COUNCIL OF EUROPE

CONSEIL DE L'EUROPE

Strasbourg, 18 August 2017 **T-PVS/Files (2017) 21**
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CONVENTION ON THE CONSERVATION OF EUROPEAN WILDLIFE
AND NATURAL HABITATS

Standing Committee

37th meeting
Strasbourg, 5-8 December 2017

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Other complaints

Possible threat to "Svaneti 1" Candidate Emerald Site (GE0000012) from Nenskra Hydro Power Plant development (Georgia)

- REPORT BY THE COMPLAINANT -

Document prepared by
the Green Alternative (Georgia) and the Balkani Wildlife Society (Bulgaria)

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31 July 2017

COMPLAINT NO. 2016/9 - POSSIBLE THREAT TO "SVANETI 1" CANDIDATE EMERALD SITE (GE0000012) FROM NENSKRA HYDRO POWER PLANT DEVELOPMENT (GEORGIA).

Balkani Wildlife Society was asked to support with biodiversity expertise Association Green Alternative, complainant of Complaint No. 2016/9 - Possible threat to "Svaneti 1" Candidate Emerald Site (GE0000012) from Nenskra Hydro Power Plant development (Georgia). Balkani experts have carried out biodiversity surveys in the areas of the planned Nenskra Hydropower Project and Adjaristsqali Hydropower Project in June 2016, October 2016, April 2017, July 2017.

In light of Balkani's findings, presented below and in the attached reports, we would like to ask the Bureau of the Standing Committee to the Bern Convention to include the Complaint No. 2016/9 on the agenda of the next Standing Committee of the Bern Convention with proposals to:

1) Open a file and send recommendations to the Georgian government to stop the development of the Nenskra project until Georgia will not provide evidence to be ready and willing to protect the precious candidate Emerald site and to involve local people in decision making.

2) Send a fact finding mission in 2018, which should research the mismatch of information that complainants provide, on one side, and the Georgian authorities, on the other side.

Our information shows a severe infringement of Article 4 of the Bern Convention: "*Each Contracting Party shall take appropriate and necessary legislative and administrative measures to ensure the conservation of the habitats of the wild flora and fauna species, especially those specified in Appendices I and II, and the conservation of endangered natural habitats*" regarding the following species:

Eurasian otter, Eurasian lynx, brown bear, Persian leopard, West Caucasian tur, booted eagle, Caucasian snowcock, Caucasian grouse, green sandpiper, red-breasted flycatcher, Caucasus Chiffchaff, green leaf-warbler, Dinnik's viper, several fish species

And natural habitats:

Caucasian *Fagus* forests, Riverine scrub, Continental humid meadows, Montane river gravel habitats, Unvegetated river gravel banks, Moist or wet tall-herb and fern fringes and meadows, Ponto-Caucasian montane *Alnus* galleries, Euxinian ravine forests, Nordmann's fir forests.

We believe that this is a priority case as Nenskra project promoters have approached for financial support several International Financial Institutions which have committed to apply the Bern Convention and EU substantive environmental standards (Habitats Directive, Birds Directive, Water Framework Directive). In September two banks – the European Bank for Reconstruction and Development (EBRD) and the Asian Infrastructure and Investment Bank (AIIB) – are due to make decisions on financing, which if positive will result in the prompt start of construction activities. Meanwhile, a lot of exploratory and preparation works are being carried out, causing already adverse impacts on the environment and preventing local communities' traditional land use.

We would also like to stress that this a case not only of general violation of article 4 of the Bern Convention, but also a case where the Nenskra project is located in territories removed from the "Svaneti 1" candidate Emerald site (GE0000012) without any scientific biological or environmental justification. The Georgian Government has disregarded the procedures for evaluation of sufficiency of the proposed Emerald sites as adopted by the Standing Committee in 2013 (T-PVS/PA (2013) 13), when in February 2016 (a month after a meeting with the project promoter) it changed the borders of the site without any scientific proof. There are no conservation plans for these territories as they were also removed from the proposed new national park (Svaneti Protected Area) leaving no alternative for local people, such as sustainable tourism development. The Chuberi and Nakra communities have

signed a Collective statement regarding the Nenskra hydropower plant with more than 300 signatures against the project.

Last but not least we have proved significant impacts of other HPP in Georgia during construction phase that we expect to happen also in the Nenskra case.

Please find enclosed the following documents when deciding how to proceed with the case on the Nenskra project:

1. Review of key biodiversity and environmental problems of Nenskra Hydropower Project (June 2017). Report ordered by Association Green Alternative, prepared by BALKANI Wildlife Society. 15 pp.
2. Report on the importance of the territories excluded from the "Svaneti 1" candidate Emerald site (July 2017). Report ordered by Association Green Alternative, prepared by BALKANI Wildlife Society. 14 pp.
3. Report on environmental problems of Shuakhevi Hydro Power Plant, Adjara, Georgia. Report ordered by Association Green Alternative, prepared by BALKANI Wildlife Society. 13 pp.

David Chipashvili - Association Green Alternative (Georgia)

Andrey Ralev - Balkani Wildlife Society (Bulgaria)

REPORT
ON THE IMPORTANCE OF THE TERRITORIES EXCLUDED FROM "SVANETI 1" CANDIDATE EMERALD SITE

commissioned by Association Green Alternative, Georgia
prepared by BALKANI Wildlife Society, Bulgaria

Andrey Ralev, Elena Tsingarska-Sedefcheva, Kostadin Valchev, Simeon Arangelov, Andrey Kovatchev

July 2017

INTRODUCTION

Balkani Wildlife Society were asked to support with biodiversity expertise Association Green Alternative, complainant of Complaint No. 2016/9 - Possible threat to "Svaneti 1" candidate Emerald site (GE0000012) from Nenskra Hydro Power Plant development (Georgia).

The area of the Nenskra Hydropower Project (Nenskra HPP) is included into the adopted Emerald site GE0000012 "Svaneti 1". The first compilation was done in November 2010, adoption as ASCI was done at the biogeographical seminar held in Tbilisi on 27- 29th of May 2015.

In January 2016 the Georgian Government amended borders of the site GE0000012 "Svaneti 1" and significantly reduced its area to 37 930 ha – more than 5 times less than its initial size. The whole project area was excluded from the site. The Resolution 4 habitats assessed with insufficient major (IN MAJ) and insufficient minor (IN MIN) are excluded and also key habitats of the 3 species of mammals already evaluated during the seminar are excluded. Such amendment of the site borders violates the procedures performed according to the document T-PVS/PA (2013) 13 of the Standing Committee of the Bern Convention and makes them meaningless.

Authors of the Environmental and Social Impact Assesment of Nenskra HPP and the Supplementary Package claim that "*habitats present in the area are not considered to be highly threatened or unique ecosystems*" and that "*habitats present had been subject to grazing and logging; leading to degraded habitats*".

The purpose of the current document is to give additional data on the importance of the Nenskra and Nakra valleys and to prove that the reduction of the Emerald site area was done without any scientific biological or environmental justification.

METHODS:

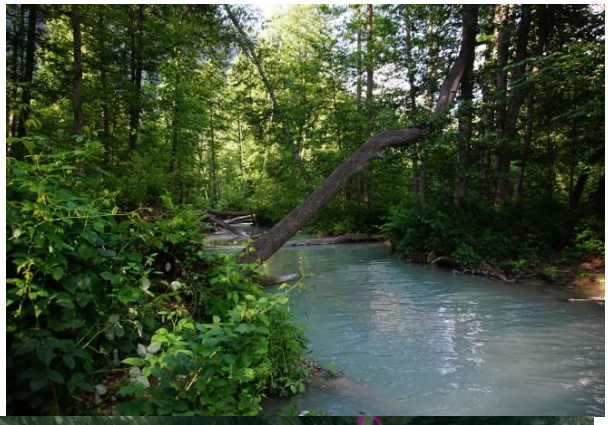
Experts of Balkani Wildlife Society carried on biodiversity surveys on bird species, mammal species and natural habitats in the areas of Nenskra and Nakra valleys, Upper Svaneti, Georgia in June 2016, October 2016, April 2017, July 2017. Field surveys were complemented with literature review and questionnaires with people who visit the natural habitats regularly for determining the relative number of mammals and fish and aquatic fauna in the most favorable habitats for them and for identifying threats to their conservation.

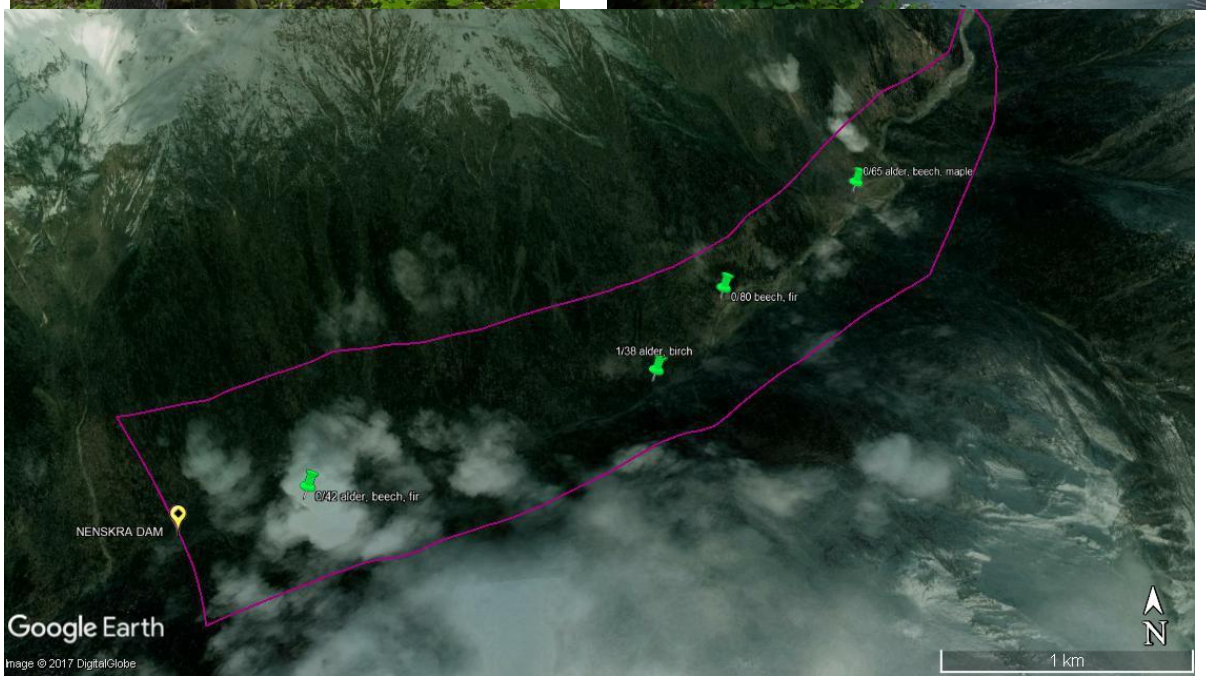
RESULTS AND CONCLUSIONS:

Forest habitats:

A total of 4 plots 30x30 meters were studied in the area of the Nenskra dam and 2 in the upper Nakra valley. The plots were selected randomly close to existing roads or paths as these are the areas were logging was possible in the past. In 5 of the plots there was no logging. In only 1 plot there was a single cut alder tree (64 years old). Big percentage of forests are old-growth or even pristine, especially in the Nenskra dam area.

Plot №	Main tree species	Total trees	Cut trees	EUNIS Habitat
1	Alder, beech, fir	42	0	G1.127
2	Alder, birch	38	1	G1.127
3	Beech, fir	80	0	G1.6H
4	Beech, alder, maple	65	0	G1.6H
5	Beech, chestnut	32	0	G1.6H
6	Alder	45	0	G1.127

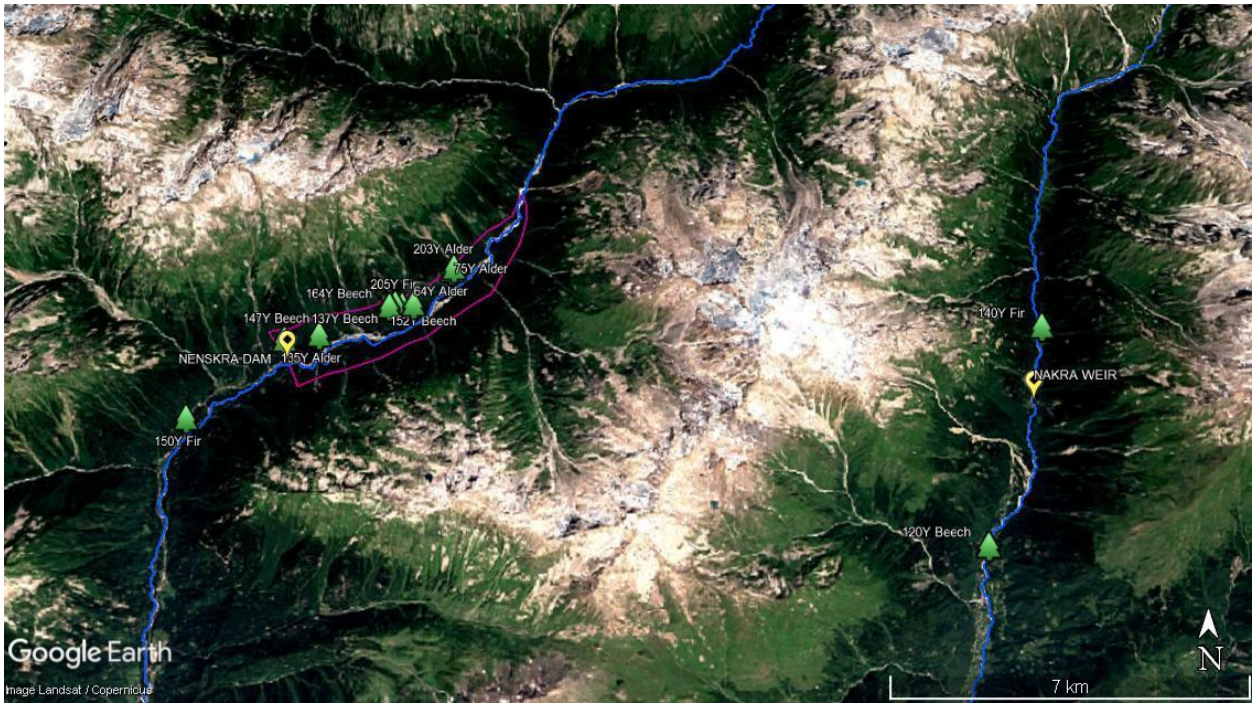




A total of 12 trees logged were examined. Most of them were cut in the last 2 years during construction of new roads for the Nenskra HPP.

Tree №	Area	Species	Age (years)
1	Nenskra bellow dam	Caucasian fir	150
2	Nenskra dam	Oriental beech	147
3	Nenskra dam	Caucasian alder	135
4	Nenskra dam	Oriental beech	152
5	Nenskra dam	Oriental beech	164
6	Nenskra dam	Oriental beech	137
7	Nenskra dam	Caucasian fir	205

8	Nenskra dam	Caucasian alder	64
9	Nenskra dam	Caucasian alder	203
10	Nenskra dam	Caucasian alder	75
11	Nakra bellow weir	Oriental beech	120
12	Nakra above weir	Caucasian fir	140
		Average age:	**141**



Most of the trees in the Nenskra dam site die because of natural causes leaving enough deadwood for wildlife (and firewood for local people). This is an unique ecosystem not found in Europe anymore.

CONCLUSION:

The Nenskra and Nakra valleys still hold some of the most representative forests in Svaneti and Georgia. Large areas are covered by pristine and old-growth forests inaccessible for logging. Access to the upper parts of the valleys is restricted by rivers, avalanches, landslides, rock crags and steep slopes not only for vehicles, but often even for horses. The road network is very limited and border areas have played an important conservation role during the centuries.

The only registered logging was close to the roads mainly for the need of local communities (fire wood, building). Even accessible forests are in favorable conservation status - there are no artificial plantations, clearcuts or large-area logging. Selective forestry has been carried on in a sustainable way - taking out individual trees and leaving a multi-age forest. This logging has not negatively impacted on the local, natural, diverse forest ecosystems.

Alluvial forests with *Alnus barbata* in the Nenskra Dam site and along the Nenskra and Nakra rivers and their tributaries are very well preserved with very limited logging. Grazing does not change the favorable conservation status of the habitat as it is extensive and comparably limited number of livestock is grazed.

The ecosystems along Nenskra and Nakra rivers represent unique ecosystems providing optimal conditions for many endangered species and habitats. Typical is very limited human impact – extensive livestock breeding which has has probably lasted for thousands of years and has no significant negative impact. So all (forest) habitats in the Nenskra and Nakra valleys should be included in the "Svaneti 1" Emerald site.

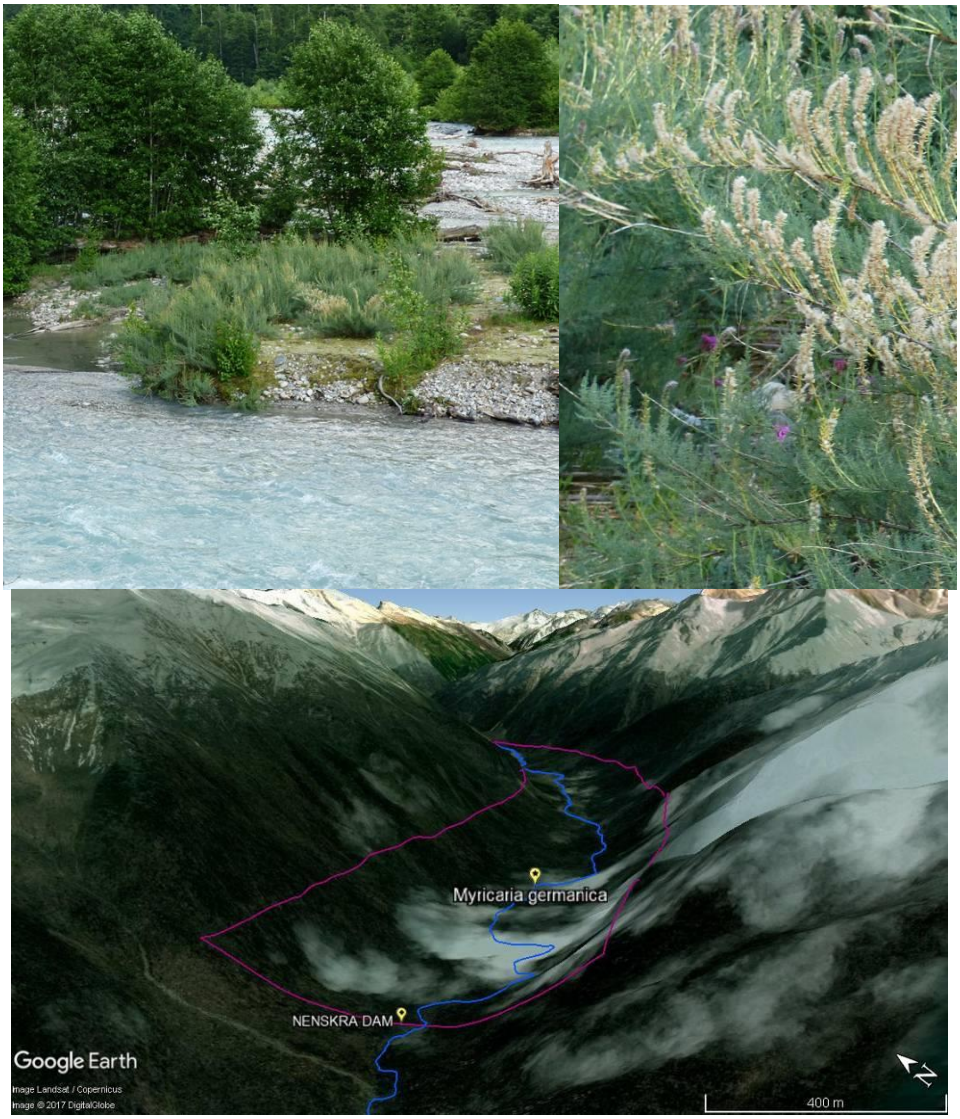
Non-forest habitats:

Transects from 700 up to 2800 meters above sea level were carried on in the Nenskra and Nakra valleys to assess the variety and conservation status of habitats excluded from the "Svaneti 1" candidate Emerald site.

A great variety of riparian, scrub, grassland, wetland and rocky habitats are present in the two valleys (more than 25 habitats from Resolution 4 of the Bern Convention[1]). This is due to the different altitudes varying from 550 to 3996 meters (Shtavler Peak), different terrain, geological formations and rock base. The area is a biodiversity hotspot with many endemic species of plants and animals.

[1] https://wcd.coe.int/ViewDoc.jsp?p=&id=1475213&direct=true

In the Nenskra dam area we discovered the EU Habitats Directive Annex 1 habitat **3230 Alpine rivers and their ligneous vegetation with *Myricaria germanica*** which is a specific subtype of EUNIS habitat F9.1 Riverine scrub[2]. Georgia has an important global role in protecting this habitat and no compensation for its loss is possible.



CONCLUSIONS:

Non-forest habitats in the Nenskra and Nakra valleys are in favorable conservation status with many inaccessible areas or areas visited rarely by border guards and herders. The scale of non-fragmented habitats is huge. If these habitats are excluded the integrity of the Emerald site will be lost.

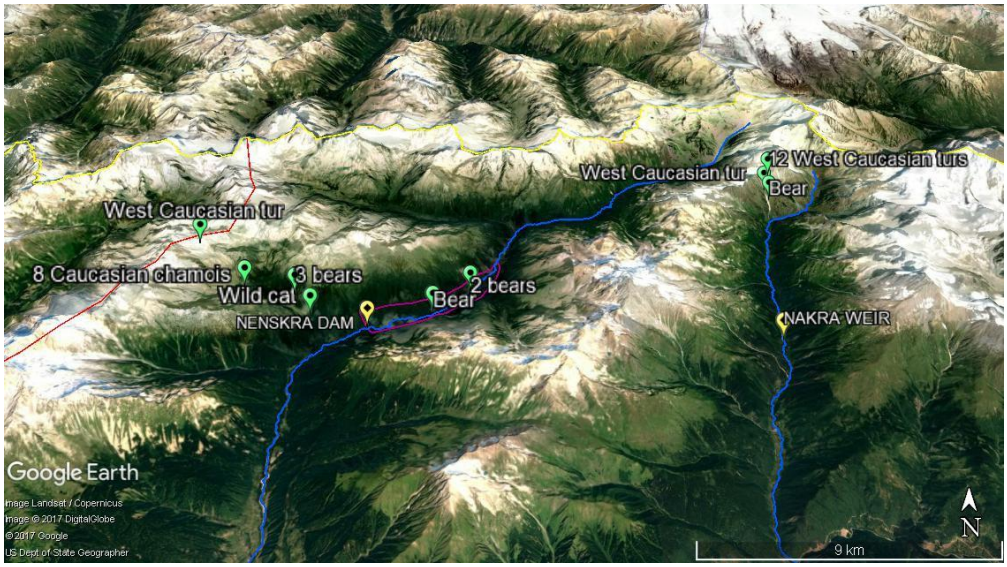
Mammal species:

The following rare and protected species were registered in specialized surveys between 13th and 15th of 2017:

Date	Area	Species	Description
15-07-2017	Between Nenskra and Nakra	Brown bear (*Ursus arctos*)	Scat
15-07-2017	Between Nenskra and Nakra	West Caucasian tur (*Capra caucasica*)	Scat discovered in many areas
15-07-2017	Between Nenskra and Nakra	West Caucasian tur (*Capra*	A group of 12 observed

[2] http://eunis.eea.europa.eu/habitats/10074

		caucasica)	
13-07-2017	Nenskra dam site	Brown bear (*Ursus arctos*)	12 cm wide footprint, female
13-07-2017	Nenskra dam site	Brown bear (*Ursus arctos*)	14 cm wide footprint, male
13-07-2017	Nenskra dam site	Brown bear (*Ursus arctos*)	9 cm wide footprint, young
12-07-2017	West of Nenskra dam site	Brown bear (*Ursus arctos*)	Herdsman
14-07-2017	West of Nenskra dam site	Wild cat (*Felis silvestris*)	Footprint
14-07-2017	West of Nenskra dam site	Caucasian chamois (*R. rupicapra caucasica*)	5 females and 3 young observed for 2 days
15-07-2017	West of Nenskra dam site	West Caucasian tur (*Capra caucasica*)	1 female observed



A total of 13 questionnaires were made with local people that often visit the mountains. All knew there were bear, wolf, West Caucasian tur and chamois in the vicinity of their settlements. Only one person from Mestia was not sure of the presence of lynx. 6 people indicated there was no leopard in their area, 3 didn't know. 4 people had some information about the species. A school teacher said that there was information from more than 10 years of a leopard coming from Abkhazia. A farmer/hunter from Nakra and a herdsman from Chuberi knew of case or cases leopard was seen chasing tur at the Nenskra pass. Another person from Nakra saw huge feline footprints on snow in winter high in the mountains. These were not lynx footprints, as everybody is familiar with them. Specialized surveys with at least 20 camera-traps are needed in order to find proof of the presence of the Persian leopard in Svaneti.

№	Settlement	Date	Bear	Wolf	Lynx	Leopard	Tur	Chamois
1	Nakra	13.7.2017	YES	YES	YES	NO	YES	YES
2	Chuberi/Zgurishi	14.7.2017	YES	YES	YES	YES	YES	YES
3	Nakra	14.7.2017	YES	YES	YES	YES	YES	YES
4	Mestia	14.7.2017	YES	YES	?	?	YES	YES
5	Nakra	15.7.2017	YES	YES	YES	NO	YES	YES
6	Chuberi/Zgurishi	15.7.2017	YES	YES	YES	NO	YES	YES
7	Chuberi/Tita	15.7.2017	YES	YES	YES	NO	YES	YES
8	Nakra	17.7.2017	YES	YES	YES	YES	YES	YES
9	Nakra	17.7.2017	YES	YES	YES	NO	YES	YES
10	Chuberi/Letsperi	18.7.2017	YES	YES	YES	YES	YES	YES
11	Chuberi/Zemo Marghi	18.7.2017	YES	YES	YES	?	YES	YES
12	Khaishi/Lukhi	18.7.2017	YES	YES	YES	NO	YES	YES
13	Becho	18.7.2017	YES	YES	YES	?	YES	YES

The Nenskra dam site was shown by 3 persons as the best place for bears. Bears, bear scats and footprints could be observed an average of 11-30 times per year per person. The same observations for wolf and tur were on average 3-10 per year, lynx - once in 3 years, chamois - 11-30 per year. More than 30 Caucasian grouses could be seen per year.

The questionnaires also showed that attacks on livestock ranged between 1-2 in Mestia and more than 25 per year in the settlements of Nenskra and Nakra valleys. Bears created most of the problems.

CONCLUSIONS:

The habitats along Nenskra and Nakra rivers and surrounding slopes, cliffs and peaks are of high quality for the endemic West Caucasian tur, Caucasian chamois, Caucasian grouse and Caucasian snowcock and for the species preying on them. The registered density is lower than the carrying capacity of the habitats. The main reason for this, according to the interviewees is lack of protection. The low density of ungulates influences negatively also their predators, some of which are very rare and endangered such as Persian leopard.

Poaching by local people and border guards is a problem with estimated 40 to 60 percent of households having a hunting gun in a region where no legal hunting is allowed. Bear is killed for food, to protect livestock and for self-protection. Accidental shooting, leg-hold traps and pursuing of bears in their winter dens are common hunting practices. Illegal hunting carried out by non-local people coming from big cities such as Tbilisi, Zugdidi, etc. was also reported.

Hunting for food of West Caucasian tur and chamois is common in the area. If effective anti-poaching measures are implemented, the populations will quickly recover as there are excellent sub-alpine and alpine habitats for both species which are also very important food base for endangered predator such as leopard, Bearded vulture, etc.

If the Nenskra HPP is built and the Nenskra and Nakra valleys are excluded from the Emerald site and the proposed national park, the large mammal populations will continue to decrease and could lead to the complete extinction in the area of the globally-threatened West Caucasian tur and Persian leopard. Building new roads (maintained year-round) and related facilities for the Nenskra HPP will facilitate the access and increase the poaching, especially by non-local people. Very limited effective management of populations and anti-poaching measures could be implemented in that case.

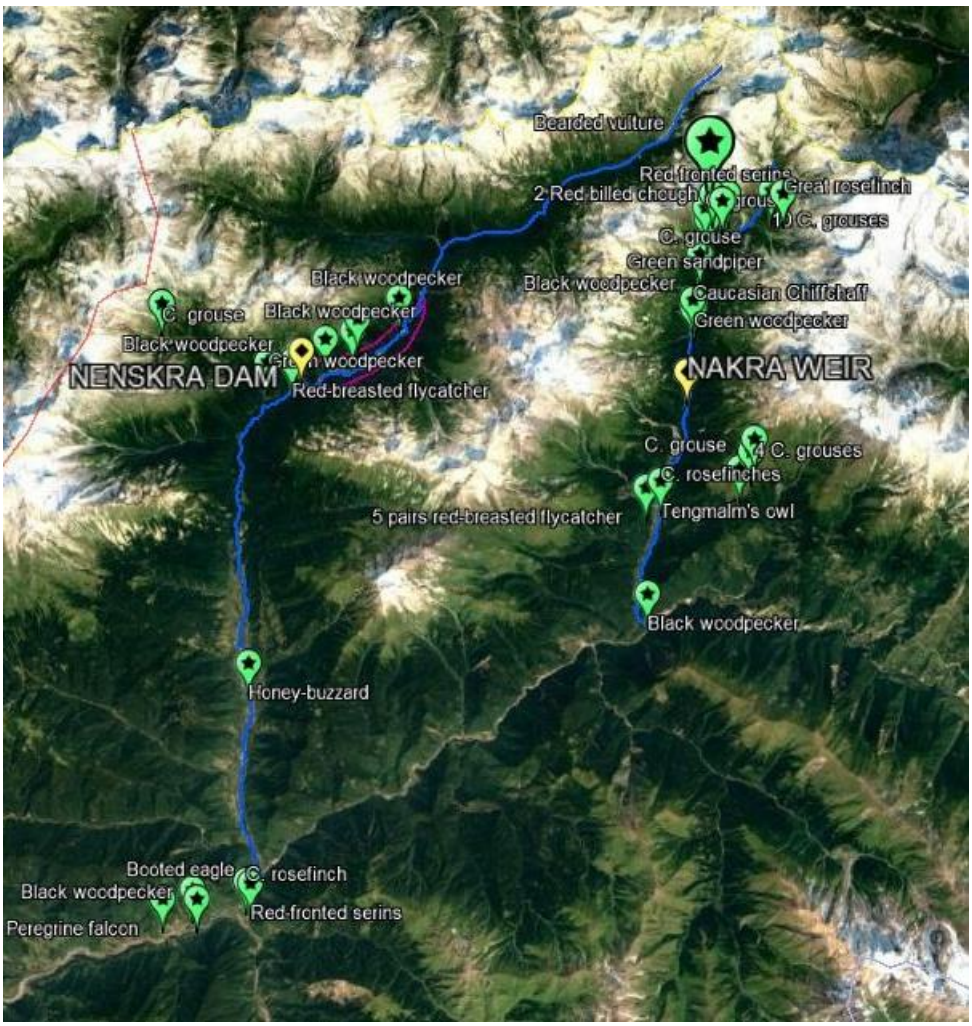
BIRD SPECIES:

A great variety of endemic, protected and rare bird species were registered in June 2016, October 2016 and July 2017. On the 15th of July a bearded vulture (*Gypaetus barbatus*) was photographed between Nakra and Nenskra valley, north of Shtavler peak. We assume it nests nearby as the breeding

season extends after the end of July. The species was assessed insufficient moderate (IN MOD) for Georgia during the Emerald biogeographical Seminar for bird species 1-2 December 2016 in Tbilisi. The territory of this pair should be included in the Emerald network.

Other species with insufficient coverage in the Emerald network in Georgia[3] have important population in the territories excluded from "Svaneti 1" Emerald site: honey-buzzard (*Pernis apivorus*), black kite (*Milvus migrans*), griffon vulture (*Gyps fulvus*), golden eagle (*Aquila chrysaetos)*, booted eagle (*Hieraaetus pennatus*), peregrine falcon (*Falco peregrinus*), black woodpecker (*Dryocopus martius*), red-breasted flycatcher (*Ficedula parva*), Krüper's nuthatch (*Sitta krueperi*). For the booted eagle (spotted by our experts in two locations) more forest sites should be added according to the seminar, taking into account that almost all forests from Svaneti 1 Emerald site were excluded without scientific proof.

[3] https://rm.coe.int/16806f40b0



CONCLUSIONS:

The Emerald network in Georgia is insufficient for protecting the bird species of European importance. For several species a bigger Emerald site in Svaneti is needed if favorable conservation status is to be ensured.

Reptiles:

A single individual of Dinnik's viper was spotted on the 14th July 2017 at 1580 meter above sea level and only 1.6 km west of the planned Nenskra dam. The species is endemic to the Great Caucasus and vulnerable according to IUCN[4]. It was not assessed in the Environmental and Social Impact Assessment of Nenskra HPP, even though the project could have important impacts.

Fish and aquatic fauna:

Fishing for trout is an important food source for local people. More than 80 fishermen were counted by our experts in July 2017 at the Nenskra river, half of them in the Nenskra Dam site. People from all around Svaneti gather at this site, known for being the best in the region. All fishermen claim to catch more than 5 kg of trout in the best days. Fish from the rivers Nakra and Nenskra are important regular food (protein) supply for the local communities with survive in general with very low incomes and producing most of their food themselves (agriculture, livestock breeding, fishing). In another studies case, during the building of Shuakhevi HPP the fish has significantly decreased and even extinct to some part of the river. If that happens to the Nenskra area, this important food source will be lost here, too.

[4] http://maps.iucnredlist.org/map.html?id=23001

Otter is difficult to spot in a big fast-flowing river, but local people with fishponds in Chuberi have seen the species twice. We assume that the species is present in the area, but the population should be studied when water levels are low. Now most of the tracks (excrements) could not be observed due to the high level of the water.

Building of Nenskra HPP will exterminate the aquatic fauna below the dam, weir and tunnel like it happened with Shuakhevi HPP in Adjara, SW Georgia, during construction phase.

REVIEW OF

KEY BIODIVERSITY AND ENVIRONMENTAL PROBLEMS OF NENSKRA HYDROPOWER PROJECT

"Biodiversity Impact Assessment" is a separate volume within the Supplementary Package. As in the case of other parts, assessments are of very poor quality: surveys were made mostly in September 2015 when the period was not appropriate for most of the species, endangered species threatened by enhanced permeability of the habitat were not evaluated at all, no real survey on fish species has been made. A review of key biodiversity and environmental problems follows, taking into account the Environmental and Social Impact Assessment, 2015 (ESIA), the Supplementary Package, 2017 (SP) and the Bern Convention complaint, 2016.

1. EU AND INTERNATIONAL SUBSTANTIVE ENVIRONMENTAL STANDARDS INFRINGEMENTS:

The Nenska HPP does not meet EU and international substantive environmental standards and, subsequently, EBRD and EIB standards.[5]

1.1. The project has already provoked the violation by the Georgian Government of Article 4, point 1 and 2, Article 5 and Article 6 of the Bern Convention. Complaint No. 2016/9 - Possible threat to "Svaneti 1" Candidate Emerald Site (GE0000012) from Nenskra Hydro Power Plant development (Georgia) is being currently assessed by the Standing Committee of the Bern Convention. The construction permit could lead to destroying significant protected habitats and species from Resolution No. 4 (1996) and Resolution No. 6 (1998) of the Standing Committee of the Bern Convention situated in Emerald Site GE0000012 "Svaneti 1" as adopted at the Biogeographical Seminar held between 27th and 29th of May 2015. The Emerald site included most of the Nenskra HPP area - Nenskra River, headrace tunnel, power house, Nakra intake, Nakra transfer tunnel and half of Nenskra Dam and reservoir, as well as most of the roads and transmission lines. **Moreover Georgian Government disregarded procedures for evaluation of sufficiency of proposed Emerald sites as adopted by the Standing Committee in 2013 (T-PVS/PA (2013) 13), when in February 2016 (a month after a meeting with project promoter) excluded from Emerald Site GE0000012 "Svaneti 1" all territories part of Nenskra HPP[6].**

1.2. The project is also an infringement of Art. 4 of the Habitats Directive by using criteria of a non-scientific nature for excluding the area of Nenskra HPP from the Emerald site. The Emerald Network is an ecological network which was launched by the Council of Europe in compliance with Resolution 3 of the Bern Convention adopted in 1998. It is based on the same principles as Natura 2000, and represents its *de facto* extension to non-EU countries[7]. When selecting sites for inclusion in the list (of potential Natura 2000 and respectively - Emerald sites) the states should follow three conditions:

- only criteria of a scientific nature may guide the choice of the sites to be proposed;
- the sites proposed must provide a geographical cover which is homogeneous and representative of the entire territory of each state (...);
- the list must be complete, that is to say, each state must propose a number of sites which will ensure sufficient representation of all the natural habitat types listed in Annex I and all the

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5 "*The EBRD, as a signatory to the European Principles for the Environment, is committed to promoting the adoption of EU environmental principles, practices and substantive standards by EBRD-financed projects, where these can be applied at the project level, regardless of their geographical location. When host country regulations differ from EU substantive environmental standards, projects will be expected to meet whichever is more stringent."* Art. 7. of the Environmental and Social Policy (ESP) http://www.ebrd.com/news/publications/policies/environmental-and-social-policy-esp.html

6 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 121

7 http://biodiversity.europa.eu/topics/protected-areas

species' habitats listed in Annex II to the Directive (respectively Resolutions of the Bern Convention for non-member states) which exist on its territory.[8]

1.3. If the project is carried on it will additionally lead to infringement of Art.6 of the Habitats Directive. It will lead to drastic impacts on 9 habitats and 8 species from Resolution No. 4 (1996) and Resolution No. 6 (1998) of the Standing Committee of the Bern Convention found in Svaneti 1 Emerald site.

1.4. The project could also lead to the violation of Article 8 of the Convention on Biological Diversity by affecting populations of globally endangered species - Western Tur (*Capra caucasica*, endangered species[9]), Persian leopard (*Panthera pardus saxicolor*, critically endangered in the region[10]) and Caucasian grouse (*Lyrurus mlokosiewiczi*, near threatened[11]).

2. ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT PROCEDURE INFRINGEMENTS:

2.1. Construction permit was issued before consultation and evaluation procedures were finalized.

2.2. Construction started in 2016 before biological, geological and social surveys were finalized and the Supplementary Package was issued. The construction works included renovation of existing roads, building of new roads, building of permanent settlements for workers, etc.

2.3. Alternatives for the project design were not evaluated - according to Supplementary Environmental & Social Studies, Volume 2, Project Definition (page 6) "project identification had largely been completed, and elements of the Project fixed (in two confidential documents from 2010 and 2011)". "The objective of the present chapter is not to justify, a posteriori, why the proposed Nenskra HPP is the least-impact alternative to achieve the power production objectives required by the Government. There are other considerations such as politics preference (...) which have - and will - prevail-(ed)". Afterwards in the 2015 ESIA and 2017 Supplementary Studies all environmental and social impacts were evaluated only for Alternative 1: Nenskra Storage and Nakra Diversion Project. This is an infringement of Georgian and EU Legislation as all alternatives should have been evaluated before choosing the alternative that will not have a significant environmental and social impact.

2.4. There were "conceptual changes in the design since the completion of the feasibility study and issue of the 2015 ESIA" with slight modifications of some project parts. No new Environmental Permit has been awarded though.

3. UNCLEAR DESCRIPTION OF THE PROJECT AND OF OTHER PROJECTS:

Even after the Supplementary Package was made public there are uncertainties in the project design, construction and operation, as well as in other hydropower projects, which do not allow to evaluate the environmental and social impacts:

3.1. It is unclear how much water will the project use. Monthly flows of Nenskra and Nakra Rivers are missing. The lack of specific on-site studies has unsuccessfully been compensated by hydrological modeling done as part of the ESIA. If there is no monthly information on the inflow to Nenskra Dam and Nakra diversion tunnel - impact over riparian ecosystems downstream cannot be evaluated.

3.2. Precise description of the operation regime is lacking.

3.3. Any description of Enguri Hydropower Plant is lacking - current operation regime, change in the operation regime expected if Nenskra HPP is built, current impacts on the Enguri River bellow and above the Enguri Dam. In fact there is absolutely no information on the current biological value of Enguri River bellow and above the Enguri Dam.

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8 http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A61999CJ0220

9 http://www.iucnredlist.org/details/3794/0

10 http://www.iucnredlist.org/details/15954/3

11 http://www.iucnredlist.org/details/22679483/0

4 ESIA AND SUPPLEMENTARY PACKAGE OF POOR QUALITY

4.1 Insufficient and inadequate field surveys to evaluate the impacts on biodiversity:

4.1.1. Key species were not evaluated: Persian Leopard (*Panthera pardus saxicolor* , endangered subspecies assessed by IUCN), Caucasian Tur (*Capra caucasica*, endangered species endemic to the western part of the Great Caucasus Mountains), Booted Eagle (*Hieraaetus pennatus*), Red-breasted Flycatcher (*Ficedula parva*), Caucasus Chiffchaff (*Phylloscopus lorenzii*), Caucasian Snowcock (*Tetraogallus caucasicus*), Caucasian Grouse (*Lyrurus mlokosiewiczi*, near threatened species). Fish species were not evaluated at all (except habitat survey of trout), as well as many reptiles, amphibians and invertebrates.

4.1.2. No survey on fish species was made at all - "*Accurate estimation of the population and density of fish within the Nenskra and Nakra rivers is not possible without employing standard quantitative fish survey techniques. One such technique is based upon electrofishing (...) However at the time of survey (2015) electrofishing in Georgia was illegal so could not be undertaken (...) ."*[12] It is obvious that other quantitative techniques could have been used as they were proposed in the Mitigation Strategy: box traps, casting net, fishing rods, trotlines and seine netting.

4.1.3. Key habitats were not evaluated: Riverine scrub (EUNIS code F9.1), Continental humid meadows (EUNIS code E3.46), Montane river gravel habitats (EUNIS C3.552), Unvegetated river gravel banks (EUNIS C3.62), Continental river bank tall-herb communities dominated by *Filipendula* (EUNIS code E5.414), Continental tall-herb communities of humid meadows (EUNIS code E5.423, Euxinian ravine forests (EUNIS code G1.A47). The habitat Ponto-Caucasian montane *Alnus* galleries (EUNIS code G1.127) was only mentioned.

4.1.4. Field surveys were conducted in inappropriate season for many species and habitats. It is stated that "*the investigations were conducted from August to November 2015 and additional surveys in May to June 2016 in the project-affected area. (...) The (May/June) surveys were designed to search for Eurasian lynx and brown bear at a watershed level"*[13]. **Breeding birds were not evaluated at all as breeding season in the Caucasus Mountains ends in June or July depending on the species. Plants flowering in spring/early summer and grassland habitats could not be evaluated according to internationally recognized methodology.**

4.1.5. Geographical insufficiency of the surveys: for many species and habitats only the area of the Nenskra Dam is investigated but not the Nenskra and Nakra valleys above the water catchments (problem with increased accessibility for sensitive habitats and species). The 17 km of Nenskra River (17 km) between the dam and the confluence with Enguri and 9 km of Nakra River between the catchment and confluence with Enguri were investigated very roughly, not taking into account all project impacts: drastic change in hydrological regime and extreme floods, drastic change in temperature, sedimentation and oxygen regime, future change in microclimate (that could lead to change in the vegetation of both valleys). The Enguri River was not surveyed at all.

4.1.6. Lack of quantitative data - there is no data on number of breeding pairs of bird species, areas of river habitats or alluvial forests to be affected, etc.

4.2. False mitigation strategy:

Most of the mitigation, enhancement and compensation measures are not really planned, but additional "monitoring", "inventory", "mapping" and "surveys" are proposed before the on-site measures. This means that the most important impacts of the project on biodiversity are not *de facto* assessed (or have been hidden):

4.2.1. There is no idea how large is the population of the endemic plant *Paracynoglossum imeretinum* that will be destroyed at the reservoir site.

4.2.2. The real value of the habitats is unknown, so additional detailed floristic inventory and habitat loss areas mapping and survey is proposed.

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12 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 103

13 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 5

4.2.3. Monitoring brown bear populations is proposed but no anti-poaching measures.

4.2.4. Only trees which have been certified nest free will be felled during breeding season, but it is unclear what will be the methodology to assess each and every tree. No bird surveys during breeding season were done until now.

4.2.5. Potential effects on downstream biodiversity are not understood. "*After a number of years of operation, the first reservoir sediment flushing operation will be required. As part of the preparation for this event an impact assessment will be performed to understand the potential effects which may occur on downstream biodiversity.*"[14]

4.2.6. Invertebrates sampling for Nenskra and Nakra Rivers, using European Union (EU) standard methods (EN ISO 5667-3, ISO 7828, EN ISO 8689) is proposed for the future, but no base information is available.

4.2.7. A negotiation with the Government is proposed to identify "*conservation project(s) to (part) fund to aid in the creation of the proposed Svaneti Protected Area*". But the protected area boundaries were modified before its creation in order to exclude the Nenskra and Nakra valleys.

5. MOST SIGNIFICANT RISKS FOR BIODIVERSITY:

5.1 Impact on habitats:

5.1.1. Nine habitats of European importance will be affected by the project. From 2% to 12% of the total area of distribution of those habitats in Svaneti will be destroyed or will suffer severe degradation. For more information on the impacts on these habitats see Bern Convention complaint and Appendix 1.

All these habitats should be considered of conservation concern as they are listed in Resolution No. 4 (1996) of the Standing Committee of the Bern Convention. Annex 1 of EC Habitats Directive is still not updated with all Caucasian habitats, so should not be considered. The 9 habitats also contain viable populations of Georgian Red List species - lynx, brown bear, brown trout, etc.

The assessments in the ESIA and SP documents that the "*habitats present in the CHAA are not considered to be highly threatened or unique ecosystems*"[15] and "*the area in which the reservoir is to be located, while forested, has been modified by man and so does not represent pristine natural habitat*"[16] are either a result of poor quality field work or are manipulated. Photos provided in the ESIA , Supplementary Package and Bern Convention complaint clearly show that the project will affect some unique ecosystems - pristine and old-growth forests, natural river and riparian habitats and semi-natural grassland habitats in favorable conservation status because of the sustainable use by local people through the centuries.

5.1.2. For habitat Caucasian beech forests (EUNIS code G1.6H , called in the Supplementary Package Colchic relic broad-leaved mixed forest) in the area affected by the Nenskra Dam stands of old growth forests predominate, because of inaccessible slopes.

14 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 157
15 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 117
16 ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 150

The expected impact of the project will be significant related to direct destruction due to road and dam construction and especially flooding after the dam construction. The direct destruction of the habitat will occupy an area of about 200 ha, which is about 7% of the total area of the habitat in Svaneti. The construction of new roads for the project have already destroyed several hectares of old-growth beech forests.

5.1.3. Possibly the most representative stands of alluvial forests in Svaneti (EUNIS code G1.127 - Ponto-Caucasian montane *Alnus* galleries) will be affected. Large part of the Nenskra Dam area is covered by an unique forest of *Alnus barbata* and the river banks of Nenskra and Nakra Rivers are covered with *Alnus* galleries. Botanical descriptions during the environmental impact assessment procedures didn't show any scientific prove of the degradation of the habitat as stated in the Supplementary Package[17].

5.1.4. Riverine and riparian habitats are not assessed as the impacts over them will be irreversible. Riverine scrub (F9.1, 17,5 ha affected), Montane river gravel habitats (C3.552, 16 ha affected), Unvegetated river gravel banks (C3.62, 60 ha affected) and Continental river bank tall-herb communities (E5.414, 30 ha affected) will be destroyed not only because of the Nenskra Dam, but also over the 17 km of Nenskra River downstream and 9 km of Nakra River because of complete change in hydrological and sedimentation regime. **The mandatory ecological flow for Nenskra River will be only 5% of the average annual flow. For Nakra River it will be 13%.** The impacts on Enguri River habitats up to Enguri Dam should also be significant because of unpredictable operation of Nenskra powerhouse causing floods totally different from natural.

[17] ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 117

5.2 Impacts on plants

5.2.1. One of less than 20 locations in the world where the Georgian endemic Imeretian hound's tongue (*Paracynoglossum imeretinum*) is found would be destroyed at the Nenskra reservoir site. Only one individual plant was found, but this is because of inappropriate survey season. The conclusion that "*the habitat is not considered critical for this species as it is likely to sustain a population less than 1% of the global population*" has no scientific proof.

5.2.2. The Great Caucasian Mountains are a biodiversity hotspot and many other Caucasian endemic plants will be destroyed. No assessment is made.

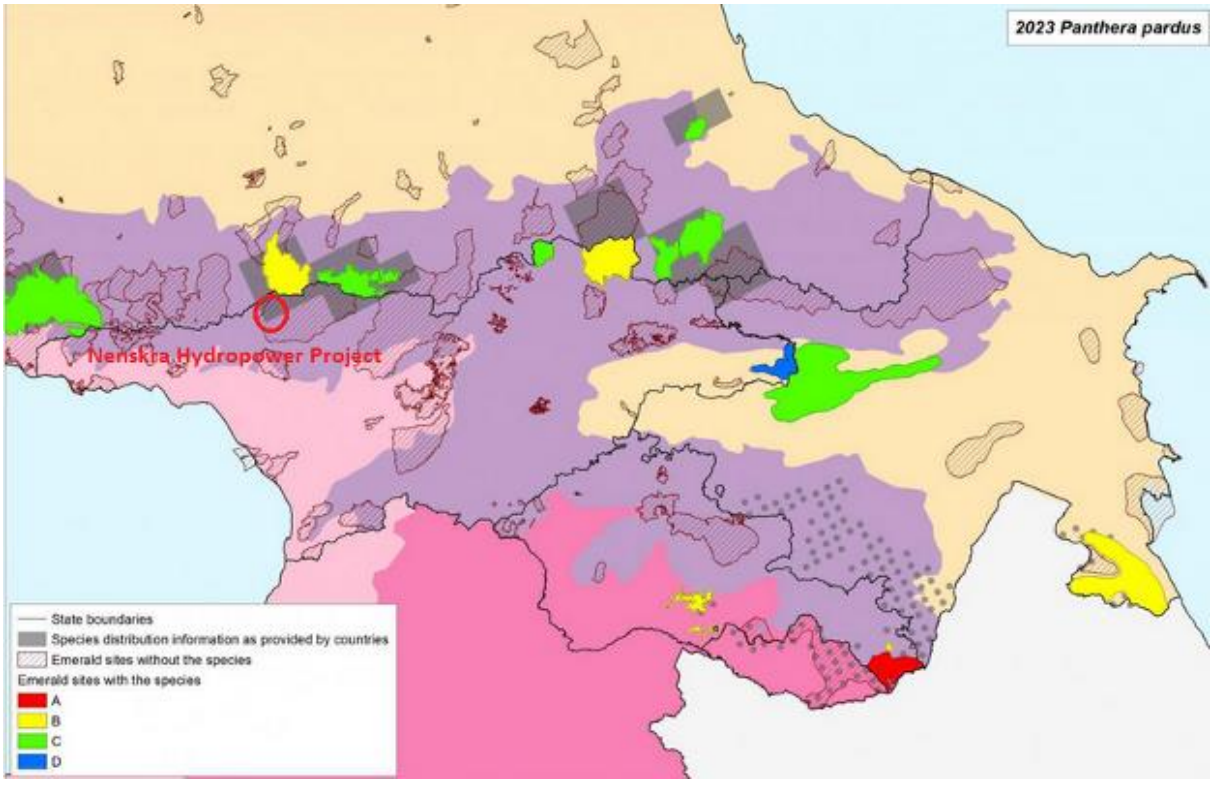
5.3 Impact on mammals

5.3.1. Even with the limited data collected it was proven that the area of the Nenskra reservoir is core area of great importance for the brown bear with as many as 14 signs of the species found in 2015 and 2016. The conclusions that the impacts are not significant are not justified with any scientific methodology and we assume this is made in order not to change the location of the reservoir. No special surveys were made to search for bear, wolf and lynx dens, so there is no proof that reproduction areas for these species will not be affected by the project.

Direct destruction of habitats, increased disturbance and poaching will affect the population in the upper Nenskra and Nakra valleys, our estimation is **for 4-6% of brown bear and 7-10% of lynx population in Svaneti.**

5.3.2. The most significant impact on mammals is the increased permeability of the habitat. New roads will be constructed and existing ones will be rehabilitated. Roads will be maintained all-year-round giving access to the upper parts of Nenskra and Nakra valleys. Permanent human presence associated with the project (500-600 people during construction for 4.5 years, 50-60 people during operation), lack of real control on poaching in Georgia and lack of any anti-poaching measure could lead to the disappearing of two endangered species - the West Caucasian tur and the Persian leopard.

According to data provided by the Russian Federation - the Leopard is present in the Great Caucasus just north of the construction site of Nenskra Hydropower Project:



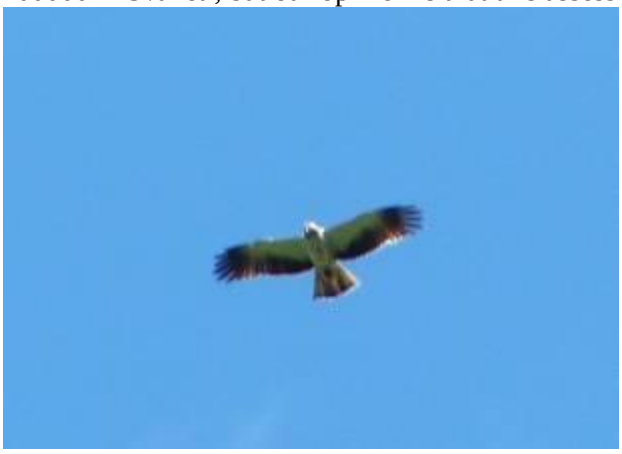
Interviews with local hunters and shepherds from Nakra and Chuberi communities made in October 2016 show that the species is present in the upper Nenskra and Nakra valleys. At least one individual was found dead by avalanche, there was one sighting of a Leopard feeding on Tur carcass and another chasing Tur. The status of the species in Svaneti is unclear, but some of the few Leopards remaining in the Western Caucasus could be threaten after the construction of the Nenskra Hydropower Project by disturbance, poaching and disappearing of the main prey species - Western Tur.

The Western Tur is endemic to the western part of the Great Caucasus Mountains in Georgia and Russia. Listed as Endangered because of a serious population decline, estimated to be more than 50% over the last three generations. The total world population was given at 5,000-6,000 animals by Weinberg (2004), and might now be lower. Approximately 1,000 tur live in Svaneti region in Georgia (NACRES, 2006). Our estimation is that at least 150 animals live in the Nenskra and Nakra valleys, but the numbers could be much higher. The construction of the Nenskra Project could threaten 3-4% of the world population by poaching, disturbance and destruction of winter habitats.

5.4 Impacts on birds

5.4.1. Booted Eagle *(Hieraaetus pennatus)*

1-2 pairs could be breeding in the area to be flooded by the dam. One adult (dark phase) was registered on 06.06.2016 west of the school in Chuberi. One adult (light phase) was registered on 11.06.2016 at the Khudoni dam site, west of Khaishi (see attached photo). The area of the project is suitable for several pairs of the species. The Booted Eagle is assessed with population D in the proposed Emerald site GE0000012 Svaneti, but our opinion is that this assessment is underestimated.



5.4.2. Red-breasted Flycatcher *(Ficedula parva)*

During the fact finding mission on Nenskra Project one breeding pair was registered on 08.06.2016 south of the Nenskra dam site and 5 more pairs on 15.06.2016 in old-growth beech forest west of Nakra village

50 to 100 pairs possibly inhabit the area affected by the project. The area that could be flooded by Nenskra Dam is suitable for 10 to 20 pairs. The species is missing from the Emerald Data Standard Form for Svaneti 1.

5.4.3. Caucasus Chiffchaff (*Phylloscopus lorenzii*)

One of the target species for declaring Important Bird Area 012 Svaneti. Endemic to the Caucasian Mountain. On 09-10.06.2016 five pairs were registered in the Nakra River valley:

On 11.06.2016 two more in the Enguri River valley close to Khaishi. The area to be flooded by the Nenksra dam possibly holds several dozens of pairs.

5.4.4. Caucasian Snowcock (*Tetraogallus caucasicus*)

Healthy population in the Nenskra and Nakra river valleys would be threatened by increased permeability of habitat. According to local people - easy to spot above tree line. In winter descends to lower altitudes, including the dam site. One of the target species for declaring Important Bird Area 012 Svaneti. Endemic to the Greater Caucasus - Russia, Georgia and Azerbaijan. Poaching is a major threat in Svaneti. 2-3% of the population in Svaneti could be affected by the project.

5.4.5. Caucasian Grouse (*Lyrurus mlokosiewiczi*)

This species is listed as Near Threatened species in the IUCN Red Data Book. Healthy population in the Nenskra and Nakra river valleys would be threatened by increased permeability of habitat. On 10.06.2016 at 2100 masl a lek site was registered at the river Nakra with 8 displaying males.

The species is regularly poached but some lek sites have more than 30 males according to local people. The population of Nenskra and Nakra valleys is possibly more than 200 calling males. More than 5% of the population in Svaneti could be affected. One of the target species for declaring Important Bird Area 012 Svaneti.

5.4.6. Green Sandpiper (*Tringa ochropus*)

On 10.06.2016 an adult was registered feeding at the banks of the Nakra River:

This locality is outside the known breeding area of the species.[18] **If a breeding population is proven in the project area it could be the first for Georgia.**

5.4.7. Other endemic subspecies of birds:

The Nenskra Hydropower Project will affect many other endemic to the Caucasus sub-species of birds (registered in June 2016), including: *Picoides minor colchicus, Picoides major tenuirostris, Anthus spinoletta coutellii, Troglodyutes troglodytes hyrcanus, Cinclus cinclus caucasicus, Prunella modularis obscura, Erithacus rubecula caucasicus, Sylvia atricapilla dammholzi, Aegithalos caudatus major, Parus ater michalowskii, Sitta europaea caucasica, Certhia familiaris caucasica, Carpodacus erythrinus kubanensis, Carpodacus rubicilla rubicilla, Pyrrhula pyrrhula rossikovi, Garrulus glandarius krynicki*:

5.5 Impacts on fish species

5.5.1. ESIA and SP documents do not provides any scientific proof that there is only one fish species in the Nenskra and Nakra Rivers while drafting such conclusions. "*The aquatic biodiversity survey had to rely on a habitat assessment and the examination of fish caught by local anglers as electro-fishing was not licensed in Georgia at the time of survey.*" is written in the Supplementary Package. But later in the same document other techniques were proposed: "*To catch adult fish the following devices will be used: box traps, casting net, fishing rods, trotlines and seine netting. The*

[18] http://maps.iucnredlist.org/map.html?id=22693243

juvenile trout will likely be caught using seine/landing nets, drift traps and cone traps."[19] Lack of fish data is one of the biggest problems of the biodiversity assessment.

5.5.2. It is not even clear which species or subspecies of trout (*Salmo* sp.) is/are present in the affected rivers. The trout caught by local fisherman and photographed were not examined afterwards to determine the species. "*The survey team encountered a local fisherman who caught 10 trout on-site. Detailed dissection of fish was not possible on site given that the fish were food for the fisherman"*. Genetic studies in the last years have split *Salmo trutta* into many species throughout its distribution.

5.5.3. If any quantitative fish survey techniques was used we suppose that the 8 other fish species of which 5 endemic would be caught in the Nenskra and Nakra rivers or middle stretches of Enguri river: Transcaucasian sprilin *(Alburnoides fasciatus*, endemic species), Colchic minnow (*Phoxinus colchicus*, endemic species), stone loach *(Barbatula barbatula)*, Angora loach (*Oxynoemacheilus angorae* or other endemic species of *Oxynoemacheilus*), Crimean barbel (*Barbus tauricus*), Colchic khramulya *(Capoeta sieboldi*, endemic species), Colchic nase *(Chondrostoma colchicum*, endemic species), spined loach *(Cobitis taenia*, or other species of *Cobitis*).

Leaving 5% of the river flow in the Nenskra River and 13% in Nakra River would lead to complete extermination of these fish species (before they are even assessed).

5.6 Cumulative impacts

5.6.1. No information is provided about the current working regime of Enguri Hydropower Plant, the planned working regime of Nenskra HPP or other hydropower projects in the Enguri basin. No biodiversity surveys were made in the Enguri river at all.

5.6.2. Significant cumulative impacts on fish species can be expected if the Nenskra HPP project is built. Adding up to all impacts on the middle stretches of Enguri River and its tributaries (Nenskra and Nakra) it is expected that also lower stretches of Enguri River will be affected. The Enguri Dam (Jvari HPP) already has an significant impact on the lower Enguri River by releasing more water in winter and less in summer that the natural hydrological regime. The Nenskra Dam will add up to that problem by regulating even more the outflow from Enguri Dam. This could lead to the complete extinction of species like the critically endangered Russian Sturgeon (*Acipenser gueldenstaedtii*), Ship Sturgeon (*Acipenser nudiventris*), Stellate Sturgeon (*Acipenser stellatus*) and European Eel (*Anguilla anguilla*). These species are reported from the lower Enguri river and depend on high water levels in the warm season for reproduction. No assessment on this species (or any species of fish, except habitat of trout) has been done.

[19] ES Nenskra_Vol 4_Biodiversity_Feb 2017, page 164

REPORT
ON ENVIRONMENTAL PROBLEMS OF SHUAKHEVI HYDRO POWER PLANT, ADJARA, GEORGIA

commissioned by Association Green Alternative, Georgia
prepared by BALKANI Wildlife Society, Bulgaria

Andrey Ralev, Elena Tsingarska-Sedefcheva, Kostadin Valchev, Simeon Arangelov, Andrey Kovatchev

July 2017

INTRODUCTION

Balkani Wildlife Society were asked to support with biodiversity expertise Association Green Alternative, complainant of Complaint No. 2016/9 - Possible threat to "Svaneti 1" candidate Emerald site (GE0000012) from Nenskra Hydro Power Plant development (Georgia).

The 184 MW Shuakhevi Hydro Power Plant is under construction on the Adjaristsqali river and two of its main tributaries in the Autonomous Republic of Adjara, Georgia. The design envisages it as a run-of-the-river plant with capacity of diurnal storage in two reservoirs, allowing Shuakhevi HPP to store water for up to 12 hours and sell electricity at peak demand times. By July 2017 most of the construction phase is finalized, but the HPP is still not in operation because of problems with water diversion through tunnels and connection to transmission lines. This means that major changes in the river ecosystems are still to come.

The Adjaristsqali river is the biggest tributary of the Chorokhi river. A pilot river basin management plan is being developed for the basin of both rivers[20]. Asti HPP was built in the middle section of Adjaristsqali river in 1937 with a weir giving some possibilities for fish migration upstream. In the last 5 years the Chorokhi Hydro Power Plant[21] was finalized impeding completely the connectivity of Adjaristsqali river with the Black Sea.

Shuakhevi HPP is the first and uppermost scheme of Adjaristsqali Hydropower Cascade Project with two more schemes planned.

The purpose of the current document is to evaluate some of the most important impacts on biodiversity during construction phase of Shuakhevi HPP and to advert on similar problems to be expected for the Nenskra HPP in Upper Svaneti, Georgia.

METHODS

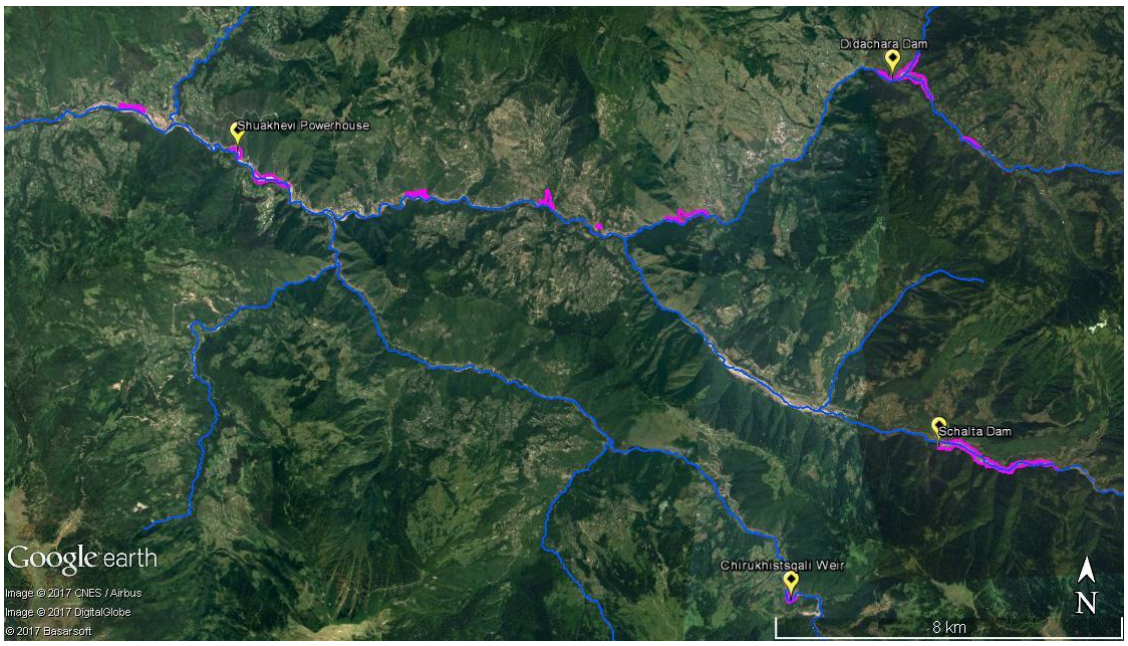
Experts of Balkani Wildlife Society carried on biodiversity surveys on fish, mammal, bird species and natural habitats in the area of Shuakhevi HPP, Adjara, Georgia in July 2017. Field surveys were complemented with literature review and questionnaires with people who visit the natural habitats regularly for determining the relative number of mammals and fish and aquatic fauna in the most favorable habitats for them and for identifying threats to their conservation.

RESULTS AND CONCLUSIONS

Natural habitats:

We discovered 93 ha of natural habitats destroyed during construction of Shuakhevi HPP (see polygons in violet below) - 56 ha for the two dams, the weir and the powerhouse; 30 ha for spoiled deposits and 7 ha for contractor's colonies.

[20] http://blacksea-riverbasins.net/en/pilot-basins/chorokhi-adjaristskali-basin
[21] https://cdm.unfccc.int/Projects/DB/RINA1356641431.9/view



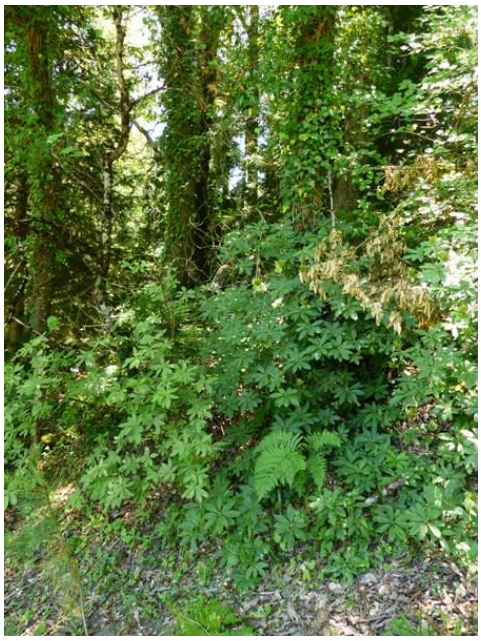
Access roads, job facility areas, transmission lines would add to this area at least 30 ha. During operation phase we expect that 46 ha river and riparian habitats (like Alluvial forests of *Alnus barbata*) will additionally be destroyed due to completely changed hydrological and sediment regime. **The total area of destroyed habitat will be around 170 ha** without taking into account the impacts downstream of Shuakhevi Powerhouse and on the Chorokhi Delta (Important Bird Area and Emerald site). The delta is already severely impacted by other HPP projects and Shuakhevi HPP will have an significant cumulative impact.

Offsetting or compensation was proposed only for forest habitats: "*The forest creation scheme will include the planting of 9.2 ha of mixed species forest*". The tree planting was not done before the habitats were destroyed as it is required according to EU Directives. The forest offsetting/compensation will not ever create habitats with similar ecological functions like the destroyed habitats. There are several reasons for that:

1. Trees planted over areas of deposits will never create a forest or other natural habitat, like the area bellow which was unsuccessfully planted with 49 trees:

2. Some plantations are made destroying natural grasslands.

3. Pine trees (*Pinus* sp.) are planted in a mixed forest habitat rich in endemic plants

4. Trees are planted in area where natural oak seedlings were present (natural reforestation), but removing of alien species like black locust (*Robinia pseudoacacia*), native to North America, was not done.

CONCLUSIONS:

The total area of habitats lost under the Project is several times higher than assessed. Tree planting was done poorly not creating a natural habitat at all. The loss of key river and riparian habitats was not offset/compensated at all, as it is impossible to create a new river. Grassland habitats were not restored, even worse - some additional areas were destroyed during afforestation activities.

Fish species:

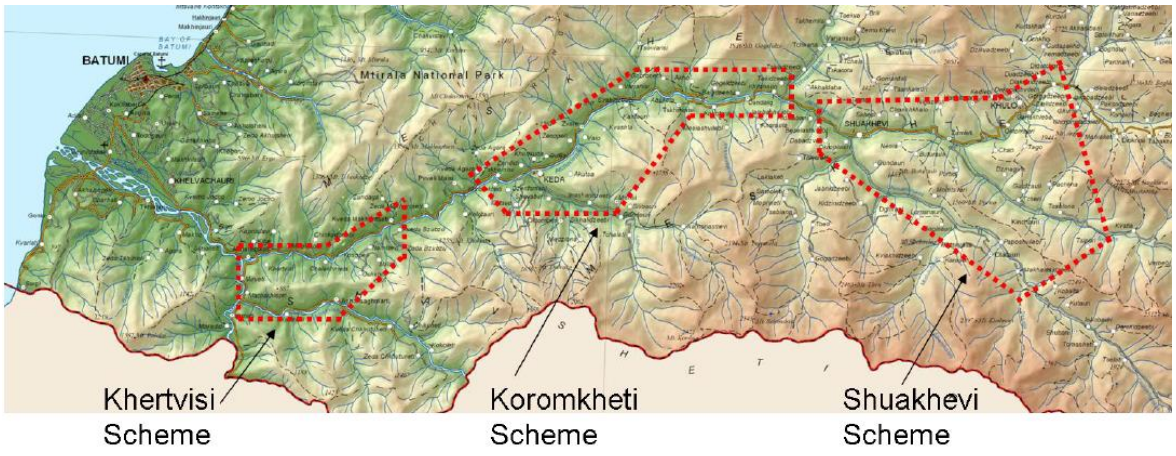
A total of 12 interviews were made with local people that (used to) go regularly fishing from 8 villages in the area of Shukhevi HPP. Fish used to be an important source of protein for local population and around 60% percent of households used to have at least one member that went fishing in the area. 10 out of 12 interviewees said they fished more than 3 kg per day in the best days and 2 out of 12 said they fished between 1 and 3 kg per day. The most common catch was trout and barb.

By July 2017 (Shuakhevi HPP construction almost completed) for sections of the rivers Adjaristsqali, Skhalta and Chirukhistsqali bellow the dams/weir 3 out of 11 interviewees declare they can't catch any fish, and 8 declare they can catch under 300 grams. For sections above the dams only one person (village of Uba Barnali) declared 300-1000 grams in the best days. Most of local people have quit fishing as they can wait a whole day without catching a single fish.

№	Municipality	Settlement	Date	% of families fishing	Fish/day before	Fish/day bellow dam/weir	Fish/day above dam/weir
1	Shuakhevi	Maakhalakidzebi	9.7.2017	60-100%	>3kg	0-300gr	0-300gr
2	Shuakhevi	Maakhalakidzebi	9.7.2017	60-100%	>3kg	0-300gr	0-300gr
3	Shuakhevi	Paposhvilebi	9.7.2017	20-40%	1-3kg	0-300gr	?
4	Shuakhevi	Maakhalakidzebi	9.7.2017	?	>3kg	0gr	?
5	Shuakhevi	Maakhalakidzebi	9.7.2017	60-100%	>3kg	0gr	?
6	Khulo	Uba Barnali	10.7.2017	20-40%	>3kg	?	300-1000gr
7	Khulo	Kinchauri	10.7.2017	40-60%	>3kg	0-300gr	0-300gr
8	Khulo	Schalta	10.7.2017	40-60%	1-3kg	0gr	?
9	Khulo	Vashlovani	11.7.2017	?	>3kg	0-300gr	?
10	Khulo	Vashlovani	11.7.2017	20-40%	>3kg	0-300gr	?
11	Khulo	Cheri	11.7.2017	20-40%	>3kg	0-300gr	?
12	Khulo	Diakonidzeebi	11.7.2017	60-100%	>3kg	0-300gr	?

CONCLUSION:

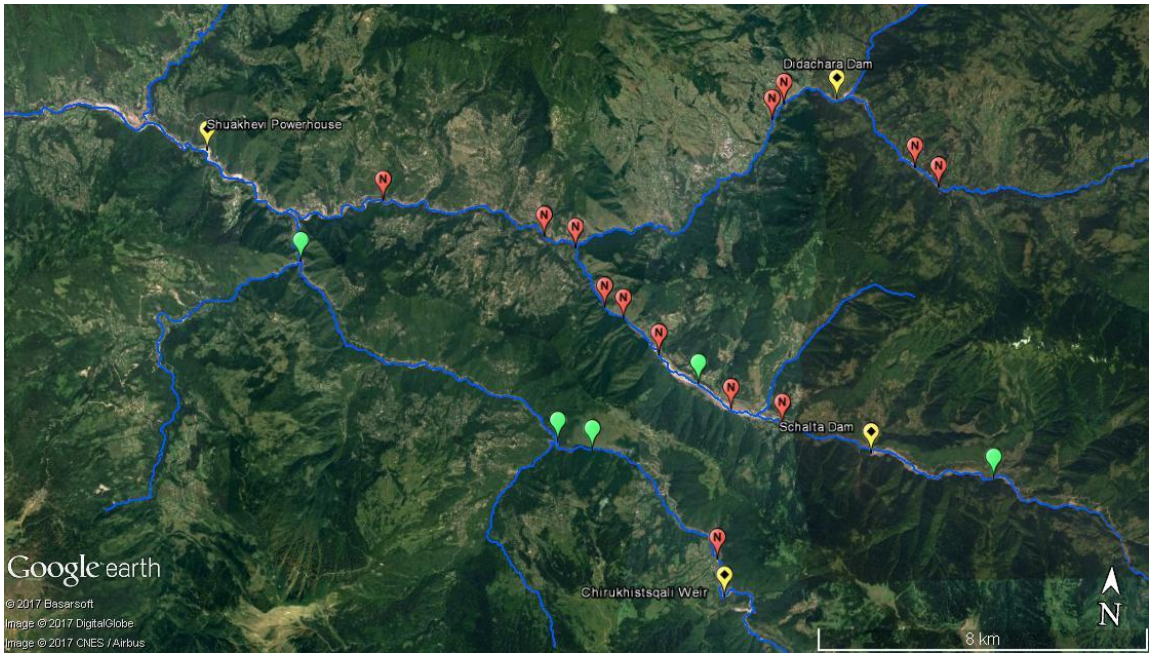
Even before Shuakhevi HPP is in operation fish populations are almost completely extinct for several kilometers bellow the 2 dams and the weir. The fish species could not survive the poisoning with chemicals and the changes in water quantities and quality (as it ws pointed out by all local people). The remaining fish populations above the dams/weir are also in a bad state. Special conservation is needed for the unconstructed middle section of Adjaristsqali river and the remaining tributaries so that any aquatic live is left in the basin. This means plans to build Koromkheti and Khertvisi schemes should be abandoned.



Source: Mott MacDonald Ltd

Eurasian otter (*Lutra lutra*):

18 transects of 600 meters each were made on the shores of upper Adjaristsqali river and its tributaries by our experts searching for otter scats and footprints. Otter was found in 5 sections of the rivers (green on the map) and was absent in 13 sections (red on the map):



Otter was also found in one transect in middle Adjaristsqali river 28 km bellow the Shuakhevi powerhouse. The species is probably extinct in the upper part of the river, above and under Didachara Dam (7 transects).

It is still present in Chirukhistsqali river only because two major tributaries hold important fish populations (3 transects). Otter is extinct bellow the Chirukhistsqali weir, locals declare seeing it before construction of tunnel and weir.

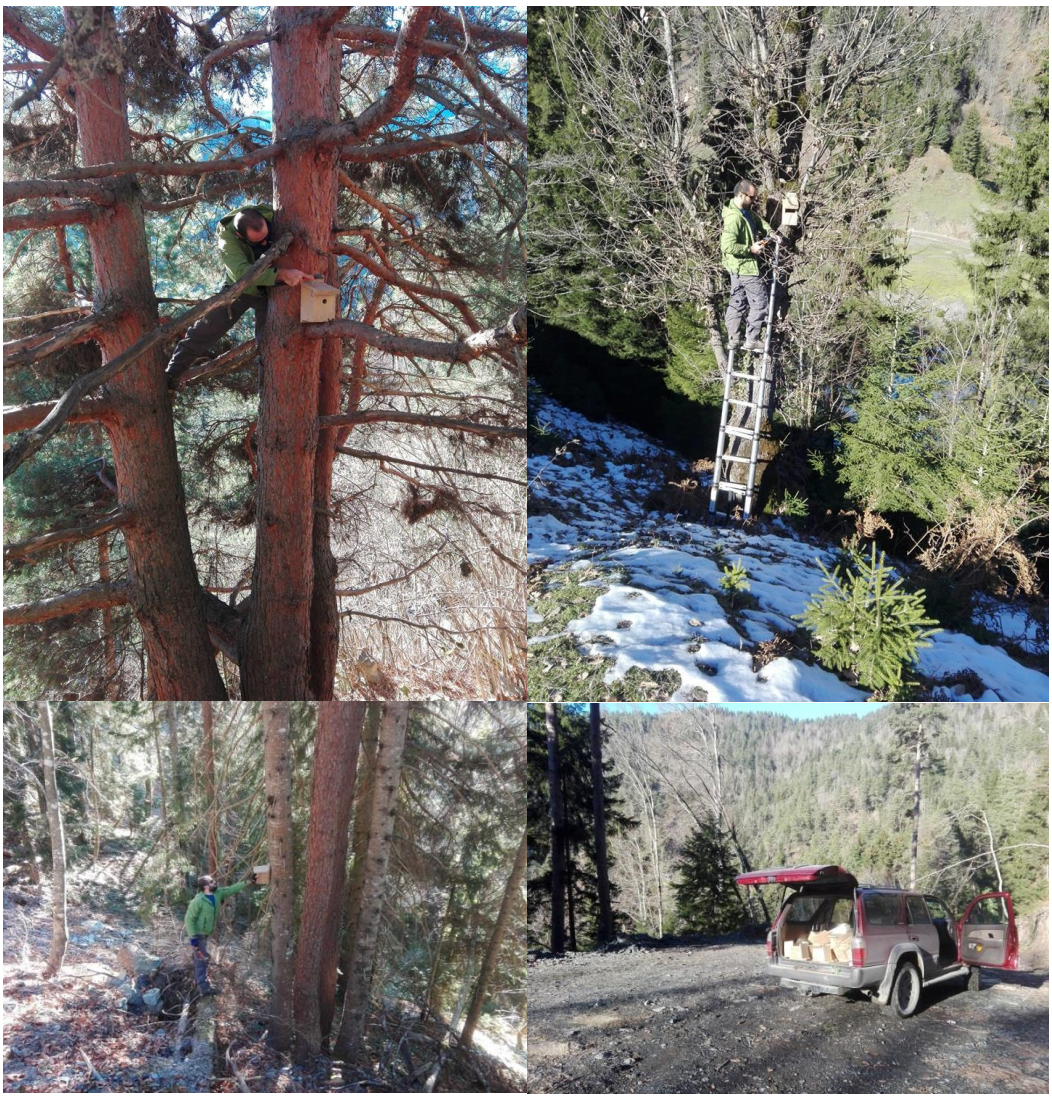
Otter scats were found on the Skhalta river above the constructed dam. Between the dam and the confluence with Adjaristsqali otter was found only in 1 out of 6 sections (after the confluence of a tributary).

CONCLUSION:

The Adjaristsqali basin is of great importance for the conservation of the Eurasian otter, a red list species in Georgia. Even before the Shuakhevi HPP operation starts otter is extinct bellow the 2 dams and the weir. Special conservation is needed for the unconstructed middle section of Adjaristsqali river and the remaining tributaries so that otter remains in the basin. We doubt it can anymore hold a healthy population if the minimum ecological flow of 10% only remains in the rivers and if there are daily changes in the Shuakhevi powerhouse water release. Otter population surveys show very similar results to fish and aquatic fauna questionnaires as fish is the main prey of the species.

Birds and bats:

Offsetting/compensation for protected mammal populations was proposed by "*installation of up to 100 bat boxes in each scheme*". The same measure was proposed for bird species. The bat and bird boxes were installed in November 2016, already after more than 100 ha of suitable habitats (for different species) were destroyed. The design of the boxes is adequate for common species, but not specialized for rare species.



During the Emerald Biogeographical Seminar (Tbilisi, 1-2 December 2016) the final conclusions on the representation of bird species from Res. No. 6 (1998) of the Bern Convention in proposed Emerald sites in Armenia, Azerbaijan and Georgia[22] indicate that Emerald sites in Adjara should be enlarged to include the most important territories for bird migration. The area of the

[22] https://rm.coe.int/16806f40b0

transmission line to Shuakhevi HPP hold more than >3000 raptors or cranes per migration season (according to special census made[23]) and so should be included in Emerald site according to Bern Convention criteria. The new transmission lines are an important migration barrier for more than 1% of the world populations of European honey buzzard (*Pernis apivorus*), steppe buzzard (*Buteo buteo vulpinus*), black kite (*Milvus migrans*), Eurasian sparrowhawk (*Accipiter nisus*), Levant sparrowhawk (*Accipiter brevipes*), Montagu's harrier (*Circus pygargus*), pallid harrier (*Circus macrourus*), lesser spotted eagle (*Aquila pomarina*), greater spotted eagle (*Aquila clanga*) and booted eagle (*Aquila pennata*).

Many species of the Chorokhi Delta are not sufficiently protected according to the Biogeographical Seminar results.

CONCLUSION:

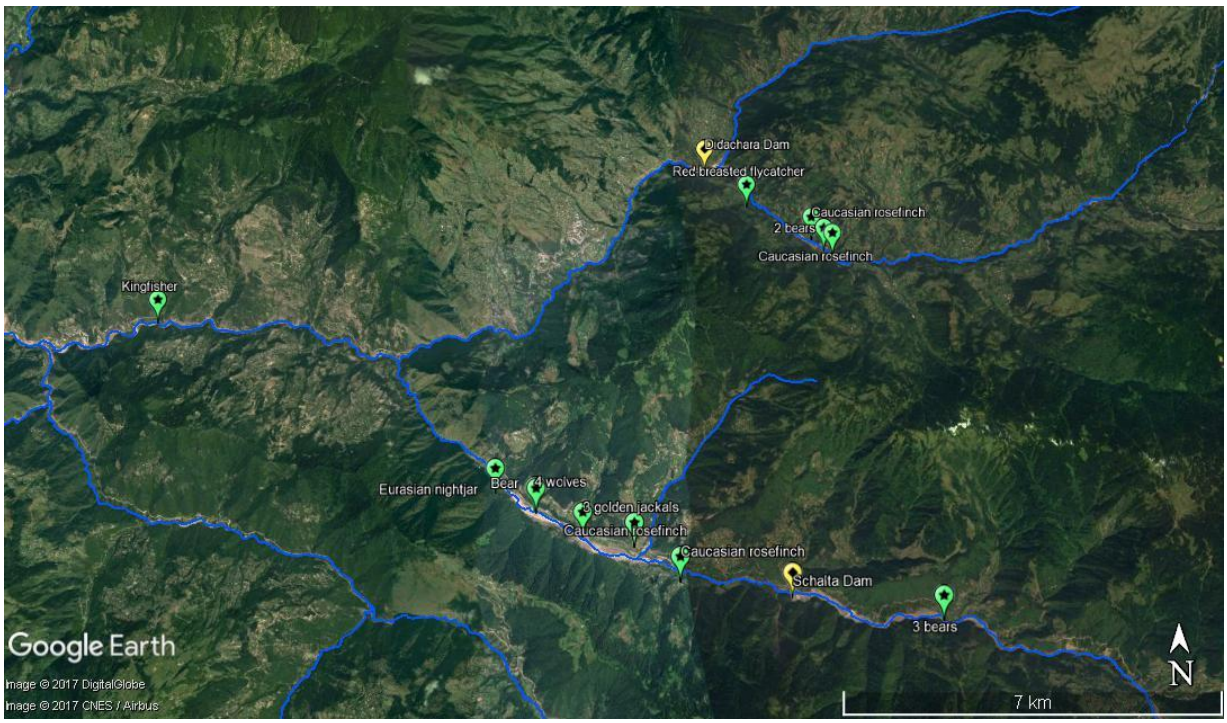
Installment of bird and bat measure is totally inadequate as it can't offset the loss of natural habitats, especially riparian habitats. The natural habitat were the boxes were put in November 2016 have enough old trees with hollows so rare species of birds and bats are unlikely to occupy them.

Two main impacts on bird species are not addressed adequately - the migration barrier effect and the impact on the Chorokhi delta because of changed hydrological and sedimentation regime.

Other species:

In three days our experts found along the river shores traces of 6 different individuals of brown bear, a pack of 4 wolves, we heard at least 3 golden jackals, 1 Eurasian nightjar, 4 Caucasian rosefinches and saw 1 kingfisher and 1 red-breasted flycatcher.

[23] http://www.ebrd.com/english/pages/project/eia/45335bap.pdf



Conclusion: the river shores are a biodiversity hotspot and no offsetting is possible, as there is no "free" space for creation of new rivers.