

Biogeosciences Discuss., referee comment RC2
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Comment on bg-2022-18

Anonymous Referee #2

Referee comment on "Updated estimation of forest biomass carbon pools in China, 1977–2018" by Chen Yang et al., Biogeosciences Discuss.,
<https://doi.org/10.5194/bg-2022-18-RC2>, 2022

In context of climate change, comprehensively estimate of forest C stocks will be helpful for forest carbon sequestration, as well as achieving target for carbon neutrality in 2060 proposed by the Chinese government. There is a timely need for a greater global perspective in assessing carbon sequestration using datasets of eight inventory periods from 1977 to 2018. The authors highlight that the pronouncing increases in total biomass C pool and average biomass C density of Chinese forests were largely attributed to afforestation practices, forest age growth, and environmental changes. Overall, the manuscript is well written and its objectives adequately addressed in the discussion section. I do, however, also have some more detailed comments on the manuscript. My recommendation is minor revision with reassessment by the editor.

General comment:

- The authors should bring out the novelty of the study. The authors should be clearer about the uniqueness of the study.
- While the paper presents some useful results, does the paper present new product or new methodology compare with other related studies?
- In the discussion part, a real discussion about the effects of environmental changes on total biomass C pool and average biomass C density of Chinese forests should be stated, and its relationship to other existing works. Implications (clear and striking messages) about this topic also should be required.

Specific comments:

Line 27: China's and here and elsewhere (lines 43, 54.....).

Line 28: Ecological

Line 31: using full name abbreviation for CO₂.

Lines 46–48: Please revise these sentences. There are some reports in several articles.

Lines 56–63: the advantages and disadvantages of these three common methods should be described in this paragraph, especially for BEF methods you used in this study.

Lines 142: add a space between 30 and years.

Lines 207: Table 1 shows a negative value of C sink of , also Table 2 for nature forests, could you explain these results and give more detailed discussion.

Lines 228-236: A constant C conversion factor of 0.5 was used to convert biomass into C in this study may be an uncertainty, different C contents for tree species and components were reported by many studies.