

Forestry and biodiversity conservation in Romania

Integrated or not?

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Romania's forests - some facts and figures

- around 7 mil. ha of forests (approx. 29% of the country)
- dominated by European Beech (31%), Norway spruce (20%) and oaks (16% = *Q. petraea*, *Q. robur*, *Q. cerris*, *Q. frainetto*) + many other deciduous and some conifers
- mostly concentrated in the mountainous areas (59%) and hills (34%), less in the flat plains (7%, where agriculture removed the forest cover in the past)
- 97% with natural composition, 86% obtained by natural regeneration (seed & sprout)
- forestland area is stable and even slightly increased in the last decades

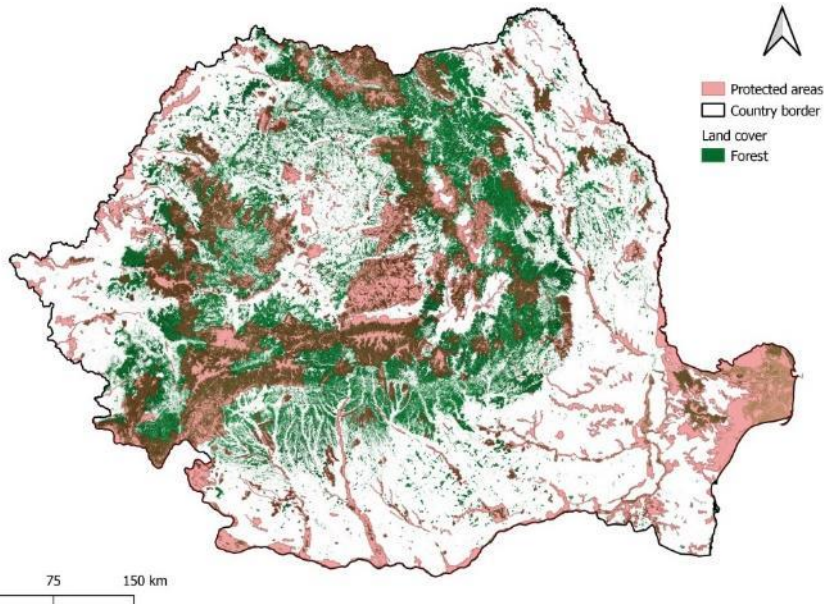
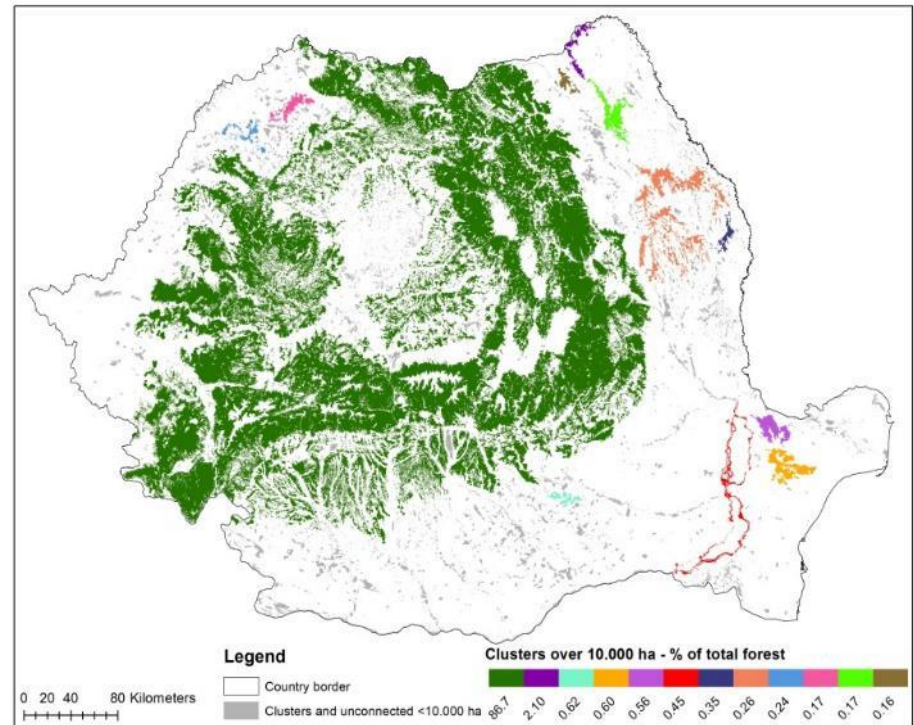


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Connectivity and biodiversity

- forestland well connected (for 1 km buffer dist. = 6.076.055,32 ha or 86% of all forests connect in one cluster around the Carpathians. Together with 11 more existing clusters larger than 10.000 ha = the percentage is around 91%)



- high biodiversity (24% of the country is covered by protected areas) with largest large carnivore populations in EU and important areas of old-growth forests

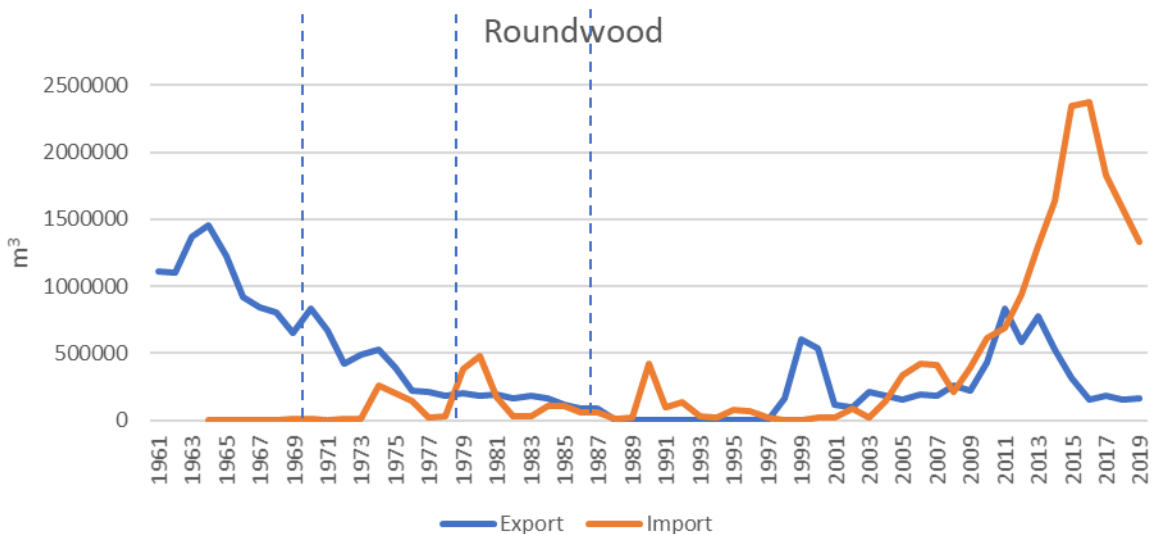


Ownership structure:

- 48.6% (3.14 mil. ha) **public** (Romanian state)
- 15.9% (1.04 mil. ha) **public** (local authorities: cities, towns, communes)
- 34.1% (2.24 mil. ha) **private** (individuals and legal entities)
- 1.4% (0.09 mil. ha) **private** (local authorities: cities, towns, communes)

Timber harvest and commerce

- annual harvesting (38 mil. m³) is lower than annual growth (58.6 mil. m³) showing sustainability (2/3 is harvested which is similar with many European countries).



...difference between National Statistics Institute reporting system and National Forests Inventory is 20 mil. m³ **Illegal logging?**

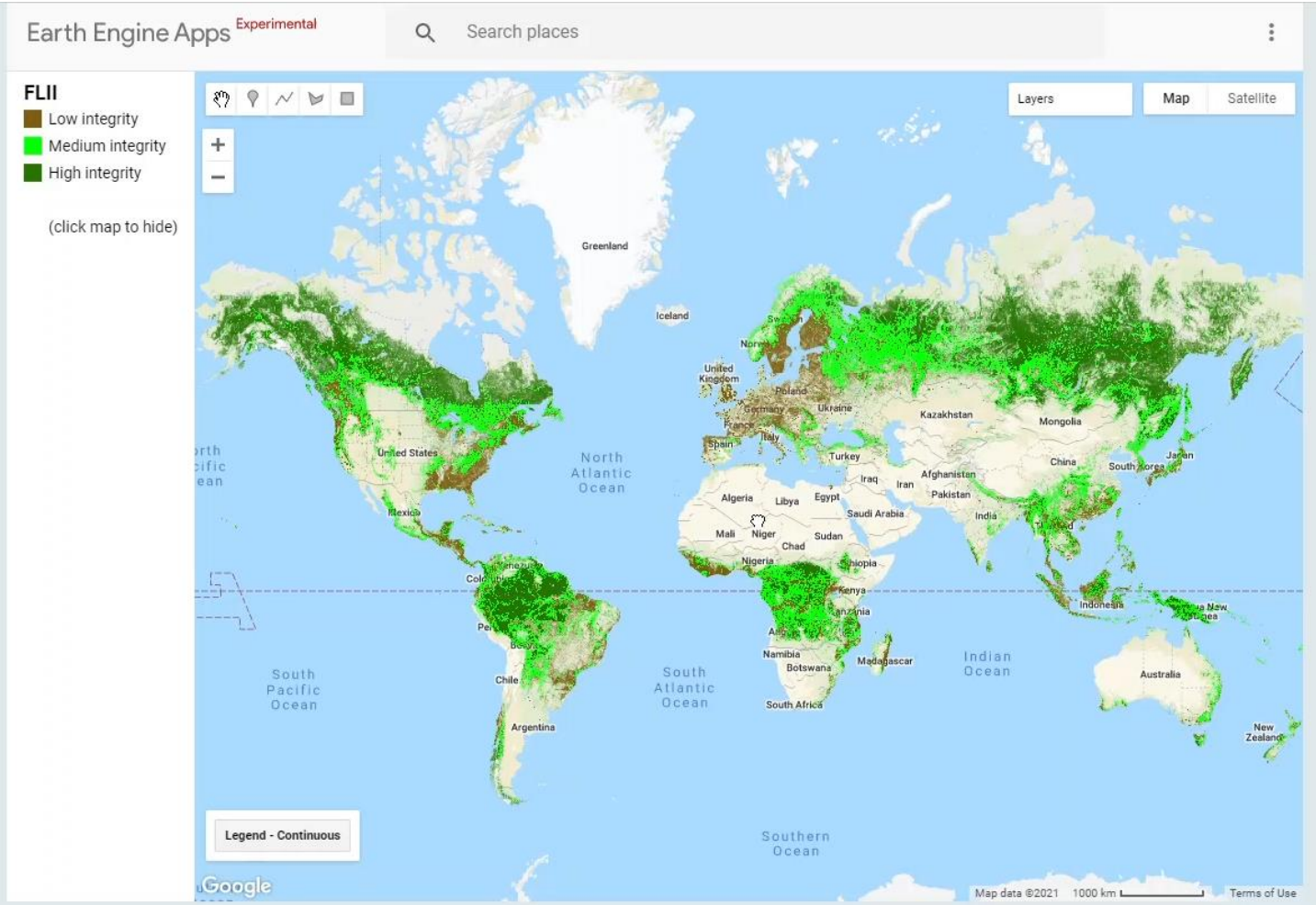


Romania's forests – according to media and other sources

- Each hour, 3 ha of forests are vanishing in Romania
- Illegal logging is large scale (20 mil. m³/yr.)
- Nature rangers are killed by the timber organized mafia
- Any type of cutting is deforestation (or clearcutting), including the shelterwood final fellings with natural regeneration established on the ground
- Any type of harvest in sustainable management zones of national/natural parks (although fully obeying the law) are depicted as illegal logging, destroying the biodiversity, last remnants of untouched nature etc.
- Timber transports are considered by default illegal (including train transports from forests killed by recent insect outbreaks in other parts of Europe)
- Etc.

... a simple conclusion = Romania's forests are vanishing, "the green lungs of Europe" are destroyed

Forest Landscape Integrity Index ...



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... tells a different story

High biodiversity in Romanian forests ... why?

- Diverse environments (5 biogeographical regions)
- Diverse tree species assemblages, matching natural compositions
- Diverse structures (uniform, relatively uniform, relatively diversified, diversified)
- Age diversity – mosaic of different age classes in the landscape
- Old forest stage (usually over 100-140 yr. + special cases of virgin forests > 300-400 yr.) constantly present in the mosaic (habitat for some specialized species)
- Gradual transition (most common) from old to young forest and (less frequent) sudden transition. Long periods of tranquility
- Maintenance of forestland area (control of land use change) and even increase
- A well connected forestland

Are all these a result of chance? Or of untouched nature which now will be destroyed by management?

Forest management for biodiversity... how?

- natural composition of stands is imposed by national norms = **Diverse native tree species assemblages**
- diverse silvicultural treatments imposed by national norms (following state objectives) = **Diverse structures (uniform to diversified)**
- principle of sustained yield (balanced proportion of age classes) imposed by national norms = **Stand age diversity (landscape mosaic)**
- rotation length imposed by national norms (in general 100-120 yr); virgin (old-growth) forests protected = **Old forest stage constantly present**
- silvicultural treatments imposed by national norms – prevalent is shelterwood (group or uniform) = **Gradual transition (most common) from old to young forest and (less frequent) sudden transition**
- during the last quarter of rotation, only sanitation cuttings allowed = **long periods of tranquility**
- strict control of land use change by law and high costs of land-use change = **Maintenance of forestland area and its connectivity**



... these rules are imposed at national level, regardless of ownership



Forest management

- carried only by authorized entities, paid by the owner
- carried according to plans (10 yr.) developed by authorized entities
- management objectives set by national norms not by owner

Forest management planning

- only by specialized companies accredited by the ministry (not by owners themselves, but paid by them)
- according to national norms (state goals not owners goals) - “One-type-fits-all”
- before implementation plans are approved by ministry (supervised and controlled by the state)
- implementation only by specialized entities (not by owner) and controlled by state (Forest Guard)

Despite all these, plans are seen as potentially harmful for environment and an EIA procedure is required!



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Around 0.5 mil ha (private, small-size forest) are not included in forest management plans anymore ... biodiversity conservation perspective?



How to integrate biodiversity conservation with all other needs?

For a successful integration of very different values:

- have a (very) **large-scale approach**
- have a **long-term perspective**
- understand and accept **the dynamic nature of forests**

Threats for an integrated forest management:

- 1) Misunderstanding the natural dynamics of forests
- 2) Misunderstanding the natural disturbances, their role/effect and similarities to management
- 3) Misinterpreting the old-growth forests – their status and role
- 4) High costs not compensated by state or EU

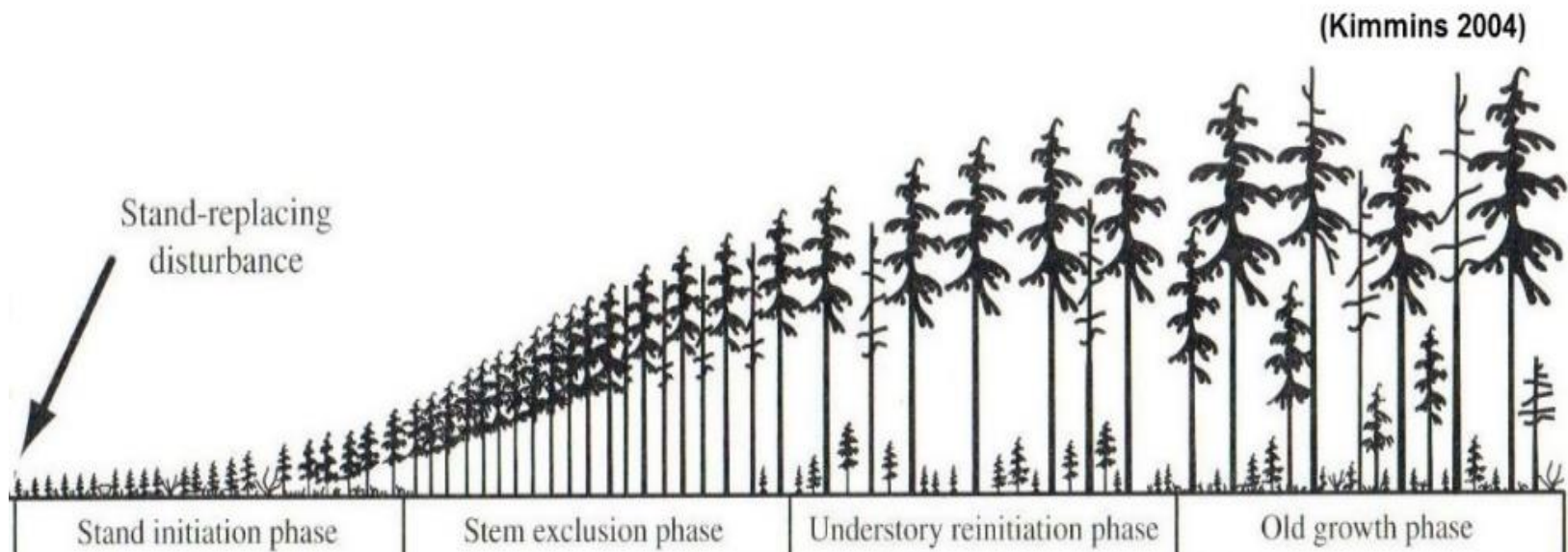
Integrated forest management is the key!
But is it possible and/or feasible?



1). Misunderstanding the natural dynamics of forests

Myth = forests are unchanged if we leave them alone; biodiversity will remain unchanged accordingly. **Therefore, the solution is strict protection (and a segregated approach rather than integrated one)**

Reality = forests change along time with or without our intervention, with and without natural disturbances.



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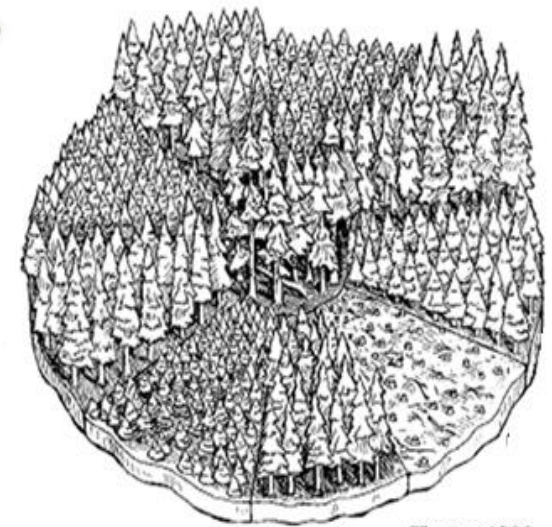
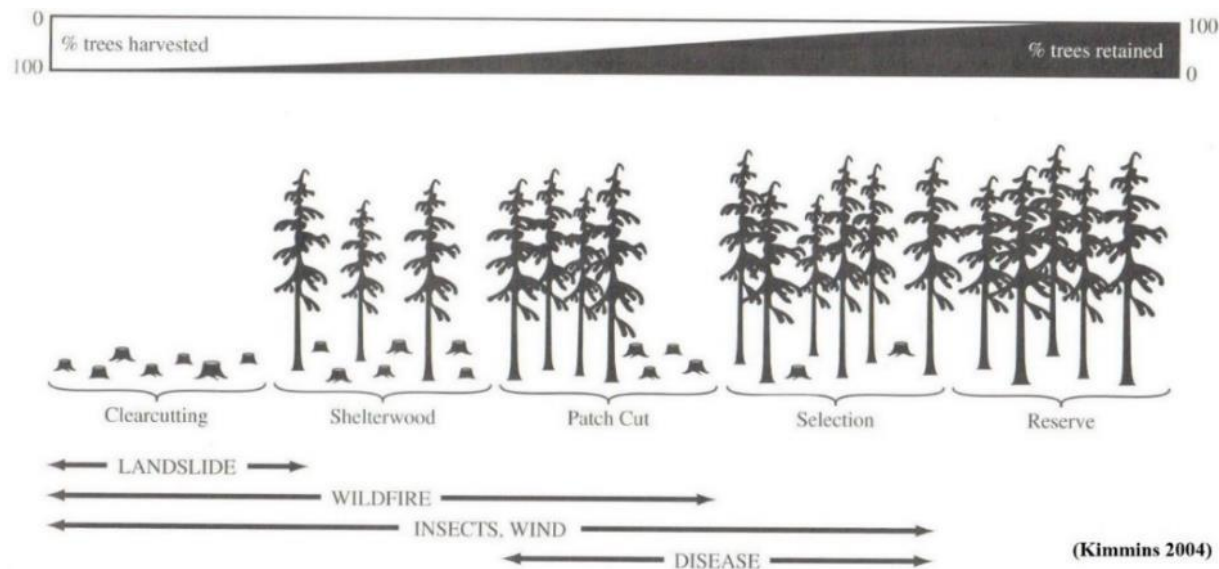
Change is always bad for some species but good for others.



2) Misunderstanding the natural disturbances, their role/effect and similarities to management

Myths = only single tree selection is good; clearcutting is always bad; shelterwood is unnatural

Realities = All structures are needed for a maximum biodiversity. Clearcuts are producing very important habitat for plants and certain animals. No structure provides habitat for all species (not even the single-tree selection).



(Kimmins 2004)

Hunter 1990



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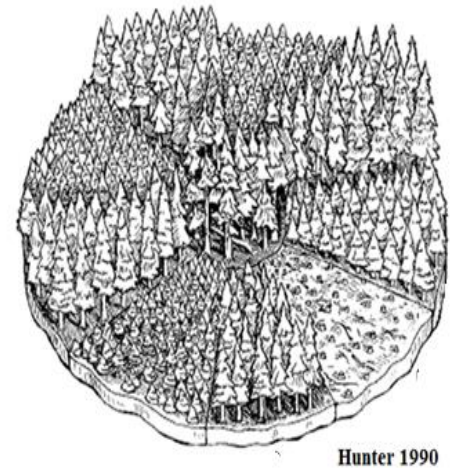
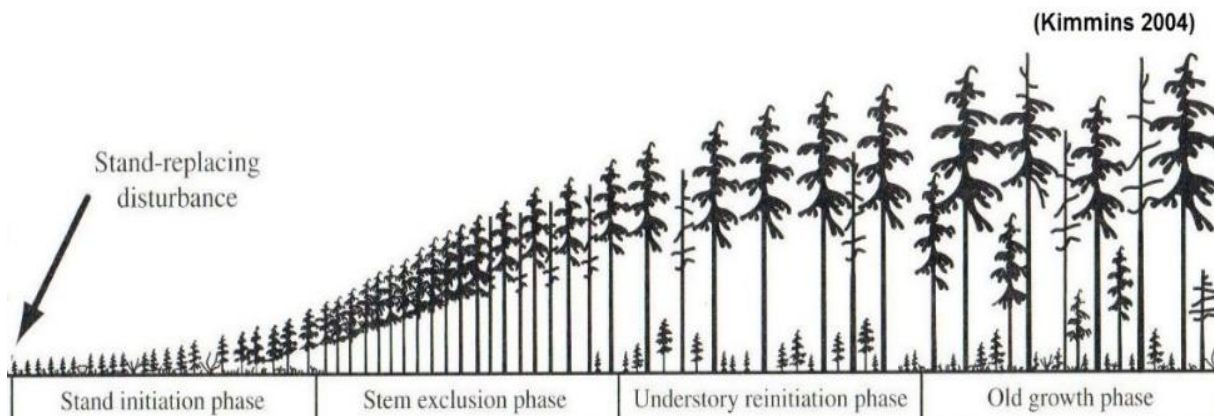
a *shifting steady-state mosaic* with all different structures is the key!



3) Misinterpreting the old-growth forests – their status and role

Myth = forests over 100 yr. are already old-growth and they must be strictly protected as management will destroy them

Reality = forests of 120-140 yr. old are not yet old-growth (=when trees die because they have reached **their physiological age limit**). Pushing a strict protection on old but managed forests under a long rotation (i.e. not true old-growth) will negatively affect biodiversity at large!



Producing old forests in many places is better than protecting them in some!



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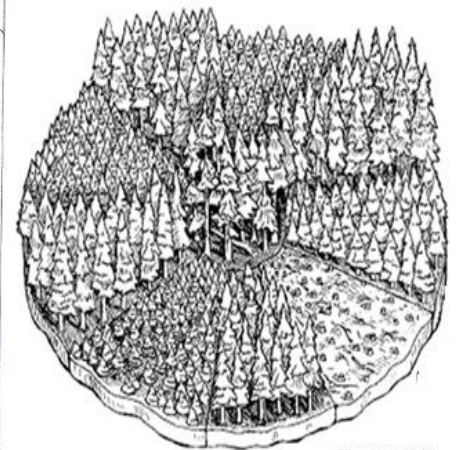
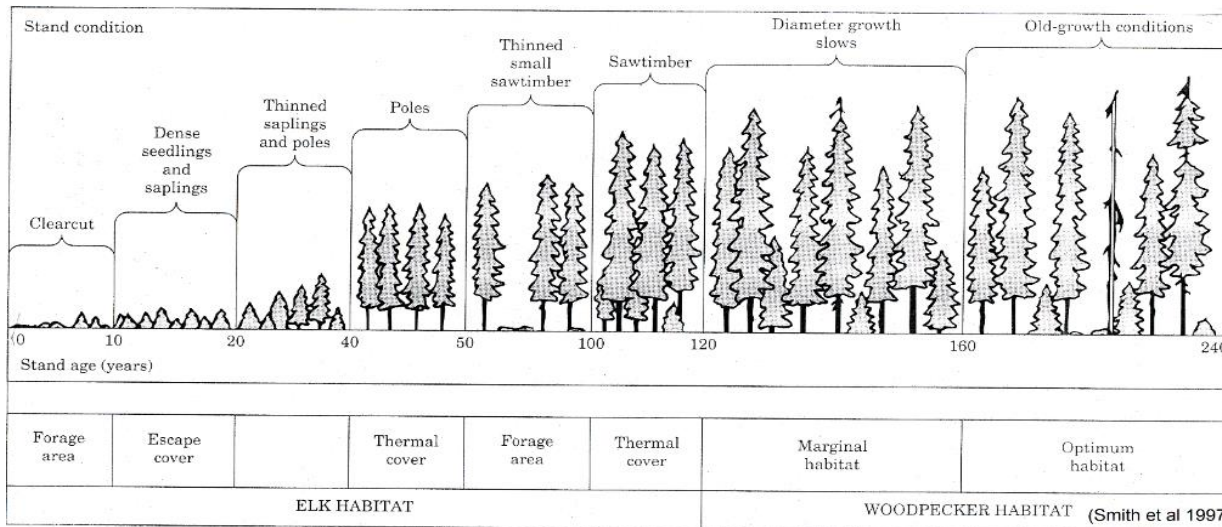
True old-growth must be protected!



3) Misinterpreting the old-growth forests – their status and role

Myth = old forests are harboring all the biodiversity; young stages are void of biodiversity.

Reality = old forests (even the old-growth ones) are not harboring the entire biodiversity. Indeed, **earlier stages are mandatory** for feeding and hiding habitat for much more species of animals and for habitat for species of plants.



Hunter 1990

The importance of other stages must not be overlooked! Old forest is only one component!

The complete shifting steady-state mosaic is the key!



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4) High costs ... a big challenge for integrated forest management

Financial burden due to its particular features (imposing higher restrictions):

1. natural species composition,
2. long(er) rotations, in general (much better for biodiversity) or for some areas at least
3. balanced proportion of age classes (balanced shifting steady state mosaic)
4. connectivity across large landscapes (country? EU?)
5. similar rules across large landscapes (country? EU?) regardless of ownership - “one-type-fits-all”



The question is not how to do it but rather if we can afford it!

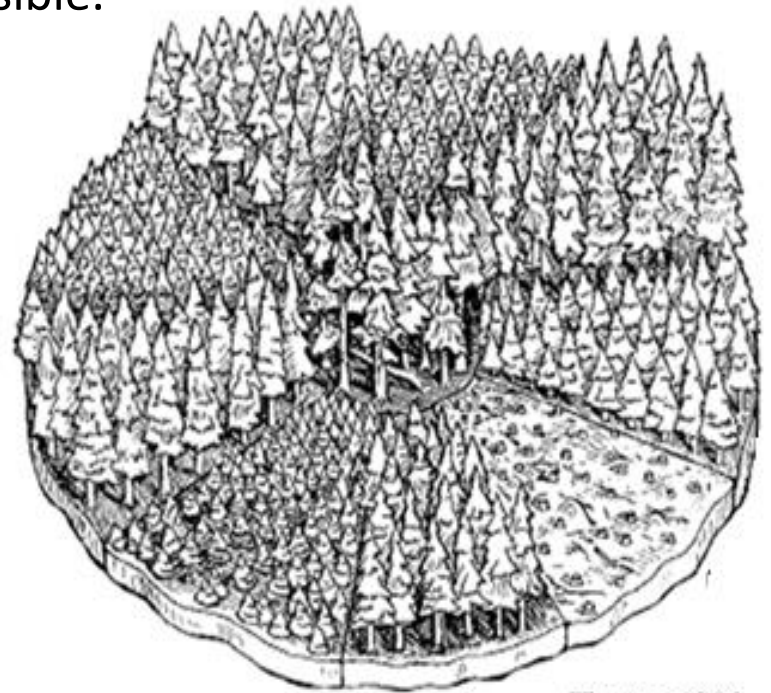


Integrated or segregated forest management?

Segregated approach will reduce the area for biodiversity and place more pressure on managed forests for other goals. For a large landscape approach, only integrated approach is possible.

Moreover, strict protection does not guarantee creation and maintenance of a balanced shifting steady-state mosaic (i.e. provides no control over the structure and proportions)

Integrated forest management is the key!



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**We need to find the right way to make it
feasible and effective!**



Final thoughts ...

Romania could bring examples and empirical evidence on integrated rules applied for decades at large scale

... but also of very high costs (and low economic viability of forest administration) associated with them

... costs which are unfortunately not compensated by the state and not rewarded by EU and therefore negatively affect integration.

Even if we have the tools, for a successful implementation we shall ask ourselves first - *Can we afford a true integrated management at very large scale across well-connected landscapes in Europe?*

Otherwise ... ***“conservation without money is just conversation”*** (Stirling Adams, former president of Ducks Unlimited)

Thank you for your attention!

