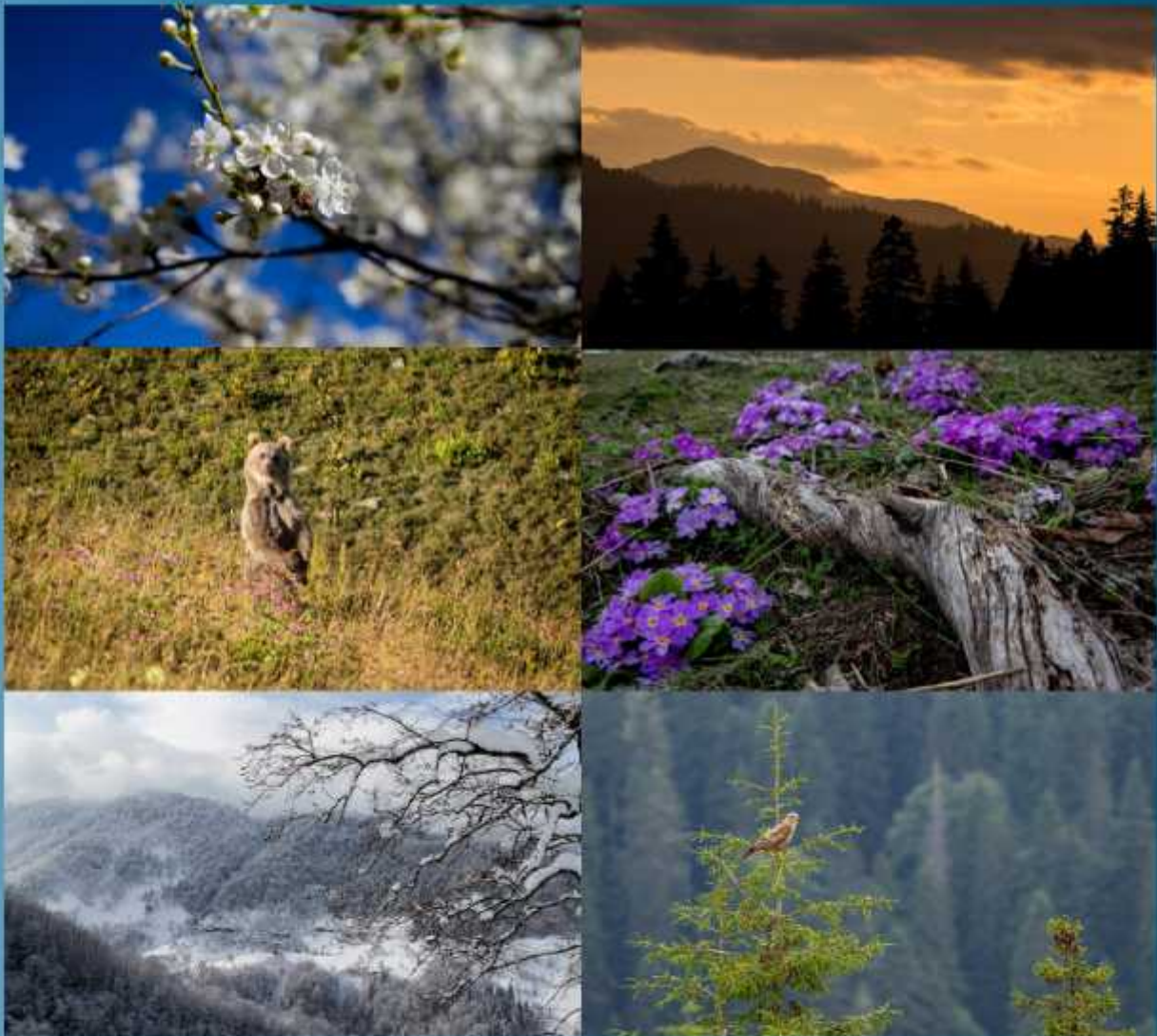


Biodiversity and Wild Animals in Ajara

Teacher's Book



Education Training Course on Conservation for Ajara Schools

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Batumi

2017

Introduction

Biodiversity and Wild Animals in Ajara Conservation Education Training Course for Ajara Schools

The aim of this teaching module is to raise awareness of the relationship between humans and wild animals, as well as of the crucial role of wildlife in the functioning of the ecosystem, its recreational, aesthetic and economic importance and the necessity of conservation. It will also facilitate the reduction of the risk of attack on domestic animals by wild animals, through preventative measures in the high mountains of Ajara, which in turn is a precondition for the economic strengthening of small farms and improving their living conditions. The principles of teaching this subject are based on identifying the problems and solutions, project and research based teaching methodology and involving students in practical activities.

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Lesson 1. Wildlife with us

Purpose: The primary goal of the module's first lesson is that student should:

- understand the uniqueness of the biodiversity of the Ajara Region;
- consider the role and importance of conservation education within the framework of the country's development and particularly for the Ajara Region;
- discuss the harmonious coexistence of farmers engaged in agricultural production and wild animals;
- set the practical ways, to manage and receive benefit from the natural resources and improve their living/livelihood conditions and environment;
- develop a positive attitude toward wildlife.

Resources: Computer, projector, board, board marker, flipchart, coloured markers

The way to achieve the goal (activities and training methods): Definition of expectations, showing videos, mini-discussions, working on questionnaires and presentations.

Lesson 1 – Process

Activity 1. Determination of expectations towards the subject of the study, Time: 10 min.

Get the students acquainted with the name of the subject - "Coexistent living between human and wild animals in Ajara" and ask them to express their learning expectations and experience they are anticipating from this course. After the student's opinions, introduce the main objectives of the subject and match them to the students' expectations.

Activity 2. Showing the video, Mini-discussion, time: 10 min.

Introduce the lesson title - "Wildlife with us" and show them the video on - The wolf and human relations (Please see: Electronic resources, in the beginning of the video 2nd -3rd minutes). After completing the video, ask the following questions:

- What did you feel? What kind of emotions do you have?
- What do you think, is coexistence between humans and wild animals possible, and in what situations? (For example: Wolves and bears will only live with people if they are willing to share the same environment). What is your attitude toward wildlife? Explain your answer supported with personal examples.
- What does wildlife mean to you? What types of wildlife are around you?

Activity 3. Working on questionnaire, Presentation, time: 25 min.

Divide the students into groups and give them the cards (for cards see an appendix -1 of the Lesson 1, guideline for students) with the following questions:

- In your opinion, what is unique about the biodiversity of Ajara? Should we keep it and why do you think so?
- In your opinion, what kind of attitude do the people have about maintaining biodiversity? What do you think, what are the bases for such attitude?
- What benefits can humans gain if nature is used rationally? What consequences will be there in the case of irrational use of nature? Please support your answer.
- What is the role of a positive attitude towards the wildlife around us? Please express your thoughts and give examples (e.g. From film, work, personal experience etc.).

Ask them to review the questions given in the cards, make a response and develop a common opinion on these issues. Time should be limited to 10 minutes –When the time is up, listen to the opinions of the groups according to the following instructions: ask the first question and receive the answer only from one group, the rest of the groups will add their opinions, if they have different opinions and examples.

Results and indicators

[Fundamentals of elective conservation biology X/XI/XII.1.](#)

The student can define biodiversity and its importance. The student can describe the main components/levels of biodiversity and discuss their importance.

Lesson 2. The principle components of biodiversity

Purpose: Students are able to describe the main components of biodiversity, discuss its importance and understand their role in maintaining biodiversity.

Resources: Computer, projector, board, marker, appendix 1 – text, appendix 2 - hot spots of biodiversity, appendix – photos (guideline for students).

The way to achieve the goal (activities and training methods): Discussion of the situation, brainstorming, active lecture, mini-discussions and summarising.

Lesson 2- Process

Activity 1. Review the situation, 10 min.

Divide the students into the groups (according to the counting principle - 1, 2, 3, 4, or your own will) and give them the following instruction: you will be given a text (Appendix 1 – text of the lesson 2, guideline for students), please read it and answer the questions. Determine the time: after expiration of 5 minutes, ask the groups to present their own opinions. In case of similar opinions, they should not be repeated, they can only express different opinions. After listening the students' opinions, make a conclusion and draw their attention to the issues that are given in the first part of the lesson “what is an ecosystem?”

Activity 2. Brainstorming, active lecture, 15 min.

Ask the students the following questions:

- In your opinion, what is the relationship between an ecosystem and biodiversity?
- After receiving students' opinions, without critical restrictions, via the mini-lecture, introduce students the following issues:
 - What is biodiversity?
 - What type of biodiversity does Georgia have?

* Please see the materials for mini-lecture in the second part of the lesson 2 -“what is biodiversity? A mini-lecture could be conducted on the background of photos reflecting Georgia's biodiversity. Regarding this you can see the following [link](#). After discussing the above mentioned issues, show the students the following photos: 1 - *Mertensiella caucasica*, 2 - *Pelodytes causicus* and 3 - *Bufo verrucosissimus* and ask them, “Have they ever seen them in nature or what do they know about them?” After students' respond carry on with the mini-lecture and introduce the students to:

- What is an endemic species?
- Explain that the animals in the photos show endemic species that are present in the protected area of Mtirala Park.

*Materials for mini-lecture, could be seen in the third part of the second lesson “what is endemic?” At the end of the mini-lecture, you should also highlight that the territory of Georgia used to be richer with regard to biodiversity than it is now. There are also:

- Extinct animals, they no longer exist in nature;

- They are in nature, however, with a high risk of extinction;
- They are not deemed endangered at the moment (do not have a status assigned), however, a sharp decrease of animals has been noted in nature. For example: The gazelle is considered as being almost extinct; Caucasian endemic – aurochs face an extremely high risk of extinction, the number of wild boar has significantly reduced and so on.

Activity 3. Mini-discussion, 13-14 min.

Ask the students – what kind of similarities and distinctions have they seen during the brainstorming between the information gained from mini-lectures and their thoughts? Then ask the following questions for discussion:

- What is the biodiversity of the nearby territories of your living environment?
- Do you think it is at risk of becoming endangered or changed? Please, explain why you think so?
- Why was Georgia entered into the hotspots of the world’s biodiversity?
- What is the importance of maintaining biodiversity, for the species located there as well as for humans? Support your opinion.

- What kind of role do you think you could have in maintaining biodiversity?
- What would you change regarding Georgia’s biodiversity? Explain why?

Activity 4. Summarise, 6-7 min.

Show the students a 35 second video, name of the video – biodiversity (please see the [link](#) here.) After watching the video, ask what their slogan would be in terms of Georgia’s biodiversity.

Results and Indicators

Fundamentals of elective conservation biology X/XI/XII.1.

Student is able to define biodiversity and its importance. Can describe the main components/levels of the biodiversity and can discuss the importance of biodiversity.

Lesson 3. Wild animals habitats in Ajara ecosystems

Purpose: Students will learn about the variety of habitats and will discuss the importance of habitats (forests) for wild animals as well as the reasons behind their reduction. They will understand the reasons for the decline in biodiversity using the example of habitat degradation.

Resources: Board, board marker, computer, projector, video-clips recorded on CD: (Videos about burning forest of Borjom-Kharagauli : 1 [See the link](#) 2 [See the link](#)) Power point - Slides.

The way to achieve the goal (activities and training methods): Review the situation, mini-discussion, presentation, summarize -discussion

Lesson 3-Process

Activity 1.Reminder about the situation, mini-discussion, 15 min.

Present the purpose and the topic of the lesson. Remind the students about the burning of the forest area of Borjomi-Kharagauli National Park during the 2008 war. (ask them, what they remember regarding this fact, turn on the projector and simultaneously show them the areas of burned forest (for materials, see the el. resources) and ask the questions:

- What will be the result of the destruction of the forest habitat? (animals will no longer have a living

environment, they will be forced to find a new living environment, which is linked with many problems)

- What is the relationship between habitat degradation and the decline of biodiversity? (The aim of the discussion is to highlight the importance of habitat maintenance for wild animals).

Activity 2. Presentation, 15 min.

After receiving the students responses, explain the definition for the term - habitat. Give them the information, that live organisms find their living in the living environment. For example: Forest birds live in the forests but they find living conditions in different places (different trees). Use the prepared power-point slides and discuss the types of forest habitats. Then ask the students to think and name the characteristic ecosystems and wild animal habitats for the Ajara region. Use the power point slides as well as focusing on the unique habitats of Ajara and their importance.

Activity 3. Summarize, discussion, 15min.

After completing the presentation, ask the student to think about the reasons for biodiversity reduction and ask the following questions:

- What may be the causes for the loss of biodiversity? (e.g. one of the reasons: the destruction of habitats, fragmentation etc.).
- What are the underlying factors behind these reasons? (e.g. lack of information)
- In your opinion, what mechanisms are there to prevent the decrease in biodiversity?
- As citizens, what can you do in order to halt the decline in biodiversity?

Results and indicators

Fundamentals of elective conservation biology/XI/XII.2.

The student can analyse the factors that impact biodiversity decrease (for example, climate change, destruction of habitat environment, excess procurement, impact of invasive species, environmental pollution) taking into account global and Georgian examples; Discusses the threats caused by degradation of forests, analyses the reasons for the loss in biodiversity based on Global, the Caucasus and Georgian examples.

Lesson 4. Law of Georgia on “Wildlife”

Purpose: The students will consider the main goals and purposes of the Law of Georgia on “wildlife”, they will discuss the cause-result attitude, that is caused by the violation of above mentioned legislation and elaborate adequate regulation mechanisms for problem solving.

Resources: Computer, projector, board, marker, materials for distribution to the students- Appendix 1-text, Appendix 2 – Definitions of the terms, Appendix 3 – list of table, guideline for students.

The way to achieve the goal (activities and training methods): Introduction of the issue, working on the text and completing the table, presentation, mini-lecture, mini-discussion.

Lesson 4 – Process

Activity 1.Introduction of the issue, 2 min.

After arranging any organisational issues, explain to the students that their lesson covers the topic that on the one hand regulates the maintenance and protection of biodiversity as well as other issues and on the other hand ensures its lawful use.

Activity 2. Working on the text and filling the list, 10 min.

Put the students into groups (according to the counting principle - 1, 2, 3, 4, or of your own will) and give them the following instructions: After reading the text, read the questions, definitions of terms and complete the table (Appendix 1 – text questions, Appendix 2 – definition of terms, Appendix 3 - list, guideline for students), there are a number of different problems in the text, look through them, select one of the most important problems for you and write it in the first column of the table. (For example: bigger reduction of endangered animals) express your assumptions about the causes of the problem and write them in the second column of the table. (For example: reduction of food area, spread of the diseases, poaching, lack of awareness about endangered animals and so on). In the third column of the table, indicate what activities and legislative regulations would facilitate solving the problem, selected by you. (for example: Preparation of brochures which would show the endangered animals in specific environments, accounting and monitoring, elaborating or security measures, such as reintroduction etc.) Concerning the definitions of terms, familiarize yourself with the given words and in case of the necessity use them appropriately. In order to prepare the task, time given: 12-13 min.

Activity 3. Presentation, 10 min.

When the time is up, ask each group to present their completed tables to the class, also during the presentation they should explain why this issue was selected, why it was considered significant and prioritized. Give them an additional instruction for presenting the works: “Listen to each other very carefully and in case of the similar opinion, other groups should not repeat them, we should add only those opinions that have not yet been expressed in the class.”

Activity 4. Brainstorming, mini-lecture and feedback, 10 min.

Ask the following question to the students:

- Which legislation or legal document do you think could refer the regulations created by you?

After getting the answers, by means of the presentation, introduce the students to the main goals and the importance of the law of Georgia on “Wildlife” (you can use the lesson text for mini-lecture). Also you need to mention, how the law stipulates the regulations mentioned by each group. Emphasize the importance of the problems that were not mentioned by the groups.

Activity 5. Mini-discussion, 10-12 min.

Ask the students:

- How important do you think the legislation is for different target groups? (For example: farmers, scientists, hunters etc.)
- Why do you think it is important to protect the legislation and in case of necessity to modify the sustainability of animals and sustainable use.

Activity 6. Homework, 1-2 min.

Consider, how you would promote the dissemination of information about the legislation in society and its popularity in terms of protection?

Results and indicators***Fundamentals of elective conservation biology X/XI/XII.2.***

The student can analyse the factors affecting the reduction of biodiversity (for example, climate change, destruction of living environment, excess procuring, influence on invasive species, environmental pollution) considering the examples in Georgia and the World.

The result is evident, if the student:

- Analyses the causes of biodiversity decline on the basis of examples from Georgia, the Caucasus and the World;
- Participates in discussions on biodiversity decrease as a result of the unsustainable use of natural resources (discusses the events which occurred in Georgia, the Caucasus and the World);

Fundamentals of elective conservation biology X/XI/XII 3.

The student can discuss the approaches to conservation to maintain biodiversity. The result is clear, if the student is able to provide environmental protection examples in-situ (e.g. protected areas, ecosystem management) and ex-situ (e.g. reintroduction, translocation) methods;

Lesson 5. Forms and regulations for the use of wildlife

Purpose: Students will learn the uses of wildlife. They will discuss the hunting rules and forms of regulations.

Resources: Board, board marker.

The way of achieving the goal (activities and training methods): Expressing assumptions, discussion of problem situations, mini-lecture, mini-discussion.

Lesson 5-Process

Activity 1. Expressing assumptions, 5min.

Present the students the subject and purpose of the lesson: Hunting, fishing, gathering of zoological collections, obtaining animal samples for scientific research. Ask the question:

- What do they serve and what is their purpose?
- After listening to the students' opinions, inform students the forms of animals use and their meaning. (Use the materials of the lesson).

Activity 2. Discussion of problem situation, 15min.

Introduce the students to some devastating results of the misuse of natural resources. For example: Based on the latest data, the number of endemic Caucasian aurochs and gazelle has reduced significantly. Ask the question:

- In your opinion, what is the main reason for the decline?

After receiving the students' answers, familiarize them with the following:

Based on the data obtained in recent years, we can assume that the decline of the aurochs and especially the gazelle in Georgia is associated with poaching, the level of which has reached an unprecedented scale. The target of foreign or local poaching is mostly the aurochs. The main targets of illegal hunting of the aurochs are the elderly (a big horned) aurochs and gazelles. Regardless, that these species are entered in the "Red Book and List" they could be facing extinction in the near future.

"In earlier times, hunting aurochs in Tusheti was related to "rock climbing" the art of rock climbing that provided physical and psychological preparation for border guards. The unwritten law defined the rights of the hunter and ensured the biological balance. Even if the hunter was with an empty hand, there were no rules about shooting the Billy-goats (wild goat, goat, deer.) Also there were no rules about hunting birds".

Ask the questions after introducing the situation:

- In your opinion, how is hunting conducted nowadays. What are the rules for hunting?

Activity 3. Mini-lecture, 10min.

After the opinions are expressed in the class, talk with the students about hunting and hunting rules (use the materials given in the lesson)

Activity 4. Mini-discussion, 15min.

Put forward the following questions:

- What are the results of excessive hunting? Poaching?
- Should the government tighten up the rules regarding excessive hunting of animals?
- In your opinion, does hunting with strict rules have a positive effect? Support your arguments
- What is your/public attitude toward this issue? (Regarding poaching? What is the basis for such an attitude?)

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.2

The student can analyse the factors affecting the decline in biodiversity (e.g. climate change, destruction of the living environment, excessive extraction of animals, impact of invasive species, pollution of environment), based on global and Georgian examples.

The result is obvious if the student analyses the reasons for biodiversity decrease, considering the examples of Georgia, the Caucasus and the World.

Lesson 6. Protection of endangered species in Georgia

Purpose: Students should discuss the protection mechanisms and their significance to endangered animals. Should understand the causes of extinction or decrease, consider the role of specific institutions and public involvement in solving the problem.

Resources: Computer, projector, board, marker, materials to be distributed to the students - Appendix 1: photos, appendix 2: text and appendix 3: table list (guideline for students)

The way to achieve the goal (activity and training methods): Impressions from the photos, working on the problem and completing the table, presentation, mini-lecture, Summarising.

Lesson 6-Process

Activity 1. Impressions from the photos, 2-3 min.

At the beginning of the lesson show the students the two photos (please see. Appendix 1 - photos) and ask the questions:

- What kind of impressions and feelings do these photos raise?
- Ask some of them to express their own impressions and opinions regarding these photos.

Activity 2. Mini-discussion, 12-13 min.

Hand out the texts to the students (appendix 2 - text) and ask them read the texts. Set a 2-3 min time limit. Once the time is up, conduct a mini-discussion with the help of the following questions:

- In your opinion, how should we preserve living organisms on Earth? What is the solution?
- In your opinion, what are the major factors that cause a species to become endangered or decline in numbers?
- In your opinion, who should take responsibility for the protection of endangered species and how should it be done?

Activity 3. Mini-lecture, 10 min.

By means of the mini-lecture (please use the lesson materials for mini-discussion) introduce the students to the following issues:

- Creation and history of the red book and pre-conditions, The Red book of Georgia;
- The major factors that cause the reduction of endangered species;
- State institutions that protect the endangered animals.

Activity 4. Mini-discussion, 17-18 min.

After providing the information, discuss all the questions given in the second activity in the following manner and ask the questions:

- What changes have you made after the mini-lecture?
- What kind of similarities and differences have you seen between your opinion and the information given? Conduct a mini-discussion:
- How can you participate, in order to protect endangered animals? How would you take care of them?
- Why is it so important to protect them?
- In your opinion, is it just enough to have legislative regulations and mechanisms in terms of endangered animals? Why? Why not?
- What is the role of active public involvement?
- For instance, what would happen in ten years, if we did not protect them?
- How and where will you use the information received in this lesson in your life?

Activity 5. Homework, 2-3 min.

Ask the students to get acquainted with the materials –"Human-Wildlife Interface Baseline survey". November, 2015 (please see the [link](#) here page: 24 -29) Ask the students to copy out the animals described in the material, their relevant conservation status (Georgian), also sort the animals with similar status and submit graphically. Please review the document - "The Red Book of Georgia", please see the [link](#) here (or with attached photos you can see [here](#) and identify which of the wild animals are included in the red list.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.2

The student can analyse the main cause of the loss of biodiversity (e.g. climate change, destruction of the living environment, excessive removal of animals, impact of invasive species, and pollution of the environment) based on World and Georgian examples. Prepares the presentation on the ecological disaster/species extinction caused by the biodiversity decline. Discusses the reasons for biodiversity decline.

Lesson 7. Protected areas in Ajara

Purpose: Students will learn the categories of protected areas in Georgia (Ajara), the goals of their creation, will observe ecosystems in nature, discover the components of biodiversity and analyse their importance¹.

Resources: Computer, projector, video materials recorded on CD, *internet resources, which may be used by the teacher using the projector. (these video clips can be recorded on CD)*

Mtirala National Park, Please [see on the link](#)

¹We divided the lesson into two parts 1. Before the study cognitive visit 2. Study-cognitive visit in the protected area of Ajara (e.g. Mtirala National Park)

Machakhela National Park, Please, [see the link](#)

Ispani Mire, [Please, see the link](#)

Arrangement of tourist routes on Ispani mire territory - please [see the link](#)

The way to achieve the goal (activities and training methods): Brainstorming, Mini-lecture, Showing of video clips, preparation for the visit.

Lesson 7-Process

Activity before the study-cognitive tour 1. Brainstorming, 5min.

Introduce the subject and goals of the lesson: Put the following questions to the class:

- What do you know about protected areas?
- Why are these territories created?

Activity 2. Mini-lecture, 15 min.

After receiving the opinions from the students, based on the materials, talk with the students about the goal of creating protected areas, talk about categories and give an explanation for each type. Draw their attention to the fact that, the first reserve was created in Lagodekhi in 1912, and as a consequence the first National Park, it was founded within the frameworks of the WWF-project - Borjomi-Kharagauli National Park. (This park is included in the list of European PEN Parks. Also, remind students that, a large area of this park was burned during the war in 2008, use the materials from the [link](#))

Activity 3. Showing of the video clips, 15min.

Tell the students that you are planning a trip with them to the protected area and regarding this, it is desirable to prepare beforehand familiarise yourself with a specific place:

- Use the appendix and teach them the Ajara protected areas on the map;

(Recommendation: the protected area could be selected by joint decision, taking into consideration the travel distance and financial expenses.)

- With the use of the projector show them the video materials, present the protected areas in Ajara, (see resources), talk about the purpose of creation, importance and its biodiversity. Draw their attention to the Red List species.

Activity 4. Preparing for a visit to the protected areas. Sharing the tasks, 10min.

Give the instructions to the students: search for information on the internet regarding the protected areas of Ajara. Advise them with the relevant internet resources and divide the tasks.

Group N1 – students will work on general description of the categories of protected areas in Ajara (creation time and purposes list of categories);

Group N2 – students will work on the importance of creating protected areas (e.g. Mtirala National Park), (they will prepare a short verbal presentation);

Group N3 - Students will work on the flora (e.g. Mtirala National Park) of protected areas (they will prepare a short verbal presentation);

Group N4 - students will work on Red list species (both animals and plants), (they will prepare a short verbal presentation);

Group N5 - Students will work on the fauna representatives of the protected area (they will prepare a short verbal presentation);

- Presentations will be presented, after visiting the centre.
- Plan a visit to the protected area along with a specialist from the visitor centre (e.g. Mtirala National Park).

- Define the list of items they will need during the visit. These are a small bag, a notebook, a pencil, a pair of binoculars and a photo camera.

Study and Cognitive visit in Mtirala National Park

(A visit should be planned on a day-off)

While visiting the protected area:

Activity 1. Gathering of the visitors at the centre, Presentation

- Gathering in the visitor centre along with the students, according to the pre-arranged plan of the excursion (considering relevant stuff)
- Students groups will present their presentation in accordance with the prepared materials.

Activity 2. A specialist of the visitor centre will show them a scheduled route.

Before the walk give the students the following instructions: Observe the visible components of the ecosystem (Plants, animals, tiers in the forest.) Identify them and make notes, take photos, look through binoculars at birds and other organisms, discover the plants and the types of ecosystem)

Periodically stop the students during the walk in order to make observations. Also help them to identify the plants.

- At the end of the visit ask them the following questions:

What did you feel? What kind of notes did you make? What did they observe and why? Do they think that the creation of protected areas is a significant event?

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.3.

The student can discuss conservation approaches for keeping biodiversity. Analyse the significant role of protected areas in terms of preserving the biodiversity and its sustainable use.

It is possible to conduct the whole lesson in the protected areas.

It is possible for the teacher to conduct activities N1 and N2 while at the visitor's centre (before the actual tour) without prior preparation of the presentations by the students. (carry on Carry out the activities in N2 s part of the visit.

Lesson 8. The predatory animals in Ajara and their lifestyle

Purpose: Students will understand why the Ajara Region is in the list of the World's hotspots, get familiarized with the diversity of flora and fauna. They will be able to determine independently the task of survey, according to their own interest and assess the importance of issue.

Resources: Computer, projector, presentation, board, board marker, flipchart, coloured markers.

The way to achieve the goal (activities and training methods) to compile the text with lexical units, submission of the work, mini-lecture, determination of issue, presentations.

lesson 8-process

Activity 1. Expression of opinions according to the situation, 7-8 min.

Introduce the students to the following situation: Ajara is a rich region with its biodiversity in the Caucasus, which is entered into the World's 34 so called "hotspots" list by the International Union of Nature Conservation (IUCN), in addition, in the initiative of World's Wildlife Conservation Fund (WWF) on

“Europe forests 100 hotspots” one of the foremost priorities was given to the unique forest of Ajara ecosystems. After introducing the situation ask your students:

- What do you think the given situation refers to? What do you think a hotspot might be?
- In your opinion, why was Ajara region entered into the hotspot list?

Activity 2. Mini-lecture, 10 min.

Mini-lecture refers to the following issues (see, the lesson text):

- Ajara in the “hotspots” list
- Diversity of Ajara forests
- Diversity of Ajara fauna

After the mini-lecture ask the students:

- Which predatory animals are in Ajara and what do you know about their lifestyle?

(Remind them about the homework from lesson 6, which requested students to find specific information about wild animals in Ajara, according to the basic research – “Human-Wildlife Interface Baseline survey”, see the [link](#) pages: 24-29). Write the animals which the students on the board.

Activity 3. Determination of the issue, 15 min.

Underline only those animals on the board that students are going to study on the following lessons (bear, wolf, lynx, jackal, fox and wild boar.) Divide the students into groups and ask them to choose one of the underlined animals to work on later. For better understanding of the selected topic, make them answer the following questions: (Give them a time limit of 10 min)

- What questions will be answered regarding the topic you selected? Please specify: write down all the questions that you come to mind.
- Why did you decide to work on this topic, why do you think that it is important? Give reasons.
- What do you imagine the circumstances of the animal you have selected will be after 5, 10, 20 years later? Discuss the cases and introduce your confirmations.

Activity 4. Presentation, 10 min.

After the expiration of time, students make a presentation. After the presentations give feedback and note that future lessons will be devoted to those animals that were written on the board and their questions will be answered. Ask them to pay attention to the following lessons and note the issues that are directly related to their questions (presentations of the students may be on the walls for a certain period of time)

Activity 5. Homework, 2-3 min.

Think about the outline, how you will be able to find the answers on your questions.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.2

The student is able to analyse the factors impacting biodiversity decline (e.g. climate change, destruction of the living environment, excessive extraction of animals, impact on invasive species, and pollution of environment) based on World and Georgian examples. The result is obvious if the student studies the local environment (e.g. excess hunting, excess harvesting of seasonal floral plants on the adjacent territories of the big cities) and based on the concrete examples suggests what could happen after 5, 10 or 20 years.

Lesson 9. The Bear

Purpose: students will learn the biological characteristics of the bear and will evaluate its place in nature and express their attitudes and opinions.

Resources: Board, chalk, lesson text.

The way to achieve the goal (activities and training methods): Brainstorming, mini-lecture, text processing
- marked questions, regions, discussion;

lesson 9-process

Activity 1. Brainstorming, 5min.

Introduce the students to the subject and the goal of the lesson and ask the following questions:

- What do you know about the bear?
- What kind of lifestyle does the bear have?
- In your opinion, is the bear dangerous and what threats does it pose to humans?

Activity 2. Mini-lecture, 15 min.

After receiving the students opinions, talk with the class about the bear (use the materials given in the lesson)

Activity 3. Question of the text (marked question), 10min.

After the information about the bear is provided, draw their attention to the threats and problems caused by bears to humans. Then give the instructions to the students: read the lesson text carefully and highlight the places that will strengthen their position.

Ask the question: should the “guilty bear” be punished?

Activity 4. Summarising (corners), 15 min.

- Ask the students to divide into two groups (according to their opinion) „Yes“ and „No“ groups.
- Sit the two groups opposite each other.
- Draw a chart on the board:

Should the “guilty bear” be punished?

Yes	No

- The positive “Yes” and negative “No” opinions expressed by the students and supporting arguments should be put on the board and filled into the relevant part of the chart.
- You will always need to remind the students to manage their emotions, to respect the opinions of others and to listen carefully to the opposing arguments.
- Conduct a discussion, as the students are able to express their attitudes on the basis of an argumentative discussion regarding the relationships between humans and wild animals. Make a joint conclusion in the class, whether the “guilty bear” should be punished or not. In case of yes, express why it should be punished and what forms should be used as well as in case of “NO”.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII 1.

The student is able to understand biodiversity and its importance. Characterises the main components/levels of biodiversity and discusses of their significance. Please see, Appendix 4 – *Natural area for bears, guidelines for students.*

Lesson 10. The Wolf

Purpose: Students will learn the biological characteristics of the wolf; they will evaluate its place in nature and express their attitude.

Resources: Board, chalk, lesson text.

The way to achieve the goal (Activities and training methods): Question-answer, completing a table, mini-lecture, working on the text (managed question), presentation.

Lesson 10-Process

Activity 1. Question/Answer, 10 min.

Introduce the students to the subject and the purpose of the lesson and ask the questions:

- What have you heard about the wolf?
- What is the main characteristic of the wolf as the predator?
- What attitude do people have toward the wolf? What kind of attitude do you have?
- In your opinion, what is the significance of the wolf, as a predator in nature?
- Do wolves cause problems for the human population? Name the problems.
- Think about problem-solving issues.
- The problems raised by the students during the question-answer process and their solutions should be drawn on the board (see the table).

Problems raised by the students	The ways for solving the problems seen by the students
1.	1.
2.	2.
....	

You can also use this table for presentation (activity N3). All Students should be involved in the activity. Ensure that everyone expresses his or her own opinion.

Activity 2. Mini-lecture, 5min.

Talk to the students about the wolf and its lifestyle, behaviour, natural area and density (use the material in the lesson).

Activity 3. Working on the text (managed question, (15min.))

Divide the class into groups of 3 or 4.

- Give each group a reading material from an annex – text N1, text N2, text N3 (annexes of the lesson 10, guideline for students). If there are more than 3 groups in the class, two groups can have the same text.

Give the groups instructions:

- Read the text carefully that is prepared by the specialist.
- Groups should prepare a presentation, present the information given in the text, draw their attention to key issues. It would be nice, if each group creates a slogan and makes a sketch in order to design the presentation.

Activity 4. Presentation/Summarising, 15 min.

Groups will make a presentation and the teacher in order to summarise the activity adds one new column to

the table drawn on the board, and discusses with the students about the new ways of problem solving. Students on the basis of a newly received knowledge present the ways of problem solving, note them in the relevant column of the list and compare them with the records made at the beginning of the lesson. In case of differences, the teacher should discuss with the class the reasons that caused the change in the students' vision in the way of solving the problems.

Problems raised by the students	The ways for problem-solving seen by the students	A new way to solving the problem that has been revealed through the text processing
1.	1.	1.
2.	2.	2.
....		

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1

Student is able to define biodiversity and its importance. The result is obvious if the student describes the specific components/ levels of biodiversity and their significance.

Lesson 11. The Lynx

Purpose: The students will learn about the lifestyle and importance of the lynx in nature. They will be able to explain the reasons for entering it into the “Red Book of Georgia” and discuss ways of preservation.

Resources: Projector, computer, board, board marker, appendix N 1 internet resources that could be used by the teacher while displaying the projector. (these video clips can be recorded on the CD) Video - 1, Eurasian lynx (*Lynx lynx*) - [please see here](#)
Wild Cat Lynx (National Geographic) - [please see here](#)

The way to achieve the goal (activity and training methods): Discussion about the situation, showing the video clips, brainstorming, mini-lecture, discussion.

Lesson 11-process

Activity 1. Discussion of the situation, 10 min.

After arranging the organisational issues, introduce the students to the subject of the lesson and the following information: It is known from history, that due to unreasonable opinions, until 1975 a monetary award (amount of 50 “maneti”) was given for killing a lynx as it was a harmful animal”.

After presenting the information ask the students:

- In your opinion, what would be the outcome of this decision?
- In your opinion, what outcomes would be expected with such an approach?

After listening to the students' opinions, explain to them that regarding such decisions the number of lynx “has been significantly reduced” in Georgia. In 1980, the lynx was entered into the Red Book as an endangered animal. Nowadays the number of lynx is over 160. Up until recently, the natural area for the lynx was the whole Georgia. Nowadays, some isolated areas are preserved for the bio population.

Activity 2. Brainstorming, mini-lecture, 15 min.

Ask the students the following questions:

- In your opinion, what lifestyle does the lynx have?
- In your opinion, what significance does it have in nature?

After students response, turn on the video 1. (el. resources) and in parallel with the movie conduct the mini-lecture (for materials use the text of the lesson). In order to show the natural area, show the appendix 1 of the lesson - map, guideline for students. During the mini-lecture the economic importance of the lynx should be specifically highlighted.

Activity 3. Mini-discussion, 20 min.

After completion of the lecture, ask the questions:

- Have your knowledge and opinion about lynx been changed? How has it changed?
- In your opinion, is the lynx a threat to the human population? Why do you think so?
- Regarding the positive or negative aspects of the lynx, who are the stakeholders? What are the bases for their interest? (e.g. if you do not receive the full response from the students, you can add: farmers, hunters, scientists, media, representatives of ecotourism and so on). (*for detailed information please see the "Human-Wildlife Interface Baseline survey". November, 2015. pages: 39-42*).
- List and justify all the reasons that caused the lynx to be entered in the red book (for example: if you are not able to receive the full response from the students, you can add: 1. Reduction of the habitat areas, exploiting forests, especially cleaning the forest of branches and dead trees which significantly reduced the number of shelters in the forest, which has affected the birthrate. 2. Poaching has also had a significant impact on the decrease in numbers.
- What do you think, is it possible to keep a number of lynx in nature? How do you think it could be done?
- How would you evaluate its role in nature?

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.2

Student is able to define biodiversity and its importance. The result is obvious if the student describes the specific components/ levels of biodiversity and their significance.

Lesson 12. The Jackal

Purpose: Students will understand the lifestyle and importance of the jackal in nature and will be able to discuss the benefits of its use and develop recommendations for farmers.

Resources: Projector, computer, board, board marker, appendix 1 - Map; Appendix 2 - Text. Internet Resources, which may be used by the teacher to display the projector (these video clips can be recorded on the CD) *Video 1-* Golden jackal (*Canis aureus*) [see here](#). *And video 2-* Golden jackal (*Canis aureus*) [see here](#).

The way to achieve the goal (activities and training methods): discussion of the situation, brainstorming, mini-lecture, T -scheme, summarising.

Lesson 12-Process

Activity 1. Discussion of the situation, 10 min.

Divide the students into groups (according to the counting principle - 1, 2, 3, 4, or your own will) and give them the following instructions: introduce the text (appendix 2 - text, guideline for students) and answer the queries, set a time limit: 5 min. Once the time is up, listen to the opinions of the students and the reasons listed by them and put them on the board. Provide the information given below, which refers the facts and events of the lesson, if any of the reasons written on board coincides with the actual answer, underline or mark it.

“As with most animals, the jackal suffers from harassment from people throughout the world, however, using the case of Israel where the people have been convinced of the "benefit" of its existence: Previously, the number of jackals was drastically reduced due to mass poisoning. Since then, the number of human deaths as a result of snakebite the rose from 229 to 435 in two years. When the mass poisoning of jackals stopped, the number of jackals increased and consequently the cases by snakebite were reduced. (source: “the biting of human beings“

Source: Khutsishvili, Iamze. “Hyena, Viper and Others...” Biodiversity hot spots, Tbilisi, 2002.).

Activity 2. Brainstorming, mini-lecture 10 min.

After providing the information, put forward the following questions:

- In your opinion, what lifestyle does the jackal have?
- In your opinion, what benefits does it have in nature?
- After receiving the students' opinions, show them the video 1 and video 2(el. resources) and in the parallel with the videos you can conduct the mini-lecture (the text of the lesson can be used as materials) for the purpose of submitting the dispersal area, show them appendix 1- map (guideline for students)
- During the mini-lecture, emphasize the economic role of jackal (please see the text of the lesson).

Activity 3- T scheme, summarising time: 25 min.

After the mini-lecture, draw the scheme on the board and along with the students write the positive sides of the jackal on one side and negative sides the other.

After moving to the list of table: regarding the scheme:

- They should determine, whether the jackal should be protected from destruction or not? Why do you think so?
- Make recommendations for farmers, that on the one hand will protect their livestock and on the other hand the jackal from destruction. Set a time limit of 10 min. after the expiration of time; they should present their ideas in front of the class.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1.

The student is able to define biodiversity and its importance. Characterises the main components/levels of biodiversity and discusses of their significance.

Lesson 13. The Fox

Purpose: Students will learn about the characteristics of the fox and will assess its role in nature, they will discuss the benefits and express their attitudes.

Resources: Board, chalk, computer, projector, appendix 1-map: the natural area of fox el. Resources that may be used by the teacher while showing the projector (or may be recorded on CD). Photo and video materials on red fox - [see here](#).

The way to achieve the goal (activity and training method): Getting familiar with the situation, mini-lecture, summarising, role play.

Lesson 13- Process

Activity 1. Getting familiar with the situation, 15min.

It caused the increase of rodents and resulting in higher crop losses. Referring to this issue, Prof. Janashvili correctly observed: "The Fox is of great benefit to our people in terms of the massive destruction of the rodents (rats, mice, etc.). It destroys a large number of insects. Therefore it is necessary to protect this predator in the areas where harmful rodents exist and where grain, vegetables, and crops are cultivated."

Source: - <http://www.bazieri.ge/publ/9-1-0-138>:

Take into consideration, that besides the above mentioned information, within the frames of the research conducted in Ajara on interrelationship of human and animals, according to the population the damage inflicted by the fox was less evident.

After providing this information ask the students:

- What is the positive role of fox in nature? What is the benefit for humans?
- In your opinion, how will you be able to protect this animal? (Restrictions on hunting, hunting the fox is currently banned); In your opinion, based on the given information, which role prevails positive or negative?

Activity 2. Mini-lecture, 10min.

After the students responses, turn on the video clips and carry on the mini-lecture (you can use the lesson text as a material) While speaking about the natural area of the fox, show the appendix 1 –map (guideline for students).

Activity 3. Summarising, role game 20 min.

Draw their attention to the fact that the fox is of great benefit in terms of controlling the number of harmful rodents, but inflicts great damage to useful hunting-birds, especially the ground dwelling birds: quail, pheasant, francolin, partridge and others.

Then introduce the students to the groups who may be the stakeholders, regarding biodiversity conservation: (farmers, foresters, hunters, media, active leisure lovers, decision makers, rural residents, scientists, ecotourism operators and protectors of environment).

- Ask the students to imagine themselves in any of the above mentioned positions and to think about, what would they do to protect the fox in nature;
- Finally ask the question: Has your attitude toward the fox changed? Why/ Why not?

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1.

Student is able to define biodiversity and its importance. The result is obvious if the student describes the specific components/ levels of biodiversity and their significance.

Lesson 14. The Wild Boar

Purpose: Students will learn about the way of life and the role of the wild boar in nature, they will be able to discuss the benefits and drawbacks of it.

Resources: Projector, computer, board, board marker, text of the lesson, internet resources that can be used by the teacher while displaying the projector (these video clips can be recorded on CD) video 1 - Wild boar (*Sus scrofa*) [see here](#).

The way to achieve the goal (activities and training methods): Review of the situation, mini-lecture, summarising, and presentation.

Lesson 14-Process

Activity 1. Review of the situation, 10 min.

After solving the organisational issues, Inform the students about the subject of the lesson and the following information: *“as it is known, in the last period the number of wild boar has been significantly reduced in Ajara, based on the oldest resources, there were huge numbers of wild boar in the mountains surrounding Batumi, which were covered with impenetrable forests. Unfortunately the situation has changed dramatically”.*

To illustrate the issue, draw the table on the board (see the appendix 1, guideline for students) and write down the problem in the first box – reduction of wild boar in Ajara, ask the questions:

- What do you think, what could the reasons be?
- What is the benefit of wild boar in nature?
- In your opinion, what threats can wild boar bring to humans?

In the second box of the table write the opinions of the students – the reasons of decrease, in third box- should be written benefits and in the fourth box – drawbacks.

Fill in all the boxes as you receive the answers. Give a little time to review the information and receive responses that are different from each other.

Activity 2. Mini-lecture, summarising 15 min.

Once the table is completed, turn on the video 1 and simultaneously read the text of the lesson. In order to present the spread area of an animal, show the map in appendix 2.

While conducting the mini-lecture, the economic role of the wild boar should be emphasized (lesson text). Ask the students to review the texts of the 2nd, 3rd, and 4th boxes of the table and subsequently, fill in the boxes or correct the information.

Activity 3. Presentation, 20 min.

Divide the students into groups and give them instructions to answer the following queries: (the task is also given in appendix – 3, guideline for students):

Based on the drawbacks and benefits of the wild boar, decide whether we should minimize the reasons that cause the reduction of the number of wild boars or not, state your opinions.

- How can we provide the real (correct) information to the public about the benefits and drawbacks of wild boar?
- What kind of defence mechanisms would you offer to farmers, whose livelihood might be harmed by wild boar?

Set a time limit: 10 min. At the end of the time, one of the groups should present the work, while others will present their attitudes in case of different opinions.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1

A student is able to define biodiversity and its importance. The student describes the specific components/ levels of biodiversity and their significance.

Lesson 15. The importance of wild animal - Sanitary, tourism, biodiversity/ecosystem

Purpose: Students will be able to give explanations on ecosystem services and evaluate the importance of wild animals.

Resources: Board, chalk, sheets (for brochures) coloured markers.

The way to achieve the goal (activities and training methods): Brainstorming, mini-lecture, presentation prepare and present brochures.

Lesson 15- Process

Activity 1. Brainstorming, 5 min.

Provide the students with the topic and the goal of the lesson: ask the following questions:

- Do you understand the meaning of ecotourism? What do you know about it?
- Do you see any place for the animals we have discussed in the development of ecotourism?
- Explain the importance of ecotourism after the student's answers (See the terms)

Activity 2. Presentation, mini-lecture, 10 min.

Make a presentation (it is preferable to prepare in advance power-point slides according to the materials given in the lesson-) and explain services of ecosystems. Introduce information on the importance of ecotourism development and benefits in Ajara.

Activity 3. Preparation of brochure, 20 min.

Divide the class into groups and give them a task to prepare information brochures for tourists, suggest for example: "bear tours". The tour should include different kind of possibilities. For example: A tourist will be able to see the tracks and will observe the bears with binoculars from a long distance as well as others. Brochures should provide the information on the wild animal (for example a bear) and what could be seen by tourists. There should also be information about safety measures. For example:

- Where does the bear live (what kind of habitat it can be found in)
- What kind of track does it have? Will tourists be able to see the tracks)
- How many bears are there in a particular location (inf. according to the municipalities)
- What do they eat?
- Are they dangerous?

Note: while preparing the brochures, students should have access to the previous lessons and the Internet if possible.

Activity 4. Presentation of brochures, 10min.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1

The student evaluates the need for economic and ethical compromises related to the biodiversity.

The result is obvious if the student explains the ecosystem services and describes the importance of sustainable benefit for humans received from biodiversity.

Lesson 16. Wild animals – A problem or challenge for farming

Purpose: The students will discuss and set out the practical ways to turn the danger posed by wild animals to farms to a basis for farm development

Resources: Projector, computer, board, board marker, flipchart, colour markers, appendix N1.

The way to achieve the goal (activities and training methods): Reading of diagram, review of the problem, presentation, mini-lecture, summarising.

Lesson 16- Process

Activity 1. Reading of diagram, 6-7min.

In the beginning of the lesson divide the students into 4 groups and provide the following information:

”Human-Wildlife Interface Baseline survey” the main goal is to study interrelationships between the livestock farmers and the representatives of wild animals in Ajara Autonomous Republic, and to develop mitigating measures for negative issues on the basis of international and local experience.

The preliminary survey of key stakeholders is aimed to specify:

Which wild animal is considered as a major threat to humans, household activities and domestic animals”.

After providing the information, discuss the appendix -1, diagram (guideline for students) with the class and ask the students to get familiar with the results of the survey, after that write on the board these animals with the students (bear, wolf, jackal, fox, please see the first part of the lesson).

Activity 2. Review of the problem, 12-13min.

After writing the animals on the board, give the groups the following tasks:

- How could the problem be solved, so that neither the farmer suffers and nor the number of wild animals are decreased. Set the practical ways in order to make the risk of wild animals as a basis of farming development. Please substantiate the importance of your examples.

Activity 3.presentation, 10min.

After the expiration of time, ask one of the groups to present their presentation and the others will express their attitudes in case of different opinions.

Activity 4. Mini-lecture, summarising, 15 min.

After the students’ presentations, according to the mini-lecture focus on the importance of ecotourism development (please see the lesson 5) for farmers as well as agro-tourism (please see the lesson 2). Familiarise yourself with additional sources.

After mini-lecture ask the students:

- Do you want to make any changes in your presentations, considering the new information?

Listen to some groups (2-3) and summarise their thoughts.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1

The students can define biodiversity and its importance.

The result is clear if the student discusses the importance of biodiversity;

Lesson 17. Wild animals attacks - Character, seasonality, frequency

Purpose: students will understand the nature of the attacks of wild animals as well as the seasonality and frequencies, will discuss the causes and risks of the attacks, will consider the importance of sustainable benefits for humans received from biodiversity.

Resources: Board, board marker, computer projector, diagrams 2 and 3 (annexes of the lesson, guideline for students) table list 1 (preferable diagrams and tables to be presented as slides)

The way to achieve the goal (activity and training methods): Brainstorming, analysis of diagram, presentation, mini-discussion, summarising-discussion.

Lesson 17-Process

Activity 1. Brainstorming, 5min.

Introduce the students to the subject and the aim of the lesson, explain to the students the definition of the term “sustainable development”; Discuss the importance of sustainable benefits from biodiversity; Ask the question:

- What can be the hindering factors for sustainable benefits that are received due to biodiversity?

Activity 2. Analysis of diagram, presentation, 15 min.

After the discussion, explain to the students, that the survey was conducted within the population. It was related to the major attacking animals as well as the nature, frequency and seasonality of these attacks which could threaten the benefits from sustainable development.

Ask the students to look at the diagram 2, let them analyse the characteristics of the attacks, also which animals they are and what kind of damage they inflict to the population. After receiving the students' answers show them the results of survey. Prepare the slides reflecting the results of the survey based on the lesson text. Highlighting in which season there are more attacks and why.

(in winter the domestic animals are in the shelters, and in spring they are released into pastures often without the herdsman).

Activity 3. Mini-discussion, 10 min.

After presentations put forward the questions:

- In your opinion, what are the reasons for these attacks?

The aim of this discussion is that students have to come to the conclusion that the attacks are often caused by the unsustainable use of natural resources and incorrect agricultural practices, so in many cases the reason for such attacks are actions of humans.

After listening to the students, summarise the reasons for the attacks based on the text of the lesson.

Activity 4. Summarize the discussion 15 min.

Introduce the specific situation: “one farmer made a plantation of hazel nuts on the village outskirts”.

Ask the question:

- What could threaten the farmer, when and why? Two different strategies for reducing risks:
 1. To remove the attacking animals from the nature
 2. To change the behaviour and farming methods to achieve economic benefit with the use of sustainable resources available to farmer.
- After offering the strategies, divide the class into two groups (according to their will), they should consider the relevant arguments for their positions.

(the aim of the activity is to assess the importance of sustainable benefits for human in a reasonable way)

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.4

The student evaluates the need for economic and ethical compromises in relation to biodiversity.

The result is obvious if the student determines the services of ecosystem and characterises the importance of sustainable benefits from biodiversity.

Lesson 18. Response to wild animals attack

Purpose: The students should consider the established practice of reaction to wild animal attack. They should be aware of the legal mechanisms of the response and assess the legal and environmental consequences of willful (illegal) actions. They will analyse the latest statistical data and discuss the threats related to the species.

Resources: Computer, projector, diagram N5

The way to achieve the goal (activity and training methods): Situation analysis, mini-discussion, mini-lecture

Lesson 18- Process

Activity 1. Situation analysis 15 min.

Get the students acquainted with the subject and the purpose of the lesson.

Introduce them an actual situation: *“A farmer, who made a plantation at the outskirts of the village, faces a problem. His plants were attacked by a bear several times which resulted in significant damage. The farmer suffered a huge loss. Hence, the farmer chose a single way of reacting, which meant the removal of the animal from the wild.”*

Students should analyse this situation and ask them a question:

- Discuss and evaluate the legal and environmental aspects of the farmer’s action.

The aim of the activity is that the students should see the negative side of the farmer’s action and assess the legal and environmental consequences. (killing of a bear as a Red List species should be considered as a legal aspect and the bear as a biodiversity component should be evaluated as the environmental aspect)

Activity 2. Mini-discussion 10 min.

After the students discussion and assessment ask the question:

- In your opinion, who should take responsibility for attacks by the wild animals?
- What type of responses should be there (monetary remunerations, conducting of prevention measures or for example an insurance system).

Activity 3. Mini-lecture, Read diagram 20 min.

After the students have expressed their views, please introduce the information on established practice and existing mechanisms according to the pre-prepared slides (use the materials of the lesson text).

After that diagram N 5 should be considered the, which reflects the established practices of responses in terms of municipality. Please ask the students to analyse and assess the data.

Results and indicators

Fundamentals of elective conservation biology X/XI/XII.1

The student will be able to analyse the factors of biodiversity decrease (e.g. climate change, habitat destruction, excessive procuring, impacts of invasive species, environmental pollution) considering the examples of Georgia and the World. Student will acquire the latest statistical data, analyse it and discusses the dangers related to the species spread in Georgia and on ecosystems.

Lesson 19. Risk reduction-prevention measures

Purpose: Students will consider the strategy of preventive measures; they will discuss advantages and disadvantages of each preventive activity/ device. They will evaluate their effectiveness and develop recommendations for their use.

Resources: Computer, projector, board, board marker, internet resources which can be used by the teacher while displaying the projector (these video clips could be recorded on CD) video - 1- [Washington Dept of Fish and Wildlife Wolf Fladry](#) *see here* and video 1- [Bear Fence Test](#) *see here*.

The way to achieve the goal (activity and training methods): Video presentation, mini-discussion, classification of information, elaboration of recommendations, presentation

Lesson 19-Process

Activity 1. Video presentation, mini-discussion, time: 12-13 min.

When the organisational issues are arranged, put forward the following questions:

- In your opinion, how is it possible to reduce the risks related to wild animals and the losses inflicted by them?

After listening to the students opinions, show them the video 1 and video 1 (in the beginning of the video - 2-3 min) and ask the question:

- What do you think, how effective are the given activities to reduce the damages inflicted by the wild animals?
- What preventive measures do you know? How effective are they?

Listen to 2-3 students' answers.

Activity 2. Sorting of information, elaborating recommendations. Time: 17-18min.

Divide the students into 4 groups, give them the table (please see the appendix 1, guideline for students) and the text of the lesson for processing: I group – artificial and natural barriers (flags and turbo barriers); II group – electric shepherd; III group – shepherd guard; IV group - renovation of livestock farms. In order to process the text, give the following instructions: after reading the text sort the information and write the specific activity in the first box of the table list and device that reduces the damages inflicted by the animals. In the second column write its advantages. In the III column – put down its disadvantages, and in the IV column - recommendations, the cases that could be taken into consideration and how they can be used.

Activity 3. Presentation, time 15 min.

After the expiration of time, ask the groups to submit their work and present them. In parallel with the presentation, if necessary, provide the feedback according to the materials given in the basic information.

Results and indicators

Result is obvious, if the student:

- Discusses essential preventive measures for reducing damage caused by the wild animals.
- Determines advantages and disadvantages of each activity/device and evaluates the possibility of their use for specific cases.

Lesson 20. Risk reduction – Preventive measures

Purpose: The students will consider the recommendations on preventive measures relating to the implementation of compensation and insurance systems, data management and strengthening of mechanisms management. They will discuss how to simultaneously maintain biodiversity and avoid threats to the population; they will be able to see their role in the conservation of biodiversity. Also they will discuss the importance of the subject.

Resources: Computer, projector, board, board marker

The way to achieve the goal (activity and training methods): Brainstorming, active lecture, discussion, summarising.

Lesson 20-Process

Activity 1. Brainstorming, active lecture, time: 20 min.

After arranging any organisational issues, tell the students that one of the most important recommendations in research of preventive measures is to develop a compensation and insurance system resulting from wild animals.

- In your opinion how can this system be put into action? After their responses, read the mini-lecture about the compensation system, insurance of livestock and harvest. Put forward the question:
- In your opinion, what is the importance of collecting and analysing data about wild animals?
- In your opinion, what is the importance of raising public awareness toward conservation education?

After students give their opinions, conduct the mini-lecture about data management and information delivery (please see the text, chapter with the same name). Ask the question:

- In your opinion, what should be done and who is responsible to respond the attacks of wild animals.

After receiving the students' feedback, the teacher is reading a mini-lecture on institutional mechanisms.

Activity 2. Discussion, time: 15 min.

After finishing the lecture, teacher holds a discussion with the following questions:

- Which preventive measure do you find is the most effective and why?
- What is the importance of preventive measures? Support your answer.
- What will happen, if we do not take preventive measures?
- What is the importance of biodiversity protection and sustainable use for the Ajara region?
- What conclusion have you come to: is it possible to keep biodiversity and simultaneously to avoid the hazard to the population with the use of specific preventive measures?
- How can public awareness be raised in this regard?
- Students should name one specific action that would be conducted by them for the maintenance of biodiversity and sustainable use in the Ajara Region.

Activity 3. Summarising, time: 10 min.

Put forward the following questions:

- What expectations did you have regarding this subject? Were your expectations met?
- What knowledge and experience did you gain from this subject? How and where will you use the knowledge and experience gained from this subject?
- Has your attitude changed toward wild animals? How has it changed?
- Evaluate, what is the significance?
- How would you evaluate the importance of the subject "coexistent living between human and wild animals in Ajara?"

Results and indicators

The result is obvious, if the student:

- Discusses preventive measures, such as developing of compensation and insurance systems,

strengthening of data management and institutional mechanisms;

- Is able to assess the significance of biodiversity defence and the importance of sustainable use, in this respect substantiates with specific examples. Expresses own opinion about the subject of study.

Electronic resources

Lesson 1.

Video - about the wolf and human relationship.

- Save Our Nature Wildlife, Living with Wolves (DVD) <https://www.youtube.com/watch?v=zd3d-9fvp7g> (access 25.07.2016)

Articles on wildlife

National Geographic Georgia, *wild nature*, <http://www.nationalgeographic.ge/?page=world&cat=240> (access 25.05.2016)

Lesson 2.

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