

Legacies of 19th century land use shape contemporary forests



A perspective on Carpathian forests



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Carpathian Basin Project
Eastern Europe Synthesis Project*

Outline



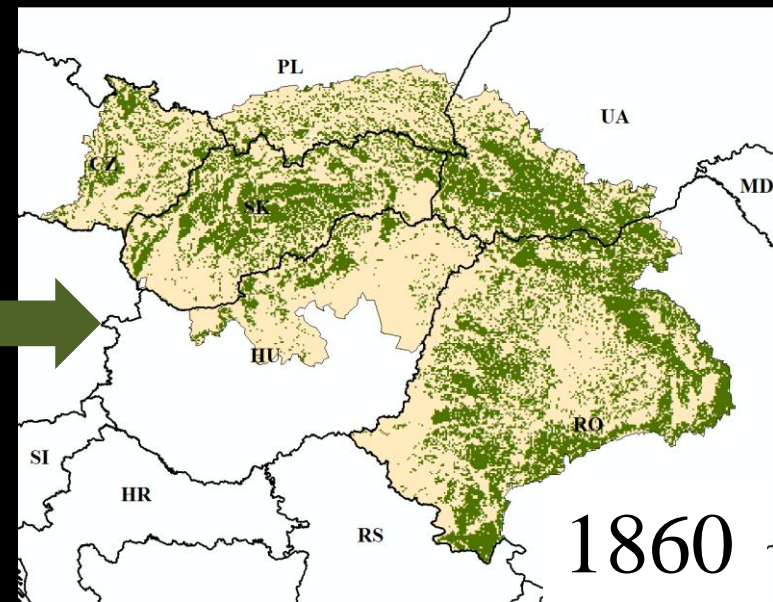
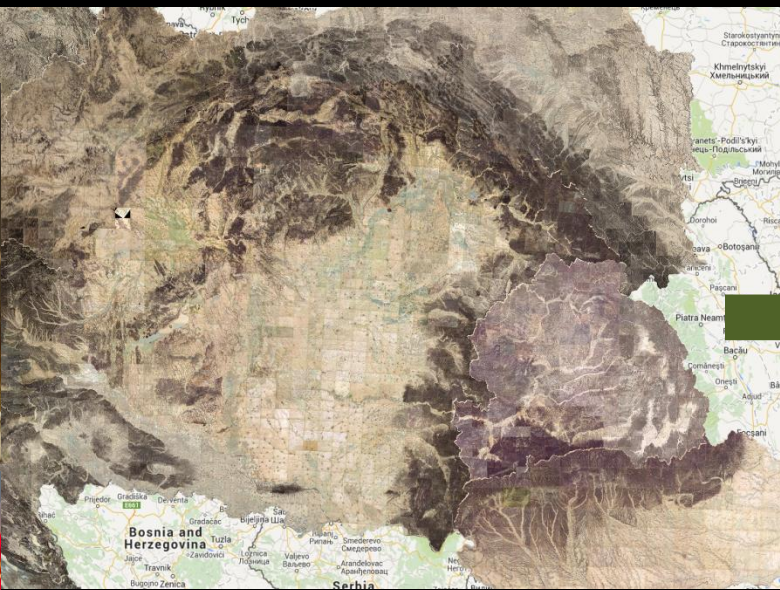
Long term land change

Legacies of past land use type

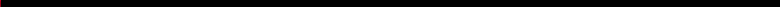
Legacies of past land management

Why are legacies important?

~1860

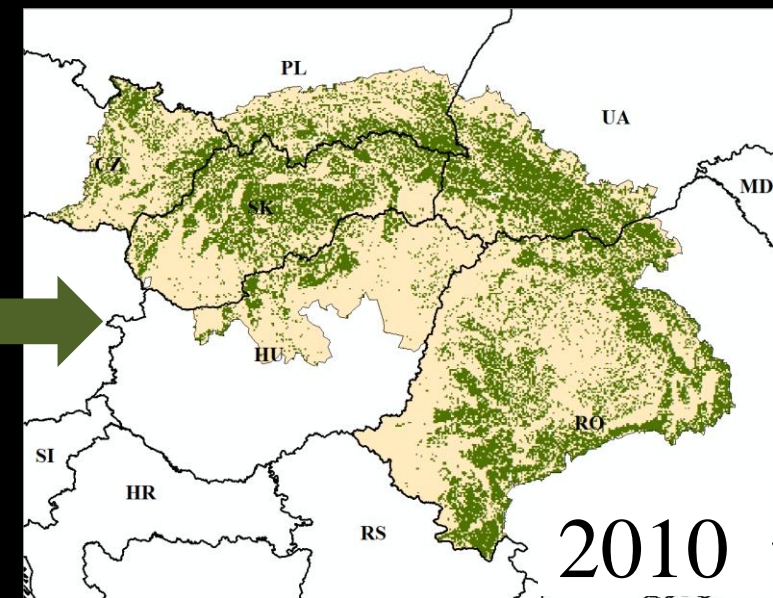
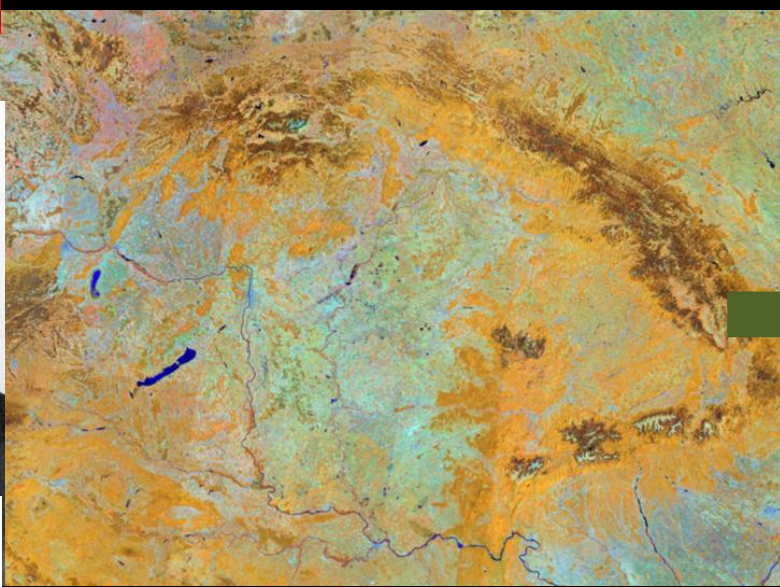


~1940



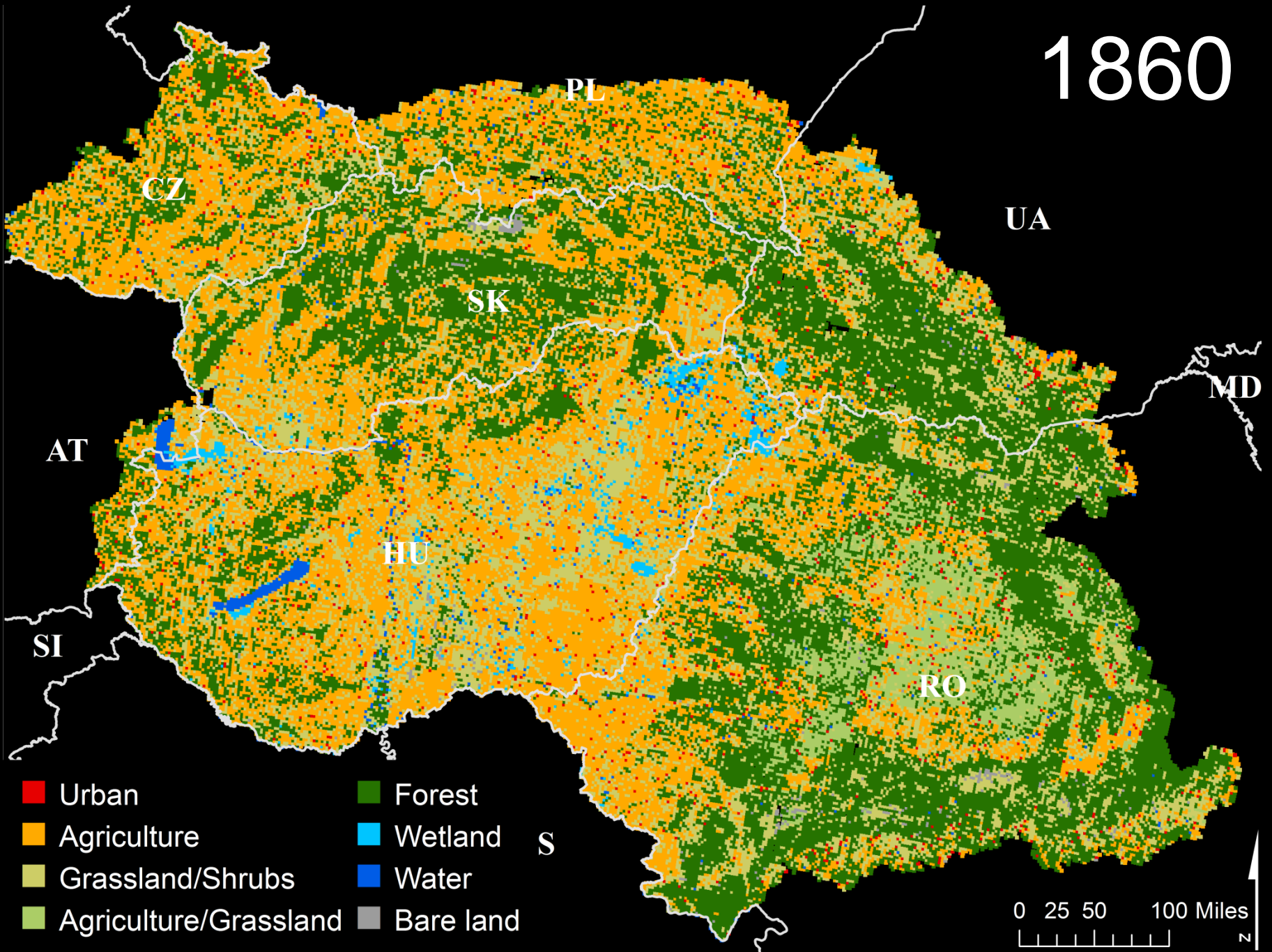
How did past land uses and past forest management affect contemporary forests?

~1990

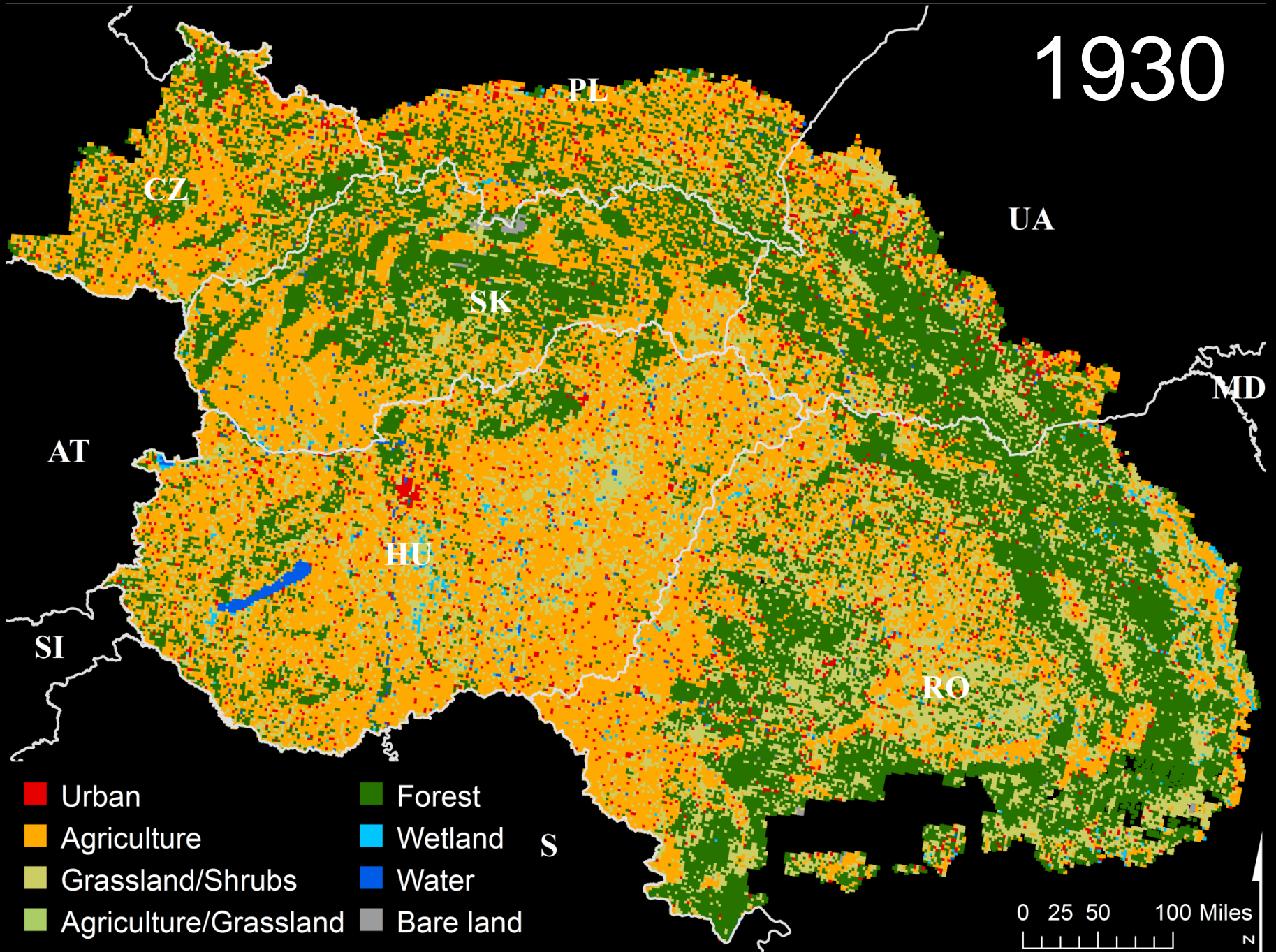


~2010

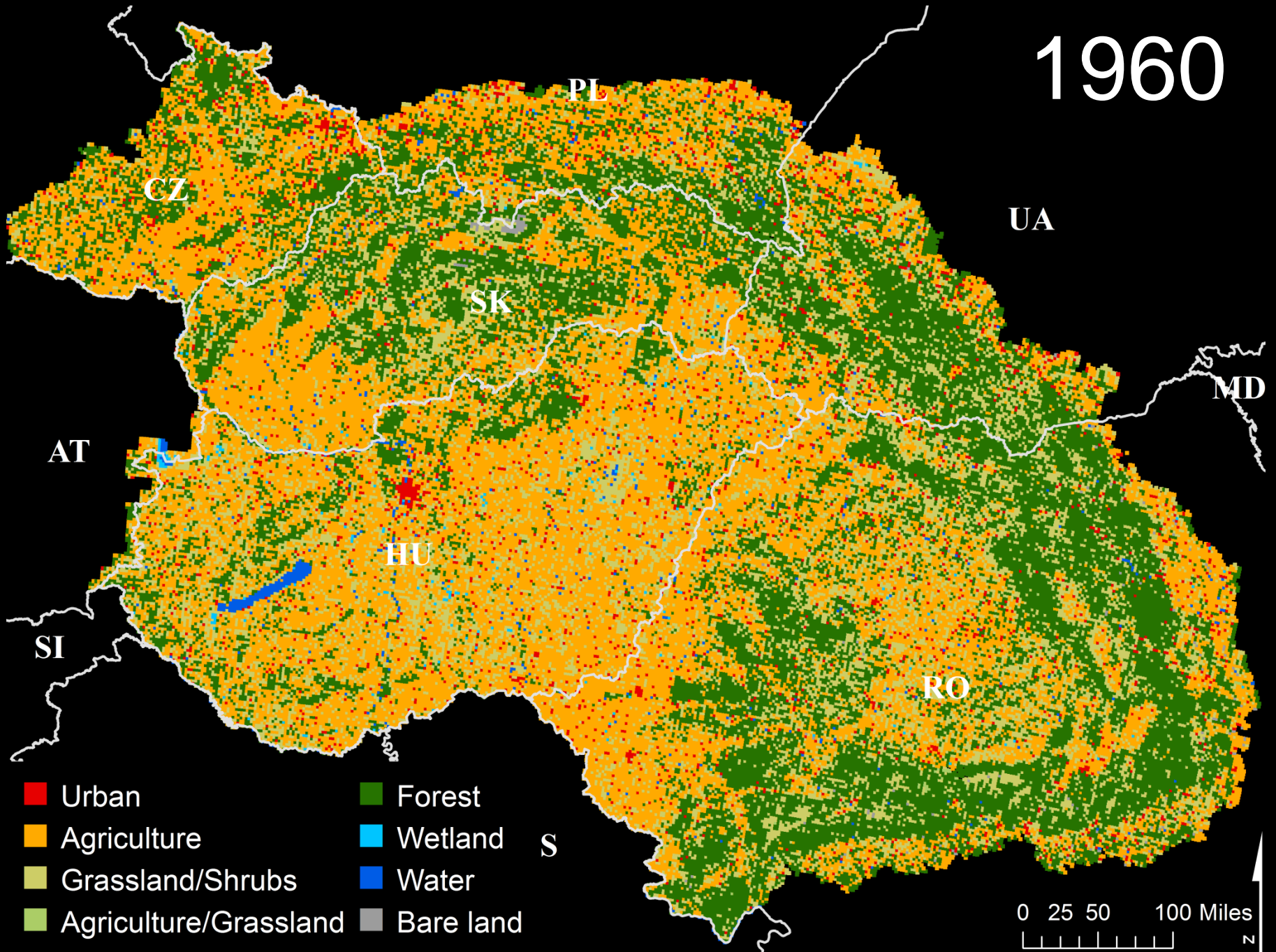
1860



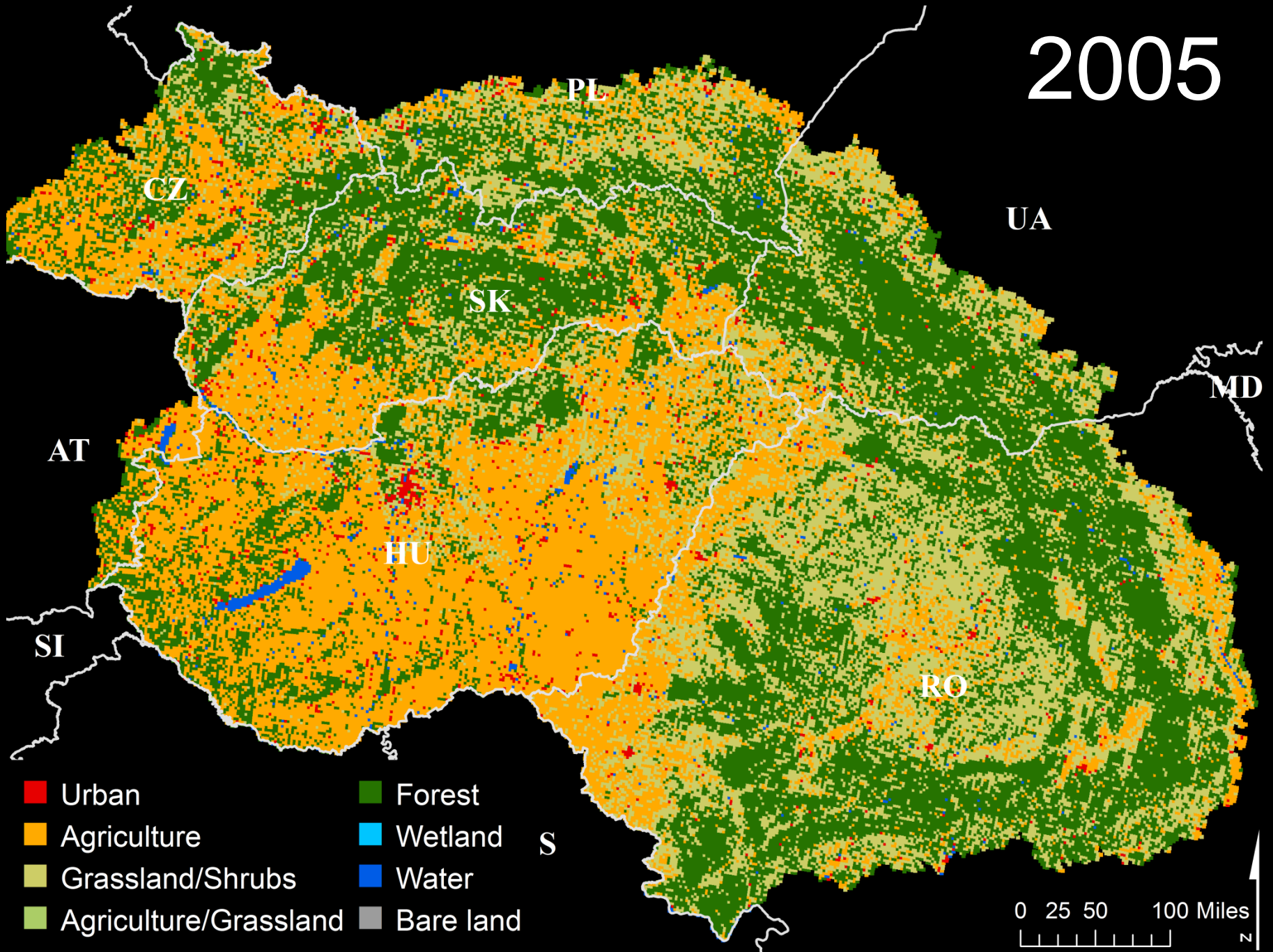
1930



1960



2005



Long term land change

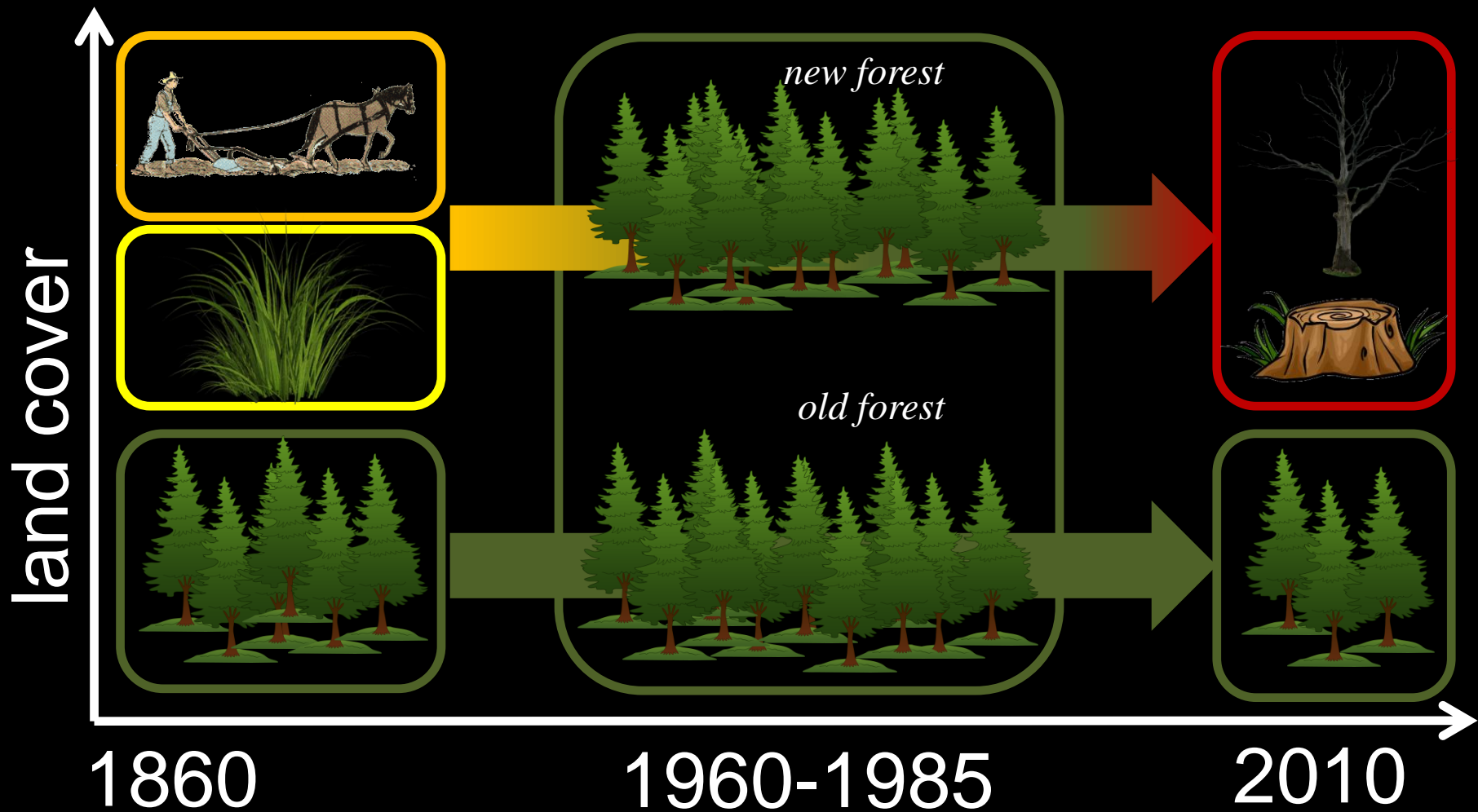
Forest cover increase, agricultural and grassland intensification, then abandonment, wetland loss

Dynamic land systems, good study region for legacies

Legacies of past land use type

Do past land uses affect recent rates of land use change?

Forest disturbance $_{1985-2010} \sim \text{forest}_{1860} +$
geography + climate + accessibility + socio-
economics + institutions



Chance of forest loss is almost 50% higher in 'new forests' compared to 'old forests'



Legacies of past land use type

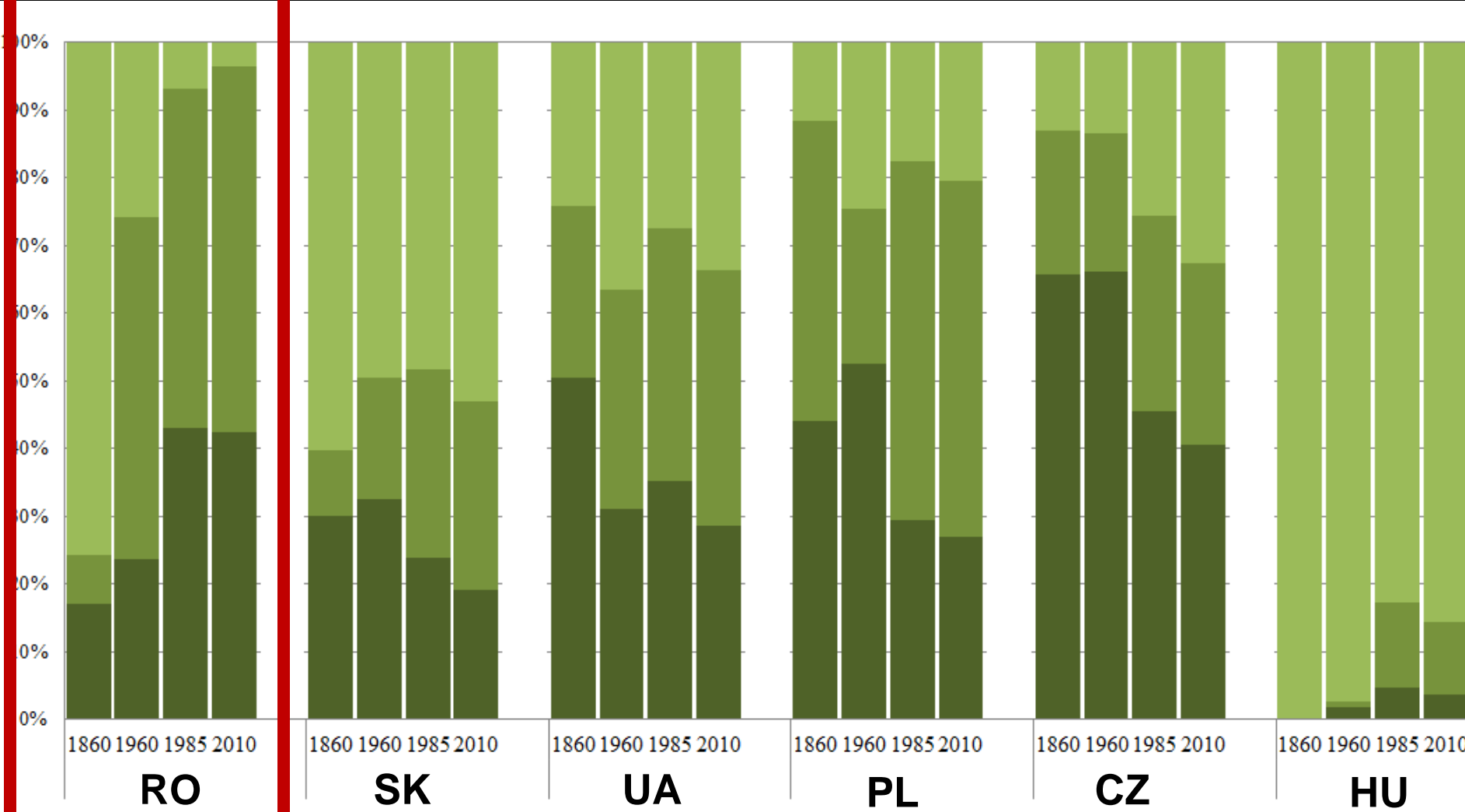
Do past land uses affect recent rates of land use change?

Yes! Higher rates of forest disturbance in new forests!

Legacies of past land management

Does past forest management affect recent forest composition?

Decrease in conifers



... but in Romania

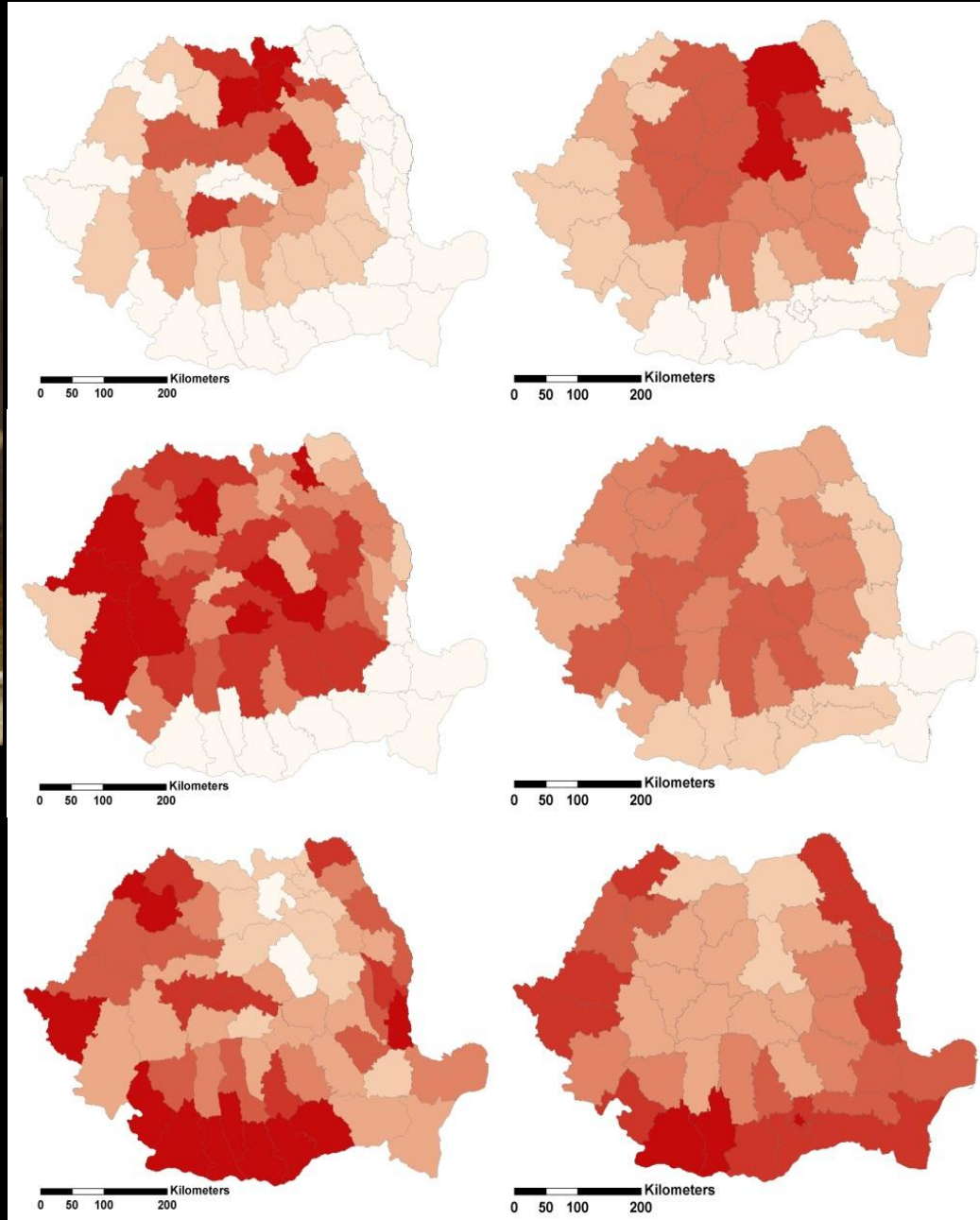
Early 19th century | Early 20th century

Picea abies L.



Fagus sylvatica

Quercus sp



Legacies of past land management

Does past forest management affect recent forest composition?

Yes! Historic forest management produced legacies for current composition of forests!

Why are legacies important?

- Long term studies now possible – legacies importance
- Legacies for the future
- Implications for conservation & land management
- Cascading effects for wildlife



Thank you!



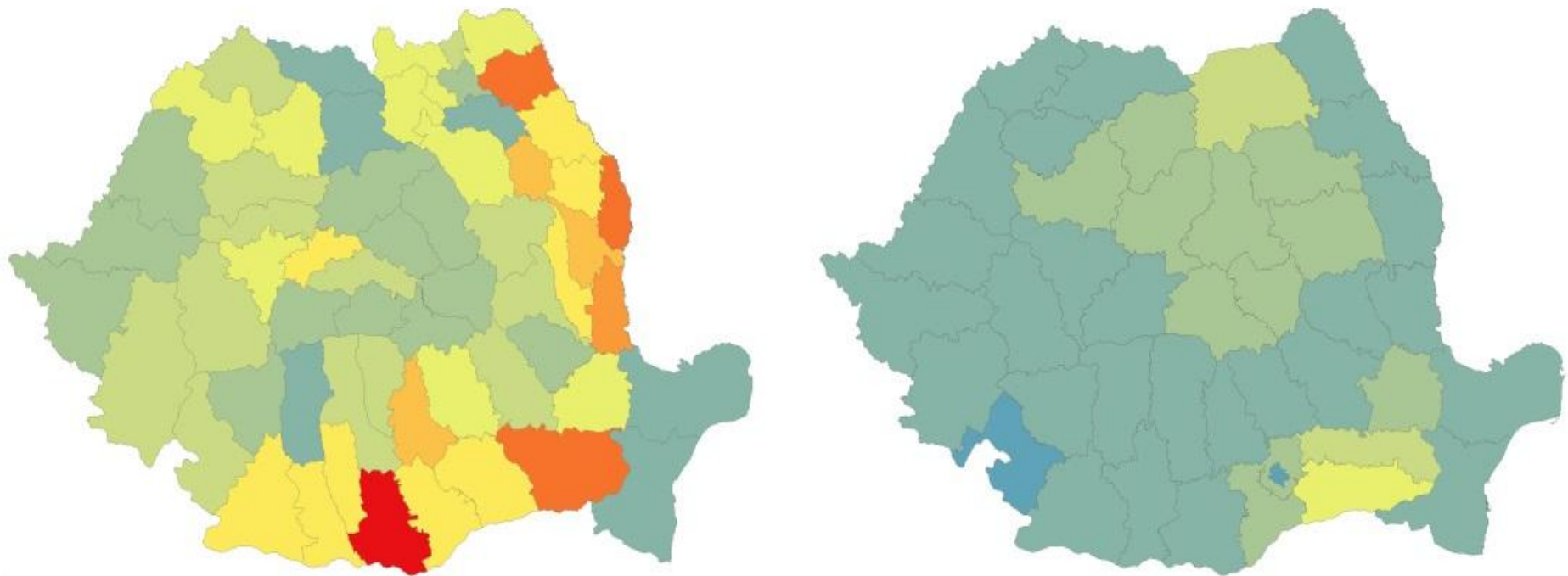
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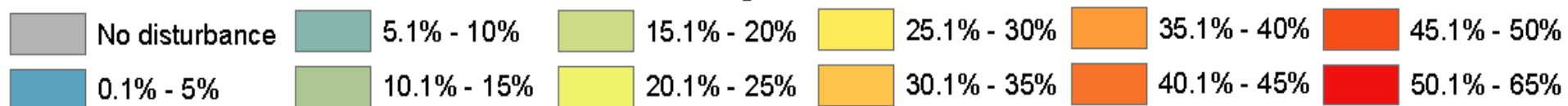
Legacies of past land management

Does past management affect recent age structure?

Forest harvest in Romania in 10 year intervals



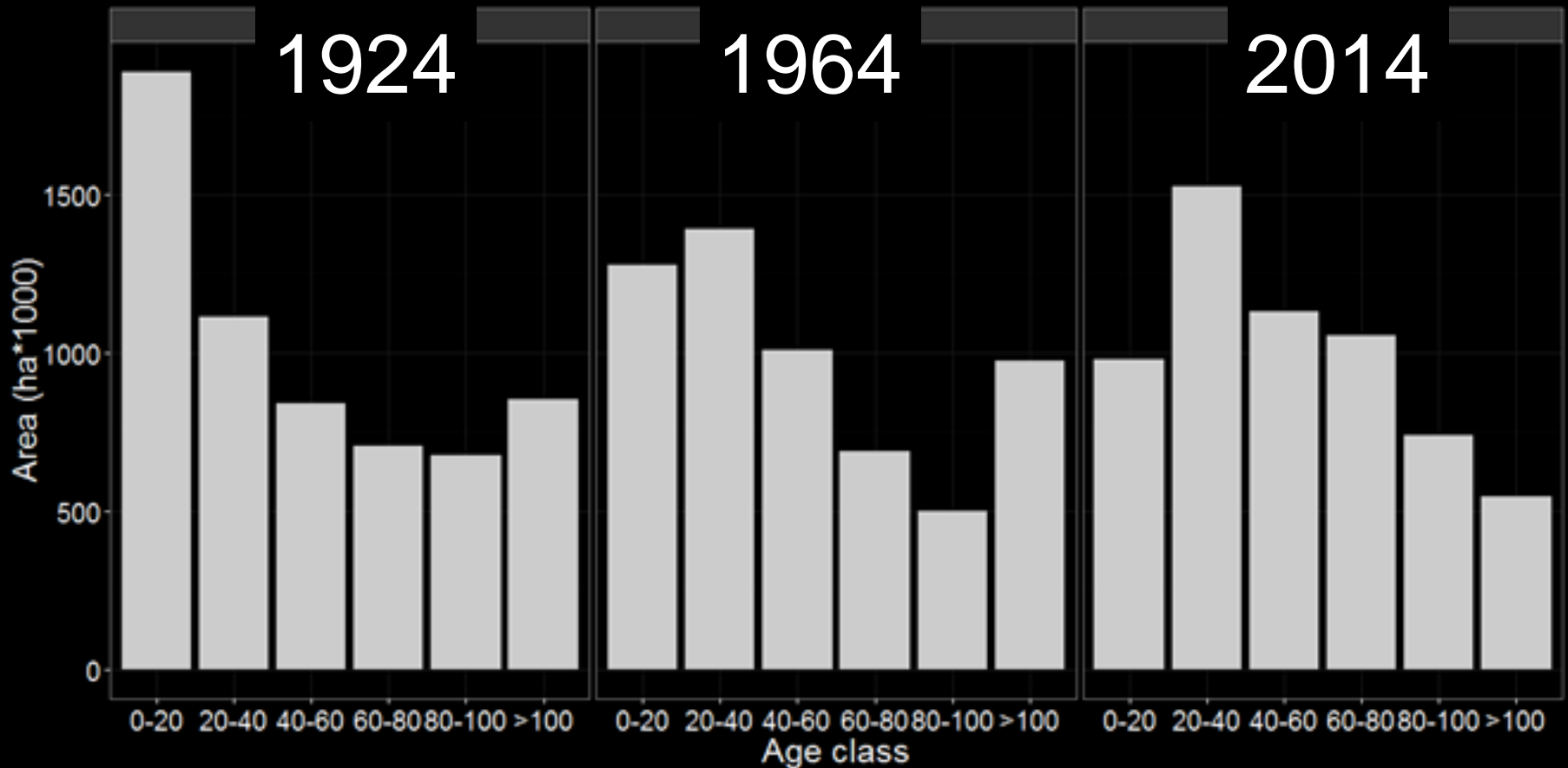
Percentage disturbance



1912-1922

2003-2013

Forest age in Romania



- Good news: less harvest and more balanced age structure
- Bad news: Less old forests

Legacies of past land management

Does past management affect recent age structure?

Yes! Less young and less old forests