



ESIA Albania

Annex 6.2.3 – Protected Areas System in Albania

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6.2.3 Protected Areas System in Albania

This Annex should be read in conjunction with *Annex 4.2*. All pictures contained within this Annex were taken by ERM.

6.2.3.1 Overview

Several protected area systems exist within Albania, these can be divided between Emerald Sites and Ramsar Sites which are both related to International and the Albanian National Network which includes National Parks, Managed Reserves (with various levels of protection) and Nature Monuments.

In Albania, the current network of protected areas has been designated to fulfil the objectives set out in national and international legislation (laws, bylaws, conventions, agreements, etc.) for the protection of the natural environment. Since the national and international framework is dynamic, a continuous process of revision on the protected areas network is required. Therefore, mainly due to the requirements derived from the Bern Convention, it is expected that over the next few years new protected areas will be established in Albania or those candidate sites currently submitted to the Council of Europe will become ratified.

This section provides an overview of the different protected areas classification, both current and proposed, that is currently being utilised in Albania and their current status. Where relevant, Protected Areas Categories are taken from the IUCN publication; *Guidelines for Applying Protected Areas Management Strategies* (Dudley, 2008). A summary of these categories is listed below and for further details on these categories the above publication should be referred to. For these categories it should be noted that the Category of the Protected Area (Cat I,II,III,IV. etc.) is the important part as the name such as National Park can vary markedly between countries as to what they protect.

The protected and designated areas listed in Albania are constantly being updated and one such recent change to the listings was the formal update of Nationally Protected areas in July 2012 which included the expansion of the Tomori National Park from 4,000 ha to 24,723 ha.

6.2.3.1.1 Category Ia Strict Nature Reserve and Ib Wilderness Areas

Category Ia are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphical features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. Such protected areas can serve as indispensable reference areas for scientific research and monitoring. Category Ib protected areas are usually large unmodified or slightly modified areas, retaining their natural character and influence without permanent or significant human habitation, which are protected and managed so as to preserve their natural condition.

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6.2.3.1.2 Category II National Park

Category II protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible, spiritual, scientific, educational, recreational, and visitor opportunities.

6.2.3.1.3 Category III Nature Monument

Category III protected areas are set aside to protect a specific nature monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove or tree. They are generally quite small protected areas and often have high visitor value.

6.2.3.1.4 Category IV Habitat / Species Management Area

Category IV protected areas aim to protect particular species or habitats and management reflects this priority. Many Category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category.

6.2.3.1.5 Category V Protected Landscape

A protected area where the interaction of people and nature over time has produced an area of distinct character with significant, ecological, biological, cultural and scenic value: and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values.

6.2.3.1.6 Category VI Protected Area with Sustainable Use of Natural Resources

Category VI protected areas conserve ecosystems and habitats together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition. A proportion of the area is under sustainable natural resource management where low-level non-industrial use of natural resources compatible with nature conservation. This is seen as one of the main aims of the area.

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Table 6.2.3-1 List of Protected Area Categories and Proposed Protected Areas in Albania (updated in July 2012)

<i>Protected Area Type</i>	<i>General Description</i>	<i>Number of sites</i>	<i>Surface area (ha)</i>	<i>% of country's total surface area</i>
<i>Nationally Protected Areas</i>				
<i>Based on Albanian law, important or threatened parts of the country's territory are proclaimed as protected areas, according to the following categories:</i>				
a) <u>Strict natural reserve / scientific reserve (I Category)</u>	Sites are strictly protected areas set aside to protect biodiversity and also possibly geological/geomorphological features, where human visitation, use and impacts are strictly controlled and limited to ensure protection of the conservation values. These areas generally is suitable as a baseline monitoring site with minimal disturbance from human activities and possess functioning (preferably native) ecosystems that are largely intact and free of significant direct human intervention.	2	4,800.00	0.17
b) <u>National Park (II Category)</u>	These protected areas are large natural or near natural areas set aside to protect large-scale ecological processes, along with the complement of species and ecosystems characteristic of the area, which also provide a foundation for environmentally and culturally compatible spiritual, scientific, educational, recreational and visitor opportunities. These areas are typically large and conserve a functioning 'ecosystem' which, in some cases, may be complemented by sympathetic management in surrounding areas.	15	209,668.2	7.28
c) <u>Nature Monument (III Category)</u>	Category III protected areas are set aside to protect a specific nature monument, which can be a landform, sea mount, submarine cavern, geological feature such as a cave or even a living feature such as an ancient grove. They are generally quite small protected areas and often have high visitor value. The term 'nature' as used here can refer to both wholly natural features but also sometimes features that have been influenced by humans. Sites often include natural formations, groups of trees or small forests up to 50 ha or single trees with historical/aesthetic values. This category is afforded the highest degree of protection according to the Albanian Law on Protected Areas (No. 8906, 06/06/2002). Although there is a list of the sites included in Albanian Government decision (No. 676, 20/12/2002), the sites have not been mapped, therefore the exact location of Nature Monuments within the study area are currently not known.	750	3,470.00	0.12
d) <u>Managed Nature Reserve/Natural Park (IV Category)</u>	These areas aim to protect particular species or habitats and their management reflects this priority. Many category IV protected areas will need regular, active interventions to address the requirements of particular species or to maintain habitats, but this is not a requirement of the category. These areas are set up typically to protect, or restore, flora and fauna species of international, national, or local importance (including resident or migratory fauna) and/or habitats.	22	122,974.1	4.27
e) <u>Protected Landscape (V Category)</u>	A protected area where the interaction of people and nature over time has produced an area of distinct character with significant ecological, biological, cultural and scenic value and where safeguarding the integrity of this interaction is vital to protecting and sustaining the area and its associated nature conservation and other values. These areas possess high or distinct scenic quality, a balanced interaction between people and nature over time, and unique or traditional land-use patterns.	5	95,864.40	3.33

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<i>Protected Area Type</i>	<i>General Description</i>	<i>Number of sites</i>	<i>Surface area (ha)</i>	<i>% of country's total surface area</i>
f) <u>Protected area of managed resources / protected area with multiple use (VI Category)</u>	Areas that conserve ecosystems and habitats, together with associated cultural values and traditional natural resource management systems. They are generally large, with most of the area in a natural condition, where a proportion is under sustainable natural resource management and where low-level non-industrial use of natural resources compatible with nature conservation is seen as one of the main aims of the area.	4	18,245.00	0.63
<i>Internationally Protected Areas</i>				
Ramsar sites	Protected under international law as a result of the Ramsar Convention (The Convention on Wetlands of International Importance, especially as Waterfowl Habitat) which is an international treaty for the conservation and sustainable utilisation of wetlands, i.e. to stem the progressive encroachment on and loss of wetlands now and in the future, recognizing the fundamental ecological functions of wetlands and their economic, cultural, scientific, and recreational value. It is named after the town of Ramsar in Iran where the convention was developed and adopted by participating nations on 2 February 1971, and came into force on December 21, 1975. Albania has been a party of the convention since 29 February 1996.	3	77,584.0	2.70
<i>Proposed Protected Areas</i>				
Emerald Network	<p>One of the ways in which the EU countries are fulfilling the requirements of the Bern Convention 1976 is through the establishment of the Natura 2000 network. This network results from the combination of the sites designed under the Birds Directive and the Habitats Directive Non-EU countries, such as Albania, fulfil some of the requirements of the Bern Convention under the Emerald Protected Areas Network. Each Emerald site is defined as an Area of Special Conservation Interest (ASCI) and is designated on the basis that it fits one or several of the following conditions:</p> <ul style="list-style-type: none"> • It contributes substantially to the survival of threatened species, endemic species, or any species listed in Appendices I and II of the convention; • It supports significant numbers of species in an area of high species diversity or supports important populations of one or more species; • It contains an important and/or representative sample of endangered habitat types; • It contains an outstanding example of a particular habitat type or a mosaic of different habitat types; • It represents an important area for one or more migratory species; and • It otherwise contributes substantially to the achievement of the objectives of the convention. <p>Emerald and Natura 2000 Networks are often considered or presented as analogous nets with different geographical coverage areas. The main difference between the Natura 2000 sites (EU states) and the rest of the Emerald sites is the basis on which these have been designated (Natura 2000 sites have a much stronger legal basis than most of the sites designated in non-EU countries such as Albania). In addition, because of the strong legal basis of Natura 2000, the Emerald Network, in the EU Candidate countries, is being used as a contribution to the preparatory work to comply with the EU Habitats and Birds Directives.</p>	25 (potential identified)	522,430 ha	18.17



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<i>Protected Area Type</i>	<i>General Description</i>	<i>Number of sites</i>	<i>Surface area (ha)</i>	<i>% of country's total surface area</i>
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The network has been identified and completed during the implementation of three projects: the pilot project (2002 – 2004), the second project in (2003 – 2004) and the third (2007 – 2008). By 2008 a second phase of development was finalised which identified potential sites for inclusion in the Albanian network (Council of Europe 2009) as shown in Figure 1.0, with the most up to date site information being uploaded onto the Council of Europe website in September of 2011 where it is currently being assessed by Bern Convention Experts.

Current status of the candidate Emerald sites in Albania is that they are at Phase II of the designation process having been formally submitted to the Council of Europe Standing Committee (although consultation undertaken in January 2011 has identified that the Tomorri candidate Emerald Site boundary is currently incorrect). As part of Phase II the committee will undertake an evaluation of the efficiency of the proposed sites which has to be done on a species by species and habitat by habitat base. Ideally the evaluation would only start if a complete inventory of proposed sites exists for a certain area. Realistically, this would mean that over 80 % of the finally proposed sites would already be available for the evaluation. This exercise is to be conducted in cooperation with the European Environment Agency.

Once the scientific value of the proposed sites is assessed, the candidate sites will be submitted to the Standing Committee and will eventually be approved so to formally integrate the Emerald Network. They will decide whether they are sufficient and to address further needs for site proposals to complete the Emerald network. Sites are deemed to be sufficient if they ensure proper conservation of habitats and species listed respectively under Resolutions 4 (1996) and 6 (1998) of the Bern Convention.

Areas of Conservation Interest

CBD - Pan European Ecological Network (PEEN)

The Pan-European Biological and Landscape Diversity Strategy (PEBLDS) was set up following the Rio Earth Summit and the adoption of the United Nations Convention on Biological Diversity (CBD). It was adopted by the Council of Europe (of which Albania is a member) at the 3rd Ministerial Conference “An Environment for Europe” held in October 1995 in Sofia, Bulgaria.

The need for a PEEN arose from an increasing body of scientific evidence relating to biological population dynamics that indicated that isolated protected areas were unlikely to guarantee the mid to long term maintenance of many species of animal and plant nor the integrity of habitats and ecosystems. Thus, the best way to avoid the potential loss of biodiversity, and ensure healthy populations, is to guarantee a minimum degree of connectivity between the protected areas through the existence of wide areas (outside protected areas) which allow species to disperse and occupy wider areas. In accordance with the Council of Europe, the specific objectives of the PEEN are that it:

- Seeks to conserve ecosystems, habitats, species, genetic diversity and landscape of European

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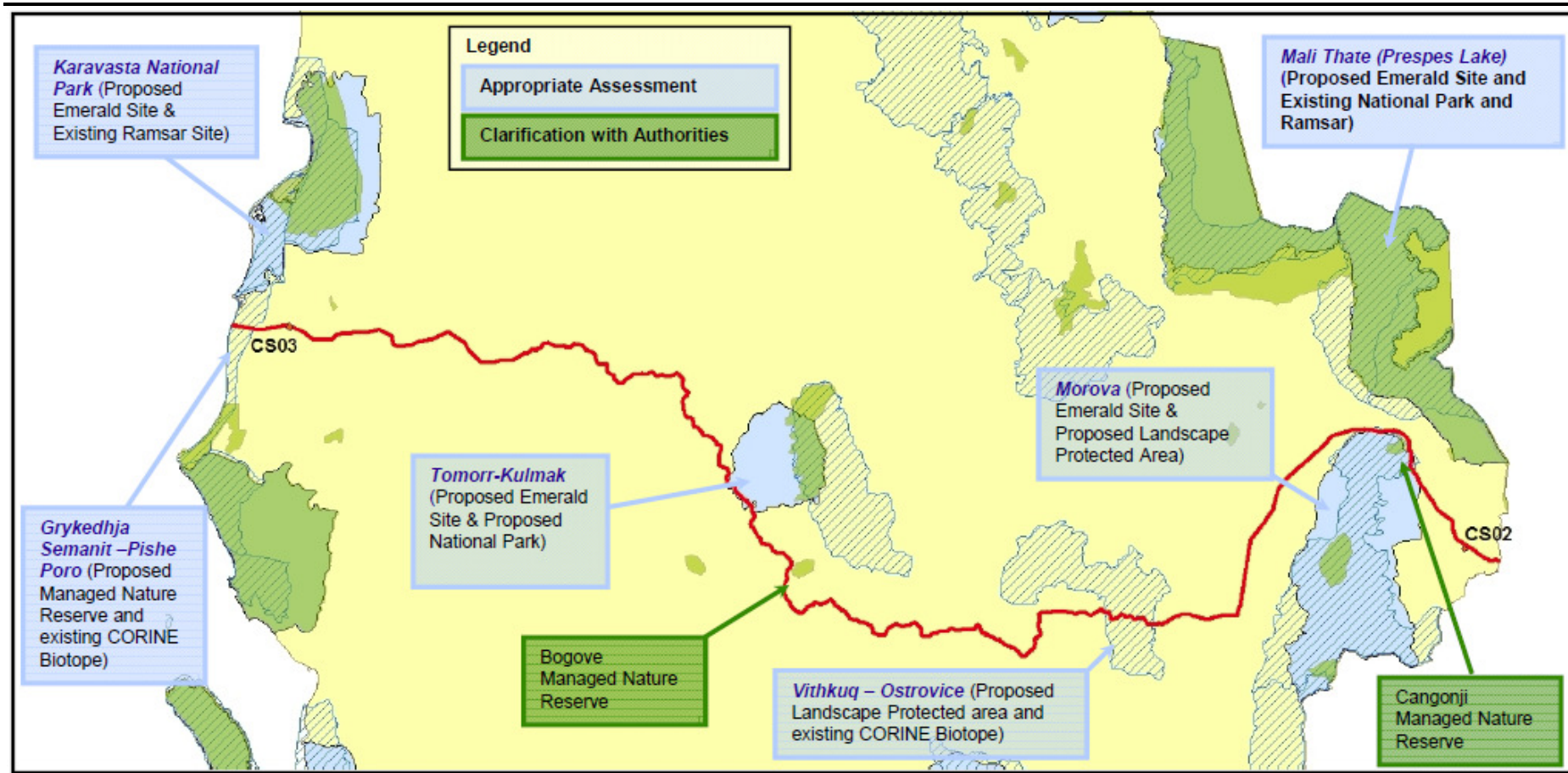
<i>Protected Area Type</i>	<i>General Description</i>	<i>Number of sites</i>	<i>Surface area (ha)</i>	<i>% of country's total surface area</i>
	<p>importance;</p> <ul style="list-style-type: none"> Intends to link “core areas” physically through “corridors” and “buffer zones”, including “restoration areas” where needed in the whole of Europe; and Is a tool for conciliation of socioeconomic activities and the preservation of biological and landscape diversity. <p>The adoption of the <i>Kyiv Resolution on Biodiversity</i> (2003) established as a target that in 2006 all countries should have identified the PEEN and various types of areas, and in 2008 a coherent and adequate conservation of all core areas should be accomplished. Albania participated in the project carried out by the European Centre for Nature Conservation (ECNC) that produced for the first time the indicative map of PEEN for south-eastern Europe which identified the core nature areas of European importance, existing corridors between these areas, and where new corridors could and should be established. However, the process is in the early stages of implementation in Albania.</p>			
CORINE Biotopes	<p>CORINE biotopes are particular areas that have been identified as “major nature sites” across Europe by the European Environment Agency (EEA) and include sensitive or rare habitats (EEA 1994), vulnerable ecosystems and species of importance. In the European context, these sites (and CORINE programmes in general) would be one of the main criteria for the selection and establishment of protected areas (ASCIs). However, it must be noted that these are areas of interest but do not afford any protection status themselves whether national or international.</p>	79	499,290.00	17.36
Important Bird Areas (IBAs)	<p>The study “Inventory of wetlands in Albania”, carried out by ECAT Tirana in cooperation with EKBY Greece, have managed to identify IBAs for Albania (Refer to Figure 2.0). Furthermore their status towards the designation as SPA for birds, according to the provisions of the Birds Directive, has been prepared by the elaboration of the national legal framework with the approval of the law “On protection of wild fauna” in late 2008.</p>	15 (identified)	55,309.00	1.92
Important Plant Areas (IPAs)	<p>In 2011 a list of Important Plant Areas of the south and east Mediterranean region was published jointly by the IUCN, Plantlife and the WWF. The purpose of this document was to establish priority sites for conservation from a botanical perspective. In Albania 45 sites were identified across the country including 15 transboundary sites. These sites are non-statutory designated sites which have no legal protection directly unless located at the site of an existing site. They will however help form the basis for future expansion of the protected areas network in Albania through the Emerald or Natura networks.</p>	45	384,824	13.38

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Figure 6.2.3-1 Map of proposed sites for the Emerald Network in the Vicinity of the Proposed Pipeline Route


Source: ERM using Proposed Emerald Sites published by the Council of Europe, September 2011.

Notes: Karavasta, Tomorr, Morova and Mali Thate are ASCI candidate Emerald Sites. Tomorr, Vithkuq-Ostrovice and Morova are classified as CORINE Biotopes.

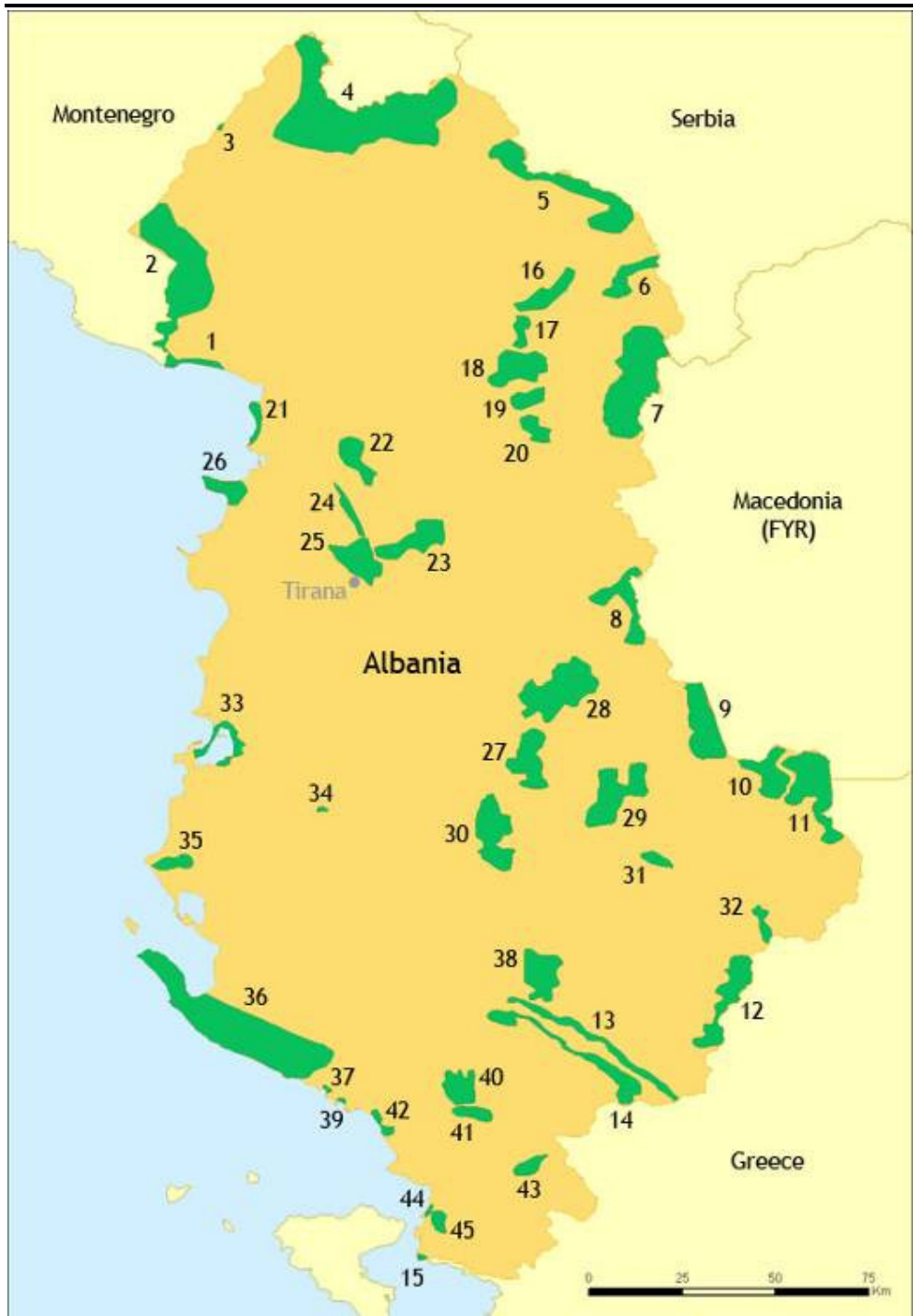
Current boundary for Tomori National Park site has now been updated by MoEFWA outside of the current alignment (as of consultation undertaken in October 2012).

Figure 6.2.3-2 Sites identified as Important Bird Areas (IBAs) in Albania





Source: Ministry Environment, Forests and Water Administration, Republic of Albania, Fourth National Report to the United Nations Convention on Biological Diversity (2011)

Figure 6.2.3-3 Sites identified as Important Bird Areas (IBAs) in Albania according to level of importance



Source: Radford, E.A., Catullo, G. and Montmollin, B. de. (eds.) (2011). *Important Plant Areas of the south and east Mediterranean region: priority sites for conservation*. IUCN, Gland, Switzerland and Malaga, Spain. Gland, Switzerland and Malaga, Spain: IUCN. VIII + 108 pp.)

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6.2.3.2 Nature Monuments Data Sheets

Surveys were undertaken in April 2012 to distinguish the true locations of the Nature Monuments as previous data supplied from GIS analysis only had central locations and secondly additional points were supplied by the MoEFWA in consultation conducted on the 8th February 2012. The datasheets for this survey are thus provided within this section.

A summary of these sites is given below for completeness in *Table 6.2.3-2* below.

Table 6.2.3-2 Nature Monuments Present within the 2 km survey area





Nature Monument Code	Site Name	Still Present	Destroyed
NM-A	Poplar of Piluri	X	
NM-B	Voskop Spring	X	
NM-C	Forest of Markeza	X	
NM-D	Forest of Lirza	X	
NM-E	Forest of Helmesi & Water Reservoir	X	
NM-F	Holy Oak Tree of Osoj		X
NM-G	Canyons of the Osumi	X	
NM-H*	Oriental Plane of Vershezha	X	
NM-I	Chestnut Trees of Therepelit		X
NM-J	Oak Tree of Munishtir Village		X
NM-K	Cave of Shahinova	X	
NM-L	Oak of Pashallise		X
NM-M*	Crown Forest of Sermani River	X	
NM-N	Semani old Sand Dunes	X	


*Note: *Indicates sites within the 2 km buffer area which were thought unlikely to be affected by the project and were therefore not surveyed as part of the assessment.*




6.2.3.3 Field Data Sheets

This section presents the field data sheets from the 2012 surveys.

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Nature Monument Name / Description:		Poplars of Piluri, Nature Monument represented by two old white poplars (<i>Populus alba</i>) far away from the centreline and close to a religious place, pilgrimage shrine – Tree 2.		
Survey point NM-A2	Long. E 494713	GPS Elev.	Date	Section
Surveyor Ferdinand Bego	Lat. N 4502078	862 m	02.04.2012	Eastern
Approximate Distance From Centreline	600 m	Approximate Area of Coverage		0.05 ha
Species Remarks		 		
<p>Nature Monument is represented by two old white poplars (<i>Populus alba</i>) located cc 600 m distance from the centreline and close to a religious place. The oldest tree is some 22 m high, and 2.13 m diameter (more than 200 year old). The younger tree is some 20 m high, and 90 cm diameter (45-50 years old). The trunk of the oldest tree is partly burned.</p>				
Habitat Remarks				
Agricultural land and inhabited rural centre.				
Landscape Remarks				
Nature monument is located in a flat area, developed as a mosaic agriculture land.				
Corresponds to listed site				
This is new NM site, composed of two individual trees of white poplar (<i>Populus alba</i>) close to a religious place, pilgrimage shrine.				
Conclusion				
This NM is not expected to be affected by the TAP project, because of the distance from the centreline (cc 600 m)				

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Nature Monument Name / Description:		Water source of combustible gas		
Survey point NM-B1	Long. E 20 41.734	GPS Elev.	Date	Section
Surveyor Alfred Mullaj	Lat. N 40 31.373	944.88 m	02.04.2012	Eastern
Approximate Distance From Centreline	c. 650 m from pipeline	Approximate Area of Coverage		0.2 ha
Species Remarks Water source of combustible gas, surrounded by a narrow belt of the riparian vegetation dominated by common reed (<i>Phragmites australis</i>), lesser bulrush (<i>Typha latifolia</i>). White willow (<i>Salix alba</i>), black poplar (<i>Populus nigra</i>), etc		 		
Habitat Remarks White willow (<i>Salix alba</i>) and black poplar (<i>Populus alba</i>) galleries. Water source of combustible gas is surrounded by shrub formations dominated by Oriental hornbeam (<i>Carpinus orientalis</i>) or Galio-Carpinetum Oak hornbeam forests habitat type				
Landscape Remarks The environment around this water source of combustible gas is highly contaminated by quarry activity was located close				
Corresponds to listed site The site corresponds to one of the locations given in the GIS and includes the feature listed (water source). Information is correct.				
Conclusion Depending on which of the NM locations is used one may be affected the other not. (see sheet NM-B2).				

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Nature Monument Name / Description:		Water source of combustible gas		
Survey point NM-B2	Long. E 474748 E 474213	GPS Elev.	Date	Section
Surveyor Ferdinand Bego	Lat. N 4485323 N 4485840	921 m 945 m	02.04.2012	Eastern
Approximate Distance From Centreline	WP 022 cc 50 m WP 026 cc 650 m	Approximate Area of Coverage		2 ha & 0.2 ha

Species Remarks

Water source of combustible gas, surrounded by a narrow belt of the riparian vegetation.

WP 022. Potential Nature Monument. Not sure. A small water source, partly damaged situated next to main road.



Drinking water spring

Another water source was found nearby at the foot bridge of the irrigation channel, fed by the Gjanci water reservoir. An individual of terrapin (*Emys orbicularis*) observed nearby this water source.



European pond terrapin (*Emys orbicularis*)



WP 022



WP 026

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Habitat Remarks

Water source situated downhill of Bellovodo village (WP 026). White willow (*Salix alba*) and white poplar (*Populus alba*) galleries. Water source of combustible gas is surrounded by shrub formations dominated by oriental hornbeam (*Carpinus orientalis*) or Galio-Carpinetum Oak hornbeam forests habitat type. Water source brought in through irrigation channel and discharged into Dunaveci river (WP 022) is surrounded by a well developed riparian vegetation classified as white willow and white poplar galleries. Presence of otter (*Lutra lutra*), terrapin (*Emys orbicularis*), and frogs (*Rana graeca*, *R. balcanica*) make this sites rather sensitive to disturbance.



Landscape Remarks

The environment around the water source of WP 026 is heavily impacted by quarry activity located close to it.

Corresponds to listed site

Coordinates of WP 022 corresponds to the ones provided in the listed NM site. Coordinates of WP 026 are not the ones provided earlier by ERM.



Conclusion

The proper location of the NM is not confirmed. The karstic water source (WP 026) is situated some 650 m north of the pipeline route and is not expected to be impacted by the construction of the TAP. The other location (WP 022) is situated some 100 m distance from the TAP central line, and expected to be moderately impacted by the TAP project (noise and disturbance).

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Nature Monument Name / Description:		Markeza Pine Forest Nature Monument.		
Survey point NM-C1	Long. E 467055 E 467056 E 467366	GPS Elev.	Date	Section
Surveyor Ferdinand Bego	Lat. N 4483952 N 4483855 N 4484038	1177 m 1185 m 1207 m	02.04.2012	Eastern
Approximate Distance From Centreline	Directly through this site.	Approximate Area of Coverage		20 ha
Species Remarks Forests dominated by black pine (<i>Pinus nigra</i>). Abundant presence signs of voles (<i>Microtus sp.</i>). Presence signs of red squirrel (<i>Sciurus vulgaris</i>). Birds observed: chaffinch (<i>Fringilla coelebs</i>), tit (<i>Parus spp.</i>), coal tit (<i>Parus atter</i>), woodpigeon (<i>Columba palumbus</i>), buzzard (<i>Buteo buteo</i>), <i>Turdus spp.</i>				
				
Habitat Remarks (Sub)-Mediterranean pine forests with endemic black pine. These forests are often damaged and in very bad condition as a result of timber harvesting or illegal cuttings, burning. Some selective cuttings of old stands have been observed.				
				

Feeding signs of red squirrel (*Sciurus vulgaris*)

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Landscape Remarks

Landscape is hilly and gently undulated. Historical Monument. Memorial of the establishment of Brigade 1st of the Albanian Army (15 August, 1943). Pine forest of Markeze is situated in the vicinity of this memorial.








Corresponds to listed site

Yes. The site corresponds to the listed NM sites and the information is correct.

Conclusion

Provided the distance from the Central line, it is expected that this NM may receive some impacts by the TAP project (some tree cutting, noise and disturbance during the construction phase. Micro siting may avoid the majority of impacts.

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Nature Monument Name / Description:		Markeza Forest Nature Monument.			
Survey point NM-C2	Long. E 20 36.670 E 20 36.671 E 20 36.890	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj	Lat. N 40 30.338 N 40 30.285 N 40 30.385	1176.5 m 1184.7 m 1206.7 m	02.04.2012	Eastern	
Approximate Distance From Centreline	Directly through this site.	Approximate Area of Coverage		20 ha	
Species Remarks Forests dominated by black pine (<i>Pinus nigra</i>). Several deciduous trees and shrubs are found there, including: oak (<i>Quercus petraea</i>), Turkey oak (<i>Q. Cerris</i>), Prickly juniper (<i>Juniperus oxycedrus</i>), Oriental hornbeam (<i>Carpinus orientalis</i>), Hungarian maple (<i>Acer obtusatum</i>), Dogwood (<i>Cornus sanguinea</i>), Wig tree (<i>Cotinus coggygria</i>), Flowering ash (<i>Fraxinus ornus</i>), <i>Ostrya carpinifolia</i> . The herb flora is relatively rich, e.g. Wood spurge (<i>Euphorbia amygdaloides</i>), <i>Pteridium aquilinum</i> , <i>Stachelina uniflosculosa</i> , Spiked spurge (<i>Euphorbia spinosa</i>), Daisy (<i>Bellis perennis</i>), <i>Agrimonia agrimonoides</i> , <i>Mercurialis perennis</i> , etc.					
Habitat Remarks (Sub)-Mediterranean pine forests with endemic black pine. These forests are often damaged and in very bad condition as a result of timber harvesting or illegal cuttings, burning. Lowland hay meadows. Some areas of former agriculture land in this wp, which were abandoned 15 - 20 years ago, now support a semi-natural grasslands dominated by Erect brome (<i>Bromus erectus</i>), Meadow foxtail (<i>Alopecurus pratensis</i>), Greater burnet (<i>Sanguisorba officinalis</i>), <i>Arrhenatherum elatius</i> .					
Landscape Remarks Historical monument of World War II. Here by August 15, 1943 was established the first partisan brigades, in the fight against Italian and German fascism.					
Corresponds to listed site The site corresponds to one in GIS and includes features listed (forest). Information is correct.					
Conclusion The pipeline goes directly through this site and will cause some minor loss of forest. Micro-siting will largely reduce impacts.					

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Nature Monument Name / Description:		Forest of Markeza		
Survey point NM-C3	Long. E 20° 36'669	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat. N 40° 30'335	1185 m	02.04.2012	Eastern
Approximate Distance From Centreline	0 km	Approximate Area of Coverage		20 ha
Species Remarks Forest with black pine (<i>Pinus nigra</i>). The understory is constituted by oak (<i>Q.petraea</i>), juniper (<i>Juniper</i> sp.), Pubescent oak (<i>Q. Pubescences</i>).				
Habitat Remarks The forest was located in a hill close to the Vithkuqi village.				
Landscape Remarks . The landscape is hilly and undulating. Forest covers much of the area with scrub and pasture land between.				
Corresponds to listed site The site correspond with coordinates given in the material.				
Conclusion The pipeline passes directly through this site and will affecte this Nature Monument.				




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In order to estimate the amount of timber that might be logged as result of the pipeline construction we did estimation using 2 circular sample plots with size 200 m². The final results of measurements inside sample plots are given in the following table:




<i>Sample plot</i>	<i>Nr of trees per sample plot</i>	<i>Mean dbh (cm)</i>	<i>Mean height (m)</i>	<i>Volume (m³/200 m²)</i>	<i>Volume (m³/ha)</i>
1	28	25,2	15,3	15,1	755
2	17	24,2	15,1	8	400

The volume in the second sample plot is lower because this forest area was damaged by illegal logging.



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Nature Monument Name / Description:		Forest of Lirza			
Survey point NM-D	Long. E 20° 25'58	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj, Julian Shehu	Lat. N 40° 29'04	1556 m	20.07.2012	Central Eastern	
Approximate Distance From Centreline	Road passes directly through this site	Approximate Area of Coverage		50 ha	
Species Remarks					
<p>Mountain hay meadows are wide-spread in the area, consisting mostly of different cold resistant grasses such as <i>Calamagrostis varia</i>, <i>Koeleria splendens</i>, <i>Melica ciliata</i>, <i>Poa bulbosa</i>, <i>Stipa joannis</i>, <i>Potentilla erecta</i>, <i>Luzula luzulina</i>, <i>Hieracium sp.</i>, <i>Plantago lanceolata</i>, <i>Taraxacum sp.</i>, <i>Achillea millefolium</i>, <i>Marrubium vulgare</i>.</p>					
Habitat Remarks					
<p>Old <i>Luzulo-Fagetum</i> beech forests are found at this wp, dominated by <i>Fagus sylvatica</i>. The forest is dense with high trees and with high biodiversity values.</p> <p>In addition to the forest and the hay meadow a natural spring is also present on site which supplies a drinking trough used by locals. The spring is within the meadow area and works could affect groundwater flows to this spring.</p>					
Landscape Remarks					
<p>Lirza Beech Forest, Nature Monument. A memorial of the Second World War (commemorate of the First Congress of the Antifascist Youth Union of Albania on 08 August, 1944) found in a subalpine wet meadow situated inside the beech forest.</p>					
Corresponds to listed site					
The site corresponds with coordinates provided by MoEFWA although the extent of this entire area is unknown. It is likely to be 400 m buffer from the centre point to give a total area of 50 ha.					
Conclusion					
Both the road and the pipeline are likely to affect this protected area. Particularly road which passes directly though the middle of the site and has the potential to affect the forest, meadow and natural spring.					




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Nature Monument Name / Description:		Forest of Helmesi		
Survey point NM-E	Long. E 20 24.956	GPS Elev.	Date	Section
Surveyor Alfred Mullaj, Julian Shehu	Lat. N 40 28.072	969 m	21.07.2012	Central Eastern
Approximate Distance From Centreline	0.02 km	Approximate Area of Coverage		10 ha (approx)
Species Remarks Forested area dominated by <i>Pinus nigra</i> (Black pine) plantation near the Staravecka water reservoir. Mountain hay meadows dominated by different cold resistant grasses, such as <i>Bromus erectus</i> , <i>Potentilla erecta</i> , <i>Luzula luzulina</i> , <i>Poa ursina</i> , <i>Brachypodium sylvaticum</i> , <i>Chrysopogon gryllus</i> , <i>Arrhenatherum elatius</i> , <i>Juniperus communis</i> .		 		
Habitat Remarks The forested area is damaged and in very bad condition as result of abusive cutting, that is clearly evident by the dominant presence of <i>Juniperus communis</i> . In many cases, there are open areas/ clearings where seedlings, generally less than 15 years old are present. Forest planted for stabilisation purposes and to protect the Staravecka water reservoir. Listed as beech forest within dataset although this is clearly a mistake.				
Landscape Remarks Planteax area on slope from east to west. Large flat meadow area adjacent to site would be ideal for construction camp.				
Corresponds to listed site Exact extent of the forest is difficult to define although the main reservoir and adjacent forest can be easily distinguished				
Conclusion While the site is located very close to the pipeline it is unlikely it will be affected as the area is open, relatively flat and has ample space for construction.				




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Nature Monument Name / Description:		Oak tree of the Osoja village			
Survey point NM-F1	Long. E 20 17.130	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj	Lat. N 40 30.587	939.0 m	06.04.2012	Central Eastern	
Approximate Distance From Centreline	c. 400 m from pipeline	Approximate Area of Coverage		0.002 ha	
Species Remarks					
<p>Monument of nature: Very old oak tree in the Osoje village (<i>Quercus frainneto</i>), but fallen 15 years ago. So, this monument does not exist. From conversation with a resident of the village, it was a very tall tree, about 30 m high and 2 meter in diameter. The place where it was, was regarded as sacred by the people. The only thing that remains is the trunk already decomposed.</p>					
Habitat Remarks Agricultural land and inhabited rural center, Osoja village.					
Landscape Remarks The environment around this fallen tree is filled with garbage.					
Corresponds to listed site The site corresponds to GIS record and includes features listed (Group of trees). Information is correct.					
Conclusion It is not affected by the pipeline as it no longer exists.and is located 400 m from pipeline.					




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Nature Monument Name / Description:		Oaks of Osoja		
Survey point NM-F2	Long. E 20° 17 130"	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat. N 40° 30 587"	939.0 m	06.04.2012	Central Eastern
Approximate Distance From Centreline	Over 5 km	Approximate Area of Coverage		-N/A
Species Remarks There are 2 dead oak trees. They were oak (<i>Quercus frainetto</i>) with dbh 2m and height 13 m with an age of 400 years old. They were felled 20-30 years ago.				
Habitat Remarks The trees were located in the village of Osoja.				
Landscape Remarks The landscape is hilly.				
Corresponds to listed site The site corresponds to GIS record and includes features listed (Group of trees). Information is correct.				
Conclusion . The NM is not affected by the pipeline as the trees have been felled. Furthermore, the site is located 400 m from pipeline.				

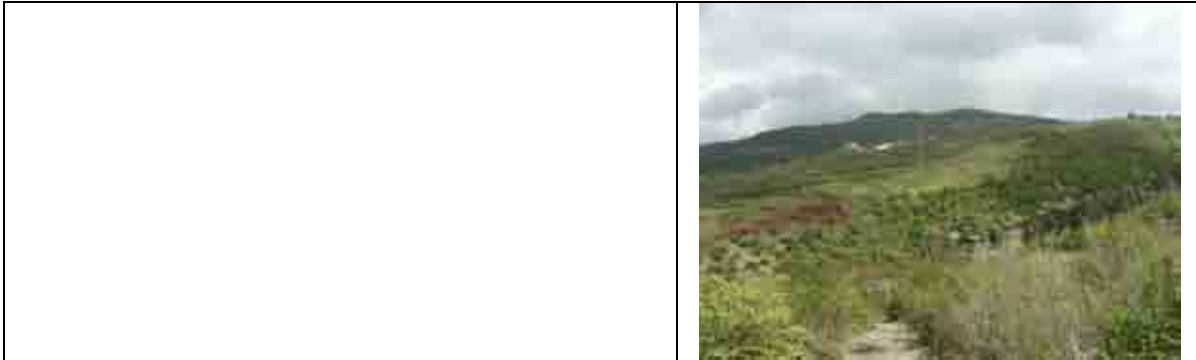
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Nature Monument Name / Description:		The Osumi's canyon			
Survey point NM-G1	Long. E 20 13.519	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj/ Ferdinand Bego	Lat. N 40 29.394	282.85 m	06.04.2012	Central Eastern	
Approximate Distance From Centreline	250 m from pipeline and 190 m from 'Logistics New Road';	Approximate Area of Coverage		ha 13 km long, and 70-80 m deep	
Species Remarks Vertical walls are partly covered by macchia vegetation such as Strawberry tree (<i>Arbutus unedo</i>), Narrow-leaved phillyrea (<i>Phillyrea angustifolia</i>), Prickly juniper (<i>Juniperus oxycedrus</i>), Evergreen oak (<i>Quercus ilex</i>), Judas tree (<i>Cercis siliquastrum</i>), <i>Cistus villosus</i> , and along the Osumi river by riparian vegetation dominated by oriental plane (<i>Platanus orientalis</i>).					
Habitat Remarks Mediterranean Arborescent Matorral and white willow (<i>Salix alba</i>) and white poplar (<i>Populus alba</i>) galleries. Monument of Nature: The Osumi's canyon. Lies in the Çorovodë-Hambull sector of the Osumi valley. It is the largest canyon in the Albania about 13 km long, and 70-80 m deep.					
Landscape Remarks Created by Osumi river at the calcareous rocks is really wonderful. The inhabitants of the zone call it also the "Albanian Colorado".					
Corresponds to listed site The site corresponds to one in GIS and includes features listed (The Osumi's canyon). Information is correct.					
Conclusion We do not think that is affected by the project, because the distance from the pipeline is huge, 250 m from pipeline and 190 m from 'Logistics New Road'.					

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Nature Monument Name / Description:		Osumi canyon		
Survey point NM-G2	Long. E 20° 13 519"	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat. N 40° 29 394"	282 m	06.04.2012	Central Eastern
Approximate Distance From Centreline	Over 0.2 km	Approximate Area of Coverage		-See NM-G1
Species Remarks On both sides of the canyon there are mediterranean vegetation such as: oriental plane (<i>Platanus orientalis</i>), hawthorn (<i>Crataegus monogyna</i>), rose (<i>Rosa</i> sp.), strawberry tree (<i>Arbutus unedo</i>), heath (<i>Erica</i> sp.), <i>Poliurus spinachrisit</i> , prickly juniper (<i>Juniperus oxycedrus</i>), oriental hornbeam (<i>Carpinus orientalis</i>) and Judas tree (<i>Cercis siliquastrum</i>).				
Habitat Remarks The Osumi canyon is located near to the Corovoda town with a length of 26 km located between Corovoda town and Blezenke village. It represents a special form of the relief with vertical slopes with height of 30-50 m and width of 10-20 m. It is formed as result of Osumi river activity and according to studies it is formed 2-3 million years ago. Over its length there are several underground and unexplored caves. On both sides of the canyo there are several waterfalls.				
Landscape Remarks The landscape includes the canyon system which is the largest in Albania. The wider area is hilly and karstic.				




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Corresponds to listed site
 The site corresponds with coordinates given in the material.

Conclusion
 .We do not think that is affected by the project, because the distance from the pipeline is huge, 250 m from pipeline and 190 m from 'Logistics New Road'.




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Nature Monument Name / Description:		Chestnut Trees of Therepelit			
Survey point NM-I1	Long. E 20 07.306	GPS Elev.	Date	Section	
Surveyor Ferdinand Bego	Lat. N 40 31.149	620.8 m	04.04.2012	Central Eastern	
Approximate Distance From Centreline	270 m	Approximate Area of Coverage		38 ha (formerly)	
Species Remarks Old and very beautiful forest dominated by Chestnut (<i>Castanea sativa</i>) Nature Monument, chopped and burned 10 – 15 years ago from the inhabitants of the Therepeli village. This forest does not exist anymore. Area covered by this forest was about 38 ha. 4 – 5 individual trees still remain from this area.					
Habitat Remarks Agricultural land of the Therepeli village, surrounded by Pannonian- Balkanic turkey oak-sessile oak forests					
Landscape Remarks Near this ex-forest is the Tekke of Therepeli (ruin), Bektashi order (Sufi order that shares much in common with other islamic mystical movements) spiritual place of the Therepeli village constructed in recent times.					
Corresponds to listed site The site corresponds to the location in GIS but not in relation to the features listed (forest, instead of Group of trees,). Information is largely correct.					
Conclusion Will not be affected by the project, because the distance from the pipeline is 270 m and the site has largely been destroyed. Care should be taken to not disturb holy place of Tekke of Therepeli and the remaining old tress during the construction of the pipeline.					




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Nature Monument Name / Description:		Group of trees, oak tree of the Munishtir village			
Survey point NM-J1	Long. E 20 11.141	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj	Lat. N 40 29.819	623.9 m	06.04.2012	Central Eastern	
Approximate Distance From Centreline	260 m	Approximate Area of Coverage		N/A	
Species Remarks Very old oak tree in the Munishtir village (<i>Quercus frainneto</i>), but burned and fallen from 4 years ago. So, this monument does not exist yet. From conversations with a resident of the village, has been a very high tree, about 35 m high and 2 meter in diameter. At the place where the wood has been (people regarded as sacred place) has remained still his trunk almost completely decayed.					
Habitat Remarks Agricultural land and abandoned rural center, Munishtir village, surrounded by Pannonian- Balkanic turkey oak-sessile oak forests					
Landscape Remarks Near this place are some of the tombs of the village (Hamzollare neighborhood). From this point you can see a very beautiful and a good part of the Skrapari District					
Corresponds to listed site The site corresponds to one in GIS and includes features listed (Group of trees). Information is correct.					
Conclusion We do not think that the NM is affected by the project, because the distance from the pipeline is huge, 260 m from pipeline and has largely been destroyed.					




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Nature Monument Name / Description:		Oak of Munishtiri			
Survey point NM-J2	Long. E 20° 11 141"	GPS Elev.	Date	Section	
Surveyor Ferdinand Bego	Lat. N 40° 29 819"	623m	06.04.2012	Central Eastern	
Approximate Distance From Centreline	Over 0.25 km	Approximate Area of Coverage		N/A	
Species Remarks It is located in the village of Munushtiri. The tree is felled and burned four year ago. The tree was close to the graveyard of Hamzallari quarter. The tree diameter was 97 cm and height was 21m.					
Habitat Remarks Urban area and ground vegetation.					
Landscape Remarks The landscape is flat.					
Corresponds to listed site The site doesn't corresponds with coordinates given in the material.					
Conclusion The pipeline is passing on the top of the hill and the NM has largely been destroyed.					




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Nature Monument Name / Description:		Shahinova Cave			
Survey point NM-K1	Long. E 19 52.021	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj	Lat. N 40 46.047	43.58 m	04.04.2012	Central Western	
Approximate Distance From Centreline	790 m	Approximate Area of Coverage		1 ha	
Species Remarks Shahinova Cave, Nature Monument, new discovery continuity cave damaged by quarry activity					
Habitat Remarks The old entrance of the cave					
Landscape Remarks Shahinova Cave, currently damaged and threatened by quarry activities, which was very active during our visit.					
Corresponds to listed site The site corresponds to one in GIS and includes features listed (Shahinova Cave). Information is correct.					
Conclusion We do not think that it is affected by the project, because the distance from the pipeline is huge, 790 m from pipeline.					



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Nature Monument Name / Description:		Shahinova Cave		
Survey point NM-K2	Long. E 19° 52'022	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat. N 40° 46'047	44 m	04.04.2012	Central Western
Approximate Distance From Centreline	790 m	Approximate Area of Coverage		1 ha
Species Remarks Cave with limestone. It is damaged as result of activity of a stone-pit. It is quite completely ruined and a small part of the cave is shown.				
Habitat Remarks Stony area with Aleppo pine (<i>Pinus halepensis</i>) in the top of the hill.				
Landscape Remarks The landscape is hilly.				
Corresponds to listed site The site corresponds with coordinates given in the material.				
Conclusion This monument is not affected by the pipeline construction.				




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Nature Monument Name / Description:		Pashallize Oak			
Survey point NM-L1	Long. E 19 50.989	GPS Elev.	Date	Section	
Surveyor Alfred Mullaj	Lat. N 40 45.824	63.70 m	04.04.2012	Central Western	
Approximate Distance From Centreline	740 m	Approximate Area of Coverage		N/A	
Species Remarks Pashallize Oak Nature Monument: Pashallize Oak represented a very old (more than 200 years old) and big tree (2 m in diameter) and from taxonomic point of view belongs to the Fagaceae family and oak species <i>Quercus ithaburensis subsp. macrolepis</i> .					
Habitat Remarks This monument of nature no longer exists. It is cut by a resident of the Pashallize village because it was decaying, and jeopardizes his house. This oak was in the centre of the village, close to the farmer's house.					
Landscape Remarks Agricultural land and inhabited rural center, Pashallize village.					
Corresponds to listed site The site corresponds to one in GIS and includes features listed (Pashallise oak). Information is correct.					
Conclusion We do not think that is affected by the project, because the NM has been destroyed and the distance from the pipeline is 740 m from pipeline.					

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Nature Monument Name / Description:		Oak of Pashallise		
Survey point NM-L2	Long. E 19° 52'022	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat N 40° 46'218	66 m	04.04.2012	Central Western
Approximate Distance From Centreline	740 m	Approximate Area of Coverage		N/A
Species Remarks This tree is more than 300 years old. It is cut down because was completely decayed and was risking the dwellings of the farmers. It was cut on the January 2012. This oak was located in the village of Pashalli, quarter of Haxhallise. The tree diameter was 2 m.				
Habitat Remarks Urban areas. The oak was in the middle of the village.				
Landscape Remarks The landscape is hilly.				
Corresponds to listed site The site corresponds to with coordinates given in the material.				
Conclusion It is not affected by the pipeline as it no longer exists.				

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Nature Monument Name / Description:		Semani Old Sand dunes		
Survey point NM-N1	Long. E 19 22.657	GPS Elev.	Date	Section
Surveyor Alfred Mullaj	Lat. N 40 48.470	6.09 m	07.04.2012	Western
Approximate Distance From Centreline	1.5 km	Approximate Area of Coverage		10 ha
Species Remarks The sandy belt closer to the seaside is completely vegetation free. Pioneer species Sea rocket (<i>Cakile maritima</i>), <i>Xanthium strumarium subsp. italicum</i> , prickly saltwort (<i>Salsola kali</i>), which looks very isolated at the beginning, becomes denser further from the coast away. Gradually, as going away from coast line, as the height of dunes increase, the physiognomy of vegetation changes and species such as sand couch grass (<i>Elymus farctus</i>), sea spurge (<i>Euphorbia paralias</i>), Dune galingale (<i>Cyperus capitatus</i>), sand sporobolus (<i>Sporobolus pungens</i>), belonging to a more evolved stage of vegetation appear. The “real” or the highest dunes of this wp, by a height c. 3 m are colonized by big tufts of marram (<i>Ammophila arenaria</i>) are presented by small defragmented patches.				
Habitat Remarks Nature Monument, Embryonic shifting dunes (<i>Cakiletea maritimae</i> & <i>Ammophiletea</i>) far away from pipeline, not impacted from the project. The sandy dunes of this wp comprise a wide belt along the Adriatic Sea, with a width c.200- 250 meters and which reach a maximum height of c. 3 meters.				
Landscape Remarks Pioneer species sea rocket (<i>Cakile maritime</i>)				
Corresponds to listed site The site corresponds to one in GIS and includes features listed (Sand dunes). Information is correct.				
Conclusion This nature monument is situated some cc 1.5 km north of central line of the pipeline and is not expected to be impacted by the construction of the Pipeline.				

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Nature Monument Name / Description:		Sand dunes in the Semani seaside		
Survey point NM-N2	Long. E 19° 22' 657	GPS Elev.	Date	Section
Surveyor Saimir Ozuni	Lat. N 40° 48'470	6 m	07.04.2012	Western
Approximate Distance From Centreline	1.5 km	Approximate Area of Coverage		10 ha
Species Remarks The terrain is flat with Mediterranean and maritime ground vegetation.				
Habitat Remarks The vegetation was part of the Mediterranean and thermo-atlantic halophilous scrubs as well as <i>Salicornia</i> and other annuals colonising mud and sand.				
Landscape Remarks The terrain is flat.				
Corresponds to listed site The site does correspond with that in the listed sites.				
Conclusion This nature monument is situated some cc 1.5 km north of central line of the pipeline and is not expected to be impacted by the construction of the Pipeline.				

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Date 01/2013

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