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FOREST UNDERSTORY EFFECT ON CARBON SEQUESTRATION

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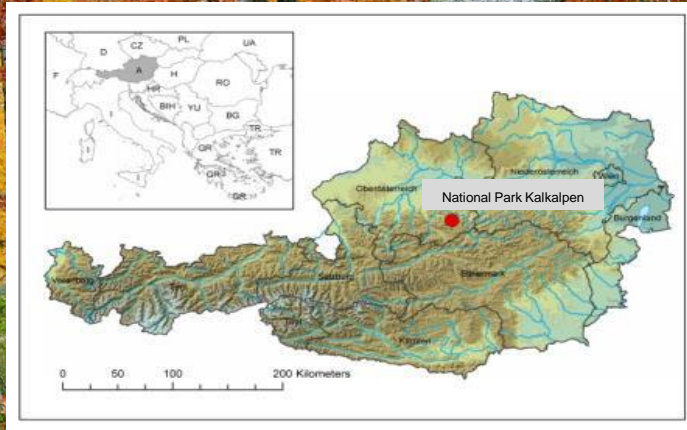
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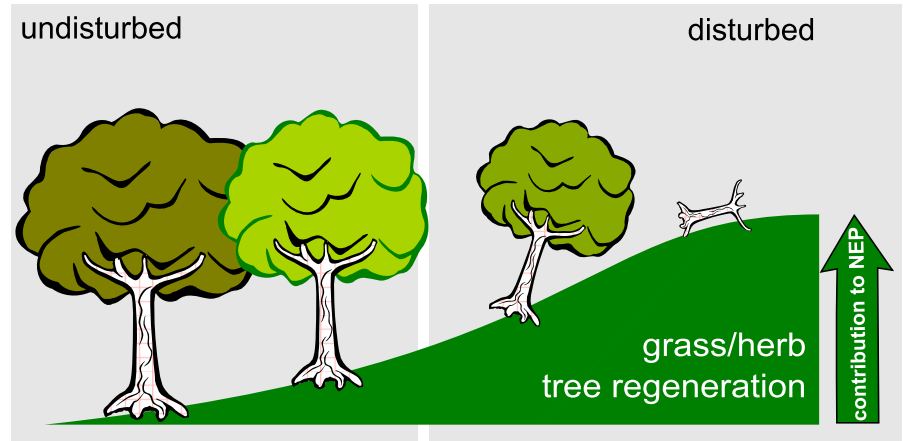


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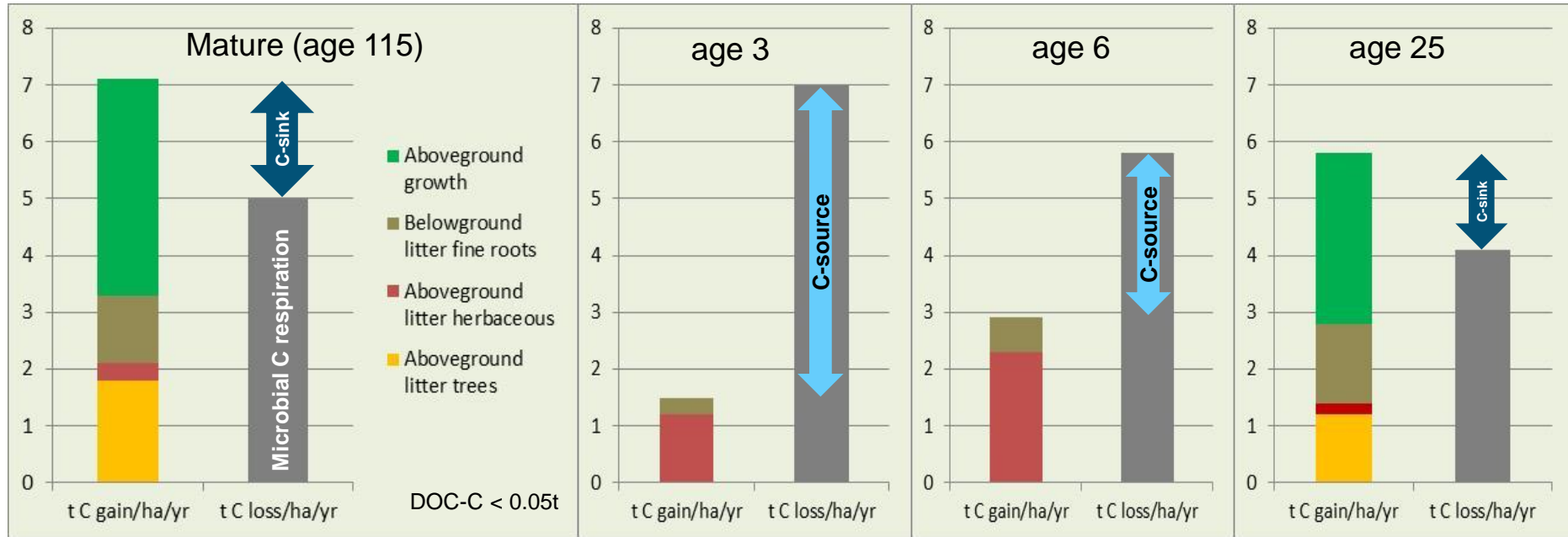
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UNGULATES AND THE FOREST C SINK

- In most Austrian mountain **forests tree regeneration is strongly affected by ungulate browsing**, particularly after **forest disturbances**
- **Understory effects** on net ecosystem production (NEP) **should be considered** with increasing overstory disturbance because
 - **Tree regeneration** is crucial in maintaining C sequestration after stand replacing disturbances
 - **Herbs and grasses** contribute to ecosystem net primary production and litter input but also compete with tree saplings

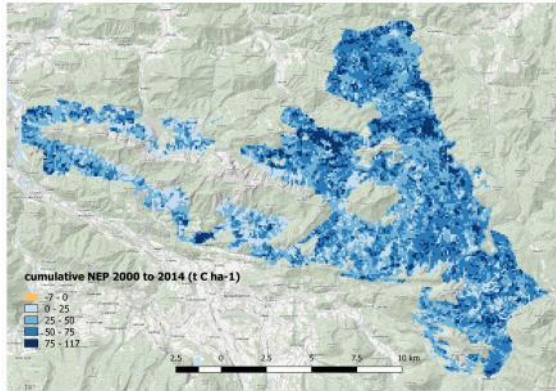


POST-DISTURBANCE EFFECT OF THE HERB LAYER

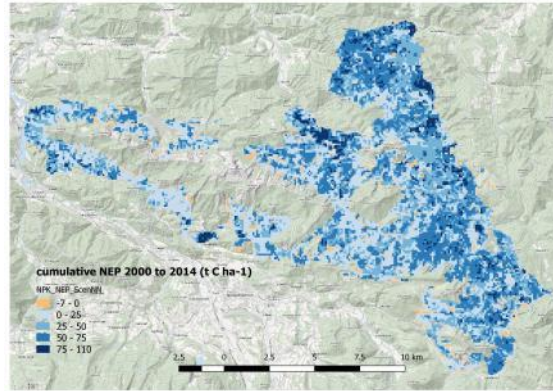


MODEL SCENARIOS WITH AND WITHOUT UNDERSTORY

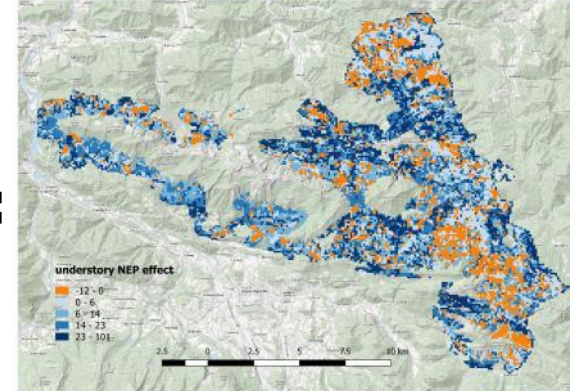
LandscapeDNDC



Yes herb/grass
Yes tree regeneration

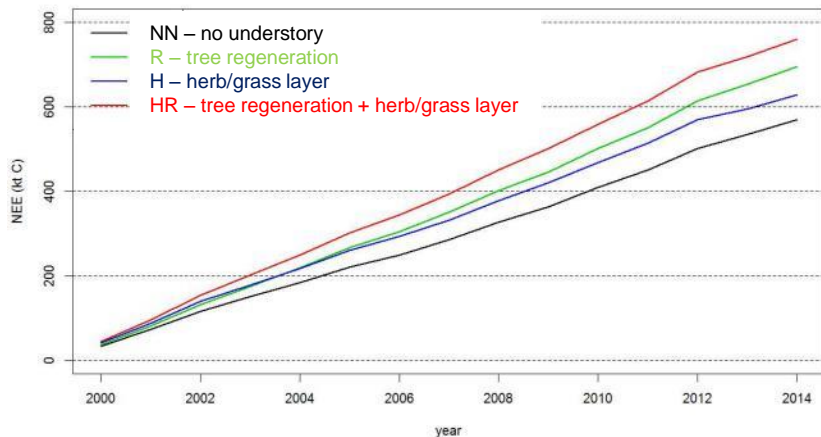


No herb/grass
No tree regeneration



Effect of herb/grass, tree
regeneration

33% HIGHER NET ECOSYSTEM PRODUCTION



- Total cumulative NEP from 2000 to 2014 was **33% higher when considering herb+regeneration (HR) Tree regeneration scenario**
- **Tree regeneration: 23% higher NEP**
- **Disturbance severity** clearly increased the contribution of tree regeneration to NEP
- **There is a clear (unintentional) win for C sequestration owing to regulations on ungulate populations for habitat restoration**

CONTACT & INFORMATION

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