

D3.2 BIODIVERSITY - WHAT WE'VE LEARNED

ES group

Matts Lindbladh & Adam Felton

Porto, Portugal

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Modelling implications for biodiversity

- Inferred biodiversity outcomes from model outputs within the context of regional goals
 - Tree species composition, forest structures, and disturbance regimes
- LCCs used combined or individual metrics to evaluate these outputs
- Many potential comparators and insights in D3.2
 - Multiple LCCs, scenarios, FMMs, and their interactions

LCC comparison – Most countries projected benefits for forest biodiversity

For example:

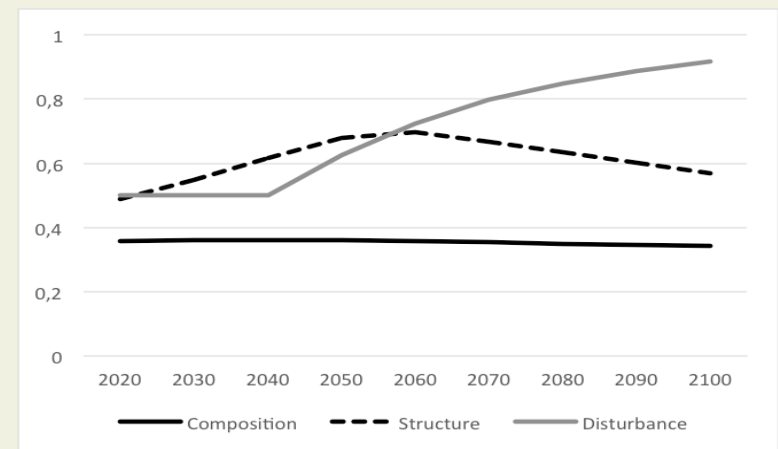
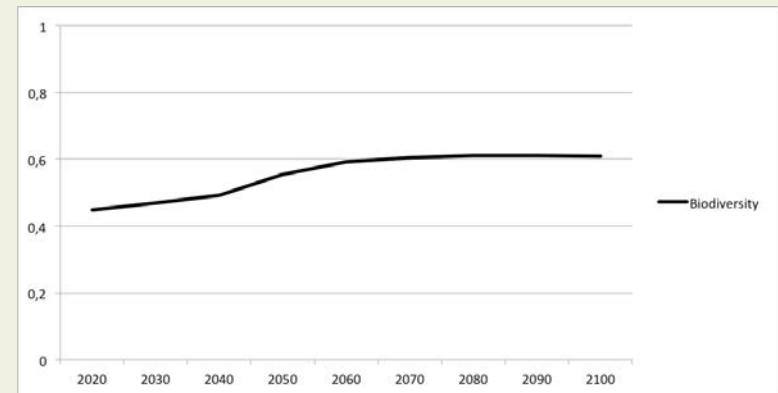
- Germany (Augsburg)
 - Larger trees
- Slovakia, Netherlands
 - Older forests & broadleaves
- Ireland
 - Broadleaf trees and natural forest conditions
- But not all... (e.g.)
 - Germany (Lieberose) stable
 - Lithuania & Sweden (conifer dominance)

There's
consistency in
habitat goals

Consistent scenarios didn't lead to consistent patterns



- Sometimes limited differences among scenarios
 - Germany (Lieberose), Portugal, Ireland
- No consistent pattern for biodiversity outcomes among scenarios
 - If higher growth beneficial, favored reference scenario
 - If lower growth rates beneficial, favored global bioenergy scenario
- Strong trade-offs among scenarios
 - Biodiversity indicators are not perfectly correlated



Importance of external drivers

Ireland:

- Increase in native woodlands
- Restricted activities in blanket bogs

Netherlands:

- Shift towards mixed species stands
- Fewer exotics
- Young stands in starting simulations

Lithuania:

- Shift to Norway spruce

Slovakia:

- Shift away from Norway spruce to naturally regenerated broadleaves

In summary

- Strong consistency across LCCs regarding what is positive forest biodiversity
 - But regional differences in emphasis
- Consistent scenarios did not result in consistent outcomes for forest biodiversity
 - Strong influence of external drivers (i.e. starting contexts)
- We can't confuse relative change with absolute habitat availability
- We can expect clearer insights from modelling alternative FMMs

Potential scientific publications

- Assessment unit
 - LCC
- Metrics
 - ES & within ES
- Comparator
 - FMM alternatives
 - Scenarios
 - LCCs
 - ES outcomes
 - Among ES outcomes

Potential scientific publications

- Relationships among ES
 - Trade-offs and synergies
 - Are there consistent relationships exhibited among the ES that cut across regional and scenario contexts?
- Patterns among FMMs
 - Do certain FMMs consistently optimize or neglect certain FMMs, or provide for a better diversity of ES?
- Patterns among scenarios
 - Any consistencies across LCCs or FMM alternatives
- Overall patterns that cut across differences
 - Are certain FMMs consistent in their ES implications despite regional and scenario context?
- Context implications
 - How such contexts can override projected implications of scenarios

What I would like to work on with the modellers

- Combinational metric
 - RAFL versus Fuzzy logic
- Same scale among LCCs (e.g. low = low) for absolute and relative comparison
 - Disaggregate by compositional, structural and disturbance metrics
- Some measure of the proportion of the landscape (per ha?) meeting different levels for these scales
 - Frequency distribution for stands, versus landscape scale average score
 - Enables distinguishment between diversity at stand vs. landscape scales
 - Four potential categories in this regard
- Questionnaire to each LCC
 - Max and min values for each index
 - Stand level capacity to reach goals