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Massive open online course Sustainable Development of Mountain Territories in the Context of the Concept of Ecosystem Services

*The European Commission's support for the production of this publication does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



This educational resource is intended for university students, schoolchildren, teachers and a wide range of people interested in the issues of sustainable development of mountain territories and ecosystem services.

It was jointly developed by Gorno-Altai State University and Kumaon University.

The MOOC is located on the specially created GASU educational platform for further education <http://sunraise.gasu.ru/> . Self-registration is available.

AVAILABLE COURSES



MOOC_SUSTAINABLE
DEVELOPMENT OF
MOUNTAIN
TERRITORIES IN THE
CONTEXT OF THE
CONCEPT OF
ECOSYSTEM
SERVICES



MOOK_УСТОЙЧИВОЕ
РАЗВИТИЕ ГОРНЫХ
ТЕРРИТОРИЙ В
КОНТЕКСТЕ
КОНЦЕПЦИИ
ЭКОСИСТЕМНЫХ
УСЛУГ

Co-funded by the
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of the European Union



Unlike most similar MOOCs, this course is accessible all year round (no exact starting days), 7 days a week, and 24 hours a day, which allows studying it at any convenient time.

The course is free of charge; no certificates are given after completing the course.

There are no pre-requisites for taking this MOOC, apart from having access to a computer with an internet connection.

The course is available both in Russian and English Languages

<http://sunraise.gasu.ru/>

<http://sunraise.gasu.ru/?redirect=0&lang=en>

Massive open online course

Sustainable Development of Mountain Territories in the Context of the Concept of Ecosystem Services

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Logos: SUNRAISE, European Union, and institutional logos of the Russian Academy of Sciences and Kumaon University.



The course consists of 6 themes

1. General characteristics of mountain territories
2. Biological diversity of mountain territories
3. Global significance of mountain territories
4. Ecosystem services: essence and history of development
5. Economic valuation of ecosystem services
6. Threats to mountain ecosystem services and their restoration

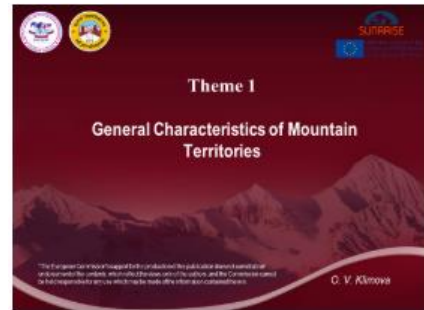
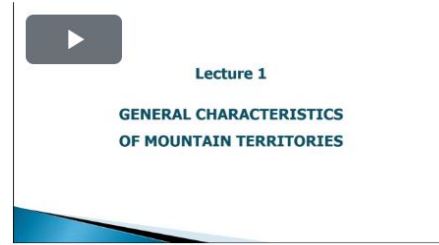


Each theme includes

Text for reading with
interactive links



Test for self-control



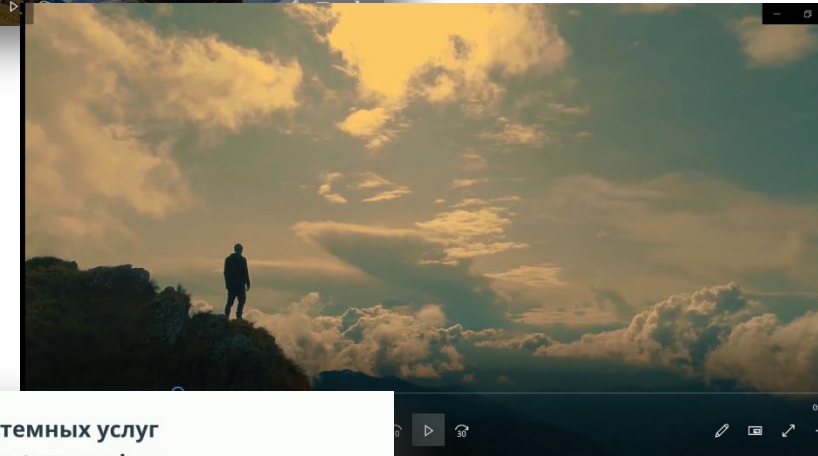
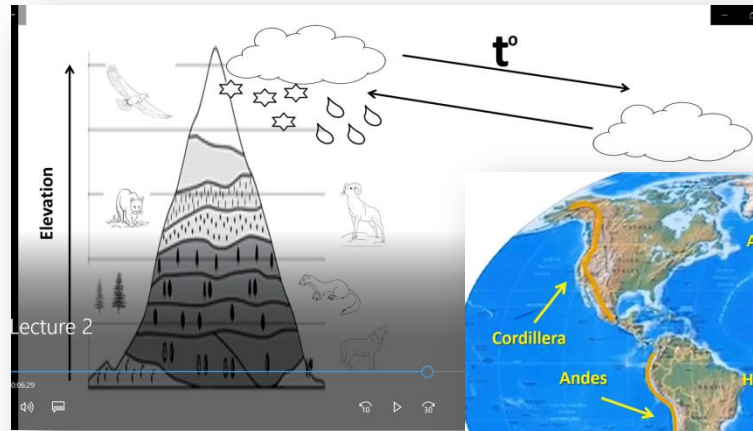
Introductory
video lecture

Revision presentation

Co-funded by the Erasmus+ Programme of the European Union



All introductory video lectures are created in the form of 8 – 13 min. educational films with thematic schemes.





All text for reading have interactive links which help to understand the meaning of the new scientific terms, study in detail one or another aspect of the given topic, and get to know basic documents in the sphere of sustainable development of mountain territories and ecosystem services.



Chapter 13 of Agenda 21

What is Agenda 21?

Agenda 21 is the global plan of action that was adopted at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992, also known as the Rio Earth Summit.

Agenda 21 is a comprehensive plan of action to be taken globally, national and locally by organizations of the United Nations System, Governments, and Groups in every area in which human impacts on the environment. Agenda 21 is a comprehensive plan of action to be taken globally, national and locally by organizations of the United Nations System, Governments, and Groups in every area in which human impacts on the environment. Agenda 21 is a comprehensive plan of action to be taken globally, national and locally by organizations of the United Nations System, Governments, and Groups in every area in which human impacts on the environment.

What is an Ecosystem?

An ecosystem, a term very often used in biology, is a community of living organisms and animals interacting with each other in a given area, and with their non-living environments. The non-living environments include weather, earth, sun, soil, climate and atmosphere.

The ecosystem relates to the way that all these different organisms live in close proximity to each other and how they interact with each other. For instance, in an ecosystem where there are both rabbits and foxes, these two creatures are in a relationship where the fox eats the rabbit in order to survive. This relationship has a knock-on effect with the other creatures and plants that live in the same or similar areas. For instance, the more rabbits that foxes eat, the more the plants may start to thrive because there are



SUSTAINABLE DEVELOPMENT OF MOUNTAIN TERRITORIES IN THE CONTEXT OF THE CONCEPT OF ECOSYSTEM SERVICES



Theme 4

Ecosystem Services: Essence and History of Development

The concept of ecosystem services was formed in the late 1990s with the aim of finding an economic solution to traditional problems of environmental protection, ecological safety, and ecological functions of natural and man-made ecosystems, and to provide economic and financial leverages to address them in a market economy. Services are not free. They have their own cost that must be taken into account while planning economic activities in order to ensure the sustainable development of modern society.

This realization has led to the development of an independent direction – [The Economics of Ecosystems and Biodiversity](#) (TEEB) under the framework of the [United Nations Environment Programme](#) (Konyushkov D.E., 2015).

Today, a wide range of issues related to ecosystem services, including their assessment, identification of their potential sellers, buyers and compensation mechanisms, as well as the establishment of markets for such services are being actively developed in the world. In international relations and economics these services are increasingly linked to such new terms as "payments for ecosystem services" (PES), "environmental donors," "compensation mechanism," and "debt-

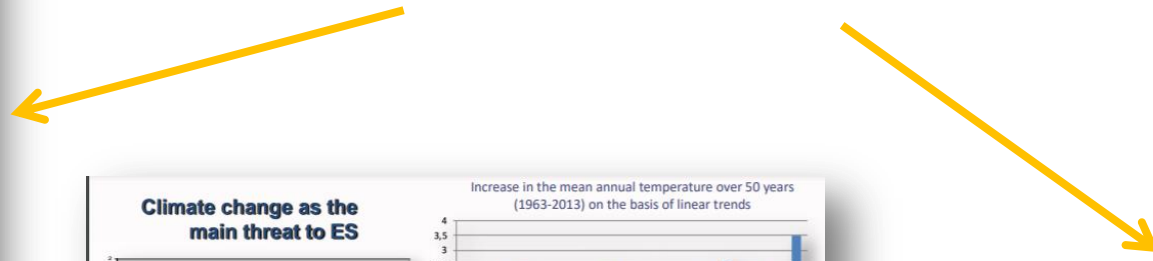


Theme 4

Ecosystem Services: Essence and History of Development

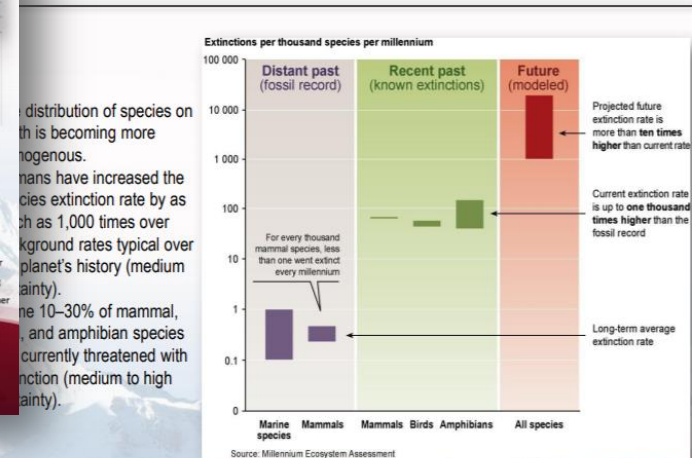
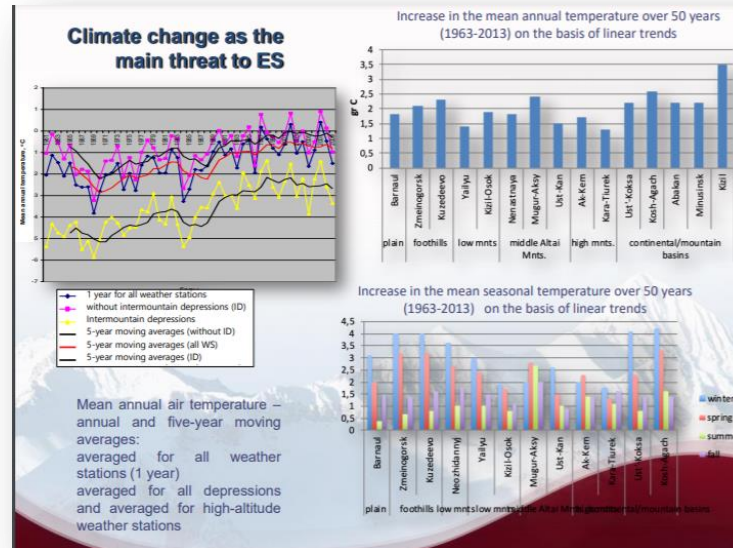
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Offered presentations summarize the information the students have seen and read



Today, there are three international classifications of ecosystem services:

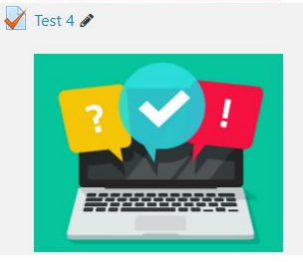
- The classification given in the Millennium Ecosystem Assessment (2005) that is used for global and sub-global assessments of ecosystem services.
- The classification of the international project "The Economics of Ecosystems and Biodiversity - TEEB," which is used by the countries participating in the project for assessment of ecosystem services at the national level.
- The Common International Classification of Ecosystem Services (CICES) developed from the work on environmental accounting undertaken by the European Environment Agency (EEA). It is based on the two above-stated classifications, but to a greater extent aimed at economic assessment and accounting of ecosystems at the national, regional and local levels.



...distribution of species on th is becoming more rogenous. ...ans have increased the cies extinction rate by as ch as 1,000 times over ...ground rates typical over planet's history (medium ainty). ...ne 10–30% of mammal, and amphibian species currently threatened with nction (medium to high ainty).



After each theme students should perform a short test for self-control, which can be performed an unlimited number of times.



Имя	Алина Зиновьева
Тест начат	Пятница, 8 мая 2020, 08:08
Состояние	Завершённые
Завершен	Пятница, 8 мая 2020, 08:11
Прошло времени	3 мин. 21 сек.
Баллы	9,79/10,00
Оценка	97,86 из 100,00

НАВИГАЦИЯ ПО ТЕСТУ

1	2	3	4	5	6	7	8
✓	✓	✓	✓	✓	✗	✓	✓
9	10						
✓	✓						

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ВОПРОС 1

Верно

Баллов: 1,00 из 1,00

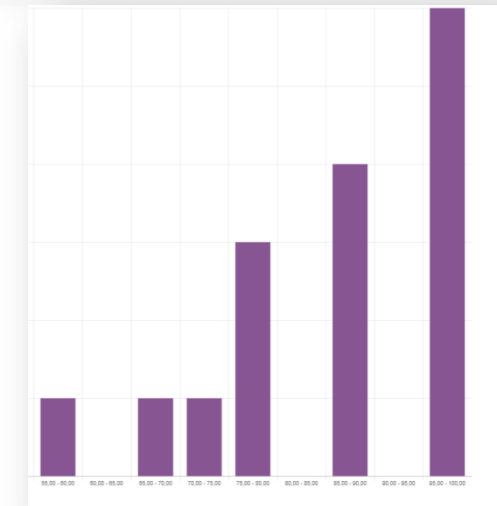
Редактировать вопрос

Когда впервые была сформулирована концепция экосистемных услуг?

Выберите один ответ:

- а. В середине 50-х годов прошлого века
- б. В конце 90-х годов прошлого века ✓
- с. В начале 21 века
- d. В начале 20 века

Имя / Фамилия	Адрес электронной почты	Состояние	Тест начат	Завершено	Затраченное время	Оценка/100,00	В. 1	В. 2	В. 3	В. 4	В. 5	В. 6	В. 7	В. 8	В. 9	В. 10
Дмитрий Черных	cherrykhd@mail.ru	Завершённые	28 апреля 2020 09:22	28 апреля 2020 09:29	6 мин. 58 сек.	100,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00
Алина Зиновьева	charming-alin@yandex.ru	Завершённые	8 мая 2020 08:08	8 мая 2020 08:11	3 мин. 21 сек.	97,86	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	7,86	✓10,00	✓10,00	✓10,00	✓10,00
Мария Ямщикова	m.yamshchikova@list.ru	Завершённые	22 октября 2020 15:52	22 октября 2020 16:05	12 мин. 26 сек.	67,14	✓10,00	✓10,00	✓10,00	✗0,00	✓10,00	7,14	✓10,00	✗0,00	✗0,00	✓10,00
Виктор Лисин	vitya.lisin.2015@mail.ru	Завершённые	22 октября 2020 21:45	22 октября 2020 22:13	27 мин. 10 сек.	70,00	✓10,00	✗0,00	✓10,00	✓10,00	✗0,00	✓10,00	✓10,00	✓10,00	✗0,00	✓10,00
Мария Ковязина	manyachek@bk.ru	Завершённые	22 октября 2020 21:57	22 октября 2020 22:04	7 мин. 20 сек.	77,14	✓10,00	✓10,00	✗0,00	✗0,00	✓10,00	7,14	✓10,00	✓10,00	✓10,00	✓10,00
Андрей Ковязин	kovязин.93@list.ru	Завершённые	22 октября 2020 22:09	22 октября 2020 22:12	3 мин. 45 сек.	57,86	✗0,00	✓10,00	✗0,00	✓10,00	✗0,00	7,86	✓10,00	✗0,00	✓10,00	✓10,00
Артём Климов	mrbo3mytum04@mail.ru	Завершённые	22 октября 2020 22:12	22 октября 2020 22:16	4 мин. 19 сек.	89,29	✓10,00	✓10,00	✓10,00	✓10,00	✗0,00	9,29	✓10,00	✓10,00	✓10,00	✓10,00
Екатерина Журавлева	zhuravleva.ekaterina.1997@mail.ru	Завершённые	23 октября 2020 11:36	23 октября 2020 11:50	14 мин. 3 сек.	100,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00	✓10,00
Андрей Ковязин	kovязин.93@list.ru	Завершённые	23 октября 2020 18:09	23 октября 2020 18:13	4 мин. 6 сек.	77,86	✓10,00	✓10,00	✗0,00	✓10,00	✗0,00	7,86	✓10,00	✓10,00	✓10,00	✓10,00
Алена Архипова	Alena.arkhipova.1995@mail.ru	Завершённые	24 октября 2020 14:26	24 октября 2020 14:34	8 мин. 16 сек.	88,57	✓10,00	✓10,00	✗0,00	✓10,00	✓10,00	8,57	✓10,00	✓10,00	✓10,00	✓10,00



55 65 75 85 100



МООК_УСТОЙЧИВОЕ РАЗВИТИЕ ГОРНЫХ ТЕРРИТОРИЙ В КОНТЕКСТЕ КОНЦЕПЦИИ ЭКОСИСТЕМНЫХ УСЛУГ

Личный кабинет / Мои курсы / МООК_УРГТыКЭУ / ИТОГОВЫЙ ТЕСТ ПО КУРСУ / Итоговый тест

Алена Архипова

Тест начат	Суббота, 24 октября 2020, 15:00
Состояние	Завершённые
Завершен	Суббота, 24 октября 2020, 15:26
Прошло времени	26 мин. 2 сек.
Баллы	29,00/30,00
Оценка	96,67 из 100,00

ВОПРОС 1
Верно
Баллов: 1,00 из 1,00
Редактировать вопрос

Метод предотвращенных затрат основан на оценке реальных затрат при замене данной услуги.

Выберите один ответ:

- Верно
- Неверно ✓

Складчатые горы образовались в результате?

Выберите один ответ:

- извержения магматических пород;
- растяжения земной коры;
- дробления старых кристаллических пород и неравномерно их поднятия;
- сжатия земной коры при столкновении литосферных плит; ✓

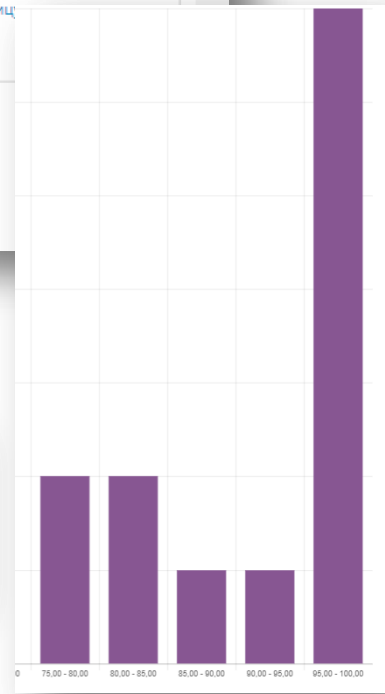
Ваш ответ верный.
Правильный ответ: сжатия земной коры при столкновении литосферных плит;

[Оставить комментарий или переопределить балл](#)

НАВИГАЦИЯ ПО ТЕСТУ

1	2	3	4	5	6	7	8
✓	✓	✓	✓	✓	✓	✓	✓
9	10	11	12	13	14	15	16
✓	✓	✓	✓	✓	✓	✓	✓
17	18	19	20	21	22	23	24
✓	✓	✓	✓	✓	✓	✓	✓
25	26	27	28	29	30		
✓	✓	✓	✓	✓	✓		

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[Закончить обзор](#)



Горная система, протянувшаяся на 18000 км. и расположенная в Северной и Южной Америке носит название . Самой высокой точкой является Монблан. - это высочайшая горная система нашей планеты. На северо-западе африканского континента расположены . На восточном и юго-восточном побережье Австралии расположен .

Гималаи Большой Водораздельный хребет Кордильеры Атласские горы Альпы



QUESTIONNAIRE

 Your opinion is important to us!

The students are asked fill out the short questionnaire after completing the course:

1. How did you hear about this MOOC?
2. Assess the level of complexity of this MOOC (suggested variants)
3. Various forms and methods of teaching were used in this MOOC (agree / disagree)
4. The course was interesting and useful for the further development of your skills as a (future) professional (agree / disagree)
5. What is your overall assessment of the MOOC? (from excellent to bad)
6. Which theme(s) was the most interesting? (open-ended question)
7. Which theme(s) was the most difficult for understanding? (open-ended question)
8. Does this MOOC require improvement? If so, in what part? (open-ended question)
9. Do you have any wishes or recommendations concerning this MOOC? (open-ended question)



Course statistics

October 2020

MOOK_УСТОЙЧИВОЕ РАЗВИТИЕ ГОРНЫХ ТЕРРИТОРИЙ В КОНТЕКСТЕ

Личный кабинет / Мои курсы / MOOK_УРГТвККЭУ / Участники

УЧАСТНИКИ

Фильтры не применены

Введите слово для поиска или выберите фильтр

Число участников: 49

MOOC_SUSTAINABLE DEVELOPMENT OF MOUNTAIN TERRITORIES IN T
ECOSYSTEM SERVICES

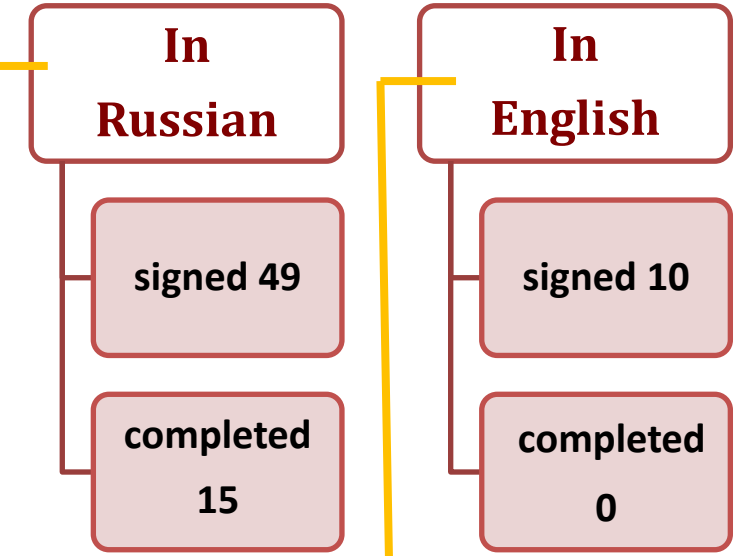
Dashboard / My courses / SDMTCCES / Participants

PARTICIPANTS

No filters applied

Search keyword or select filter

Number of participants: 10





SUNRAISE (2)

SEARCH YOUR COURSES

Type and press Search

Search

ABOUT THE PROJECT

*This MOOC has been developed under the Erasmus+ project «SUNRAISE - Sustainable Natural Resource Use in Arctic and High Mountainous Areas». The European Commission's support for the production of this course does not constitute an endorsement of the contents, which reflect the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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649000, Altai Republic, Russia

✉ E-mail: oiup@gasu.ru

