read and translate the dialog

You and your friend are discussing the ecological situation in your city. Discuss the following ecological problems and choose the one you both find most serious:

- air pollution
- rubbish
- water pollution
- noise

- What's your opinion about the ecological situation in our city?

- I don't think that it is awful but of course there are some problems.

- I can't agree with you. In my opinion, our city is in a sorry state. And the most important problem is air pollution. Every day a huge number of plants and factories emit lots of harmful substances into the atmosphere of our city so the concentration of harmful substances in the air is over ten times the admissible level. Besides, a great increase in the use of private cars has caused an increase in a new kind of air pollution. The most dangerous pollutant from cars is lead. Even small amounts of it can affect the brain and nervous system of people. What is more, breathing poisonous air may lead to serious lung diseases. Do you agree with me?

- Absolutely! However, we can do something to decrease the level of harmful substances in the air. For example, car owners should install special filters on their cars, besides the government should move all plants and factories outside the city. And of course we should plant more parks because trees produce oxygen and clean the air. In my opinion, water pollution is a far more serious problem.

- Why do you think so?

- First of all, industrial pollution has made the water in our river completely undrinkable and thousands of fish die every year as a result of the illegal dumping of waste into our river by factories and plants. If this trend continues, one day we won't have any fish at all. Another problem is that people consume too much water so in the future we won't have enough fresh water for everybody.

- I don't think that the situation is so critical because we have lots of water underground. We can also improve the quality of water in our river by installing different purifying systems. What is more, we can recycle rain water and use it to water plants or for washing.

- Yes, I agree with you. The building of new water facilities is now less important than using what we already have efficiently and wisely. And what about rubbish? Don't you think that our city is slowly turning into a big landfill site? Then it is loads of litter everywhere. People throw it on the ground instead of putting it into a litter bin.

- I can see what you mean but the reason is that there aren't enough litterbins in public places. If there were more litterbins, our city would be much cleaner.

- But the main problem is that we're producing a huge amount of rubbish each year — millions and millions of tones of it. And the existing landfill sites are nearly full. Where are we going to put all our rubbish in the future? Finding new sites isn't easy. I'm afraid that soon we won't have enough landfill sites to dispose of our rubbish.

- I'm with you there. Of course we've all got to try and reduce the amount of rubbish we throw away. We can do that by buying unpackaged goods, like fruit and vegetables, rather than goods which are wrapped and packaged in plastic. Besides, we shouldn't dump our rubbish without thinking which things, such as bottles and paper, can be recycled. But what about noise?

- You can't be serious! Is it an ecological problem?

- Of course it is. Although noise is not a chemical and cannot be seen like a broken car, it is a kind of pollution. Noise is all around us, wherever we live, and we do not notice it most of the time because we've got used to it. Yet excessive noise can lead to serious psychic disorders. And don't forget about people living near the airport. They suffer from the noise of large and powerful jet airliners taking off and landing.

- I've never thought that noise can be a real problem.

- Yes, it's a serious problem because loud noise can make people ill. People who are exposed to loud noises all the time become very nervous and upset. Moreover, they run a risk of going deaf.

- That's terrible. But I think that other people in our city are also exposed to loud noise, for example, noise from cars, buses or trains. Besides, when people listen to loud music they may disturb their neighbours. And the power of our music centres is growing all the time. Of course, we don't pay attention to it but the effects can be dangerous.

- I completely agree with you. We can install different air filters and water treatment facilities or recycle rubbish but we don't know how to fight against the growing noise around us. That's why I think that noise pollution is the most serious environmental problem in our city.

- You are absolutely right! To sum up, we've chosen noise as the most serious ecological problem for our city.

# 4. Act out the dialog

survey – исследование drugs – наркотики particular – определенный rebel – бунт adult – взрослый dare – храбрость helpline – телефон доверия teenager – подросток to convince – убеждать to double – удваивать Ecstasy – «Экстази» to addict – пристраститься stimulant – возбуждающий hallucinogenic – галлюциногенный LSD – «ЛСД» fashionable – модный

### 2. Read and translate the text

The government decided that it is needed a new anti-drugs campaign. The survey showed that teenagers knew that drugs were bad for them but they could not actually name any health risk associated with particular drugs. 61 % of teenage drug-users would consider stopping using drugs if they thought they were a serious danger to their health.

Many teenagers ignored drugs warnings at schools. In fact, it was proved that in some cases, the reason for taking drugs was to rebel against warnings from adults.

New anti-drugs campaign has been started. This new campaign informs young people of the health risks associated with particular drugs.

Many teenagers try drugs as a "dare". The health authority has put the number of their drugs helpline in a lot of places. The people at the helpline advise people what to do if they have a drug problem or need more information about the dangers of drugs.

World's drug problem is growing. The highest increase in drug use is among teenagers. How can they be convinced to stop?

Last year, the number of teenagers who had tried drugs was 6 % in Greece, 15 % in France and 30 % in Britain.

Statistics show that drug use by teenagers has doubled since 1999. Half teenagers who were interviewed admitted they had tried at least one type of drug. 70 % said they had been offered drugs in the past 3 months.

31 % of interviewed teenagers could not name a health risk associated with Ecstasy.

49 % of young drug-users say they would stop using drugs if they thought they were getting addicted.

35 % of young drug-users say they don't know why they use them.

MOST young drug-users say that they listen more to what their friends say about drugs than to what the media say about drugs.

THE NUMBER of young males taking drugs is higher than the number of young females.

The drugs that the government is most worried about are stimulant drugs such as Ecstasy (or "E" as it is commonly known) and hallucinogenic drugs such as LSD. Many young people believe these drugs to be fashionable.

### 3. Translate the following:

- Количество мальчиков, употребляющих наркотики, больше, чем количество девочек.
- Во всем мире растет проблема употребления наркотиков.
- Многие подростки пробуют наркотики «для храбрости».
- ... опрашиваемых подростков не знали, что употребление «Экстази» причиняет вред здоровью.
- ... в некоторых случаях причиной для начала употребления наркотиков являлся бунт против предостережений взрослых.

## 4. What is the best title for this article?

- 1. ANTI-DRUGS CAMPAIGN
- 2. PROBLEMS OF YOUTH
- 3. ALL ABOUT DRUGS

### 5. Make up five questions on the text.

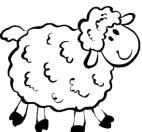
## XXIII. TEXT G

# 1. Study the vocabulary

to stun — оглушать, ошеломлять research — (научное) исследование lamb — ягненок, барашек; овечка adult — взрослый, совершеннолетний **DNA** — ДНК едд — биол. Яйцеклетка heated discussion — горячая дискуссия implication — следствие, вывод; последствия, результаты to draw a conclusion — сделать, извлечь вывод compelling — неодолимый, неотразимый, непреодолимый harmful — вредный, пагубный severe — жестокий, тяжелый (о болезни, утрате и т. П.); крупный, ощутимый (об убытке и т. П.) treatment — обращение (of — с кем-л.) obvious — очевидный, явный, ясный sheer — абсолютный, полнейший, сущий, явный loss — утрата, потеря creature — создание, творение trial — испытательный, пробный **nuclei** — ядра to survive — остаться в живых: выжить

#### abnormality — отклонение; аномалия in addition — в добавление, к тому же, сверх, кроме того identity — индивидуальность; личность uniqueness — единственность, уникальность lung — анат. Легкое liver — анат. Печень kidney — анат. Почка heart — анат. Сердце chimpanzee, chimp — шимпанзе gene — ген via — посредством чего-л., с помощью чего-л. transgenic — трансгенный majority — большинство outweigh-перевешивать; быть более влиятельным, важным embryo — биол. Зародыш, эмбрион to impose a ban — налагать запрет; запрещать

## 2. Read and translate the text



The world was stunned by the news in late February 1997 that a British embryologist named Ian Wilmut and his research team had successfully cloned a lamb named Dolly from an adult sheep. Dolly was created by replacing the DNA of one sheep's egg with the DNA of another sheep's udder. The world media was immediately filled with heated discussions about the ethical implications of cloning. Scientists and ethicists have debated the implications of human and non-human cloning extensively when scientists at the Roslin Institute in Scotland produced Dolly.

No direct conclusions have been drawn, but compelling arguments state that cloning of both human and non-human species results in harmful physical and psychological effects on both groups.

Many people are convinced that the cloning of any species, whether they are human or nonhuman, is ethically and morally wrong. Cloning of human beings would result in severe psychological effects in the cloned child, and that the cloning of non-human species subjects them to unethical or unmoral treatment for human needs. The possible physical damage that could be done if human cloning became a reality is obvious when one looks at the sheer loss of life that occurred before the birth of Dolly. Less than ten percent of the initial transfers survive to be healthy creatures.

There were 277 trial implants of nuclei. Nineteen of those 277 were deemed healthy while the others were discarded. Five of those nineteen survived, but four of them died within ten days of birth of severe abnormalities. Dolly was the only one to survive. It has lived for seven years. In addition to physical harms, there are worries about the psychological harms on cloned human children. "One of those harms is the loss of identity, or sense of uniqueness and individuality.

The cloning of a non-human species subjects them to unethical treatment purely for human needs. What would happen if humans started to use animals as body for growing human organs? Where is the line drawn between human and non human? If a primate was cloned so that it grew human lungs, liver, kidneys, and heart, what would it then be? Would non-human primates, such as a chimpanzee, who carried one or more human genes via transgenic technology» be defined as still a chimp, a human, a subhuman, or something else? It could create a world wide catastrophe that no one would be able to stop. That is why the majority considers that the ethical and moral implications of cloning are such that it would be wrong for the human race to support it.

On the other hand, some people think that potential benefits outweigh the potential harms of cloning. Cloning would be probably used by infertile people who now use donated sperm, eggs, or embryos. It may provide a way for completely sterile individuals to reproduce, a valuable basic research of technologies related to reproduction and development.

The dilemma is very complex. The question shakes us all to our very souls. For humans to consider the cloning of one another forces them all to question the very concepts of right and wrong that make them all human. Many countries imposed a ban for human-cloning research.

## 3. Answer the following questions:

1. Why was the world stunned in late February 1997?

- 2. How was Dolly created?
- 3. What was the world media immediately filled with?

- 4. Why are many people convinced that the cloning is ethically and morally wrong?5. What would cloning of human beings result in?
- 6. How many trial implants of nuclei were there? How many of them survived?
- 7. What are the worries about the psychological harms on cloned human children?
- 8. What could cloning create?
- 9. What are the benefits of cloning?

# 4. What is the best title for this article?

- 1. SHEEP ARE NICE!
- 2. THIS AWFUL SCIENCE!
- 3. CLONING

# 5. Make up five questions on the text.

### XXIV. GREENPEACE HISTORY

# 1. Internet Research. Search for the up-to-date information about Greenpeace. Prepare a one-minute talk to the class.

### 2. Study the vocabulary

to threaten – угрожать solution – решение to deserve – заслуживать individual – человек bear witness – засвидетельствовать peregrine falcon – сокол сапсан lobbying – лоббирование (продвижение своих интересов через законодательные органы) non-profit - некоммерческий

### 3. Read and translate the text

People are beginning to realize that environmental problems are not somebody else's. They join and support various international organizations and green parties. If people wake up to what is happening – perhaps we'll be able to avoid the disaster that threatens the natural world and all of us with it.

"The Earth needs solutions. It needs change. It needs action." – this is the motto of the Greenpeace, the organization that exists "because this fragile earth deserves a voice".

Everything started in 1971 when a small team of volunteers and journalists, motivated by their vision of a green and peaceful world, set sail from Vancouver, Canada, in an old fishing boat. These activists, the founders of Greenpeace, believed a few individuals could make a difference.

Their mission was to "bear witness" to US underground nuclear testing at Amchitka, a tiny island off the West Coast of Alaska, which is one of the world's most earthquake-prone regions. Amchitka was the last refuge for 3000 endangered sea otters, and home to bald eagles, peregrine falcons and other wildlife.

Even though their old boat, the Phyllis Cormack, was intercepted before it got to Amchitka, the journey sparked a flurry of public interest. The US still detonated the bomb, but the voice of reason had been heard. Nuclear testing on Amchitka ended that same year, and the island was later declared a bird sanctuary.

Since then Greenpeace has been campaigning against environmental degradation. The tradition of 'bearing witness' in a non-violent manner continues today, and such ships are an important part of all campaign work. In pursuing their mission, they have no permanent allies or enemies. They promote open, informed debate about society's environmental choices. They use research, lobbying, and quiet diplomacy to pursue their goals, which we can call our goals too as we are all children of nature. Greenpeace encourages many millions people to take action every day.

Greenpeace is a non-profit organization, with a presence in 40 countries across Europe, the Americas, Asia 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. As a global organization, Greenpeace focuses on the most crucial worldwide threats to our planet's biodiversity and environment.

They campaign to:

- Stop climate change
- Protect ancient forests
- Save the oceans
- Stop whaling
- Say no to genetic engineering
- Stop the nuclear threat
- Eliminate toxic chemicals
- Encourage sustainable trade

The one of the longest banners they'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..."

Based in Amsterdam, the Netherlands, Greenpeace has 2.8 million supporters worldwide, and national as well as regional offices in 41 countries

## 4. Match the word with its definition:

- 1. a disaster
- 2. a solution
- 3. a motto
- 4. a campaign
- 5. a refuge
- 6. a sanctuary
- 7. an ally
- 8. an enemy

- 9. a goal
- 10. a founder
- 11. an island
- 12. an independence
- 13. a threat
- A. something that you hope to achieve in the future
- B. someone who hates you and wants to harm you
- C. a statement in which you tell someone that you will cause them harm or trouble if they do not do what you want
- D. an area for birds or animals where they are protected and cannot be hunted
- E. a way of solving a problem or dealing with a difficult situation
- F. someone who helps and supports you when other people are trying to oppose you
- G. a series of actions intended to achieve a particular result relating to politics or business, or a social improvement
- H. political freedom from control by the government of another country
- I. someone who establishes a business, organization, school etc
- J. shelter or protection from someone or something
- K. a sudden event such as a flood, storm, or accident which causes great damage or suffering
- L. a piece of land completely surrounded by water
- M. a short sentence or phrase, which expresses the aims or beliefs of a person, school, or institution

# 5. Find the synonym:

- 1. a disaster
- 2. a refuge
- 3. a solution
- 4. a sanctuary
- 5. a debate
- 6. volunteers
- 7. donation
- 8. team
- 9. corporation
- 10. a boat

- A. group
- B. discussion
- C. catastrophe
- D. a ship
- E. shelter
- F. activists
- G. money
- H. company
- Ι. answer
- J. refuge

# 6. Correct the sentences:

- 1. People understands that environmental problems are their own problems.
- 2. Greenpeace offices are in 41 country.
- The Greenpeace's history has started in 1971.
  The founders of Greenpeace believe a few individuals could makes a difference.
- 5. Amchitka were the last refuge for sea otters.
- 6. Nuclear testing for Amchitka ended in 1971.
- 7. Greenpeace is a not-profitible organization.
- 8. Greenpeace uses quiet diplomacy for pursue their goals.

# 7. Make up five questions on the text.