Forest production and carbon storage -potentials of European forestry

INTEGRATED SINK ENHANCEMENT ASSESSMENT

FORESTRY MODELLING Forestry Program IIASA
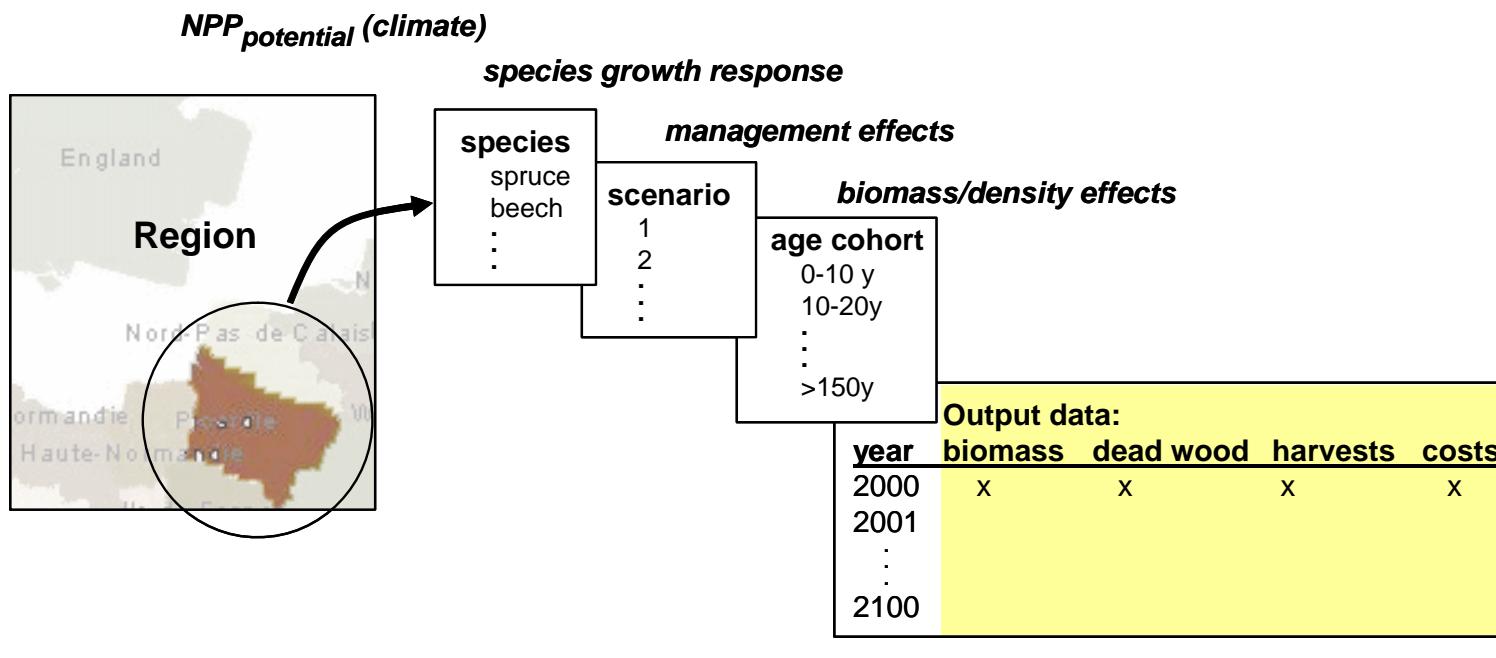
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the OSKAR Forestry model and data

OSKAR forestry model

$NPP_{potential}$ *(climate)*

species growth response

management effects

biomass/density effects

Region

species
spruce
beech
.
.

scenario
1
2
.
.

age cohort
0-10 y
10-20y
.
.
>150y

Output data:

year	biomass	dead wood	harvests	costs
2000	x	x	x	x
2001				
.				
.				
2100				
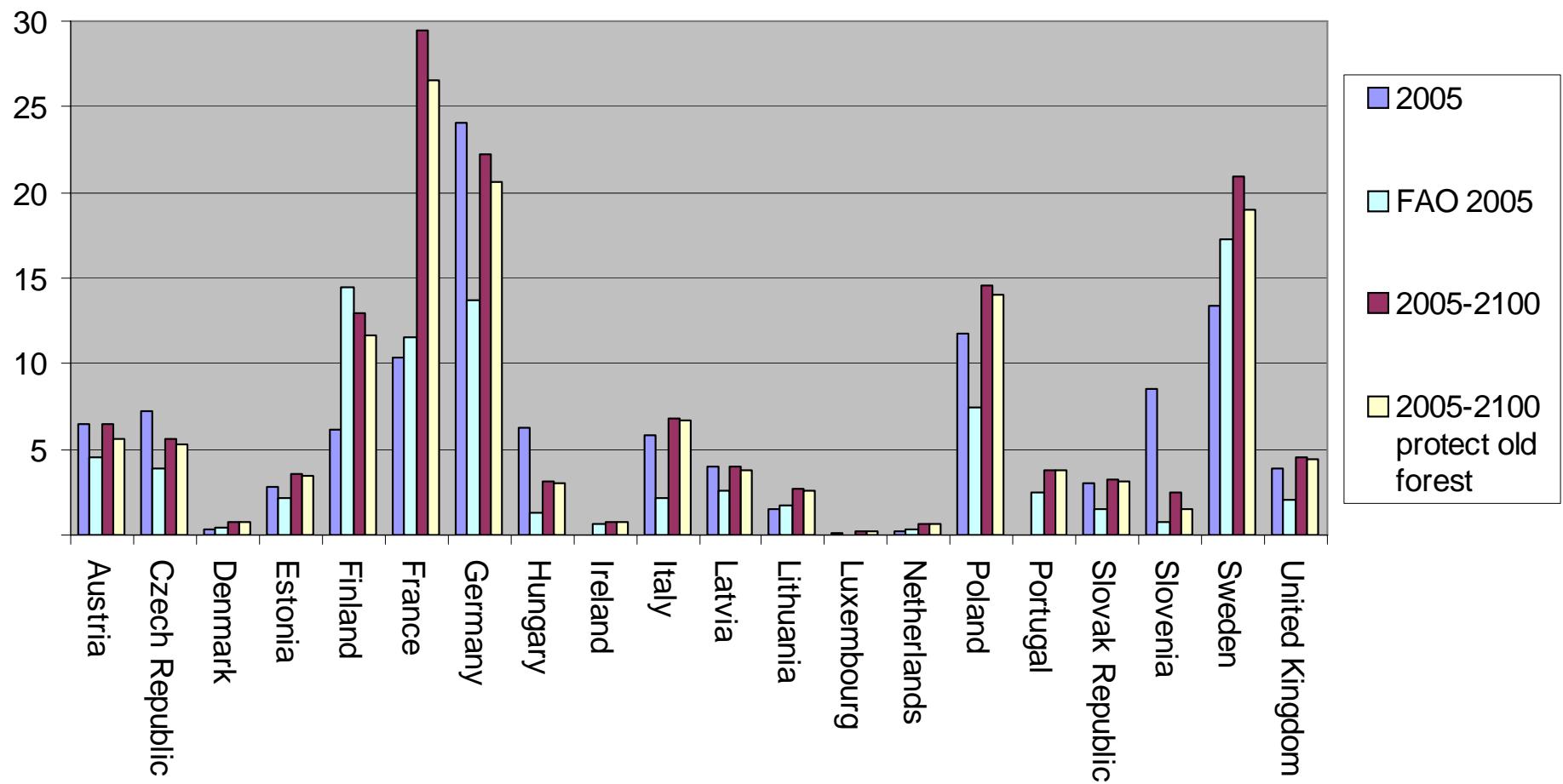
FASOM

Current and future forests

Harvests (MtC/year)

Legend:
- 2005
- FAO 2005
- 2005-2100
- 2005-2100 protect old forest

Countries (x-axis): Austria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Sweden, United Kingdom
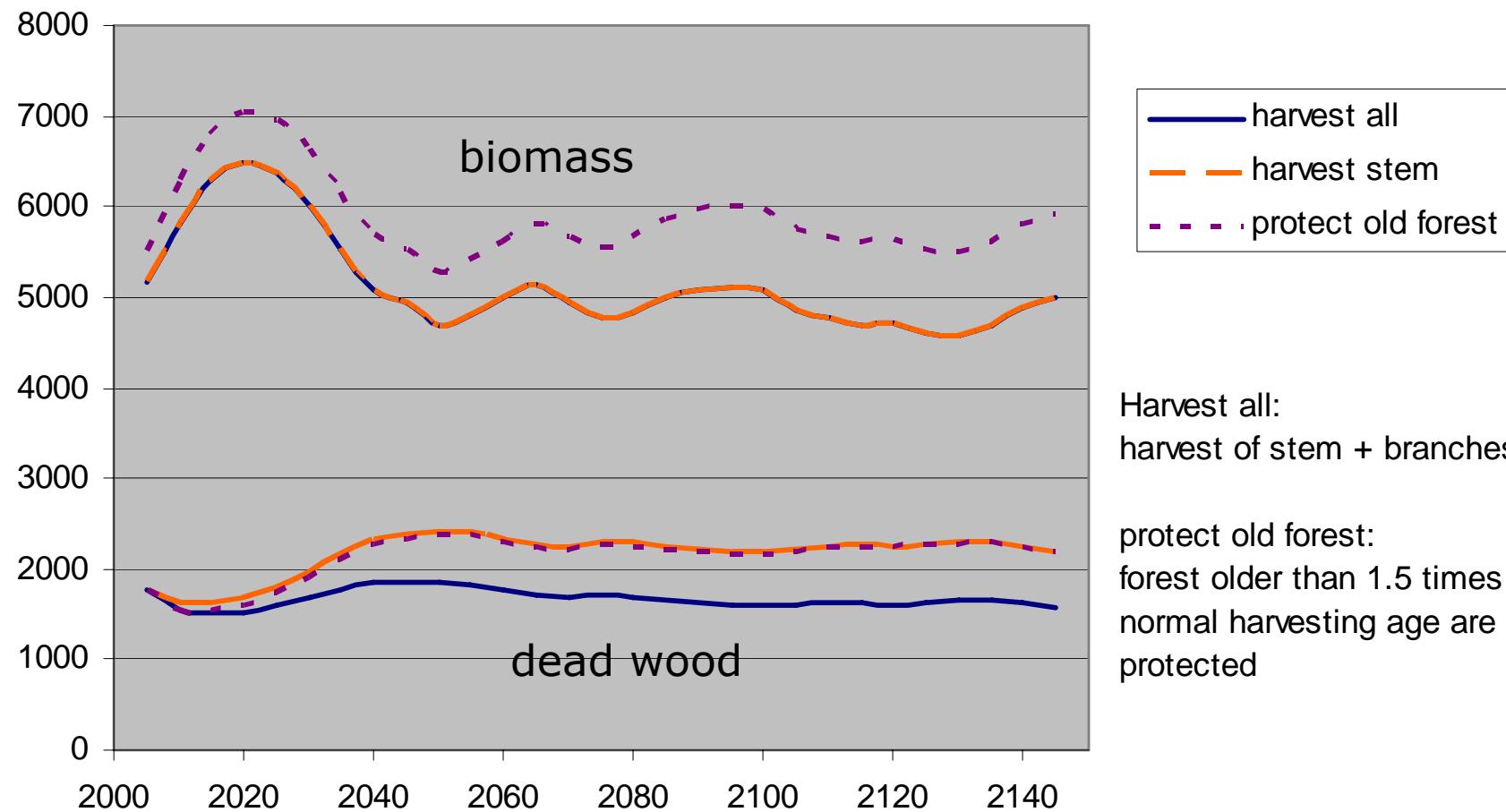
Total maximum sustainable harvests in EU ≈ 200 MtC/year (2005-2100)

Forest development scenarios

Biomass and dead wood for different harvesting scenarios (MtC)
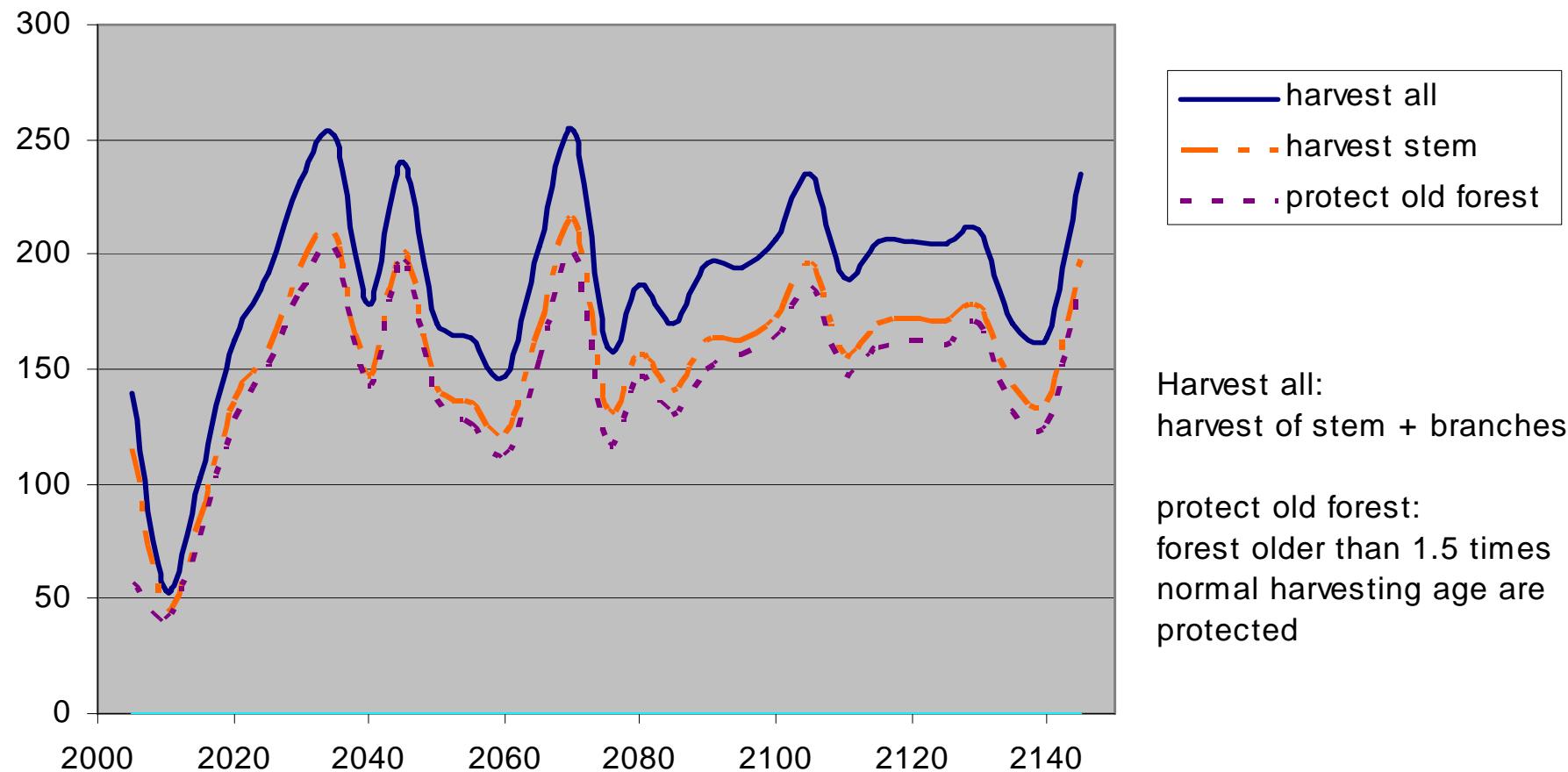
Legend:
- harvest all
- harvest stem
- protect old forest

biomass

dead wood

Harvest all:
harvest of stem + branches

protect old forest:
forest older than 1.5 times normal harvesting age are protected
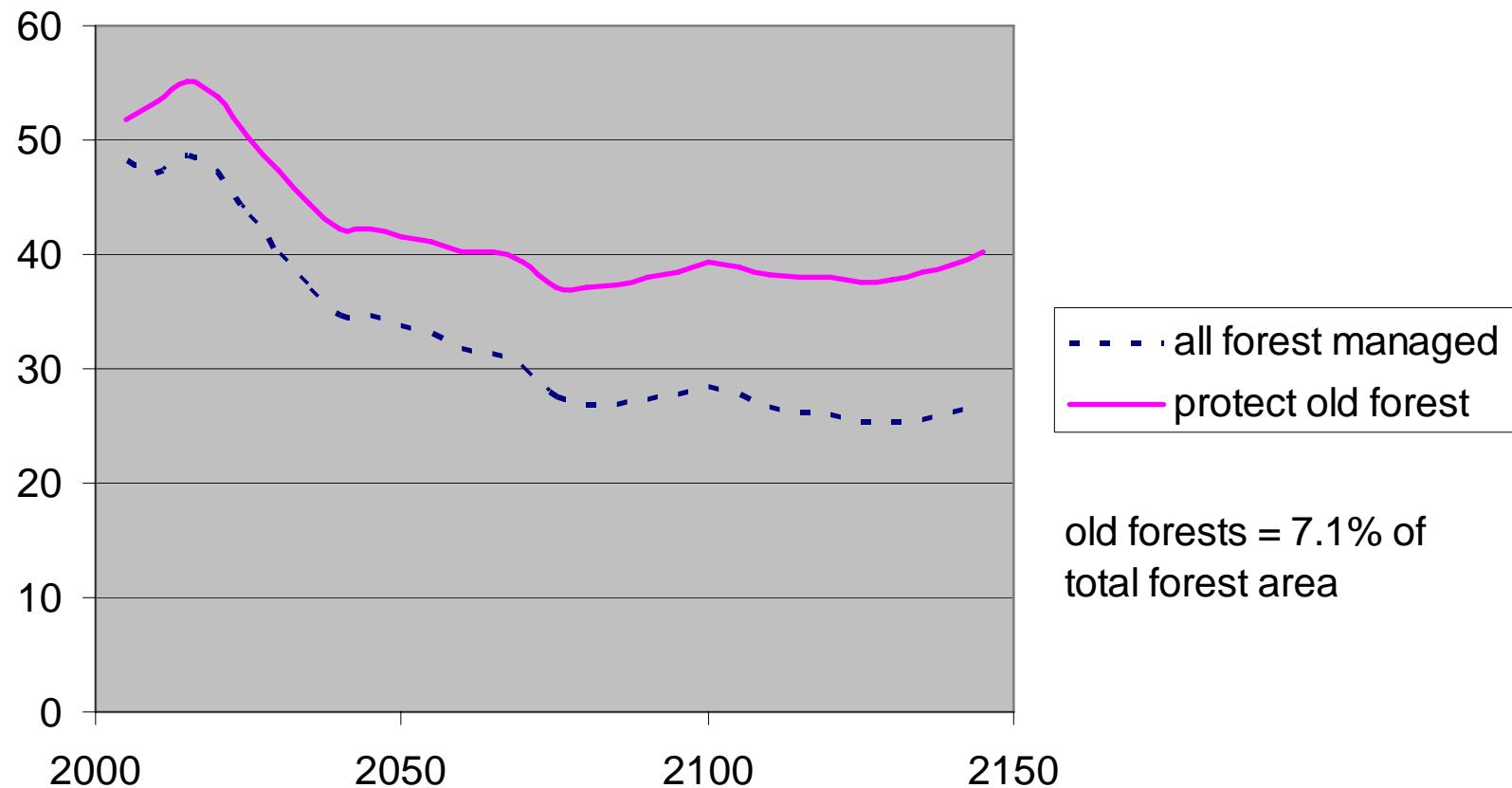
Forest development scenarios

Harvests for different harvesting scenarios (MtC)

Legend:
- harvest all
- harvest stem
- protect old forest

Harvest all:
harvest of stem + branches

protect old forest:
forest older than 1.5 times
normal harvesting age are
protected

Forest development scenarios

Mean age of forests (years)

Legend:
- - - - all forest managed
— protect old forest

old forests = 7.1% of total forest area