RIPARIAN FORESTS IN BULGARIA
MAIN THREATS AND RESTORATION MEASURES

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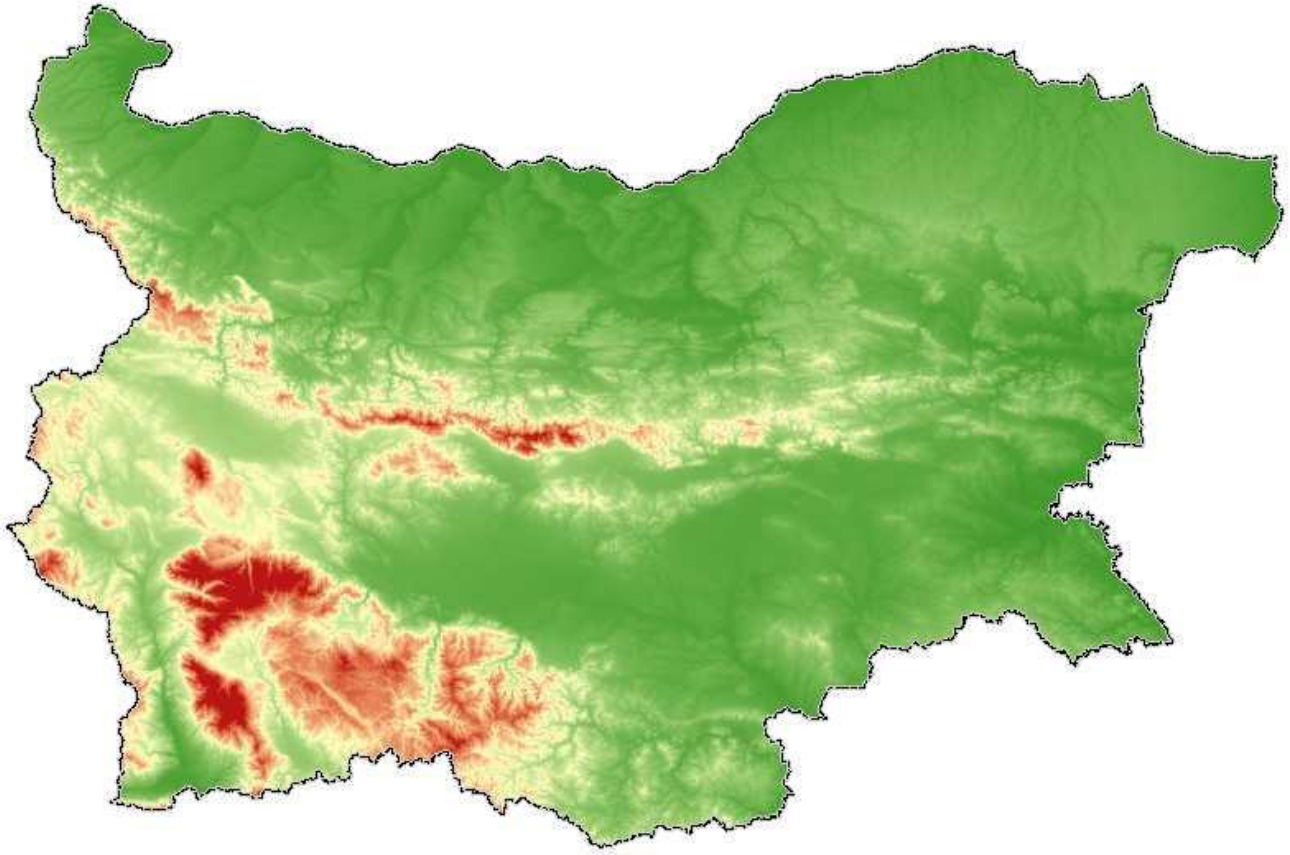
COUNTRY
GENERAL INFORMATION

- ✓ Total area: 110 000 ha
- ✓ 39 Mountains
- ✓ 8 mountains higher than 2000 m
- ✓ Highest mountain in the Balkans,

  Rila 2925 m

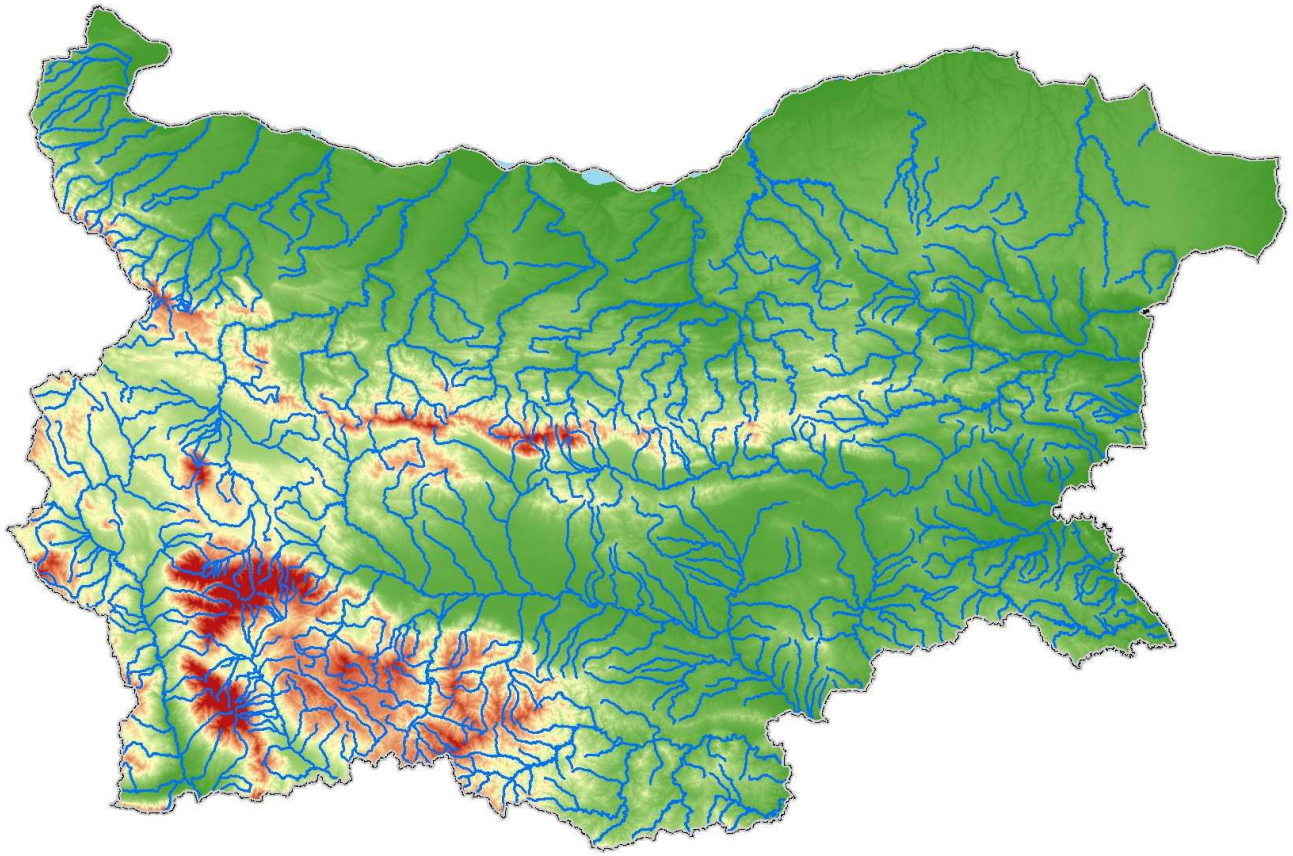


The Balkan Range (In the back)
as seen from Sredna Gora Mountain

Rila Mountain

COUNTRY
GENERAL INFORMATION

- ✓ Dense river network
- ✓ Few bigger rivers
- ✓ Access to Danube and Black See
- ✓ Many dam-lakes and irrigation channels



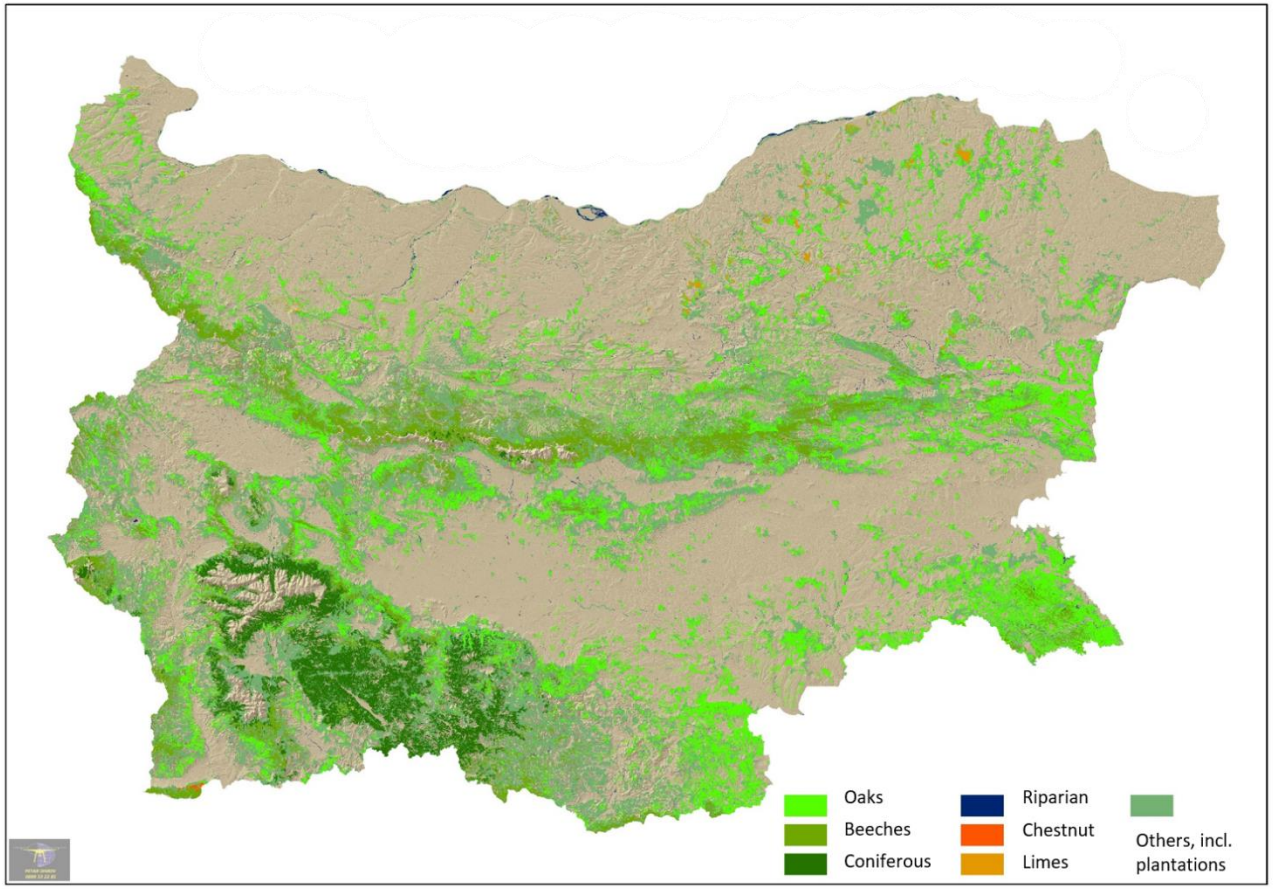
Danube river

Kamarska reka

COUNTRY
GENERAL INFORMATION

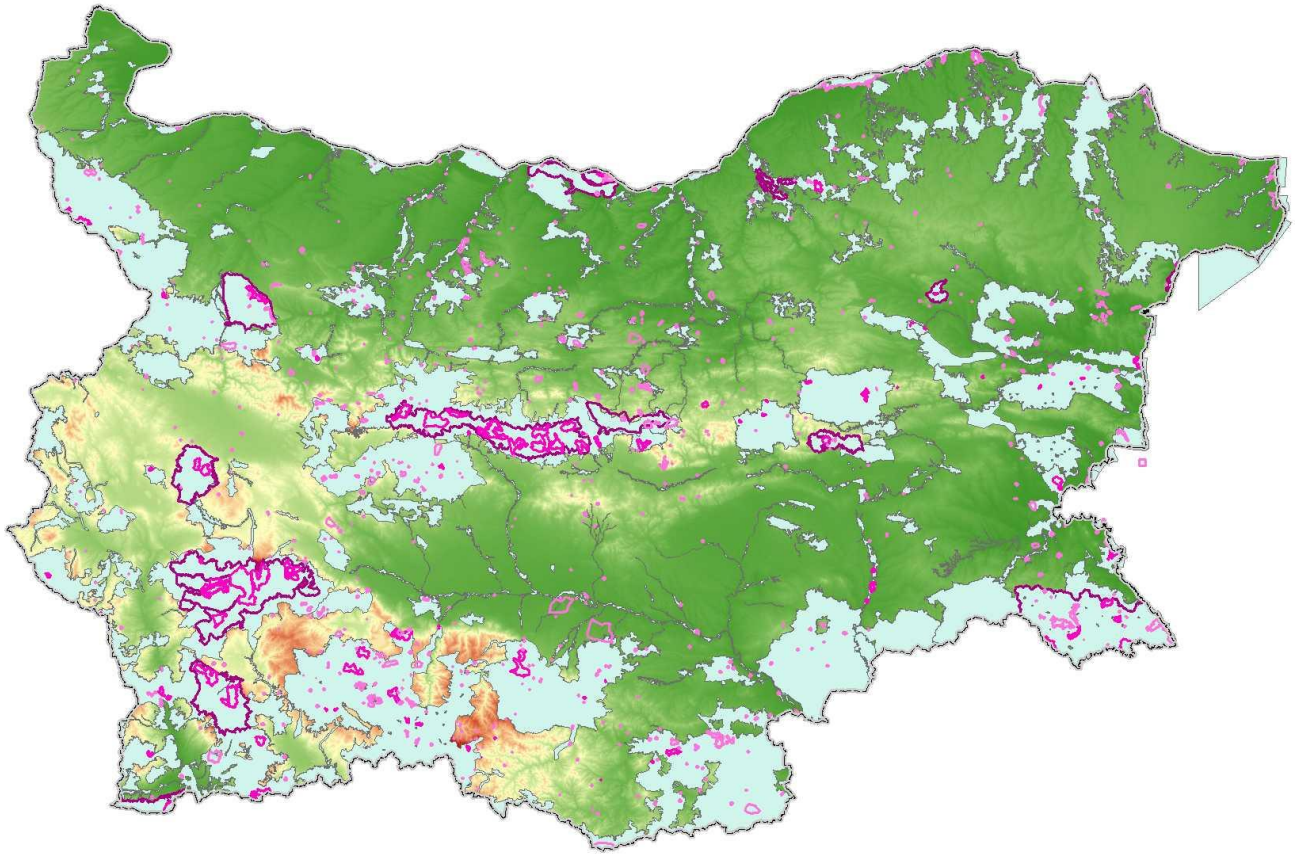
- ✓ Total forested area: 3.8 Mil. ha
- ✓ Total growing stock: 680 Mil. m^3
- ✓ Average growing stock per ha:

  178 m^3
- ✓ Average year increment: 3.7 m^3/ha



COUNTRY
GENERAL INFORMATION

- ✓ Dense network of protected territories
- ✓ Protected territories – 5% of the country territory
- ✓ Natura 2000 – 1/3 of the country territory
- ✓ Many issues with the effective protection



RIPARIAN FORESTS

- ✓ 5 Natura 2000 habitats
- ✓ Some habitats critically threatened
- ✓ All in unfavorable conservation status

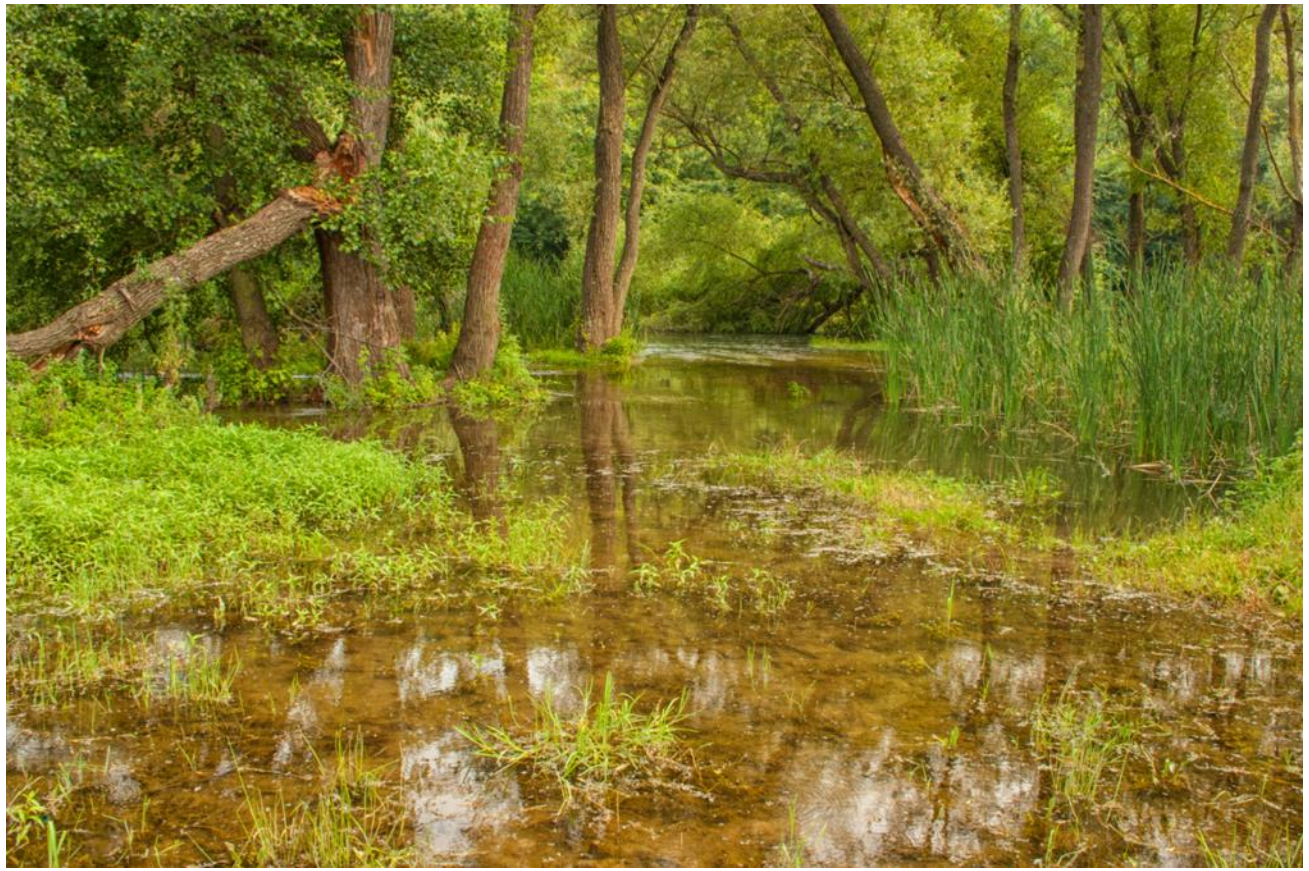
Habitat/Subtype	Red Data Book of the Republic of Bulgaria	Assessment of the conservation status for Bulgaria	Assessment of the conservation status for the EU
91E0		Unfavorable	Unfavorable
Subtype 1	Vulnerable		
Subtype 2	Vulnerable		
Subtype 3	Threatened		
Subtype 4	Threatened		
91F0		Unfavorable	Unfavorable
Subtype 1	Critically threatened		
Subtype 2	Critically threatened		
Subtype 3	Critically threatened		
91A0	Vulnerable	Unfavorable	Unfavorable
92C0	Threatened	Unfavorable	Unfavorable
92D0	Threatened	Unfavorable	Unfavorable

91E0* - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior*

- ✓ *A. glutinosa* dominated forests in the lower parts of the rivers, periodically flooded under natural conditions
- ✓ *A. glutinosa*/ *A. incana* dominated galleries in the middle and upper parts of the rivers
- ✓ *Salix alba*, *Populus alba* and *P. nigra* dominated forests and galleries, periodically flooded under natural conditions

92A0 - *Salix alba* and *Populus alba* galleries

- ✓ Riverside galleries dominated by *Salix alba*, *S. fragilis*, *Populus alba* and *P. nigra* in the rives from the Mediterranean basin (in South Bulgaria)



91E0* - Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* & 92A0 - *Salix alba* and *Populus alba* galleries

Reasons for degradation

- ✓ Alteration of the river bed/ canalization
- ✓ Dam lakes
- ✓ Dikes and irrigation channels
- ✓ Plantation forestry and agriculture
- ✓ Invasive species

91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Fraxinus excelsior* or *Fraxinus angustifolia* along the greater rivers

- ✓ Floodplain riparian forests (longozi) dominated by *Quercus robur*, *Fraxinus oxycarpa* and *Ulmus minor*
- ✓ Humid lowland oak forests in the Danube hilly plain
- ✓ Thracian forests of *Quercus pedunculiflora*. This is the least humid type, but still dependent on regular flooding.

91F0 Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Fraxinus excelsior* or *Fraxinus angustifolia* along the greater rivers

Reasons for degradation

- ✓ Dikes and irrigation channels
- ✓ Dam lakes
- ✓Plantation forestry and agriculture
- ✓ Invasive species and forest succession
- ✓ Illegal cutting

92C0 Platanus orientalis woods

- ✓ River galleries on alluvial soils (gravel and sand on the surface) in the rives from the Mediterranean basin (in South Bulgaria). Both in the lower and the upper river flows.

92C0 Platanus orientalis woods

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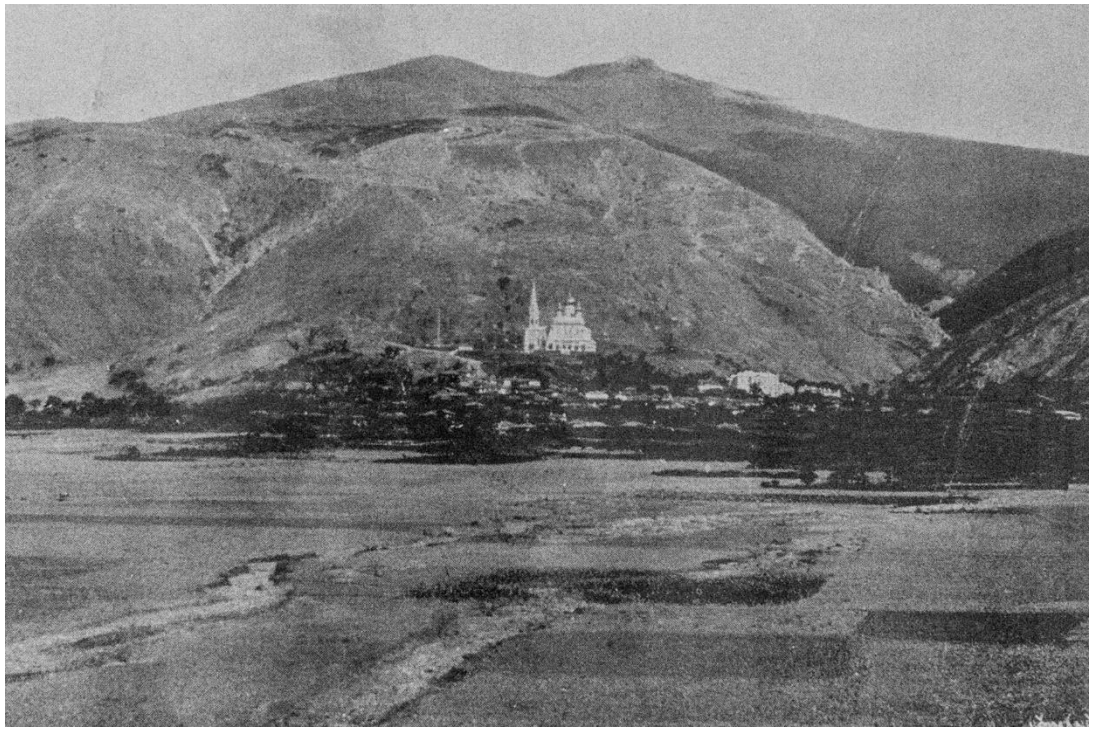
92C0 Platanus orientalis woods

- ✓ Population fragmentation (housing & urban areas)
- ✓ Habitat quality degradation due to change of water regime (hydropower stations)
- ✓ Continuing decline of mature individuals
- ✓ Invasive non-native/alien species

Examples of good practices

Afforestation – since beginning of 19th century

Central Balkan range – eroded slopes of the mountain, muddy flows flooded settlements



The same place now – hills covered by forests, river flows stabilized (for the moment)

Examples of good practices

Afforestation – positive effect on the river currents

Tundzha river in Kazanlak valley, riverside vegetation gradual recovery

Eastern Rhodopes

Examples of good practices

Afforestation – not always achievable (anymore) and sustainable

Eastern Rhodopes

A small river in the same valley with destroyed banks and natural vegetation

Examples of good practices

Conservation, protected territories – valuable but not always sustainable

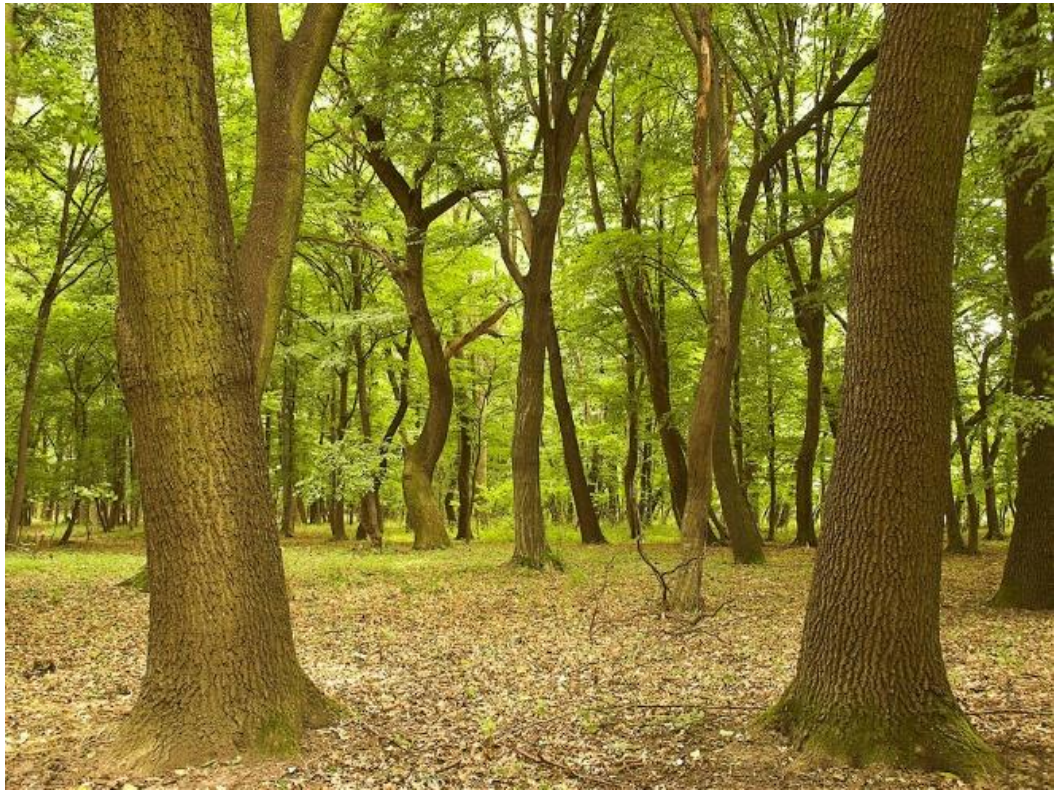
Old *Populus nigra* trees along Tundzha river, gene pool preservation

Trees dieback, no regeneration, if yes, origin contaminated

Examples of good practices

Conservation, protected territories – valuable but not always sustainable

Protected territory Tulovska koriya



Trees die-back, succession due to changed water regime

Examples of good practices

Conservation, protected territories – valuable but not always sustainable

Kosuy island protected territory, Danube river

Invasive species

Examples of good practices

Afforestation with native species – only on scattered locations

Populus nigra plantation, established recently by WWF – Bulgaria

Protected territory Dolna Topchia, *Q. robur* plantation

THANK YOU!

WE HELP BNSF!