

Review Paper

A Preliminary Review of Endemic Plants *in Situ* Conserved of Adjara Protected Areas in Georgia

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Abstract

The Caucasus, falling in the "Colch" section of the Euro-Siberian Floristic region has been identified as one of the Earth's 34 biological richness and most endangered terrestrial Eco-Regions by Conservation International (CI), World Bank, and GEF. Truly, the Colchic and the Hyrcanic regions of the Caucasus are the most important refuge and relict areas of the arctotertiary forests in West – Eurasia. One of the approbated and important measures for *in situ* conservation of species and habitats is to create various types of protected areas and to develop protected areas network. Endemic species are one of the specific and significant constituent parts of all floras. The research aimed to describe Endemic Plant species distribution of Adjara protected areas. At present 174 endemic species are registered in Adjara floristic region out of which 137 endemic species can be liable to conservation in Adjara protected areas, including: Caucasian - 71, Colchis - 36 Georgian - 19, Adjara-Lazeti - 11.

Key Words: Protected area, Endemic Plants, *in situ* conservation.

Introduction

The Caucasus is one of the most biologically rich regions on Earth. Home to an unusually high number of endemic plant and animal species, it ranks as one of the world's biodiversity "hotspots" according to both Conservation International and WWF. These are the only places on earth where warm temperature deciduous forest existed without interruption since the Tertiary. Large parts of these forests are still virgin and largest pristine forest ecosystems within a huge geographical zone which covers Europe and Central Asia can be found here. The global Conservation significance of the area has also been recognized by WWF which has identified temperate forest of the Caucasus as one of the 200 priority Eco regions on Earth. Adjara floristic region is located in the West Caucasus corridor of the world famous "Hotspot" of the Caucasus. It is distinguished by tertiary period relict flora as well as unique diversity of Colchis mountainous humid forests [1].



Fig 1.Caucasus Ecoregion

One of the approbated and important measures for *in situ* conservation of species and habitats is to create various types of protected areas and to develop protected areas network. The network of Adjara Protected Areas is distinguished by diversity of status: Kobuleti Strict Nature Reserve Ispani II, Kobuleti Managed Nature Reserve Ispani I, Kintrishi Strict Nature Reserve, Kintrishi Protected

Landscape, Mtirala National Park, Machakhela National Park. They all together comprise a unique system of Ajara Protected Areas which, including a transboundary protected areas, exceeds national scales. Current and planned conservation territories of Adjara – Shavshet floristic region (Created by G. Beruchashvili - WWF Caucasus office). These areas are distinguished by floristic diversity and comprise ecosystems within the height of 0-2000 *masl*.

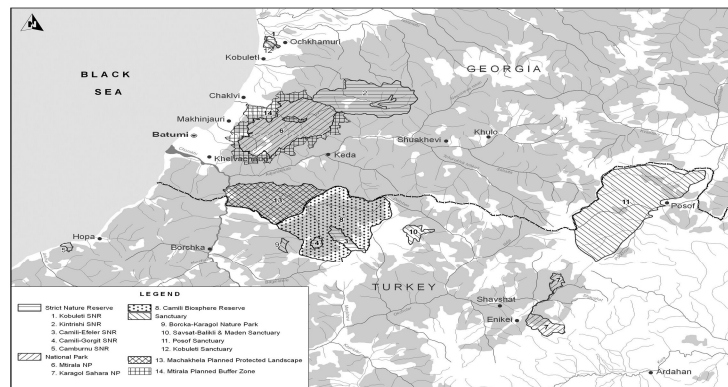


Fig 2. Map of transboundary protected areas (Georgia-Turkey)

Kobuleti protected areas were created in 1999 and comprise Kobuleti Strict Nature Reserve Ispani II (331 ha) and Kobuleti Managed Nature Reserve Ispani I (439 ha) which are situated along the Black Sea coast north of Kobuleti. Ispani I and Ispani II are the most inviolable habitats of world-distinguished unique dome-like bogs in which on the so called “*cushions*” of sphagnum moss together with boreal species (*Drosera rotundifolia*, *Osmunda regalis*, *Carex riparia*, *Molinia littoralis*, etc.) there are relict Colchis species (*Rhododendron ponticum*, *R. luteum*, *Smilax excelsa*, *Rhynchospora caucasica*, *Hedera colchica*, *Quercushartwissiana*, *Q. imeretina*, *Buxuscolchica*).

These bogs and humid ecosystems are not distinguished by diversity of species. Here we have 199 species of vascular plants united in 153 genera and 44 families.



Fig. 3. Mires of Ispani II (Kobuleti, Adjara, Georgia)

The number of endemic species on the given area is 4 including 2 Colchis (*Solidago turfosa*, *Rhamphicarpa medwedewii*), 1 Caucasian (*Solidago virgaurea*) and 1 Georgian (*Quercus imeretina*) species.

Kintrishi Protected Areas comprises Kintrishi Nature Reserve, created in 1959, and Kintrishi Protected Landscape, established in 2007. Total area of these territories comprise 13 893 ha and are within 250-2000m above sea level. The territory is distinguished by rich evergreen sub-forest, ferns and lianas so characteristic of South Colchis.

Flora comprises 895 species of 593 genera and 196 families of vascular plants. Among them there are 757 herbaceous, 23 ferns and 5 liana species.

Among 110 species of woody plants there are 36 trees, 55 bushes and 19 shrubs.

The majority of forest-forming species are relicts of tertiary period: *Quercus pontica*, *Betula medwedewii*, *Rhododendron ungeronii*, *Taxus baccata*, *Staphylea colchica*, etc.

123 endemic species are spread in Kintrishi protected areas that comprise 13.7% of total flora. Among the endemic species: Caucasian endemic – 64 species, Colchis - 34, Georgian-17, Ajara-Lazeti - 8.

Mtirala National Parks represented by the world specific Colchis type plants rich in well preserved and totally original tertiary relicts. The park is considerably sizable and is situated over the territory of three municipalities: Kobuleti, Khelvachauri and Keda. Total area of these territories comprises 15806 ha.

*Solidago virgaurea**Scutellaria pontica**Primula megasaefolia**Epigaea gaulterioides*

At present 593 species of 308 genera and 100 families have been registered in the Park including: Herbaceous -495, Fern - 15, Liana - 5, Trees - 28, Bushes - 35, Shrubs – 15 species. 66 species (11,12 %) from the total floristic composition of the National Park are endemic ones, including: Caucasian -26, Georgian -9, Colchis-25, Ajara-Lazeti - 6[2].

Machakhela National Park

Comprises Machakhela Gorge and partially forest ecosystems of the Chorokhi right bank situated along the Turkish-Georgian transboundary zone. 8733 ha territory is covered with forest, 75% of which is .



Fig. 4. Machakhela National Park

It comprises 548 species of 293 genera and 104 families, including: Herbaceous - 449, Fern - 15, Liana - 5, Trees - 30, Bushes -31, Tree or shrub - 18. Out of plant species spread in the area 55 are endemic ones, including: Caucasian - 21, Georgian - 5, Colchis - 25, Ajara-Lazeti - 4.

Conclusion

Endemic species are one of the specific and significant constituent parts of all floras. At present 174 endemic species are registered in Adjara floristic region out of which 137 endemic species can be liable to conservation in Adjara protected areas, including: Caucasian - 71, Colchis - 36 Georgian - 19, Adjara-Lazeti - 11.

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