

Interactive comment on “Soil organic carbon storage changes in coastal wetlands of the modern Yellow River Delta from 2000 to 2009” by J. Yu et al.

J. Yu et al.

junbao.yu@gmail.com

Received and published: 11 May 2012

Dear Editor,

We sincerely thank the reviewers for constructive comments and suggestions, which are helpful for us to improve our manuscript. The review comments are considered carefully and addressed in detail below; corresponding modifications are made in the manuscript wherever necessary.

Reply to review comments from Reviewer #1

General comments

C1100

The MS is, in general, well written, and should be accepted for publication. However, a few errors remain and may be considered during revision.

R: Thanks.

Special comments

Q1. Line 20, page 2: change “concentration of the carbon cycling” to “greenhouse gases”

R: Thanks. It has bee revised.

Q2. Line 10, page 3: change “bog” to “bogs”

R: Thanks. It has been changed.

Q3. Line 21, page 3: change “The land use” to “Land use”

R: Thanks. It has bee revised.

Q4. Line 10, page 5: delete “,” after Beauv

R: Thanks. The “,” has been omitted.

Q5. Line 17, page5: change “EADAS” to “ERDAS”

R: Thanks a lot.

Q6. Line 9-14, page5: these sentences should be included in section “Material and Methods”

R: Thanks for the suggestion. These sentences have been in the section “2.2 data and methods” which was second part of “Material and Methods”

Reply to review comments from Reviewer #2

General comments

This paper focuses on the change in soil organic carbon in the 0-30 cm soil layer and

C1101

landscape in the Yellow River Delta. It is rather interesting for reader to understand the river effect on landscape and soil organic C. The paper is written in a good manner. Therefore I will recommend it for publication in Biogeosciences after minor revision. I also encourage authors to invite an English editor to improve the paper.

R: Thanks.

Special comments Q1. P1760 L1, please change "mitigating CO₂ increases" into "mitigating atmospheric CO₂ increases".

R: Thanks. It has bee revised.

Q2. P1760 L21, please change "greenhouse gases related carbon in the atmosphere" into "carbon-containing greenhouse gases"

R: Thanks. It has bee changed.

Q3. P1763 L27, authors should describe the process of inorganic carbon removal.

Thanks for the comment. The Soil total organic carbon was determined by Total Organic Carbon Analyzer (TOC-VCPh, Shimadzu, Japan). The instrument can determine SOC directly. Therefore it is not necessary to remove the inorganic carbon in soil samples.

Q4. P1767 L5-10, authors should clearly show why the amount of sediments transported by the Yellow River in the past decade (building the dams).

R: Thanks for the comment. When Yellow River flowed through the Loess Plateau, large amounts of sediment joined into water, this is the main reason for amount of sediments transported by the Yellow River in the past decade (Wang and Liang 2000). But in recent years, Human activities, e.g. the construction of reservoirs and dams, have played a critical role on the decrease of water discharge and sediment load into the sea. About 84%-85% of reductions of runoff and sediment load were caused by anthropogenic activities in the river basin.

C1102

In order to clearly show the reason of sediments transported by the Yellow River in the past decade, the sentence has been changed to "Recent study showed that the average area increase rate of eastern part the modern YRD had decreased to about 3.94 km² year-1 in 1996-2008, which was only 24.3% of that in 1986-1995, because of sharp reductions of runoff and sediment load, of which 84%-85% was caused by anthropogenic activities of the construction of reservoirs and dams in the river basin (Yu et al. 2011)."

References: Wang, Z. Y. and Liang, Z. Y.: Dynamic characteristics of the Yellow River mouth, Earth Surface Proc Land, 25, 765-782, 2000.

Q5. P1767 L16, it is not necessary that "which strongly impacted by human being activities".

R: Thanks for the suggestion. The sentence has been revised.

Q6. Fig. 3, data in the figure is not necessary.

R: Thanks for the suggestion. It should be much clear for readers, so we will keep the data in Fig.3.

Further revision

1. We recalculated and modified some data (marked in blue). 2. Fig.3 and Fig .4 was changed based on new data. 3. Two necessary references were added.

The revised version was attached in "Supplement"

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/9/C1100/2012/bgd-9-C1100-2012-supplement.pdf>

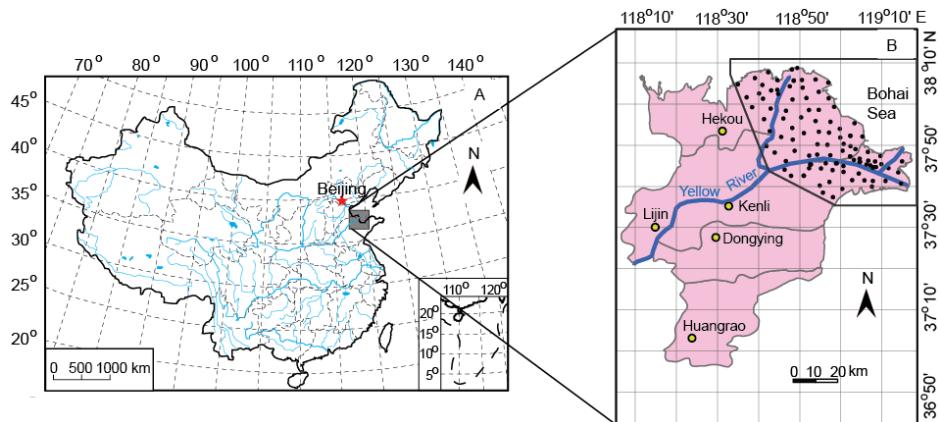


Fig. 1. Location of the modern Yellow River Delta (A), the study region and sample sites (B)

C1104

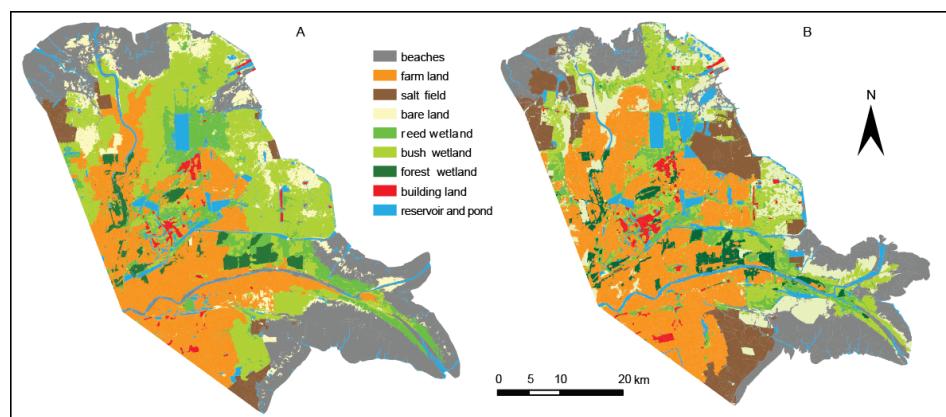


Fig. 2. The landscape types of study area in 2000 (A) and 2009(B)

C1105

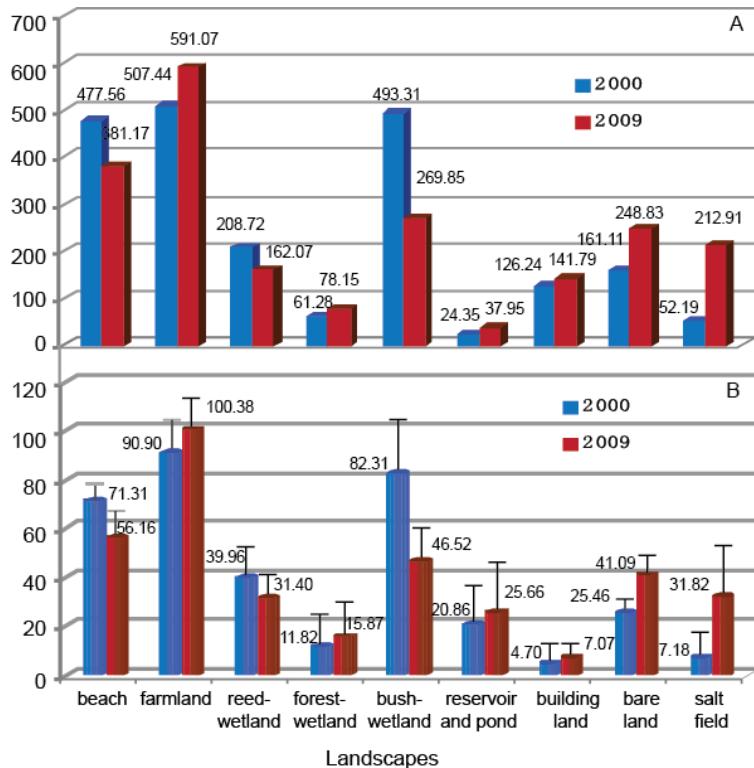


Fig. 3. Comparison of wetland landscape area (A) and SOC storage (B) in the Yellow River Delta from 2000 to 2009. Vertical bars represent standard error

C1106

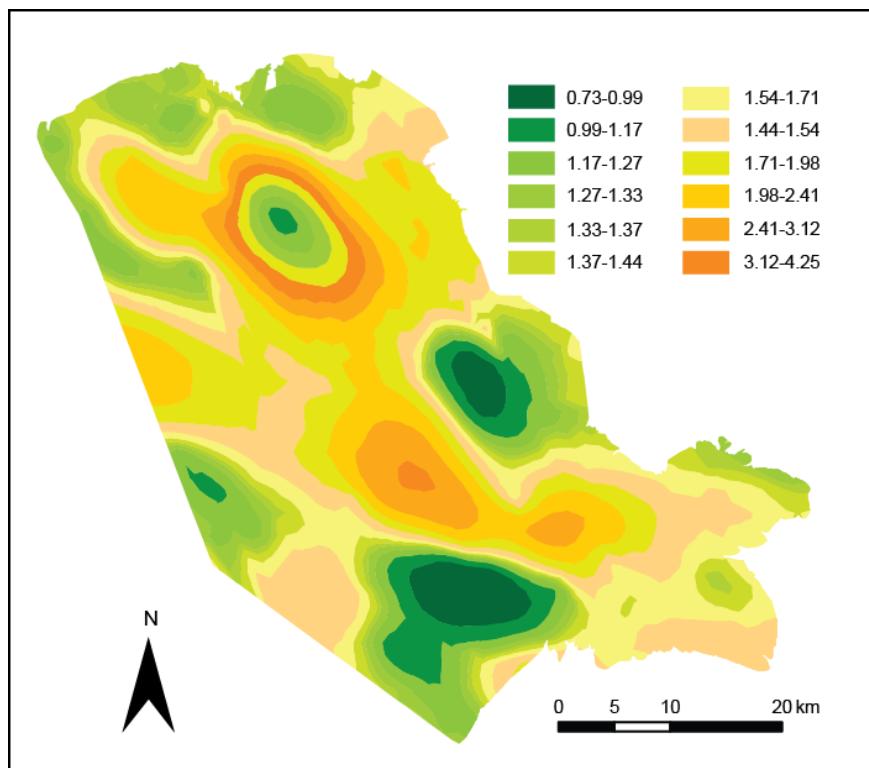


Fig. 4. The distribution of soil organic carbon density in Yellow River Delta

C1107