

A photograph of a misty forest with tall, thin trees and a mossy forest floor. The text is overlaid on the image.

**Annual meeting of the Forest Invasive Species for Europe
and Central Asia (REUFIS)**

Zdanovicy, Belarus

**Invasive species of pathogens, plants, vertebrates
and invertebrates of Caucasus region**

G.M. 2018

Caucasus

A satellite map of the Caucasus region, showing the mountainous terrain of Georgia, Armenia, and Azerbaijan, with the Black Sea to the west and the Caspian Sea to the east. The word "Caucasus" is written in large white letters across the top of the map.

Total area of 580.000 km²

Armenia, Azerbaijan, Georgia, the North Caucasus portion of the Russian Federation, northeastern Turkey and part of northwestern Iran.

One of the hotspots

Invasion

Human, tourism, trade, transport, wind, water and etc...

Impacts: Nature/Human

Exotic-alien species were imported for special purposes, but ...

Resulting terrible picture

Brief overview on pathogens

Dutch elm disease, boxwood blight, chestnut blight and many others, who proceeded to the death of natural and artificial forests.

Dead elm trees



Elm began to regrow



There is no updated or special research on vectors - elm bark beetles

Boxwood blight – *cylindrocladium buxicola*

According to the example of Georgia, the damage of box trees, caused by boxwood blight began from 2009. as it was identified on species level in 2011 as a fungus - *C. buxicola*. In 2012 it was registered in Iranian natural boxwood forests.



Branches actively travelled for religion purposes during Easter

Still here are no effective treatment methods



Chestnut blight – *Cryphonectria (Endothia) parasitica*



Castanea sativa is protected by red book and red list of Georgia. The fungus was known from 1938 (Georgia) and only now, during last years, the scientists found several bio-agents – hypovirulent strains; Numerous researches must be done to find relevant strains... And release them in sample plots, then in large areas.

Brief overview on Invasive plants

Ambrosia artemisiifolia



Ailanthus altissima



Paulownia tomentosa



***Ambrosia artemisiifolia* – ragweed competes with native plants for space, nutrients, light and water. Cause to human rhinitis, oculorhinitis, asthma and dermatitis;**

***Ailanthus altissima* – tree of heaven: good for erosion but its toxins produced in the bark and leaves accumulate in the soil and inhibit the growth of other plants**

***Paulownia tomentosa* – imported for light-weight wood, fast growing, ornamental purposes. Competes especially in disturbed areas with rare plants for space, water, nutrients, light and wins!!!**

Albizzia julibrissin – MIMOZA,
Lenokoran acacia or Persian silk tree



In Talysh mountains its naturally (Azerbaijan), in Iran its Invasive and in Georgia we plant artificially... Invades any type of disturbed area. Once it is established its difficult to remove due to long lived seeds and ability to re-sprout vigorously. Competes with native plants for space, nutrients and etc...

Pueraria lobata - Kudzu

Once it is established, there is no chance to remove! Covers everything! Noxious weed. Competes with native plants for water and **LIGHT**. Always wins!



Invasive species of Vertebrates

Procyon lotor – Raccoon



The most economically important mammal for furbearer. In 1941 raccoon was introduced in Azerbaijan and then it widely spread in whole Caucasus region. Georgia - 1984.

Its broad ecological niche allows to exploit a wide range of habitats and explains the success of its colonization as an alien species

Impact on wide range of crops, small animals, eggs of birds and human health-vector of rabies

Lutra lutra – Eurasian otter *Mustela lutreola* – European mink



Invasive

VS



native

Good for furbearer, negative impact on Mink and fish farmers. Protected by red book and red list of Georgia

***Sciurus vulgaris* – Eurasian red squirrel**



VS

***Sciurus anomalus* – Caucasian squirrel**



Negative impact: competes for space and food

***Phasianus colchicus mongolicus* –
ring necked pheasant**



VS

***Phasianus colchicus colchicus* –
common (colchian) pheasant**



Compete in space and food. Impact: genetic level

Invasive species of Invertebrates

American white butterfly - *Hypantria cunea*, gypsy moth – *Lymantria dispar*, great spruce bark beetle – *Ips typographus* ...

***Cydalima perspectalis* – box tree moth**



**Brown marmorated sting bug –
*Halyomorpha halys***



So ...

Where do we still do mistakes and what we should update?

Raise Public awareness about how dangerous are Invasive species...

Increase the number of specialists – competent specialists in custom houses...

Find the first source of spreading the Invasive species... “CHINA/HOLAND”...

Strong control of certification of those companies who export products (plants, animals) all over the world...

Increase the finings for companies and human who export or carry the invaded material...

Shorten the reaction time for the invasive species control...



Thanks for your attention