

**Author Comments in response to reviews of the article submitted to Biogeosciences:**

**bg-2009-160**

**Hooijer et al. - Current and future CO<sub>2</sub> emissions from drained peatlands in Southeast Asia**

The paper was submitted in June 2009, and there have been three reviews of the paper:

1. Gronlund (15 Sep 09) C2024-2009
2. Couwenberg & Joosten (16 Dec 09) C3578-2009
3. Anonymous (23 Dec 09) C3700-2009

The three reviewers recognize the importance of the paper and relevance of the topic, and support publication of the paper. See below the compilation of the statements on the overall quality of the paper as provided by the reviewers.

However, from their answers to the questions asked by NG (see below), two overarching topics emerge from all three reviewers: 1) the paper requires some more detail in describing the various scientific methods and assumptions used in the analyses; and linked to this, 2) the paper also needs some more detail in describing the experiments and calculations so that the results are reproducible by others.

Reviewer C3578 suggests a number of new references, more accurate ones and, in general, additional references to support some of the assumptions and statements made throughout the paper. He offers substantial feedback on new papers and more appropriate citations for a number of statements which we thank the reviewer for providing.

Part of the reason for not fully describing some of the methods is because this paper is based on a much more detailed report which we refer to on a number of occasions throughout the paper. The reviewers point out rightly that they would like to see some of the additional detail in the paper and not just referenced in a report considered grey literature.

We are indeed happy to bring the additional information into the paper which will be a relatively straightforward process for us given that the detailed methods have been already documented and written up elsewhere. We believe these changes will make the paper more self-contained, and the additional references will make it better documented and supported.

Reviewer C3700-2009 provided a detailed account of editorial inconsistencies in the use of a number of terms and requests for clarifications. We believe we'll be able to address and take up most of the suggestions and corrections in the revised manuscript which will result in tighter and more precise language all throughout.

In summary, we are pleased with what we consider to be three constructive reviews of the paper and we are certain we are in a position to address most of the comments in a revised manuscript.

We are looking forward to hearing from you and hopefully receiving an invitation to submit a revised manuscript on what we consider is pioneer research of the under-studied tropical peatlands of Southeast Asia.

Regards,

Al Hooijer, Susan Page, Pep Canadel

8 February 2010

## **Referee comments on overall quality**

### Gronlund (15 Sep 09):

The paper presents a highly important topic and will provide relevant knowledge generated by combination of different data sources. In general, the methods are clearly described, but an extension of the description of methods should be necessary in order to completely understand the calculation procedure for some of the results.

### Couwenberg & Joosten (16 Dec 09):

This paper addresses a timely topic. It presents a valuable assessment of greenhouse gas emissions from peatland drainage in tropical south-east Asia. Fires in these peatlands have been recognised as a major source of anthropogenic greenhouse gases, although quantification is still issue of debate. This paper is based on a study published in the 'grey' circuit in 2006. That study – next to addressing and quantifying fire-related emissions – put the problem on the map of ongoing carbon losses caused by drainage and subsequent degradation of south-east Asian peat soils. The quantification of these emissions as presented has raised global awareness of the problem and already has had policy implications. Peer reviewed publication of the findings would add a most welcome reference to cite in further development and implementation of climate policy.

### Anonymous (23 Dec 09):

This paper deals with the very important topic of how much carbon is being transferred from tropical peatland to the environment as a result of land use change and fire and the information should be published. The manuscript contains, however, errors, inconsistencies and confusing statements that must be addressed and corrected.

## Referee answers to specific BG questions

(Note that the reviewer C3700-2009 did not answer these questions)

The questions where the reviewers agreed that the paper requires some further clarifications (4, 6, 13) have been **underlined in bold**.

	C2024-2009 Sep 15 09	C3578-2009 16 Dec 09
1. Does the paper address relevant scientific questions within the scope of BG?	Yes	Yes
2. Does the paper present novel concepts, ideas, tools, or data?	Yes	Yes
3. Are substantial conclusions reached?	Yes	Yes
4. Are the scientific methods and assumptions valid and clearly outlined?	<b><u>Not completely</u></b>	<b><u>Not sufficiently</u></b>
5. Are the results sufficient to support the interpretations and conclusions?	Uncertain	Yes, but the results are not reproducible
6. Is the description of .. calculations sufficiently .. to allow their reproduction .. (traceability of results)?	<b><u>No</u></b>	<b><u>No</u></b>
7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution?	Yes	Yes
8. Does the title clearly reflect the contents of the paper?	Yes	Yes
9. Does the abstract provide a concise and complete summary?	Yes	Yes
10. Is the overall presentation well structured and clear?	Yes	Could have some improvement
11. Is the language fluent and precise?	Yes	Not always
12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used?	Yes	Yes
13. Should any parts of the paper .. be clarified, reduced, combined, or eliminated?	<b><u>Clarified, extended</u></b>	<b><u>Several parts should be clarified</u></b>
14. Are the number and quality of references appropriate?	Yes	No. Many references quoted do not cover the facts referred to.
15. Is the amount and quality of supplementary material appropriate? Yes	Yes	N/A