Anthropogenic Transformation of the Forest Ecosystems of Azerbaijan

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Abstract:
Vegetation cover, particularly the forest being a vital component of the natural environment shows a sensitive reaction to all changes going on there and reflects in itself the situation of changed environment taken place as a result of human influence.

Key Terms: Anthropogen, forest ecosystems, degradation, forest landscape, tree species

Introduction:
The basic reasons of negative transformation of the forest ecosystems are - destruction of forests and formation instead of their places agrocenoses, lawlessly felling of trees, speedily development of cattlebreeding (over grazing the cattle in the forest), soil melioration, use of fertilizers and chemical substances, fire accidents, extraction of mineral resources, etc.

Atropogen impact on forest ecosystems in the most regions of our republic was the cause of transformations natural ecosystems into atropogenic ecosystems. Some ekzogenous factors are activated due to atropogenic impact. For example, the deforestation on the slopes are caused to the intensification of the erosion process and the strengthening of the flood taking place, which might be reason for landslides and rock leads.

The transformation of forest ecosystems in separate zones of Azerbaijan has taken place differently depending on the physical-geographical conditions, then intensity and direction of anthropogenic influence as well.

Our researches showed that the present (anthropogenic) upper border of the forest in the mountain regions of our republic averagely passes from 1600-2000 m above sea level, i.e. the upper border of the forest (UBF) was descended 500-1000 m down.

The route surveys in the Muhahchay basin of Zakatala region shows that the Upper Forest Board has been reduced up to 1800-2000 meters. (Figure 1.) In the Qashqay basin of Qah region The Upper Forest Board (UBF) is less prone in the south 1450 meters, its neighboring Kurmuk basin area is reduced up to 1550-1650 meters. However, in the Lakitchay basin is more than 2000-2015 meters more.

In the basin of Ganjachay and Tartarca at about 2200-2350 meters above sea level of the high slopes, the small areas of birch trees forests are available, also hornbeam and oak trees mixes are included.

On the left bank of Ganjachay at 2400-2500 meters above sea level there are also juniper schubs can be found. There are creeping juniper shrubs in the source forms remnants in Zayamchay, arising on the top of mountains up to 2600-2700 meters. There are curved hull of the birch trees avalanche having the short height (2 meters) can be found in Kulekchay basin on Kapaz mountain.

In “Tillek” area of Ordubad region 2400-2600 meters above sea level, there are a small population of oak trees, ash trees, trembling trees (Populus tremula) and birch trees are can be found. In Talish the UFB are mainly more than 1500-1800 meters above sea level.

In some places such as Alar, Lerik and Sori settlements the UFB zone is gone down up to 1100-1300 meters. On the north slope of the mountain the UFB is completed with Chestnuts leaves Oak (Quercus castaneifolia) and beech trees (Fagus orientalis).
The biological varieties of thin groves of the subalpine type crooked trunk, low shapely birch (*Betula pendula*), service-tree (*Sorbus* sp.) and eastern oak (*Quercus macranthera*) degraded and in their places appeared anthropogenic type meadows, steppes and bushes as a result of descending of UBF. (Figure 2)

In mountains of Greater and Lesser Caucasus 1200 -1800 (2000) above sea level average slopes of mountain-forest zones according to all features defined (except the other trees species involved), large harvest of beech forests (beech zones) were spread.

In one part of (in Gadabay and in Dashkesen regions) Lesser Caucasus average slopes of mountain-forest, located in the wide lowlands of mountains quite landscapes was replaced by deforestation of landscapes and agriculture fields since the most ancient times.

As a result of the human activity available beech forests are sparsing and their productivity decreasing, replaced by hornbeam trees and shrubs groups (juniper, hazelnut and different others) (picture 4).

**Figure 1.** Present upper border of the Zagatala Preservation

Because of anthropogenic influence the beech forests existed in the middle mountain forest belt became thin, then their productivity decreased and they were replaced by hornbeam (*Carpinus caucasia*) groves and bush groups (juniper (*Juniperus* sp.), hazelnut (*Corylus* sp.) and different bushes).
The pure oak (*Q. iberica*) and oak-hornbeam forests in the lower mountain-forest belt (Georgian oak belt) of Major and Minor Caucasus being thinned became underwood origin groves and replaced by oriental hornbeam (*Carpinus orientalis*) generated from lower productive shoots and xerophil type shibliaks (Christ's thorn, Spiraea, juniper bushes, etc.). In many parts of Minor Caucasus the biological diversity of the forest was completely annihilated and replaced by agricultural areas, seliteb landscape and wormwood semi-deserts.

According to survey held in Talish lowlands and in average mountain-forest zones due to antropogen negative factores effect high-hull chestnut oak trees forests were replaced by hornbeam trees (*Carpinus caucasia*), iron tree (*Parrotia persica*), shrub-shaped tree (*Zelkova carpinifolia*), thorn, sometimes sumac bushes, but beech forests are replaced by fern and elder hooks.
The plain forests are met in Ganykh-Eyrichay valley, Samur-Devechi and Lenkaran plains and alongside areas of Kur-Araz rivers in our republic. The forest landscape has mainly dominated in Ganykh-Eyrichay valley and Lenkaran plain up to the near past. Only separate small areas of these forests are preserved. They have been substituted by different direction spheres of man’s economic activity and gardens.

There were time when Samur-Devechi lowland area was covered by oak, hornbeam, whiteleaves poplar (Populus hybrida) forests.

According to the intensive development of agriculture in the region (gardening, farming, cropping, vegetable-growing, cattle-breeding) wide areas of the forests were severely destroyed and instead aqrosenoz, seliteb-garden, seliteb-recreation forest landscapes were created.

As a result of anthropogenic impact on forest agriculture areas, longstalk oak trees (Quercus longipes) forests were replaced by hornbeam, blackberry and white leaves poplar (Popalus hyprida) forests sparsing and distroying is replaced by marsh grasses (cane, sedge and etc.) and with sixs-armed bindweed.

Once, until the middle of the XVIII century the tugay forests stretching 900 km distance alongside of the Kur river up to the Caspian Sea occupied a wide strip in the territory of our republic. (picture 4). Now they are preserved as small tracts shape separately from each other.

Reducing the forests zones in many places, in order to obtain sown fields, intensive irrigative constructions and usage them as pasture were the reason for deforestation.

According to the anthropogen impact there are longstalk oak trees (Quercus longipes) and white leaves poplar (Popalus hyprida) trees replaced by covered ivy bushes among the sparse range of trees or wide spread areas of shrubs such as thorn, blackberry, tamarisk, barberry, which can be commonly found in the forests agriculture fields and protected areas. However the East part of Shirvan lowland are transformed deforestation fields into near desert zone with salty and efemeric plants.

Conclusions

1. Antropogen transformation is meddling in the forest biogeocenosis, natural development process, reducing age and structure of trees, their floristic features become scarce, initial biology diversirty perishing and reproduction of endangered tree species are replaced by meadows, steppe and plains.

2. According to the long human activity and their interfere, the forest ecosystems is stopped transformation of vertical heights zones in forests and this is the main reason for continued distraction.

References

Figure 4. Antropogenic factors influence on the iberian oak biological diversity

Biology diversity of iberian oak

- Falls of productivity
  - Sparsing
  - Falls of productivity
- Changing (replacing)
  - Oriental hornbeam
  - Shrubbery
- Destroying
  - Agricultural fields
  - wormwood semidesert
  - Selitel landscape
  - Gardens, vineyards

Thorn shrub

Juniper

Spirea

Friqana shrub