

## ***Interactive comment on “A preliminary assessment of peat degradation in West Kalimantan” by G. Z. Anshari***

**Anonymous Referee #2**

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Review of the manuscript entitled: “A preliminary assessment of peat degradation in West Kalimantan” by G.Z. Anshari

Comment 1. The manuscript deals with most important and globally influential topic; degradation of tropical peatlands. Significant and largely inadequately known biodiversity and huge carbon stores previously formed in tropical peatlands in Southeast Asia have been under severe decline due to massive land use change.

Comment 2. Number of tropical peat studies in West Kalimantan is low and this database is valuable addition in existing information. Most of the tropical peat studies in Indonesian area have been conducted in South-East areas of Kalimantan. Study site selection including both coastal and inland peats in comparison is very good idea as this could bring insight on consequences related to differing peat formation time

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scales and climate.

In ‘Methods’ section the site collection includes 5 sites (3 forest growing sites and 2 disturbed peat areas). Peat age data is provided for 2 sites (see comment 3), hydrological data is provided for all sites (see comment 4, 5, and 6), and data on major properties of peat is provided for 2 sites (see comment 6). There must have been a large amount of field- and laboratory work allocated in data collection, but current data presentation form lacks consistency.

Comment 3. Peat age presented in Table 2 gives about 30 000 years age for the peat at depth 150 cm at the NF site. However, in Supplement materials peat depths of 900 cm are presented for this NF site. How this can be explained?

Comment 4. In ‘Methods’ section one site data collection has been made along a transect with predetermined intervals. However, location of transect on the peat dome remains unclear; does it go over the whole peat deposit or cover only some definite area on the dome? Peat environment (hydrology, vegetation, concentrations of elements in peat) vary in different parts of the dome. For rest of the sites sampling is performed on randomized spots and this provides even less information on the sampling conditions. It would also useful to know how large peat areas are included in sampling agenda.

Comment 5. Table 4 provides information on the hydrology on the 5 sites, but data cannot be compared between sites. Hydrological data collection periods vary from 1 to 6 months on various sites (and timing is at least partly non-overlapping) and the presented data do not necessarily represent peak wet- or dry season conditions. There is very little information on the hydrological data collection method or data collection locations on the peat deposit/peat dome.

Comment 6. The most important information of this manuscript is in 2 tables (table 5 & 6). Lines below title ‘Plot’ and ‘Subsample’ which do not provide information on sampling location on peat deposit, sampling depth or environmental conditions in the sampling depth. Author aims to compare certain characteristics in natural and re-

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claimed peat profiles (outlined in introduction to include also acrotelm and catotelm peat) but the table and text provide useful information for the studied elements only as 'Grand mean' of the whole peat profile(?) in the presented 2 sites. It would be better to indicate sampling depths in the table and notify the boundary of permanently water logged peat. Now it remains unclear what the presented numbers present and which proportions – permanently aerobic peat, annual water fluctuation zone peat or permanently waterlogged peat. It could be expected that differences in natural and disturbed peat major properties are best expressed in relatively thin air exposed peat layers, but now the whole peat matrix properties seems to be in single comparison.

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Interactive comment on Biogeosciences Discuss., 7, 3503, 2010.