EUROPEAN ACADEMIC RESEARCH
Vol. I, Issue 11/ February 2014

ISSN 2286-4822
www.euacademic.org

Impact Factor: 3.1 (UIF)
DRJI Value: 5.9 (B+)

The Anthropogenic Dynamics and the Preservation of Vegetatıon of the Western Region of Azerbaijan

A.A. BAYRAMOVA
Ganja State University, Ganja
Azerbaijan

Abstract:

From the botanical point of view, Azerbaijan has rich natural resources in the Caucasus region. The reason for a rich and diverse flora is a variety of geographical and historical and natural environment, as well as the complicated flora which is far from the floristic provinces formed under the influence. The flora of Azerbaijan is represented with 4500 species under 1000 genes and 150 families. It covers 64% of the Caucasian flora, 24% of the flora of the former Soviet Union, and 11% of the world's flora. In Azerbaijan flora 423 species out of 618 species under 50 families and 190 genes belong to the list of Caucasian endems and 195 species belong to Azerbaijani endems.

Key words: flora, genders, kind, family, alliaceae

Even though the flora of the country is very diverse, it's not everlasting. More than 30 species of flora have died out, 70 species are dying. Overall, there are 450 species in danger of being destroyed. For the last 60-70 years, as a result of humanity's economic activities, areals of many relicts such as *Quercus macranthera* Fisch. Et C.A.Mey. ex Hohen, *Acer trautvetteri* Medw., *Betula pendula* Roth, *Betula litwinowii* Doluch, *Ulmus glabra* Huds, *Padus avium* Mill., *Laurocerasus officinalis* M.Roem. etc. became narrower, or it was observed that some of them became very rare or completely destroyed. Even though plant cenozis during the end of the glaciasion period in Bozdagh, Diabar, Beshbarmag, Kapaz mountain

ranges species of genes *Erysimum* L., *Xeranthemum* L., *Stipa* L. and *Dianthus* L. were widespread, now most of them have died out.

Pinus eldarica Medw., *Galium eldaricum* Grossh., *Netorularia eldarica* (Grossh.) V.Avet., *Pyrus eldarica* Grossh typical eldaricaendems. *Juniperus pygmaea* C. Koch., *J.sabina* L., *Pinus eldarica* Medw., *P.kochiana* Klotzch in C. Koch., *Taxus baccata* L., *Orchis papilionacea* L., *O.punctulata* Stev. ex Lindl., *Allium callidictyon* C.A.Mey. ex Kunth., *Galanthus caucasicus* (Baker.) Grossh., *İris grossheimii* Woronow ex. Grossh., *İ.paradoxa* Stev., *İ.prilipkoana* Kem.-Nath., *Juncus alpigenus* C.Koch., *Lilium ledebourii* (Baker) Boiss., *Scilla caucasica* Miscz., *Tulipa eichleri* Regel., *Orchis mascula* (L.) L., *Ferula szowitsiana* DC., *Acer trautvetteri* Medw., *Galium eldaricum* Grossh., *Netorularia eldarica* (Grossh.) V.Avet., *Pyrus eldarica* Grossh., *Scorzonera pulchra* Lomak., *Campanula meyeriana* Kupr., *Dianthus raddeanus* Vierh., *Rhododendron caucasium* L., *Cyclamen elegans* Boiss. et. Buhse., etc. are species under the threat of extinction.

Increased anthropogenic load on the environment under current conditions, the problem of the protection of biological diversity, are the main course of country's environmental policy. Rear and extinct ecosystems and the modern distribution of species establish the level of current research. Permanent control over the National Parks and State Natural reserves are taken seriously.

At present, to protect natural ecosystems, 8 national parks, 11 state natural reserves, and 21 natural protected areas have been created, with a total of 890 thousand hectares of land under protection. Overall, 10.3% of the country's territory is protected area.

Environmental policy of the Republic of Azerbaijan, activities carried out in the Protection of biodiversity had been discussed in Austria, Turkey, Georgia, Russia, and promoted at some locally held International Congresses and conferences.

In 18th and 19th centuries, 35% of the territory of current Azerbaijan was covered by forests. The total area of Azerbaijan forests is 1213,7 thousand hectares. Beside this area covered by forests there is accounted 989,5 thousdand hectare area which is 11,4% of the total area. It's considered that in Azerbaijan the size of forest per capita is 0,12 ha, which is in average for 4 times (0,48 ha) less than any other country. For the last 25-30 years the total area of damaged forests and shrubes is respectively 225 thousand ha and 70 thousand ha.

Currently the anthropogenial changes in the forests and mixture of plant levels are highly observed almost in all natural zones of the republic. Thus 261 thousand ha forests are in occupied territories by Armenia. In 1960's 20 thousand ha Samukh forest (Riparian forest) had been abandoned under Mingechaur hydro electric station. More than 5 thousand ha Riparian forest had been destroyed under Shamkir HES. Because of the Yenikand HES 2200 ha forest along the river Kur had been chopped down. Also in coming years more than 3 thousand ha Riparian forest will be destoyerd in Kirzan area.

In Azerbaijan dendroflora a total of 50 species were called rear and threatened species. 30 thousand species had died out, 70 thousand species are threatened, 230 species are rear.

It is worth saying that because of the Special Preserved Natural areas rear and threatened flora and fauna species are being identified in order to save them.

After the changes in the status of the Special Preserved Natural areas, for the first time biodiversity of forests, their bioecological features, and spreadness had been studied in a complex way and forest flora had been classified. Goy-Gol Natural reserve had been changed into National Park and its territory was increased from 6,739 ha to 12,577 ha. 3524 ha out of the main territory of the National Park is special area. The total area of the Special Preserved Natural areas is 6739 ha, the state forest fund is 1577 ha, the state reserve lands is 4439

ha. The researches which were held out in 2006-2012 helped to define the modern status of the plant cover of forest ecosystems. The forests of Goy-Gol National Park are divided into 3 parts:

1. Mountain – meadow (1800-220 m) forests are thin and a habitant for east oak, birch, pine trees, dog rose, juniper and other shrubes. Few trees can be met in 2500 m height. While reaching up, a birch can be met more and more.
2. High mountanious forests (1600-1800 m) is a habitant for east beech, Caucasus hornbeam. Hornbeam mixed beech forests are well grown in north, north-east, east-west valleys. In South valley beech is taken over by a hornbeam. From mountanious-meadows to meadow forests hornbeam and beech are replaced by east oak forests.
3. Medium mountanious-forests (1100-1600(1770)m) differs from high mountanious forests with a superiority of hornbeam and minority of beech in lower borders. 70% of the preeserved area is a habitat for coniferous berry which had been under anthropogenial impacts (*Taxus baccata* L.), oak tree (*Pinus kochiana* Klotzch in C.Koch), east beech (*Fagus orientalis* Lipsky), Caucasus hornbeam (*Carpinus betulus* L.(= *Carpinus caucasica* Grossh.), east oak (*Quercus macranthera* Fisch. et. C.A.Mey. ex Hohen.), Caucasus lime tree (linden) (*Tilia begoniifolia* Stev.(= *Tilia caucasica* Rupr.), mountain elm tree (*Ulmus scabra* Mill.), birch forests (*Acer platanoides* L.), in 1800-2000 m height in park subalp forests Caucasus linden (*Tilia begoniifolia* Stev.), birch of Litvinov (*Betula litwinowii* Doluch.), bladed birch (Betula pendula Roth), garden birch (*Acer campestre* L.), simple ash tree (*Fraxinus excelsior* L.) are wide spread. In the forests Caucasus rododendron (*Rhododendron caucasium* Pall.),

juniper (*Juniperus oblonga* Bieb.), dog rose (*Rosa canina* L.), peanut (*Corylus avellana* L.), barberry (*Berberis vulgaris* L.), medlar (*Mespilus germanica* L.), Caucasus pear (*Sorbus caucasica* Zinseri.), Caucasus hawthorn (*Grataegus caucasica* C.Koch.) and other shrubes are widespread, too.

In the National Park the widest spread tree is beech (1270 ha). Especially spread in 1400-2000 m height it is well grown in north, north-west, north-east valleys, and is mixed with hornbeam, birch, poplar and oak trees. The second wide spread tree is hornbeam (1020 ha). It grows almost in all heights. Pure beech forests do not exist, but in bright south valleys and in 1200-1600 m it is widespread. Beech, oak, ash, maple trees create mix forests.

Oak forests in comparison with beech and hornbeam forests occupy a relatively small area (400 ha). The most prevalent in the western part of the reserve, it is dominated by the southern slopes. Pure oak-wood is less, is mixed mainly with beech, hornbeam and birch.

Pine trees occupy mainly 1500-2200 m heights of the territory of Goy-Gol National Park (149 ha), which is developing pure beech, hornbeam, oak, birch and so on, forms with mixed forest. In Goy-Gol National Park covered with forest trees in the area of gender are: maple 39 ha (1.3%), birch 27 ha (0.9%), ash tree 7 ha (0.9%), linden 1 ha. Trautvetter birch (*Acer trautvetteri* Medw.), Nizami rosa (*Rosa nisami* Sosn.), Azerbaijan rose (*Rosa azerbaijanica* Novopokr. et Rzazade.)are also wide spread.

Between the relict lawns of the upper forest border of the third period thicket of Caucasian rododendron (*Rhododendron caucasium* Pall.), (*Vaccinium myrtillus* L.*)*, gives a special beauty to the Maral Lake (Novruzov V., Ismailova Z., Bayramova A. 2011)

Blackberries, Nizami aggul, Azerbaijan aggul, Qaya dovshanlamasi, pine trees are rare endems and relicts of the

Goy-Gol National Park.

It was determined that the 27 species of trees, 54 species of shrubs, 6 types of semi-shrubs are spread in the territory. Forests around the Goy-Gol National Park are: coniferous forests – candlestick and juniper sparse forests; Eastern pistachio forests of beech, oak forest formations; birch and maple forests of the park include the type sparse. Although the composition of the forests is mostly broad-leaved forests of beech, oak and hornbeam species forms, the area is covered with forests accounted for 85.5% of the three genesis.

Erosion is the least developed problem of the park's forests. The process of erosion is increased in damaged areas of the forests. Erosion process is not so strong in Maral Lake, reserve regime prevents pollution of the lawn. However, from time to time, severe winds cause cutting of large trees, which creates favorable conditions for beginning erosions. As a result, the erosion areas are increasing year by year. In 2005, a strong storm passing through the reserve along the strip had destroyed the big area of giant trees. Although 7 years had passed after the hurricane, the results of it have not been addressed.

Considering that the River Kura in Azerbaijan is 900 km in length along the forest area, more than 700-800 km are known to remain without forestry. Taken as a whole, the local forests are currently by the River Kura, just 90-180 km along the shore can be extended (Aliyev and Khalilov, 1982). However, these forests are not protected in the long term, breaking, change of hydrological conditions on the pasturing area decreased and the changes in the hydrological regimes of River Kura significantly changed the composition of tree species. Increasing the territory of the State Nature Reserve Garayazi to 9658 hectares and the protection of Riparian woodlands around the Kura can have a significant importance. In this regard, it is important to control trees and bushes cenopopulations.

At present, the main forest Riparian woodlands around Kura are populated with tree species as Willow, elm, gum tree (*Pistacia mut*), pomegranate (*Punica granatum* L.), tamarix (*Taxarix ramosissima* Ledeb.), barberry (*Berberis vulgaris* L.), hawthorn (*Grataegus pentagyna* Waldst. et Kit), thorn (*Paliurus spina-christi* Mill.), nightshade (*Vitis solanum* L.), grass plants such as *Agropyrum repens* L., *Solanum nigrum* L., *Lepidium latifolium* L., *Galium humifusum* Bieb., *Tragopon graminifolium* DC., *Bromus japonicus* Thunb., *Xanthium strumarium* L., *Alopecurus arundinaceus* Poir., and so on. Trees and shrubs are rarely spread in local areas. The result of all these is land salinization and swapms. Researches have revealed that the 3 species of trees, 48 species of shrubs and 2 types of semi shrubs are spread in the State Nature Reserve Garayazi.

It was found that the species of the State Nature Reserve not subject to the third round; in the Eldar Pine Grove is gum tree (*Pistacia mutica*), nettle tree (*Celtis caucasica* Willd.), Milk tree (*Cotinus coggygria* Scop.), Brimstone (*Rhamnus pallasii* Fisch. et C.A.Mey.), etc. . the part of the third period, the sparse Eldar Pine grove (*Pinus eldarica* Medw. in Acta.) xerophytic types of forests had been preserved. Around the river height of the poplar (*Populus canescens* (Ait), *Smith* (= *P.hybrida* Bieb.), willow (*Salix alba* L.), elm (*Ulmus minor* Mill. (= U.foliaceae Gilii.)), tamarix (*Tamarix ramosissima* Ledeb), pomegranate (*Punica granatum* L) as well as the local shape of the trees and shrubs of the forests are located. Kazakh juniper (*Juniperus sabina* L.), elongated juniper (*Juniperus oblong* Bieb.), dwarf juniper (*Juniperus pygmaea* C.Koch), red juniper (*Juniperus polycarpos* C. Koch.) and so on are part of sparse forests.

In dry stony slopes from the family *Ephedraceae Dumort.* 2 species – *Ephedra distachya* L.*, Ephedr. procera* Fisch et C.A.Mey. are spread. In the territory of the reserve 121 hectares are under pine trees, 170 ha under juniper forest, 37

ha under gum trees and other species in the forest covers 52 ha area. The main forest-forming species is Eldar pine (*Pinus eldarica* Medw.) In the third period, the balance of the natural world, the Eldar pine-tree in State Nature Reserve Eldar Pine ends on the border of the Republic of Azerbaijan and Georgia. Gum tree (*Pistacia mutica F.et M.*) of the pistachios genius is the wild spread and is one of the most precious relic trees. Although gum-tree forests occupy less, their geographical area is wide. This species is met in the western part of the State Natural Reserve in Eldar Pine Grove: Common yer (*Taxus baccata L.*) – is a precious relict of the 3rd period and can be found in Goy-Gol National Park and State Nature Reserve Eldar Pine Grove.

Research in this area has been developed on a regular basis and was defined that flora of Eldar Pine Grove xerophytes forests is rooted deep from the botanical-geographical point of view (L.I.Prilipko, 1970). In Bozqir plateau the mountain Elleroyugu in hard climatic conditions 380 hectares of steppe was formed. Forests in the reserve are spread on the western half of the mountain, the northern and north-eastern slopes of the sloping sea level, up to a height of 710 m. The area is hot and dry with poor soil conditions. Therefore, in the forests, elements of this xerophytic species are found. Botanical composition of the forest consists of *Pinus eldarica* Medw., *Junipeus foetidissima* Willd., *Junipeus oblonga* Bieb., *Junipeus polysarpos* C.Koch., *Punica granatum* L., *Pyurus eldarica* Grossh., *Pistacia mutica* Fisch. et C.A.Mey, *Berberis iberica* Stev. et Fisch. ex DC, *Berberis vulgaris* L, *Ephedra distachya* L., *Ephedra procera* Fisch. et C.A.Mey and others. Here, 290 ha is partially a thick wooded area, 90 ha is sparsely wooded area. 121 hectares are under pine trees, 170 ha under juniper forest, 37 ha under gum trees and other species in the forest covers 52 ha area.

Sparse xerophytic forests of Eldar Pine Grove for the number of endemic and relicts is the best not only in Jeyranchol

area, but also in the West. 92.4% of the Eldar plain endems was recorded in here. Trees, shrubs and plants formation within Eldar is connected to this type. Sparse forests are bright. The main species are facultative heliophyts. However, pure pine, juniper and gum tree forests are elected in the general background. Shrubs are developed in empty places of the forest. Sometimes they form the bottom of the forest genesis. Their strong development around the forests proves that, in the past it was a very wide area of forests, then later it became narrower and shrubs had been developed in suitable for their conditions. As a result, forests have been replaced with bushes.

In gum tree forests pine and juniper bushes are more spread (*Pistacieta-Juniperetum*). This formation was studied by L.I.Prilipko (1970) for the steppe plateau, especially for Reserve Turyanchay. However, at present, sonozes in Ellәroyugu Mountain were formed. The dominant species is *Pistacia mutica.* Abundance of trees and bushes, grass type species composition of plants is high. The gum tree covers a large area. There are 4 openseeded plants, 27 flowering plants, 4 mosses and 12 lichen species are spread.

There are also shrub-gum trees in the sparse forest (*Pistacietum fruticosum*), the dominant type of this senoz being *Pistacia mutica.* It is up to 12 m high with a bal formed top. The trunk is deep cracked. The colour of the trunk is gray-brown. It has compound leaves. It blossoms before giving leaves. The tree is drought-resistant, and light-requiring. In this kind senozis it's spread with *Punica granatum* L.*, Berberis iberica* Stev. et Fisch. ex DC.*, Berberis vulgaris* L.*, Pyrus eldarica* Grossh. and other plants and bushes. The botanical composition of the senozis consists of the grass plants which are more common xerophytic elements (*Dactylis glomerata* L. *, Poa bulbosa* L.).

BIBLIOGAPHY:

_____. 2003. 2006. 2008. *Conspectus flora caucasi*. Tomus I-III. Editio Universitatis Petropolitanae.

_____. 2010. *Conspectus flora Karachaeva – Çerkes*. Stavropol.

_____. 2010. *The conspectus of Azerbaijan flora*. Baku.

ANSA. 2011. *Botanii institute scientific works. The Goy-gol National Parks gazon ecosystems flora and plant*. Baku.

ANSA. 2012. "The forest ecosystems of flora and plants of the west region of Azerbaijan." *The scientific works of Botanic İnstitute*. XXXII part.