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Кафедра иностранных языков

Учебное пособие по английскому языку для магистрантов и аспирантов факультета лесного хозяйства и экологии

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Учебное пособие предназначено для магистрантов и аспирантов факультета лесного хозяйства и экологии. В процессе работы по пособию решаются задачи как обучения ознакомительное чтение профессионально-ориентированных текстов; обучение навыкам перевода и аннотирования литературы с английского на русский язык. Пособие состоит 4 тем, включающих в себя по три текста и задания к ним. Упражнения направлены на тренировку навыков просмотрового, изучающего чтения, аннотирования, перевода и высказываться по заданной теме.

Учебное пособие по английскому языку для магистрантов и аспирантов факультета лесного хозяйства и экологии обсуждено и одобрено на заседании кафедры иностранных языков. Протокол № 11 от 18 июня 2018 года.

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Unit 1. Definition of term Forest. Text Wordings of terms forest, woodland, wild and afforested areas

STARTING UP

Discuss this question

What do you know about forests?

VOCABULARY 1

1. **Read and translate the international words into Russian**

Ecological function, percent, area, organization, the globe, biosphere, biomass, ecosystem service, productivity, pole, legally, future, category, administrative, activity, biomass, ecozones, billion, mile, hectare, type, composition, ecological function, basal area.

2. Read and translate into Russian the following words and word combinations

High levels of tree canopy, woody vegetation, tree density, tree height, land use, legal standing, dominant terrestrial ecosystem, the gross primary productivity, cross-section of tree trunks, human activities, tourist enjoyment, negatively affect, legal designations of land.

3. Read and translate the verbs

To cover, to distribute, to account, to contain, to form, to tend, to consist, to include, to affect, to impose, to provide, to use, to grow, to designate, to base, to bear, to define, to occupy, to be based upon.

READING

TIP for success

As you read, circle new vocabulary words that you don't know. After you finish reading, use the dictionary to look up the words to help you better understand the text.

https://elt.oup.com/.../skills/q_skills_for_success

According to the widely-used United Nations Food and Agriculture Organization definition, forests covered an area of four billion hectares (15 million square miles) or approximately 30 percent of the world's land area in 2010.

Forests are the dominant terrestrial ecosystem of the Earth. Trees are distributed across the globe. Forests account for 75% of the gross primary productivity of the Earth's biosphere, and contain 80% of the Earth's plant biomass. The number of trees in the world, according to a 2015 estimate, is 3.04 trillion, of which 1.39 trillion are in the tropics or sub-tropics, 0.61 trillion in the temperate zones, and 0.74 trillion in the coniferous boreal forests.

Forests at different latitudes form distinctly different ecozones: boreal forests near the poles tend to consist of evergreens, while tropical forests near the equator tend to be distinct from the temperate forests at mid-latitude. The amount of precipitation and the elevation of the forest also affect forest composition.

Human society and forests influence each other in both positive and negative ways. Forests provide ecosystem services to humans and serve as tourist attractions. Forests can also impose costs, affect people's health, and interfere with tourist enjoyment. Human activities can negatively affect forest ecosystems. People harvest forest resources and use trees for timber.

Hundreds of more precise definitions of forest are used throughout the world. Giving the definition it is used the factors as tree density, tree height, land use, legal standing and ecological function. Some dictionaries give the following definitions:

A forest is a large area of land that is thickly covered with trees.[1]

A forest is a large area of land covered with trees or other woody vegetation.[2]

The definition of the forest in encyclopedia is "A forest is a dense growth of trees, together with other plants, covering a large area of land".

The definition of forest used by Australia's National Forest Inventory is:

"A forest is an area, incorporating all living and non-living components, that is dominated by trees having usually a single stem and a mature or potentially mature stand height exceeding 2 meters and with existing or potential crown cover of over storey strata about equal to or greater than 20 per cent." (This includes Australia's diverse native forests and plantations, regardless of age. It is also sufficiently broad to encompass areas of trees that are sometimes described as woodlands.)[3]

There are some broad categories of forest definitions in use: administrative, land use, and land cover. Administrative definitions are based primarily upon the legal designations of land. It has no relationship to the vegetation growing on the land. This definition is defined the place as a forest even if no trees are growing on it. The land use definitionis based upon the primary purpose that the land serves. For example, a forest may be any lands that are used primarily for production of timber. Under such a land use definition, cleared roads or infrastructure are the forests or areas within the region that have been cleared by harvesting. The land cover definitions define forests based upon the type and density of vegetation growing on the land. Such definitions typically define a forest as an area growing trees above some thresholds. These thresholds are typically the number of trees per area (density), the area of ground under the tree canopy (canopy cover) or the section of land that is occupied by the cross-section of tree trunks. Under land use definition, there is considerable variation on where the cutoff points are between a forest, woodland, and savanna. Under some definitions, forests require very high levels of tree canopy cover, from 60% to 100%, excluding savannas and woodlands in which trees have a lower canopy cover. Other definitions consider savannas to be a type of forest and include all areas with tree canopies over 10%.

Collins Discovery Encyclopedia, 1st edition © Harper Collins Publishers 2005 https//www.google.ru//en.wikipedia.org/…/ Australia's National Forest Report. 2013.

COMPREHENSION

1. Retell the text in Russian

2. Ask some questions through the text

3. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. A forest is a small area of land covered with trees or other woody vegetation.

2. According to the widely-used United Nations Food and Agriculture Organization definition, forests covered an area of six billion hectares.

3. Forests covered approximately 60 percent of the world's land area in 2010.

4. Forests aren't dominant terrestrial ecosystem of the Earth.

5. Forests are distributed across the globe.

6. Forests account for 75% of the gross primary productivity of the Earth's biosphere.

7. Forests contain 80% of the Earth's plant biomass.

8. Forests at different latitudes form the same eco-zones.

9. There are two broad categories of forest definitions in use: administrative, and land cover.

READING SKILL

ANNOTATING A TEXT

A. Become an active reader by annotating the texts you read. Annotating a text involves underlining, writing symbols, and taking notes in the margins as you read. These steps can help you to concentrate while you read, increase your understanding, and remember information later.

The margins, between paragraphs, and the space at the end of the text are ideal places to make your notes. The following are popular techniques to use:

- **Circle** new vocabulary and key terms and write out their definitions. Use the symbol = to show the words are synonyms.
- **Write questions** you have about the text.
- **Make connections** to your own knowledge and life experience.
- **Summarize main ideas** in only a few words.
- **Agree or disagree** with the text and make comments.
- **Number** the steps in a process, supporting details or examples, key points, and so on.

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B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate these words and word combinations from Russian into English

Высота над уровнем моря, широта, на средней широте, атмосферные осадки, хвойный лес, обитающий на Земле, плотность, определение, строевой лес, общество, биосфера, древесное растение, человеческая деятельность

2. Match each word in column A with its definition in column B

1. Wooded	a. is a plant with a single self supporting of wood with (usually) no branches for some distance above the ground.
2. Savanna	b. is covered with wood.
3. Bush	c. is a large area of land covered with trees.
4. Wood	d. is an area of land covered with trees not so extensive as a forest.
5. Forest	e. is a treeless plain.
6. Tree	f. is a low growing plant with several or many woody stems coming up from the root.
7. Density	g. plants generally and collectively.
8. Timber	h. is the quality of being dense.
9. Pole	i. is a wood prepared for use in building.
10. Vegetation	g. is either of the two ends of the earth's axis.

Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

3. Complete the following sentences according to the text

1. A forest is a large ……. of land covered with trees.
2. According to the widely-used United Nations Food and Agriculture Organization definition, forests covered an area of four billion …….. (15 million square miles) or approximately 30 ……. of the world's land …….. in 2010.
3. Forests are the dominant …….. ecosystem of Earth.
4. Forests …… for 75% of the gross primary productivity of the Earth's …….
5. Forests at different …….. form distinctly different ecozones.
6. Tropical forests near the …… tend to be distinct from the temperate forests at mid-latitude.
7. Human society and forests influence each other in both positive and negative ……
8. Forests are distributed across the ……...
9. Under a land use definition, cleared roads or infrastructure are the ……..

4. Find synonyms from the following list. Translate. Learn the words

Forest, planet, meadow, lift, zone, rebuild, region, species, varieties, wood, plain, the Earth, repair, raise.

5. Find antonyms from the following list. Translate. Learn the words.

Longitude, space system, positive, latitude, narrow, small, negative, treeless land, forest, wide, terrestrial system, large.

6. **Complete the chart below. Translate.**

Noun	**Adjective**
Ecology	***Ecological***
Nature	
Globe	
Definition	
Tropic	
Function	

SPEAKING

1. What does this text deal with?
2. Discuss the main ideas of the text in a group.
3. What valuable information did you get from the text?
4. In pairs, ask and answer some questions through the text.

WRITING

1. Make up a plan of the text.

2. Write out terms related to forestry from the text. Translate the sentences with these terms.

3. Insert the necessary prepositions.

1. There are three broad categories …. forest definitions ….. use.

2. Administrative definitions are based primarily ……. the legal designations …. land.

3. Under such a Land Use definition, cleared roads or infrastructure within an area used for forestry, or areas within the region that have been cleared …… harvesting, disease or fire are still considered forests.

4. Such definitions typically define a forest as an area of growing trees ……. some threshold.

5. Under some definitions, forests require very high levels …… tree canopy cover, ……. 60% ……100%.

6. Human society and forests influence each other …… both positive and negative ways.

7. Forests are the dominant terrestrial ecosystem ….the Earth, and are distributed ……. the globe.

Text 2. Systemization of the Forests

STARTING UP

Discuss this question.

What kinds of forests are there in the world?

VOCABULARY 1

1. **Read and translate the international words into Russian.**

Line, physiognomy, tropical, subtropical, plantation, species, specify, trillion, natural, universal, complex, reclassify, mixed, to dominate, community, cellulose, carbohydrate, component, specificity, term, biome, climatic zones, dominant.

2. Read and translate into Russian the following words and word combinations

Old-growth forest, forest plantations, sparse trees, forest classification, universal acceptance, temperate needle leaf forest, temperate broadleaf forest, tropical moist forest, tropical dry, temperate zones, tropical and subtropical coniferous forests.

3. Read and translate the verbs

To find, to alter, to cover, to occur, to contain, to compare, to decompose, to classify, to exist, to occupy, to support, to propose, to reclassify, to remain, to reflect.

READING

Forest ecosystems can be found in all regions capable of sustaining tree growth, at altitudes up to the tree line, where the environment has been altered by human activity.

The latitudes 10° North and South of the equator are mostly covered in tropical rainforest, and the latitudes between 53°N and 67°N have boreal forests. As a general rule, forests dominated by angiosperms (*broadleaf forests*) are more species-rich than those dominated by gymnosperms (*conifer*, *mountain*, or *needle leaf forests*).

Forests sometimes contain many tree species only within a small area (as in tropical rain and temperate deciduous forests), or relatively few species over large areas (e.g., taiga and arid mountain coniferous forests). Forests are often home to many animal and plant species, and biomass per unit area is high compared to other vegetation communities. Much of this biomass occurs below ground in the root systems and as partially decomposed plant detritus. The woody component of a forest contains lignin, which is relatively slow to decompose compared with other organic materials such as cellulose or carbohydrate. Forests can be classified in different ways and to different degrees of specificity. One such way is in terms of the biome in which they exist, combined with leaf longevity of the dominant species (whether they are evergreen or deciduous). Another distinction is whether the forests are composed

predominantly of broadleaf trees, coniferous (needle-leaved) trees, or mixed. Boreal forests occupy the subarctic zone and are generally evergreen and coniferous. Temperate zones support both broadleaf deciduous forests (e.g. temperate deciduous forest) and evergreen coniferous forests (e.g., temperate coniferous forests and temperate rainforests). Warm temperate zones support broadleaf evergreen forests, including laurel forests. Tropical and subtropical forests include tropical and subtropical moist forests, tropical and subtropical dry forests, and tropical and subtropical coniferous forests.

Physiognomy classifies forests based on their overall physical structure or developmental stage (e.g. old growth vs. second growth).Old-growth forest contains mainly natural patterns of biodiversity in established serial patterns, and they contain mainly species native to the region and habitat. In contrast, secondary forest often contains significant elements of species which were originally from other regions or habitats.

Forests can be classified based on the climate and the dominant tree species present, resulting in numerous different forest types (e.g. Ponderosa pine/Douglas-fir forest).

Forests can also be classified according to the amount of human alteration. There are different global forest classification systems but none has gained universal acceptance. UNEP-WCMC's forest category classification system is a simplification of other more complex systems (e.g. UNESCO's forest and woodland 'sub formations'). This system divides the world's forests into 26 major types, which reflect climatic zones as well as the principal types of trees. These 26 major types can be reclassified into 6 broader categories: temperate needle leaf; temperate broadleaf and mixed; tropical moist; tropical dry; sparse trees and parkland; and forest plantations.

Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005 https//www.google.ru//en.wikipedia.org/

COMPREHENSION

1. Retell the text in Russian.

2. Ask some questions through the text.

3. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Forest ecosystems cannot be found in all regions capable of sustaining tree growth.
2. The latitudes 10° North and South of the equator are mostly covered in taiga
3. The latitudes between 53°N and 67°N have rain forests.
4. Forests dominated by angiosperms (broadleaf forests) are not more species-rich than those dominated by gymnosperms (conifer, mountain, or needle leaf forests).
5. The woody component of a forest doesn't lignin.

6. Physiognomy classifies forests based on their overall physical structure or developmental stage (e.g. old growth vs. second growth).

7. Secondary forests often contain significant elements of species which were originally from other regions or habitats.

8. Tropical and subtropical forests include birch tree forests and oak forests.

9. Tropical forests grow in the North of the Earth.

10. Coniferous forests can be found in Africa and the Amazon Basin region where the climate is dry and cold.

READING SKILL

ANNOTATING A TEXT

Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate these words and word combinations from Russian into English

Широколиственные леса, целлюлоза, биомасса, рост дерева, растение, хвойные леса, тайга, определение, площадь основания растений, высокий уровень лесного покрова, густота насаждения деревьев, маркировка, законное обозначение земельных угодий, полог леса, биосфера, средняя широта

2. Match each word in column A with its definition in column B

1. Tundra	a. is a biome characterized by coniferous forests consisting mostly of pines, spruces and larches.
2. Taiga	b. is forests characterized by high rainfall, with annual rainfall between 250 and 450 centimeters (98 and 177 in).
3. Cellulose	c. is treeless place in the North cold zone
4. Rainforest	d. is an organic compound , a polysaccharide consisting of a linear chain of several hundred to many thousands of -(1→4) linked D-glucose units.
5. Broadleaf tree	e. is a plant that has leaves throughout the year, always green.
6. Needleleaf tree	g. is any tree that has wide leaves, rather than slim, needle-like leaves as found in conifers.
7. Lignin	h. is a class of complex organic polymers.
8. Equator	i. is an imaginary line around the earth at an equal distance from the North and South Poles.

Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.
https//www.google.ru//en.wikipedia.org/…/

3. Complete the following sentences according to the text

1. Forest ecosystems can be found in all ……. on the Earth.
2. The …… 10° north and south of the equator are mostly covered in ……..
3. The latitudes between 53°N and 67°N have …… forests.
4. As a general rule, forests dominated by …… .
5. Broadleaf forests are more species-rich than those dominated by ……. (conifer, mountain, or needle leaf forests).
6. The woody component of a forest contains ……. ..
7. ……. occupy the subarctic zone and are generally evergreen and coniferous.
8. …….. zones support both broadleaf deciduous forests (*e.g.*, temperate deciduous forest) and evergreen coniferous forests (e.g., temperate coniferous forests and temperate rainforests).
9. Warm temperate zones support broadleaf evergreen forests, including …… forests.
10. Physiognomy classifies forests based on their overall physical structure or developmental stage (e.g. ……..).
11. Forests can also be classified more specifically based on the ….and the ……..tree species present.
12. Forests can also be classified according to the amount of ……. alteration.

4. Find synonyms from the following list. Translate. Learn the words

Wet, to protect, bush, humid, to discover, fir forest, needle leaf forest, to find, to cover, to occur, to show, shrub, to occupy, to support, tropical forest, to reflect, to take place, laurel forest.

5. Find antonyms from the following list. Translate. Learn the words

To frost, dry, subtropical forest, broadleaf forest, to harvest, the South Pole, to destroy, to thaw, moist, subarctic forest, to support, to plant, needle leaf, the North Pole.

6. Complete the chart below according to the model. Translate all the words

Noun	**Verb**
Model	
Classification	***Classify***
Distinction	

Reflection	
	to produce
	to plant
Creation	
	to except
	to produce

SPEAKING

1. What does this text deal with?
2. Discuss the main ideas in a group.
3. What valuable information did you get from the text?
4. In pairs, ask and answer some questions through the text.

WRITING

1. Make up a plan of the text.

2. Write out terms related to forestry from the text. Translate the sentences with these terms.

3. **Insert the necessary prepositions**.

1. The number …… trees in the world, according …. 2015 estimate, is 3.04 trillion.

2. 1.39 trillion trees are …… the tropics or sub-tropics.

3. The estimate is about eight times higher than previous estimates, and is based …… tree densities measured …… over 400,000 plots.

4. Forests can also be classified according …..the amount of human alteration.

5. Old-growth forest contains mainly natural patterns …..biodiversity in established serial patterns.

6. The forests contain mainly species native ……. the region and habitat.

7. UNESCO's forest and woodland sub formations' divides the world's forests ……. 26 major types, which reflect climatic zones ……well ….. the principal types of trees.

TEXT 3 Typology of forests and forest-parks

STARTING UP

Discuss this question.

What types of forests do you know?

VOCABULARY 1

1. **Read and translate the international words into Russian**

Hemisphere, nutrient, to class, sclerophyllous, carbon dioxide, central, terra firma, to locate, formation, variation, corresponding, physiognomy, seasonal,

proportion, stature, to prolong, phenomenon, savanna, transition, taiga, regime, tundra.

2. Read and translate into Russian the following words and word combinations

Temperate needle leaf forests, the higher latitude regions, the northern hemisphere, high altitude zones, warm temperate areas, unfavorable soil, pines spruces, Douglas firs, hemlocks, the southern hemisphere, broadleaf species, mixed forests, the counterparts, evergreen rainforests, tropical moist forests, terra firma forests, peat swamp forests, high forests, upper and lower mountain formations, tropical dry forests, seasonal drought, thorn forest, grazing animals, sparse trees, non-forested landscape, high bryophyte cover, forest plantations, biodiversity, nutrient capital, watersheds, soil structure, storing carbon, recycling, carbon sink, natural hazards, flood.

3. Read and translate the verbs

To compose, to cool, to extend, to mix, to change, to reflect, to dry, to open, to intend, to recycle, to serve, to forget, to act.

READING

There are different types of forests in the world. But most common classification is the following: temperate needle leaf forests, temperate broadleaf and mixed forests, tropical moist forests, tropical dry forests, sparse trees and parklands.

Temperate needle leaf forests mostly occupy the higher latitude regions of the northern hemisphere, as well as high altitude zones and some warm temperate areas, especially on nutrient-poor or otherwise unfavorable soils. These forests are composed entirely of coniferous species. In the Northern Hemisphere pines, spruces, larches, firs, Douglas firs and hemlocks, make up the canopy. In the Southern Hemisphere, coniferous trees occur in mixtures with broadleaf species, and they are classed as broadleaf and mixed forests. They include such forest types as the mixed deciduous forests of the United States and their counterparts in China and Japan, the broadleaf evergreen rainforests of Japan, Chile and Tasmania, the sclerophyllous forests of Australia, Central China.

There are different types of tropical moist forests among them the lowland evergreen broad leaf rainforests, the forests of the Amazon Basin, the peat swamp forests, dipterocarp forests of Southeast Asia, and the high forests of the Congo Basin. Forests located on mountains are also included in this category, divided largely into upper and lower mountain formations on the basis of the variation of physiognomy corresponding to changes in altitude.

Tropical dry forests are in the tropics affected by seasonal drought. The seasonality of rainfall is usually reflected in the deciduousness of the forest canopy, with leafless trees for several months of the year. However, under some conditions, e.g. less fertile soils or less predictable drought regimes, the proportion of evergreen species increases and the forests are characterized as "sclerophyllous". Thorn forest, a

dense forest of low stature with a high frequency of thorny or spiny species, is found where drought is prolonged, and where grazing animals are at grass. Woody savannas develop on very poor soils and especially where fire is a recurrent phenomenon.

Sparse trees and parkland are forests with open canopies of 10–30% crown cover. They occur in areas of transition from forested to non-forested landscapes. The two major zones in which these ecosystems occur are in the boreal region and in the seasonally dry tropics. At high latitudes, north of the main zone of boreal forest or taiga, growing conditions are not adequate to maintain a continuous closed forest cover, so tree cover is both sparse and discontinuous. This vegetation is variously called open taiga, open lichen woodland, and forest tundra. It is a species-poor place.

Forests keep our planet alive. They can be managed in ways that enhance their biodiversity protection functions and they are important providers of ecosystem services such as maintaining nutrient capital, protecting watersheds and soil structure as well as storing carbon. Forests may also play an important role in alleviating pressure on natural forests for timber and fuel wood production. They may provide a diversity of ecosystem services including recycling carbon dioxide into oxygen, acting as a carbon sink, aiding in regulating climate, purify water, mitigating natural hazards such as floods, storms.

Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005 .https//www.google.ru//en.wikipedia.org/…/

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Temperate needle leaf forests mostly occupy the higher latitude regions of the northern hemisphere.

2. Temperate needleleaf forests grow in the South areas.

3. In the Northern Hemisphere pines, spruces, larches, firs, Douglas firs and hemlocks make up the canopy.

4. In the Southern Hemisphere most coniferous trees grow with broadleaf species, and the forests are classed as broadleaf and mixed forests.

5. Coniferous and broadleaf trees grow in temperate broadleaf and mixed forests.

6. Tropical dry forests are characteristic of areas in tundra affected by seasonal drought.

7. Thorn forests grow on poor soils, and especially where fire is a recurrent phenomenon, woody savannas develop.

8. Sparse trees and parkland are forests with open canopies of 70% crown cover.

9. Sparse forests are species-poor; it has high bryophyte cover, and is frequently affected by fire.

10. Birches, lime trees, oaks are coniferous trees.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques

VOCABULARY 2

1. Translate the following words and word combinations into English

Моховидные деревья, редколесье, колючий лес, дождевой лес умеренного пояса, сосновый лес, неблагоприятная почва, лиственничный лес, двойник, высокоствольный древостой, жестколиственный лес, жесткая почва, сезонная засуха, торфяник, лесонасаждения, ксерофитный лес, структура почвы, биоразнообразие, лекарственное средство, травоядное животное, однократно цветущие растения.

2. Match each word in column A with its definition in column B

1. Flood	a. is the variety of different types of life found on the Earth and the variations within species.
2. Lumber	b. is an overflow of water that submerges land which is usually dry.
3. Bryophyte	c. is the mixture of minerals, organic matter , gases, liquids, and the countless organisms that together support life on earth.
4. Swamp	d. carbon dioxide is the third planet from the Sun, the densest planet in the Solar System.
5. The Earth	e. refers to timber with the principal use of making wood pulp for paper production.
6. Climate	f. is a traditional name used to refer to all land plants that do not have true vascular tissue and are therefore called "non-vascular plants.
7. Soil	g. is a wetland that is forested.
8. Biodiversity	h. is the long-term pattern of weather in a particular area.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

1. Complete the following sentences according to the text

1. Temperate needle leaf forests mostly occupy the higher ……. regions of the Northern Hemisphere.
2. In the Northern Hemisphere pines, spruces, larches, firs, Douglas firs and hemlocks make up …….. .
3. In the Southern Hemisphere, most coniferous trees occur in mixtures with ……. species, and are classed as …….. and ……. forests.
4. Temperate broadleaf and mixed forests are generally characteristic of the warmer temperate …….. .
5. Forests located on the mountains are divided largely into upper and lower …… formations.
6. Tropical dry forests are in the tropics affected by seasonal ……..
7. ……..forests dense forest of low stature with a high frequency of thorny or spiny species.
8. There are only coniferous forests in the North.
9. Forests store…….carbon.

4. Find synonyms from the following list.

Dry season, softwood forest, Southern Hemisphere, abies sibirica, rich, low land forest, bryophyte(s) , spiny, drought, moss, thorny, high land forest, Northern Hemisphere, wetland, poor, Silver fir, needle leaf forest.

5. Find antonyms from the following list.

Direct, dry land, to dig, regard, unsuitable, to extinguish, rural, indirect, balance, suitable, disregard, imbalance, urban, wet land, to plant, to burn,

SPEAKING

1. What does this text deal with?
2. Discuss the main ideas in a group.
3. What valuable information did you get from the text?
4. In pairs, ask and answer some questions through the text.

WRITING

1. Make up a plan of the text.

2. Write out terms related to the forestry from the text. Translate the sentences with these terms.

3. Insert the necessary prepositions.

1. Temperate needle leaf forests mostly occupy the higher latitude regions … the Northern Hemisphere.
2. Temperate needle leaf forests grow …. nutrient poor or otherwise unfavorable soils.
3. … the Northern Hemisphere pines, spruces , larches , firs , Douglas firs and hemlocks , make … the canopy.
4. In the Southern Hemisphere, most coniferous trees occur…..mixtures …. broadleaf species.

5. There are many different types …. tropical moist forests.

6. Tropical dry forests grow …. areas … the tropics affected …. seasonal drought.

7. The seasonality of rainfall is usually reflected … the deciduousness …. the forest canopy.

Unit 2. Category of Forestland
Text 4 North-polar and boreal forests

STARTING UP

Discuss this question

Where do boreal forests grow? Why are they very important for people?

VOCABULARY 1

1. **Read and translate the international words into Russian**

The Arctic Circle, solar energy, continental climates, a subarctic climate, the horizon, alpine tundra, biome, biochemistry

2. **Read and translate into Russian the following words and word combinations**

The boreal forest, coniferous forests, terrestrial biome, a lowland area, a coastal area, the main tree species, the length of the growing season, barren areas, a tree line, subalpine, influence, the high latitude, hours of daylight, coniferous trees, evergreen spruce, deciduous larch, hornbeam, threshold, moss, oak.

3. Read and translate the verbs

To estimate, to use, to vary, to find, to influence, to locate, to vary, to differ, to dominate, to receive, to warm, to occur, to mean, to stay, to depend, to characterize, to cover, to record, to classify, to mean, to grade, to reach, to last, to deal, to approach, to clear out, to depend on.

READING

The boreal forest or snow forest (taiga) is a biome characterized by coniferous forests consisting mostly of pines, spruces and larches. The boreal forest (taiga) is the world's largest terrestrial biome. In North America it covers most of inland of Canada and Alaska. In Eurasia it covers most of Sweden, Finland, much of Norway, some lowland of coastal areas of Iceland, much of Russia from Karelia in the west to the Pacific ocean (including much of Siberia), and areas of northern Kazakhstan, northern Mongolia, and northern Japan. However, the main tree species, the length of the growing season and summer temperatures vary. For example, the boreal forest (the taiga) of North America mostly consists of spruces; Scandinavian and Finnish taiga consists of spruce, pines and birch trees; Russian taiga has spruces, pines and larches depending on the region, while the Eastern Siberian taiga is a vast larch forest.

Boreal forest makes up 29% of the world's forest cover; the largest areas are located in Russia and Canada. The boreal forest is the terrestrial biome with the lowest annual average temperatures after the tundra and permanent ice caps. The lowest reliably temperatures in the Northern Hemisphere were recorded in the taiga of northeastern Russia. The boreal forest has a subarctic climate with very large temperature range between seasons, but the long and cold winter is the dominant feature. In Siberian taiga the average temperature of the coldest month is between −6 °C (21 °F) and −50 °C (−58 °F). There are also some much smaller areas grading towards the oceanic climate with milder winters.

The growing season, when the vegetation in the boreal forests comes alive, is usually slightly longer than the climatic definition of summer as the plants of the boreal biome have a lower threshold to the growth. Lakes and other water bodies are common in taiga. Boreal forests are rich in spruces. Scots pines grow in the western Siberian plain. Larch trees are dominated in the boreal forest (taiga) in Eastern Siberia, before returning to its original floristic richness on the Pacific shores. Two deciduous conifers mingle throughout southern Siberia: birch and populous tremula. In the southern regions taiga may be replaced by forest steppe where rainfall is very low. In these warmer areas the taiga has higher species diversity, with more warm-loving species such as Korean pine, spruce, and Manchurian fir trees. In southern areas there are more coniferous temperate rainforests where oak and hornbeam appear and join the conifers, birch and populous tremula.

Taiga soil tends to be young and poor in nutrients. It lacks the deep, organically enriched profile present in temperate deciduous forests. The thinness of the soil is due largely to the cold, which hinders the development of soil and the ease with which plants can use its nutrients. Fallen leaves and moss can remain on the forest floor for a long time in the cool, moist climate, which limits their organic contribution to the soil; acids from evergreen needles further leach the soil, creating spodosol also known as podzol. Since the soil is acidic due to the falling pine needles, the forest floor has only lichens and some moss growing on it. In clearings in the forest and in areas with more boreal deciduous trees, there are more herbs and berries. Diversity of soil organisms in the boreal forest is high, comparable to the tropical rainforests.

Evergreen species in the taiga (spruce, fir, and pine) have a number of adaptations specifically for survival in harsh taiga winters, although larch, the most cold-tolerant of all trees is deciduous. Taiga trees tend to have shallow roots to take advantage of the thin soils, while many of them seasonally alter their biochemistry to make them more resistant to freezing. The narrow conical shape of northern conifers and their downward-drooping limbs also help them shed snow. Although the boreal forest is dominated by coniferous forests, some broadleaf trees also occur, notably birch, aspen, willow, and rowan. Many smaller herbaceous plants, such as ferns and occasionally ramps grow closer to the ground. Periodic stand-replacing wildfires (with return times of between 20–200 years) clear out the tree canopies, allowing sunlight to invigorate new growth on the forest floor. For some species, wildfires are a necessary part of the life cycle in the taiga; some, e.g. jack pine have cones which only open to release their seed after a fire, dispersing their

seeds onto the newly cleared ground; certain species of fungi (such as morels) are also known to do this. Grasses grow wherever they can find a patch of sun, and mosses and lichens thrive on the damp ground and on the sides of tree trunks. In comparison with other biomes the boreal forest has low biological diversity.

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COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. The boreal forest (taiga) is a biome characterized by coniferous forests consisting mostly of pines, spruces and larches.
2. The taiga is the world's largest terrestrial biome.
3. In North America it covers the small part of Canada and Alaska.
4. In Eurasia, it covers Italy, Portugal, Spain and France.
5. In Russia the boreal forests grow in the south.
6. The main tree species don't vary in the boreal forests.
7. The taiga of North America mostly consists of spruces.
8. Scandinavian and Finnish taiga consists of spruce, pines and birch trees.
9. Russian taiga has spruces, pines and larches depending on the region.
10. Taiga is the world's smallest land biome, and makes up 2.29% of the world's forest cover.
11. The largest areas of taiga are located in Brazil and Europe.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques

VOCABULARY 2

1. Translate the following words and word combinations into English

Рябина, ива, береза, тополь, пихта, сосна, ель, период роста растений, низменность, прибрежные районы, линия роста деревьев, гористая тундра, годовая низкая температура, постоянный снежный покров, субарктический климат, ели, пихты, лиственница, пустошь, солнечная энергия, хвойное дерево, вечная мерзлота

1. **Match each word in column A with its definition in column B**

1. Larches	a. is a lacking vegetation area.
2. Longitude	b. is a tree with smooth bark and thin branches that grows in northern countries.
3. Barren area	c. is a tree with long thin branches and long thin leaves, that often grows near water.
4. A birch	d. is the area where land meets the sea or ocean, or a line that forms the boundary between the land and the ocean or a lake.
5. A coastal area	e. is a portion of plain that is conditionally categorized by its elevation above the sea level.
6. Tundra	f. is the transition time period from one day to the next: the moment when the date changes.
7. Midnight	g. are conifers in the genus *Larix*, in the family Pinaceae. Growing from 20 to 45 m tall (65 to 147 ft), they are native to much of the cooler temperate northern hemisphere, on lowlands in the north and high on mountains.
8. A lowland	h. is a geographic coordinate that specifies the east-west position of a point on the Earth's surface.
9. A willow	i. is the large flat Arctic region of northern Europe, Asia, and North America where no trees grow and where the soil below the surface of the ground is always frozen.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

4. Complete the following sentences according to the text

1. The boreal forest is a ……. characterized by ……. forests consisting mostly of ……..……. and…….. .
2. The boreal forest (taiga) is the world's largest …….biome.
3. The taiga or boreal forest has a ……climate with very large temperature range between seasons.
4. In Siberian taiga the average temperature of the coldest month is between …… and.
5. Two ……. conifers mingle throughout southern Siberia: birch and populous tremula.
6. The boreal forests may be replaced by …… south of the 15 °C (59 °F) July isotherm.
7. Taiga…. is poor in nutrients.
8. The thinness of the soil is due largely to the cold, which hinders the development of soil and the ease with which plants can use its……..

9. Fallen leaves and …… can remain on the forest floor for a long time in the cool.

10 ……. of soil organisms in the boreal forest is high, comparable to the tropical rainforest.

5. Find synonyms from the following list

A highland, wild land, sunlight, huge, to uphold, a hill, a coastal area, treeless zone, shore, barren area, big, waste area, sunshine, to support.

6. Find antonyms from the following list

A lowland, frost-free days, mid-winter, a small area, longitude, forest zone, to rise, a highland, island, a mainland, latitude, to set, barren area, a midnight, a midday, a mid-summer, frosty days, treeless zone, a vast area.

SPEAKING

1. **What does this text deal with?**
2. **Discuss the main ideas in a group.**
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Write your arguments** "How can we protect taiga in Russian Federation?"

4. Insert the necessary prepositions

1. The growing season, when the vegetation …. the taiga comes alive, is usually slightly longer than the climatic definition ….. summer as the plants …. the boreal biome have a lower threshold ….. trigger growth.

2. In Canada, Scandinavia and Finland, the growing season is often estimated ….. using the period ….. the year when the 24-hour average temperature is +5 °C (41 °F) or more.

3. The longest growing season is found …..the smaller areas …… oceanic influences.

4. The longest growing season is found …..the smaller areas ….. oceanic influences; ….. coastal areas …… Scandinavia and Finland, the growing season …..the closed boreal forest can be 145–180 days.

5. The winters, ……. average temperatures below freezing, last five ….. seven months.

6. Some trees in boreal forests are ….danger …. extinction.

Text 5 Tropical rain forests

STARTING UP

Discuss this question

Why are tropical forests called the "world's largest pharmacy"?

VOCABULARY 1

1. **Read and translate the international words into Russian.**

To associate**,** to characterize, to colonize, pharmacy, medicines, photosynthesis, lianas, stability, respiration, sporadically, microorganisms, intertropical, jungle, equator, fungi, monsoon, equatorial zone.

2. Read and translate into Russian the following words and word combinations

Rainfall, tropical rainforests, insects, "jewels of the Earth", oxygen production, carbon dioxide, undergrowth, poor penetration, ground level, leaf canopy, vines, shrubs, the "Earth's lungs", the coastal areas, the Adriatic coast, Far East coast, kapok tree, pollen, buttress roots, wax, the emergent, canopy, understory, forest floor layers.

3. Read and translate the verbs

To feed, to drop, to prevent, to grow out, to spread out, to pollinate, to discover, to consume, to restrict, to lie, to call, to find out, to adapt, to disappear, to associate.

READING

Rainforests are forests characterized by high rainfall, with annual rainfall between 250 and 450 centimeters (98 and 177 in). There are two types of rainforest: tropical rainforest and temperate rainforest. Although some tropical forests are deciduous, most tropical trees are considered evergreen because their leaves are not shed simultaneously at a certain season; however, they are believed to drop and renew their leaves sporadically each year. They cover only 7% of the Earth's landmass and about one-half of the planet's species lives there.

From 40% to 75% of all biotic species are indigenous to the rainforests. There may be many millions of species of plants, insects and microorganisms still undiscovered in tropical rainforests. Tropical rainforests have been called the "jewels of the Earth" and the "world's largest pharmacy", because over one quarter of natural medicines have been discovered there. Rainforests are also responsible for 28% of the world's oxygen turnover, sometimes misnamed oxygen production, processing it through photosynthesis from carbon dioxide and consuming it through respiration.

The undergrowth in some areas of the rainforests can be restricted by poor penetration of sunlight to ground level. If the leaf canopy is destroyed or thinned, the ground beneath is soon colonized by a dense, tangled growth of vines, shrubs and

small trees, called a jungle. The word *jungle* is sometimes applied to tropical rainforests generally.

Tropical rainforests are characterized by a warm and wet climate with no substantial dry season: typically found within 10 degrees north and south of the equator. Mean monthly temperatures exceed 18 °C (64 °F) during all months of the year. Average annual rainfall is no less than 168 cm (66 in).

The monsoon, alternatively known as the intertropical convergence zone, plays a significant role in creating the climatic conditions necessary for the Earth's tropical rainforests.

The broader category of tropical moist forests is located in the equatorial zone. Tropical rainforests exist in Southeast Asia to the Philippines, Malaysia, Indonesia, Papua New Guinea, Sri Lanka, Sub-Saharan, South America and on many of the Pacific Islands (such as Hawaii). Tropical forests have been called the "Earth's lungs", although it is now known that rainforests contribute little net oxygen addition to the atmosphere through photosynthesis.

Tropical forests cover a large part of the globe, but temperate rainforest sonly occur in few regions around the world. Temperate rainforests are rainforests in temperate regions. They occur in North America, in Europe e.g. parts of the British Isles such as the coastal areas of Ireland and Scotland, parts of the western Balkans along the Adriatic coast and on Sakhalin Island and also in Australia and New Zealand.

A tropical rainforest typically has a number of layers, each with different plants and animals adapted for life in that particular area. Examples include the emergent, canopy, understory and forest floor layers.

The rainforest itself is home to more than 40,000 plant species. The most common tree in the rainforests is the palms. However, it only makes up 1% (5 billion) of the 390 billion trees in the region. Rainforest plants are in a constant battle, not just with the insects, fungi, birds and mammals that eat them, but also with each other. In order to get the sunlight that they need, plants have to be able to grow faster, or to have bigger leaves, than their neighbors. Plants protect themselves from predators using various strategies. Some tropical rainforest plants are poisonous, some have thorns, some have thick bark and others have tough leaves. But it’s not all about keeping animals away. Rainforest plants also have to attract the animals that help them to pollinate. 90% of flowering plants require animal assistance to pollinate. The other 10% use wind or other means to transfer pollen. The leaves of rainforest plants are often waxy, with thin tips, known as ‘drip-tips’. They have evolved this way to encourage rainwater to run off the leaves. A leaf holding water could become too heavy and break. The water may also encourage fungus and bacteria to grow, which could prevent photosynthesis. Tropical rainforests often have poor quality soil. It is thin and shallow, and low in nutrients. Because of this, many rainforest trees have developed what are known as ‘buttress roots’. Buttress roots grow out at an angle from a tree’s trunk up to 10 meters from the ground. They widen the base of the tree, making it more stable in the thin soil. They also help to spread out the tree’s roots over a large area, allowing it to obtain more nutrients. Kapok trees have buttress

roots. These tall trees, which can push through the rainforest canopy to form the emergent layer, rely on their wide roots for stability. Kapok trees are found in South American, Asian and African tropical rainforests.

Mangrove forests are tropical forests that grow where the soil is waterlogged for long periods of time. They often occur near the coast. Some mangrove trees have 'stilt' or 'prop' roots. These are roots that grow out of the trunk above the ground before extending downwards into the soil. Like buttress roots, they give the trees more stability. Trees in mangrove forests also have roots that grow upwards from under the ground. These roots stick out of the mud or water like snorkels. The trees obtain oxygen directly from the air using these "root snorkels".

Lianas are rainforest vines. These thick, woody plants have roots in the ground and wrap themselves around other plants in order to reach the sunlight. Rainforest animas use lianas to climb trees and to get around the upper levels of the tropical rainforest. Epiphytes are plants that grow on other plants. Epiphytes are extremely common in tropical rainforests. It is thought that there are over 15000 species in Central and South American tropical rainforests. Epiphytes can grow in large numbers without harming the host tree. Over 50 species of epiphyte have been found growing on a single tropical rainforest tree. Together, the epiphytes on a single tree can weigh several tones. Epiphytes include many vines, bromeliads.

Some of the most useful plants in the tropical rainforest are palms. Palms can be trees, shrubs or vines. They have large leaves and are 'evergreen', which means their leaves are green for all of the year. There are around 2,800 palm species in the world. Most are found in tropical and subtropical regions. Many rainforest palms are grown for their edible fruit, which are used to flavor fruit drinks and ice cream. Other notable rainforest palms include the Carnauba Palm from which a variety of products, including car polish, surf wax, and lipstick are made. Rattan palms are used to make furniture. The trees, shrubs, vines and flowers of tropical rainforests provide food and shelter for the animals. Palms provide food, mainly in the form of fruit. Many other rainforest plants are harvested for food e.g. the Brazil nut and Cashew nut trees. Rainforest hardwood trees, such as mahogany, are harvested for their wood.

Today many rainforest species are rapidly disappearing due to deforestation, habitat loss and pollution of the atmosphere.

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COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Rainforests are forests characterized by dry seasons.

2. There are many types of rainforest: tropical rainforests and temperate rainforests.

3. The monsoon doesn't play a significant role in creating the climatic conditions necessary for the Earth's tropical rainforests.

4. Around 60% to 90% of all biotic species are indigenous to the rainforests.

5. Many millions of species of plants, insects and microorganisms still undiscovered in tropical rainforests.

6. Tropical rainforests have been called the "jewels of the Earth" and the "world's largest pharmacy".

7. Rainforests are also responsible for 50% of the world's oxygen turnover.

8. The term *jungle* is also sometimes applied to tropical rainforests generally.

9. Fir trees grow in tropical rainforests.

10. Animal help rainforest plants to pollinate.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques

VOCABULARY 2

1. Translate the following words and word combinations into English

Дождевые осадки, муссоны, лекарственные растения, кислород, фотосинтез, джунгли, плохая глубина проникновения, углекислый газ, побережье Дальнего Востока, лесной слой почвы, нижний ярус леса(подрост), кустарники, вьющиеся растение, верхний слой почвы, дерево возвышающееся над другими (в джунглях).

2. Match each word in column A with its definition in column B

1. Palm	a. is land covered with dense vegetation dominated by trees.
2. Photosynthesis	b. is sorts of tree growing in a warm climate, with no branches and a mass of large wide leaves at the top.
3. Mineral	c. is the process by which trees obtain food from sunlight.
4. Jungle	d. is a naturally occurring chemical compound.
5. Stream	e. is a chemical element with symbol **O** and atomic number 8.
6. Oxygen	f. is one form of soil degradation.
7. Soil erosion	g. is a body of water with a current, confined within a bed and banks.
8. Field	h. is an area of land in the country used for growing

	crops.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby.Oxford Press University. 2000.

3. Complete the following sentences according to the text

1. Rainforests are forests characterized by high ……., with annual rainfall between 250 and 450 centimetres (98 and 177 in).
2. There are two types of rainforest: …….. and ……
3. The monsoon plays a significant role in creating the climatic conditions necessary for the …….'s tropical rainforests.
4. Around 40% to 75% of all biotic …. are indigenous to the rainforests.
5. There may be many millions of species of plants, insects and…… still undiscovered in tropical rainforests.
6. Tropical rainforests have been called the "……..of the Earth" and the "world's largest ……", because over one quarter of natural ……. have been discovered there.
7. Rainforests are also responsible for 28% of the world's ……. turnover.
8. The …… in some areas of a rainforest can be restricted by poor penetration of sunlight to ground level.
9. Tropical rainforests are characterized by a …..and…… climate with no substantial dry season.
10. Many of the world's tropical forests are associated with the location of the …….., also known as the intertropical convergence zone.
11. The broader category of tropical moist forests are located in the ……..zone. A tropical rainforest typically has a number of ……., each with different plants and animals adapted for life in that particular area.
12. More than……..of the world's species of plants and animals are found in the rainforest.
13. Many rainforest species are rapidly disappearing due to ……., habitat loss and pollution of the atmosphere.

4. Find synonyms from the following list.

Rainforest, herbology, varieties, matter, law, to join, forest crop, monsoon, to be situated, abrading, broad-wood forest, tropical forests, herbal medicine, to be located, soil erosion , to link, hardwood forest, species, forest plantation, affair, act, rain season.

5. Find antonyms from the following list.

Tropical forest, upper growth, pole, drought, land area, to appear, herbal medicine, boreal forest, chemical medicine, to disappear, coastal area, undergrowth, flood, equator.

SPEAKING

1. **What does this text deal with?**
2. **What is the main idea of the text?**
3. **What valuable information did you get from the text?**
4. **Discuss:** "How can we protect rain forests?"
5. **Work in pairs. Ask and answer some questions through the text.**
6. **Please make a short report with presentation about the rain forests in some countries**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from text. Translate the sentences with these terms.**
3. **Write your arguments: "If we lose rainforests……..?"**
4. **Insert the necessary prepositions.**

1. Rainforests are forests characterized …. high rainfall, …. annual rainfall between 250 and 450 centimetres (98 and 177 in).

2. There are two types …..rainforest: tropical rainforest and temperate rainforest.

3. The monsoon plays a significant role …..creating the climatic conditions necessary ….. the Earth's tropical rainforests.

4. Tropical rainforests have been called the "jewels of the Earth" and the "world's largest pharmacy ".

5. Rainforests are also responsible …. 28% of the world's oxygen turnover.

6. The undergrowth …..some areas of a rainforest can be restricted ….. poor penetration of sunlight to ground level.

7. Tropical rainforests are characterized …..a warm and wet climate with no substantial dry season.

Text 6 Needle leaf, temperate deciduous and mixed forests

STARTING UP

Discuss this question.

Is it easier to grow broadleaf forests or boreal forests?

VOCABULARY 1

1. **Read and translate the international words into Russian**

Global, biogeography, organic materials, humus, climatically, extensive, to organize, globally, oxides, tolerant, juvenile, dominant, mixed, eucalyptus, to occupy, biome, maximal.

2. Read and translate into Russian the following words and word combinations

The temperate broadleaf and mixed forests (TBMF), terrestrial biome, the World Wildlife Fund (WWF), shade-tolerant understory, mature trees, saplings, ground cover, herbaceous layer, oaks, beeches, maples, birches, endemic genera, the Mediterranean climate zones, buildup, layer, loamy soils, iron, oxides, extensive farming.

3. Read and translate the verbs

To mix, to organize, to use, to include, to compose, to domesticate, to occur, to produce, to clear for, to replace, to ash, to burn, to change, to displace, to suppress.

READING

Temperate broadleaf and mixed forest is a temperate climate terrestrial biome, with broadleaf tree eco regions, and with conifer and broadleaf tree mixed coniferous forest ecoregions.

The term 'Temperate broadleaf and mixed forest' is used by the World Wildlife Fund (WWF) in global biogeography as one of the biome designations under which to organize ecoregions.

Temperate broadleaf and mixed forests are richest and most distinctive in central China and eastern North America, with some other globally distinctive ecoregions in the Caucasus, the Himalayas, southern Europe and the Russian Far East.

The typical structure of these forests includes four layers. The uppermost layer is the canopy composed of tall mature trees ranging from 30 to 61 m (100 to 200 ft) high. Below the canopy is the three-layered, shade-tolerant understory that is roughly 9 to 15 m (30 to 50 ft) shorter than the canopy. The top layer of the understory is the sub-canopy composed of smaller mature trees. Below the sub-canopy is the shrub layer, composed of low growing woody plants. Typically the lowest growing (and most diverse) layer is the ground cover or herbaceous layer.

In the Northern hemisphere, characteristic dominant broadleaf trees in this biome include oaks, beeches, maples, or birches. The term "mixed forest" comes from the inclusion of coniferous trees as a canopy component of some of these forests. Typical coniferous trees are pines, firs and spruces. In some areas of this biome the conifers may be a more important canopy species than the broadleaf species. In the Southern hemisphere eucalyptus occupy this biome.

Temperate broadleaf and mixed forests occur in areas with distinct warm and cool season, which give it a moderate annual average temperature from 3 to 15.6 °C (37 to 60 °F). These forests occur in relatively warm and rainy climates, sometimes also with a distinct dry season. A dry season occurs in the winter in East Asia and in summer on the wet fringe of the Mediterranean climate zones. Other areas, as in the Eastern United States and Southeastern Canada, have a fairly even distribution of rainfall; annual rainfall is typically over 600 mm (24 in) and often over 1,500 mm

(59 in).Temperatures are typically moderate except in parts of Asia where temperate forests can be found despite very harsh conditions with very cold winters.

The soil is rich and fertile in the temperate broadleaf and mixed forests. In these areas human populations are quite high (which includes many of world's largest cities). Because the soil is excellent for agriculture, much of it has been cleared for a very long time all over the world for this purpose. In addition, hardwood trees are valuable for timber, so these forests were severely altered for thousands of years even before extensive farming. In some areas, they are now growing back in second-growth stands of many of the same tree species. Many fire-climax pine forests are succeeding into deciduous forests where protected from fires by humans. Pine forests are used for lumber, and there are many major reforestation in this zone. Many plants from this zone were domesticated for food (fruits, vegetables, herbs) in Europe and the Near East.

Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005 https//www.google.ru//en.wikipedia.org/…/ Richard H. Waring, Ph.D., Professor Emeritus of Forest Ecology, Oregon State University.

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. We can find temperate broadleaf and mixed forests only in the territory of Russian Federation.

2. The typical structure of these forests includes ten layers.

3. The uppermost layer is the canopy composed of the shrub layer.

4. In the Northern hemisphere, characteristic dominant broadleaf trees in this biome include oaks, beeches, maples, or birches.

5. The term "mixed forest" comes from the inclusion of coniferous trees as a canopy component of some of these forests.

6. Typical coniferous trees include: birch trees, maples, oaks.

7. Temperate broadleaf and mixed forests occur in areas with distinct warm and cool season.

8. Forests in the temperate world experience a wide range of variability in temperature and precipitation.

9. In regions where rainfall is broadly distributed throughout the year, deciduous trees mix with species of evergreens.

10. The soil is reach and fertile in temperate broadleaf and mixed forests.

11. Hardwood trees are not valuable for timber.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English.

Широколиственный лес, умеренный климат, дуб, осина, клен, береза, буковое дерево, зрелые деревья, свойственный данной местности вид, окись железа, экстенсивное земледелие, суглинок (почва), теневыносливая древесная порода, лесопосадочный материал, Всемирный Фонд Природы, ярус травянистых растений

2. Match each word in column A with its definition in column B

1. Oak tree	a. are a mountain range in Asia separating the plains of the Indian subcontinent from the Tibetan Plateau.
2. The Himalayas	b. is a diverse genus of flowering trees and shrubs (including a distinct group with a multiple-stem mallee growth habit) in the myrtle family.
3. Broadleaf tree	c. is a sustained multi-generational relationship in which one group of organisms assumes a significant degree of influence over the reproduction and care of another group to secure a more predictable supply of resources from that second group.
4. Domestication	d. is the climate typical of the lands in the Mediterranean Basin.
5. Mediterranean climate	e. is any tree which has flat leaves and produces seeds inside of fruits.
6. Mature tree	i. is a tree or shrub in the genus *Quercus*
7. Eucalyptus	f a tree having a trunk diameter greater than that specified in the applicable code

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000

3. Complete the following sentences according to the text

1. Temperate broadleaf and mixed forest is a …….
2. Temperate broadleaf and mixed forests are richest and most distinctive in central …… and eastern……., with some other globally distinctive ecoregions in the ……., the ……., southern …….., and the ……. .
3. The typical structure of these forests includes……..layers.
4. The uppermost layer is the ……. composed of tall mature trees ranging from 30 to 61 m (100 to 200 ft) high.
5. In the Northern hemisphere, characteristic dominant …….trees in this biome include ……,……., ……., or ……. ……...

6. The term "mixed forest" comes from the inclusion of …….trees as a canopy component of some of these forests.

7. Typical coniferous trees include: …… , ……..., and ……

8. A dry season occurs in the winter in …… and in summer on the wet fringe of the …….. zones.

9. Human populations are quite …… in this zone.

10. Because the soil is excellent for ……., much of it has been cleared for a very long time all over the world for this purpose.

11. Hardwood trees are valuable for ……. ., …….

4. Find synonyms from the following list

To tame, upper layer, vine, to domesticate, top soil, mountain, pine, substratum, hill, conifer, twining plant, under layer

5. Find antonyms from the following list

A softwood trees, a pick of the mountain, clay soil, to decrease, substratum, root of the mountain, humus soil, top soil, to increase, hardwood trees.

SPEAKING

1. **What does this text deal with?**
2. **Discuss the main ideas in a group.**
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Write some notes about broadleaf forests in your region.**
4. **Insert the necessary prepositions.**

1. Temperate broadleaf and mixed forest is a temperate climate terrestrial biome…… broadleaf tree ecoregions, and ……conifer and broadleaf tree mixed coniferous forest ecoregions.

2. The term 'Temperate broadleaf and mixed forest' is used …… the WWF …. global biogeography as one …. the biome designations ……. which to organize ecoregions.

3. Temperate broadleaf and mixed forests are richest and most distinctive …. central China and eastern North America, …… some other globally distinctive ecoregions ….. the Caucasus, the Himalayas, southern Europe, and the Russian Far East

4. The uppermost layer is the canopy composed …..tall mature trees ranging from 30 …. 61 m (100 to 200 ft) high.

5. The term "mixed forest" comes …..the inclusion ….. coniferous trees as a canopy component ….. some …. these forests.

6. Broadleaf trees have been cleared …..a very long time all …..the world.

7. Many plants …..this zone were domesticated …..food (fruits, vegetables, herbs) ……. Europe and the Near East.

Unit 3.Management in Forestry
Text 7 Forest exploitation

STARTING UP

Discuss this question

How can we manage forests?

VOCABULARY 1

1. **Read and translate the international words into Russian**

The management, ecologists, effect, to focus on, via, to combine, security, local communities, natural expansion, anthropogenic factors, urban, human, invasive species, practices, agriculture, cultivation, natural expansion, public parks, practical logistics.

2. Read and translate into Russian the following words and word combinations

The management of forests, rapid changes, sustainable forest management, forest ecologists, patterns and processes, cause-and-effect relationships, forest worldwide, logging, urban sprawl, human-caused forest fires, acid rain, slash and burn practices, widen agriculture, shifting, loss and re-growth of forest, old-growth forest, secondary forest, cause changes, competition between species, undisturbed forest, intact forests, boreal forest, world deforestation, urban forestry, human benefits, scientific skills.

3. Read and translate the verbs

To add, to focus on, to culminate, to lead, to record, to decrease, to rise, to reduce, to combine, to reverse, to manage.

READING

Forest management is a branch of forestry concerned with overall administrative, economic, legal, and social aspects, as well as scientific and technical aspects, such as silviculture, protection, and forest regulation. This includes management for aesthetics, fish, recreation, urban values, water, wilderness, wildlife, wood products, forest genetic resources, and other forest resource values. The management of forests is often referred to as forestry.

Forest management establishes the main principles for the most efficient use an

d regeneration of forest resources, sets theage at which trees may be cut, calculates th e amount of wood to be felled (optimum rate for annual cutting of forest), andestablis hes the methods and extent of improvement cuttings, reforestation, and other work. Special attention is paid todeveloping scientifically sound recomm endations for the most rational exploitation of forest lands, increasing theproductivity of forests, and expanding their uses. Efforts to plan and develop forest lands are bein g expanded.

Forest management has changed over the last few centuries, with rapid changes from the 1980s.It is sustainable forest management today. Forest ecologists concentrate on forest patterns and processes, usually with the aim of elucidating cause-and-effect relationships. Foresters who practice sustainable forest management focus on the integration of ecological, social, and economic values, often in consultation with local communities and other stakeholders.

Humans have generally decreased the amount of forest worldwide. Anthropogenic factors that can affect forests include logging, urban sprawl, human-caused forest fires, acid rain, invasive species, and the slash and burn practices of widen agriculture or shifting cultivation. The loss and re-growth of forest leads to a distinction between two broad types of forest, primary or old-growth forest and secondary forest. There are also many natural factors that can cause changes in forests over time including forest fires, insects, diseases, weather, competition between species, etc. In 1997, the World Resources Institute recorded that only 20% of the world's original forests remained in large intact tracts of undisturbed forest. More than 75% of these intact forests lie in three countries—the boreal forests of Russia and Canada and the rainforest of Brazil.

In 2010, the Food and Agricultural Organization of the United Nations reported that world deforestation, mainly the conversion of tropical forests to agricultural land, had decreased over the past ten years but still continues at a high rate in many countries. Globally, around 13 million hectares of forests were converted to other uses or lost through natural causes each year between 2000 and 2010. The study covered 233 countries and areas. Brazil and Indonesia, which had the highest loss of forests in the 1990s, have significantly reduced their deforestation rates. China instituted a ban on logging, beginning in 1998, due to the erosion and flooding. In addition, ambitious tree planting programmes in countries such as China, India, the United States and Vietnam, combined with natural expansion of forests in some regions - have added more than seven million hectares of new forests annually. As a result, the net loss of forest area was reduced to 5.2 million hectares per year between 2000 and 2010, down from 8.3 million hectares annually in the 1990s. In 2015, a study for Nature Climate Change showed that the trend has recently been reversed, leading to an "overall gain" in global biomass and forests. This gain is due especially to reforestation in China and Russia.

About30% of the world is forested today, but the ratio between forest and popu lation varies immensely. More than one half of theworld's softwood timber (the major forest product) comes from Today people understand value of forests for human being. They try to plant trees around big cities and industrial areas. These forests are

often created for human benefits. Smaller areas of woodland in cities may be managed as urban forestry, sometimes within public parks. Spending time in nature reduces stress and improves health, while forest schools and kindergartens help young people to develop social as well as scientific skills in forests. Forests should be close to where the children live, for practical logistics.

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COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Foresters who practice sustainable forest management focus on the integration of ecological, social, and economic values.

2. There are few natural factors that can cause changes in forests over time.

3. Forests fires, insects, diseases, weather, competition between species, destroy forests.

4. In 1997, the World Resources Institute recorded that only 50% of the world's original forests remained in large intact tracts of undisturbed forest.

5. More than 20% of these intact forests lie in three countries—the boreal forests of Russia and Canada and the rainforest of Brazil.

6. In 2010, the Food and Agricultural Organization of the United Nations reported that world deforestation.

7. Germany and China had the highest loss of rain forests in the 1990s.

8. Forest management is the methods of cutting trees for timber.

9. Smaller areas of woodland in the villages may be managed as urban forestry.

10. Spending time in the industrial areas, noise reduces stress and improves health.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English

Быстрые изменения, хвойные леса, общественные парки, вырубка леса, реликтовый лес, подсечное земледелие, паразитные виды, городское лесное хозяйство (парковое хозяйство), вторичный лес (сменивший коренной), научно-исследовательские навыки, подсечно-огневое земледелие, лесоустройство, кислотные дожди, девственный лес, заготовка леса, неповрежденный лес,

межвидовая борьба, естественное распространение, рост городов, восстановленный лес

2. Match each word in column A with its definition in column B

1.Acid rain	a. is a branch of biology that deals with the habits of living things, especially their relation to their environment.
2.Grass area	b. is a rain or any other form of precipitation that is unusually acidic.
3. A log	c. is a person who is interested in ecology and believes the environment should be protected.
4.Urban area	d. is an area of soil-covered land planted with grasses or (rarely) other durable plants e.g. clover, alfaalfa etc.
5. An ecologist	e. is a location characterized by high human population density and vast human-built features in comparison to the areas surrounding it.
6.Ecology	f. is a wood used as a building material.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

3. Complete the following sentences according to the text

1. The management of forests is often referred to as ……..
2. Forest management has referred to as ……...
3. Forest ecologists concentrate on forest …….
4. Foresters who practice ……. focus on the integration of ecological, social, and economic values.
5. …….. factors that can affect forests include logging, human-caused forest fires, acid rains etc.
6. ……. and …….of forest leads to a distinction between two broad types of forest, primary or old-growth forest.
7. The …… lie in Russia and Canada.
8. The ……. lie in Brazil.
9. The……. forest area was reduced to 5.2 million hectares per year between 2000 and 2010.
10. Smaller areas of woodland in cities may be managed as ……
11. Spending time in nature reduces ……. and improves …….
12. ……. and ……. help young people to develop social as well as scientific skills in forests.

4. Find synonyms from the following list

An ecologist, to replenish, a leader, environment, to manage, to decrease, to reduce, to lead, to add, an environmental expert, a manager, nature.

5. Find antonyms from the following list

A manager, to rise, environment, public parks, old growth forest, to add, to decrease, to take away, an ecologist, a poacher, a regrowth forest, private parks, nature, follower.

SPEAKING

1. **What does this text deal with?**
2. **Discuss the main ideas in a group.**
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from text. Translate the sentences with these terms.**
3. **Write arguments for and against this statement:** «The best way of protecting forests is to adopt good laws»
4. **Insert the necessary prepositions.**

1. The loss and re-growth …..forest leads … a distinction between primary or old-growth forest and secondary forest.

2. There are also many natural factors that can cause changes … forests …..time including forest fires, insects, diseases, weather etc

3. Only 20% …. the world's original forests remained …. large intact tracts …. undisturbed forest.

4. Tropical forests had decreased …… the past ten years but still continues ….. a high rate …. many countries.

5. China instituted a ban …. logging, beginning in 1998, due to the erosion and flooding that it caused.

6. ……. a result, the net loss of forest area was reduced ….. 5.2 million hectares per year …… 2000 and 2010, down ….. 8.3 million hectares annually in the 1990s.

7. Foresters try to put…..fires in summer.

8. It depends …. people to keep forests clean.

9. Many fires in the forests …….due … people.

Text 8 Agricultural afforestation or agroforestry

STARTING UP

Discuss this question.

What do you know about agro forestry?

VOCABULARY 1

1. Read and translate the international words into Russian

Agroforestry, productive, the theoretical base, method, security, toxic chemicals, herbicides, human nutrition, stability, carbon, alley, minerals, technologies.

2. Read and translate into Russian the following words and word combinations

A land use management system, pastureland, diverse, productive, profitable, healthy, sustainable land-use systems, land-use sciences, intercropping, nitrogen –fixing plants, forest production methods, food security, soil fertility, food crops, soil runoff, edible oils, fuel wood, human nutrition, crop stability, bioremediation, carbon sequestration, parklands, alley cropping, strip cropping, shade systems, crop-over-tree systems, grazing animals, strong wind bursts, rodent-eating birds, mineral fertilizers.

3. Read and translate the verbs

To provide, to reduce, to support, to sow, to deplete, to increase, to improve, to clean, to combine, to support, to create, to intercrop, to apply, to contribute, to prune, to represent, to eliminate, to spread over.

READING

Agroforestry or agro-sylviculture is a land use management system in which trees or shrubs are grown around among crops or pastureland. It combines shrubs and trees in agricultural and forestry technologies to create more diverse, productive, profitable, healthy, and sustainable land-use systems.

The theoretical base for agroforestry comes from ecology, via agroecology. From this perspective, agroforestry is one of the three principal land-use sciences. The other two are agriculture and forestry.

Agroforestry has a lot in common within the cropping. Both have two or more plant species (such as nitrogen-fixing plants). In close interaction both provide multiple outputs, as a consequence, higher overall yields and, because a single application or input is shared, costs are reduced.

Agroforestry systems can be advantageous over conventional agricultural and forest production methods. They can offer increased productivity, economic benefits, and more diversity in the ecological goods and services provided.

Biodiversity in agroforestry systems is typically higher than in conventional agricultural systems. With two or more interacting plant species sowing in a land area, it creates a more complex habitat that can support a wider variety of birds, insects and other animals.

Agroforestry can reduce poverty through increased production of wood and other tree products for home consumption and sale. It guarantees food security by restoring the soil fertility for food crops. This system can help to clean water through reduced nutrient and soil runoff. It also slows down global warming and the risk of hunger by increasing the number of drought-resistant trees and the subsequent

production of fruit, nuts and edible oil. Agroforestry can reduce deforestation and pressure on woodlands by providing farm-grown fuel wood.

The main principle of agroforestry is eliminating the need for toxic chemicals (insecticides, herbicides, etc.). It improves human nutrition. In situations where people have limited access to mainstream medicines it can provide growing space for medical plants. This system of land use management increases crop stability and can give multifunctional site use i.e. crop production and animal grazing. Farmers have drought resistant plants and they can stabilize soils from erosion. Agroforstry is a bioremediation land use management.

Agroforestry represents a wide diversity in application and in practice, for example, parklands, alley cropping, strip cropping, shade systems, crop-over-tree systems etc.

Parklands are visually defined by the presence of trees widely scattered over a large agricultural plot or pasture. The trees are usually of a single species with clear regional favorites. The trees offer shade to grazing animals, protect crops against strong wind bursts, provide tree pruning for firewood, and are a roost for insect or rodent-eating birds.

Crop-over-tree systems employ woody perennials in the role of a cover crop. For this, small shrubs or trees pruned to near ground level are utilized. The purpose is to increase in-soil nutrients or to reduce soil erosion.

In alley cropping the trees are pruned before planting the crop. The cut leafy material is spread over the crop area to provide nutrients for the crops. In addition to nutrients, the hedges serve as windbreaks and eliminate soil erosion.

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COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. The theoretical base for agroforestry comes from geography.
2. Agroforestry has a lot in common with deforestation.
3. Agroforestry system has some disadvantages over conventional agricultural, and forest production methods.
4. Agroforestry cannot offer increased productivity, economic benefits, and more diversity in the ecological goods and services provided.
5. Biodiversity in agroforestry systems is lower than in conventional agricultural systems.
6. Agroforestry creates more habitatsand it can support a wider variety of birds, insects, and other animals.

7. Agroforestry can include contribution to food security by restoring the soil fertility for food crops.

8. Agroforestry reduces deforestation and pressure on woodlands by providing farm-grown fuel wood.

9. It also reduces the need for toxic chemicals.

10. Strip cropping is similar to alley cropping.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English

Промежуточная культура, теоретическая база, токсические химикаты, азотосодержащие растения, землепользование, эрозия почвы, питание для человека, убирать остатки, методы выращивания лесов, сток с почвы ливневых вод, плодородие почвы, био восстановление, грызуны, безопасность продуктов питания, порывы ветров, минеральные удобрения, парковый лес, система управления, сокращение выбросов двуокиси углерода

2. Match each word in column A with its definition in column B

1. Alley	a. is a land used for grazing.
2.Pasture	b. is a plantation usually made up of one or more rows of trees or shrubs planted in such a manner as to provide shelter from the wind.
3.Windbreaks	c. is is any material of natural or synthetic origin that is applied to soils or to plant tissues (usually leaves) to supply one or more plant nutrients essential to the growth of plants.
4 Fertilizers	d. is the general term used for a branch of urban planning encompassing various disciplines which seek to order and regulate land use in an efficient and ethical way.
5. Valley	e. is a narrow lane, path, or passageway, often reserved for pedestrians, which usually runs between, behind, or within buildings in the older parts of towns and cities.
6. Land use planning	f. is a low area between hills, often with a river running through it.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

3. Complete the following sentences according to the text

1. ……..is a land use management system in which trees or shrubs are grown around or among crops or pastureland.

2. Agroforestry combines shrubs and trees in agricultural and forestry technologies to create more diverse, productive, profitable, healthy, and sustainable l……. .

3. The theoretical base for agroforestry comes from ……, via ……

4. Agroforestry has a lot in common with ……..

5. Agroforestry systems has some advantages over conventional agricultural, and forest production ……. .

6. …….. in agroforestry systems is typically higher than in conventional agricultural systems.

7. Agroforestry can reduce ……..through increased production of wood and other tree products for home consumption and sale.

8. Agroforestry can contribute to food ……. by restoring the soil……. for food crops.

9. Methods of agroforestry can reduce ……. and pressure on woodlands by providing farm-grown fuel wood.

4. Find synonyms from the following list.

Humid, a poor soil, varieties, morels, to spread, ground, meadow, taiga, moist, boreal forests, to distribute, soil, grassland, species, fungi, a thin soil.

5. Find antonyms from the following list.

Poor soil, precipitation, a southern part, a broadleaf forest, moist, rich soil, dry, a northern part, a boreal forest, evaporation.

SPEAKING

1. **What does this text deal with?**
2. **Discuss the main ideas in a group.**
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Insert the necessary prepositions.**

1. The theoretical base ……. agroforestry comes …….. ecology, viaagroecology.
2. Agroforestry is one ….the three principal land-use sciences.
3. Agroforestry has a lot ….common……. intercropping.
4. Biodiversity … agroforestry systems is typically higher than ….conventional agricultural systems.

5. …… two or more interacting plant species ….a given land area, it creates a more complex habitat that can support a wider variety ….birds, insects, and other animals.

6. Depending ……. the application, impacts of agroforestry can reduce poverty …… increased production ….wood and other tree products …… home consumption and sale.

7. Methods of agroforestry can be used to clean water …..reducing nutriant and soil runoff.

8. In addition ….nutrients, the hedges serve as windbreaks and eliminate soil erosion.

Text 9 Ecological forestry or Ecoforestry

STARTING UP

Discuss this question.

Will forests survive without human interference?

VOCABULARY 1

1. **Read and translate the international words into Russian**

Emphasize, debris, holistic, practice, to maximize, organisms, budget, to contribute, visual, selection drainage, economic productivity.

2. Read and translate into Russian the following words and word combinations

Selection forestry, restoration forestry, a sustainable basis, internal conditions, soil compaction, tree damage, disease, fire, blow down the sustainability, non-living factors, consumption, inhabitants, to be nonexistent, cohabitate, feed off , retention, riparian zones, drainage pattern, the composition, snags, fallen trees, the disturbance ,watershed, clear cutting, slash burning, caution, topsoil quality, human interference.

3. Read and translate the verbs

To select, to define, to restore, to emphasize, to determine, to add, to maximize, to convert, to become, to survive, to harvest, to damage, to affect, to feed off, to remove, to plant, to take place, to cohabitate, to die, to involve, to maintain.

READING

Ecoforestry has been defined as selection forestry or restoration forestry. The main idea of ecoforestry is to maintain or restore the forest to standards where the forest may still be harvested for products on a sustainable basis. Ecoforestry is a forestry that emphasizes holistic practices which protect and restore ecosystem rather than maximize economic productivity. There are other factors that may affect the forest than the harvesting. There are internal conditions such as effects of soil compaction, tree damage, disease, fire that directly affect the ecosystem. These factors have to be taken into account when determining the sustainability of a forest.

Since the forest is considered an ecosystem, it depends on all of the living and non-living factors within itself. This is a major part of why the forest needs to be sustainable before it is harvested. For example, a tree would convert sunlight to sugars for respiration to keep the tree alive. The remains of the converted sugars are left in roots for consumption by the organisms surrounding the tree in the habitat. This shows the productivity of an ecosystem with its inhabitants. If all of the organisms of the ecosystem are nonexistent, the ecosystem itself will soon come to be nonexistent. Once that happens, there is no longer any forest to harvest from. Ecoforestry has many principles within the existence of itself. It covers sustainable development and the fair harvesting of the organisms living within the forest ecosystem. The principles relate to the idea that in ecoforestry less should be harvested and diversity must be managed. Through harvesting less, there is enough biomass left in the forest, so that the forest may stay healthy and still stay maintained. It will grow at a sustainable level annually. Through management of the diversity, species may cohabitate in an ecosystem where the forest may feed off of other species in its growth and production. People must consider retention. Men should know what must be leftin the forests to ensure the protection of such things as rare species, sites of native cultural significance, riparian zones. According to ecoforestry the riparian zones should not be touched. It is a sensitive area, thus tree removal should not occur there. This protects the water quality. Water quality is protected by not altering the drainage pattern of the zones.

Old trees, snags, and large fallen trees should not be taken away. These pieces of the ecosystem are upheld through letting them grow and die out into a timber extraction area. Clear cutting must be prohibited. Clear cutting is not ecologically correct. There are methods for cutting trees to maintain structure, and to allow the trees to cohabitate in a healthy ecosystem.

The forest should be allowed to regenerate trees through the seeds from the trees in the logged areas. This allows tree planting to be taken out of the ecoforestry principles, allowing a natural regeneration. Ecological succession should be kept at all times. This will protect biological diversity. This even means eliminating the process of brush control.

People cannot use pesticide. The forest needs disease, insects, shrubs and herb vegetation. They are essential parts of a fully functioning forest. They are natural parts that allow the ecosystem to operate as a whole.

Ecoforestry maintains and restores topsoil quality. This can be done through leaving sufficiently coarse and small debris on the forest grounds.

Ecosystem management, an ecological approach to forest management to assure productive, healthy ecosystems by integrating the ecological, economic, and social needs and values, has become the cornerstone of forest management in recent years.

Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005 https//www.google.ru//en.wikipedia.org/…/

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Ecoforestry has been defined as a selection forestry or restoration forestry.
2. The main idea of ecoforestry is "Trees should be harvested for timber"
3. There are external conditions such as effects of soil compaction, tree damage, disease, fire, and blow down that also directly affect the ecosystem.
4. The forest doesn't need disease, insects, and shrub, and herb vegetation.
5. Ecoforestry doesn't maintain and restore topsoil quality.
6. People must take away the wildlife, the plants, or structural layout of the ecosystem.
7. People must always look at the forest as a whole. Each part of the forest contributes to its overall needs and health. That is how the forest would have survived without human interference.
8. The ecosystem needs tending. If the forest is not preserved, then it cannot be harvested forever.
9. People have to use pesticide to kill insects in the forests.
10. According to ecoforestry foresters must use the method as clear cutting to keep the forests clean.
11. Old trees, snags, and large fallen trees should be taken away.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the Text 3. Use at least five different annotation techniques

VOCABULARY 2

1. Translate the following words and word combinations into English

Лесная селекция, восстановление леса, внутренние условия, повреждение дерева, потребление, обитатели, состав, качество верхнего слоя почвы, упавшие деревья, водозаборы, влияние человека, сплошная лесосечная вырубка, береговая зона, сучки (коряги), огневая очистка, перестанет существовать, существующие условия, экологическая безопасность

2. Match each word in column A with its definition in column B

1. Forestry	a. are a class of invertebrates that have a three-part body

	(head, thorax and abdomen),three pairs of jointed legs, compound eyes and one pair of antennae.
2. Clear cutting	b. is the global sum of all ecosystems.
3. Biosphere	c. refers to a standing, dead or dying tree, often missing a top or most of the smaller branches
4. Pesticides	d. is a forestry practice in which most or all trees in an area are uniformly cut down.
5. Insects	e. is a line that separates neighbouring drainage basins.
6. Debris	f. are substances meant for attracting, seducing, and then destroying any pests.
7. Watershed	g. is the science or practice of lanting and taking care of the trees and forests.

https//www.google.ru//en.wikipedia.org/…/ .Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

3. Complete the following sentences according to the text

1. Ecoforestry has been defined as …… forestry or ……..forestry.
2. There are internal conditions such as effects of soil ……, tree ……, disease, ……., and blow down that also directly affect the ecosystem.
3. Since the forest is considered an ecosystem, it is dependent on all of the ……..and non-living factors within itself.
4. A tree would convert sunlight to …..for respiration to keep the tree alive.
5. Productivity within the ecosystem cannot come to fruition unless the forest is sustainable enough to be ……
6. If all of the organisms of the ecosystem are nonexistent, the ecosystem itself will soon come to be ……...
7. Ecoforestry has many …… within the existence of itself.
8. Through management of the ……, species may cohabitate in an ecosystem where the forest may feed off of other species in its growth and production.
9. Riparian zone protects the water ……. .
10. Water quality is protected by not altering the …… pattern of the zones.
11. One of the principles of the ecoforestry is to prohibit clear …….
12. Clear cutting is not ecologically …….

4. Find synonyms from the following list

Selection, restoration, conditions, compaction, damage, choice, loss, facilities, regeneration, dweller, consumption, inhabitant, drainage, dewatering system, absorption, water collection

5. Find antonyms from the following list.

Internal, to collect, inorganic, to misapply, to spread, non- existent ,external, to lose, existent, organic, to accumulate, to apply.

SPEAKING

1. **What does this text deal with?**
2. **Discuss: Do we help forests today or do we destroy them?**
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Give the summary of the text in 5-7 sentences.**
4. **Insert the necessary prepositions**

1. The main idea of ecoforestry is to maintain or restore the forest to standards where the forest may still be harvested …. products ….. a sustainable basis.
2. Since the forest is considered an ecosystem, it is dependent …. all of the living and non-living factors ….. itself.
3. A tree would convert sunlight …. sugars …. respiration to keep the tree alive.
4. The remains…. the converted sugars are left …..roots….consumption….the organisms surrounding the tree … the habitat.
5. Productivity ……..the ecosystem cannot come …… fruition unless the forest is sustainable enough to be harvested.
6. Ecoforestry has many principles …… the existence ……. itself.
7. Forests will grow … a sustainable level annually, and thus it will be able to still be harvested the following year.
8. …… management ……. the diversity, species may cohabitate …..an ecosystem where the forest may feed ….. …..other species …… its growth and production.

Unit 4.The Forest Reserves

Text 10.The National Parks of the USA

STARTING UP

Discuss this question.

What kinds of forests are called “the national parks”?

VOCABULARY 1

1. Read and translate the international words into Russian

Specific, term, judicial, constitutional, protection, the legal systems, national parks, monuments, territories, geologic, tundra, protector, subtropical , relaxation, an agency, commissioned, sequoia, act, antiquity, unique, geological, ecosystems, criteria, archaeological, acres, pre-National Park Service, architecture, historic structures, canyon, plateau, operation, expanse.

2. Read and translate into Russian the following words and word combinations

Reserve's designation, create, method, area, generation, to be upgraded in, to be considered, archaeological significance, to be established by, an urban area, to be based, an historic settlement, the park's main attraction, colorful layers.

3. Read and translate the verbs

To upgrade, to enjoy, to set, to own, to preserve, to spare, to creep, to remain, to establish, to enter, to share, to shape, to become, to learn, to designate, to generate, to sign.

READING

A reserve forest is a specific term for designating forests and other natural areas which have judicial or constitutional protection under the legal systems of many countries. National parks protect the countryside and allow people to enjoy plants, animals and birds. A lot of people come there to rest and to enjoy the beautiful countryside. The national parks are more than landmarks, monuments, and territories, more than mountains, forests, lakes, and geologic wonders. They represent a piece of soul.[1]

The USA was the first country where the forest was protected by state. The people of the United States own and protect mountains, deserts, forests, wetlands, tundra. Americans are protectors of the tallest living things on the Earth and of hundreds of rare species. The U.S. National Park Service (NPS) presides over a sprawling system of parks, seashores, trails, monuments, and battlefields that encompasses 3.6 percent of the nation's entire landmass. The land and its life forms are set apart, preserved, and spared from the asphalt, sprawl, and neon that creep across the modern world. National parkland of the USA is more than 34 million hectares. It is to remain unimpaired for future generations, according to the law that established the Park Service in 1916. At the same time, the gates of the parks are open to all. More than 277 million people visit the parks a year. Americans and many foreign travelers come in to the national parks in search of recreation and relaxation. American families visit the parks to see and share the wonders of their land, to learn about the forces and the people who have shaped it through the centuries. The experience becomes part of their own family history, a shared memory about a day when together they learn more about their country and how it comes to be.

Today the USA has 59 protected areas known as national parks that are operated by the National Park Service, an agency of the InteriorDepartment. The National parks must be established by an act of the United State Congress. The first

national park was Yellowstone. It was signed into law by President Ulysses S. Grant in 1872. The newest national park is Pinnacles National Park, upgraded in 2013.

Criteria for the selection of National Parks include natural beauty, unique geological features, unusual ecosystems, and recreational opportunities. The National Monumentsare frequently chosen for their historical or archaeological significance.

Twenty-seven states have national parks. For example, Alaska has eight National parks. California has nine reserved forests, Utah (five), and Colorado (four). The largest national park is Wrangell-St. Elias in Alaska: at over 8 million acres (32,000 km^2), it is larger than each of the nine smallest states. The next three largest parks are also in Alaska.

The smallest park is Hot Springs, Arkansas at less than 6 thousand acres (24 km^2).Hot Springs was established by Act of Congress as a federal reserve on April 20, 1832. Hot Springs is only national park in an urban area and itis based around natural hot springs. They provide opportunities for relaxation in an historic settlement: Bathhouse Row preserves numerous examples of 19th-century architecture. The total area protected by national parks is approximately 51.9 million acres (210,000 km^2).

The most-visited national park is the Great Smoky Mountains in North Carolina. The Great Smoky Mountains, part of the Appalachian Mountains, span a wide range of elevations, making them home to over 400 vertebrate species, 100 tree species, and 5000 plant species. Hiking is the park's main attraction, with over 800 miles (1,300 km) of trails, including 70 miles (110 km) of the Appalachian Trail. Other activities include fishing, horseback riding, and touring nearly 80 historic structures.

The Arizona's Grand Canyon is well known all over the world. Over 4.7 million people visit the Grand Canyon in a year. The Grand Canyon, carved by the mighty Colorado River, is 277 miles (446 km) long, up to 1 mile (1.6 km) deep, and up to 15 miles (24 km) wide. Millions of years of erosion have exposed the colorful layers of the Colorado Plateau in countless mesas and canyon walls, visible from both the north and south rims, or from a number of trails that descend into the canyon itself.

About 12669 people visit the remote Gates of the Arctic in Alaska in a year. The country's northern park protects an expanse of pure wilderness in Alaska's Brooks Range and it has no park facilities. The land is home to Alaska natives, who have relied on the land and caribou for 11000 years.

Fourteen national parks of the USA are designated World Heritage Sites.

The National Forest System of the USA is one of the best in the world. It encompasses 155 national forests and 20 grasslands located among 44 states, Puerto Rico, and the Virgin Islands, comprising 191 million acres (77.3 million hectares) of land, or 8.5 percent of the total land area in the United States. The natural resources on these lands are some of the nation's greatest assets and have major socioeconomic and environmental significance. Each national forest is managed by a forest supervisor and consists of several ranger districts. Overall, the Forest Service

employs approximately 30,000 people who reflect the full range of diversity of the American population. In2016the National Forest Service celebrated its 100th anniversary.

1. Edwin Bernbaum, PhD, director of the Sacred Mountains Program at the Mountain Institute and the author of Sacred Mountains of the World, from the book America's Best Idea.
2. Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005
3. https//www.google.ru//en.wikipedia.org/…/
4. Encyclopedia.com

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. The USA has 70 protected forests and they are operated by the National Park Service.
2. The first national park, Yellowstone, was signed into law by President Ulysses S. Grant in 1972.
3. The newest national park is Pinnacles National Park, upgraded in 2013.
4. Criteria for the selection of National Parks include natural beauty, unique geological features, unusual ecosystems, and recreational opportunities.
5. Fifty states in the USA have national parks.
6. California has eleven national parks, Alaska has eight, Utah has five.
7. The largest national park is Wrangell-St. Elias in California: at over 8 million acres (32,000 km^2).
8. The smallest park is Yellow Stone in California, at less than 6 thousand acres (24 km^2).
9. Hot Springs was established by act of Congress as a federal reserve on April 20, 1832.
10. Hot Springs is the smallest national park and it is in an urban area and it is based around natural hot springs.
11. The most-visited national park is Great Smoky Mountains in North Carolina.
12. The Grand Canyon is well known all over the world. Over 4.7 million people visit the Grand Canyon in a year.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English.

Археологическая значимость, быть основанным, городская территория, имеющий историческое значение, закон (акт), поколение, создавать, заповедник, защита, методы, экосистема, обозначение (определение) заповедника, площадь, заповедные места, национальный парк, поверхность, виды деревьев, главная достопримечательность парка

2. Match each word in column A with its definition in column B.

1. National park	a. is the process by which the surface of the Earth is worn away by the action of water, glaciers, winds etc.
2. Erosion	b. is an area of scenic beauty, historical importance, or the like, owned a nd maintained by a national government for the use of the people.
3. Reserve	c. is an issue of water from the Earth, taking the form, on the surface, of a small stream or standing as a pool or small lake.
4.Caribou	d. is to keep back or save for future use, disposal, treatment, etc.
5.Plateau	e. are any of several large, North American deer of the genus *Rangifer,,* related to the reindeer of the Old World.
6. Layer	f.isa land area having a relatively level surface considerably r aised aboveadjoining land on at least one side, and often cut by de ep canyons.
7.Mesas	g. is abed; stratum
8. Spring	h. is a land formation, less extensive than a plateau, having steep walls a nda relatively flat top and common in arid and semiarid parts of the southwestern U.S. and Mexico.
9. Species	i. is a class of individuals having some common characteristics or qualit ies.

1. https//www.google.ru//en.wikipedia.org/…/
2. Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000

4. Complete the following sentences according to the text.

1. Criteria for the selection of national parks include ……

2. Fourteen national parks are designated ……
……

3. Millions of years of erosion have exposed …….
4. The most-visited national park is ……..
5. The total area protected by national parks is ……..
6. The country's northern park protects ……
7. Hot Springs was established by act of Congress ……
8. Each national forest is managed by a forest ……..and consists of several ranger ……...

5. Find synonyms from the following list.

Sight, dangerous, to think, labourer, condemnation, tax, various, domain, diverse, confiscation, worker, levy, to suppose, view, unsafe

6. Find antonyms from the following list.

Variably, irrational, inhumanity, impossibility, irregular, dry, careful, invariably, careless, rational, humid, regular, irrational, possibility, humanity, rational

SPEAKING

1. **What does this text deal with?**
2. Discuss the main ideas in a group.
3. Discuss: What problems do the national parks have today? Use some phrases given below:

From my point of view……
Frankly speaking……
On the one hand……
On the other hand……

4. What valuable information did you get from the text?
5. In pairs, ask and answer some questions through the text.

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Give the summary of the text in 5-7 sentences.**
4. **Insert the necessary prepositions.**

1. Tennessee is also a very popular tourists place …. over ten million visitors in 2014.
2. The Arizona's Grand Canyon is well known all …. the world.
3. Over 4.7 million people visit the Grand Canyon … a year.
4. The Grand Canyon, carved …. the mighty Colorado River, is 277 miles (446 km) long.
5. Millions of years …. erosion have exposed the colorful layers of the Colorado Plateau… … countless mesas and canyon walls.

6. The land is home … Alaska natives, who have relied … the land and caribou for 11,000 years.

7. Americans keep their forests ….accordance ….the acts.

8. Criteria ….the selection of national parks include their natural beauty, uniqueness.

9. Each national forest is managed… a forest supervisor.

10. Millions ..years… erosion have exposed the colorful layers … the Colorado Plateau ..countless mesas and canyon walls.

Text 11 Natural sanctuaries and forest resources of Great Britain

STARTING UP

Discuss this question.

What do you know about the forest reserves of Great Britain?

VOCABULARY 1

1. **Read and translate the international words into Russian.**

Ornamental, mosaic, concentration, charisma, sculpted, supervisor, millennia, sculptured, radial, steppe.

2. Read and translate into Russian the following words and word combinations.

Woodland, open heather-covered heaths, rivers valley mires, a coastline of mudflats, salt marshes, lowland heath, yews, a great girth, a hollow trunk, reduced crown, lichens, beetles, bats, fungi, rare and threatened species, remarkable changes, moorland, moss, bog, patterns, glacial origin elongate lakes, bedrock hollows, flat ground, tarns , glacial cirques, steeper slopes, tree lines, extensive conifer plantations, female golden eagle.

3. Read and translate the verbs.

To shape, to require, to use, to hunt, to research, to destroy, to resist, to survive, to grow, to concentrate, to cover, to reduce, to include, to depend, to threat, to bottom out, to prepare.

READING

The United Kingdom is ideal for tree growth, thanks to its mild winters, plentiful rainfall, fertile soil and hill-sheltered topography. Growth rates for broadleaved (hardwood) trees exceed those of mainland Europe. In the absence of people, much of Great Britain would be covered with mature oaks. Although conditions for forestry are good, trees do face damage threats arising from fungi, parasites and pests.

Nowadays, about 12.9% of Britain's land surface is wooded. The country's supply of timber was severely depleted during the First and Second World Wars, when imports were difficult, and the forested area bottomed out fewer than 5% of Britain's land surface in 1919. That year, the Forestry Commission was established

to produce a strategic reserve of timber. However, the recovery is still very much in progress. Of the 31,380 square kilometres (12,120 sq mi) of forest in Britain, around 30% is publicly owned and 70% is in the private sector. More than 40,000 people work on this land. Britain's native tree flora comprises 32 species, of which 29 are broadleaves. Britain is relatively impoverished in terms of native species. For example, only thirty-one species of deciduous tree and shrub are native to Scotland, including ten willows, four white beams and three birch and cherry trees.

The United Kingdom is one the countries of the world where ancient forests can be found. Some are classified as ancient woodland, which means they've been continuously forested since 1600. They are forests resorts protected by state in Great Britain. The New Forest in Hampshire is one of them. The New Forest was created for hunting by William the Conqueror in 1079. The landscape of the New Forest National Park is beautiful, rare and fragile. It is a mosaic of ancient and ornamental woodland, open heather-covered heaths, rivers and valley mires, a coastline of mudflats and salt marshes and pretty historic villages. Lowland heath once covered much of southern England. The New Forest is believed to have the highest concentration of ancient trees in Western Europe. Ancient oaks may be 400 to 800 years old, while beech can reach 300 to 400 years. The most ancient of all are yews, some of which are over 1,000 years old. Typically, the oldest trees have a great girth, a hollow trunk and a much reduced crown. Veteran trees will be the next generation of ancients. They are slightly younger in age, often still with a full crown. Ancient trees are home to a whole host of wildlife. Their twisted bark, hollows and dead wood provide a multitude of special habitats, including nest sites for birds like the redstart. The New Forest is one of the most important areas in Britain and Europe for lichens, beetles, bats and fungi dependent on very old trees, including many rare and threatened species. Immensely old and full of character and charisma, ancient trees are rare. They have been sculpted by time and revered by generations of local people. They are great survivors. It is a landscape shaped by man, by history and by the animals that still graze it today.

The other well known national forest in Great Britain is the Lake District National Park .The Lake District National Park includes nearly all of the Lake District. Peninsulas are currently outside the park boundary. This area was designated a national park on 9-th of May in 1951. British people suppose that the Lake District is most visited national park in the United Kingdom with 15.8 million annual visitors. Its aim is to protect the landscape. Most of the land in the park is in private ownership, with about 55% registered as agricultural land. The lakes and mountains combine to form impressive scenery. Farmland and settlement add aesthetic value to the natural scenery with an ecology modified by human influence for millennia and including important wildlife habitats. The Lake District has failed to be approved as a natural World Heritage Site, because of human activities, such as commercial forestry, which have adversely impacted the park's assessment. The Lake District takes the form of a roughly circular upland massif deeply dissected by a broadly radial pattern of major valleys whose character is largely the product of repeated glaciations over the last 2 million years. Most of these valleys display the U-

shape cross-section characteristic of glacial origin, and often contain elongate lakes occupying sizeable bedrock hollows often with tracts of relatively flat ground at their heads. Smaller lakes known as tarns occupy glacial cirques at higher elevations. The mountains of the Lake District are also well- known. They are also called the "Cumbrian Mountains", although this name is less frequently used than terms like "the Lake District" or "the Lakeland Fells". Many of the higher fells are rocky in character, while moorland predominates at lower altitudes. Vegetation cover across better drained areas includes bracken and heather, though much of the land is boggy, due to the high rainfall. Deciduous native woodland occurs on many steeper slopes below the tree line, but with native oak supplemented by extensive conifer plantations in many areas. Below the tree line are wooded areas, including British and European native oak woodlands and introduced softwood plantations. The woodlands provide habitats for native English wildlife. The native red squirrel is found in the Lake District and in a few other parts of England. In parts of the Lake District the rainfall is higher than in any other parts of England. This gives Atlantic mosses, ferns, lichen, and liverworts the chance to grow. There is some ancient woodland in the National Park. Management of the woodlands varies: some are coppiced; some pollarded, some left to grow naturally, and some provide grazing and shelter.

Next popular tourist national forest in Great Britain is Sherwood Forest. Sherwood attracts between 360,000 and 1 million tourists annually, many from other countries. Visitor numbers have increased significantly since the launch of the BBC's *Robin Hood* television series in 2006.It is a royal forest in Nottinghamshire, England. The area has been wooded since the end of the Ice Age . Today, Sherwood Forest National Nature Reserve encompasses 423.2 hectares,1,045 acres (4.23 km^2).Sherwood Forest is home to the famous Major Oak, which, according to local folklore, was Robin Hood's principal hideout. The oak tree is between 800 and 1,000 years old and, since the Victorian era, its massive limbs have been partially supported by an elaborate system of scaffolding. In February 1998, a local company took cuttings from the Major Oak and began cultivating clones of the famous tree with the intention of sending saplings to be planted in major cities around the world. The Major Oak was featured on the 2005 BBC TV programme *Seven Natural Wonders* as one of the natural wonders of the Midlands.

Nowadays the British Isles are one of a very few places in the world where the stock of forested land is actually increasing.

Collins Discovery Encyclopedia, 1st edition © HarperCollins Publishers 2005 https//www.google.ru//en.wikipedia.org/…/

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.

1. Nowadays, about 12.9% of Britain's land surface is wooded
2. Sherwood Forest National Nature Reserve encompasses 423.2 hectares, 1,045 acres (4.23 km^2).
3. Sherwood Forest is home to the famous pine tree, which, according to local folklore, was Robin Hood's principal hideout.
4. The New Forest was created for hunting by William the Conqueror in 1079.
Ancient oaks may be 100 years old.
The other well known national park in Great Britain is the Lake District National Park
5. The area, which was designated a national park on 9 May 1951 (less than a month after the first UK national park designation — the Peak District).
6. Most of the land in the park is in private ownership, with about 80% registered as agricultural land.
7. The mountains of the Lake District are also known as the "Cumbrian Mountains".
8. Sherwood Forest is a royal forest in Nottinghamshire, England.
9. In parts of the Lake District the rainfall is higher than in any other parts of England.
10. Sherwood Forest is home to the famous Major Oak.

READING SKILL
ANNOTATING A TEXT

B. Read and annotate the text. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English.

Соленые болота, вересковая пустошь, ледниковое озеро, дуплистый ствол, рукотворный лес, декоративный зеленый массив, трясина, тисовое дерево, берег моря (заливаемый приливом), мох, болото, лишайник, граница леса, хвойное дерево, обхват дерева, крутой уклон, жуки-вредители, слабо пересеченная местность, уцелевший вид, заметные изменения, долина, подрезать крону деревьев, папоротник, полог леса

2. Match each word in column A with its definition in column B.

1. Meadow	a. is a tree or shrub in the genus Quercus .
2. Moorland	b. is a low-laying, wet land.
3. Oak	c. is an open, uncultivated land covered with heather.

4. Marsh	d. is a stretch of rocky, bare moorland or bare hilly land.
5. Flora	e. is a field vegetated by primarily grass and other non-woody plants.
6. Fell	f. is all the animals of any area or an epoch.
7. Fauna	g. is all the plants of an area or an epoch.

https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

1. Complete the following sentences according to the text.

1. The New Forest was created for hunting by …… in 1079. The New Forest is believed to have the highest concentration of ……. ……. in Western Europe.
2. Ancient oaks may be 400 to …… years old, while beech can reach 300 to ….. years.
3. The most ancient of all are yews, some of which are thought to be over …… years old.
4. The Lake District area was designated a …… on 9 May 1951.
5. British people suppose that the Lake District is the most visited national park in the United Kingdom with ……. million annual visitors.
6. Farmland and settlement add aesthetic value to the natural scenery with an ecology modified by human influence for ……. and including important …….
7. Ancient trees are great ……..
8. Many of the higher …. are rocky in character, while ……. predominates at lower altitudes.
9. Below the …. are wooded areas, including British and European native ….. woodlands and introduced softwood plantations.

4. Find synonyms from the following list.

Bare, proportion, edge, to increase, part, to enhance, horizon, sidewalk, noise, pavement, skyline, naked, roar, border

5. Find antonyms from the following list.

Easy, retrievable, helpless, irretrievable, difficult, helpful, appropriate, inhabited, directly, inappropriate, indirectly, uninhabited.

SPEAKING

1. **What does this text deal with?**
2. **Discuss the main ideas in a group.**

What valuable information did you get from the text? Use some phrases given below. It's interesting to know that…

As far as I know…

Firstly…

Secondly……

3. **Discuss:** You have limited time. What kind of parks is it necessary to visit in Great Britain as a forest man and why?

4. In pairs, ask and answer some questions through the text.

WRITING

1. Make up a plan of the text.

2. Write out terms related to the forestry from the text. Translate the sentences with these terms.

3. Give the summary of the text in 5-7 sentences

4. Insert the necessary prepositions.

1. The New Forest was created ….. hunting by William the Conqueror in 1079. Ancient oaks may be 400 to 800 years old, while beech can reach 300 …. 400 years.

2. Ancient trees are home ……a whole host …… wildlife.

3. The ancient trees twisted bark, hollows and dead wood provide a multitude …… specialist habitats, including nest sites ……. birds like the redstart.

4. Ancient trees have been sculpted ….. time and revered …. generations ….. local people.

5. Ancient trees are great survivors, and have lived ….. remarkable changes ….. the world ……. them.

6. Ancient trees are a landscape shaped …. man, …..history and ….. the animals that still graze it today.

7. The Lake District was designated a national park ….. 9 May 1951.

8. British people suppose the Lake District to be most visited national park in the United Kingdom ….. 15.8 million annual visitors.

9. Many ….the higher fells are rocky ….character, while moorland predominates …lower altitudes.

Text 12 The National Parks of Australia

STARTING UP

Discuss this question.

What do you know about the flora and fauna of Australia?

VOCABULARY 1

1. **Read and translate the international words into Russian.**

Per cent, crater, volcano, reef, fauna, flora, conservation, local Aboriginals, forms, meteorite, dinosaur, amphitheater, geology, individuality, marine, monitoring, crater, to characterize

2. Read and translate into Russian the following words and word combinations.

Special habitats, Agonis, Atalaya, Banksia, Hakea, Grevillea, Heterodendron, Leptospermum, Lophostemon and Syncarpiaplants, natural wonders,

European settlement, historical shipwreck sites, wide range of flora and fauna, ocean road, impressive fossil remains, native wildlife, wet season, mountain range, wilderness area, alpine and sub-alpine areas, endangered species, corroboree frog, mountain pygmy possum.

3. Read and translate the verbs.

To name, to rename, to prohibit, to monitor, to adapt, to cover, to create, to relax, to amuse, to involve, to recount, to spoil, to offer, to recognize, to inscribe, to monitor, to erupt, to clear, to forbid.

READING

Australia has a total of 125 million hectares of forest, which is equivalent to 16% of Australia's land area. Of this total forest area, determined as at 2011, 123 million hectares (98%) are native forests, 2.0 million hectares are 'Industrial plantations' and 0.15 million hectares are 'Other forest'. Australia has about 3% of the world's forest area, and globally is the country with the seventh largest forest area.

Queensland has the largest area of Australia's forest (51.0 million hectares—41% of Australia's forest), with New South Wales (22.7 million hectares—18%), Western Australia (19.2 million hectares—15%) and the Northern Territory (15.2 million hectares—12%) making up much of the balance.[1]

The forests of Australia are diverse and highly valued, and are among the country's most important natural resources. Australia's native forests occur in a broad range of geographic landscapes and climatic environments, and contain a wide array of mostly endemic species (that is, species found nowhere else) combining to form unique and complex ecosystems. Australia's native forests provide a range of wood and non-wood products that are used by Australians in their everyday lives. They also provide clean water; protect soil; provide opportunities for recreation and tourism, and scientific and educational pursuits; and support cultural, heritage and aesthetic values.

Native forests are categorized in Australia's National Forest Inventory into eight national forest types named after their key genus or structural form: Acacia, Callitris, Casuarina, Eucalypt, Mangrove, Melaleuca,Rainforest, and other native forest (which includes a range of minor native forest types that are named after their dominant genera, including Agonis, Atalaya, Banksia, Hakea, Grevillea, Heterodendron, Leptospermum, Lophostemon and Syncarpia). Across the wide range of rainfall and soil conditions that support forest, more than 80% of Australia's 'Native forest' category of forest is dominated by eucalypts (75%) and acacias (8%).[1]

Over 28 million hectares of land is designated as national parkland, accounting for almost four per cent of Australia's land areas. In addition, a further six per cent of Australia is protected and includes state forests, nature parks and conservation reserves.

National parks are usually large areas of land that are protected because they have unspoiled landscapes and a diverse number of native plants and animals. This means that commercial activities such as farming are prohibited and human activity is strictly monitored.

Like zoos, national parks have several purposes. One of these is to protect native flora and fauna. In the national parks Australians and foreign visitors can enjoy and learn about a unique environment, heritage and culture. Most of the national parks are managed by the States and Territories of Australia; however the Australian Government manages six national parks and 13 marine parks.

Australia's first national park was proclaimed on 26-th of April in 1879, south of Sydney in New South Wales. It is known as the Royal National Park. Originally named “The National Park”, it was renamed 'Royal National Park' when Queen Elizabeth II visited it in 1955.In the early days of the park it was used more as a place where residents of Sydney could come to relax and amuse themselves than for the conservation and study of native wildlife. A dance hall was even built there in the 1940s, and earlier land was cleared for large areas of lawns and a train line was set up between Loftus and Audley, two towns within the Park.

Flinders Ranges National Park is a special national park because it protects a number of land uses and remains: the ruins of early European settlement, Aboriginal rock art sites, and impressive fossil remains as part of Australia's geological history. The park is home to many unique animals and plants that have adapted to the arid landscape and have evolved as a result of the area's unique geological history. It is the traditional home of the native people and their culture. One of the most amazing places to visit in the park is Wilpena Pound. It looks like a huge crater - from a meteorite or perhaps an ancient volcano. In fact it is the remnants of a mountain range that eroded down over many millions of years. It is over 80 square kilometres in size and forms a natural amphitheatre with only one entrance in.

Kosciuszko National Park is the largest national park in New South Wales. It contains Australia's highest mountain, Mount Kosciuszko, the Snowy River and popular ski fields. The park consists of caves, gorges and historic huts used by mountain cattlemen. It offers visitors the opportunity to see alpine flora. The park is recognized as a UNESCO Biosphere Reserve. Within the park's boundaries are six different wilderness areas including alpine and sub-alpine areas with plants that grow only in Australia. Native fauna found here include endangered species such as the corroboree frog and the mountain pygmy possum. The park is one of several Australian Alps national parks.

Purnululu National Park in Western Australia contains the amazing Bungle Bungle Range, another example of Australia's fascinating geology. The distinctive beehive-shaped landforms seen today have been produced by uplift and erosion during the last 20 million years. The area has been used by Aboriginal people for thousands of years as a hunting ground, particularly during the wet season when plant and animal life was abundant. It is rich in Aboriginal artwork and contains a number of burial sites. This reserve was declared a national park in 1987. In 2002 the traditional Aboriginal owners of the land were granted living areas within the park.

The park is run by the Government of Western Australia. In 2003 the park was inscribed by the World Heritage Committee for its exceptional natural beauty and rich biodiversity and inscribed in 2005 for its cultural significance.

Australia has about 14 World Heritage areas. National parks are located in the alps, the deserts, forests, and reefs. They preserve:

- special habitats, plants and wildlife, such as the Wollemi National Park where the dinosaur tree, the Wollemi pine trees grow;
- ecosystems that exist only in Australia e.g. wetlands in the Yalgorup National Park in Western Australia;
- natural wonders, such as the Australian Fossil Mammal Sites in the North Queensland;
- areas sacred to Australian Aboriginals such as Mutawintji National Park in western New South Wales;
- historical places of Australia e.g. European settlements ;
- a wide range of flora and fauna such as Port Campbell National Park in Victoria where the natural wonders of the Great Ocean Road can be found.

Australia's State of the Forests Report https//www.google.ru//en.wikipedia.org/…/

COMPREHENSION

1. Retell the text in Russian.

2. Title each paragraph.

3. Underline the topic sentences and key words.

4. Ask some questions through the text.

5. **Now read the text again and decide whether these statements are true or false. Correct each false statement to make it true.**

1. Australia has over six hundred national parks.
2. Over 40 million hectares of land is designated as national parkland, accounting for almost ten cent of Australia's land areas.
3. In the national parks commercial activities such as farming are not prohibited.
4. Like zoos, national parks of Australia have to protect native flora and fauna.
5. Most of the national parks are managed by the States and Territories of Australia.
6. The Australian Government manages six national parks and 13 marine parks.
7. Australia has50 World Heritage areas.
8. Australia's first national park, was proclaimed on 26-th of April in 1879. It is known as the Royal National Park.
9. The first national park was Flinders Ranges in Australia.
10. Finders Ranges National Park is a special national park because it protects a number of land uses and remains: the ruins of early European settlement,

Aboriginal rock art sites, and impressive fossil remains as part of Australia's geological history.

11. Kosciuszko National Park offers visitors the opportunity to see alpine flora, caves, gorges and historic huts used by mountain cattlemen.

12. Australia has about 3% of the world's forest area.

READING SKILL

ANNOTATING A TEXT

B. Read and annotate the Text 3. Use at least five different annotation techniques.

VOCABULARY 2

1. Translate the following words and word combinations into English.

Горный хребет, яркая ложная жаба, останки животных, под защитой государства, природный ландшафт, возвышение, флора высокогорья, чудо природы, пещера, особые обитатели, чудесное творение природы, широкий спектр флоры и фауны, ископаемые остатки, древние вулканы, район дикой природы, влажный сезон, огромный кратер, вымирающие виды, произрастающий в горной местности, карликовые кускусы

2. Match each word in column A with its definition in column B.

1. A volcano	a. is a hole formed in the ground produced by an explosion near or below the surface.
2. A meteorite	b. is a mountain with a large opening at the top through which gases and lava are forced out into the air.
3. A crater	c. is a rock, or sandbar, or other feature lying beneath the surface of the water (80 meters or less beneath low water).
4. A reef	d carbon dioxide. is a hollow place in the ground especially a natural underground space large enough for a human to enter.
5. A cave	e. is a piece of rock from outer space that hits the Earth's surface.

1.https//www.google.ru//en.wikipedia.org/…/ Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.

1. Complete the following sentences according to the text.

1. Australia has over 500 ……..parks.
2. Purnululu National Park in Western Australia is rich in Aboriginal…….. .

3. Kosciuszko National Park is the……. national park in New South Wales.
4. Flinders Ranges National Park protects a number of land …. and …….: the ruins of early European settlement, Aboriginal ……., and impressive fossil remains as part of Australia's geological history.
5. Kosciuszko National Park contains Australia's highest ……., Mount Kosciuszko.

6. Kosciuszko National Park consists of ……, …… and …… used by mountain cattlemen.
7. The national parks of Australia have to protect native …..and fauna.
8. More than 80% of Australia's 'Native forest' category of forest is dominated by eucalypts (75%) and acacias (8%).

4. Find synonyms from the following list.

Purpose, to prohibit, neighbourhood, peak, dirty, craftsman, infirm, want, gloomy, aim, affect, mount, impress, dark, worker, weak, wish, vicinity, muddy, to forbid.

5. Find antonyms from the following list.

Directly, to permit, timely, private, flat area, unnecessarily, negative, positive, unregistered, untimely, indirectly, necessary, registered, state, to prohibit, mountain area.

SPEAKING

1. **What does this text deal with?**
2. **Discuss:** How does Australia protect its national parks? **Use these phrases:** Can be said. Cannot be said etc.
3. **What valuable information did you get from the text?**
4. **In pairs, ask and answer some questions through the text.**

WRITING

1. **Make up a plan of the text.**
2. **Write out terms related to the forestry from the text. Translate the sentences with these terms.**
3. **Give the summary of the text in 5-7 sentences.**
4. **Insert the necessary prepositions.**

1. Over 28 million hectares ….land is designated as national parkland, accounting …… almost four per cent of Australia's land areas.
2. National parks are located ….the alps, the deserts, forests, and reefs.
3. A dance hall was built there in the 1940s and land was cleared …..large areas ….lawns and a train line was set ….between Loftus and Audley, two towns …… the Park.
4. The park is home …..many unique animals and plants that have adapted ….the arid landscape and have evolved as a result ….the area's unique geological history.

5. One …..the most amazing places to visit ….the park is Wilpena Pound.

6. It looks like a huge crater - …. a meteorite or perhaps an ancient volcano.

7. Crater is over 80 square kilometres…..size and forms a natural amphitheatre…… only one entrance ….

8. In 2002 the traditional Aboriginal owners ….the land were granted living areas ……. the park.

9. The park is run …..the Government ….. Western Australia.

10. In 2003 the park was inscribed …… the World Heritage Committee …..its exceptional natural beauty and rich biodiversity and inscribed …. 2005 for its cultural significance.

Заключение

Тематическая направленность учебного материала отражает комплексный подход к формированию профессиональной компетенции студентов средствами иностранного языка в области лесного хозяйства и создает платформу для реализации главной стратегии обучения: совершенствования научной и профессиональной деятельности обучающихся и позволяющей им использовать английский язык в дальнейшей научной работе.

References

1. Australia's State of the Forests Report.2013.
2. Canadian forests Natural Resources Canada. 2014-10-14. Retrieved 2014-11-28.
3. "Definitions: Indicative definitions taken from the Report of the ad hoc technical expert group on forest biological diversity". Convention on Biological Diversity. Retrieved2014-11-16.
4. English-Russian Dictionary OF Synonyms. Edited by A.I. Rozenman and Academician Yu.D.Apresyan. 5th Stereatype. M. "RusskyYazyk Publishers".2000.543p
5. Oxford Advanced Learner's Dictionary of Current English. A.S. Hornby, Sixth Edition. Edited by Sally Wehmeier, Phonetics Editor Michael Ashby. Oxford Press University. 2000.|
6. "Statistics". Certification status - Canada & the globe. Canadian Sustainable Forestry Certification Coalition. Retrieved 2014-11-28.
7. Forest. Dictionary.com. Retrieved 2014-11-16.
8. Schuck, Andreas; Päivinen, Risto; Hytönend, Tuomo; Pajari, Brita (2002). "Compilation of Forestry Terms and Definitions" (PDF). Joensuu, Finland: European Forest Institute. Retrieved 2014-11-16.

Internet resources:

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