Common Borders. Common Solutions

Interpretative trails

Guidebook

2013

Chapter 1.

A. Introduction for the interpreter

What is interpretation?

Interpretation is an explanation of the natural, cultural or historic values attached to places. It enables visitors to gain insight and understanding about the reasons for protection of our heritage.

Interpretation is all about helping people appreciate something that you feel is unique and deserves to be treasured. Interpretation can refer to a place or:

- an area of countryside
- a rock formation
- a natural habitat
- plant or animal species
- an aspect of traditional culture
- a historical event or period
- an activity, for example fishing by fish traps

Information and interpretation

Where information provides facts, interpretation provides a story. All interpretation includes information and is based on sound knowledge of factual information. Good interpretation however takes facts and puts them into context, explains and expands their meaning, and weaves them into stories. For example:

Information:

As many other toponyms, the origin of the name of the Black Sea is difficult to trace. Its modern version in writing dates from the 13th century but there are indications it may be much older. Strabo's Geography reports that in antiquity, the Black Sea was often simply called "the Sea" (Pontos). For the most part, Graeco-Roman tradition refers to the Black Sea as the "Hospitable Sea", Pontos Euxeinos. This is a euphemism replacing an earlier "Inhospitable sea," Pontos Axeinos, first attested in Pindar (early fifth century B.C.). It is also possible that the name Axeinos arose by popular etymology from the ancient Persian word axšaina - "dark", "black" referring to colour symbolism of the cardinal points of the world; the designation "Black Sea" may thus date from Antiquity.

Interpretation:

One of the little known facts about the Black Sea is how it came to be called ‘black’. The earliest mention of this name used nowadays by all nations living along its coasts was in a 13th century manuscript but there are indications it may be much older. The ancient Greeks several centuries B.C. used to call it Pontos Axeinos "Inhospitable Sea" probably because of difficult navigation and hostile inhabitants on its shores. Later with the progress of colonization and trade that harsh sounding name was changed to Pontos Euxeinos, "Hospitable Sea". But it is also possible that the name Axeinos arose from the ancient Persian word axšaina meaning "dark" or "black". The cardinal points of the world in ancient times used to have colour symbols so black used to signify north. Therefore the name Black Sea may date back to antiquity.

Information:

The Southern Alps have formed along a tectonic plate boundary and are eroded by weather. The erosion rate and the uplift rate are very similar.

Interpretation:

Colliding plates on the earth’s surface created the Southern Alps. Just as when you push two pieces of paper together they buckle, fold and rise, so does the earth. Weather is working to slow the rise of the mountains, by tearing away at them with wind, rain and snow. As much as the Southern Alps get pushed up each year, the weather wears them back down again

so they stay a fairly constant height.

What are the benefits from interpretation for visitors?

Why spend your precious leisure time reading panels or on a guided walk to spot Dalmatian Pelicans? Visitors participate in interpretive activities for lots of reasons. Learning more about a place and its features can be stimulating and interesting and help make you feel good. It can:

- satisfy curiosity and thirst for knowledge
- add depth to the experience of places
- entertain
- provide insight and add meaning
- heighten sensory awareness
- inspire
- make the unfamiliar familiar
- be an opportunity to meet and talk with experts
- help you meet other people who share your interests
- be a good activity on holiday or school trips
- make you want to return to the site again

Interpretation also provides deeper less tangible benefits to individuals and to society. The underlying human desire for meaning and connections to communities and places underpins interpretation work. Identifying with unique places and culture helps people develop a personal and collective sense of being and value.

Principles of interpretation

- Enjoyable
- Relevant
- Organised
- Thematic
- Reaching visitors through different learning styles

Enjoyable

To hold people's attention any form of communication has to entertain to some degree.

Some of the following approaches can help make your tour more enjoyable for visitors:

Provide means of interaction

Keep people actively involved in the tour to make it more fun for them and you. Engage as many of their senses as possible. Ask questions or organise group discussions to make people form their own opinions and share them. Demonstrations and activities also stimulate people to interact with the environment and each other.

Vary your style

Changing the tone and volume of your voice can dramatically increase the effect of your words on the listeners. Silence, used at the right moment, can be very powerful too. It may help you emphasise the importance of something you just stated or help build suspense.

Embrace the unexpected

If something unplanned occurs, like a sudden storm, make use of the opportunity it provides and talk about it. For example, how local people using traditional clothing dealt with such conditions. If a small lizard passes by while you are talking about something different, don't be afraid to change your focus to it. Try to catch the opportunities that nature provides sometimes.

Relevant

If visitors can relate to what they see this may help them establish a personal connection to the place. When visitors can establish a link between new information and something they already know or have experienced, then it is more easily understood and may leave a lasting impression.

Use comparisons

Comparisons can highlight differences and similarities. This allows people to form connections to new places, animals, plants, landforms and local traditions by seeing them in relation to what they know.

Know your audience

Find out where visitors come from, learn their names, if possible and find out their level of knowledge on your topic. If someone is already very well informed you can try to include them and encourage them to share their knowledge with the group.

Avoid technical terms

Scientific language and complex terms do not bring a clear message to an audience without previous knowledge on the topic. Use analogies and comparisons to explain things your audience is not familiar with.

Organised

Information has to be presented in a logical order to be understood easily.

Objectives

If you know what you are trying to achieve, then it is easier to reach the end. Think about why you are running this tour and what you would like your audience to learn and experience during the tour. This will help you formulate objectives and will provide the framework and themes to build your task or tours around.

Planning

Plan the structure of the tour. A helpful approach is to follow the structure of a story with a beginning, middle part and end. This can be put to a draft or outline of the main facts. Make sure you have researched your topic well and can include stories about places and people that give liveliness to the story without too many terms, dates and figures. Check that your ideas and topics form an interrupted storyline. Then they will make sense to the audience too.

Thematic

People may quickly forget facts and figures but they will remember elements of a presentation based on a theme. A theme is the main message of the story you are telling. Themes provoke visitors to think and wonder, and these are first steps to changes in attitudes and behaviour.

The theme contains the message you would like people to go away with and provides the thread for linking the presented information in a meaningful way. A theme is usually expressed in a sentence and has an element of action. To create themes for your topics, ask yourself, “So what?” about your topic.

Topic: Sea cliffs

Theme: Sea cliffs can reveal past changes in sea level.

Topic: Old trees

Theme: Old trees are home for many creatures and are vital for a stable forest ecosystem.

Learning styles

People process information and learn in different ways. Probably the most popular approach is to rely on *visual information*. This includes text, graphics, art, maps, sculpture or video. Another common way of acquiring knowledge is through *sounds*, speech, music and songs. *Action, movement* and touch enrich the senses and may leave a lasting impression on visitors. Finally, the establishment of *emotional connections* can change attitudes and enrich the experience of visiting a place.

Our own learning preferences influence the way we present information and interpret facts. We often communicate information the way we like to receive it. To reach a diverse audience use different interpretation approaches based on a variety of learning styles. Learning continues long after the visit. That's why a story about the place should intensify a visitor's experience and trigger reaction and participation.

Personal interpretation

- Techniques
- Delivery skills
- Distractions and emergencies – dealing with them
- Props / Materials
- Drama
- Associates and partners

Personal interpretation techniques

Meet and greet

Make a brief introduction then allow visitors to make their own way through a site. This is an effective way to make contact with a large group for a short time.

Guided tours by foot or vehicle

Guiding provides an opportunity to visit remote or less accessible places, see wildlife, or view landscapes in a different light. Tours can be easily tailored to different audiences with general or special interests.

Talks or presentations

They can be delivered at a scheduled time and place or can take place informally, such as a talk at an entry point to a site or at remarkable points of interest.

Open days and events

This can be a cost-effective way to reach bigger audiences. Good planning and promotion is essential to attract people.

Volunteer programmes

Mix active conservation work with interpretation to provide a deeper more meaningful experience. Include time on volunteer programmes for interpretative talks.

Seasonal programmes

On many sites summer programmes can be specially tailored for different audiences. Interpretation can be provided on short guided walks, river trips or special tours. The activities can be effective and memorable for those involved when you take into account their interests, background and way of learning. A few tourism operators are interpretation focused, for instance on culture trips, some include interpretation as an item in their programme, while others focus just on an activity.

Delivery skills

Body

First impressions are important. Wear clean and tidy clothes. Don't forget a name badge and hat for the sun.

Smile to help everyone relax and feel welcome.

Think about your posture and body language. Stand solid and firm to show confidence and competence. Avoid playing with objects, such as pens and keys.

Use natural gestures and always face your group.

Voice

Speak with enthusiasm and passion

Vary tone and rhythm. Remember to pause for emphasis, to collect your thoughts, to let your story be absorbed or to indicate a change in topic.

Replace "um" and "ah" with a pause.

Language

Use simple language and speak clearly with short sentences.

Avoid scientific and technical jargon – it turns visitors off.

Create images in people's minds

Use humour. If your audience is laughing then everyone is relaxed. Make jokes or stories relevant to your subject.

Use silence for impact and focus.

Analyse your performance – what worked best, what did visitors really like? Ask for feedback. To calm down your nerves and improve your public speaking practice, join a presentation skills course and keep practising. Practice your presentation delivery on other colleagues and prepare variations for different audiences and group sizes.

Answering questions

Buy time to answer to audience questions or remarks:

- rephrase the question
- acknowledge the point
- ask for clarification
- ask for an example
- agree

Develop your own style

Enthusiasm is the most highly valued attribute interpreters can have. Credibility and professionalism are also appreciated. While a sense of humour always helps relate to a visitor, don't force humour if it doesn't come naturally.

Managing large groups

Determine a maximum size to suit the talk and site; eight to twelve is often optimum but this would be determined by the number of interpreters involved – 30 people is a good maximum for 4 interpreters.

Stay at the front and appoint someone to bring up the rear.

Allow time to deal with obstacles.

Talk to your group once everyone has arrived.

Be visible and audible at all times, stand above your group if necessary, and project your voice to the person at the back

Provide children with tasks or games along the route and periodically count your group – safety first!

Talks

If your talk is longer than 30 minutes (the average adult attention span) take a break.

Have good images. Few talks are effective without visual aids.

Use sound to maintain interest and attention.

Present in a pleasant setting free of other distractions.

Distraction and emergencies

Distractions can come in many forms: a crying baby, a loud talker in the back of the group or an overly energetic child. Sometimes you can anticipate a problem and prevent it before it comes disruptive. Ask the hyperactive child to assist in a task, such as counting the number of people in the group or lead a song during a walk between two points. Invite the loud visitors to come closer, so they can "see well". Deal with distractions in a professional manner; don't let them ruin the experience for the majority of the visitors.

Accidents and emergencies do happen and they will test your efficiency. Preparation and contingency planning is the best approach to dealing with such situations. If someone becomes ill or injured during a visit you have to major responsibilities: assist the injured and direct the rest of the group.

Props

Every visitor's centre, museum or a protected area office is full of potential props. Props explain things, gain attention and engage a group.

People respond to familiar objects used in innovative ways.

Involve different senses with props – smell, noise and touch.

Pass around a sample of a smelly leaf or twig, feel the touch of a local bird feather. Use a whistle to imitate an animal's call.

Try using historic artefacts as they were originally. Lifting or using a tool for a minute can give an insight into people's life in times past.

Props can also be distracting and you can lose visitors' attention when it is their turn to have a go. When passing a prop around, stay on the topic until visitors have finished with it then put it away

Possible props:

- skins
- skeletons
- pressed plants
- rocks
- artefacts
- tools
- replicas
- costumes
- equipment
- traps
- laminated photos and sketches
- models and replicas
- books
- music

– instruments

Drama

Dramatisation of a history related to an event or period is a popular technique which takes visitors to another time. Theatrical skills are required to make this interpretation work well – interpreters need to stay in role at all times and be historically accurate.

Costumed guides who do not play a part are not limited to staying in character. The costume is part of the story and provides context. Tours of buildings and historic sites benefit from personalised stories or a political context to bring the architectural forms and features to life.

Re-enactment of real events provides the opportunity to immerse the audience mentally and emotionally. The resources, planning and the skills required of participants will depend on the scale and nature of the re-enactment, and can provide good opportunities for volunteer involvement.

Demonstrations of cultural practices involve visitors and provide a relaxed environment to talk about the activity and other cultural information.

Performing arts – music and theatre events often take place in outdoor sites and sometimes draw on the site for the story line.

Non-costumed guides

Costumes and characterisation are not essential to create great interpretation. Once the theme has been established, the story can become more specific as points of interest are reached. A historic house can offer lots of engaging stories (mysterious deaths, ghosts, character people, and odd things) and plenty of opportunities to ‘do things’ with well placed props. Grab visitor attention.

Associates and partners

Tour operators, volunteers, museums, community groups, schools and others

Partners from the tourism sector and associates such as museums, community groups, schools and others, play a significant role in delivering interpretation to visitors and providing satisfying recreation experiences. The responsibility for visitors becoming informed is shared by the interpreters, tour operators, other partners and associates in delivery, and by all people who choose to visit protected areas.

Volunteers, communities and schools

The work of volunteers and schools education is integral to achieving long term conservation and social benefits. The volunteer, community and schools education programmes provide information about opportunities for involvement and a public events calendar. They also incorporate policies, standards and procedures to direct, guide and support interpretation.

Chapter 2.

Kobuleti Protected Areas

Trail 1. – “Travel to ancient wetlands."

- **General Description of trail**

The Kobuleti Protected Areas were established in 1999 and cover the Kobuleti State Nature Reserve (331 ha) and the Kobuleti Managed Nature Reserve (439 ha), which are both situated in the Autonomous Republic of Adjara, along the Black Sea coast to the north of the city of Kobuleti.

The territory is built with modern marine sediments; from rivers, lakes, and marshes. The Kobuleti Protected Areas include the Ispani peat deposits. The relief of the area is flat and slightly irrigated by rivers and streams. The climate is typical marine, humid and subtropical. Annual precipitation is 1500-2500 mm - the majority of the rain falls in the autumn and winter seasons.

Photo 1: Kobuleti Protected Areas; Bird Control Tower

The territory of Ispani is full of migratory water bird species. However, these places are exceptionally rich in plant species. Ispani 1 (Kobuleti Managed Nature Reserve) is represented by a semi-degraded, secondary plant communities.

Ispani II (Kobuleti Strict Nature Reserve), a worldwide unique dome swamp, which is only fed by rain water. The sphagnum peat vegetation of the Kobuleti Protected Areas are represented by Peat Moss - spagnum species, white *Rhinchospora alba*, *Rhynchospora caucasica*, sedge peat (*Molinia litoralis*), water clover (*Menyanthes trifolita*) and *Drosera rotundifolia* .

Most of these plants are from Colchis Quaternary glacial epochs. Colchis flora plants grow in peat swamps: rhododendron (*Rhododendron pontica*), Yale *(Rhodonedron luteum), Smilax excelsa* and royal fern (*Osmunda regalis*).

There are mammals living there as well including but not limited to: jackal, otter (Lutra lutra), badger, nutria, babbits, scrub vole, vole and more. It should be noted that the otter is in the "Red List" of species of Georgia, indicating their threatened status.

Among amphibians are: the Kaspi and bog turtle, toads, green frogs, common *Hylidae* and other reptiles - the water snake, Ankara, bokhmetsa, *Ophisaurus apodus*, Striped lizards, Common newts, and more. Different fish are found in the canals, such as pike, perch and eels

The region is interesting from cultural and historical point of view. In the past one of the most important trade route went through Kobuleti and it was a small cultural center in late antiquity.

The spread of Christianity in Kobuleti area in the first century is connected with the name of St. Andrew. Modern architecture here takes our attention. Since 1950 people started to build

huge houses with big stairs and balconies. The size of houses was a sign of wealth. In the nearby villages there are Adjarian and Laz housing patterns. Near Kobuleti there are the remains of the medieval ruins of castles and bridges.

Bronze Era Colchis culture was one of the most important groups in the area, and was the centre of civilization in the Caucasus and the Near East at the end of the first millenium, BC. It is not accidental that the Argonauts famous trekking in Colchis (13-12 centuries BC) is connected with this period, also the development of the first Georgian state associations Daiaena and Kulkha in the basin of Chorokhi (12-8 centuries BC) and the excellent archaeological monuments and treasures of the ancient samples of the South and West Georgia.

Of course, this comes after a serious cultural progress. At the boundary of IV-III millennium BC, in the Eneolith (Copper) Early Bronze Age in the region and in particular, in Ispani there was a settlement. There, they built logged buildings (without nails) in 3180-3150 BC, which was slightly modified in 2600 BC.

Analyses of local materials have concluded that the population of Ispani held onto Neolithic (New Stone Age) traditions for a long time. Collective farming traditions have been detected: the remains of chestnut, hazelnut, *Fagopyrum* and acorns are found there. The remains of dolphins and other fish, as well as animal remains have also been found there. The population of Ispani kept bees. Bees, besides honey, give us wax, which was used in the manufacture of metal pouring forms. The first direct descendants of axes viewed in Anatolian compatible axe materials have been found here. A mass production of pottery vessels show that there was a well-developed iron making, but unlike the Middle East, there still was not evidence of the use of specialized machines. Great attention is paid to the clay statue, which is similar to the statues widespread in the Near East. Often on women's statues fertility expressive marks are highlighted. Essentially they represent fertility and reproduction.

Photo 2: The Reconstruction of Neolithic settlement of Kobuleti .

In the third millennium, BC in Ispani wooden log houses standing on piers appear, which are keys to explain the variability of natural conditions - when the mid-term global warming happened and the sea water levels started to rise along the coast, which lasted for almost 800 years. It covered the coastline and people hoped to escape from the water's advance by building wooden log houses on piers but in vain; they had to leave the territory of Ispani and move towards the mountains.

However in the final steps of Bronze Age, at the end of third millenium BC, some populations of Ispani moved to a nearby settlement named Namcheduri . At this site samples of wooden building ruins and handmade potteries have been found, which are related to Ispani settlements on the upper level. It proves that the population had continued their old traditions of metal processing. It seems that metallurgical workshops were even more advanced at Namcheduri. They were supplied from the local metal processing center, which can be proved from lots of metal treasures found there.

Photo 3. Materials from the Ispani settlement. 4-6. Blower tubes for crucible melting 7. a wooden model of steep spine ax: 8-9. clay mould fragments for making steep spine axes; 10. Bath-like miniature crucibles.

The ancient settlement of Namcheduri is part of the Pichvnari archaeological complex, which is part of the coastline hand stack. This so-called Dune settlement dates back to VIII-VII centuries BC. It contains a layer with thickness of 5-7 m and reflects the spiritual world the early iron age in the united Colchis culture.

Photo 4. Late Bronze Age Colchian stone forms for making axes and beads, trowel and clay crucibles, sickles and arrow components.

In early times of antiquity there was good soil for establishing a state, city life, and a merchant class. This part of the country seems to be widely involved in the field of international economics and cultural relations. These processes were sharply accelerated by the Greek colonization of the Black Sea coast. By the 5th century BC, Pichvnari was one of the important urban center not only in the east but in the whole antiquity world. It was a contact point for the Kolkhis and the Greeks.

There are no written sources about the origin of the statue. It seems that Pomponius Mela, a Roman author (43 AD), referred to it as kiknosi (in Greek Swan): "The bend in the beach town, which, as they say, was founded by Greek merchants and is called kiknosi, because they didn't know where the land was because of darkness and storm, then they heard a swan's voice and they found out where the land was".

It is a unique phenomenon for the Black Sea coast that there are untouched side by side Greek and local resident cemeteries from V-IV centuries, BC in the area of almost 100 acres. Discovered materials indicate that the colonists and residents in the population coexisted peacefully and actively used various cultures characteristic of faith and material sites. These contacts deepened so that in the Hellenistic period (III-II centuries), the differences between them were removed, and there was a common burial ground, where Colchian and Greek culture were represented in unison.

In Pichvnari, in particular in Napurvala, there are remains of monuments from a Christian period and a basilica. In a recent times, tombs from AD IV-V centuries appeared where the dead were buried in a Christian tradition. The areas ability to be part of the western civilization is partly the result of an intense relationship with the world of antiquity.

The Kobuleti area is one of the best locations for developing tourism industry in Georgia; there can be water, ethnological and ecological tours, bird watching in mountainous areas near Kobuleti , and more.

Photo 5. The trail map

2. Main description of the sites along the trail;

Before we start introducing the beauty of biodiversity of the protected area, the first point we choose is Pichvnari and Namcheduri settlement. As they have historical and cultural importance, it follows that there will be great interest in viewing and visiting them. History tells us that at the end of the third millenium most of Ispani settlers moved to nearby Namcheduri area.

Here the samples of wooden building ruins and handmade potteries are found which are related to Ispani settlements on the upper level. It proves that the population had continued their old traditions of metal processing. It seems that metallurgical workshops were even more advanced. They were supplied from the local metal processing center, which can be proved from lots of metal treasures found there.

Photo 6. The reconstruction of the ancient Colchis iron melting workshop

The ancient settlement of Namcheduri is part of Pichvnari archaeological complex, which is part of the coastline handstack. This so-called Dune settlement from VIII-VII centuries BC. It contains a layer 5-7 m of thick and reflects the spiritual world the Early Iron Age in the united Colchis culture.

It is a unique phenomenon for the Black Sea coast that there are untouched side by side Greek and local resident cemeteries from V-IV centuries, BC in the area of almost 100 acres. Materials found indicate that the colonists and residents in the population coexisted peacefully and actively used various cultures characteristic of faith and material sites. These contacts deepened so that in the Hellenistic period (III-II centuries), the differences between them were removed, and there was a common burial ground, where Colchian and Greek culture can be seen represented in unison.

Photo 7. Colchis ornamented pottery jugs from Pichvnari.

In Pichvnari, in particular in Napurvala, there are remains of monuments from a Christian period and a basilica. In a recent times, tombs from AD IV-V centuries appeared where the dead were buried in a Christian tradition. The areas ability to be part of the western civilization is partly the result of an intense relationship with the world of antiquity.

Tourists will be able to participate in the process of opening of burial places, or to watch and become witnesses to such historic events. Then in the visitor center, visitors can get full information about the protected area.

Photo 8. Excavations of Pichvnari burial places. Jewelry discovered, fifth century, BC.

Photo 9. Greek ornamented pottery jugs from Pichvnari.

There they can get a handbook, which allows them to look through the tourist trail without a guide and to get know the wild life reality themselves. Any visitor can get a full assistance from a guide and detailed information. The guides can also help the visitors to see the tourist trail and provide full information about the biodiversity.

The path creates an interesting impression from the beginning, because there is a green coverage line in the city centre, where the rare species of flora and fauna typical of the Colchis era grow.

At the end of the last ice age (ten thousand years ago), the Black Sea level began to rise. The newly formed dunes along the coast prevented water runoffs from mountains back to the lake.

The sand, stones and clay coming with the water went to the bottom of the lake. In the north, 25 km from there, where the Kolkheti National Park is, 5000-7000 years ago a process similar to the above mentioned lake occurred, and was filled with vegetation and started to form peat. Here in the Ispani swamps the accumulation of peat started only 4 000-5 000 years ago and is still going on. Sphagnum Peat is still alive today...

Ispani II is the World's Wealth

It is supposed that Ispani II is the only live peat area in the world. It is the whole world's treasure. Ispani II is special because of an unusual combination of features that are found nowhere else on the earth.

Many wetlands, including Ispani I and II, receive the necessary moisture from rainfall only. In all swamps, except Ispani II, because of this process the level of water from time to time decreases in evaporation periods during a year.

Scientists believe that to keep the water level at a condition conducive to the formation of peat areas is only possible through ground water. They were surprised when they discovered that, despite the absence of ground water, the water is at the same level in Ispani II thanks to the frequent and abundant water from rain. One more wonder is that scientists have discovered the water flow from all the parts of the wetland which is called percolation.

Due to the equal distribution of rainfall annually, Ispani II gets enough water throughout the year. The weather is mostly rainy in Kobuleti and the vaporized and drained water does not exceed the water from the rain. The nearly raw plant-peat of Ispani causes the water to leak without stopping. When new water mass pushes the whole wetland, it makes the old, already existed water to leak out.

Wetlands with moss require special conditions.

Many mossy peat, including Ispani peat, grow and become gradually less dependent on groundwater. They begin to be nourish by rain water, so the rainfall should be sufficient for plant growth and peat water saturation.

There exists the best conditions for the development of mossy peat on the Black Sea coast; humid and subtropical climate provides warmth and abundant rainfall. The equal distribution of rainfall, high humidity and occasional freeze create favourable conditions for plant growth in Ispani.

The unique rarity of wetlands, of course, creates a peat moss or sphagnum which is 40-50 cm of thick. It is gentle and beautiful. It balances water and land. That is why it is of global importance. Tourists have a chance to view the magnificent and rare relic. It produces the upper part of the wetlands and peat.

Photo 10 . Sphagnum
Sphagnum
It is mainly spread in Kobuleti.
Common places of spread: Europe
Location: mossy wetland peat

Condition: Rare species create communities with Sphagnum imbricatum.
It is reproduced via spores;
It experiences a reduction in population when wetlands dry out.
Mossy peat bogs are protected in Ispani Nature Reserve of Kobuleti
Necessary activities for protection: Strict protection of Ispani I and II unique ecosystems.

Photo 11 . Yellow Lily

Yellow lily is a perennial, herbaceous aquatic plant

Importance: In marshes, ditches, and water reservoirs it is still preserved. It is important for the study of the history of flora in the region. It has a decorative quality as well.

The spread zone: It is spread mainly in Kobuleti, Georgia. It is also found in other parts of Abkhazia, Samegrelo, Imereti, Racha. It is also common in Western Europe, the Mediterranean, the Balkans and Asia.

Location: It grows in lakes of lower parts of mountains and in swamps.

Status : Extremely rare. There are small groups of them with floating leaves on the water surface. It is spread by seeds.

The reason of the reduction is wetlands drought. It is protected in Ispani - II peat reserve; It is included in the "Red Book", indicating it as a threatened species.

Necessary protection actions: Though rare, the plant serves a crucial function in maintaining homeostasis in the ecosystems in which it is present. Removal is both an indication of environmental distress as well as a catalyst to such problems. Thus all effort should be made to preserve it in its natural habitat including, but not necessarily limited to, the protection of the Ispani I and II protected areas.

Photo 12. Sedge

Sedge is perennial, herbaceous plant, it is also a plant that has not under gone significant evolution for a long time. It's considered a prehistoric plant.

The spread zone: It is spread in Mtirala, Chakvi, Kobuleti, Gvara. Also it is found in other parts of Georgia: Abkhazia, Samegrelo, Guria
It is also spread in Central Europe, and the Transcaucasia region.

Location: It grows in the lower mountain zone of wetland areas. It is rare on the river banks and lake coasts. It can be seen in small groups in mountainous wetland areas. It grows by seeds and vegetation.

The reason of reduction: The drying of wetland areas for agricultural purposes is the main reason for it to dwindle in numbers. It is protected in Ispani Nature Reserve. It is included in the "Red Book", indicating it as a threatened species.

Photo 13 . The Royal Fern

Royal fern is a perennial plant. It has a scientific value as a plant of ancient origin. It is a decorative plant as well. Plant roots are used as substrate for *Orchis*. (The plant is an alternative to ordinary land).

The spread zone: It is spread in Kobuleti , in Ispani peat bog . It is also found in other parts of Imnati, Nabada, Churia, and the Anaklia peat bogs. It is found in Europe, East Asia, Africa, North and South America. It is mainly found in the peat bogs. It is rare in groups, and grows by spores .

The reason of reduction : The drying of wetland areas for agricultural purposes is the main reason for it to dwindle in numbers. The plant is protected in Ispani Nature Reserve; It is cultivated in the Batumi Botanical Garden. It is included in the "Red Book" indicating that this particular species is considered a threatened species.

On the trail tourists can see swamp turtles, which are well adapted to the local environment, as well as various species of reptiles.

Photo 14. Lizard

Following the trail, as has been mentioned above, tourists will have the opportunity to meet land and swamp fauna inhabiting species, especially sparrows, various rare species of birds, wild chicken and other birds.

The oldest human settlements

In the areas of ancient Colchis on the Black Sea coast before Greeks came, ancient tribes lived and fed their families for 15 000 years in today's Kobuleti and Colchis lowland areas.

Like modern population, the oldest residents of Kobuleti also grew grain and kept cattle, they lived in huts built on piers, with holes of the huts being filled with clay. They were professional masters at making clay objects. They made fine ceramic vessels, in which they kept food, drinks and other items. They also modeled clay figures.

Bronze axes and other artefacts have been discovered during excavations. Those metal items were probably ones they did not trade with other tribes. Ispani and Pichvnari residents were masterful in the casting of bronze and other metals. This is confirmed by the archeological findings in the area. These beautiful ancient artifacts are kept in museums in Batumi and Tbilisi. Items found during excavations help scientists to find out what ancient people ate and also what kind of climate and environment existed during that period. Shell of acorns and chestnut bark indicate what both people and their animals ate during that time It also gives the scientists the reason for their conclusion that there was favourable conditions for growing oak and chestnut forests.

It is also known that people were already settled in the current Ispani wetlands and Pichvnari areas 5 000-6 000 years ago. The archaeologists identified it by studying the remains of under peat settlements. The name of Ispani was given to the area due to the oldest settlement name. Many of the items discovered by the archeologists tell us a lot about the lifestyle of these people. Remnants of their culture include ceramics and bronze artifacts, remains of wooden dwellings, grinder stones, even nut shells.

Photo 15 . Walking through the ancient Colchis sphagnum wetlands.

The trail location: The trail is located in western Georgia, on the Black Sea coast 6 km north of Kobuleti. Kobuleti is, 300 km from Tbilisi, the capital of Georgia. Duration of travel from Tbilisi is 5-6 hours by car, and 5 hours by train. The administration of Kobuleti protected areas is located in Kobuleti, 4 Leselidze Street.

Target group: school and university students, scientists and all interested persons

Recommended time for the visit: It is possible to see the protected area at any time of the year, but the best time to visit it is from spring to early November.

Duration of visit - 2 hours

Necessary equipment for visitors: rain protective wear, sport clothes, rubber boots and drinking water is preferable.

Chapter 3.

Kolkheti National Park
Trail 1. Navigational route Paliastomi - Pichori
1. General Description of the trail
Photo 1. Kolkheti National Park. Paliastomi lake.

Kolkheti National Park is situated at an altitude of 0-5 meters in height and is almost perfectly flat, with a very slight and fragmented inclined surface. The main form of relief is presented by the coastal plain, which in some places is cut by the river bed with a depth of 1-3 m depending on the location.

In some places these river beds are a result of excess accumulation of sediment and are 1-2 meters higher than the surface of the surrounding plain. The Colchis lowland, which is located in the western part of the National Park area, suffered a long geological period of tectonic sliding. The result of this sliding was the accumulation of weathered materials from the rivers to the nearby Caucasus, Adjara and Imereti mountains.

The area of the National Park, along with the whole Colchi lowland, is an area of intense sedimentation, where the coastal, marine, marsh, lake and river sediment accumulate. According to geological drilling data the National Park area from the surface to a depth of 10-14 meters is built on alluvial (sand, clay, silt), marsh (peat-swamp clays) and coastal genesis (sand and silt) sediments. Coastal plains feature intense bogging, that is why there are extensively developed peat swamps. The surface of swamps is located almost at the sea level and peat layers create a single horizon in them.

The thickness of the peat in its thickest point is 12 meters. The middle and bottom layers in almost all coastal peat swamps are under the sea level. With the help of different lithological and radiocarbon methods it is estimated that peat accumulation in Colchi coastal wetlands began about 6 000 years ago and is still being continued to this day.

Photo 2. Paliastomi lake shore .

There is a typical subtropical, marine, humid and warm climate on the territory of the National Park. As a result of this the territory of National Park and the surrounding areas receives abundant rainfall. Also mixed fed (snow, rain and groundwater) rivers flow there. Some of them are transitive (the Supsa, the Rioni, the Khobistskali, the Tsivi, the Tekhuri, the Engury), but some take their origin from some local wetlands (the Maltakva, the dedabera, the Tsia, the Tsiva, the Churia, etc.). Some of the riverbeds were changed due to the reclamation works in the past. The rivers of National Park in general are characterized by water runoff seasonality, yielding small periods of drought. However floods can be expected in all seasons. Periodically there are catastrophic floods, especially on the Rioni River.

The Black Sea coast which is along the Kolkheti National Park includes the shelf, which is an average of 6-8 km from the coast line. The surface of the shelf is slightly inclined. For example, a depth of 20 meter mark is 1300-1400 meters away from the shore line. The prevailing air mass circulation in the Black Sea coastal waters determine the water flow cyclone circulation (clockwise or counter clockwise with respect to a north-south axis). Stream velocity is equal to 1 km per hour on average and it reaches 5-6 kilometres with strong winds. The western direction

of the winds and waves prevail in the Georgian part of the Black Sea area. In winter north-western type of winds are also common. Sometimes there are strong ocean waves. The maximum height of waves reaches from 3 to 6 meters. Occasionally the height of waves reach 8 meters. The daily tidal influence of the Black Sea level fluctuation does not exceed 10 cm. The open sea surface water salinity is equal 17-18 grams per litre, and at the big river estuaries it changes between 3 and 9 grams per litre. The development process of alluvial silt, sandy and swamp soils contributes to this decline.

Photo 3. Paliastomi lake shore. Path to the boat

There are several lakes in the national park. Among them the most important is Paliastomi lake, which is located in the western part of the parks territory (area of 18.2 km², maximum depth of 3.2 m.) On the territory of Paliastomi lake and its basin wetlands there has been a strong anthropogenic influence which has developed the process of ruining the ecological balance which was formed during millenniums. A freshwater lake turned into a salt reservoir (during strong sea waves Paliastomi water salinity increases up to 12-14 grams per litre). Accordingly, the water fauna of the lake has changed. The result of becoming more salty and polluted has caused the degradation of biological ecosystem.

The swamp rivers bring water full with biogenic elements as the result of rotten peat rot. As a result the transparency of the lake water has gone down. So there was a sharp deterioration of conditions of arising and circulation food items connected with the photosynthesis. The biomass of plankton of the lake decreased 15 times and the biomass of benthos 6 times compared with the previous data.

Hydrographic networks are an important component of the peat bog. The most intensive swamping process is going on within the boundaries of the protected area, where the surface is almost perfectly flat and the land is not angled at all. Therefore it strongly hinders the drainage of surface water, which during exceeding atmospheric precipitation the surface of the land gets damped and therefore, swampy. Within the boundaries of the National Park there are transitional types of wetlands like Anaklia, Churia, Nabada, Maltakva, Pichori, Imnati, Grigoleti's Kvedauri, and Zedauri.

The Greek sources tell us an interesting story about the area. The location of Phasis mentioned in Greek sources, particularly by the famous Greek poet Hesiod in the 8th century BC in his Theogony, is believed as the name of modern Georgian city of Poti. The name was adopted as the basis of the Kartvelian languages.

The city of Phasis is mentioned again in the 4th century, BC with the author of Pseudo-Scylax. "The residents of Phasis are hospitable... They supply boats to those who are left without them. They give those people three boats and send them home by sea" - Aristotle wrote. According to Strabon ""On the Phasis river there is the same name city of Phasis, Colchis trade area, surrounded by a river (the Rioni), a lake (Paliastomi, which may mean confluence in ancient Greek), and the sea. There were 60 tribes, including "barbarians from India and Bactria". Archaeological achievements prove that famous Colchis Tetri (Tetri meaning white, but the product was silver) was mined and minted here. Colonists and Colchis traded with Colchis Tetri. At the time Phasis was one of main points in the transit route between Europe and Asia, where they exported gold, steel, construction wood, flax, flax seed oil, honey, wine and other goods. The names etymology in European languages comes from Phasis, which refers to the Phasis pheasant.

Unfortunately, in Poti and its surroundings areas all ancient monuments now are destroyed. Close to the lake at the estuary of the river Kaparcha, in certain periods, 3-7 century AD pottery

piles can be seen. At the mouth of Pichori which in the past must have joined with the river Phasis, there are ruins of an old church. Other ruins of churches are found to the south of Paliastomi, on the road to Grigoleti. A lot of materials were found here at the beginning of the 20th century. Greek inscriptions are recorded on some of the objects found here.

Visitors can see the beautiful landscapes of Paliastomi Lake, there are north sedge clusters of vegetation across the lake to the south as well as a thick covering of royal ferns, spots of impenetrable reed and typha, scenic views of the river confluence with the Pichori river, and wetlands established on the eastern coast.

A resting place at the eastern shore of the lake near the river Pichori will allow visitors to see the live Imnati sphagnum peat along the Paliastomi lake, the wetland, and its prehistoric forests of Colchis.

Photo 4. Kolkheti National Park map.

Photo 5. Trail map.

2. The description of main sites along the trail;

The trail starts from the Colchis Museum, where visitors have the opportunity to become familiar with the values of historic Colchis, and then visit the church and learn about the history of Poti. According to Greek sources, Phasisi, which is mentioned in Greek sources, particularly by the famous Greek poet Hesiod in the 8th century BC in his Theogony, is believed as the name of modern Georgian city of Poti. The name was adopted as the basis of the Kartvelian languages.

Picture 6. Jason and Medea golden fleece.
The history is associated with the invasion of the Argonauts to Colchis, when the Greek heroes came in by the legendary river in order to gain the Golden Fleece and with the help of Medea, the beautiful daughter of King Aeëtes, they abducted the cherished treasure and escaped the same way they came, through the **Pontus Euxinus** (inhospitable or the Black Sea).

According to the Greek myth Medea was a daughter of King Aeetes of Colchis and the goddess of Hecate, Apsyrtus and Chalciope's sister, was a minor goddess of magic and Circe's nephew, grandchild of Helios, and "the world's greatest magician." She was a doctor, expert in herbs and drugs, the founder of medicine, and the word medicine probably is connected with her name. Medea's great spiritual strength, her supernatural talent, the ability make dead things alive and other evidence "proved" that she was a type of goddess, and then become a magician. She was worshiped in Greece and there were churches dedicated to her where they also sang songs about her. According to legend, leader of the Argonauts, Jason and Medea fell in love with a great passion and she helped him to take the Golden Fleece from Colchis using her magical abilities. According to one of the legends the two told the Argonauts to kill Apsyrtos, Medea's half-brother, who was the leader of Kolkhis and was pursuing the Argonauts to take the Golden Fleece back. A new town Apsarus arose on his grave, later it was a Roman stronghold and today it is known as Gonio. After Medea fled from her homeland she committed many miracles. For example, she killed Talon, a giant man of bronze, from Crete. She hypnotized the daughters of Jason's uncle and had them killed their father, Pelias, the king of Iolcus, who didn't want to give his throne to Jason. The couple were expelled from their native city and Jason and Medea arrived in Corinth, where Jason fell in love with the daughter of King Creon of Corinth, Creusa, and in whose favor Jason abandoned Medea. She obtained her revenge by giving Creusa a poisoned dress and Creusa and her father died together. According to Euripides, one of the great tragedians of classical Athens, Medea did not stop and continued her revenge by killing her sons, Mermeros and Pheres, (which has not been confirmed in other versions), and then fled to Athens

in a golden chariot driven by dragons sent by her grandfather Helios, god of the sun. There she got married to the local king of Aegeus. After the Greek hero Theseus came to Athens confronted her, she left with her new son Medus. Medea returned to Colchis and, finding that Aeëtes had been deposed by his brother Perses, promptly killed her uncle, and restored the kingdom to her father.

Time passed and the Black Sea became hospitable (evksinos) with Greek colonists already settling there. The settlements of Ionels and Miletels became active. The city of Phasis (modern Poti) that the BC Phasis was probably founded by these colonists in the 6th century. In Kubani a silver bowl V-IV cc BC, was found and there was a sign on it: "I belong to priest of Apollo, who is in Phasis". A well-known scientist Hippocrates (460-363, BC) in his famous work "On Airs, Waters, and Places" wrote "This area is marshy, warm, watery and moist ... People have their wooden and cane houses in the marsh. They have little terrain to go on foot to the city and shopping places, but they use boats to go upstream and downwards, because there are many channels."

The city of Phasisi is first mentioned in the 4th century, BC by the author of Pseudo-Scylax. "The residents of Phasis are hospitable... They supply with boats to

those who are left without them. They give those people three boats and send them home by sea" - Aristotle wrote. According to Strabon ""On the Phasis river there is a city by the same name, Phasis, a Colchis trade area, surrounded by a river (the Rioni), a lake (Paliastomi, which may mean confluence in ancient Greek), and the sea. There were 60 tribes, including "barbarians from India and Bactria". Archaeological achievements prove that famous Colchis Tetri (a form of silver coin currency) was minted here. Colonists and Colchis traded with Colchis Tetri. At the time Phasis was one of main points of the transit route between Europe and Asia, where they exported gold, steel, construction wood, flax, flax seed oil, honey, wine and other good overseas. A term in European languages comes from Phasisi (Phasisi pheasant).

In the third century BC, after the collapse of the ancient kingdom of Colchis, Phasis was transformed into a buffer city between the internal Colchis and antic countries, and it was an ethnically mixed city. It is the second century BC, Heraclides referred to Phasis policy, which meant the existence of ancient customs and order.

At the end of nineties BC, in Kolkhi and of course, in Phasis, Pontus appeared with their famous chief Mithridates VI of Pontus. But soon a conflict between Mithridates and superpower of Rome started. The fight began in the minor Asia had gradually shifted to the Caucasus. In the year of 66, BC the conqueror of east Georgia and Iberia Pompey and Roman military and navy commander Servilius met at Phasis. The Roman fleet closed the city from the sea and it was easy for Pompey to conquer the Colkhis.

From the first century AD there were regularly Roman units in Phasis. Arrian of Nicomedia, who had traveled in the east of Black Sea coast in order to inspect it, confirmed that there was a Roman fort and settlement of trade:

"When you enter Phasis to the left there is a statue of the goddess Pasiyan erected ... The fortress, where can be put 400 favorite warriors, seems to me very unreachable according to the nature of the place ... there is double wall trench complex and both are broad. Before the wall was made of clay and wooden towers were on it, but now the wall and towers are made from bricks. Its foundation is firm, there are military machines on it. ... The port had to be fearless against ships, as well as other places around the fort, which is populated by the retired military officials and traders". Agathias tells us: "There is a lake there, which is called a small sea and joins the Pontus Euxinus (the Black Sea); That lake is connected to the sea by channel. Cargo ships are near the confluence of the Phasis.

From the fourth century in Phasis there was a rhetorical school, where the famous philosophers Themistius and Ioane Lazi worked. In the years of 542-562 during the Byzantium-Iranian war, one of the decisive battles took place near Phasis. Here the Byzantium-Laziki army defeated the Persians. In 6-8 centuries there were bishoprics depended on Constantinople.

The Phasis bishop Theodore participated in the World Ecumenical Council in 553. One Phasis bishop, Kviros, was promoted to Alexandria Patriarch. Phasis was the residence of the Metropolitan Lazica. In the 14th-15th centuries, there was a Genoese trade place operating there. Ambrozio Kontarini (15th century), Arcangelo Lamberti (17th century), Jean Chardin (17th century) tell us about the medieval city of Poti. In 1834, Marie-Frédéric Dubois de Montpéreux found the ruins of an old castle in the east of Poti, near Najikhuri. He considered it as the Arian-era fortification. New history of the city is connected with the release from the Ottoman occupation (from time to time there was Ottoman garrison since 1578; There is preserved Ottoman-era tower in the city center). Since 1828 the city has been in the Kutaisi controlled district.

By the order of Russian Emperor Nicholas the first they started to make projects for the Poti port, which were completed in 1831 by Major-General Mathias. On January 1st, 1859 Poti became a port city and they started works to create an inner basin. During this period, the French writer Alexandre Dumas (senior) was in Poti, who illustrated the story in his work "Caucasus". 1858-1872 there was a twice a week motion steam ships from Poti, "The prince Baryatinsky", "Golumchiki", and others. And by their means foreign and Russian merchants brought wool, canvas, cloth, sugar, salt, and more in Orpiri. They brought from Poti timber materials, raw silk, cotton, wine. Construction of the railway began in the summer of 1867 led by Niko Nikoladze. From 1872 to 1885 the export of oil from Baku was done using the Tbilisi-Poti railway. In 1894, Niko Nikoladze was chosen as a city mayor, who gave the final look of the port. His name is associated with the development of Poti planning, civil and public buildings bridges, and a monumental church that were constructed. With the efforts of a retired Russian army officer, Adam Kurkovski, in the vicinity of the church a beautiful garden (today's Central Park) was cultivated. According to the Zelenko and Marphild's project a temple like Hagia Sophia was built on September 14th, 1906. In 1932 Communist government decided to make it into a theater. After the return to independence, the dispute between the church and the theater troupe lasted a long time and finally The City Council awarded the building to the church. In November 2005, the President of Georgia Mikheil Saakashvili granted the cathedral key to the Patriarch of Georgia Ilia the second. Unfortunately, in Poti and its surroundings areas all ancient monuments now are destroyed. Close to the lake at the estuary of the river Kaparcha, in certain periods, 3-7 century AD pottery piles can be seen. At the mouth of Pichori which in the past must have joined with the river Phasis, there are ruins of an old church. Other ruins of churches are found to the south of Paliastomi, on the road to Grigoleti. A lot of materials were found here at the beginning of the 20th century. Greek inscriptions are recorded on some of the objects found here.

The route continues on the sedge banks of the river Kaparcha, where starts a very beautiful landscape of the lake. Paliastomi Lake starts off as a lagoon with an area of over 18 hectares, the length of 4.7 km and the width of 3.8 km. The maximum depth of the lake is 3 m. In the north and in the south of the lake there are areas with sedge, royal fern in dense cover, impenetrable reed and typha places.

Sphagnum peat swamp grass can be seen along the banks of the lake and the surface, and also the alder swamp forests. Tourists most often can see birds among living habitants, which can be seen everywhere. On the surface of the lake one can see common moorhens, various species of ducks, bucephalas, aythyas. And there are herons, storks and cranes because there is a route for migratory birds to Eurasia and Africa in Colchis lowland during spring and autumn period. Visitors are able to see not only native birds of the lake, but also huge teams of birds migrating to different places: wild ducks, geese, swans and often pelicans as well. Fifteen species of fish

inhabit the lake, most numerous of which are carp. Unforgettable impression on visitors are made seeing mullets pop out of the water.

The bio-geographical location of Kolkheti National Park is the reason for high biodiversity of wild flora and fauna, endemic and transient species are in ample abundance. On the area of the National Park there are different types of landscapes which have their own individual ecosystems. In particular, seawater ecosystems, rare plant communities of sand dunes, ancient coastal peat bogs, endemic plants, and wet alder thickets occupy wetlands, wetland lakes and rivers ecosystems. The humid and hot subtropical climate, hydrographic network and the existence of wetland soils have contributed to maintain high biodiversity.

In addition, the high biodiversity of the National Park is largely due to its geographic position because some of the areas are unreachable (impassable marshes and swamp forests).

Flora

The KNP primarily attracts the attention of its botanical importance. In conditions with a slightly angled but largely flat surface, coupled with the warm and humid climate there are good conditions for the wetland ecological environment created within the National Park. However, due to peculiarities of relief and hydrographic network, the existence of various soil conditions can be observed. This fact leads to the development of rather different ecosystems in the coastal sand dunes, peat bog, wetlands and humid forests and aquatic vegetation in the form of groups on the area of the Kolkheti National Park. Large numbers of species are from ancient times (the Tertiary period) flora. Therefore, the vegetation of the National Park represents the most important natural heritage. Sand dune vegetation is preserved in north - western coastal strip of the National Park in the area of confluence the rivers Churisa and Khobistskali. Very peculiar, different from each other, littoral, ephemeral, perennial xerophyte and xerophytic vegetation and plant communities grow on the sand substrate salted with the sea water.

From littoral species there grow euphorbia (*Euphorbia paralias*), *Eryngyium ratium*, and others; From perennial xerophytes - *Anthemis euxina, Silene euxina*, *Stachis maritima*. From xerophytic vegetation *Paliurus spina-christi*, *Hippoplae rhamnoides,* and others. There are some Mediterranean rare species - *Glaucium flavum* and *Pancratium maritimum* groups.

Like boreal wetlands, the wetlands of Kolkheti are characterized by dome like surface and spagnum moss. In addition, in the wetlands of Kolkheti boreal (tundra and taiga) marsh plants such as spagnum mosses (*Sphagnum imbricatum, S. papilosum, S. acutifolium, S. palustre*), Drosera (*Drosera rotundifolia*), Rhynchospora (*Rhynhospora alba*), peat sedge (*Carex lasiocarpa*), water clover (*Menianthes trifoliata*) grow.
The existence of boreal flora elements in these marshes is still unclear. Some botanists think about the boreal flora elements as Quaternary glacial-era relics.

Sedge marshes (*Carex acutifolium, C. vesicaria* da sxv.), Rush (*Juncus effusus, J. infexus, J. acutus* and others), *Typha latifolia, T. angustifolia*, reed *(Phragmites australis)*, iris *(Iris pseudacorus)*, *Sparganium poliedrum*, Imeretian sedge *(Molinia litoralis)*, royal fern *(Osmunda regalis)*, *Solidago turfosa*, Pontic Hemp *(Hibiscus pontica)*, kosteletzkya *(Kosteletzkya pentacarpos)*, and others grow in Kolkheti National Park. Kolkheti mountain flora elements are added to the originality of Colchis flora peat marshes such as yellow azalea (*Rhododendron luteum*) and pontic rhododendron (*R. ponticum*).

Swamp forests along the river and a peat bog in the peripheral zone have a huge environmental value. These forests are represented by the absolute dominance of an ancestor of Colchi alder (*Alnus barbata*).

Swampy alder forests in the National Park are primary formed from of Colchis Flora. Swampy alder trees, as a rule, are low quality forests in which the average tree height equals 10 meters. Due to the influence of human encroachment, species such as the Alnus barbata there are *Pterocarya pterocarya,* Imeretian oak (*Quercus imeretina*), maple (*Acer campectre*) and others are endangered.

Photo 7. Small islands on the Paliastomi Lake.

In the swampy alder forests there are yellow azalea (Rhododendron luteum), Pontic rhododendron (R. ponticum), Ruscus ponticus, and Ruscus hypophyllum, *Ilex colchica*. From lianas there are Colchis ivy (*Hedera colchica*) , ivy (H. helikh) , *Smilax excelsa* and others.

In the slightly more elevated terrain, surface water drainage there causes humid alder forests to develop. The *Alnus barbata* performs a crucial role in contributing to the humidity of alder forests. In these forests there are still *Pterocarya pterocarya, Quercus imeretina, Quercus hartwissiana, Vitis silvestris, Diopyros lotus, Staphyiea pinnata,* and *Buxus colchica.* These species are endangered and are included in the Red Book list. Also there are very rare (though quite widespread in the past) beech (Fagus orientalis), hornbeam (Carpinus caucasica) , maple (Acer campectre) , ash (Fraxinus excelsor) , and elm (ulmus carpinifolia) trees.

There are *Ilex colxica, Ruscus hypophillum, Rhododendron ponticum, Laurocerasus officinalis* and others represented in the humid alder forests.

From lianas there are Colchis ivy *(Hedera colchica*), *Smilax excelsa* and others.

Along the lakes and swamp rivers, also in a very moist areas there are highly developed aquatic vegetation included in Red Book list such as an endangered species of white lily *(Nymphaea colchica*), yellow lily (*Trapa cochica),*and *water nut (Trapa cochica).*

There are also lemna (*Lemna minor*), salvinia (*Salvinia natans)* and others.

In the area of the Kolkheti National Park there are 350 species of algae in the waters.

Photo 8. Water nuts.

Photo 9. Sphagnum carpet.

According to the ecological analysis of Paliastomi Lake area, the algae biotopes from drainage water is populated mainly by cenoses created from benthic zone organisms, where species of dominance include rheophiles, epiphytes, epilytes *(Merismopedia tenuissima, Microcystis aeruginosa, Gomphosphaeria lacustris, Cerotium hirundinella, Gloeococcus schroeteri, Pediastrum tetras, Scenedesmus arcuatus).*

Plankton bionts are mainly in stagnant water. According to the phytoplankton structure Paliastomi lake can be attributed to eutrophic water bodies. The majority of the Colchis lowland marshes algae species belong to desmidiales classification.

Colchi lowland native flora and vegetation poses a serious threat of invasive species, which are highly competitive and characterized by rapid pace of growth. In many cases, their monodominant groups are developing in a large area.

Polygonum thunbergii, Ambrosia artemisiifolia, Paspalum paspalodes, Robinia pseudoacaia and others belong to an unusual species of Colchi lowland.

According to existing data, the local spread of invasive species such as Arabian Peninsula flora elements like *Gomphocarpus fruticosus,* North American *Hypericum mutilum* and others are present; It is likely that these taxa will expand the area of their expansion in the territory of Colchis lowland areas, where intense fragmentation and destruction of primary vegetation communities are on-going, which contributes to the expansion of the zone of unusual elements in the area.

It is probable that these taxa gaipartoebs spreading area of Colchis lowland areas, where intense primary fragmentation of plant communities is due to habitat destruction of the native species, which opportunistic foreign distribution of elements contributes to the expansion of the zone.

Fauna

The Kolkheti National Park, with rare species of flora, is an important shelter for a number of wild fauna species. However it should be noted that the world of wild animals of the National Park is not well studied. The places of residence of different species, the number of individual species and their populations' environmental conditions, etc has not precisely been identified.

Mammals (***Mammalia***)

• Insectivores (*Insectivora*) registered in the territory of the National Park are the Caucasian mole (*Talpa caucasica*), white-toothed shrews (*Crocidura russula*) and Radde's shrew (*Sorex raddei*). Radde's shrew is included in the Red Book list of endangered species. This species is described in the north - eastern part of the National Park. It is unknown if there are radde's shrews in other areas of the park. It is not also clear the ecological conditions of their residence which requires proper study.
• From the mammals of the order Chiroptera in the National park area it is accounted Mehely's Horseshoe Bat (*Rhynolophus mehelyi),* Bechstein's bat (*Myotis bechsteini*), long-winged bat (*Miniopterus schreibersi*) and small noctules (*Nyctalus leisleri*) which belong to rare species and are included in the Red Book list of Georgia. We don't have exact information about their ecological conditions and therefore it should be monitored.
• The area of the sea adjacent to the National Park is used by bottlenose dolphins *(Tursiops truncatus)* and harbour porpoises *(Phocoena phocoena)* from the order of Cetacea. They are included in the International Union for Conservation of Nature (IUCN)'s list. There are also common dolphins *(Delphinus delphis).* The number of these species, not only in the surrounding waters , but on the whole the Black Sea , has sharply reduced by the influence of humans. It should be noted that all three of these species in the Black Sea forms a closed population , which is due to the low salinity, high concentrations of hydrogen sulfide and limited geographic barriers (the limited connection between the Black and Mediterranean Seas influenced by The Dardanelles, a long narrow strait) of the Black Sea. Black Sea dolphins are adjusted to the ecological environment, which limits their immigration to the Mediterranean, and therefor connections with other populations. Under these conditions, if the number of populations of the dolphins reduce to a critical point, it will be impossible to restore the populations of these animals.

Photo 10. Black Sea bottlenose dolphins
Common dolphins *(Delphinus delphis)* have the highest density in the black sea (15.7 individuals / 1 square kilometre), then harbour porpoises *(Phocoena phocoena)* come with the density of 10.2 individuals on 1 square kilometre and bottlenose dolphins *(Tursiops truncates)* tend to a relatively low density (0.13 individuals/11 square kilometre)
• In the National Park and its surrounding area there are only 8 species of the order of carnivores (*Carnivora),* including numerous species of jackal (*Canis aureus*). There are also otters (*Lutra lutra*) which have been adversely affected by the influence of anthropogenic factors and are on the brink of extinction in the surrounding area. This species is included in the Red Book list. It is necessary to monitor and specify the location, ecological conditions and the number of this animal in the National Park area.
From the order of even-toed ungulates *(Artiodactyla)* there are European roe deer *(Capreolus capreolus).* The population numbers of them has approached critical levels in recent decades, due to a sharp deterioration of ecological conditions.

Photo 11. Colchis lowland migratory birds

Birds (class **Aves**)
The National Park, with adjacent to sea water is one of the most important place for African and Eurasian water and marsh migratory birds. 194 species of birds rest, breed, stay for the winter time in the marshes, wetlands and humid forests, rivers and lakes of the National Park. Among them are 62-76 species of migratory birds and 56 bird species staying for only in winter; According to the Convention on the Conservation of Migratory Species of Wild Animals (also known as CMS or Bonn Convention) and the African - Eurasian Water bird Agreement (AEWA) a protected species is The Dalmatian Pelican (*Pelecanus crispus*), the Common Crane (*Grus grus*), the Black Stork (*Ciconia nigra)*, the Little Egret (*Egretta garzetta*) and etc. From reptiles (*reptilia)* the European pond turtle *(Emys orbicularis),* the blindworm *(Angius fragilis)* which is in the Red Book list of Georgia, are found there.

Photo 12. The Ferruginous Duck (Aythya nyroca) – a rare bird wintering in Colchi

Amphibians *(Amphibia)* are represented by a common newt *(Tritorus vulgaris),* the southern banded newt *(Tritorus vitatus)* included in the Red Book species, marsh frog *(Rana ridibunda)* and others.

Photo 13. The Hylidae are inhabitants of Colchis lowland.

Colchis lowland rivers are the main important habitats for spawning. They are crucial for keeping sturgeon (*Acipenseridae*) populations. Especially, for rare species such as Atlantic sturgeon (*Acipenser sturio*) which is in the critically endangered category (PCR) of IUCN's Red List. Over the past few decades, it was noted only in the river Rioni.

Photo 14. The beauty of Kolkheti National Park - freshwater pond of Paliastomi

Photo 15 . Colchi lowland swamp forests .

Location of the trail: The trail is located in western Georgia, on the eastern coast of the Black Sea, in Poti. Poti is 330 km away from Georgia's capital, Tbilisi and 27 km away from the resort town of Batumi. Duration of travelling is 5 hours by car and 7 hours by train. The administration of the Kolkheti National Park is located in Poti, 222 Guria Street.

Target audience : pupils, students , scientists and all interested people

Recommended time for visiting: the area can be visited from May to October in good weather conditions.

The visit duration - 4 hours

Visitors' necessary equipments: a hat , a raincoat , sports clothes , sports shoes and drinking water is preferable .

The trail's length is 18 km and Visitors can take a boat to see it.

Chapter 4.
Mtirala National Park
Trail 1. - The Magical Mountain of Mtirala
1. General Description of the trail

Photo 1. Mtirala National Park

Mtirala National Park is situated in historic Adjara. Its territory is within the Kobuleti, Keda, and khalvachauri municipalities. Geographically, it belongs to the southern Colchi, and Lesser Caucasus (an extreme western part of the Adjara-Imereti mountain range). The geographical coordinates of the central part of the Park: Eastern longitude 410 50 ', north latitude 410 40'.

In Mtirala National Park the air humidity is 80-85%, with frequent foggy days which gives the peculiar scent of impenetrable forests of Colchis covered with evergreen shrubs. The average annual temperature varies according to the elevatino from 10-12 ^{0}C (500-600 meters above sea level) to 5-6 ^{0}C (1000-1200 meters above sea level). In lower mountainous zone the warmest month is August with an average temperature of 20 ^{0}C, the coldest month is January with average temperature of -2^{0}C. The absolute minimum temperature reaches -13,6 ^{0}C (1000-1200 m above sea level). In the area of the park the number of days with no frost is an average of 274. In the middle and upper zones of the mountain the snow often reaches 3 or 4 meters (in some areas even more).

Mountain Mtirala is located between the Black Sea and the mountain system of Adjara, and the Chakvistskali and Korolistskali river watershed. The local mountains stop the influx of moist air of the sea and set a very humid climate of Adjara.

Mtirala mountain, with a height of 1381 meters above sea level, has the most abundant precipitation in Adjara which is already famous for its heavy precipitations. Here the annual precipitation is 4520 mm, which is the wettest place not only in Adjara but also in the whole country. The name of Mtirala (“weeping") is due to the abundant precipitation there.

Geologically the park is less distinct from the whole Adjara region: tuffaceous rocks with tertiary andesite are mainly spread there, orographically Kobuleti - Chakvi Ridge (where the park is formed), separates Adjara into western (coastal) and the eastern (the mountain) parts. In the territory of the park which mainly covers the coastal zone there are:

A) A hilly belt of the foothill (500-600 m above sea level);

B) The bottom belt of the mountain (1000-1200 m ASL);

C) The middle belt (1500-1600 m ASL) and

D) The upper (Above 1500-1600 m) belt.

The highest hypsometric markers are close to 1700 meters, almost the same height as Morvil Ridge (the height of Mount Morvili is 1733 m ASL, and the park's highest point is 1761 m ASL) which runs through the park's eastern border. Great Mtirala, Terati and some others mountains are higher than 1300 meters ASL. The relief features of the area are very fragmented. Among the forms of relief there are picturesque narrow valleys (including the canyons).

The park was created in separate sections; Kobuleti, Chakvi, Batumi, Erge - (in two parts of Ortabatumi Ridge and Makhuntseti forestry).

Mtirala's flora is rich and diverse. Almost 100% of the park area is covered with forests and dense shrubs.

Chestnut, beech and mixed forest types are represented in the Mtirala National Park. There are also evergreen rhododendron (Rhododendron luteum) bushes typical to Colchis. In Colchis the types of woods there are beech, lime, chestnut, alder, hornbeam (Carpinus caucasica). Rhododendron, common laurel (Prunus laurocerasus), Colchis holly (Ilex colchica), Colchis box-tree (Buxus colchica) and several species of liana dominate in lower belt of the mountain.

Photo 2. Flora

Endemic rare species of Adjara-Lazeti and species included in the Red Book (a collection of endangered species) of Georgia are spread in the Mtirala National Park such as epigaea (Epigeae gaultherioides), Pontic oak (Quercus pontica), Rhododendron (Rhododendron ungernii), Colchis bladdernut (Staphylea colchica), Walnut tree (Juglans regia), yew (Taxus baccata), Medvedev birch (Betula medwedewii), Primrose (Primula negaseifolia) and others.

The Park wildlife (mammals, birds, amphibians and reptiles, and fish) is represented by 95 species. 9 species (the Mediterranean horseshoe bat and the western barbastelle, Caucasian squirrel, Greater Spotted Eagle, The Saker Falcon, Caucasian salamander, Caucasian adder and the butterflies – Apollo and Caucasian festoon) are on the IUCN list as globally endangered species. 23 species, in addition to the above mentioned species, such as lynx, brown bear, trout and others are included in the Red Book of Georgia.

Visitors can see animals or their traces and different characteristics on the path. In particular, the brown bear (Ursus actros), which is quite frequent, as well as roe deer (Capreolus capreolus), marten, badger, lynx (Lynx lynx), chamois (Rupicapra rupicapra) and others.

Birds like Common Pern (Pernis apivorus), Sparrow hawk (Accipiter nisus), hawks (Acipiter gentilis marginatus), Booted Eagle (Hieraaetus pennatus), Kite (Milvus migras migras), Long-legged Buzzard (Buteo rufinus), Common Kestrel (Falco tinnunculus), Eurasian Eagle-Owl (Bubo bubo), hoopoe, woodpecker, raven, and many other migratory birds are recorded within the Mtirala National Park area. There is species of stork, levant sparrowhawk and Red-footed Falcon (Falco vespertinus) from the Red Book of Georgia list.

The Park's fauna is also rich with reptiles and amphibians like the Caucasus viper (Vipera kaznakovi), Caucasian salamander (Mertensiella caucasica), southern banded newt, European tree frog, Caucasus frog, marsh frog.

Fish like the river trout (Salmo fario), Colchis barbell (Babus tauricus escheriche), endemic barbus (Barbus mursa) and carp (Cyprinus carpio) can be found in the territory of the Park.

There are three types of lizards and several types of snakes: the dice snake (Natrix tessellate) and the water snake (Natrix natrix), the smooth snake (Coronella austriaca) and the Caucasus viper (Vipera kaznakovi) inhabit the the area.

The Ornito-fauna of the National Park is rich in birds of prey. Here the Greater Spotted Eagle (Aquila clanga), Long-legged Buzzard (Buteo rufinus), hawks (Accipiter gundlachi), Sparrowhawk (Accipiter nisus), Common Kestrel (Falco tinnunculus), as well as night predators:

Eurasian Eagle-Owl (Bubo bubo), Long-eared Owl (Otus) and others have been accounted for. Other the birds there are hoopoes, woodpeckers, ravens, blackbirds, Eurasian golden orioles.

From mammals the National Park residents are the brown bears, lynxes and wolves. Also mole, weasel, Caucasian squirrel, rabbit, fox, badger, wild cat inhabit the park. Ungulates like deer (Capreolus caspreolus), more rarely wild boar (Sus scrofa) are found in the park.

The park is approximately 16 000 ha and covers better preserved bush and forest ecosystems which are typical for the western part of the Lesser Caucasus and for the whole biogeographical region of Kolkheti. It was confirmed by EIA (Environmental Impact Assessment) analysis, field expeditions and spacecraft images. In addition, the surrounding area the most diverse of landscapes are present starting from the Black Sea coast ending with the mountain meadows.

The Mtirala National Park along with the Kintrishi Protected Areas (and planned Machakhela Protected Areas) allows the protection of existed biodiversity of south Kolkheti ancient forests. Moreover, the park plays an important, pivotal role in establishing a network of protected areas and developing transboundary conservation of the landscape of Lesser Caucasus.

The Park's main zone is developed on the best-preserved territory. A significant portion of the park (former Tsiskara reserve) was well-preserved until sixties. It should be noted that almost the entire area of the park is covered with woody plants. In addition, the vegetation of Colchis type, as already mentioned, is unique to the whole world: it is only presented in the eastern part of the Black Sea (ancient Colchis). Its uniqueness is due to the fact that during the ice age of the Tertiary periods Colchis was sheltered and this rare ancient diversity has kept up to this day. In addition, the area where the park was established is rich with variety of typical relicts of Colchis (especially bushes).

It should be noted that this area is one of the top priority protected areas in Europe. Due to the isolated, inaccessible location and protection offered by it, the park is considered as a shelter for many species of animals and plants of Colchis. They include some rare and endangered, as well as many endemic and ancient species of Colchis.

The park provides a wide range of opportunities for the successful development of eco-tourism. Mtirala National Park in is the only protected area of the country, the basis of which a combined sea and mountain tourism model will be launched. It is a rather long-term outlook for this kind of tourism in terms of significant growth in the country's economy, including the tourism sector.

Photo 3. Waterfall.

In addition to environmental protection and eco-tourism developmental functions, the park has a vitally important function: the National Park will maintain the ecosystem balance of Kobuleti - for example Chakvi ridge will serve to avoid the development of erosion and landslides events and floods not only in the mountain, but in the lower zone. Also it will guarantee the stability and purity of the drinking water supply for a large part of the Autonomous Republic (including Batumi).

Acoording to one version of folk legend the name of Mtirala comes from its natural conditions (there is often dense fog and rain), but there is a second version of it, which is connected with Ottomans invasions. During the invasions residents of adjoining Mountain Mtirala villages (Korolistavi, Agara, Chaisubani) sheltered there and they mourned over their loss. The famous Georgian poet Pridon Khalvashi's ballad " On Mountain Mtirala" was based on the latter option.

According to the popular legend, Queen Tamar used Mtirala as a place for summer staying. To ensure her security on the road, two fortresses were built, one in Saghoreti which is located in the Adjaristskali gorge and the other in Sakornio. The latter was on the mountain Sakornio which is

opposite to mountain Mtirala at the left bank of the river Korolistskali. It had a rectangular shape and today there are mostly ruins left. According to the legend it had a chapel too, but traces of the chapel have not been found. The study of survived parts of the fortress Sakornio showed that it was built from stone.
In the early stages of construction of seasonal houses in Mtirala, there were one-story buildings built with logs. From the 19th century they started to build two-story buildings with logs and a century later, during the Soviet period they began the construction of wooden houses. The remnants of the so-called Agha's villa can be traced to Tsinstadze or Abashidze family ownership. The Tsintsadzes were the owners of the area according to orders issued by Gurieli in the 17th century. But later in the Ottomans period the Abashidzes were promoted to land owners which caused the Tsinstadzes' weakening.

Photo 4: The trail map

2. Main description of the Sites along the trail.

The first tourist trail in the National Park starts from the Visitor Center. The trail follows the left bank of the river Chakvistavi, its height varies from 296 to 476 meters above sea level. Visitors can see representatives of endangered species of Colchis flora and fauna. Such examples include the Georgian walnut included in the Red Book list of Georgia, Colchis hazelnuts, Pontic rhododendrons, brown bears, martens, foxes, mountain eagles, falcons, blackbirds, pigeons.

Photo 5. The Arch Bridge.

About 2 km away from the visitor's center there is a picnic place which is a plain place under the shadow of plane trees with the flowing nearby mountain springs and streams.

400 meters away before reaching the Picnic area the path turns southwest and goes to a waterfall with a height of 12 m which is covered with ivy and Colchis box-tree plants.

About a kilometer away from the waterfall, the river flows between rocks and then becomes a transparent and trout rich lake. There are picnic, fire and camp places near it.

On the way from the lake to the Visitor's Center tourists can also see the ruins of ancient dwellings.

Between 260 meters and 600 meters from the beginning of the trail there is Colchis type broad-leaved mixed forest with 40% of alders, 25% of chestnuts, 15% of hornbeams, 10% of beeches, 5% of plane trees and 1% of yew trees.

Above the 600 m ASL to 1000-1250 ASL where the trail ends, 70% of the common species of beech trees are spread. Along with beech trees there are chestnut, hornbeam, maple and alder species of trees as well.

The Park wildlife (mammals, birds, amphibians and reptiles, and fish) are represented by 95 species. 9 species (the Mediterranean horseshoe bat and the western barbastelle, Caucasian squirrel, Greater Spotted Eagle , The Saker Falcon, Caucasian salamander, Caucasian adder and the butterflies – Apollo and Caucasian festoon) are on the IUCN list as globally endangered species. And 23 species, in addition to the above mentioned species, such as lynx, brown bear, trout and others are included in the Red Book of Georgia.

Photo 6. Colchis forest.

Visitors can see animals or their traces and different characteristics on the path. In particular, the brown bear (Ursus actros), which is quite frequent, as well as roe deer (Capreolus capreolus), marten, badger, lynx (Lynx lynx), chamois (Rupicapra rupicapra) and others can be seen. There are many sparrows, hawks, blackbirds and many other migratory birds. There is species of stork, levant sparrowhawk and Red-footed Falcon (Falco vespertinus) from the Red Book of Georgia list.

The Park's fauna is also rich with reptiles and amphibians like Caucasus viper (Vipera kaznakovi), Caucasian salamander (Mertensiella caucasica) and others. There are also river and lake trouts.

The trail is famous for its beautiful views, from where you can see the fog covered Mtirala Mountain as well as the forests ecosystems of it.

On the trail visitors see a lot of natural springs, where picnic areas and bathrooms are arranged so that visitors have the opportunity to receive high quality pure spring water and rest.

There is a place for 8 people at the end of the trail where visitors can spend the night. There is also a specially arranged picnic area, as well as a place for making fire. From here visitors can see spectacular views of Mtirala Mountain with its intact forest ecosystems.

The next day, the visitor can take the second route, which runs along the ancient intact beech groves, where there are picnic places next to spring waters.

The scientific observations can be carried on the flora and fauna, as this area is totally pristine forest, where there has been no human impact on the forest.

Photo 7. Mtirala National Park.

The visitors can stop at a picnic place before they continue on the path. There is natural spring water and bathrooms as well, then visitors can continue on the path to see the waterfall and the lake.

The route ends back to the Visitor Center (the visit lasts 4 hours the first day, the second day 3 hours, and an additional path for 1 hour and 30 minutes).

The location of the trail: The trail is located in western Georgia, in the Autonomous republic of Adjara. It is 320 km away from the Georgian capital, Tbilisi. The duration of travelling by car from Tbilisi is – 6 hours and by train-5 hours. The administration of the National Park is located in Kobuleti in the village of Chakviskhevi.

Target audience: pupils, students, scientists and all interested people.

The recommended period for visiting – it is best to visit the area from May through September

The duration of the visit - 2 days

Visitors' necessary equipments: rain coats , sport clothes, rubber boots and drinking water.

Chapter 5.

Kintrishi Protected Areas

Trail 1. - Legends of Colchis Forest

1. General Description of trail

Photo 1. Kintrishi protected area .

The Kintrishi Protected Areas, established in 1959, covers the Kintrishi Strict Nature Reserve and Kintrishi Protected Landscape, which in 2007 was separated from the Kintrishi Strict Nature Reserve. The Kintrishi protected areas are located in the Kobuleti municipality of the Autonomous Republic of Adjara, 360 kilometers away from Tbilisi, in the breathtaking gorge of the Kintrishi which is between the village of Tskhemlovani and Khino mountain.

The lower boundary of the Kintrishi protected area lies at an altitude of 250-300 meters while the upper boundary reaches to alpine pastures. The Kintrishi Protected Areas are situated between the Adjara-Imereti mountain system and the Black Sea. These mountains stop the humid air and they cause the very humid climate of Kintrishi. Throughout the year as much rainfall comes there (3000 mm) as at the sea coast. The average temperature in August is +24°C degrees, in January +4°C degrees. The Kintrishi Protected Areas are characterized by a complex and diverse topography. Most of the territory is characterized by mountains and gorges. The mountainous topography is accentuated by deep gorges. The main water artery of the area, the Kintrishi River, originates from the mountain Khino and flows into the Black Sea near the resort town of Kobuleti. Its runs a distance of 45 kilometers. The other rivers and streams of the area are the Kheknara , the Peranga, the Mamedaghi, the Didghele, the Misanati stream (with a breathtaking 30 meter waterfall), the Bolkvadzes stream and the Chrdila, which are the Kintrishi tributaries .

High up in mountains, 2200 meters ASL, there are two small lakes (Tbikeli lake and Sidzerdzali lake) whose area does not exceed 1.5 hectares. The first lake is within the Kintrishi protected area boundaries, but the second one is outside it, respectively.

Photo 2. Waterfall.

The flora of Kintrishi protected areas is rich with endemic plants of Adjara, evergreen shrubs, ferns and lianas.

Kintrishi protected areas' dendroflora (trees, shrubs) accounts 102 species. 46 species of trees, 4 species of bushes and 8 species of lanas can be found there. The local ancestral plants are Pontic oak, birch, rhododendron, yew, Colchis bladdernut, Ruscus, Caucasian persimmon, and chestnut. Beech forests occupy 7201 acres, chestnut forests occupy 2912 hectares, hornbeam groves cover 496 hectares, Oak trees are found on 389 ha, silver fir and fir trees cover 140 ha, linden trees occupy 40 ha, alder trees take 12 ha, Colchis box-trees occupy 4 ha, cherry laurel trees hold 727 ha, Caucasian Rhododendron cover 172 ha, while pontic rhododendron hold 1611 ha.

Photo 3. Royal fern.

Many interesting plants grow in Kintrishi protected areas: Pontic rhododendron, Caucasian Rhododendron, cranberries, cherry laurel, yellow Azalea, birch, Pontic oak and others.

Photo 4. Alpine zone of Kintrishi protected area.

Photo 5. Flora.

Photo 5. Elder.

The rivers of Kintrishi protected areas are rich with trout. In the lower parts of the river Kintrishi Shemaya and Sazan. It is said that in past times the Black Sea salmons often visited the Kintrishi for spawning.

Three species of lizards and several species of snakes are found in Kintrishi Protected Areas. From amphibians there are southern banded newt, European tree frog, toad, Caucasus frog, marsh frog, as well as grass and water snakes, smooth snakes and the Caucasus viper species.

Ornitopauna (birds) of the Kintrishi protected areas are very rich in birds of prey. Here booted eagles, common buzzards, hawks, falcons, Eurasian Hobbys, common kestrels, as well as night predators such as owls, European scops owls and boreal owl have been documented. Other birds there are Hoopoes, woodpeckers, ravens, blackbirds, Eurasian golden orioles and also such rare birds as the Caucasian grouse and Caspian snowcock.

Small mammals of Kintrishi inhabitants are the mole, least weasel, Caucasian (Persian) squirrel, rabbit, fox, badger, wild cat, and otter.

Deers inhabit the forests of the area, and in higher places, at the border of alpine and sub-alpine zones, there are chamois and wild boar. Predators located there are brown bears and their population is quite stable.

There are species from the Red Book list, indicating their endangered status: the trout, Caucasian salamander, brown bear, otter, Caucasian grouse, Caspian snowcock, Imperial eagle, Peregrine falcon and banded newt.

Photo 6. Lake Tbakeli

The Kintrishi protected areas are located in historical Adjara ("The country of Adjara", " The Valley of Adjara ," as it has been referred in ancient chronicles). In its vicinity St. Andrew Andria began to preach Christianity in the first century. There are the ruins of medieval arch bridges in the areas.

Of the historical monuments around the area noteworthy is the Khinotsminda church near the village of Didvake, Elia castle near the village Achkvistavi and Mamuka castle near the village of Alambari.

During archaeological excavations even more ancient monuments before Christianity have been discovered.

Archeologists have found the ruins of old Colchis dwellings from the III-II millennium BC and iron mines. In the villages of Khutsubani and Kobuleti which are on the right bank of the river Kintrishi, early Neolithic flint and obsidian tools have been found.

The Kintrishi protected areas are very suitable areas for the development of tourism. It is located just twenty kilometers from the resort town of Kobuleti, where there are numerous hotels, restaurants and small family hotels. It is possible to arrange marine, ethnology, ecology, and bird watching tours in the protected areas.

It's only 20 km from Kobuleti to the first point of the trail, where minibuses go every day. It is also possible to get there by bike.

Photo 7. Trail map.

2. The main description of the sites along the trail.

At the beginning of the trail we start visiting arched bridges with important cultural heritage. On the way to the visitor's center it is possible to get a sulfur bath. Then visitors can see some houses where the local population still continue to live despite the fact that they are far away from the village center. At the entrance of the protected area visitors can see Tskhemlvani arch bridge. To the right of the entrance there is a place for picnic and resting, where visitors can rest and then start visiting the untouched beauty of nature, the natural environment and observe endemic species. In certain spots on the tourist trail, visitors will have the opportunity to see historical monuments.

Photo 8. Arch bridge.

The Sulfur bath is located on the path, which is characterized by thermal, sulfur, chloride, sulfate, sodium and calcium compositions. Local residents and tourists still use thermal water bath for medical treatment. Geological studies of the bath have not been done but according to local residents it is used for skin diseases

Geological studies of the baths have not been conducted, however, local residents say the population has historically used the bath for treatment of skin and gastrointestinal diseases. Taking a bath is recommended for 10 days to see results.

Photo 8. Sulfur bath.

The history and legends of the area are things of interest for tourists. It was an integral part of Colchis culture. This has been confirmed by accidentally discovered artifacts and monuments. The proof is a trapeza (dining hall where monks and pilgrims gather for food and conversation) built on stone column on the top of mount in the village of Tkemakaravi. According to the findings of Kalota (Skhaltistskali gorge) it has been established that the place was used as a place of sacrifice for the weather cult of Lazare.

Compared to Kaloti, Tkemakarevi's trapeza is older, originating in the first millennium BC. Remains of megalithic culture (stonemen) are also found in the neighbouring Chvanistskali Gorge which indicates the existence of a West-Georgian culture.

However, a higher level of consolidation of the Georgian civilization and its subsequent rise is connected with the IX-X centuries, when the construction of a unified Georgian state starts.

At this time in Adjara and in the whole Tao – klarjeti construction of bridges started which was as a result of economic development. Main purpose of building bridges was to connect trade and

military strategic ways. In this case the road went to Khino and Chvana gorges and then towards Samtskhe-Javakheti Shavshet-Imerkhevi and Artanuji directions.

There are three bridges in Kintrishi protected area: Varjanauli, Tskhemvana and Kobalauri. All three of them are organically combined with the environment. They are fairly large structures, wide and high with a semi-circular outline. They are built with stone using limestone. The art of their construction is similar to the architecture of South - West Georgia, Tao - Klarjeti and Eastern Chaneti. These regions were unified under Georgian political and cultural space, which had the greatest influence on the Middle East at that time. This rise was particularly noticeable in the 11-12 centuries, when the so called Oriental Renaissance Era comes to Georgia. At this time, two centuries earlier than in Europe, humanist ideas were spread in Georgia and the main symbol of it was Shota Rustaveli's works. The representative of Georgian Renaissance was an Adjara resident Abuseridze Tbeli (13th century) who two centuries earlier before introducing the Gregorian calendar discovered the mistakes that existed in Julian calendar.

Photo 9. Arched Bridge

The village of Khino is an interesting historical place. It is located in Khinostskali or in Kitrishi gorge (Kintrishi could have been an ancient Zanuri name, there is a Greek equivalent of it Akinase). A strategic road to Adjaratskali gorge went from Talakha. This road was controlled from Elia fortress on the mount Elia near a village Chakhati. According to a folk legend it was built by Ali Tsetskhladze, a slave trader. Although this fact is not proved, it possibly contains some grain of truth because there is Ottoman era housing there. As for the fortress it could be a 13-14 century building. It is interesting that mountain Elia had also a religious meaning. People from different places including Guria came here with candles and prayed in the name of St. Elia even in Ottoman domination period. It was related to the celebration of the old pagan cult Tarosi which could have been remnants of the old times.

Today's Khino, or upper Khino , according to a folk legend, is the same as Salkhino because the Queen Tamar had a feast ("lkhini") there. The Ottomans occupied the village in the 17th century and they destroyed a local church. According to D. Bakradze, they did it again in 1860s. In the eighties of that century there was an earthquake. D. bakradze mentioned that the locals and pilgrimages from Guria came here until 1873, prayed there and made a sacrifice. He mentioned 300 households in Khino. According to Z. Chichinadze in 1877-1878 years, after Russian - Turkish war 40 of them left the village and moved to Turkey. In 1919 a village Baratauli resident Emin Tarieladze decided to build a house from the ruins of the church and he invited Laz masters to do it. One day they left the tools and went away for unknown reason. Since then, a broken pot was found in the church which caused doubts about finding treasure by Laz masters. Emin was drowned in the Kintrishi in 1922 and people considered it as a punishment of his blasphemous behavior.

On the Tbiskeli Mountain near Khino there is a place where according to folk legend lived an animal at the lake which fought against a bull every day. The bull came back tired every day, which drew the attention of his owner, blacksmith Gola dede Makharadze and with other villagers followed the bull one day. As he saw the situation, he put his sharp knife on the bull's horns. After it the strange animal didn't appear. The people decided to try and find the animal. But after every try there was a heavy rain which prevented them from drying the lake. They thought it was God's anger and they stopped doing it. Similar legends are preserved in other places, for example, in the village of Matskvalta of Shuakhevi Municipality.

In Khino, on Irmikeli Mountain there are stone men, which are called "sidzerdzla". According to legend, they are people from weddings who were turned into stones. According to the same legend the son of Karchkhali Mountain was engaged to a daughter of Gvantsa Mountain, but the latter got married to Khino. Offend, Karchkhali Mountain asked the God to turn them into stones, which was done in Irmikeli.

A Georgian church stood in Khino during the Georgian Renaissance, an important confirmation of which is Saint John Church of Khinotsminda.

It is located on the right bank of the Sakirisgheli (a tributary of the Kintrishi river). Vakhushti Bagrationi wrote: "Khino is a church with dome, on a good place. A bishop is there who is in charge of Khinostkali until south of Chorokhi." D. Bakradze, who saw the statue in 1874, describes the temple without a dome and refers to it as a hall type church. Unfortunately, the church has been destroyed but according to the size it is clear that it was a pretty big construction. Originally it had a three-nave basilica form and was built in IX-X centuries. The reconstruction of the church continued and this was confirmed by findings sculptures of men's heads during the clearance works of southern part of the church. According to stylistic analysis they probably are from the X-XI centuries.

The IX-X centuries was a period when the process of creating a united Georgian state went on. A western Georgian state Abkhazian Kingdom took an active role in the process. They tried to escape from Byzantine political and spiritual influences that were against creating a united Georgian state. A reflection of this trend was moving the country's coastal area Episcopal centers further inland in the country's territory. During this period they founded in the VI century Petra (today's Tsikhisdziri) the episcopacy to Khino. After that, the diocese was actively involved in the spiritual life of the country until the Ottomans annulled it in the 18th century.

Walking along the trail, visitors can see a unique Colchis forest with 100 years old beech trees.

Beech (lat. Fagus) is a genus of eleven accepted species of deciduous trees in the family Fagaceae.

Oriental beech, sometimes known as eastern beech (Fagus orientalis Lipsky), grows in Georgia. It reaches height of 30-40 meters. In rare instances, trees up to 50 meters in height can be found. The plant is powerful with smooth gray bark and risen trunk. Beeches create highly dense, cohesive and shady groves. Oriental beech is found between 200 m and 2300 m above sea level. It is the main creator of forest in Georgia. On the upper borders vertical distribution of the forest trees grow in the bent and crooked forms. The wood color of oriental beech ranges from reddish to white. It has the best physical and technical properties; it is very resistant to water. Seeds are rich in edible oil. If seeds are dried and ground into a powder they can be used to make bread and cakes. The seeds also contain alkaloids. The fruit is used to feed domestic animals. Oil can be made from it. In the beech forests visitors can see 400-500 years old yew trees. From woody plants close to the Convent and nearby areas old beech grove mix with chestnut, hornbeam and alder trees. Fragmentarily there are places with beautiful views of the gorge, its location, groves bound like a crown. There are cranberries and rhododendron and red soil is scattered through the area.

Photo 10. Beech

It is interesting to see Colchis box tree groves, which are located in a gorge of a small river Murghmi. Since 1990 the place is actively used for baptizing citizens. The place is distinguished by the fact that there is the Murghmi waterfall, which is a famous and very spectacular creature of nature. The Colchis box tree grove consists of 8-10 meters of evergreen bushes and rarely a 15 meter high trees. In eastern Georgia Colchis box trees grow around churches and their ruins as wild plants. The tree grows in moist mountain valleys and gorges in deep calcareous soils. Its habitat reaches up to 1700 m ASL. Colchis box trees often create groves. It is also found in deciduous forests. They are slow-growing evergreen shrubs and they live for 500-600 years. They produce fruit when they are 40-60 years old. It's hard and heavy wood outwardly

resembles ivory. It is a very beautiful plant with smooth leaves. Pink paint is produced from box-tree branches and wood. It's leaves and bark infusion is used in medicine, which contains alkaloids. There is 37% of oil in its seeds. Wood is heavy and even dry sinks in water. Musical instruments, boards for engraving and other materials are made from the wood. The plants flowers have a sweet smell.

Photo 11. Colchis box tree grove

The best Colchis box trees were cut down in the XIX-XX centuries. This rare relic is included in the Red Book list of Georgia. They cover 5 ha on the territory in the Kintrishi protected areas. In the lower zone (500-600 m ASL) of the area, in mixed subtropical forests, in chestnut (1000-1200 m. ASL) and beech forests they are found in small areas.

It is nice to see beautiful chestnut groves. Chestnut (Lat. Castánea) is a genus (Castanea) of eight or nine species of deciduous trees and shrubs in the beech family Fagaceae. It is widespread in some parts of Georgia, especially in Kolkheti. It is uncommon in East Georgia (Likhi Ridge, The Kakheti Caucasus). It creates chestnut groves and mixed broad-leaved forests. The trees can be found at altitudes between 200 and 1000 metres above sea level. They are in areas where the winter temperature is 0.3 ° C, in summer within the range of 18-22 ° C and rainfall exceeds 700 mm. Chestnut wood is hard and durable. It is used in in the manufacture of furniture and in building houses.

Bark and seeds are rich in tannic substances and is used in painting. The fruit is delicious. It is a sap producing plant. Due to improper usage and exploitation its habitat has been reduced, so it is included in the Red Book list of Georgia.

One place along the trail is an alder grove. Alder is the common name of a genus of flowering plants (Alnus) belonging to the birch family Betulaceae. Alders are deciduous, and the leaves are alternate, simple, and serrated. In some places they grow in shrubs (in Georgia it only grows as trees). There are two species of alder trees in Georgia: Black alder or alder (Alnus barbata)'s height ranges between 30 and 38 meters. It has scared dark gray bark with bare leaves. It has spread everywhere in Georgia except Javakheti. It grows in plains and reaches an altitude of 1800 meters ASL and is found in mixed leaves forests. They create an alder forest on swampy, alluvial and podzolic soils. They are light and moisture loving plants, and partly heat lovers. They grow rapidly. As the wood is soft, flexible, somewhat light, it can be easily worked on as well as split. It is also valued furniture making, wood cuttings, clogs, pencils and bowls.

Grey Alder (Alnus incana)'s height is between 15 and 18 meters. It has smooth bark. The leaves are matt green, or ovoid. It is spread everywhere in Georgia. They grow in beech and mixed leaved forests, mainly along mountain gorges at an altitude of 1500-1900 m. *Alnus incana* is a light-demanding, fast-growing and frost resistant tree that grows well on poorer soils. They can be found along the river banks. They live up to 50-60 (rarely up to 100) years.

Alder is reproduced by seeds. Cone infusions are used for curing gastro - intestinal diseases and sometimes it is used as against bleeding. In early spring it is also used for feeding bees mixed with sugar.

The next point of the trail is yew tree, an ancient relic that serves as a unique monument of nature. It is everywhere, including Georgia, the object of special protection. It is included in Red Book of Georgia list. Currently, worldwide there are 8 species of yew trees and a special attention is paid to a kernel yew trees. Their hard seeds are situated under red colored shells. They are the only trees from coniferous species, whose fruits are not cones. Separate groups of yew trees and forests are spread throughout Georgia. Yew trees grow extremely slow gaining just 2-3 mm per year. In 10 years they grow barely one meter high in the most favorable soil

conditions. The needles stay on the tree for 8-10 years. In Georgia yew trees grow up to 1500 - 1800 meters above sea level. Except the fruit all the parts of the yew tree are toxic. Needles contain essential oil and a poisonous substance, which can be toxic to animals.

Photo 12. Yew Tree.

Yew trees can reach 400 to 600 years of age. Some researchers believe that the tree can reach up to 2000 years. It is a small- to medium-sized evergreen tree, growing up to 25 meters. The thickness sometimes exceeds 1 meter. The world's largest natural yew tree forest is in Batsara Valley (Batsara Reserve, Georgia). They cover 236 ha. There are 18-20 meter of height and 50-60 cm thick yew trees with the age of 750-1000 years in the area. Yew tree bark is hard and dense. Due to the color of the bark the tree sometimes is called a red tree. In fact, the wood is fungus –resistant, never decays and almost never changes its color. In old days they used wood to make sarcophagus, precious objects, bows and buildings. Yew tree is a valuable material for constructing parks. The largest yew tree of Georgia is in Adjara with the height of 32.5 m, a diameter of 1.2 meters. There are three very big natural yew tree plants on the Kintrishi protected area. Scattered small groups and single yew trees are found in the area. Total number of them is 75-80. Their height is approximately 15 meters and their diameter is 12 cm average.

Before moving to other spots of the trail visitors have the opportunity to visit a monastery complex of Tskhemvana with a church, a chapel and a refectory. Two nuns permanently live in the convent, where you can hear the prayers.

Photo 13. Monastery Complex of Tskhemvana

It is also important to visit the houses of local people in the village of Khino and get familiar with their traditions. The mass relocation of the entire population of Khino gorge gradually started in 1950 and continued up to 1960s. The people were moved to Tsetskhlauri, Khutsubani, Ochkhamuri settlements of Kobuleti municipality. Local people didn't leave their places permanently and they continue to live there from May to September. There they feel well and engage in individual farming; in particular, bee-keeping is quite well developed. Walnuts, nuts and other fruit trees grow well there and give good fruit. Also it is important to mention grape plants , especially "Adesa" which have been around for more than 200 years.

Photo 14, 15. Beehives.

It is very important for visitors to attend a traditional characteristic of Khino: honey production, the process of making honey vodka, and a variety of fruit collection process. They can also buy local natural products. Within the Kintrishi protected area up to 15 families live permanently. Their main activity is beekeeping. Along the trail on the river Kintrishi still there is an iron (pedestrian) bridge where four houses are abandoned and people come there for leisure. A small island splits the river into two parts. Alder trees grow on the island which creates a peculiar beauty.

Photo 16. Old Wooden House.
Photo 17. Old wine vessels.

The Kintrishi protected area is rich in animals and birds**.** Brown bears, wolves, lynxes, roe deers, chamoises, hares, badgers, martens, foxes, squirrels, and wild boars inhabit the area. Mountain eagles are found in the upper mountainous zone. There are native Lesser Caucasus

Caspian snowcocks and grouses. In the rivers trout and salmon can be found. Southern banded newt and Caucasian salamander also can be found in the area. Video surveillance areas are located in various places of the area to monitor the forest inhabitants. It is also possible to see some of above mentioned animals such as deers, bears, birds and others.

The location of the trail **-** The trail is located in western Georgia, in Adjara Autonomous republic, 360 km away from the capital of Georgia, Tbilisi. The duration of the journey by car from the capital is 6-7 hours. And by train it usually takes 6 hours. The administration of Kintrishi protected areas is located in Kobuleti (#4 Leselidze Street).

Target audience: pupils, students, scientists and all interested people.

The main theme of the tour **-** Hiking trail (cars can be used) from the first point of the tour, Kobalauri Arch Bridge with total length of the route 28 km. Duration - 2 days. A resting place – Khino.

The recommended time of visiting – the best period for the visitors to visit the trail is from June 1 - September 30 (4 months) because the tourists will be able to see Colchis floristic environment and meet with local residents who produce agricultural products and bring their beehives seasonally in the area.

The duration of the visit – 2 days; if visitors use cars, it is possible in a single day.

Necessary equipment for visitors – a hat, hiking boots and drinking water.

List of references

The back cover

Contact Information :

Black Sea NGO Network (BSNN)
Emma Gileva
Regional Project Coordinator
2 L. Zamenhof St.
Varna , Bulgaria
Phone : +359 52 615 856
Fax : +359 52 602 047
bsnn@bsnn.org
www.bsnn.org

Black Sea - Eco Academy (BSEA)
Maya Ochigava
National Project Coordinator
51 Rustaveli Ave
Batumi, Georgia
Phone : +995 5 99 999 504
intertrails@yahoo.com

www.trails.bsnn.org

Photos are provided by the Agency of Protected Areas and the Department of Environment and Natural Resources of Adjara.

Project "Interpretative Trails on the Ground – Support to the Management of Natural Protected Areas in the Black Sea Region" (Inter Trails)

This guide has been edited by the Black Sea Eco Academy.

Release Date : June 25, 2013

This publication has been produced with the financial assistance of the European Union. Its contents are the sole responsibility of the Black Sea NGO Network and the Black Sea Eco Academy and can in no way reflect the position of the European Union.