

Old beech forests as potential sites for wilderness Albania

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Introduction

Albania is currently ranked as the country with the least forest resources in Europe. Based on data from the forest cadastre and INSTAT (2017) Albania has about 1.052 million ha with forests (36.6% of the country's area), with a timber volume of about 51.6 million m³. Based on these figures, it turns out that the forests in Albania are quite degraded, with a volume of only 49 m³/ha. In the last 20 years, the national forest stock has reduced by 32 million m³, while the average volume per hectare has decreased by 40%, dropping from 81 m³/ha (1997) to 49 m³/ha (2017). There is a deep gap between the natural growth of forests and the volume of the forest stock that decreases and where the cutting of forests exceeds 2-3 times their growth.

If in 1997 virgin forests accounted for about 7% of the national forestry stock area (2017), nowadays these forests account for only 1% of the forests, an indicator of their drastic reduction over a period of only 20 years.

Albania represents today the only country in Europe where cutting of forests exceeds their natural growth by 2-4 times. The old forest in Albania are also a part of this difficult situation of the national forestry stock.

Nowadays, old forests face many threats such as; fires, logging, grazing, hunting, waste, erosion, road opening, construction activities, HPPs, land ownership etc. These threats make these clusters even more exposed to the risk of their final disappearance.

The purpose of this article is to identify and promote those few natural areas with old beech forests that have remained in the country.

They are areas where nature has developed itself without being influenced by human activities at all. Dynamic natural processes have followed their normality of development, reaching the forest ecosystems currently represented by their “*climax*” stage. Old beech forests represent the wild Albania or its “ultimate natural islands”.

Old beech forests

Each country has formulated its own proposals regarding the definition of the old/virgin forest. In Albanian forestry terminology, this formulation may include mature and over-mature clusters (usually over 120 years old) with a natural (garden) structure.

A proposal to define the old forests in Albania would be: (i) *Naturally generated forests*, (ii) *forests which have not experienced significant human impact during their development*, (iii) *forests where trees of age ≥ 120 years¹ prevail*, (iv) *forests that are located in uniform territorial units (un fragmented)* and (v) *forests that occupy a minimum area of 100 ha*.

¹ This age should represent a minimum limit for at least 50% of the number of dominant trees in a given area.

Identification of old beech forests in Albania

The selection of the most important clusters with old beech forests was based on several key criteria;

- a. Age of forest clusters (over 120 years old);
- b. A minimum area ≥ 150 ha;
- c. Topography and homogeneity of the area (an area organized in the shape of a valley, a slope, a plateau, etc., showing an unfragmented forest cluster);
- d. Lack of human influence on the development of forest ecosystems (clusters where human influence did not exist in the dynamics of forest development).
- e. The opportunity to guarantee the management and protection of these forest clusters under the conditions they are today, undisturbed by man.

Based on the above criteria, it turns out that the areas with old beech forests in Albania are:

1. Livadhi i Harushës/ She-bear's Meadow (Malësi e Madhe Municipality)
2. Lumi i Gashit/ Gash River (Tropoje Municipality)
3. Curraj i Epërm/Upper Curraj (Tropoje Municipality)
4. Lumi i Tropojës/ Tropoje River (Tropoje Municipality)
5. Zall-Gjoçaj (Mat Municipality)
6. Rrajcë (Përrenjas Municipality)

These areas are shown in Figure no 1 below. Four from six proposed areas (Livadhi i Harushës (She-bear's Meadow), Lumi i Gashit (Gash River), Curraj i Epërm (Upper Curraj) and Lumi i Tropojës (Tropoje River)) are situated in the Albanian Alps Region constituting thus the Southern Region of the Dinaric Alps. Whereas Zall-Gjoçaj is situated in the Central Mountainous Area and Rrajca is situated in the Eastern Region of Albania.

There are interesting data regarding two of the areas: Lumi i Gashit (Gash River) and Curraj i Epërm (Upper Curraj) in terms of the age of some trees surveyed in this region. The measurements were conducted by a group of students from the Faculty of Forestry and Timber Sciences (Czech University of Life Sciences), Department of Forestry Ecology led by the professors Martin Mikoláš and Ondrej Kameniar (2016).

- In Lumi i Gashit (Gash River) 9 trees were found (from 35 surveyed trees) more than 250 years old, where two of them were 401-450 years old.
- In Curraj i Eperm (Upper Curraj) 8 trees were found (from 32 surveyed trees) more than 250 years old, where four of them were 300-350 years old.

Table 1. Data on the age of some trees in Lumi i Gashit and Curraj i Epërm

Area	Surveyed trees	Age, according to age classes(every 50 years)				
		$\Sigma >250$	251-300	301-350	351-400	401-450
Lumi i Gashit	35	9	4	-	3	2
Curraj i Epërm	32	8	4	4	-	-

These are the recent data regarding the age of the two forest clusters in question.

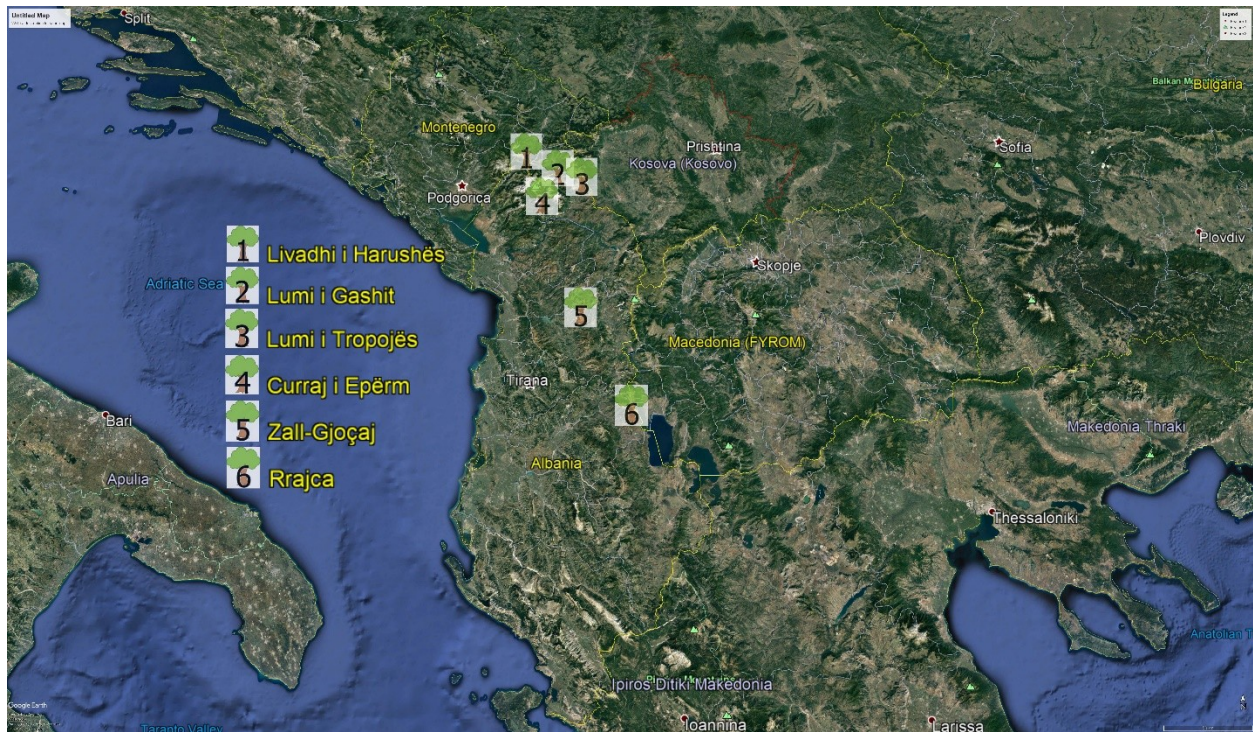


Figure 1. Areas with old beech forests in Albania

Areas with old beech forests are shown map graphed in this publication, divided into two zones (Figure no 2):

- Core zone – represents old beech forests ecosystems;
- Buffer zone – represents other ecosystems that associate beech forest ecosystems, mainly the Alpine pasture belt. They are called buffer zones so that when any management activity or use of the territory is conducted, these areas serve to mitigate impacts or pressures on old beech forests.

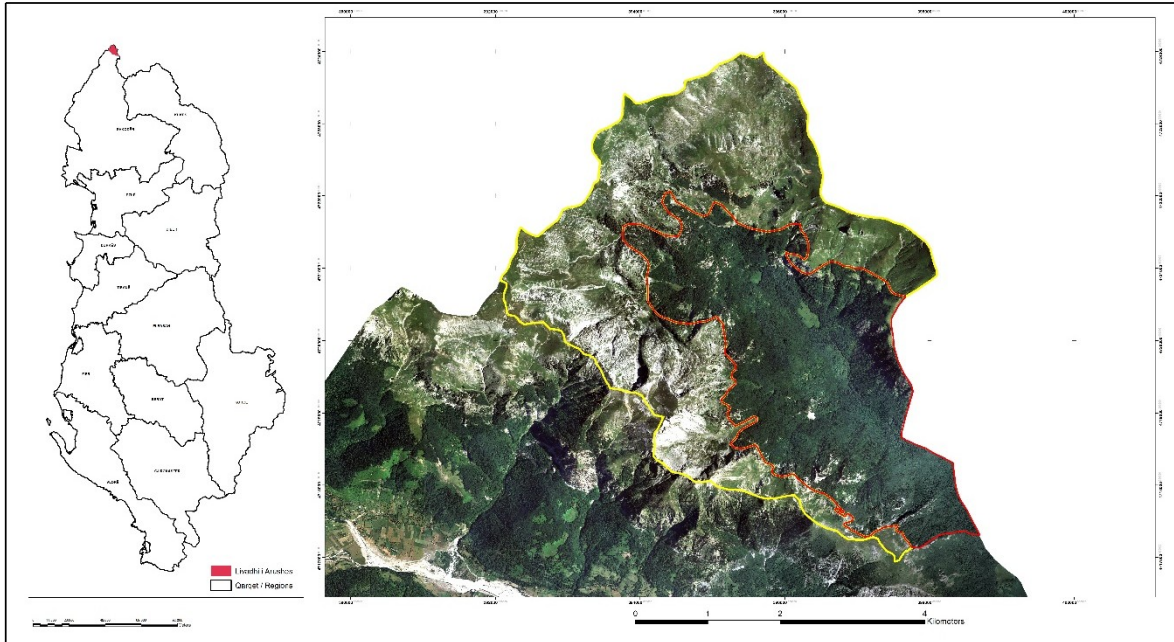


Figure 1 Zoning of areas with old beech forests (Livadhi i harushes)

On the map, the proposed zones are shown as a uniform geographic unit (valley), where the buffer zone represents the crown surrounding the area with old beech forest. It is called a buffer zone because of the fact that in reality it offers some protection for old beech forests both from the point of view of the territory and the socio-economic activities that the local communities conduct there.

Old beech forests in Albania

The old beech forest clusters in Albania represent unique areas, almost natural and which so far have not experienced any significant human impacts. They are identified in 6 different regions of the country with different areas and characteristics from each other. Table No.2 below shows areas with old beech forests in Albania and the respective areas/surfaces of their core and buffer zones:

Table 2. Areas with old beech forests and their surfaces

No	Name	Core zone, ha	Buffer zone, ha	Total, ha
1	Livadhi i Arushës	1058.5	1381.3	2439.8
2	Lumi i Gashit	5228.8	4123.4	9352.15
3	Lumi i Tropojës	1243.6	2973.8	4217.5
4	Curraj i Epërm	1644.1	895.8	2539.9
5	Zall Gjoçaj	792.2	1652.9	2445.1
6	Rrajce	1730.0	1025.4	2755.4
	Amount	11697.3	12052.5	23749.8

The surface of old beech forest areas in Albania is estimated at 11,697.3 ha. This figure represents only 1.1% of the area of the forest stock of the country. The surface of the buffer zones surrounding the old beech forests is estimated at 12,052.5 ha. This is also a very important area for the protection of old beech forests ecosystems and also the mitigation of impacts on these forests. The total surface of the areas where the old beech forests (core and buffer zones) are located, is estimated at 23,749.8 ha.

Old forests and the national system of protected areas

The conservation of the old beech forests is very important. The presence of old beech forests would be an added value for the national system of protected areas. Today, only two of the six areas with old beech forests are part of the national system of protected areas. To have a clearer view about the coverage or not of the old beech forests within the national system of protected areas, see the data shown in Table no 3:

Table 3. Coverage of old beech trees in the National System of Protected Areas

Old beech forest area	Protected area category²	Category (IUCN)
Livadhi i Harushës	“Albanian Alps” National Park	II*
Lumi i Gashit	Strict nature reserve/ scientific reserve	I
Lumi i Tropojës	“Albanian Alps” National Park	II*
Curraj i Epërm	“Nikaj-Mertur” Natural Municipal Park	IV*
Zall-Gjoçaj	-	-
Rrajca	“Shebenik-Jabllanice” National Park	II
<i>*Zones represent proposals that have not been adopted yet</i>		

Two areas with old beech forests that are currently included within the national system of protected areas are the Lumi i Gashit (Gash River) (category I) and Rrajca (category II). Other areas are currently out of this system. For three of these areas (Livadhi i Harushës (She-bear’s Meadow), Lumi i Tropojës (Tropoje River) and Curraj i Epërm (Upper Curraj) there are concrete proposals to designate them as protected areas. Livadhi i Harushës (She-bear’s Meadow) and Lumi i Tropojës (Tropoje River) have been proposed (proposal of 2016, which is not yet adopted) to be designated as the core zone of the “Albanian Alps” National Park (category II); in the framework of the drafting of the respective management plan which included almost the entire Albanian Alps region.

Curraj i Epërm (Upper Curraj) has been proposed as the core zone of the Municipal Natural Park / Regional Natural Park (category IV). The proposal was made in the framework of the drafting of the “Nikaj-Mërtur” Regional Natural Park management plan (2014), which includes the whole territory of the Administrative Unit Lekbibaj (Tropoje). The proposal has not yet been adopted by the Ministry of Tourism and Environment.

² Law 81/2017 « On Protected Areas”

As regards the old beech forests in Zall-Gjoçaj, there is no concrete proposal to include them in the Albanian system of protected areas.

The fact that only two of the six areas have a protection status is currently a call for assessing the situation of these forests, including them as soon as possible in the national system of protected areas of Albania.

Fauna

Old beech forests shelter a large number of species of flora and fauna, thus becoming very sensitive and at the same time very important environmental areas. These forests represent places of shelter and food for a large number of endangered species, part of the red list of IUCN and that of Albania. The old beech forests are the only areas in Albania where all three species of big carnivores are encountered: **The Bear** (*Ursus arctos*), **the Wolf** (*Canis lupus*) and **The Lynx** (*Lynx lynx ssp. balcanicus*) and the three species of large ungulates: **The Chamois** (*Rupicapra rupicapra*), **The wild Boar** (*Sus scrofa*) and **The European Roe Deer** (*Capreolus capreolus*).

Flora

Flora also is quite diverse and with many species that are part of the IUCN red list and that of our country. Thus old beech forests become the most important habitat of these species that are already endangered. About 81 plant species with endangered status are found in these forests.

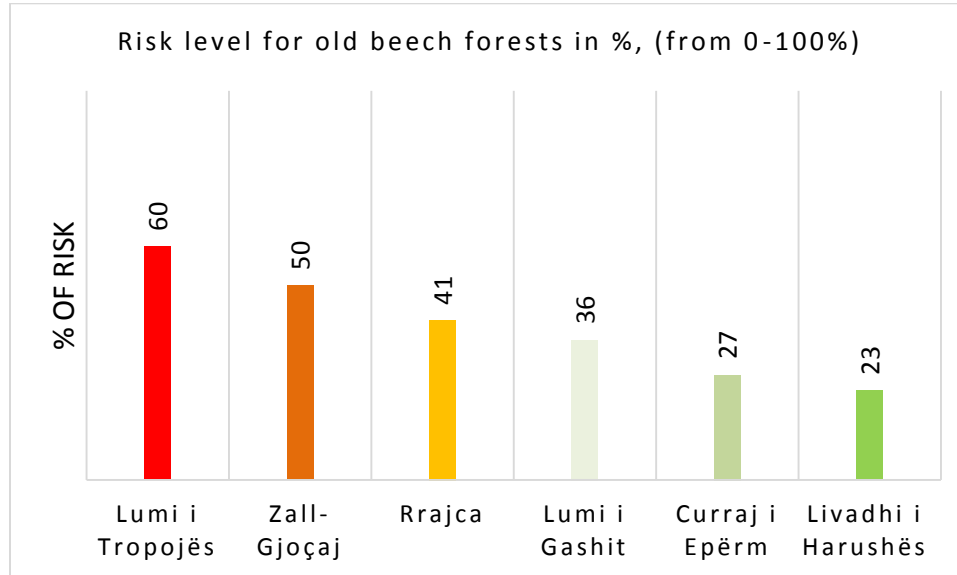
Risk assessment

Risk assessment for each area is done by assessing any probable (current and potential) risk for the area with a scale from 1 to 10, where the number 10 represents the highest level of potential risk for the respective area and the number 1 the lowest risk. Only the top 10 risks for these areas have been analyzed and assessed:

Figure 2. Major risks posed to old beech forests

Major risks posed to beech forests	Old beech forest areas					
	Livadhi Harushes	Lumi i Gashit	Lumi i Tropojes	Curraj i eperm	Zall-Gjoçaj	Rrajcë
<i>Fires</i>	9	8	7	8	9	6
<i>Cutting of trees and forests</i>	1	2	8	2	8	6
<i>Hunting and fishing</i>	2	3	5	2	4	5
<i>Waste</i>	1	2	5	2	3	5
<i>Opening of roads/highways</i>	1	4	10	2	8	4
<i>Visitors</i>	2	3	6	2	3	4
<i>Erosion</i>	2	2	4	2	4	4
<i>Construction activities</i>	2	4	6	1	2	2
<i>Construction of HPPs</i>	1	3	3	4	6	2
<i>Land ownership</i>	2	5	6	2	3	3
<i>Assessment amount:</i>	23	36	60	27	50	41

According to the assessment made in the table above this is the exposure situation of old beech forests to major risks:



1. Risk level in old beech forest areas

Referring to the table and chart above, Lumi i Tropojës (Tropoje River) remains the most endangered forest massif currently. This is due to the construction of the road that goes across the forest massif, bringing with itself other potential dangers (cutting of forests, fires, construction, waste, hunting etc.) in the area. Another important effect of the presence of the road and that has already shown its impact on the area is that of the construction activities that have started in the upper part of the valley; in the mountains of Sylbica. Among other massifs, that of Zall-Gjoçaj is the most vulnerable and endangered one. This is due to fires, logging and road construction, which is currently very close to the area of old beech forest. Two other massifs; Lumi i Gashit (Gash River) and Rrajca have almost the same level of risk. Rrajca remains the most vulnerable and endangered one because it is easily accessible whereas Lumi i Gashit (Gash River) is mainly endangered from the fires and construction activities that have begun in the mountains of Doberdol.

Protection of old beech forests

To protect the old beech forest areas and their naturalness, it is necessary to undertake some measures:

- Fire protection

- Increase of law enforcement
- Protection from cutting
- Prohibition of hunting and fishing
- Prohibition or restriction of construction
- Communication and Interpretation
- Drafting and implementation of plans for the area sustainable development
- Improvement of the legal basis on old beech forests
- Establishment of a national network for old beech forests
- Old beech forest management plan

Proposals for old beech forests in Albania

Since old beech forests do not have specific legal protection as such, it is first recommended to include them in national legislation and further in international networks or organizations. Some of the networks currently present in Europe and the World are: UNESCO, Wilderness Europe, European Beech Network, etc. It would also be necessary to establish a national network with old beech forests in Albania.

Giving the legal status (national) or integrating old beech forests into these networks is seen as the only opportunity to guarantee the protection of recent areas with old and natural forests in the country. It is understandable that much work and devotion is needed in the field to guarantee the protection of these forests from possible damages such as fires, logging, construction activities, waste, HPPs etc.

From surveys conducted on the ground, it turns out that the areas represent different situations and specific proposals need to be made for each of them;

- Inclusion in the National System of Protected Areas.
- Proposals for inclusion in the UNESCO Natural Heritage Inventory.
- Proposals for inclusion in the Wilderness Europe Network
- Proposals for inclusion in the National Network of Old Forests.

The above proposals are shown in the table below:

Table 4 Proposals concerning old beech forests

Proposals concerning old beech forests	Old Beech Forest Areas					
	Livadhi Harushes	Lumi i Gashit	Lumi i Tropojes	Curraj i eperm	Zall-Gjoçaj	Rrajcë
<i>UNESCO's Natural Heritage Site</i>						
<i>Wilderness Europe network Area</i>						
<i>Part of National System of Protected Areas</i>						
<i>Part of National Network of Old Beech Forests</i>						

	Current proposal		The area enjoys that status		Probable future proposal
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