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Кафедра профессиональных коммуникаций

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FORESTS

Часть 2

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FORESTS

UNIT 1

1.1. Прочитайте интернациональные слова и определите их значение:

taiga, monoculture, ecosystem, distance, transportation, vanadium, economic, type, adapt, basic, plan, membrane, photosynthesis, organelle, plastid, reproductive, chloroplast, structure, system, composition, factor, metal, scheme, extreme.

1.2. Выполните задание.

Name different types of forests.

1.3. Прочитайте и переведите текст.

Forest Health

The tree species in the boreal coniferous forest (taiga) are species that afforest open ground and that are adapted to climatic fluctuations and forest fires. They withstand disturbance from both nature itself and people rather well.

The boreal coniferous forest and its natural propensity for regeneration are not threatened by the appearance of treeless areas, erosion, monocultures, or impoverishment of the ecosystem when the forests when the forests are managed properly. However, studies on the state of the environment indicate that air pollutants are adversely affecting forests all over Europe. In Finland, the forests in the southern part of the country in particular are exposed to loading by precipitation due to long distance transportation both from abroad and from Finland. Effects of air pollution 1999-2000 in southern Finland are shown in figure 2.1. Darker colour indicates detection of stronger effects on vegetation. The following bioparametres have been used in the determination of the zones: sulphur and nitrogen content of needles, needle defoliation, number of needle age classes, needle damage, diversity of lichen on pine trunks, discernible lichen damage as well as lead and vanadium content in moss.

Pan-European concern for the state of health of the forests on the European continent led to the UN's European Economic Commission and the European Union setting up a continuous monitoring programme in the mid-1980s. This involves especially monitoring the condition of the canopy and tree foliage, as well as the soil.

Despite harmful sulphur and nitrogen precipitation exceeding the so called critical load in forests close to Finland's urban centres, no acidification of the soil has been detected in studies in the regions dedicated to forestry. The critical load means the maximum possible load which over the long term does not have any harmful effects on fundamental eco- system characteristics. However, it has

been predicted that soil acidification will advance unless acidifying emissions and precipitation are not brought radically under control. In forest management, the progress of acidification can be hindered by prescribed burning and by increasing broadleaf growth.

According to the report, published in 1998, a steady growth in the incidence of needle and leaf loss has been observed over large parts of Europe, for which air pollutants and long periods of dryness are in one way or another responsible, particularly in southern Europe. By contrast, recently the state of tree crowns has improved in areas where the amount of air pollution has declined, or where weather conditions have been more favourable. The chemical composition of the soil leads us to believe that around 20 per cent of the sample plots may become affected by the adverse acidifying effect of nitrogen, sulphur and heavy metal precipitation from the atmosphere. It is also apparent from the state of the tree crowns that in a comparatively large number of plots the sulphur concentration is low, whereas the nitrogen concentration is high.

Both national and international monitoring schemes indicate that air impurities constitute a stress factor to forests growing in Finland's extreme climatic conditions and on infertile soils. So far, the overall health of Finnish forests has been good. The main reason for uncertainty in regard to the future is the development in the amount of emissions.

In Finland, there were a few incidences of local forest damage during the latter half of the 1980s. A thorough study was launched into the reasons for this and monitoring of the development of the phenomenon began. Monitoring by the Finnish Forest Research Institute (METLA) has indicated that the main cause of the damage were abnormal weather conditions at that time.

Needle and leaf loss can occur among trees as a result of air impurities or other factors impairing the biological functioning of the trees. Trees are considered to be suffering from acute needle loss when they have lost more than 20% of their needles or leaves in this connection. According to the Finnish Forest Research Institute's study on the state of the health of the forests, the incidence of acute needle loss in Finland is among Europe's lowest. It is a fact, however, that signs of poor health exist in some forests in the vicinity of urban centres in southern Finland. In such places lichens, which have poor resistance to air impurities, have decreased and a degree of needle loss has occurred among the trees.

1.4. Запомните слова и выражения:

Boreal coniferous forest	Северный хвойный лес
to afforest	засадить лесом, облесить
fluctuation	флуктуация
to withstand disturbance	противостоять вмешательству
propensity for regeneration	склонность к восстановлению
to be threatened by	быть под угрозой ч.-л.
impoverishment of the ecosystem	истощение экосистемы
air pollutant (impurity)	вещество, загрязняющее воздух
to affect adversely	влиять неблагоприятно
to be exposed to loading	подвергаться нагрузке
precipitation	осадки, выпадение осадков
sulphur and nitrogen content	содержание серы и азота
needle defoliation	опадение хвои
lichen	лишайник
trunk	ствол (дерева)
lead and vanadium content	содержание свинца и ванадия
canopy	лесной полог
tree foliage	листва деревьев
critical load	критическая нагрузка
soil acidification	окисление почвы
acidifying emission	кислотный выброс
to bring under control	взять под контроль
prescribed burning	предписанное горение (сжигание)
crown	крона
to decline	уменьшаться, спадать, приходить в упадок
sample plot	пробная площадка
to constitute a stress factor	составлять фактор напряжения
to impair	вредить
to decrease	убывать, сокращать(ся)

1.5. Переведите фразы, опираясь на содержание текста (упр. 1.3):

appearance of treeless areas, impoverishment of the ecosystem, long distance transportation, fundamental ecosystem characteristics, forest management, increasing broadleaf growth, tree crown, air pollution, weather

conditions, heavy metal precipitation, development in the amount of emissions, local forest damage, needle and leaf loss.

1.6. Найдите в тексте (упр. 1.3) синонимы для следующих слов и словосочетаний:

kinds of trees, to supervise, rainfall or snowfall, leaves, to find, to increase, to prevent, number, poor soils, to do harm, close to, reason.

1.7. Измените предложения по образцу, используя Past и Future Simple и соответствующие обстоятельства времени. Переведите полученные предложения:

Образец: *A **tulip grows from the tulip bulb.***
A tulip grew from the tulip bulb last summer.
A tulip will grow from the tulip bulb next summer.

1. A new potato plant grows from the potato eye.
2. A tiny pine seed develops into a giant tree.
3. The stem carries water and minerals to the leaves.
4. Cells in a bud begin to divide rapidly during the growing season.
5. Tall and straight trunks of coniferous trees make valuable lumber.
6. The stems of many dicot trees divide into several large branches.
7. Strawberries send out aboveground stems - runners - that grow along the ground.
8. Buds on the runners develop roots and form new plants.
9. A tree grows in height by means of cell divisions at the very tips of its trunk and branches.
10. Bark protects the growing part of the tree from the weather, animals and other injuries.

1.8. Укажите, являются ли данные утверждения истинными или ложными в соответствии с содержанием текста (упр. 1.3):

1. Air pollutants are adversely affecting forests.
2. In Finland forests are mainly exposed to loading by precipitation due to a large amount of chemical enterprises.
3. A continuous monitoring programme considering the state of forest health on the European continent was launched in the 1990s.
4. No acidification of the soil in forests close to Finland's urban centres has been detected.
5. The progress of acidification can be accelerated by prescribed burning and by increasing broadleaf growth.
6. Air pollutants and long periods of dryness have caused a steady owth in the incidence of needle and leaf loss over large parts of Europe.

7. Recently the state of tree crowns has improved in areas where the amount of air pollution has increased.

8. Air impurities don't affect Finnish forests.

9. Approximately 20% of the sample plots are affected by nitrogen, sulphur and heavy metal precipitation from the atmosphere.

10. Trees are considered to be suffering from acute needle loss when they have lost more than 10% of their needles or leaves.

1.9. Закончите предложения, пользуясь информацией текста (упр. 1.3):

1. The tree species in the boreal coniferous forest are species that...
2. The boreal coniferous forest is not threatened when ...
3. The Programme set up by the European Union in the mid-1980s involves
4. The critical load means ...
5. Taking into account the state of tree crowns, one may say that in a large number of plots the sulphur concentration is ...
6. Air impurities constitute a stress factor to forests growing in ...
7. There were a few incidences of local forest damage in the latter half of the 1980s due to ...
8. Needle and leaf loss can occur because of...
9. Signs of poor health exist in some forests in the vicinity o f . . .

1.10. Расположите пункты плана в логической последовательности на основании содержания текста (упр. 1.3):

1. State of forest health in Finland.
2. State of forest soil.
3. Impact of air pollutants on the forest ecosystem.

1.11. Восстановите недостающие пункты плана, предложенного в упр. 1.10.

1.12.Пользуясь планом, полученным в упр. 1.11, подготовьте краткий пересказ текста (упр. 1.3).

UNIT 2

2.1. Прочитайте интернациональные слова и определите их значение:

mosaic, operation, comment, modification, director, ministry, process, basis, landscape, individual, programme, specific, practice, national methodological, inventory, focus, sector, criterion (pi. criteria), fauna, flora; guarantee, combine.

2.2. Выполните задание.

Try to describe what nature conservation means.

2.3. Прочитайте и переведите текст.

Old-growth Forests in Finland

The Malahvia forest has been protected as a part of the European Natura 2000 network. Its total area is about 2 400 cubic ha and it is not an intact old-growth forest (OGF) area but a mosaic of managed and unmanaged forests. There will be, however, no forestry operations in that area. The management and land use plan for the area was sent out for comments in the end of 2002. A lot of new and valuable information was received and that led to many alterations and modifications of the plan.

According to Ilkka Heikkinen, Director of Nature Conservation of the Ministry of Environment, the present network of protected areas in Northern Finland supported by the Landscape Ecological Planning (LEP) of Metsahallitus is sufficient to safeguard biodiversity in the region. The process to protect the old-growth forests in Finland has been very comprehensive and with good scientific basis, but there are dozens of different stakeholder groups in Finland and there is no such a solution that everyone is totally happy.

The Natura 2000 programme in Finland comprises of 1,804 individual areas covering 4.9 million ha of forests, peat- lands and waters. The land area of the programme is 3.6 million ha. The areas proposed for the Natura 2000 programme mainly consist of existing conservation areas, wilderness areas, and sites covered by protection programmes. The Natura 2000 network covers approximately 12 % of Finland's land area.

In Finland, nature conservation areas have been established since the 1930s. The first were national parks and strict nature reserves which were intended to preserve specific natural and landscape values. Following the recognition that modern land use practices threaten biodiversity, various national programmes were initiated to protect the main ecosystem types. These programmes were based on large-scale methodological inventories and covered both state owned and private land. Although the latest programmes in the 1990s focused on protecting old-growth forests, the previous programmes also included considerable areas of old-growth forests.

The old-growth forests of Finland were protected through a national process undertaken between 1991-1996. The protection proposals were implemented as part of a democratic process where all relevant interests were represented in a working group. The interests included research, ENGOs, state forests, environmental authorities, forest industry, and private forest sector and forest authorities. The OGF-working group agreed upon criteria for valuable old-growth forests. The criteria were initially defined by researchers of Finnish Environment Institute. The criteria were unanimously approved by the OGF-working group. OGF protection process created 345,000 ha of protected old-growth forest of which approximately 202,000 ha is productive forest land. This

was further reinforced by the LEP Metsahallitus, the state enterprise responsible for management of state forests and protected areas.

The Metsahallitus LEP process has protected 130,000 ha of valuable natural habitats. Some 80,000 ha of these forests are more than 80 years age. According to the third inventory of red listed fauna and flora conducted in 2000, there are 564 forest dependent threatened species in Finland. It is estimated that

144 of these threatened species depend on old-growth forests. The survival of these species is guaranteed by the combined area of 345,000 ha of protected old-growth forest supported by 80,000 ha of mature forests protected through the Metsahallitus LEP process.

In addition there are remarkable protected old-growth forest areas in the national parks, nature reserves, protected mire areas, wilderness areas and in the new Natura 2000 areas. The Red List Report made in 2000 states that old-growth forest protection in North Finland makes a significant impact on the survival of threatened species dependent on old-growth| forest habitat because the area of protected forests has doubled.

ENGO – European Non-governmental Organization

2.4. Запомните слова и выражения:

Old-growth forest	Перестойный лес
intact	нетронутый, неповрежденный
forestry operations	лесохозяйственные работы
nature conservation	охрана природы
to protect	защищать, охранять
to safeguard bidiversity (biological diversity	сохранять биологическую вариативность
stakeholder	совладелец, заинтересованная сторона
to comprise (of)	включать (в состав), содержать
conservation area	заповедная зона
peatland	торфяник
to consist (of)	состоять (из чего-либо)
wilderness area	девственная местность
site	участок
nature reserve	природная охраняемая территория, заповедник
To preserve values	оберегать ценности
to initiate	начинать, вводить
large-scale methodological inventories	крупномасштабные регулярные инвентаризации
to undertake	предпринимать
to implement	претворять, выполнять, осуществлять

research	(научное) исследование, изучение
environmental authorities	органы охраны окружающей среды
to approve unanimously	единогласно одобрить
to reinforce	усиливать, укреплять
natural habitat	естественная среда обитания
to guarantee a survival	обеспечить выживание
mire	болото
to make a significant impact on	оказывать существенное воздействие на что-либо

2.5. Найдите в тексте (упр. 2.3) эквиваленты следующих выражений:

нетронутая область перестойного леса, мозаика управляемых и неуправляемых лесов, лесохозяйственные работы, план управления и землепользования, различные группы совладельцев, экологическое планирование ландшафта, особые природные и ландшафтные ценности, новые типы экосистемы, органы охраны окружающей среды, программа охраны, современная практика землепользования, сектор частного владения лесом, занесенные в красную книгу животные и растения, находящиеся под угрозой лесные виды, охраняемые болотистые местности.

2.6. Измените предложения по образцу, используя Past и Future Progressive и соответствующие обстоятельства времени или придаточные предложения. Переведите полученные предложения:

Образец: *Redwood seeds are getting mature now.*
Redwood seeds were getting mature when the weather changed for the worse.
Redwood seeds will be getting mature at this time next year.

1. Mosses and liverworts are growing rapidly for it is a season of high moisture now.
2. Winter is approaching; deciduous trees are shedding their leaves.
3. The tree is aging and its bark is becoming ridged and cracked.
4. With a microscope, you can see how water and minerals are moving through the veins into the green cells of the leaf.
5. The sun is warming a spring air, a small sprout is coming out of the ground.
6. Buds are opening, flowers are arising.
7. Naturalists are collecting leaves of widely spread trees at the moment.
8. The students are observing plants from different habitats.
9. At present researchers are trying to crossbreed North American chemists with an asian variety.

2.7. Задайте различные типы вопросов к предложениям:

Образец: ***A pine seed is slowly germinating through the rocky soil.***

a. Is a pine seed germinating through the rocky soil?

b. Is a pine seed germinating through the rocky or loose soil?

c. Where is a pine seed germinating?

d. What is germinating through the rocky soil?

e. A pine seed is slowly germinating through the rocky soil, isn't it?

f. A pine seed is not germinating through the loose soil, is it?

1. The Austrian forests and countryside are becoming more important as a recreation area for people from all over Europe.

2. The forest cover is undoubtedly shrinking.

3. The roots are still growing from the corn stem and spreading out through the soil.

4. The roots of the old oak were holding the tree firmly in the ground.

5. Due to the nature conservation programme the wooded area was steadily increasing between 1990 and 2000.

6. In spring new branches, leaves and flowers will be developing from buds for several weeks.

7. The forests will definitely be expanding in the developed countries in spite of acid rain, forest fires and extensive construction.

2.8. Ответьте на вопросы по тексту (упр. 2.3):

1. What kind of forest is the Malahvia forest?

2. Will the management and land use plan for the area remain the samq as it is now?

3. What do the areas proposed for the Natura 2000 programme in Finland consist of?

4. What were the first nature conservation areas in Finland?

5. Why were the programmes for protecting the main ecosystem types initiated?

6. What were these programmes based on?

7. How many fauna and flora threatened species depend on old-growth forests in Finland?

8. What is the survival of these species guaranteed by?

2.9. Укажите, являются ли данные утверждения истинными или ложными в соответствии с содержанием текста (упр. 2.3):

1. The present network of protected areas in Northern Finland is sufficient to safeguard biodiversity in the region.

2. The Natura 2000 programme in Finland covers almost 5 million ha of forests, peatlands and waters.

3. Nature conservation areas have been established in Finland since the 1950s.

4. The major goal of the first national parks and strict nature reserves was to preserve specific natural and landscape values.

5. The programmes initiated to protect the main ecosystem types in Finland covered only state owned land.

6. The old-growth forests of Finland were protected through a national process undertaken between 1991-1996.

7. The OGF protection process was further reinforced by the state enterprise responsible for management of state forests and protected areas.

8. About 80,000 ha of the forests protected by the Metsahallitus LEP process are older than 800 years.

2.10. Составьте план текста (упр. 2.3), озаглавив каждый абзац.

2.11. Пользуясь планом, полученным в упр. 2.10, подготовьте краткий пересказ текста.

UNIT 3

3.1. Прочитайте интернациональные слова и определите их значение:

global, arctic, steppe, reptile, amphibian, expansion, cultivate, fragment, complex, proportion, systematic, intensive, potential, technological, demonstrate, debate, category.

3.2. Выполните задание.

List the main features of the forest.

3.3. Прочитайте и переведите текст.

Forestry in Russia

Russia occupies one eighth of the global land area and most of non-tropical Eurasia. Its territory presents landscapes of 8 natural zones, passing from arctic deserts and tundra all the way through the taiga zones to broad-leaved forests and steppe areas. Over 11,000 species of vascular plants, 320 mammals, about 730 birds, 75 reptiles, about 30 amphibians and 270 freshwater fish species may be found in Russia.

In spite of a long history ofj economic development, the lands of Northern Eurasia are relatively little disturbed, especially in Siberia and the Far East. Industrial and agricultural expansion into these regions has been difficult due to permafrost, the cold climate and the land which is difficult to cultivate. Almost 90% of tundra, up to 70-75% of taiga forests and 20-30% of Asian steppes have remained close to their natural state.

Somewhat more than half of the forests are young forests greatly altered by man, whereas less than 15% can still be classified as frontier forests (large

virgin forests). The other forests consist of fragments of old-growth and other mature forests and areas dominated by marsh-bog complexes.

Compared with similar vegetation zones in Scandinavia, for instance, the Russian zones are found to still have a relatively high proportion of patches close to their natural state. Natural restoration of forest is much quicker in the south than in the north. It is also evident that the species diversity is much higher here. The Russian zones, although not totally untouched, are of the highest quality that exists, and there is no doubt about quality the value of these sites.

Many species in the Red Data Books for Sweden and Finland still exist in viable populations in the Northwest of Russia. The main reason is that the forests although intensively used or disturbed in many places, have not been the subject to the systematic and intensive forestry methods applied in the neighbouring Finland and Sweden.

The annual growth of the Russian forests is nearly 1000 million m^3. However, much of this potential cannot be used by the forest industry due to environmental constraints, the remoteness of forests from domestic and international markets, absence of a transportation network and technological limitations.

It has been estimated that the economically exploitable forests comprise 55% of the forested areas under state forest management. Mortality amounts to 49% of the gross growth. This is an extremely high figure compared with most other countries. This is due to the fact, that there are still huge areas in Russia with unexploited old-growth forests, as well as a significant amount of forest fires, insect outbreaks, etc. The high figure for mortality demonstrates a special feature of Russian forests, namely that large areas are still unman- aged and thus to environmentalists appear undamaged by man. Similar, sizeable areas have nearly disappeared from Scandinavia, where "ecological forest management" has now been developed to restore some of the original features of the forests.

The vast majority of the old-growth forests remaining in Europe are located in the Northern Russia. These Russian forests have seemed like an endless source of cheap raw material for the West-European forest industry. Consequently, the Russian forests have received much emphasis in the debate on conservation of the biodiversity of boreal forests.

At present, Russia has 99 state zapovedniks, i.e. strict scientific nature reserves with the total area of 33.2 million ha and 34 national parks with the total area of 6.8 million ha. There are plans to establish some 40 additional zapovedniks and parks. Practically all the national parks are located in forest fund areas and are managed by the state forestry authorities. The total protected area is about 5% of the forest resource area in Russia, but only about is strictly protected.

The Russian forests have been divided into three categories with respect to their economic and ecological characteristics. The first category comprises es s with a protective function, e.g. forests along watersheds. However, these forests, comprising some 20% of the forested land, are certainly not strictly protected. According to Greenpeace in Russia, intensive intermediate and sanitary tree fellings are practised in 95% of these forests, and even clear-cutting (maximum size 10 hectares) is allowed in 50% of the area. The second category includes forests in populated areas and forests with low timber production, comprising 5.5% of the total area. The vast majority of forests, 74.5%, is included in category three, industrially exploitable forests, where clear-cutting (maximum size 50 ha) is the main forestry practice.

3.4. Запомните слова и выражения:

Desert	Пустыня
broad-leaved forest	лиственный лес, чернолесье
mammal	млекопитающее
permafrost	вечная мерзлота
frontier forest	пограничный лес
virgin forest	девственный (первобытный) лес
marsh-bog complex	болотистая местность
to dominate	доминировать, преобладать
vegetation zone	растительная зона
patch	небольшой участок, просека
natural restoration	естественное восстановление
viable population	жизнеспособная популяция
annual growth	годичный прирост
gross growth	общий прирост
environmental constraints	ограничения, накладываемые окружающими условиями
remoteness from	отдаленность от чего-либо
exploitable forest	эксплуатируемый лес
mortality	летальность, отпад
to amount to	равняться, доходить до
unexploited forest	неосвоенный лес
insect outbreak	нашествие насекомых
to receive much emphasis	получить большое внимание
watershed	водораздел, бассейн реки
intermediate felling	промежуточная рубка
sanitary felling	санитарная рубка

3.5. Подберите к прилагательным существительные из текста (упр. 3.3) и употребите их в собственных предложениях:

natural, industrial, mature, viable, exploitable, additional, protective.

3.6. Измените предложения по образцу, используя Past и Future Perfect и соответствующие обстоятельства времени или придаточные предложения. Переведите полученные предложения:

Образец: ***Much of the forest reduction has occurred in relatively recent times, largely because of fire and human activity.***

Much of the forest reduction had occurred largely because of fire and human activity, before people realized it was a serious problem.

Much of the forest reduction will have occurred largely because of fire and human activity, before people realize it is a serious problem.

1. The forests have demonstrated many times their ability to survive even extraordinary adversity.
2. Education, prevention, and control have reduced the amount of wildfires.
3. The undertaken measures have made American forests among thd most productive, sustainable, and healthy in the world.
4. Indirect and unintentional forest destruction has exceeded even the! effects of the ax blade or the careless match.
5. Foresters have learned how to nurture the trees and accelerate their growth.
6. The grasslands of the world have become the richest agricultural lands.
7. Industrial emissions of sulfur dioxide gas have damaged many types of plants, including trees.

3.7. Задайте различные типы вопросов к предложениям:

Образец: ***The XXth century civilization has had a profound and largely negative effect on the world's temperate forests.***

a. Has the XXth century civilization had a profound and largely negative effect on the world's temperate forests?

b. Has the XXth century civilization had a profound or insignificant effect on the world's temperate forests?

c. What kind of effect has the XXth century civilization had on the world's temperate forests?

d. What has had a profound and largely negative effect on the world's temperate forests?

e. The XXth century civilization has had a profound and largely negative effect on the world's temperate forests, hasn't it?

1. The Society of American Foresters has compiled a "top ten" list of forestry-related advances in the United States over the past century.
2. Wildfires had burned millions of acres of the country and caused at damage to life and property by the end of the XXth century.
3. Forest Services of many European countries will have established several national parks and conservation areas by 2050 to preserve specific natural values.

4. Wildlife conservation and habitat enhancement will have resulted in flourishing populations of many species by the second half of this century.

5. Dutch elm disease has wiped out millions of elm trees in the United States and Canada.

6. Insects, fungi and viruses had evolved with all forests and had become an integral part of the ecosystem before people interfered.

7. The forested area in France has virtually doubled in two centuries.

3.8. Ответьте на вопросы к тексту (упр. 3.3):

1. What kinds of landscape does the territory of Russia present?
2. Why did the lands of Northern Eurasia remain close to their natural state?
3. How can the forests of Russia be classified?
4. Why do the endangered species in Sweden and Finland still exist in viable populations in the Northwest of Russia?
5. What is the annual growth of the Russian forests?
6. Why is only a little of this potential used by the forest industry?
7. What are the main reasons for high mortality in Russian forests?
8. Why did the Russian forests receive much emphasis in the debate on conservation of the biodiversity of boreal forests?
9. How many zapovedniks and national parks are there in Russia at present?
10. How are Russian forests divided, with respect to their economic and ecological characteristics?

3.9. Обсудите в парах следующие проблемы:

- Russian forest biodiversity,
- Forest management in Russia,
- Peculiar features of the Russian forest,
- Three categories of the Russian forests.

3.10. Составьте план текста (упр. 3.3), озаглавив каждый абзац.

3.11. Пользуясь планом, полученным в упр. 3.10, подготовьте краткий пересказ текста (упр. 3.3).

UNIT 4

4.1. Прочитайте интернациональные слова и определите их значение:

legal, profession, billion, acre, control, technology, product, cellulose, camera, medicine, special.

4.2. Выполните задание:
Describe the ways of fire protection.

4.3. Прочитайте и переведите текст.

Forestry Advances

One-third of the United States is covered with forests. How have they been doing over the past century? The country has more trees now than it did in 1920 on approximately the same amount of forestland. It also has the largest legally protected wilderness system in the world, while at the same sustaining a highly productive and efficient wood products industry.

The Society of American Foresters, the national scientific and educational organization of the forestry profession, has compiled list of forestry-related advances in the United State: over the past century.

Reforestation. Until the 1920s, forests were generally logged and abandoned. Now, across the country an average of 1.7 billion seedlings are planted annually. That translates into 6 seedlings planted for every tree harvested. In addition, billions of additional seedlings are regenerated naturally.

Fire protection. Wildfire is extremely dangerous for forest ecosystems. At the turn of the century, wildfires annually burned across 21 to 50 million acres of the country each year, with devastating loss of life and property. Through education, prevention, and control, that amount has been reduced to about 2 to 5 million acres a year - a reduction of 90% - while fire's contributions to forest health have also been studied and better understood.

Affordable products and reduction in waste. Today, advanced technology allows us to use every part of the tree for products. In addition to lumber and paper coming from the trunk of the tree, bark, resins, cellulose, scraps, and even sawdust are turned into products that range from camera cases for medicines to rugs.

The return of wildlife. Species such as whitetail deer, wild turkeys, and wood ducks were almost extinct at the turn of the century. Wildlife conservation and habitat enhancement has resulted in flourishing populations of these and other species we now take almost for granted. Now, foresters are working with other professionals to improve habitats and ensure survival of other wildlife species.

Wilderness protection. America's first wilderness areas were established by the US Forest Service in the 1920s. Forty years later, the Wilderness Act of 1964 gave legal protection to 9 million acres of wilderness There are now 95 million acres in the wilderness system, and 149 million more acres of land in parks, wildlife refuges, and other special, set-aside places. No other country in the world comes close to this amount of legally designated set-aside land.

Urban forestry. Municipal ordinances, civic participation, and the growth of urban forestry have resulted in the planting and maintenance of millions of

trees in the country's cities and towns, enhancing quality of life while saving energy costs and usage.

Research. Decisions made about US forests a century ago were based on what worked in Europe. Since then, forest scientists in the United States have conducted research to control insect and disease, improve growth rates, enhance soil and water conditions, and to understand other variables that have made US forests among the most productive, sustainable, and healthy in the world.

4.4. Запомните слова и выражения:

Forestland	Лесная площадь, лесной массив
to compile a list	составить перечень
advance	успех, достижение, прогресс
reforestation	лесовосстановление
to log a forest	вырубать лес
to plant a seedling	посадить сеянец
to harvest	заготавливать (лес)
to devastate	опустошать, разорять
prevention	предупредительная (превентивная) мера, предотвращение
to reduce the amount	сократить количество
contribution to	вклад во что-либо
affordable products	возможная продукция
waste	отходы
lumber	пиломатериалы
resin	смола
scrap	щепа
sawdust	древесные опилки
extinct	вымерший
to enhance	улучшать, увеличивать
to flourish	разрастаться, процветать
to take for granted	принимать как должное
wildlife refuge	заповедник
set-aside places	государственные резервы
urban forestry	городское лесоводство
municipal ordinance	постановление городских властей
maintenance of	уход за чем-либо
disease	заболевание
growth rate	темп роста

4.5. Найдите в тексте (упр. 4.3) синонимы для следующих слов:

quantity, to keep, trade, progress, to leave, to cut, to decrease, to guarantee, to found, decree, to improve, to carry out.

4.6. Заполните пропуски в предложениях, пользуясь информацией текста (упр. 4.3):

1. Nowadays the United States have more trees than they did in 1920 on the same amount of... .

2. US forests were mostly ... and ... until the 1920s.

3. At present 6 ... are planted for every tree ....

4. The amount of ... has been reduced from 20 to 50 million acres to about 2 to 5 million acres a year.

5. The most important wood products coming from the trunk of the tree are ... and ....

6. The advanced technology allows us to use ..., ..., ..., and even ... for products that range from camera cases for medicines to rugs.

7. Due to wildlife conservation and ... enhancement many species that were almost... at the turn of the century have been preserved.

8. America's wilderness areas have been given legal protection in the form of parks, wildlife ..., and other special, ... places.

9. Forest scientists in the United States conduct research to control insect and ..., improve growth ... and enhance soil and water conditions.

4.7. Измените предложения по образцу, используя Past и Future Perfect Progressive и соответствующие обстоятельства времени или придаточные предложения. Переведите полученные предложения:

Образец: ***This forest has been suffering from periodic windblow for three months.***

When the fellers arrived they saw many broken trees as the forest had been suffering from periodic windblow for three months.

By August this forest will have been suffering from periodic windblow for three months.

1. The cypress has been growing in this area since the time it was brought from Europe.

2. Local forestry farms have been planting and regenerating naturally seedlings of this species since 1975.

3. Forests have been supplying the rural population with timber and fuel wood for hundreds of years.

4. Many parts of Austria have been executing forest conservation regulations for over 400 years.

5. Tree farmers have been waiting for the harvest from this plantation for 30 years.

6. This hardwood forest has been growing for about 80 years, they I want to do clear-cutting here.

7. During the last decades wood harvesting has dramatically been changing the age structure of the forests in the European part of Russia.

4.8. Ответьте на вопросы по тексту (упр.4.3):

What part of the United States is covered with forests?

Does the country have more trees now than it did in 1920?

What was the attitude to forests like before the 1920s?

What can you say about the reforestation measures taken in the United States at present?

Did wildfires cause a great damage in the past?

What measures help reduce the amount of wildfires?

What products are obtained from wood due to advanced technologies?

What animal species that were formerly almost extinct, exist in viable populations at present?

How was their extinction prevented?

When were the first wilderness areas in the United States established?

What lands are now legally protected?

What have municipal ordinances, civic participation, and growth of urban forestry resulted in?

What were the decisions made about the US forests a century ago based on?

4.9. Обсудите в парах успехи, достигнутые США в области лесного хозяйства.

4.10. Подготовьте краткий пересказ текста (упр. 4.3).

UNIT 5

5.1. Прочитайте интернациональные слова и определите их значение:

financing, resource, agriculture, cooperation, spectrum, strategic, procedure revision, extensive, progress, commercial, cycle, reform, start, organization, proportion.

5.2. Выполните задание:

List forest protection items.

5.3. Прочитайте и переведите текст:

Forest Protection

In keeping with international conventions, including the Rio convention on biodiversity, Finland is committed to protecting biodiversity in its ecosystems. Two ministries are responsible for Finland's natural resources and their development, i.e. the Ministry of Agriculture and Forestry and the Ministry of the Environment.

On the basis of the international conventions, both ministries approved an Environmental Programme for Forestry in 1994, which was prepared as a result of cooperation across a broad spectrum of stakeholders. This strategic

framework set out the objectives and procedures to be used in the sustainable management of Finnish forests up to the year 2005. Significant steps forward in the ongoing development and follow-up process have taken place, in the form of a recent revision of the forest and nature conservation legislation and the establishment of extensive protection programmes, as well as a programme for their overall financing. The progress was monitored.

In accordance with the framework of the Environmental Programme for Forestry in Finland, the enhancement of biodiversity in forests consists of two parts; on the one hand, the complete protection of forests and, on the other hand, silvicultural methods applied in commercial forests. Ecological values and wood production objectives are taken into consideration in the boreal coniferous forest zone by using a form of silviculture which keeps to the natural cycle of the forests as closely as possible.

Finland's reformed forest and nature conservation legislation provides J good starting point for the inclusion of natural values when managing all forests that are being grown for commercial use. The forest and nature conservation legislation specifies valuable habitats, called key biotopes, which have to be entirely in their natural state left or subjected to gentle cutting. Such biotopes include herb-rich woodlands, tree stands fringing springs, brooks and other watercourses, forests standing on eskers, tree growth on exposed bedrock, and habitats where endangered species occur.

According to a survey carried out on a cooperative basis by organizations from the forest and environmental sectors, Finland has over 2.4 million ha of forest and land which is now either protected to varying degrees or on which forestry practices are subject to constraints. This represents 10.6 % of the total area of forest land with increment of more than 0,1 mVha/year. More than 1.5 million ha, i.e. 6.6 %, of the total area of forest land is strictly protected, meaning that the forests are not subjected to silvicultural practices at all, but are allowed to develop freely according to the forces of nature. In Finland, such forests can be found in strict nature reserves, national parks and old-growth forest protection areas annexed from commercial stands. Making international comparisons on the proportion of protected forests is difficult, owing to the fact that the definitions used by different countries vary a lot.

The table below shows the approximate amount of strictly protected forests in certain EU countries.

Finland	6,6 %
Sweden	2,5 %
Denmark	1,1 %
Spain	0,3 %
Germany	0,2 %
Austria	0,2 %
France	0,1 %

5.4. Запомните слова и выражения:

To be committed to	Брать на себя обязательство
to set out the objectives and procedures	изложить цели и методы
sustainable	устойчивый, рациональный
forest legislation	лесное законодательство
nature conservation legislation	природоохранное законодательство
silviculture	лесоводство
key biotope	основной биотоп
starting point	отправная точка
to specify valuable habitats	определять ценные ареалы
to be subjected to	подчиняться, подвергаться чему-либо
gentle cutting	выборочная рубка
herb	трава
tree stand	древостой
to fringe	окаймлять
spring	источник, ключ, родник
brook	ручей
watercourse	поток, река. Течение
esker	оз, эскер
exposed bedrock	выходящая на поверхность материковая порода
endangered species	вид, находящийся под угрозой вымирания
to carry out a survey	проводить исследование, осмотр
increment	приращение, прирост
to annex	присоединять

5.5. Заполните пропуски в предложениях, пользуясь информацией текста (упр. 5.3):

1. In accordance with international ... Finland is committed to protecting biodiversity in its ecosystems.
2. The ... of Agriculture and Forestry and the ... of the Environment approved an Environmental Programme for Forestry in 1994.
3. In the Programme ... and procedures to be used in the sustainable management of Finnish forests were specified.
4. Significant steps including a recent ... of the forest, nature conservation ... and a programme for their ..., have taken place.
5. The ... of biodiversity in Finnish forests imply the complete protection of forests and silvicultural methods applied in commercial forests.
6. Key biotopes should be left in their natural state or subjected to....
7. Forest land with ... of more than 0,1 mVha/year is either protected or is subject to...
8. Forests allowed to develop freely according to the forces of nature can be found in strict ....

5.6. Раскройте скобки, употребляя глаголы в необходимой временной форме:

1. Russia (to occupy) one eighth of the global land area and most of non-tropical Eurasia.
2. Its territory (to present) landscapes of 8 natural zones, passing from arctic deserts and tundra all the way through the taiga zones to broad- leaved forests and steppe areas.
3. Russia's vast forests (to be) a natural resource of global importance, both ecologically and economically.
4. There (to be) huge areas where human influence is slight and many natural values are present.
5. Now the forests (to serve) Russia and the rest of the world as a source of timber, as a symbol of wilderness and as a critical stabilizer of the global climate.
6. In 1990s there (to be) still huge areas with unexploited old-growth forests in Russia.
7. In the distant past, the succession of ice ages (to cause) a great destruction to Northern temperate forests.
8. The most familiar temperate-zone evergreens (to reign) long before the first deciduous trees ventured a leaf.
9. Over the years, the simple plants (to dye) and (to sink) to the bottom of lakes, where their remains then formed a layer of sediment.
10. Over the millennia, adverse environmental changes (to force) the forests to retreat many times.

5.7. Раскройте скобки, образуя условные предложения *I, II* и *III* типов. Внесите необходимые изменения.

Образец: ***If there (to be) ample rainfall, plant growth (to be) riotous.*** -

If there is ample rainfall, plant growth will be riotous.

If there were ample rainfall, plant growth would be riotous.

If there had been ample rainfall, plant growth would have been riotous last summer.

1. If the temperature (to reach) 52° F, pines (to become) active.
2. If many cells (to perish), the limb (to die).
3. It conifers (not to have) useful companions in the soil, such conditions growth virtually impossible.
4. If a drought (to develop), the forest's metabolism (to slow) and the annual growth rings of trees (to be) narrow.
5. If the new forest (to be cut) before its natural balance has been regained, the result (to be) long-term degradation of the ecosystem.
6. If the rainy season (to coincide) with colder months, less vegetation (to grow) than if the rain (to come) during the summer months.
7. If the conditions (to be) favourable, the growth of southern magnolia (to be) fairly rapid.

8. If we (to know) the ecological relationships of the forest, we (to be I able) to renew it naturally.

5.8. Ответьте на вопросы по тексту (упр. 5.3):

What two ministries are responsible for Finland's natural resources?

When was an Environmental Programme for Forestry approved?

What measures did the Programme include?

What does the enhancement of forest biodiversity in Finland consist of?

What form of silviculture should be used in the boreal coniferous» forest zone?

What biotopes does the forest and nature conservation legislation specify?

What do such biotopes include?

What did a survey made by the forest and environmental organizations show?

What does the term "strictly protected forest land" mean? I o Where are strictly protected forest areas located?

5.9. Разбейте текст (упр. 5.3) на 4 части в соответствии с пунктами плана:

Protection of biodiversity in Finland**'s** ecosystems.

Forest protection and new management methods.

Key biotopes.

Protected area.

5.10. Пользуясь планом, предложенным в упр. 5.9, подготовьте краткий пересказ текста (упр. 5.3).

УРАЛЬСКИЙ
ГОСУДАРСТВЕННЫЙ
ЛЕСОТЕХНИЧЕСКИЙ
УНИВЕРСИТЕТ
УГЛТУ

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FORESTS

Часть 2

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