

Saturday paper and KP LULUCF in the Czech Republic

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Research



2010 review of the Czech Republic

- Centralized review
 - Sets of questions re. (KP)LULUCF received
 - 1st set: One week prior the review
 - 2nd set: on Tuesday, review week
 - 3rd set: on Wednesday, review week
 - 4th set: on Friday, review week
 - 5th set: on Saturday, review week
 - YET, a Saturday paper received on KP LULUCF!
- Always immediately responded

Saturday paper issues

- ERT claims that
 - *„The Czech Republic, in its 2010 submission, did not provide sufficient verifiable information as required that demonstrates that each of the following pools, namely litter, deadwood and soil organic carbon, is not a net source **individually**“*

Saturday paper issues

- ERT acknowledged that
 - „*For the **litter and soil organic carbon pools** the Party explained that it implemented a preliminary study using Tier 3 model that does not allow separation of the two pools. Regarding the **dead wood pool** the Party provided an answer to the ERT discussing why it considers that the dead wood pool is not a net source. However, the ERT considers that this was not sufficient verifiable information.*“

Response SOM/Soil reporting

- Using a peer-reviewed, dedicated study on soil carbon pool development under FM scenarios in the Czech Republic
 - EFISCEN & YASSO model application
 - Using detailed country-specific data

Development of forest carbon stock and wood production in the Czech Republic until 2060

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(Received 31 October 2007; accepted 6 June 2008)

Abstract –

- This study describes the scenarios of likely development of carbon pools in managed forest ecosystems of the Czech Republic. The analysis was based on a matrix scenario model (EFISCEN), adopting a novel parameterization based on forest stand site types and forest typology. The model was constrained by practical management rules as prescribed by the Czech Forestry Act and used to assess production potential for the next five decades under three management and three climate scenarios. The analysis provided data on carbon pool development, including both tree biomass and soil compartments.
- For the tested scenarios of sustainable forest management (wood removals not exceeding increment) the model indicated a slight increase of soil carbon pool. For the possibly largest removals (maximum sustainable felling scenario), soil carbon stabilized within two or three decades reaching a mean value of about 8.1 kg/m² for. At the same time, the mean carbon stock held in biomass reached about 10.2 kg/m² including belowground parts. No decline of soil carbon was observed for any of the tested scenarios.
- We conclude that it is reasonable to assume that soil carbon is not a source of carbon under the current management constraints as implemented in the Czech forestry practice.

What does it say?

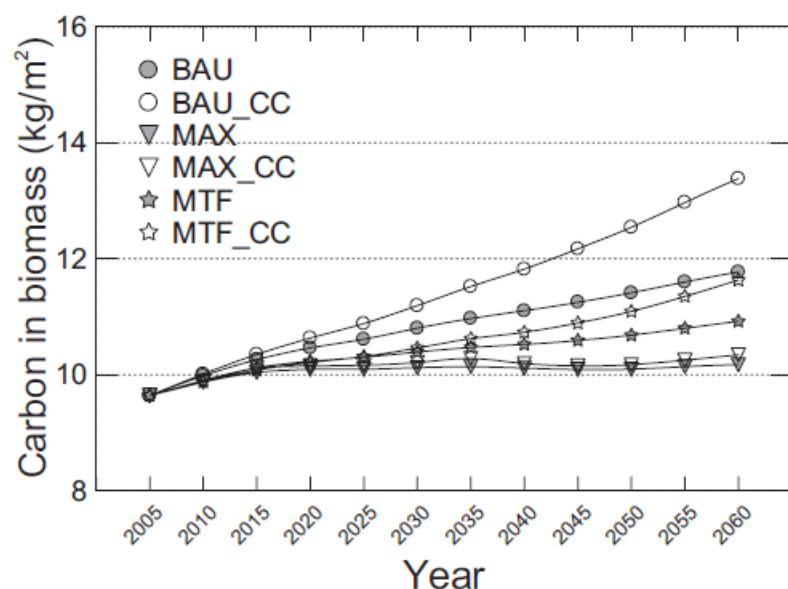


Figure 2. Development of total tree biomass (incl. belowground) until 2060 under different management scenarios (BAU, MAX, MTF), excluding or including the effect of climate change (CC).

1. For a set of sustainable FM scenarios, there is no decline in biomass stock (incl. climate change effect)

2. Similarly, there is no decline in soil carbon stock (incl. organic layer)

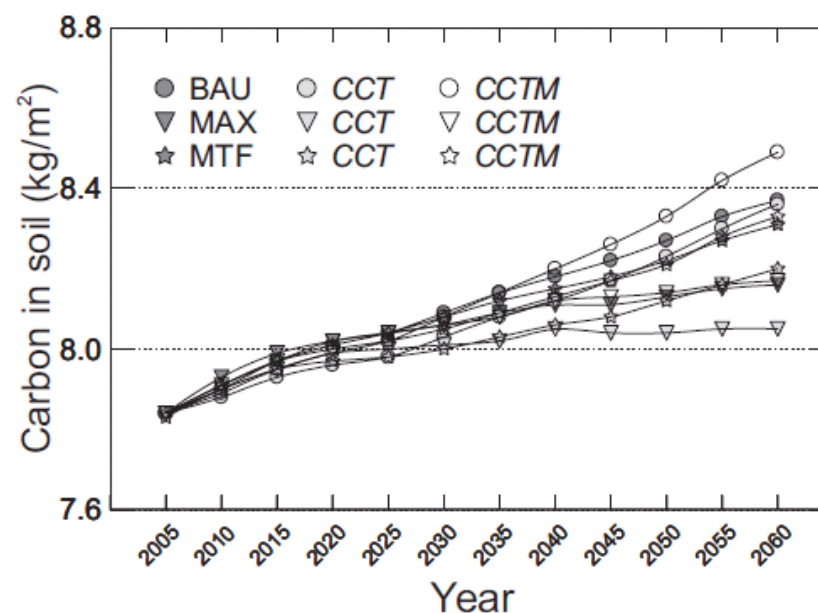


Figure 5. Mean forest soil carbon stock development as simulated by YASSO/EFISCEN for BAU, MAX and MTF scenario; each of these management scenarios is also combined with changing temperature (CCT) and changing temperature with increasing moisture deficit (CCTM).

Response regarding deadwood

1. Reasoning based on sound knowledge not enough, therefore
2. Providing ERT extra evidence from empirical data, namely by comparing estimates of
 - National Forest Inventory (2001-2004)
 - National Landscape Inventory (2008-2009)



both using **identical methodology** of deadwood volume estimation

Dead wood = net sink of CO₂

Table 1: Mean volume of lying deadwood on forest land by decay classes as estimated by NFI and CzechTerra inventory programs. The unit is mil. m³ and the parentheses show the 95% confidence interval.

Decay stage	Campaign	NFI – ref. year 2003	CzechTerra – ref. year 2009
Wood is hard		7.47 (7.02 - 7.93)	9.54 (7.58 – 11.5)
Soft periphery, centre hard		3.75 (3.48 - 4.02)	5.10 (2.81 – 7.38)
Hard periphery, centre soft		0.82 (0.73 - 0.90)	1.28 (0.72 – 1.85)
Totally soft/rotten		6.28 (5.98 - 6.59)	4.79 (3.84 – 5.74)

Table 2: Carbon stock held in lying deadwood on forest land by decay classes as estimated by NFI and CzechTerra inventory programs. The unit is mil. t C.

Decay stage	Campaign	NFI – ref. year 2003	CzechTerra – ref. year 2009
Wood is hard		1.29	1.65
Soft periphery, centre hard		0.65	0.88
Hard periphery, centre soft		0.09	0.14
Totally soft/rotten		0.27	0.21
Total quantity		2.30	2.88

$$0.58 \text{ mil. t C}/(6 \text{ yrs}) = 0.096 \text{ mil. t C/yr} = -0.35 \text{ mil t. CO}_2\text{/yr}$$

Concluding

- The Czech Republic was asked to provide verifiable information on litter, soil organic carbon and dead wood pools on not being a net source.
- We use a combination of
 - i) reasoning based on sound knowledge of likely system responses
 - ii) specific, peer-reviewed literature to support the above.
 - iii) representative and verifiable sampling and analysis

Hoping for the positive outcome!

Thank you!