

**Title: Soil microbial necromass carbon in forests: A global synthesis of patterns and controlling factors<sup>1</sup>**

**Running Title:** Soil microbial necromass carbon in forests

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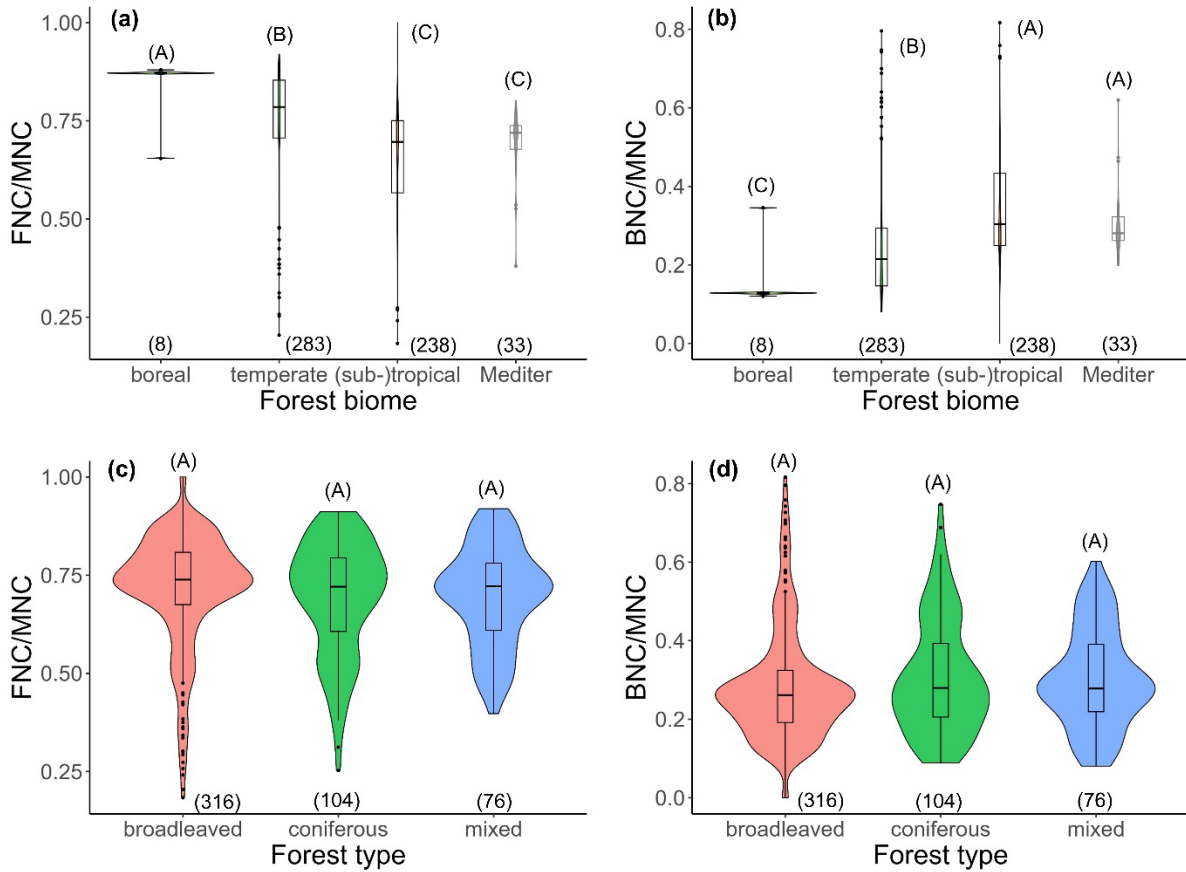
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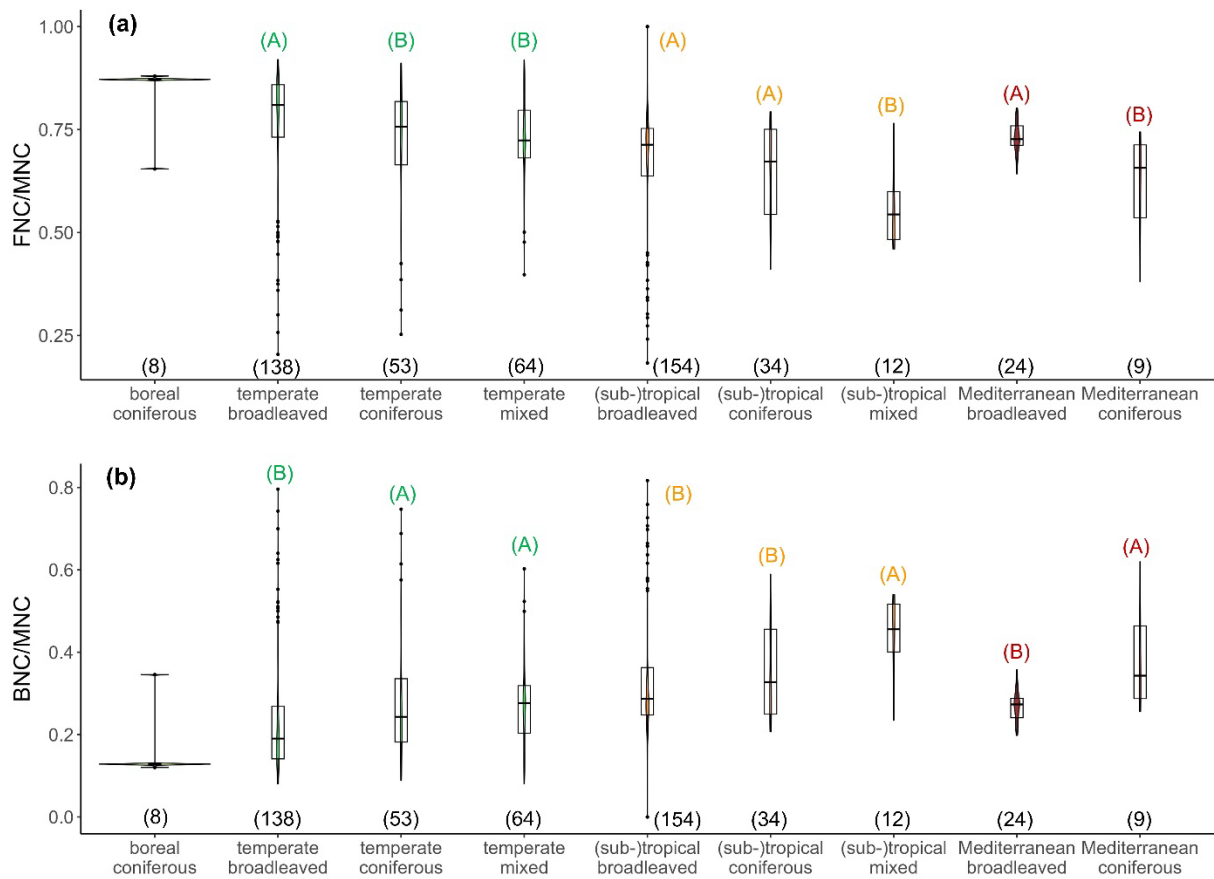
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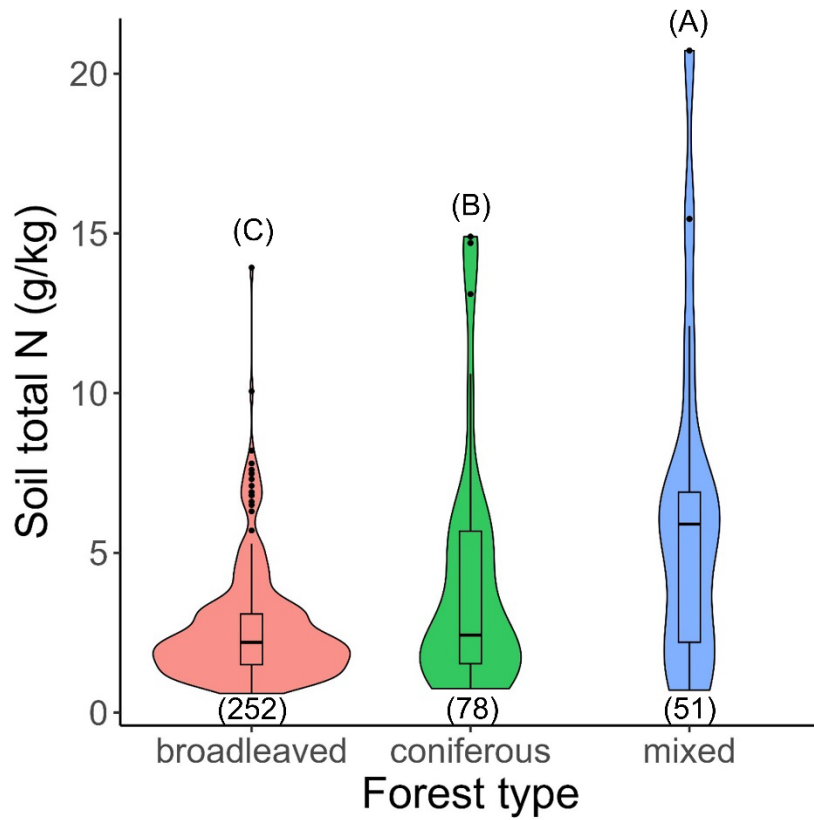
<sup>1</sup>MNC, microbial necromass carbon; SOC, soil organic carbon; FNC/BNC, fungal-to-bacterial necromass carbon ratio; AS, amino sugars; GluN, glucosamine; MurA, muramic acid.



**Figure S1** The ratio of fungal necromass carbon to microbial necromass carbon (FNC/MNC) and the ratio of bacterial necromass carbon to microbial necromass carbon (BNC/MNC) in surface 0–20 cm soils in different forest biomes (a and b) and forest types (c and d). The shapes of the violin represent the distribution pattern of the corresponding data. The upper and lower ends of boxes denote the 0.25 and 0.75 percentiles, respectively. The solid lines in the boxes mark the medians. Solid dots denote outliers. Numbers in the parentheses represent the number of data. The different capital letters indicate significant differences between groups.



**Figure S2** The ratio of fungal necromass carbon to microbial necromass carbon (FNC/MNC; a) and the ratio of bacterial necromass carbon to microbial necromass carbon (BNC/MNC; b) in surface 0–20 cm soils in different forest types from different forest biomes. The shapes of the violin represent the distribution pattern of the corresponding data. The upper and lower ends of boxes denote the 0.25 and 0.75 percentiles, respectively. The solid line and cross in the box mark the median and mean of each dataset, respectively. Solid dots denote outliers. Numbers in the parentheses represent the number of data. The different capital letters indicate significant differences between groups.



**Figure S3** Soil total nitrogen (N) content (g/kg) in surface 0–20 cm soils in broadleaved forests, coniferous forests, and mixed forests. The shapes of the violin represent the distribution pattern of the corresponding data. The upper and lower ends of boxes denote the 0.25 and 0.75 percentiles, respectively. The solid lines in the boxes mark the medians. Solid dots denote outliers. Numbers in the parentheses represent the number of data. The different capital letters indicate significant differences between groups.