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**Tree biomass models and related parameters for carbon
accounting of major tree species**

主要树种立木生物量模型与碳计量参数

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part

1. Structure and drafting rules for standardization documents" Drafting. Please note that some of the contents of this document may involve patents. The issuing organization of this document does not assume the responsibility for identifying patents. This document was proposed by the State Forestry and Grassland Administration. This document is under the jurisdiction of the National Forest Resources Standardization Technical Committee (SAC/TC370). This document was drafted by: Forestry and Grassland Survey and Planning Institute of the State Forestry and Grassland Administration, East China Survey and Planning Institute of the State Forestry and Grassland Administration, Central South Survey and Planning Institute of State Forestry and Grassland Administration, Northwest Survey and Planning Institute of State Forestry and Grassland Administration, and Southwest Survey and Planning Institute of State Forestry and Grassland Administration. The main drafters of this document are: Zeng Weisheng, Chen Xinyun, Yao Shunbin, Chen Zhenxiong, Maxi, Pu Ying, Xu Zhiyang, Xiao Qianhui, Li Zhihua, Zhang Rong, Huang Guosheng, Qiu Yaorong, He Peng, Chen Zhilin, Li Hua, Yang Xueyun, Wu Wen Yue, Chen Huochun, Sun Jilin, Hou Xiaowei, Zhang Lu, Sun Xiangnan, Luo Qinfeng, Xu Xuping, Zhang Weidong, Lu Yagang, Feng Qiang, Du Zhi, Li Rui, Huang Xiangnan, Hu Jue, Xiang

Anmin, Li Guoxing, Shi Yakun, Niu Juan, Ma Guoqiang, Su Junyan, Luo Chunlin. Standing biomass model and carbon accounting parameters of major tree species

1 Scope

China's national standard giving tree biomass models and their parameters for carbon accounting of the major species. The models are allometric equations: from measurements a forester can take - the diameter at breast height, sometimes the height - they estimate the total biomass of the tree, above and below ground, from which the carbon is calculated as a fraction. They exist because the alternative is to fell, dry and weigh trees, which is destructive and can only be done for a sample. The parameters differ by species, by region and by the age and density of the stand, and applying a model developed elsewhere gives an answer that can be wrong by a wide margin. Publishing them as a national standard for China's major species is what makes forest carbon accounting reproducible, and it is the foundation on which the certification standard rests - the credit is only as sound as the equation behind it.

This document specifies the types of trees that can be used for the production of *Abies* spp., *Picea* spp., *Larch* spp., *Masson pine* spp., and *Pinus massoni*- (*Quercus* spp.), birch (*Betulas* pp.), poplar (*Populus* spp.), linden (*Tilia* spp.), elm (*Ulmus* spp.), *Schima superba* biomass model, underground biomass model, biomass conversion factor model, compatible standing timber volume model, root-to-shoot ratio model, wood density, carbon content coefficient and model applications, etc. This document applies to the measurement of forest biomass and carbon stocks of the above-mentioned major tree species (groups) across the country.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document. LY/T 1353-1999 Standing timber volume table LY/T 2258-2014 Technical specification for standing tree biomass modeling method

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Tree biomass The total amount of organic matter (dry weight) present in living trees at a particular moment.

Note. It includes above-ground biomass and underground biomass, which are represented by MA and MB respectively. Among them, above-ground biomass includes dry wood, dry

bark, branches (including fruits), leaves, The underground biomass includes rhizomes, thick roots (diameter ≥ 10 mm) and fine roots ($2 \text{ mm} \leq \text{diameter} < 10 \text{ mm}$). Roots are not included in the underground biomass but are included in the soil organic matter content. [Source: LY/T 2258-2014, 3.1]

3.2 Tree biomass model treebiomassmodel Taking standing tree measurement factors (DBH, tree height, etc.) as explanatory variables and standing tree total biomass or each sub-item biomass as target variables, the statistical method was used to A regression model established based on the principles and methods of statistical analysis. [Source: LY/T 2258-2014, 3.2, modified]

3.3 Conversion factor for converting trunk volume to aboveground biomass.