N_2O and CH_4 fluxes of forested floodplains in the Danube National Park, Austria

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Favorable hydrological properties combined with periodic input of organic matter and nutrients after flooding dispose floodplain forests as potential "hot spots" of carbon (C) and nitrogen (N) cycling. Environmental conditions could also be favorable for the production of nitrous oxide (N_2O) and methane (CH_4). We measured soil N_2O and CH_4 fluxes at 18 sites in the Danube National Park (~ 10.000 ha), spanning natural gradients from frequently to less frequently flooded forest. Intensive monitoring sites were additionally equipped with auto-chambers to measure soil GHG fluxes in daily resolution. Stem N_2O and CH_4 fluxes were measured at the intensive sites as well. Against our expectations, soils acted primarily as CH_4 sinks. Though we observed CH_4 emissions shortly after flooding, the soil at the frequently flooded sites still showed average CH_4 uptake of 18 µg CH_4-C m^{-2} h^{-1} during the first 18 month of our study. Less frequently flooded sites showed soil CH_4 uptake of on average 54 µg CH_4-C m^{-2} h^{-1}. Nitrous oxide was mostly emitted from soil and fluxes increased shortly after flooding events. Highest soil N_2O emissions (> 70 µg N_2O-N m^{-2} h^{-1}) were, however, measured independently of flooding during freeze-thaw periods in late spring. Tree stems fluxes differed among tree species (poplar, ash) and among stem sampling heights. Poplar showed sharply declining CH_4 and N_2O emissions with increasing stem measurement height. Ash showed opposite trends with regard to CH_4 and no distinctive pattern with regard to N_2O. Generally, stems mostly emitted CH_4 and N_2O, but emissions were very low.

Strategic genetic resources from Uruguay, the Southern limit of the Atlantic forest, on the current scenario of climate change

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The Atlantic Rainforest is a Neotropical plant formation, traditionally present in Brazil, Paraguay, and Argentina. In Brazil, it followed the country coastal zone, from Rio Grande do Norte to Rio Grande do Sul, reaching inland the Province of Misiones in North-Eastern Argentina, and east of Paraguay. It is a threatened tropical forest and its surface has been fragmented discontinuously due to intensive deforestation of the biome, mainly in the twentieth century. It still holds one of the greatest biodiversities on the planet. It covered important stretches of mountain ranges and escarpments of the Brazilian plateau and was the extension of the Amazon rainforest. It was the second largest tropical forest in expansion in South America. The largest area continues as original surviving forest, the best preserved of this ecosystem is in the Argentine province of Misiones. However, Uruguay has small remnants of Atlantic forest that make it the final limit of the southern distribution. The edaphoclimatic conditions of Uruguay are different from those in the rest of this biome. It has four distinct seasons with contrasting temperatures. The low relief soil does not represent a physical barrier for the winds, making the changes of weather very variable. The aim of this work is to describe five genetic resources species of this biome, its potential for reforestation and productivity in the current scenario of climate change. These are *Parapiptadenia rigida*, *Ilex paraguariensis*, *Myrcianthes pungens*, *Eugenia invlolucrata*, and *Cordia americana*. We propose Conservation in situ, improvement and international germplasm interchange.

Estimation of carbon fluxes from the decomposition of coarse woody debris in *Pinus koraiensis* stands in the Russian Far East

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Forests play an important role in global carbon cycles by accumulating carbon in biomass as well as through photosynthesis and respiration. An accurate assessment is complicated because of variations in carbon fluxes for different decomposition stages of wood. The carbon stored in coarse woody debris (CWD) belongs to anthropogenically heavily affected carbon pools in forests available for wood supply (FAWS). The CWD pool in the forest is regulated by natural processes such as mortality and decomposition as well as the activities of the local population such as the use as easily accessible fuelwood. Furthermore, forest fires have a significant impact on CWD stocks. CWD stocks in *Pinus* koraiensis dominated forest stands were investigated in the Primorsky Krai territory of Russia including Bikin national park (no logging) with a CWD stock of 104 -119 m^3/ha, and in an Ussuriisk-based forest stand of FAWS with a CWD stock of 10-59 m^3/ha. The deadwood basic density for *Pinus* was determined at five consecutive decomposition stages as 0.30, 0.26, 0.20, 0.16, and 0.10 g/cm^3. For the different decomposition stages carbon emissions were measured for the CWD surface throughout 2015-2017 with annual emissions ranging from 0.06 to 0.59 t C/ha for the stands investigated. CWD decomposition amounts to 2-7% of total destructive carbon flux. Comprehensive data on CWD differentiated by decomposition stage is useful not only for the refinement of carbon budgets in Primorsky Krai but also for soil scientists, mycologists, forest scientists and biodiversity assessments.

Climate gas emissions from forestry – silvicultural measures about models for allocation

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The Norwegian forest industry is increasingly being requested for environmental documentation, typically environmental product declarations (epds). Currently, the environmental documentation is based on aggregated quantities for industrial roundwood and fiber. This implies that wood products in general do not reflect wood species (spurce or pine). It is therefore important to calculate emissions from products from specific wood species. Climate gas emissions from Norwegian forestry