

<Review comments by experts on Chapter 3 of the First Order Draft of Wetlands Supplement>

| ID    | Expert (Last Name, First Name) | Chapter /Section | Start Line | End Line | Sub-section | Comment  | supplementary documents | Authors' Action | Authors' note   |
|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30001 | FEDERICI, Sandro               | 3                | 1          | 1        |             | <p>General comment: "This chapter is completely based on flux methods for estimating carbon stock changes in rewetted lands. Although eddy covariance techniques may be a simpler way for making C budgets at ecosystem level the accuracy, and precision, of their estimated fluxes of C is still a challenge. Therefore, I would consider a good practice to use for calculating the default factors only C fluxes from studies where the carbon budget has been verified using measurements collected with other methods.</p> <p>Moreover, in analogy with chapter 4, two tier 1 approaches may be provided, one based on flux factors and another one based on stock changes; while providing guidance on the appropriateness of using one of the approaches according with climate/soil/management combination and availability of data</p> |                         | Noted           | <p>The purpose of the guidance is to quantify GHG fluxes to the atmosphere; stock-changes are used as a proxy for CO2 fluxes. In case of organic soils, the use of the stock change approach (comparing total stock at various points in time) is not practicable and therefore direct flux estimates are used. Limiting data to studies with a double check would result in less than a handful of studies. As the review of Chapter 2 has shown, the approach proposed there for tropical peatlands was deemed inappropriate by multiple reviewers.</p> |

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| 30002 | FRIBORG, Thomas                | 3                | 1          | 1        |             | I am in general a bit skeptic about the use of the terminology in this chapter and through out the report, where emission factors are listed in g C. In terms of ecosystems science it makes perfect sense to make balances for peatlands in units of carbon, but in terms of climate, C alone is not a climate forcing factor. Though C containing molecules as CO2 and CH4 are greenhouse gasses, these have very different forcing effects, which is not reflected by their C weights content. I would suggest that you considered changing the units into g CO2 and CH4 respectively or maybe more logical into CO2 equivalents, in which way CO2, CH4 and N2O can be compared. |                         | Accepted        |   |
| 30003 | ORR, Harriet                   | 3                | 1          | 47       |             | section 3.4 seems to be missing   |                         | Accepted        |   |
| 30004 | Rock, Joachim                  | 3                | 1          | 1        | 3           | Please expand page numbers and include chapter number therein.  |                         | Rejected        | Very true, but no data exists on Bofedales to include them here. Countries should seek to develop country-specific approaches for such cases. |
| 30005 | Tuomainen, Tarja               | 3                | 1          | 7        | 3           | The terms, names of variables, units and the manner how equations are presented need harmonisation between chapters and 2006 IPCC GLs. For example, in Ch2 Eq. 2.1 is for annual carbon loss from drained organic soils but in Ch3 is discussed about emissions and removals in Eq. 3.1. Clarifying is needed for example to: 'peatland type' or 'peat type', signs of emissions and removals, are EFs in carbon or in gases (signs).   |                         | Accepted        | Sentence will be reworded, units and variables checked, and equations made more consistent.   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30006 | PETRESCU, Roxana               | 3                | 7          | 7        |             | why use capital letters ?  |                         | Noted           | Sentence will be reworted.             |
| 30007 | Thomson, Amanda                | 3                | 7          | 12       | 3           | Font size  |                         | Accepted        |  |
| 30008 | TIEMEYER, Barbel               | 3                | 9          | 18       |             | If DOC fluxes are added, they deserve a separate chapter.  |                         | Rejected        | DOC are mostly emitted offsite as CO2. |
| 30009 | Baltzer, Heiko                 | 3                | 18         | 18       | 3           | Insert page number in place of 'Error!'  |                         | Accepted        |  |
| 30010 | Thomson, Amanda                | 3                | 18         | 32       | 3           | missing page number  |                         | Accepted        |  |
| 30011 | Baltzer, Heiko                 | 3                | 27         | 32       | 3           | Add the titles of all equations here   |                         | Accepted        |  |
| 30012 | Thomson, Amanda                | 3                | 27         | 39       | 3           | give names to all equatons or none   |                         | Accepted        |  |
| 30013 | Baltzer, Heiko                 | 3                | 37         | 37       | 3           | Add the titles of all tables/figures here  |                         | Accepted        |  |
| 30014 | Thomson, Amanda                | 3                | 37         | 39       | 3           | name for figure 3A.1   |                         | Accepted        |  |
| 30015 | Thomson, Amanda                | 3                | 39         | 42       | 3           | name for table 3.1   |                         | Accepted        |  |
| 30016 | Evrendilek, Faith              | 3                | 42         |          | 3           | (EFD <sub>DOC</sub> _rewetted in tonnes CO <sub>2</sub> -C ha <sup>-1</sup> yr <sup>-1</sup> ) - insert superscripts |                         | Accepted        |  |

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| 30017 | PENMAN, Jim                       | 3                | 50         | 477      |             | The relationship between this capter and chapter 2 seems unclear; both are cross-cutting. Is there any potential to shorten the text by reducing overlap? If we don't do this there is the potential for confusion. |                         | Accepted with modification | Overlap will be reduced and more explanations provided to reduce confusion.        |
| 30018 | Romanovskaya, Anna                | 3                | 50         |          | 3           | in the chapter 3 I didn't find any information what is default transition period for rewetted lands? 20 years? What is correct time for reporting its as anthropogenic GHZ emissions and removals?                  |                         | Accepted with modification | Land transition is not considered for time horizon will be clarified as necessary. |
| 30019 | Schreir & Silvius, Arina & Marcel | 3                | 50         | 51       | 3           | suggestion: add clear definitions of 1) peatlands 2) organic soils and 3) wetlands. Now, throughout the different chapters of the guidance it is confusing what is meant it.  | Attachment_2 0050.pdf   | Accepted                   | Ch 1 already provides some definitions, and a glossary will be prepared.           |
| 30020 | PETRESCU, Roxana                  | 3                | 51         | 64       |             | should be made very clear from the beginning the difference between peatlands and organic soils, please add some definitions; as shown in Table 3.1 the coverage of this chapter is mainly for peat.                |                         | Accepted                   | Ch 1 already provides some definitions, and a glossary will be prepared.           |

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| 30021 | PENMAN, Jim                    | 3                | 53         |          |             | <p>replace text with "Wetlands are lands characterised by water saturation of the soil dominating hydrological and biogeochemical processes. Rewetting is the action of raising the water table on drained land to re-establish such conditions, e.g. by blocking drainage ditches or disabling pumping facilities. Rewetting may be accompanied by restoration, which necessarily includes re-wetting and is the permanent re-establishment, on formerly drained sites, of hydrological and biogeochemical processes characteristics of saturated soils, as well as of the vegetation cover that pre-dated the drainage of these soils.</p> <p>Rehabilitation or reclamation is the re-establishment, on formerly drained sites, of some of – but not necessarily all - the hydrological, biogeochemical and ecological processes and functions that characterized pre-drainage conditions. As such, rehabilitation can involve a large variety of practices on formerly drained peatlands or organic soils, which may or may not include re-wetting. Rehabilitation as an activity separate from rewetting (with or without restoration) is not covered by this chapter" - Comment: I think the text as ammended is much clearer. The overaeching activity must be rewetting, otherwise the authors risk excluding activities not called rewetting from consideration under the KP, or a future climate agreement based on it. I presume that was not the intention.</p> |                         | Accepted with modification | Sentence will be clarified. |

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| 30022 | Schreir & Silvius, Arina & Marcel | 3                | 53         | 53       | 3           | remove 'and how they affect GHG', there is nothing on GHG in this section. Or add a paragraph on the influence of these measures on GHG.   | Attachment_2 0050.pdf   | Accepted                   |  |
| 30023 | Thomson, Amanda                   | 3                | 53         | 57       | 3           | reword title   |                         | Accepted                   |  |
| 30024 | Garcia-Apaza, Emilio              | 3                | 54         |          | 3           | It is important to mention the components of the biogeochemical processes involved making a volume approximately originated by the antropogenic activity.  |                         | Accepted                   | Approach will comply with managed land proxy in assuming that allcus on anthropogenic emissions and removals on managed land.          |
| 30025 | Schreir & Silvius, Arina & Marcel | 3                | 55         |          | 3           | 'Wetlands are...'; Does this exclude wetlands that are not saturated part of the year because of dry summers?  | Attachment_2 0050.pdf   | Rejected                   | No - definition does not exclude ephemeral wetlands, but allows countries to implement national definitions and data. See def in ch 1. |
| 30026 | Klemedtsson, Asa Kasimir          | 3                | 56         | 56       | 3           | Rewetting is the action of raising water table..., my reflection is that rewetting of former drained peatlands happens also by abandonment where the dithes slowly fills and other passive rewetting. Thus not always an action. |                         | Accepted with modification | This chapter is about the effect of rewetting without assumption about the causes.. Clarification will be added.                       |
| 30027 | Thomson, Amanda                   | 3                | 56         |          | 3           | Be consistent with use of either re-wetting or rewetting   |                         | Accepted                   |  |
| 30028 | Schreir & Silvius, Arina & Marcel | 3                | 59         |          | 3           | remove 'processes'   | Attachment_2 0050.pdf   | Accepted                   |  |

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| 30029 | Schreir & Silviu, Arina & Marcel | 3                | 59         | 69       | 3           | 'pre-dated' – original? Perhaps say: recovery of vegetation.  | Attachment_2 0050.pdf   | Accepted with modification | It is not about recovery, but also about re-establishment by planting or sowing. Clarity will be improved.                                |
| 30030 | Choowaew, Sansanee               | 3                | 66         | 67       | 3           | Scope of this guidance. Wetland deepening for increasing floodwater storage capacity and flood protection services are increasingly practiced; should these be addressed ?  |                         | Accepted with modification | This chapter is about the effect of rewetting without assumption about the causes. Clarification will be added. Flooded land is excluded. |
| 30031 | PENMAN, Jim                      | 3                | 66         | 69       |             | delete sentence; This sentence is confusing and introduces yet another term, reclamation. I think the main point is covered if we include the sentence just inserted, beginning 'Rehabilitation as a separate activity ...' |                         | Accepted                   |   |
| 30032 | PENMAN, Jim                      | 3                | 68         | 68       |             | Good!!!   |                         | Accepted                   |   |
| 30033 | Thomson, Amanda                  | 3                | 68         | 70       | 3           | Insert 'we' after 'hence wherever'  |                         | Accepted                   |   |
| 30034 | Lund, Herluf Gyde                | 3                | 70         | 70       | 3           | Consider having hot links to the various parts of the IPCC material.  |                         | Accepted                   |   |
| 30035 | PETRESCU, Roxana                 | 3                | 70         | 73       |             | replace "in keeping with the..."with "based on the recommendation of chapter 7..." or "in line with..."   |                         | Accepted                   |   |

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| 30036 | PETRESCU, Roxana                  | 3                | 70         | 71       |             | You refer always to emissions/removals of CH <sub>4</sub> -C and CO <sub>2</sub> -C...It can be confusing and should be made clear if the results for CO <sub>2</sub> -C and CH <sub>4</sub> -C are in C (as all units in all Eqs.) or take into account the following conversion factors: 44/12 and 16/12 respectively to become CO <sub>2</sub> and CH <sub>4</sub> . If not included please specify somewhere "to be add it when calculating the "real" CO <sub>2</sub> and CH <sub>4</sub> emissions".   |                         | Accepted with modification | Will be clarified  |
| 30037 | Schreir & Silvius, Arina & Marcel | 3                | 70         | 73       | 3           | Personally, I do not really see the advantage of expressing fluxes in terms of C. When we talk about the IPCC I would expect that we express things in terms of 'climate change', and so in 'warming potentials'; for CH <sub>4</sub> in CO <sub>2</sub> -equivalent (warming potential 23) and for N <sub>2</sub> O in CO <sub>2</sub> -equivalents (warming potential 310?). You want to know the effect on the climate, not in terms of carbon losses. Is it because DOC can not directly be translated in CO <sub>2</sub> -eq because the conversion factor of DOC-> CO <sub>2</sub> is quite uncertain? | Attachment_2 0050.pdf   | Accepted with modification | Will be clarified  |
| 30038 | Wirth, Tom                        | 3                | 73         | 80       | 3           | Not sure I understand why you need to report in units of CH <sub>4</sub> -C. This does not seem consistent with reporting of other methane or nitrous oxide emissions in the 2006 GL, for example with rice methane or soil N <sub>2</sub> O.  |                         | Accepted with modification | Will be clarified  |
| 30039 | Garcia-Apaza, Emilio              | 3                | 74         |          | 3           | One the wetlands in the highland is the bofedal (kind of peatland), which in terms of area it is not huge, but in terms of quality of the ecosystem is importan for its function and the relationship with the livestock management. Recently, there are efforts to recover dried bofedales in Bolivia.  |                         | Rejected                   | Very true, but no data exists on Bofedales to include them here. Countries should seek to develop country-specific approaches for such cases |



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| 30040 | PENMAN, Jim                    | 3                | 74         | 77       |             | delete " contrary to most ecosystems"   |                         | Accepted        |  |
| 30041 | Lund, Herluf Gyde              | 3                | 77         | 80       | 3           | Consider inserting (EF) after 'emission factors'  |                         | Accepted        |  |
| 30042 | Lund, Herluf Gyde              | 3                | 80         | 80       | 3           | Is GL an abbreviation for the Guidelines? If so, consider putting (GL) after the first time the Guidelines are mentioned.   |                         | Accepted        |  |
| 30043 | Thomson, Amanda                | 3                | 80         | 83       | 3           | replace GLs with Guidelines   |                         | Accepted        |  |
| 30044 | Jauhiainen, Jyrki              | 3                | 81         | 85       | 3           | Rewetting is considered in very narrow sense here. In boreal and temperate regions rewetting is basically the only needed action for returning mosses, sedges or other low biomass vegetation back to site. However, in the tropics rewetting is likely made on previously clear felled, burned peatlands and the process usually include also attempted tree based vegetation return by planting. The vegetaion status, litter feed to soil and thus the created GHG releasing proceses depend largely on the vegetaion type on the rewetted peat. If there is no litter input to tropical peat (rewetting only) there is likely not much change in GHG emissions either in the tropics. However, rewetting and increased litter input from vegetation together likely have notable impact on GHG emissions. Maybe this could be clarified here. |                         | Rejected        | It is true that rewetting of tropical swamp peat is very difficult and may depend on reestablishing vegetation cover, however, the technical challenges of achieving rewetting are beyond the scope of this chapter. |
| 30045 | Thomson, Amanda                | 3                | 83         | 88       | 3           | This sentence is confusing: it needs to be re-worded or split after 'regions' on line 85  |                         | Accepted        | Sentence will be reworded.   |

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| 30046 | PENMAN, Jim                       | 3                | 84         | 87       |             | Not sure of the implications. If we include categories just as a basis for future development, the corresponding emission and removals are unlikely to be reflected in GHGs |                         | Noted           | Sentence will be reworded. |
| 30047 | Evrendilek, Faith                 | 3                | 86         | 87       | 3           | re-wetting; "however," countries in tropical and sub-tropical regions where significant areas of peatlands or organic soils have been re-wetted "are encouraged"            |                         | Accepted        |                            |
| 30048 | FEDERICI, Sandro                  | 3                | 87         |          |             | delete "should"   |                         | Accepted        |                            |
| 30049 | Klemedtsson, Asa Kasimir          | 3                | 87         | 87       | 3           | ...should are encouraged... exchange are for be.  |                         | Accepted        |                            |
| 30050 | Rock, Joachim                     | 3                | 87         |          | 3           | check: "should are" is wrong  |                         | Accepted        |                            |
| 30051 | Schreir & Silvius, Arina & Marcel | 3                | 87         |          | 3           | 'have been re-wetted should be encouraged...'.<br>Attachment_2 0050.pdf   |                         | Accepted        |                            |
| 30052 | Stenhouse, Michel                 | 3                | 87         | 87       | 3           | Editorial: Delete "should"  |                         | Accepted        |                            |
| 30053 | Thomson, Amanda                   | 3                | 87         | 88       | 3           | Remove 'should' after 're-wetted'   |                         | Accepted        |                            |
| 30054 | Freibauer, Annette                | 3                | 88         | 88       | 3           | add N2O where appropriate.  |                         | Accepted        |                            |
| 30055 | Kolka, Randy                      | 3                | 88         | 88       | 3           | I don't understand the need for the tropical heading for both the column and rows. It is assumed the soil is peat.  |                         | Accepted        | Table will be revised.     |

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| 30056 | PETRESCU, Roxana               | 3                | 88         | 89       |             | consistency throughout the chapter when using emission factors/EFs  |                         | Accepted        |  |
| 30057 | Romanovskaya, Anna             | 3                | 88         | 88       | 3           | terms "bog" and "fen" are not defined or clearly explained  |                         | Accepted        | This terminology will either be clarified or not used. Chapter 1 or the Glossary will provide definitions. |
| 30058 | Thomson, Amanda                | 3                | 88         | 88       | 3           | Table 3.1 - title needed  |                         | Accepted        |  |
| 30059 | Thomson, Amanda                | 3                | 88         | 89       | 3           | Table 3.1- this table should be re-arranged so it is more concise, e.g. move the climate region headers to correspond with the peat type headers                      |                         | Accepted        |  |
| 30060 | Baltzer, Heiko                 | 3                | 89         | 89       | 3           | The table needs a title / caption   |                         | Accepted        |  |
| 30061 | Wirth, Tom                     | 3                | 89         |          | 3           | Table 3.1: For tropical peat it refers to section 3.4.1 and 3.4.2, neither of which exist. Also, what appendix are you referring to?                                  |                         | Accepted        | Sections will be added in the new SOD (DM)   |
| 30062 | PENMAN, Jim                    | 3                | 91         |          |             | delete "post-rewetting" and insert "following rewetting" after "soils"  |                         | Accepted        |  |
| 30063 | PENMAN, Jim                    | 3                | 98         | 113      |             | Suggest no need to hyphenate rewetted, but I won't try to edit every occurrence.  |                         | Accepted        |  |
| 30064 | Baltzer, Heiko                 | 3                | 102        | 106      | 3           | Cveg and Cbiomass are ill-defined here, since woody vegetation is a subgroup of all vegetation. Define these terms better, e.g. woody / herbaceous vegetation biomass |                         | Accepted        |  |

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| 30065 | FEDERICI, Sandro               | 3                | 103        | 106      |             | When an eddy covariance technique is used for monitoring flux exchanges at ecosystem level, equation 3.1 double accounts net photosynthesis in vegetation. Indeed, the term CO <sub>2</sub> -Cwoody biomass, being the stock change of woody plants, includes the increase in carbon stock that is the consequence of net photosynthesis that is part of the net fluxes measured with eddy covariance techniques. Furthermore, whatever is the method applied to measure/estimate the CO <sub>2</sub> fluxes, the inclusion in the balance-equation of losses of biomass (implicitly included in the net CSC of the woody biomass) due to transfer of carbon to other pools represents a double accounting since reporting carbon transfers from (losses) a pool that are not paired by the equivalent carbon transfers to (gains) a pool results in accounting for an emission of CO <sub>2</sub> that is not occurred yet (and this CO <sub>2</sub> will be double accounted when the carbon will be released from the receiving pool to the atmosphere). The formula should then refer to the term CO <sub>2</sub> -Cwoody biomass to: "C stock gains (i.e. tree growth), while ensuring that CO <sub>2</sub> emissions from on-site burning of woody perennial biomass and carbon stock changes in the HWP (including fuelwood) pool are reported according with methods provided in chapter 12, volume 4, of the 2006 IPCC Guidelines (including instantaneous oxidation)" |                         | Accepted        | Concern is valid on a theoretical basis, but does not apply here because the derivation of default Efs took this into account. Clarifications will be provided on possible double-counting when different estimation methodologies are combined (at higher tiers). |
| 30066 | Gyldenkarne, Steen             | 3                | 103        | 106      | 3           | Only C should be given in the equations not CO <sub>2</sub> - has consequences for the all chapters.  |                         | Noted           | Concern is valid on a theoretical basis, but does not apply here because the derivation of default Efs took this into account. Clarifications will be provided on possible double-counting when different estimation methodologies are combined (at higher tiers). |

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| 30067 | Thomson, Amanda                | 3                | 106        | 110      | 3           | Consider replacing all terms except CO2-Cdoc with CO2-Con-site, and moving CO2-Con-site= CO2-C soil/veg/woody biomass/DOM terms into a separate equation as no guidance is given for the separate estimation of these terms (as explained in line 119).   |                         | Accepted with modification | Clarity will be provided in relation to pool coverage.        |
| 30068 | Gyldenkarne, Steen             | 3                | 110        | 111      | 3           | Cveg should be defined so it is possible to distinguish from perennial woody plants. Are we talking about annual. On cropland and grassland there is a default biomass carbon stock (5 tonnes C ha-1 table 5.9 in 2006 GL). Are there any new value for wetlands. There is none in the 2006 GL, chapter 7.3.2. page 7.20. It is acknowledged that eddy variance measurements cannot distinguish.  |                         | Accepted                   | Clarifications will be provided to avoid any double-counting. |
| 30069 | Lilleskov, Erik Andrew         | 3                | 110        | 111      | 3           | Line 110-111. Woody biomass is by definition, part of vegetation. If CO2-C veg and CO2-C woody biomass are split out there should be some explanation. This split implies that “vegetation” is only annual tissue production. This could be accomplished in lines 114-118 where other terms are defined.  |                         | Accepted                   |   |
| 30070 | Lilleskov, Erik Andrew         | 3                | 110        | 110      | 3           | Line 110-111. Here and throughout the entire document, please clarify the meaning of “removals from” in this context. If it means the opposite of “emissions from” then stating “uptake by” or other less ambiguous terminology would be clearer. When I read “removals from” the immediate meaning I take from this is that CO2-C is being removed from this pool. This applies throughout the document. If its use is continued for consistency, then it should be defined wherever used. |                         | Accepted with modification | Clarifications will be provided                               |

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| 30071 | Romanovskaya, Anna                | 3                | 110        | 110      | 3           | if rewetted vegetation here does not include woody biomass it should be clearly stated  |                         | Accepted                   |  |
| 30072 | Thomson, Amanda                   | 3                | 110        | 117      | 3           | clarify that this re-wetted vegetation is non-woody biomass, to avoid double-counting, or   |                         | Accepted with modification |  |
| 30073 | Klemedtsson, Asa Kasimir          | 3                | 114        | 115      | 3           | Here should also the component CO2-Cwoody biomass be explained, it is lacking.  |                         | Accepted with modification |  |
| 30074 | PETRESCU, Roxana                  | 3                | 115        |          |             | why not use similar methods for both CO2-C veg and CO2-C woody biomass? They both uptake and emit CO2 and together in literature are referred as NEE (net ecosystem exchange)   |                         | Rejected                   | Woody biomass is treated as a separate pool  |
| 30075 | Schreir & Silvius, Arina & Marcel | 3                | 115        |          | 3           | ‘...strongly by oxygen availability within the soil.’: and thus water table. In the rest of the chapter, often WT is reported as a control of CO2 (which of course indirectly controls O2 availability), I would say ‘water table’ and also ‘temperature’ (even within climate zones, often temperature is the dominating factor for CO2 emissions of soils and water). | Attachment_2 0050.pdf   | Accepted with modification | Main obstacle to integrating T effect is data requirement. T will be acknowledged as a factor. |
| 30076 | Schreir & Silvius, Arina & Marcel | 3                | 117        | 125      | 3           | ‘decomposition of dead organic matter such as...’. The litter and root exudates are included in the CO2 measurements where the EF’s are based on I guess? (included in the CO2-Csoil component?). In the definition of ‘organic soil’ the litter layer is included?   | Attachment_2 0050.pdf   | Yes as stated in line 119  |  |

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| 30077 | Klemedtsson, Asa Kasimir       | 3                | 119        | 120      | 3           | It is needed arguments for why CO2-Cveg should be included in the EF for rewetting. What is icluded here and in the 2006 GL forest etc.? Avoid double counting.  |                         | Accepted                   | Will be clarified   |
| 30078 | Lapvetelä inen, Tuija          | 3                | 119        | 120      |             | As other IPCC Guidelines and UNFCCC guidance and reporting tables in general recommend/require reporting of emissions by pools, the good practice for situations, where only aggregate EF is available should be included/discussed (including the possible risk of double accounting).  |                         | Accepted with modification | Existing IPCC pools are not affected.   |
| 30079 | PETRESCU, Roxana               | 3                | 120        | 126      |             | what "annualized" means? Averaged? Annual total? Please explain and add references...  |                         | Accepted                   | Will be rephrased as 'measurements of annual fluxes';   |
| 30080 | FEDERICI, Sandro               | 3                | 123        | 125      |             | According to the comment provided in the above-row, the following text should be added: "When data on C fluxes have been collected with eddy covariance techniques at ecosystem level it is good practice to not account for carbon stock changes in perennial woody biomass since measured CO2 fluxes include net CO2 removals from biomass, and C stock transfers from the biomass pool to other pools needs not to be included in the calculation." |                         | Accepted with modification | Clarifications will be provided on possible double-counting when different estimation methodologies are combined (at higher tiers). |
| 30081 | Garcia-Apaza, Emilio           | 3                | 123        | 125      | 3           | We need to make more effort around the default emission factors on this topic  |                         | Noted                      |   |

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|-------|-----------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---------------|
| 30082 | Lapveteläinen, Tuija              | 3                | 124        |          |             | Add "2006 IPCC guidelines" to the sentence.   |                         | Accepted        |               |
| 30083 | PENMAN, Jim                       | 3                | 125        | 125      |             | identify the document that should be used   |                         | Accepted        |               |
| 30084 | Romanovskaya, Anna                | 3                | 125        | 135      | 3           | please add the correct reference to IPCC 2006 GL after "vol.4, chapter 2,4,5 and 6"   |                         | Accepted        |               |
| 30085 | Freibauer, Annette                | 3                | 127        | 135      | 3           | Guidance must be consistent with chapter 2 and equation 3.2.  |                         | Accepted        |               |
| 30086 | Schreir & Silvius, Arina & Marcel | 3                | 127        | 129      | 3           | Perhaps report in 'broad lines' what happens to all components (CO <sub>2</sub> -C soil, CO <sub>2</sub> -Cveg, CO <sub>2</sub> -Cwoosy biomass, CO <sub>2</sub> -CDOM, DOC, DIC and POC) of the total balance, and why, if peatlands are rewetted. | Attachment_2 0050.pdf   | Accepted        |               |
| 30087 | Lilleskov, Erik Andrew            | 3                | 128        |          | 3           | Line128-129. It is my understanding that dissolve CO <sub>2</sub> is part of DIC. If so why is it treated separately from DIC here?   |                         | Accepted        |               |
| 30088 | Schreir & Silvius, Arina & Marcel | 3                | 128        | 134      | 3           | explanation on what exactly particulate organic carbon is?  | Attachment_2 0050.pdf   | Accepted        |               |



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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30089 | Thomson, Amanda                | 3                | 131        | 142      | 3           | This is not entirely consistent with Appendix 2a.1 (lines 851-857). Cross-refer to appendix 2a.1, e.g. by inserting 'but is explored in appendix 2a.1' after 'text' on line 134.   |                         | Accepted        |   |
| 30090 | Tuomainen, Tarja               | 3                | 139        | 140      | 3           | It is assumed that in tier 1 method it is possible to subdivide the re-wetted area by peatland types. In practice this is unfeasible in most cases due to the lack of information (including historical data) and the very intensive management practices before re-wetting. More guidance for these situations is needed. |                         | Accepted        | Guidance will be provided that does not require this distinction. |
| 30091 | Romanovskaya, Anna             | 3                | 140        | 146      | 3           | after word "emissions" please, add "/removals"   |                         | Accepted        |   |
| 30092 | TIEMEYER, Barbel               | 3                | 142        | 145      |             | Calculations should be consistent with Chapter 2: Losses of CO2 and DOC should be calculated separately  |                         | Noted           | Losses of carbon as CO2 and DOC are already calculated separately |
| 30093 | Romanovskaya, Anna             | 3                | 143        | 145      | 3           | as Efs are disaggregated by climate region and by peat type, so equation should use a sign of sum " $\Sigma$ " by climate c and peat type p (for example), and the same climate c and peat type p should be after each A and EF in the equation  |                         | Accepted        |   |
| 30094 | Gyldenkarne, Steen             | 3                | 145        | 147      | 3           | EF shall be given in C not in CO2, not in EFCO2rewetted  |                         | Accepted        |   |
| 30095 | Romanovskaya, Anna             | 3                | 147        | 150      | 3           | delete last bracket  |                         | Accepted        |   |

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|-------|-----------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|---------------|
| 30096 | Romanovskaya, Anna                | 3                | 148        |          | 3           | add to the end of each definition "in climate region c and peat type p "  |                         | Accepted with modification |               |
| 30097 | Schreir & Silvius, Arina & Marcel | 3                | 150        | 180      | 3           | because DOC and related CO2 fluxes are from ditches and other open water bodies, it has to be noted that double counting must be avoided. I could be that people use EF's for 'water fluxes' from chapter 2, and on top of that use DOC values and their EF's to estimated CO2 emissions from DOC.  | Attachment_2 0050.pdf   | Accepted                   |               |
| 30098 | Thomson, Amanda                   | 3                | 152        | 159      | 3           | This section is confusing and doesn't make sense unless you have read the sections below first (otherwise the reference to DOCflux-natural comes from out of the blue). Please re-write or consider moving text to the emission factor section. Use cross-references to other chapters/sections/equations. Clarify the 5 year transition period concept- I assume that you don't mean that re-wetted peatlands will only take 5 years to recover to a pristine state? |                         | Accepted                   |               |
| 30099 | Gyldenkarne, Steen                | 3                | 153        | 156      | 3           | A description of what happens after 5 years is needed.  |                         | Accepted                   |               |
| 30100 | Freibauer, Annette                | 3                | 156        | 156      | 3           | I do not understand why previous land use matters here. The difference in emissions would be calculated via change in land-use category or sub-category.  |                         | Accepted with modification |               |

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| ID    | Expert (Last Name, First Name)    | Chapter /Section | Start Line | End Line | Sub-section | Comment  | supplementary documents | Authors' Action            | Authors' note  |
|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30101 | Freibauer, Annette                | 3                | 156        | 156      | 3           | on what observations or reasons is the separation of the 0-5 years after rewetting and the subsequent period based? For reasons of consistency with other activities and land use changes it would be much easier to give Efs that represent a 20year transition time. |                         | Rejected                   | Transition period will be removed due to insufficient evidence |
| 30102 | TIEMEYER, Barbel                  | 3                | 156        | 157      |             | Are there references for a transition time of 0 to 5 years for CO2?  |                         | Accepted                   |  |
| 30103 | Thomson, Amanda                   | 3                | 157        |          | 3           | Please provide references as well  |                         | Accepted                   |  |
| 30104 | PENMAN, Jim                       | 3                | 159        |          |             | replace "by the use of a" with "specific to this"  |                         | Accepted                   |  |
| 30105 | PENMAN, Jim                       | 3                | 159        |          |             | delete quotation marks around "transition period"  |                         | Accepted                   |  |
| 30106 | Schreir & Silvius, Arina & Marcel | 3                | 159        | 159      | 3           | 'use of 5 years transition zone': references?  | Attachment_2 0050.pdf   | Accepted with modification | Term "Transition period" to be removed                         |
| 30107 | Wirth, Tom                        | 3                | 159        |          | 3           | Use of 5 year transition periods is not consistent with IPCC 2006, which uses 20 year transition periods.  |                         | Accepted with modification | Term "Transition period" to be removed                         |
| 30108 | PENMAN, Jim                       | 3                | 160        |          |             | replace "may" with "should" - what else would be used?   |                         | Accepted                   |  |
| 30109 | PENMAN, Jim                       | 3                | 161        | 161      |             | what is meant by "conversion factor"?  |                         | Accepted                   |  |

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|-------|-----------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---------------|
| 30110 | Thomson, Amanda                   | 3                | 161        |          | 3           | What is meant here by 'conversion factor'?  |                         | Accepted        |               |
| 30111 | PENMAN, Jim                       | 3                | 162        | 171      |             | replace "could" with "entailing greater disaggregation"   |                         | Accepted        |               |
| 30112 | Schreir & Silvius, Arina & Marcel | 3                | 163        | 164      | 3           | also differences because of LU history & increased fertility of soils because of management, maybe more factors that control the differences: decreased erosion upon rewetting (because of the combination heavy rainfall and vulnerable peat soils in the case of drainage). | Attachment_2 0050.pdf   | Accepted        |               |
| 30113 | TIEMEYER, Barbel                  | 3                | 163        |          |             | Are there references to suggest that DOC losses depend on the re-wetting technique or on the vegetation present after re-wetting? I would rather assume that soil properties (degradation status) determine DOC losses.   |                         | Accepted        |               |
| 30114 | Stenhouse, Michel                 | 3                | 165        | 165      | 3           | This is first appearance of DOC_FLUX_NATURAL - not yet defined and doesn't appear to be used in Tier 1 approach; defined later under Equation 3.3. Perhaps Equation 3.3 needs to be placed earlier?   |                         | Accepted        |               |
| 30115 | Wirth, Tom                        | 3                | 165        | 172      | 3           | You have not defined the term DOCflux_natural   |                         | Accepted        |               |
| 30116 | TIEMEYER, Barbel                  | 3                | 171        | 172      |             | Are there references for a transition time of 0 to 5 years for DOC?   |                         | Accepted        |               |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|---|
| 30117 | Freibauer, Annette             | 3                | 172        |          | 3           | on what observations or reasons is the separation of the 0-5 years after rewetting and the subsequent period based? For reasons of consistency with other activities and land use changes it would be much easier to give Efs that represent a 20year transition time. |                         | Accepted                   |   |
| 30118 | Stenhouse, Michel              | 3                | 175        | 176      | 3           | Similar comment  |                         | Accepted                   |   |
| 30119 | Lund, Herluf Gyde              | 3                | 176        |          | 3           | Consider having a glossary in the supplement to include terms like 'blanket bogs'  |                         | Accepted with modification | Defintions will also be provided in chapter 1 |
| 30120 | PENMAN, Jim                    | 3                | 178        |          |             | replace "specific" with "alternative"  |                         | Accepted                   |   |
| 30121 | Stenhouse, Michel              | 3                | 178        | 178      | 3           | This is first appearance of F_DOC-CO2 - not yet defined and doesn't appear to be used in Tier 1 approach; defined later under Equation 3.3. Perhaps Equation 3.3 needs to be placed earlier?   |                         | Accepted                   |   |
| 30122 | Wirth, Tom                     | 3                | 178        | 185      | 3           | You have not defined the term Fdoc-CO2   |                         | Accepted                   |   |
| 30123 | Romanovskaya, Anna             | 3                | 185        | 192      | 3           | please, provide few examples of existing models and references to them (web-reference, if possible)  |                         | Accepted                   |   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30124 | Lund, Herluf Gyde              | 3                | 190        | 191      | 3           | Figure 3.1 Decision Tree - This is very helpful. Consider having one for each chapter in the supplement. |                         | Accepted        |  |
| 30125 | Lilleskov, Erik Andrew         | 3                | 191        | 192      | 3           | Line 191. In Figure 3.1, please define “a key category” here, or reference location of definition.       |                         | Accepted        |  |
| 30126 | Romanovska ya, Anna            | 3                | 191        | 196      | 3           | in first lozenge (after "start") after words "detailed information" - please, add brackets "(e.g. ....)" |                         | Rejected        | Suggestion inconsistent with agreed format in 2006 GLs |
| 30127 | Evrendilek, Faith              | 3                | 196        | 196      | 3           | the application of default emission factors "(EFs)"  |                         | Accepted        |  |
| 30128 | Romanovska ya, Anna            | 3                | 196        | 198      | 3           | delete words "emission factors"  |                         | Accepted        |  |
| 30129 | Evrendilek, Faith              | 3                | 198        | 202      | 3           | There "are" insufficient data available  |                         | Accepted        |  |
| 30130 | Romanovska ya, Anna            | 3                | 198        | 198      | 3           | should be clear descriptions\definitions for "bog" and "fen"   |                         | Accepted        |  |
| 30131 | Thomson, Amanda                | 3                | 198        |          | 3           | Is an appendix on further methodological development being considered for re-wetted tropical peatlands?  |                         | Accepted        |  |
| 30132 | Klemedtsson, Asa Kasimir       | 3                | 204        | 204      | 3           | Exchange 3.1 for 3A.1  |                         | Accepted        |  |
| 30133 | PETRESCU, Roxana               | 3                | 204        | 209      |             | Annex 3A.1   |                         | Accepted        |  |

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|-------|----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|------------------------------|
| 30134 | Romanovskaya, Anna               | 3                | 207        |          | 3           | it is unclear what is "temperate fens"   |                         | Accepted        |                              |
| 30135 | Klemetsson, Asa Kasimir          | 3                | 208        | 209      | 3           | A think it should be Table 3.2 instad of 3.3.  |                         | Accepted        |                              |
| 30136 | Klemetsson, Asa Kasimir          | 3                | 208        | 209      | 3           | The numbers for temperate fens do not feel robust, it has a plus sign (emission) in contrast to the others. What data used for constructing these EFs were used? The references for the data entries should be reported. |                         | Accepted        |                              |
| 30137 | PETRESCU, Roxana                 | 3                | 209        | 211      |             | only available data from re-wetted sites were used...  |                         | Accepted        |                              |
| 30138 | Lapveteläinen, Tuija             | 3                | 210        | 211      |             | Please provide references to studies used to derive EFs presented in the table 3.1 to increase transparency. If EFs include also other C pools than soil indicate this as footnote.                                      |                         | Accepted        |                              |
| 30139 | Quintero, Adriana Patricia Yepes | 3                | 210        | 211      |             | In Table 3.2 are not reported emission factors for the tropics. This could be an obstacle for the calculations of countries located in this area.  |                         | Accepted        | Default EF will be provided. |
| 30140 | Romanovskaya, Anna               | 3                | 210        | 211      | 3           | uncertainties should be in 95% confidence interval for all data in the Supplement  |                         | Accepted        |                              |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|-----------------------------|
| 30141 | Gyldenkarne, Steen             | 3                | 211        | 211      | 3           | Error in the EF for temperate fens. If not a very good explanation is needed.  |                         | Accepted        | Values will be checked.     |
| 30142 | Gyldenkarne, Steen             | 3                | 211        | 211      | 3           | Are these figures the same as referred on page 2.34  |                         | Noted           | They shouldn't be the same. |
| 30143 | Rock, Joachim                  | 3                | 211        | 215      | 3           | Table 3.2: Please add references, define "bog", define "fen".  |                         | Accepted        |                             |
| 30144 | TIEMEYER, Barbel               | 3                | 214        | 215      |             | Please give references for this statement.   |                         | Accepted        |                             |
| 30145 | TIEMEYER, Barbel               | 3                | 214        | 216      |             | There are also references which suggest a flush of higher DOC concentrations after re-wetting (e.g. Zak & Gelbrecht, 2007); therefore a transmission time could be applicable. |                         | Rejected        | Not enough data             |
| 30146 | PETRESCU, Roxana               | 3                | 216        | 223      |             | Annex 3A.2   |                         | Accepted        |                             |
| 30147 | Gyldenkarne, Steen             | 3                | 218        | 222      | 3           | notations are different  |                         | Accepted        |                             |
| 30148 | Klemedtsson, Asa Kasimir       | 3                | 221        | 221      | 3           | Why are the units in m-2 not hectares as in chapter 2?   |                         | Accepted        |                             |
| 30149 | Romanovska ya, Anna            | 3                | 221        | 225      | 3           | EF is in units per m2, however, in the equation 3,2 area is in ha. Please, change units accordingly.   |                         | Accepted        |                             |



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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|---------------------------|---------------|
| 30150 | Romanovskaya, Anna             | 3                | 225        | 229      | 3           | after words "available data" please, include few possible references to them  |                         | Accepted                  |               |
| 30151 | Romanovskaya, Anna             | 3                | 228        |          | 3           | it is unclear what is "blanket bogs"  |                         | Accepted                  |               |
| 30152 | Klemedtsson, Asa Kasimir       | 3                | 230        | 230      | 3           | Annex X, should it be 2A.2  |                         | Accepted                  |               |
| 30153 | Romanovskaya, Anna             | 3                | 230        | 230      | 3           | Annex X should be changes to the respective number  |                         | Accepted                  |               |
| 30154 | Thomson, Amanda                | 3                | 230        | 239      | 3           | annex number required   |                         | Accepted                  |               |
| 30155 | PENMAN, Jim                    | 3                | 232        | 239      |             | I thought we had already covered this in Ch 2. Need cross reference or rationalization.   |                         | Accepted (with chapter 2) |               |
| 30156 | TIEMEYER, Barbel               | 3                | 232        | 238      |             | Given the high uncertainties and the relatively low proportion of DOC losses, wouldn't it be more honest to use $F_{DOC-CO2} = 1$ ? |                         | Accepted (with chapter 2) |               |
| 30157 | Romanovskaya, Anna             | 3                | 238        |          | 3           | the reference to Chapter 2 is too general. Please, indicate more concrete section of the chapter 2, or related literature sources   |                         | Accepted                  |               |

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|-------|-----------------------------------|------------------|------------|----------|-------------|---|-------------------------|---------------------------|---------------|
| 30158 | Schreir & Silvius, Arina & Marcel | 3                | 238        | 240      | 3           | '...default value of 90% is proposed..'. based on? 10% is stored elsewhere? Mangroves in tropical regions? Released as CH4? In this case it should perhaps be accounted for?  | Attachment_20050.pdf    | Accepted (with chapter 2) |               |
| 30159 | Klemedtsson, Asa Kasimir          | 3                | 239        | 239      | 3           | Table 3.3 The number size of the DOCflux_natural column is not consistent with table 2.2, where the unit is t C ha-1 yr-1, here it is tonnes C m-2 yr-1, and ??   |                         | Accepted                  |               |
| 30160 | Lilleskov, Erik Andrew            | 3                | 239        | 240      | 3           | Line 239. I believe there is an error in Table 3.3. It seems physically impossible that flux rates of DOC could be of the magnitude indicated in the column "DOC FLUX_NATURAL (tonnes C m-2 yr-1). 5-59 tonnes lost per meter square would suggest some impossibly high carbon density. Please check units and rectify. |                         | Accepted                  |               |
| 30161 | Rock, Joachim                     | 3                | 239        | 240      | 3           | Table 3.3: Please add references.   |                         | Accepted                  |               |
| 30162 | Romanovskaya, Anna                | 3                | 239        | 240      | 3           | EF DOC_REWETTED in per ha (see title of the table 3.3), however DOC FLUX_NATURAL is per m2 -- it is not clear how and where the recalculations from M2 to ha were performed   |                         | Accepted                  |               |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|---------------------------|---------------|
| 30163 | Romanovskaya, Anna             | 3                | 239        | 240      | 3           | in the title it is stated that values in parentheses represent uncertainty ranges. However, all uncertainties in the Supplement should be as 95 confidence interval as for whole GHG inventories   |                         | Accepted (with chapter 2) |               |
| 30164 | Romanovskaya, Anna             | 3                | 239        | 240      | 3           | in the footnote to the table the equation is provided, however the reference source to it is not cited - please, clear indicated literature source for the equation or an expert judgment of authors, etc....  |                         | Accepted                  |               |
| 30165 | Thomson, Amanda                | 3                | 239        | 240      | 3           | Table 3.3: Efdoc-rewetted is stated as being in tonnes Co2-C/ha/yr in the title but is in tonnes C/m2/yr in equation 3.3. Also these values look the same as those included in table 2.2 in chapter 2 but are in different units. They seem to be out by a factor of 10 (for conversion of m2 to ha) - please check. Table 2.2 also includes ranges for DOCflux-natural- these could also be included here (along with the r2 value in the footnote equation). |                         | Accepted (with chapter 2) |               |
| 30166 | Tuomainen, Tarja               | 3                | 239        | 249      | 3           | Table 3.3. Compare the DOC_flux_natural values and units to the values and units in Table 2.2 in Chapter 2.  |                         | Accepted (with chapter 2) |               |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------|
| 30167 | Freibauer, Annette             | 3                | 240        | 240      | 3           | Guidance should include how to stratify according to main land use / vegetation / peat types, maybe also time since rewetting. Include guidance on how to deal with harvest. It is good practice to report separately for each C pool - in particular biomass! |                         | Accepted        |               |
| 30168 | Gyldenkarne, Steen             | 3                | 240        |          | 3           | Table 3.3: wrong EF. data are not in tonnes C m-2 yr-1   |                         | Accepted        |               |
| 30169 | PENMAN, Jim                    | 3                | 241        | 248      |             | delete first sentence and replace with "Countries can increase accuracy of results by using country specific emission factors"   |                         | Accepted        |               |
| 30170 | PENMAN, Jim                    | 3                | 241        |          |             | Are we assuming that Tier 3 will use the same equations as Tier 2? Usually Tier 3 entails process models   |                         | Accepted        |               |
| 30171 | Klemedtsson, Asa Kasimir       | 3                | 243        |          | 3           | WTD do not use the abbreviation here, not explained.   |                         | Accepted        |               |
| 30172 | PENMAN, Jim                    | 3                | 243        | 248      |             | spell out WTD  |                         | Accepted        |               |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------|
| 30173 | FEDERICI, Sandro               | 3                | 246        | 248      |             | According with comments provided in the two above-rows, the text should be amended as follows: "Countries where the CO2-Cwoody biomass element plays a significant role in the net CO2-C exchange between rewetted peatlands or organic soils and the atmosphere should develop country-specific factors reflecting C stock gains in this pool under typical management practices. Guidance to this effect can be found in Vol 4, chapters 3-5." |                         | Accepted        |               |
| 30174 | Klemedtsson, Asa Kasimir       | 3                | 246        | 248      | 3           | Should woody biomass changes due to rewetting, be included in the rewetting or forest categories? The report needs to be clear on this. Since on line 71 this chapter it is said that "...quantified as fluxes rather than C stock changes..."   |                         | Accepted        |               |
| 30175 | Romanovskaya, Anna             | 3                | 248        | 251      | 3           | please add the correct reference to IPCC 2006 GL after "vol.4, chapters3-5"  |                         | Accepted        |               |
| 30176 | Romanovskaya, Anna             | 3                | 251        | 258      | 3           | change "Tiers" to "tiers"  |                         | Accepted        |               |
| 30177 | Freibauer, Annette             | 3                | 254        | 258      | 3.2.1       | Best resources are soil maps: national or WRB if no national is available. Additional information would be project documentation of restoration projects.  |                         | Accepted        |               |
| 30178 | Romanovskaya, Anna             | 3                | 255        | 266      | 3           | if any international sources for activity data are existing, please, indicate those  |                         | Accepted        |               |
| 30179 | PENMAN, Jim                    | 3                | 259        | 262      |             | The distinction between Tier 2 and 3 is unclear.   |                         | Accepted        |               |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30180 | Tuomainen, Tarja               | 3                | 260        |          | 3           | To choice the AD for Tiers 2 and 3 is said: "...more detailed stratification than in Tier 1. This can include further sub-divisions based on time since re-wetting,...". It shuld be noted, in the GHG inventory all emissions and removals are reported since 1990. Also when Tier 1 methods is applied, the time since re-wetting is needed.   |                         | Noted           | Time since re-wetting can be used to determine the appropriate reporting category, BUT ALSO to calculate a T2 emission factor. |
| 30181 | Romanovskaya, Anna             | 3                | 267        | 268      | 3           | there are not any words/explanations about CO2 emissions from fires. How are they considered?  |                         | Accepted        |  |
| 30182 | Baltzer, Heiko                 | 3                | 268        | 395      | 3           | Use subscript formatting in CH4  |                         | Accepted        |  |
| 30183 | Evrendilek, Faith              | 3                | 268        | 304      | 3           | CH4 - insert subscript   |                         | Accepted        |  |
| 30184 | Lund, Herluf Gyde              | 3                | 268        | 395      | 3           | All of the 4s in CH4 should be subscripts.   |                         | Accepted        |  |
| 30185 | PETRESCU, Roxana               | 3                | 268        | 426      |             | Very few references for processes described by the entire sub-chapter 3.2.2. Perhaps a better referenced Annex should be added to explain physical processes and factors influencing the CH4 emissions. For example availability and quality of suitable substrate for CH4 production (such as roots of vascular plants and biomass amount) is not included. if not detailed should be mentioned together with TWD and soil temperature (see comment below for lines 378-380). |                         | Accepted        |  |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30186 | Romanovskaya, Anna                | 3                | 268        | 426      | 3           | correct the writing of CH <sub>4</sub> and N <sub>2</sub> O - numbers should be subscripts   |                         | Accepted                   |  |
| 30187 | Thomson, Amanda                   | 3                | 268        | 271      | 3           | Use correct subscripts for N <sub>2</sub> O and CH <sub>4</sub>  |                         | Accepted                   |  |
| 30188 | Huissteden, Ko van                | 3                | 270        |          | 3           | Why is here the emission from open water (ditches, pools) not included, which may be strongly changed after rewetting?   |                         | Accepted with modification | Text moved to Tier 2 and also addresses open water (confirmed with ch2).           |
| 30189 | Schreir & Silvius, Arina & Marcel | 3                | 271        | 272      | 3           | '...oxidation in the soil column...'. And water column should be added.  | Attachment_2 0050.pdf   | Accepted with modification | We have removed the words "in the soil column"                                     |
| 30190 | Schreir & Silvius, Arina & Marcel | 3                | 271        | 298      | 3           | should biomass burning and peat burning be mentioned in re-wetted areas? This is not a significant contributor to th GHG balance in re-wetted areas. If so..also for CO <sub>2</sub> , because this is the most important contributor in case of fire. | Attachment_2 0050.pdf   | Accepted with modification |  |
| 30191 | Gyldenkarne, Steen                | 3                | 273        | 276      | 3           | CH <sub>4</sub> emission shold be given in CH <sub>4</sub> and not in CH <sub>4</sub> -C   |                         | Rejected                   | CH <sub>4</sub> -C is consistent with Chapter 7 of volume 4 of the 2006 guidelines |
| 30192 | Huissteden, Ko van                | 3                | 276        |          | 3           | After 'organic' the word 'soil' is missing   |                         | Accepted                   |  |
| 30193 | Klemedtsson, Asa Kasimir          | 3                | 276        | 277      | 3           | add "soils" after "organic".   |                         | Accepted                   |  |
| 30194 | Romanovskaya, Anna                | 3                | 276        | 277      | 3           | after word "emissions" please, add "/removals"   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30195 | Romanovskaya, Anna             | 3                | 277        | 277      | 3           | please, clearly indicate that from SOILS of peatlands or organic soils   |                         | Accepted with modification | We have specified that this equation refers to "rewetted land with organic soils" and in equation 3.5, clarified for soil. |
| 30196 | Thomson, Amanda                | 3                | 277        | 281      | 3           | This should be net emissions   |                         | Accepted                   | Emissions/removals   |
| 30197 | Romanovskaya, Anna             | 3                | 278        | 298      | 3           | should be provided some note, indicating that there is a possibility for double-counting of emissions from fires, which may be already estimated as wildfires in other land use categories   |                         | Accepted                   | Sentence added to text   |
| 30198 | Garcia-Apaza, Emilio           | 3                | 282        | 286      | 3           | There are lot of kind of ditches but the ones that is in our interest is the ones which are construted sorrounding the croplands which are rewetted from time to time (in the highland known as sukakollus, in the lowland as camellones), those that now helps in the adaptation processes; actually also since the floodings are increasing there huge areas in these processes. |                         | Rejected                   | This is not rewetted land in the sense used for this chapter.  |
| 30199 | Thomson, Amanda                | 3                | 282        | 285      | 3           | CH4-Csoil-burn needs to be referred to more clearly- is there guidance in this chapter or will countires have to develop their own?  |                         | Accepted with modification | Clarification of CH4 soil burn   |



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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30200 | Romanovskaya, Anna                | 3                | 283        |          | 3           | please add the correct reference to IPCC 2006 GL after "volume 4"  |                         | Accepted                   |  |
| 30201 | PENMAN, Jim                       | 3                | 284        | 286      |             | after "volume 4", insert "of the 2006 Guidelines"  |                         | Accepted                   |  |
| 30202 | Lapveteläinen, Tuija              | 3                | 285        | 286      |             | (If) the IPCC guidelines do not provide currently EF/guidance for soil burn, this could be mentioned here clearly. |                         | Accepted                   |  |
| 30203 | PENMAN, Jim                       | 3                | 285        | 298      |             | I don't think it is acceptable not to provide a Tier 1 method. Also can't countries use Tier 3?.                   |                         | Accepted with modification | Although rare, fire on rewetted organic soils will be included for completeness. |
| 30204 | Huissteden, Ko van                | 3                | 287        | 298      | 3           | Paragraph is repeated twice  |                         | Accepted                   |  |
| 30205 | Schreir & Silvius, Arina & Marcel | 3                | 287        | 292      | 3           | Lines 287/292 and 293/298 are the same.  | Attachment_2 0050.pdf   | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|-------------------------------|
| 30206 | PENMAN, Jim                    | 3                | 289        | 292      |             | replace "When ditches remain, countries are encouraged to include estimates of CH <sub>4</sub> -C ditch emissions using methodology provided in Chapter 2 (Equation 2.X) and country specific emission factors. Table 2.X can also be consulted for guidance on emission factors for ditches in drained peatlands." with "When ditches remain, countries should use the methodology provided in Chapter 2, section X." COmment: This is presumably the meaning.I don't like the language 'encouraging'; the guidance should be systematic application of Tier 1,2 or 3 methods, guided by key-category analysis. |                         | Accepted        | Modified text moved to tier 2 |
| 30207 | Romanovskaya, Anna             | 3                | 290        | 291      | 3           | please, change X with respective number of equation and the table  |                         | Accepted        |                               |
| 30208 | Thomson, Amanda                | 3                | 290        | .        | 3           | Insert correct equation and table references   |                         | Accepted        |                               |
| 30209 | Klemedtsson, Asa Kasimir       | 3                | 291        | 298      | 3           | Equation 2.X and Table 2.X, correct this!  |                         | Accepted        |                               |
| 30210 | FEDERICI, Sandro               | 3                | 293        | 298      |             | The text is reported twice. Delete it  |                         | Accepted        |                               |

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|-------|--------------------------------|------------------|------------|------------|-------------|---|-------------------------|----------------------------|--|
| 30211 | Freibauer, Annette             | 3                | 293        | 298        | 3.2.2       | countries are encouraged to include ditch emissions is an invitation not to report sources in IPCC language (or could be interpreted by countries as invitation). There is little knowledge about speed of ditch closure so I suggest to continue reporting CH4 emissions from drainage ditches for a transition time until ditch closure can be safely assumed (even then the ditch segment are likely to remain wetter and emit more than the average restored area). I suggest to continue reporting ditch CH4 emissions for the 20 year transition time after rewetting as default Tier 1, and to allow more flexible periods, or stratification by fen/bog or restoration type or ditch width in higher Tiers. |                         | Accepted with modification | "Good practice" recommendations will be provided |
| 30212 | Klemedtsson, Asa Kasimir       | 3                | 293        | 298        | 3           | This whole paragraph is the same as paragraph line 287-292, delete.   |                         | Accepted                   |  |
| 30213 | PENMAN, Jim                    | 3                | 293        | 298        |             | delete  |                         | Accepted                   |  |
| 30214 | PETRESCU, Roxana               | 3                | 293        | 298        |             | delete paragraph, repetition  |                         | Accepted                   |  |
| 30215 | Romanovskaya, Anna             | 3                | 293        | 298        | 3           | delete the para (repeating)   |                         | Accepted                   |  |
| 30216 | Thomson, Amanda                | 3                | 293        | 301        | 3           | paragraph is repeated   |                         | Accepted                   |  |
| 30217 | Romanovskaya, Anna             | 3                | 301        | everywhere | 3           | delete word "estimate"  |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30218 | Romanovskaya, Anna             | 3                | 304        | 307      | 3           | please, use the consistent way of writing for word "rewetting"   |                         | Accepted                   | Needs to be made consistent across the entire supplement - editorial   |
| 30219 | Klemedtsson, Asa Kasimir       | 3                | 306        | 307      | 3           | At first I did not understand why it is a division by 1000 in this equation, but it is a unit change.  |                         | Noted                      |  |
| 30220 | Romanovskaya, Anna             | 3                | 306        | 308      | 3           | as Efs are disaggregated by climate region and by peat type, so equation should use a sign of sum " $\Sigma$ " by climate c and peat type p (for example), and the same climate c and peat type p should be after A and EF in the equation |                         | Accepted                   |  |
| 30221 | TIEMEYER, Barbel               | 3                | 306        |          |             | Equation 3.5 should be split into an open-water and "land" part (as for ditches in Chapter 2)  |                         | Accepted with modification | Section will be re-written; however once rewetted, former ditches are considered to be the "wetter end" of the natural variability in wetness. |
| 30222 | Romanovskaya, Anna             | 3                | 309        | 310      | 3           | these are only emissions? Where and how to estimate removals?  |                         | Accepted                   |  |
| 30223 | Freibauer, Annette             | 3                | 310        | 310      | 3.2.2       | unit per year is wrong   |                         | Accepted                   |  |
| 30224 | Gyldenkarne, Steen             | 3                | 310        | 311      | 3           | ha yr-1 should be changed to "ha"  |                         | Accepted                   |  |
| 30225 | Romanovskaya, Anna             | 3                | 310        | 310      | 3           | add to the end of each definition "in climate region c and peat type p "   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|--|
| 30226 | Tuomainen, Tarja               | 3                | 310        | 311      | 3           | The rewetted area may be the total, not the annual area, see unit is now 'ha yr-1 '   |                         | Accepted        |  |
| 30227 | PETRESCU, Roxana               | 3                | 311        | 311      |             | units of EFCH4 soil should be kept as kg C / ha yr  |                         | Accepted        |  |
| 30228 | Romanovskaya, Anna             | 3                | 311        | 311      | 3           | please, provide a reference to the table 3.4  |                         | Rejected        | This is not consistent with document formatting  |
| 30229 | TIEMEYER, Barbel               | 3                | 311        | 316      |             | Use t C ha-1 yr-1 for all emission factors  |                         | Rejected        | EF units for non-CO2 emissions are kg ha-1 yr-1 in 2006 IPCC GLs.  |
| 30230 | PENMAN, Jim                    | 3                | 313        | 316      |             | In that case what is the default advice? Not to estimate these emissions? I don't think we can make Tier 2 mandatory for non-key categories   |                         | Noted           | Text amended, default emission factor from pristine site, change also table  |
| 30231 | Tuomainen, Tarja               | 3                | 314        | 323      | 3           | The guidance encourages countries to subdivide rewetted area into bogs and fens even in Tier 1 method. In practice this can be unfeasible since these areas can be intensively managed before rewetting (cropland and peat mining). More guidance would be helpful for inventory compilers. |                         | Noted           | Efs are provided by climate region alone, so inventory compilers do not need to subdivide if it is not possible. We have also added the terms "nutrient poor bogs" and nutrient-rich fen |
| 30232 | PENMAN, Jim                    | 3                | 318        | 323      |             | What's the implication? How does one obtain representative values?  |                         | Accepted        | Text modified  |
| 30233 | Romanovskaya, Anna             | 3                | 318        | 323      | 3           | please, include any appropriate literature references here, if possible   |                         | Accepted        | Refer to Annex   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|------------------------------------|
| 30234 | PENMAN, Jim                    | 3                | 322        | 329      |             | delete   |                         | Accepted with modification | Text modified to provide guidance. |
| 30235 | PENMAN, Jim                    | 3                | 325        | 325      |             | What's the implication? How does one obtain representative values? |                         | Accepted                   | Text modified to provide guidance. |

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|-------|--------------------------------|------------------|------------|------------|-------------|--|-------------------------|-----------------|--|
| 30236 | PETRESCU, Roxana               | 3                | 325        | everywhere |             | Similar to point 3.2.1 CO <sub>2</sub> , use WTD abbreviation for depth of the water table. Also, some literature references are needed to support this line. Compiled from A.M.R. Petrescu 2010, PhD thesis: "Studies (e.g. Moore et al., 1990; Roulet et al., 1991; Walter et al., 1996; van der Molen et al., 2007; Petrescu et al., 2008) have shown that CH <sub>4</sub> fluxes are influenced by fluctuations of the ground water table, which may have an effect on the quantity of released CH <sub>4</sub> stored in soil. The water table can influence the CH <sub>4</sub> emissions because it is the border between the anoxic/oxic zones where the gas is produced and respectively oxidized (e.g. Bubier et al., 1995; Moore and Roulet, 1993; Funk et al., 1994). The CH <sub>4</sub> oxidation in the soil at high water table sites is limited and the CH <sub>4</sub> fluxes are high (Christensen et al., 1993). Water table depth is generally considered to be a physical parameter of major importance to CH <sub>4</sub> emissions from wetlands (Waddington et al., 1996; Christensen et al., 2000; Frenzel and Karofeld, 2000; Petrescu et al., 2008). Ström et al. (2007) concluded that mires affected by permafrost degradation become wetter and the correlation between the water table depth and the CH <sub>4</sub> emissions and dissolved CH <sub>4</sub> in the pore water is high and one of the primary drivers of the production and emission of this gas." |                         | Noted           | We will ensure that all references used are in the annex and text is supported. However, some of these references are not applicable as we have limited our analysis to annual data. Also, some of these processes (permafrost) are not applicable in this chapter, or provide too much detail (oxic/anoxic zone, etc.) for this section of the document |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30237 | Romanovskaya, Anna             | 3                | 325        | 326      | 3           | instead of word "efflux" in GHG inventories usually use word "emission" or "flux". Please, consider if it is appropriate to change   |                         | Noted           | Suggestion will be considered and may be retained subject to comments on terminology. "Efflux" is the scientifically correct term when only loss of CH4 from the ecosystem is occurring |
| 30238 | Evrendilek, Faith              | 3                | 326        | 326      | 3           | when mean annual water levels "stand" below -20 cm   |                         | Accepted        | Text modified   |
| 30239 | FEDERICI, Sandro               | 3                | 326        | 327      |             | To improve the clearness of the text, replace "below -20" with "in the range of 0-20"  |                         | Accepted        | Text modified   |
| 30240 | PETRESCU, Roxana               | 3                | 326        | 329      |             | be consistent using "-20 cm from the surface". I would recommend using always positive sign and the expressions "below surface" and "above surface" which are highly used in the literature. |                         | Accepted        | Text modified   |
| 30241 | TIEMEYER, Barbel               | 3                | 327        | 328      |             | Please only use references with actual measured data   |                         | Noted           | These are review articles, arriving at new insights and summing up results from dozens of original papers   |
| 30242 | Freibauer, Annette             | 3                | 328        | 328      | 3.2.2       | only quote the original literature with the observations.  |                         | Noted           | These are review articles, arriving at new insights and summing up results from dozens of original papers   |



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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------------|
| 30243 | Lund, Herluf Gyde                 | 3                | 328        | 367      | 3           | Couwenberg & Fritz 2012; Couwenberg et al., 2010 not listed in References  |                         | Accepted        |                     |
| 30244 | Baltzer, Heiko                    | 3                | 331        | 337      | 3           | Use subscript formatting in CH <sub>4</sub> for all instances  |                         | Accepted        |                     |
| 30245 | Freibauer, Annette                | 3                | 331        | 362      | 3.2.2       | This paragraph should discuss the role of vegetation when rewetting is done by flooding and then give guidance on how to deal with rewetted peatlands that are flooded.  |                         | Noted           | Tier 2 text revised |
| 30246 | PENMAN, Jim                       | 3                | 331        | 337      |             | This section needs to distil out what the advice on Tier 2 methodologies actually is. Presumably the point is about stratification and representativeness.   |                         | Noted           | Tier 2 text revised |
| 30247 | Schreir & Silvius, Arina & Marcel | 3                | 331        | 334      | 3           | Except for prior land use, in temperate organic soils also the in-flux of nutrient rich ground water (through underlying mineral soil layers) from the surrounding heavily managed areas has a large impact on methane fluxes (see e.g. Hendriks et al., 2007). Even though the area is already 20 years abandoned after rewetting, the water in the area is still very eutrophic. | Attachment_2 0050.pdf   | Noted           | Tier 2 text revised |
| 30248 | Lund, Herluf Gyde                 | 3                | 333        | 334      | 3           | Augustin & Chojnicki, 2008; and Hahn-Schöffl et al., 2011 not listed in References.  |                         | Accepted        |                     |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30249 | TIEMEYER, Barbel               | 3                | 333        | 334      |             | The studies by Hahn-Schöffl (2011) and Glatzel (2011) do not investigate previous land use, but substrate quality (in the lab) and vegetation composition, respectively  |                         | Noted           | But these studies are on land with a specific previous land use and link results to this                                 |
| 30250 | Freibauer, Annette             | 3                | 334        | 335      | 3.2.2       | Hahn-Schöfl refers to a laboratory study about substrate and shows that fresh plant residues are the main source of CH <sub>4</sub> . They do not study different nutrient levels but different materials from the same fen. |                         | Noted           | Hahn-Schöfl explains the processes behind the CH <sub>4</sub> flux values of Augustin & Chojnicki                        |
| 30251 | Romanovskaya, Anna             | 3                | 335        | 335      | 3           | provide correct reference to the Annex of Chapter 2  |                         | Rejected        | Cannot be address because line reference seems incorrect - nothing about Annex or chapter 2 here.                        |
| 30252 | TIEMEYER, Barbel               | 3                | 335        | 339      |             | Cut-over peatlands tend to be bogs, while very high CH <sub>4</sub> -emission were generally measured from fens. Thus, the first (and most simple) differentiation would be the peatland type.                               |                         | Noted           | This is completed at the tier 1 level, but prior land-use is also important as may change vegetation type and fertility. |
| 30253 | Evrendilek, Faith              | 3                | 339        | 367      | 3           | Data on CH <sub>4</sub> (insert subscript) emissions and removals from rewetted peatlands and organic soils "remain"   |                         | Accepted        |  |
| 30254 | Lund, Herluf Gyde              | 3                | 339        | 344      | 3           | All of the 4s in CH <sub>4</sub> should be subscripts.   |                         | Accepted        |  |
| 30255 | Lund, Herluf Gyde              | 3                | 344        | 346      | 3           | Waddington and Day, 2007 not listed in references.   |                         | Accepted        |  |
| 30256 | Lund, Herluf Gyde              | 3                | 346        | 362      | 3           | Augustin and Joosten 2007 not listed in References.  |                         | Accepted        |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30257 | Freibauer, Annette             | 3                | 350        | 353      | 3.2.2       | I have not checked all references but it seems that not all of this is observational evidence but rather summaries. This should be clearly distinguished or only original observational literature quoted.   |                         | Noted           | References will be checked. Some meta-analyses of data are included but provide substantial new information |
| 30258 | Lund, Herluf Gyde              | 3                | 352        | 354      | 3           | Bubier 1995; Shannon et al. 1996; Marnier et al. 2004; Wilson et al. 2007; Dias et al. 2010 not listed in references..   |                         | Accepted        |   |
| 30259 | Thomson, Amanda                | 3                | 354        | 358      | 3           | Equisetum not Equistem?  |                         | Accepted        |   |
| 30260 | Lund, Herluf Gyde              | 3                | 355        | 356      | 3           | Sebacher et al. 1985, Chanton et al. 1992, Schimel 1995, Shannon et al. 1996, Frenzel & Rudolph 1998, Verville et al. 1998, Yavitt & Knapp 1998, Grünfeld & Brix 1999, Frenzel & Karofeld 2000, Arkebauer et al. 2001, Armstrong & Armstrong 2011, Askaer et al. 2011- all not listed in references. |                         | Accepted        |   |
| 30261 | Rock, Joachim                  | 3                | 356        | 359      | 3           | Verville et al. is missing in references.  |                         | Accepted        |   |
| 30262 | TIEMEYER, Barbel               | 3                | 359        | 367      |             | Please only use references with actual measured data   |                         | Noted           | These are review articles, arriving at new insights and summing up results from dozens of original papers   |
| 30263 | PENMAN, Jim                    | 3                | 365        | 367      |             | Pretty self-evident  |                         | Noted           | We will provide more guidance on what can be included in tier 3   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30264 | Romanovskaya, Anna             | 3                | 365        | 377      | 3           | Are there any examples of such models? Any references to models?   |                         | Accepted        | Text on process-based models to be added with suggestions                                  |
| 30265 | Baltzer, Heiko                 | 3                | 367        | 367      | 3           | No uncertainties are provided. These need to be added. If quantitative estimates are not available then expert opinion should be used.                       |                         | Accepted        | Uncertainty to be determined with 95% confidence interval                                  |
| 30266 | PETRESCU, Roxana               | 3                | 367        |          |             | Similar to Tier 3 for CO2, should be added the use of process based models.  |                         | Accepted        | Text on process-based models to be added with suggestions                                  |
| 30267 | PENMAN, Jim                    | 3                | 373        | 374      |             | So what is the Tier 1 advice?  |                         | Noted           | Text amended, default emission factor from pristine site, change also table                |
| 30268 | Freibauer, Annette             | 3                | 374        | 374      | 3.2.2       | Hourly flux data are not useful in a guidance for annual fluxes, and effect of vegetation presence needs to be considered. I suggest to delete the sentence. |                         | Accepted        | This text will be deleted and default emission factor developed as noted for comment 30267 |
| 30269 | Romanovskaya, Anna             | 3                | 374        |          | 3           | it is not explained what is SE   |                         | Noted           | This sentence will be deleted now  |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30270 | Schreir & Silvius, Arina & Marcel | 3                | 374        | 375      | 3           | it would be interesting to see a number for this; what is 'much lower', The reader will be curious eventhough it can not be used as EF. No number are given in annex 3.3.  | Attachment_2 0050.pdf   | Noted           | Text amended, default emission factor from pristine site, change also table   |
| 30271 | Jauhiainen, Jyrki                 | 3                | 375        |          | 3           | Does Couwenberg et al., 2010 use hourly flux data (i.e. flux data collected diurnally in one hour intervals) in their analysis? The paper content may be wrongly sited here.   |                         | Noted           | This paper is correctly cited here, and refers to flux data expressed (not measured) on hourly basis.   |
| 30272 | Klemedtsson, Asa Kasimir          | 3                | 375        | 377      | 3           | Annex 3.3 should be Annex 3A.3   |                         | Accepted        |   |
| 30273 | Lapveteläinen, Tuija              | 3                | 376        | 376      |             | Please provide references to studies used to derive EFs presented in the table 3.4 to increase transparency. If EFs include also other C pools than soil please indicate this as footnote.   |                         | Accepted        | References are included in the Annex 3A.3 as noted in the text and all references will be updated in annex. Text in section 3.2.2. will clarify which pools this includes               |
| 30274 | Lilleskov, Erik Andrew            | 3                | 376        |          | 3           | Line 376. Given the order of magnitude differences between boreal and temperate bogs and large differences between fens, it seems as if it would be better to use a continuous latitudinal function rather than boreal-temperate class variables. Perhaps some discussion of why this was not done would be useful in Annex3A.3. |                         | Rejected        | Using a latitudinal function is not feasible for inventory compilers at Tier 1. This could be incorporated at higher tiers, but this would be at the discretion of individual countries |

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| ID    | Expert (Last Name, First Name)   | Chapter /Section | Start Line | End Line | Sub-section | Comment  | supplementary documents | Authors' Action | Authors' note   |
|-------|----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30275 | Quintero, Adriana Patricia Yepes | 3                | 376        | 377      |             | It would be important to look at gray literature such factors for tropical zones.  |                         | Noted           | Default emission factor from pristine sites will be developed, change also table  |
| 30276 | Romanovskaya, Anna               | 3                | 376        | 377      | 3           | it is not explained in the table what are "n=..." and "p.m.". Uncertainty values should be provided as 95% confidence interval |                         | Accepted        | n is commonly used and will not be defined, pm will be removed when default emission factor determined, uncertainty to be included  |
| 30277 | Thomson, Amanda                  | 3                | 376        | 380      | 3           | Table 3.4 - include uncertainties. What does 'p.m.' mean in the Tropical row?  |                         | Accepted        | pm will be removed when default emission factor determined, uncertainty to be included  |
| 30278 | Freibauer, Annette               | 3                | 377        | 380      | 3.2.2       | Differentiation between water table above and below the ground surface should be the first to consider.                        |                         | Rejected        | according to our analysis the mean water table position is important, but actually a wetness class divided by sites wetter/dryer than WTD at 30 cm below the surface explains most of the variability. Since at Tier 1 it is unrealistic to expect WT data to be available, this is not included in default emission factors, but is the first factor noted for inclusion in Tier 2 |
| 30279 | PENMAN, Jim                      | 3                | 378        | 380      |             | Thus should provide advice on how to obtain disaggregated EFs at Tier 2, or how to establish models at Tier 3                  |                         | Noted           | this information is provided in the "Choice of EF section" which will be modified to provide clearer guidance. No additional changes made here.   |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---|
| 30280 | PETRESCU, Roxana               | 3                | 378        |          |             | Soil temperature is an important factor influencing the physical processes which influence the CH <sub>4</sub> emissions from wetlands. I would suggest to add this to the already mentioned list of factors at line 380. To support this, here some useful references compiled from A.M.R. Petrescu 2010, PhD thesis: "It influences the rate at which processes such as degrading of the organic matter (formation of substrate for methanogenesis) and CH <sub>4</sub> production/oxidation occurs (e.g. Bubier et al., 1995; Crill et al., 1988; Frolking and Crill, 1994; Whalen and Reeburgh, 1992). Studies have shown that the highest net fluxes occur in warmer soils, the maximal values being attained in the tropical zone (Panikov et al., 1999). Roulet et al. (1992) and Christensen et al. (1993) observed a high correlation between the fluxes and temperature when waterlogged conditions are present. The sensitivity of methanogenesis to temperature and the longer growing season at the warmer sites has been mentioned by Walter et al. (2000). Valentine et al. (1994) observed that the temperature dependence of CH <sub>4</sub> production increased with amount and quality of the organic substrate. Other studies also found that CH <sub>4</sub> formation also may occur at subzero temperatures (Rivkina et al., 2000, 2007; Wagner et al., 2007) and some of this winter emissions are presented by Mastepanov et al. (2008)." |                         | Noted           | Temperature is covered in the climate zone and partly through water table. Temperature is not a feasible proxy to derive fluxes on a national scale. Models on T leads to overestimation (Hendriks et al. 2009) |
| 30281 | Romanovska ya, Anna            | 3                | 378        | 394      | 3           | please, consider to change "emission factors" to "EFs"  |                         | Accepted        |   |
| 30282 | Lund, Herluf Gyde              | 3                | 379        | 379      | 3           | All of the 4s in CH <sub>4</sub> should be subscripts.  |                         | Accepted        |   |

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| ID    | Expert (Last Name, First Name) | Chapter /Section | Start Line | End Line | Sub-section | Comment   | supplementary documents | Authors' Action | Authors' note   |
|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---|
| 30283 | Romanovskaya, Anna             | 3                | 379        |          | 3           | insert "to" between "relating" and "CH4"  |                         | Rejected        | The sentence makes sense as written. This text will be modified according to other comments and this sentence may be removed in the process |
| 30284 | Freibauer, Annette             | 3                | 383        |          | 3.2.2       | Consistency with area used for CO2 calculation is important, refer to chapter 3.2.1 |                         | Accepted        | Consistency will be confirmed between all sections of the chapter   |
| 30285 | Romanovskaya, Anna             | 3                | 383        | 387      | 3           | consistent way for writing of "tiers" and "rewetted"                                |                         | Accepted        |   |
| 30286 | PENMAN, Jim                    | 3                | 386        | 394      |             | Where from? We are supposed to be providing guidance, not stating assumptions       |                         | Accepted        | Sources of activity data added  |
| 30287 | PENMAN, Jim                    | 3                | 390        | 394      |             | How can countries obtain corresponding activity data?                               |                         | Accepted        | Sources of activity data added  |



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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|---|
| 30288 | PETRESCU, Roxana               | 3                | 390        | 392      |             | <p>I would add here the use of process based models, hydrological models to derive WTD, soil temperature and substrate availability. Of course the type of vegetation plays an important role but the amount of substrate this vegetation provides is more important together with the transport pathways...lets not forget about diffusion (Oquist, 2001) and ebullition processes, the latter may count as an important CH<sub>4</sub> route in boreal peatlands, possibly accounting for up to 50% of the total emissions (Christensen et al., 2003), which, together with plant mediated transport contribute and help the release of CH<sub>4</sub> from soils. A.M.R. Petrescu 2010 Phd thesis: "Some authors observed a close link between the factors indicating the substrate presence, such as NPP, net ecosystem production (NEP) and the biomass amount, correlated with the CH<sub>4</sub> production (Morrisey and Livingston, 1992; Whiting and Chanton, 1993). Vascular plant root systems may be an important source of fresh carbon compounds that can be utilised for CH<sub>4</sub> production in the soil (van Veen et al., 1989; Jackson and Caldwell, 1992; Chanton et al., 1995; Joabsson et al., 1999a; King et al., 2002). Vascular plants provide methanogenesis with substrates, form a pathway to transport CH<sub>4</sub> from soil to the atmosphere and enhance CH<sub>4</sub> oxidation by transporting oxygen to water saturated peat (Kettunen, 2003). In 2001, Christensen and Joabsson (2001) have investigated if such a correlation exists between vascular plant production (photosynthetic rate) and CH<sub>4</sub> exchange. By step-wise multiple regressions</p> |                         | Accepted with modification | Provide more detail on some suggested process to include in models/sources of activity data, land cover estimation. However, Tier 3 is country specific and thus guidance must be general enough to allow flexibility |

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| ID    | Expert (Last Name, First Name) | Chapter /Section | Start Line | End Line | Sub-section | Comment   | supplementary documents | Authors' Action | Authors' note   |
|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---|
| 30289 | Romanovskaya, Anna             | 3                | 390        | 426      | 3           | it is not clear why monthly averages are required if EF should be annual average. Please, explain if monthly data should be used to obtain annual                           |                         | Noted           | Monthly was used to indicate that higher temporal resolution would provide more accurate estimation possibly through use of empirical/mechanistic models. Text modified |
| 30290 | Baltzer, Heiko                 | 3                | 396        | 427      | 3           | Use subscript formatting in N2O for all instances   |                         | Accepted        | Correct to subscript form   |
| 30291 | Evrendilek, Faith              | 3                | 396        | 424      | 3           | N2O - insert subscript  |                         | Accepted        | Correct to subscript form   |
| 30292 | Lund, Herluf Gyde              | 3                | 396        | 427      | 3           | All of the 2s in NO2 should be subscripts.  |                         | Accepted        | Correct to subscript form   |
| 30293 | Romanovskaya, Anna             | 3                | 396        | 396      | 3           | there are not any words/explanations about N2O removals, though it is indicated in the title for 3.2.3  |                         | Accepted        | Add text on N2O removals  |
| 30294 | Thomson, Amanda                | 3                | 396        | 399      | 3           | Are N2O removals actually possible or should the title just refer to emissions?   |                         | Accepted        | Add text on N2O removals  |
| 30295 | Romanovskaya, Anna             | 3                | 399        | 402      | 3           | correct the writing of "denitrification"  |                         | Accepted        | Correct to "denitrificaton"   |
| 30296 | Hamilton, Stephen K.           | 3                | 400        |          | 3           | It would be good to cite reference(s) to back up this statement. Perhaps they are the same as in the footnote cited on Line 419 below, but that should be made clear if so. |                         | Accepted        | Cite new reference (Couwenberg et al., 2011)  |
| 30297 | Klemedtsson, Asa Kasimir       | 3                | 400        | 400      | 3           | exchange "turned" into "turne"  |                         | Accepted        | Correct to "turn"   |
| 30298 | Rock, Joachim                  | 3                | 400        |          | 3           | is in turn controlled, not "turned"   |                         | Accepted        | Correct to "turn"   |

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| ID    | Expert (Last Name, First Name)    | Chapter /Section | Start Line | End Line | Sub-section | Comment  | supplementary documents | Authors' Action | Authors' note                         |
|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------------------------------|
| 30299 | PENMAN, Jim                       | 3                | 401        | 412      |             | replace "practically completely" with "fall practically to zero"   |                         | Accepted        | Correct to "fall practically to zero" |
| 30300 | Romanovskaya, Anna                | 3                | 408        | 412      | 3           | usually in all IPCC guidelines the N2O emission is estimated in units of N2O-N   |                         | Accepted        | Correct units to N2O-N                |
| 30301 | Schreir & Silvius, Arina & Marcel | 3                | 408        | 409      | 3           | if CH4 and CO2 are expressed as CO2-C and CH4-C, then I would recommend to express N2O as N2O-N. Add ha-1.   | Attachment_20050.pdf    | Accepted        | Correct units to N2O-N                |
| 30302 | Hamilton, Stephen K.              | 3                | 409        | 409      | 3           | Units inconsistent in these terms (N2O vs. C).   |                         | Accepted        | Correct units to N2O-N                |
| 30303 | Romanovskaya, Anna                | 3                | 409        | 413      | 3           | units of tonnes C yr-1 should be change to N2O   |                         | Accepted        | Correct units to N2O-N                |
| 30304 | Romanovskaya, Anna                | 3                | 410        | 410      | 3           | should be provided some note, indicating that there is a possibility for double-counting of emissions from fires, which may be already estimated as wildfires in other land use categories |                         | Accepted        | Clarification will be provided.       |
| 30305 | Thomson, Amanda                   | 3                | 410        |          | 3           | Subscript 'biomass burn' after N2O   |                         | Accepted        | Correct subscript                     |
| 30306 | Romanovskaya, Anna                | 3                | 415        | 418      | 3           | correct spelling of 2006 IPCC Guidelines   |                         | Accepted        | Correct to "2006 IPCC Guidelines"     |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30307 | PENMAN, Jim                    | 3                | 417        | 419      |             | I don't think Tier 2 is an acceptable default.   |                         | Accepted with modification | Tier 1 default will be provided whenever supporting scientific evidence is sufficient. |
| 30308 | Hamilton, Stephen K.           | 3                | 419        | 419      | 3           | Document switches to a footnote style of citing references.  |                         | Accepted                   | Include references in main text  |
| 30309 | Thomson, Amanda                | 3                | 419        |          | 3           | Include references in main text , not footnote.  |                         | Accepted                   | Include references in main text  |
| 30310 | PENMAN, Jim                    | 3                | 420        | 441      |             | replace "are encouraged to examine" with "should take account of"  |                         | Accepted                   | Correct to "should take account of"  |
| 30311 | Lilleskov, Erik Andrew         | 3                | 423        | 423      | 3           | Lines 423-426, 437-441. Regarding double counting, it seems important to distinguish not only that N was emitted but also the form of N. So NOx and NHy may have been emitted at the primary source, but N2O was emitted from the wetland. So the N might be double counted but the N2O can not be ignored. Please clarify the approach here to deal with this and perhaps reference another section or document that deals with N accounting. |                         | Rejected                   | Beyond scope of chapter  |
| 30312 | Lund, Herluf Gyde              | 3                | 423        |          | 3           | Nagata et al., 2006 not listed in references, however there is one for 2005. See lines 556-557.  |                         | Accepted                   | Correct to " Nagata et al., 2005"  |
| 30313 | PENMAN, Jim                    | 3                | 424        | 426      |             | replace "caution should be exerted to avoid" with "there is a risk of"   |                         | Accepted                   | Correct to "there is a risk of"  |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30314 | Romanovskaya, Anna             | 3                | 426        | 431      | 3           | please, provide reference to respective chapter in 2006 GLs   |                         | Accepted                   | provide reference to respective chapter in 2006 GLsreference |
| 30315 | Romanovskaya, Anna             | 3                | 431        |          | 3           | delete "emissions from"   |                         | Accepted                   |  |
| 30316 | PENMAN, Jim                    | 3                | 432        | 436      |             | insert "Tier 1" before "default"? Is this the intent?   |                         | Accepted                   |  |
| 30317 | PENMAN, Jim                    | 3                | 434        | 436      |             | delete; This seems an instruction to bias the inventory, which is inconsistent with good practice                                 |                         | Accepted with modification | Will be better expressed                                     |
| 30318 | Romanovskaya, Anna             | 3                | 434        | 437      | 3           | it is not absolutely clear how countries should report in the response to that requirement? Just indicated that they are sure...? |                         | Accepted with modification | Guidance on completeness will provided in chapter 7          |
| 30319 | Romanovskaya, Anna             | 3                | 437        | 441      | 3           | between "land" and "categories" insert word "use"   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|---|
| 30320 | Vitullo, Marina                | 3                | 437        | 441      | 3           | Change of the text: "As for all land categories, countries are encouraged to monitor the fate of rewetted and restored peatlands, and avoid double counting emissions reported from lands in various categories. The greenhouse gas balance of rewetted lands with peat or organic soils should include all applicable carbon pools, while avoiding double counting between carbon pools, especially if flux-based estimation methodologies are combined with stock change approaches." as follow: "Countries are encouraged to monitor the fate of rewetted and restored peatlands, avoiding double counting emissions reported from lands in various categories. The greenhouse gas emissions from rewetted lands with peat or organic soils should include all applicable carbon pools; double counting between carbon pools has to be avoided, especially if flux-based estimation methodologies are combined with stock change approaches." |                         | Accepted with modification | Emissions will be replaced with "Emissions and removals". |
| 30321 | PETRESCU, Roxana               | 3                | 438        |          |             | Yes I agree with this sentence and that is why I would not combine the methodologies presented by this chapter with those of C stock changes (e.g. the case of CO2-C woody biomass) to avoid further confusion   |                         | Noted                      | Clarification will be provided on method combination.     |
| 30322 | Klemedtsson, Asa Kasimir       | 3                | 441        | 426      | 3           | It could be explained when it would be possible to combine flux-based estimations methodologies with stock-change approaches.  |                         | Accepted                   | Clarification will be provided.                           |
| 30323 | PETRESCU, Roxana               | 3                | 442        | 447      |             | consistent with using N2O/N2O  |                         | Accepted                   |   |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30324 | Huissteden, Ko van             | 3                | 447        | 447      | 3           | Reference in footnote should be Hendriks et al 2007   |                         | Accepted                   |  |
| 30325 | Lund, Herluf Gyde              | 3                | 447        | 447      | 3           | Footnote 1 -Hendriks et al. 2005 is not listed in the references, but there is a reference for 2007. See lines 540-541.   |                         | Accepted                   |  |
| 30326 | Romanovskaya, Anna             | 3                | 447        | 452      | 3           | insert "tier 2 and 3" before "emission factors"   |                         | Accepted with modification | Will use "country-specific" emission factors.                  |
| 30327 | Romanovskaya, Anna             | 3                | 452        | 459      | 3           | consider to change "high quality" to "representative"   |                         | Accepted                   |  |
| 30328 | Romanovskaya, Anna             | 3                | 459        | 461      | 3           | the results of verification for models also should be described   |                         | Accepted with modification | Reference to such good practice will be provided in chapter 7. |
| 30329 | PENMAN, Jim                    | 3                | 460        | 460      |             | Meaning is obscure  |                         | Accepted with modification | Clarifications will be provided.                               |
| 30330 | Romanovskaya, Anna             | 3                | 460        |          | 3           | insert "country-specific" before "emission factors"   |                         | Accepted                   |  |
| 30331 | PENMAN, Jim                    | 3                | 464        |          |             | insert "publications" as another e.g. data source   |                         | Rejected                   |  |
| 30332 | PENMAN, Jim                    | 3                | 465        | 478      |             | re: "communication with industry" - comment: I don't think industry has been mentioned before. It should have been, if it is a significant source of activity data. What about other takeholders? |                         | Accepted                   | Section will be improved.                                      |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30333 | Freibauer, Annette             | 3                | 472        |          | 3.3.4       | why would the method change over time? It is good practice to recalculate everything if the method changes. The latter should be written.  |                         | Noted           | Method remains the same, EFs may vary        |
| 30334 | Romanovskaya, Anna             | 3                | 476        | 614      | 3           | and consistency in methodologies within time series should be assured  |                         | Accepted        | To be added                                  |
| 30335 | Thomson, Amanda                | 3                | 478        | 497      | 3           | Ensure that the language of non-English references is given. Check GHG subscripts. I am unhappy with published references being given as 'cited by...'. The original reference should be checked to ensure that the data and methodology are suitable. Papers that are only submitted and not in press should not be included (e.g. Juottonen et al, line 545) |                         | Accepted        |  |
| 30336 | Lund, Herluf Gyde              | 3                | 497        | 502      | 3           | Drop ( ) around year.  |                         | Accepted        |  |
| 30337 | Lund, Herluf Gyde              | 3                | 502        | 503      | 3           | The 2 and 4 on the gases should be subscripts.   |                         | Accepted        |  |
| 30338 | Lund, Herluf Gyde              | 3                | 503        | 504      | 3           | Consider adding URL <a href="http://www.geog.mcgill.ca/faculty/moore/HydrolProc-22_2044.pdf">http://www.geog.mcgill.ca/faculty/moore/HydrolProc-22_2044.pdf</a>  |                         | Rejected        | URLs will not be provided for any reference  |
| 30339 | Thomson, Amanda                | 3                | 504        | 506      | 3           | Evans not Evans  |                         | Accepted        |  |
| 30340 | Lund, Herluf Gyde              | 3                | 506        | 514      | 3           | Consider adding URL <a href="http://www.int-res.com/articles/cr_oa/c045p013.pdf">http://www.int-res.com/articles/cr_oa/c045p013.pdf</a>  |                         | Rejected        | URLs will not be provided for any reference. |



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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30341 | Thomson, Amanda                | 3                | 514        | 523      | 3           | spelling of Hydrobiologia?   |                         | Hydrobiologia   |  |
| 30342 | Lund, Herluf Gyde              | 3                | 523        | 523      | 3           | Add Verry, E.E, as last co-author. Last word in the line should be Northern  |                         | Accepted        |  |
| 30343 | Thomson, Amanda                | 3                | 523        | 534      | 3           | Spelling of Northern   |                         | Accepted        |  |
| 30344 | Lund, Herluf Gyde              | 3                | 533        | 533      | 3           | Add Fowler, D. as last author. The fourth word in the title is 'of'. Consider adding URL <a href="http://www.agu.org/pubs/sample_articles/bg/2000GB001370/2000GB001370.pdf">http://www.agu.org/pubs/sample_articles/bg/2000GB001370/2000GB001370.pdf</a> |                         | Rejected        | URL not provided for any references          |
| 30345 | Thomson, Amanda                | 3                | 533        | 536      | 3           | 'suppression of'?  |                         | Accepted        |  |
| 30346 | Lund, Herluf Gyde              | 3                | 536        | 541      | 3           | Consider adding URL <a href="http://www.lung.mv-regierung.de/dateien/lis_vortrag_11_10_04_glatzel.pdf">http://www.lung.mv-regierung.de/dateien/lis_vortrag_11_10_04_glatzel.pdf</a>  |                         | Rejected        | URLs will not be provided for any reference. |
| 30347 | Lund, Herluf Gyde              | 3                | 540        | 541      | 3           | Not cited in text, but there is a reference for 2005.  |                         | Accepted        | change in text                               |
| 30348 | Lund, Herluf Gyde              | 3                | 541        | 549      | 3           | Consider adding URL <a href="http://www.biogeosciences.net/4/411/2007/bg-4-411-2007.pdf">http://www.biogeosciences.net/4/411/2007/bg-4-411-2007.pdf</a>  |                         | Rejected        | URLs will not be provided for any reference. |
| 30349 | Lund, Herluf Gyde              | 3                | 548        | 562      | 3           | Not listed in text, but there is one for 2010.   |                         | Noted           | will check                                   |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30350 | Lund, Herluf Gyde                 | 3                | 562        | 565      | 3           | Add period after fluxes  |                         | Accepted        |   |
| 30351 | Lund, Herluf Gyde                 | 3                | 565        | 567      | 3           | Delete ( ) around year.  |                         | Accepted        | change in text  |
| 30352 | Lund, Herluf Gyde                 | 3                | 567        | 597      | 3           | Consider adding URL<br><a href="http://www.borenv.net/BER/pdfs/ber12/ber12-101.pdf">http://www.borenv.net/BER/pdfs/ber12/ber12-101.pdf</a>   |                         | Rejected        | URLs will not be provided for any reference.            |
| 30353 | Lund, Herluf Gyde                 | 3                | 597        | 613      | 3           | Consider adding URL<br><a href="http://tellusb.net/index.php/tellusb/article/download/16628/18567">http://tellusb.net/index.php/tellusb/article/download/16628/18567</a>   |                         | Rejected        | URLs will not be provided for any reference.            |
| 30354 | Lund, Herluf Gyde                 | 3                | 613        |          | 3           | Consider adding URL<br><a href="http://www.borenv.net/BER/pdfs/ber12/ber12-177.pdf">http://www.borenv.net/BER/pdfs/ber12/ber12-177.pdf</a>   |                         | Rejected        | URLs will not be provided for any reference.            |
| 30355 | Schreir & Silvius, Arina & Marcel | 3                | 631        | 652      | 3           | ‘studies that report daily CO2 flux.....used’. Why not? What is the reason to exclude them? Upscaling reasons?   | Attachment_2 0050.pdf   | Noted           | There is too much uncertainty to scale up daily fluxes. |
| 30356 | Romanovskaya, Anna                | 3                | 616        | 618      | 3           | From the text of Annex 3A.1 is not clear what is the main methodology used in the actual experiments compiled in the database for default Efs? If different methodologies used - how they are comparable? Remain unclear the actual list of all studies used in the analysis |                         | Accepted        | Further description to be provided.                     |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30357 | Hamilton, Stephen K.           | 3                | 618        | 652      | 3           | It would be valuable if this literature review (data and sources) were made available to the community, probably best to do so online.  |                         | Accepted                   |  |
| 30358 | Thomson, Amanda                | 3                | 618        | 620      | 3           | A table showing the compiled emission factors, uncertainties and references used for each climate region/peatland type is required, as in Table 2.1   |                         | Rejected                   | Suggested Table is already in the main text and references will be available in Annex. |
| 30359 | Freibauer, Annette             | 3                | 620        | 645      | 3           | what were the criteria and methodologies for the expert judgement? Document the criteria, the data and their sources so that the derivation of the Efs is transparent.  |                         | Accepted                   |  |
| 30360 | Lilleskov, Erik Andrew         | 3                | 622        | 631      | 3           | Line 622. I would hope that the primary database would be made available and at least a link to the location of that database would be referenced here. This applies for all data used in coming up with flux terms. Line 645. Please also include data points used to make the figure if possible. |                         | Accepted with modification |  |
| 30361 | Freibauer, Annette             | 3                | 631        | 631      | 3           | what is 12-33%? Why is this a variable fraction?  |                         | Accepted                   |  |
| 30362 | Hatala, Jaclyn                 | 3                | 631        | 633      | 3           | The statement about how data were excluded from the analysis is very vague and should be much clearer. I don't understand why there is a range of the % data omitted - it seems like this should be a solid, defensible number.   |                         | Accepted                   |  |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------|
| 30363 | Lilleskov, Erik Andrew            | 3                | 633        | 638      | 3           | Line 633. There is a problem with assuming 15% of flux occurs in non-growing season if net flux was into the wetland. How is this dealt with, e.g., in sites in Table 3.2 that have negative flux values? It would be unreasonable to assume that uptake continues in non-growing season. Please clarify |                         | Accepted        |               |
| 30364 | Freibauer, Annette                | 3                | 638        | 638      | 3           | what was the criterium for leaving out natural/undrained sites with water table below 30 cm?   |                         | Accepted        |               |
| 30365 | PETRESCU, Roxana                  | 3                | 638        | 642      |             | Specify if 30 cm below or above surface  |                         | Accepted        |               |
| 30366 | Schreir & Silvius, Arina & Marcel | 3                | 641        | 645      | 3           | While a total of 142....factors. Why are 12 studies not included? Because they were outliers? Because they were judged as unreliable? Explain.   | Attachment_20050.pdf    | Accepted        |               |
| 30367 | Baltzer, Heiko                    | 3                | 645        | 645      | 3           | The figure needs a caption and title, as well as axis annotations.   |                         | Accepted        |               |
| 30368 | Evrendilek, Faith                 | 3                | 645        | 645      | 3           | Figure 3A.1: Axes labels should be properly done.  |                         | Accepted        |               |
| 30369 | Hatala, Jaclyn                    | 3                | 645        | 645      | 3           | The axes labels are missing so I cannot tell what is being depicted.   |                         | Accepted        |               |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------|
| 30370 | Huissteden, Ko van                | 3                | 645        |          | 3           | Figure 3.A.1 is incomplete, information figure axes is missing   |                         | Accepted        |               |
| 30371 | Kabo-Bah, Amos Tiereyangn         | 3                | 645        | 646      | 3           | It will be interesting to provide the coefficient values for the Figure 3A.1; i.e. what are the values of "a" and "b1" and what is the R2 value for this such a plot ( $CO_2 \text{ flux} = a + b1 * WT$ ) |                         | Accepted        |               |
| 30372 | Klemedtsson, Asa Kasimir          | 3                | 645        |          | 3           | Figure 3A.1, lacks axes and explanations, however it is possible to find it in the equation.   |                         | Accepted        |               |
| 30373 | MIAO, Chiyuan                     | 3                | 645        | 646      |             | The label of X-axis is missing.  |                         | Accepted        |               |
| 30374 | Romanovskaya, Anna                | 3                | 645        | 646      | 3           | please, provide title for axis X in figure 3A.1  |                         | Accepted        |               |
| 30375 | Thomson, Amanda                   | 3                | 645        | 652      | 3           | Where are the axes on this table?  |                         | Accepted        |               |
| 30376 | Schreir & Silvius, Arina & Marcel | 3                | 647        | 649      | 3           | perhaps short explanation on why rewetted temperate fens differ from undrained natural temperate fens in terms of $CO_2$ emissions.  | Attachment_2 0050.pdf   | Accepted        |               |
| 30377 | Thomson, Amanda                   | 3                | 649        | 659      | 3           | use $\pm$ not $\pm$ -SE  |                         | Accepted        |               |

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|-------|-----------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|----------------------------------|
| 30378 | Lund, Herluf Gyde                 | 3                | 650        | 652      | 3           | Glatzel et al. 2003 not in references.  |                         | Accepted        |                                  |
| 30379 | Freibauer, Annette                | 3                | 652        | 659      | 3           | why 130 if the natural fens were removed?   |                         | Accepted        |                                  |
| 30380 | Thomson, Amanda                   | 3                | 658        | 661      | 3           | Doe these percentages refer to an increase/decrease in DOC or drainage?   |                         | Accepted        |                                  |
| 30381 | TIEMEYER, Barbel                  | 3                | 659        | 662      |             | Is this statement (based on only one study) valid for other peatland types (temperate, more degraded, fens,...) |                         | Accepted        |                                  |
| 30382 | Lund, Herluf Gyde                 | 3                | 662        | 664      | 3           | Zak and Gilbrecht, 2007 not listed in references.   |                         | Accepted        |                                  |
| 30383 | TIEMEYER, Barbel                  | 3                | 662        |          |             | This would call for a transition time for DOC.  |                         | Accepted        |                                  |
| 30384 | Klemedtsson, Asa Kasimir          | 3                | 663        | 663      | 3           | Table 3A.X should be 3A.1 (if I am not wrong)   |                         | Accepted        |                                  |
| 30385 | Thomson, Amanda                   | 3                | 663        |          | 3           | table number required   |                         | Rejected        | Table number is already provided |
| 30386 | Schreir & Silvius, Arina & Marcel | 3                | 664        |          | 3           | explain what is 'soon after rewetting'.   | Attachment_2 0050.pdf   | Accepted        |                                  |
| 30387 | Klemedtsson, Asa Kasimir          | 3                | 665        | 665      | 3           | Annex X should be Annex 2A.2  |                         | Accepted        |                                  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30388 | Thomson, Amanda                | 3                | 665        | 666      | 3           | annex number required  |                         | Accepted                   |  |
| 30389 | Evrendilek, Faith              | 3                | 666        | 667      | 3           | TABLE 3A.1: DOC (g C m <sup>-2</sup> yr <sup>-1</sup> ) - insert "r" in y-1  |                         | Accepted                   |  |
| 30390 | Klemedtsson, Asa Kasimir       | 3                | 666        | 667      | 3           | Table 3A.1, the r in yr for DOC has become superscript.  |                         | Accepted                   |  |
| 30391 | Klemedtsson, Asa Kasimir       | 3                | 666        | 667      | 3           | Table 3A.1, it is something wrong when draining undrained land and this results in lower DOC, but % DOCrewet obtains a minus percentage. Check this for the last two rows. |                         | Accepted                   |  |
| 30392 | Lund, Herluf Gyde              | 3                | 666        | 667      | 3           | Table 3A.1 Armstrong et al 2010; Givbson et al 2009; Höll et al. 2009; Wallage et al 2006; Waddington et al 2008 ; O'Brien et al. 2008 all not listed in references        |                         | Accepted                   |  |
| 30393 | Gyldenkarne, Steen             | 3                | 667        | 707      | 3           | Table 3A.1 Not the same data as in table 2A3 page 2.31   |                         | Accepted with modification | See Ch 2 cross cutting   |
| 30394 | Romanovskaya, Anna             | 3                | 669        |          | 3           | the same as comment # 155  |                         | Accepted                   | Expand text on studies used in our meta-analyses including methods. Ensure all references complete |
| 30395 | Klemedtsson, Asa Kasimir       | 3                | 672        |          | 3           | Annex 3.1 should be Annex 3A.1   |                         | Accepted                   |  |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30396 | Stenhouse, Michel                 | 3                | 672        | 688      | 3           | Editorial: "Annex 3.1" should be "Annex 3A.1"  |                         | Accepted        |  |
| 30397 | Evrendilek, Faith                 | 3                | 679        |          | 3           | CH4-C ha-1 yr-1 - correct super/subscripts   |                         | Accepted        |  |
| 30398 | Hamilton, Stephen K.              | 3                | 679        | 688      | 3           | variance = ? (appears several times and looks like a placeholder)  |                         | Accepted        | Uncertainty to be determined from data distribution and 95% confidence interval as outlined in 2006 guidelines for asymmetrical data distributions |
| 30399 | Romanovskaya, Anna                | 3                | 679        | 685      | 3           | it is not clear what does word "variance" represent? Better to replace with actual ranges or 95% confidence intervals  |                         | Accepted        | Uncertainty to be determined from data distribution and 95% confidence interval as outlined in 2006 guidelines for asymmetrical data distributions |
| 30400 | Schreir & Silvius, Arina & Marcel | 3                | 679        | 701      | 3           | It is interesting to see that methane fluxes from rewetted sites are overall lower than from undrained pristine sites. This is probably because of the redox conditions (soils more eutrophic after certain LU history). Would be interesting to report if after a certain period an equilibrium is expected, that rewetted peatlands have the same emissions than undrained peatlands. Or will this equilibrium never be reached? | Attachment_2 0050.pdf   | Noted           | Although there isn't enough ong-term data to derive length of possible transition to pristine conditions   |



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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|---|
| 30401 | Thomson, Amanda                | 3                | 679        | 690      | 3           | These values and references should be put into a table rather than the main text. The variance values are also missing   |                         | Accepted with modification | Values appear in Table of Efs in main text of the chapter. Uncertainty to be determined from data distribution and 95% confidence interval as outlined in 2006 guidelines for assymetrical data distributions |
| 30402 | FRIBORG, Thomas                | 3                | 689        | 708      | Annex 3A3   | CH4 emission factors: "finding is based mainly on a small number of extremely high efflux values from sites on enriched agricultural soil that were flooded during rewetting" though the number of studies may be small the relevance of this transition from agricultural soil to wetlands may be the most common in many parts of Europe, where very little unmanaged land is available and many low laying areas have been drained for agricultural purposes. If wetlands are reestablished on such soils CH4 emission may be considerable. I do however agree that numbers for espically rewetted temperatre wetlands apears to be very high (41.6 g CH4-C m-2 y-1 ~ 1400 g CO2 equiv.) and since the numbers seem to rely mostly on "grey" litterature I suggest that you make ref. to Herbst et al. Vadose Zone J. 10 doi:10.2136/vzj2010.0058 (2010) and Herbst et al. / Agricultural and Forest Meteorology 151 (2011) 841–853). |                         | Accepted                   | Reference to be included and incorporated in EF values  |
| 30403 | Baltzer, Heiko                 | 3                | 704        | 704      | 3           | Revise this last paragraph. It is unfinished and mentions a paper that is underway without being specific.   |                         | Accepted                   | More to be added to annex 3A.3 on derivation of tropical EF for CH4   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30404 | Jauhiainen, Jyrki              | 3                | 704        | 704      | 3           | If there is any/some useful references available, they could be listed here.   |                         | Accepted        |   |
| 30405 | Jauhiainen, Jyrki              | 3                | 704        | 707      | 3           | Does Couwenberg et al., 2010 use hourly flux data (i.e. flux data collected diurnally in one hour intervals) in their analysis? The paper content may be wrongly cited here. |                         | Noted           | Paper is properly cited here. This text to be revised when EF for tropical derived. |
| 30406 | Thomson, Amanda                | 3                | 704        |          | 3           | Unfinished section   |                         | Accepted        | More to be added to annex 3A.3 on derivation of tropical EF for CH4                 |
| 30407 | Klemedtsson, Asa Kasimir       | 3                | 706        | 706      | 3           | rice-padi, is it correct english?  |                         | Accepted        | Text to be revised after derivation of tropical EF for CH4                          |
| 30408 | Lund, Herluf Gyde              | 3                | 706        | 707      | 3           | Couwenberg et al., 2010 not in references, but there is a listing for 2011. See lines 516-518  |                         | Accepted        | Should be 2010, GCB   |
| 30409 | Lund, Herluf Gyde              | 3                | 707        | 707      | 3           | Couwenberg 2011 not listed in References, but there is an et al. for 2011. See lines 516-518. .  |                         | Accepted        | Should be 2010, GCB   |
| 30410 | Rock, Joachim                  | 3                | 707        | 709      | 3           | Delete editorial remark.   |                         | Accepted        | More to be added to annex 3A.3 on derivation of tropical EF for CH4                 |

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|-------|--------------------------------|------------------|--------------|----------|-------------|---|-------------------------|----------------------------|---|
| 30411 | Lund, Herluf Gyde              | 3                | 709          | 709      | 3           | Footnote 5- Koehler et al., 2010 is not listed in references, but a 2011 is. See lines 548-549;   |                         | Accepted                   | All references to be check for accuracy/completeness      |
| 30412 | Lund, Herluf Gyde              | 3                | 709          | 710      | 3           | Footnote 5 - Roulet et al., 2007 is not listed in references.   |                         | Accepted                   | All references to be check for accuracy/completeness      |
| 30413 | Baltzer, Heiko                 | 3                | 710          | 722      | 3           | This appendix is completely missing.  |                         | Accepted                   |   |
| 30414 | Rock, Joachim                  | 3                | 710          | 718      | 3           | Appendices are missing. And both are numbered equal ...   |                         | Accepted                   |   |
| 30415 | Romanovska ya, Anna            | 3                | 710          | 718      | 3           | please, provide the respective text   |                         | Accepted with modification |   |
| 30416 | Thomson, Amanda                | 3                | 710          |          | 3           | I asme these a[[endices will be included in the second review draft, included in the contents list and cross-references in the text.                                  |                         | Accepted with modification |   |
| 30417 | Romanovska ya, Anna            | 3                | 109, 112,113 | 80       | 3           | only CO2-C emissions are mentioned, however it is unclear if these are net-emissions or not, and where and how the input of C to pools of soil and DOM are considered |                         | Noted                      | All emissions are net-emissions, hence emissions/removals |

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|-------|-----------------------------------|------------------|--------------|--------------|-------------|---|-------------------------|----------------------------|---|
| 30418 | Freibauer, Annette                | 3                | 74-80        |              | 3           | It is good practice to report C stock changes (or CO <sub>2</sub> fluxes) separately for all carbon pools in the IPCC Guidelines and the CRF tables. The stock change method is the default for biomass, litter and dead wood. If the Supplement provides guidance which does not allow to distinguish between all carbon pools a very clear guidance with example is to be given how to avoid omissions and double counting. Acknowledging the difficulty to distinguish between peat and moss, I still suggest to derive a methodology which allows to separate all the carbon pools. |                         | Accepted with modification | The stock difference is not always the recommended T1 approach (see vol 4, ch 3 for forest biomass). Clarification will be provided on why separation is not feasible on certain cases. |
| 30419 | Schreir & Silvius, Arina & Marcel | 3                | Annex 3.1    | all          | 3           | Suggestion: Refer to studies where EF's are based on (e.g. as in annex 3.3 for CH <sub>4</sub> ).   | Attachment_2 0050.pdf   | Accepted                   | good suggestion   |
| 30420 | Freibauer, Annette                | 3                | Annex 3A.3   |              | 3           | Water table above and below surface should be distinguished, data used should be shown  |                         | Rejected                   | Data insufficient   |
| 30421 | Kabo-Bah, Amos Tierayangn         | 3                | Content Page |              | 3           | 3.4 Basis for future methodological development ..... Error! Bookmark not defined should be checked.  |                         | Accepted                   |   |
| 30422 | Schreir & Silvius, Arina & Marcel | 3                | equation 3.1 | equation 3.2 | 3           | why not implementing the biomass burning component here such as has been done in eq. 3.4 (methane) and 3.6 (n <sub>2</sub> o)? consistency needed.... Perhaps just say that on rewetted soils the GHG emissions as a result of fire is approximately zero (with references)? And then also remove it from eq. 3.4 and 3.6?. Natural, wet, peat- and organic soils usually do not burn.  | Attachment_2 0050.pdf   | Accepted                   | good suggestion   |

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|-------|----------------------------------|------------------|--------------|--------------|-------------|--|-------------------------|----------------------------|--|
| 30423 | Freibauer, Annette               | 3                | equation 3.2 | equation 3.3 | 3           | include harvest, distinguish C pools.  |                         | Rejected                   | Chapter covers soil pool; other pools covered in the 2006 IPCC GLs.  |
| 30424 | Freibauer, Annette               | 3                | equation 3.3 |              | 3           | FDOC-CO2 is inconsistent with guidance in chapter 2 for drainage. I have not seen a scientific justification for a value of FDOC-CO2 other than 1. Tier 1 should set FDOC-CO2=1 as in chapter 2.   |                         | Rejected                   | CF of 90% agreed with Chap 2.  |
| 30425 | Schreir & Silviu, Arina & Marcel | 3                | equation 3.3 | equation 3.5 | 3           | is nothing know about a 'DOC peek' after rewetting? No need for a temporal dynamic equation for the first 5 years after drainage?  | Attachment_2 0050.pdf   | Accepted with modification | Pending assessment of sufficient evidence of post-rewetting dynamics   |
| 30426 | Freibauer, Annette               | 3                | equation 3.5 | equation 3.5 | 3.2.2       | include ditch emissions, consider two equations for transition time after land change to rewetted land and for rewetted land remaining rewetted land   |                         | Rejected                   | Former ditches are considered to be the "wetter end" of the natural variability in wetness. EF independent of land-use change, and evidence of temporal dynamics is insufficient to support derivation of default factors. |
| 30427 | Freibauer, Annette               | 3                | equation 3.5 | equation 3.5 | 3.2.2       | show full equation with several subdivisions as recommended in lines 312-316.  |                         | Accepted with modification |  |
| 30428 | Freibauer, Annette               | 3                | equation 3.5 |              | 3.2.2       | it is well known that CH4 emissions from rewetted peatlands can be much higher than from natural peatlands when the sites are periodically or completely inundated. This should be included by having two different Efs for CH4, at least for the transition phase with flooding. Otherwise there is a systematic underestimate in the guidance for the wetlands restoration activity. |                         | Rejected                   | Not supported by available evidence.   |

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|-------|-----------------------------------|------------------|--------------|-------------|-------------|--|-------------------------|----------------------------|---|
| 30429 | Schreir & Silvius, Arina & Marcel | 3                | equation 3.6 | Figure 3.1  | 3           | remove biomass burn and soil burn components?  | Attachment_20050.pdf    | Accepted with modification | Emissions from biomass combustion is as in IPCC 2006 GLs. Emissions from soil combustion will be consistent with chapter 2. |
| 30430 | Freibauer, Annette                | 3                | Figure 3.1   | Figure 3A.1 | 3           | The decision tree asks "are rewetted peatlands and organic soils a key category"? This is not consistent with guidance in chapter 7 about key category analysis and with the existing guidance for key category analysis. I agree with the guidance in chapter 7, which is in accordance with previous guidelines. Correct guidance in figure 3.1 accordingly. |                         | Accepted                   |   |
| 30431 | Freibauer, Annette                | 3                | Figure 3A.1  |             | 3           | what is the x-axis?  |                         | Accepted                   |   |
| 30432 | Evrendilek, Faith                 | 3                | General      |             | 3           | TABLE 3.4: (n= ???   |                         | Accepted                   |   |
| 30433 | Evrendilek, Faith                 | 3                | General      |             | 3           | The following same format "Chapter" should be used throughout the manuscript.  |                         | Accepted                   |   |
| 30434 | Evrendilek, Faith                 | 3                | General      |             | 3           | Citations should be used in the same format throughout the manuscript.   |                         | Accepted                   |   |
| 30435 | Evrendilek, Faith                 | 3                | General      |             | 3           | The term "Rewetting" should be written in same format throughout the manuscript.   |                         | Accepted                   |   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|---|
| 30436 | Freibauer, Annette             | 3                | General    |          | 3           | The Efs taking soil, vegetation and DOM together are inappropriate for land uses in which harvest of biomass (grazing, grass cutting, timber harvest...) or DOM (sphagnum farming) occur. Harvest must be considered and included in the guidance as in any other land use. Include harste in equation 3.2.  |                         | Accepted                   | Will be separated.  |
| 30437 | Freibauer, Annette             | 3                | General    |          | 3           | If there is an initial pulse it must be included in the methodology. A simple approach for Tier 1 would be to continue to use the EF DOC for drained organic soils for a 20 year transition time and then to use a reduced value.  |                         | Rejected                   | Not enough scientific evidence to support "pulse" emissions under T1, but recommended for T2. Default EF provided that is constant over time. |
| 30438 | Freibauer, Annette             | 3                | General    |          | 3           | The rationale for FCO2-DOC and the derivation of the default is missing.   |                         | Accepted with modification | Is in ch 2, there will be a copy or reference in ch 3.  |
| 30439 | Freibauer, Annette             | 3                | General    |          | 3.2.1       | Guidance about fire is missing.  |                         | Accepted                   |   |
| 30440 | Freibauer, Annette             | 3                | General    |          | 3.2.2       | it is well known that CH4 emissions from rewetted peatlands can be much higher than from natural peatlands when the sites are periodically or completely inundated. This should be included by having two different Efs for CH4, at least for the transition phase with flooding. Otherwise there is a systematic underestimate in the guidance for the wetlands restoration activity. |                         | Accepted with modification | Default CH4 EFs provided for nutrient-rich and nutrient-poor organic soils.   |

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|-------|--------------------------------|------------------|------------|-----------|-------------|---|-------------------------|----------------------------|--|
| 30441 | Freibauer, Annette             | 3                | General    |           | 3.3.2       | Time series consistency is mainly an issue of activity data, not so much of Efs. Give guidance about activity data and detection of rewetted areas and changes in water table, and fractions with water table above and below the surface |                         | Accepted with modification | Guidance to be provided on sources of AD for T1 (not about detections and WT changes) and T2 (remote sensing of wet areas, monitoring of WT) |
| 30442 | Freibauer, Annette             | 3                | General    | general   | 3.3.3       | Please add guidance about activity data QA/QC, in particular, if private data or project data are used  |                         | Accepted                   |  |
| 30443 | PETRESCU, Roxana               | 3                | general    | general   |             | consistency throughout the chapter when using re-wetting/rewetting  |                         | Accepted                   |  |
| 30444 | PETRESCU, Roxana               | 3                | general    |           |             | consistency throughout the chapter when using peatlands and organic soils/peatlands or organic soils  |                         | Accepted                   |  |
| 30445 | TIEMEYER, Barbel               | 3                | general    |           | 3.2.2       | The calculation of CH4-C emissions should be done consistently with Chapter 2. Especially in nutrient-rich peatlands it is advisable to distinguish between areas of open water and other re-wetted areas!                                |                         | Accepted with modification | Default CH4 EFs provided for nutrient-rich and nutrient-poor organic soils. Not enough evidence to support separation as suggested.          |
| 30446 | TIEMEYER, Barbel               | 3                | general    | all       | 3.2.2       | Structure: clearly distinguish "choice of method" and "choice of emission factors"  |                         | Accepted                   |  |
| 30447 | TIEMEYER, Barbel               | 3                | general    |           | 3.3         | Completeness, Time series, consistency and QA/QC: Is there specific need for that for Chapter 3 only?   |                         | Accepted with modification |  |
| 30448 | TIEMEYER, Barbel               | 3                | References | Table 3.1 |             | Many references from the text are missing, please check for completeness  |                         | Accepted                   |  |
| 30449 | Freibauer, Annette             | 3                | Table 3.1  |           | 3           | I do not find the table helpful, the content can be described in one sentence.  |                         | Noted                      |  |



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|-------|-----------------------------------|------------------|------------|-----------|-------------|--|-------------------------|----------------------------|--------------------------------------|
| 30450 | PENMAN, Jim                       | 3                | Table 3.1  |           |             | Is this table referred to in the text? What do the dashes mean? That there are no emissions or removals, or that we have no methods, no data and the corresponding emissions and removals should be taken as zero?   |                         | Accepted                   |                                      |
| 30451 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.1  | Table 3.2 | 3           | 4th column should be deleted and shifted into the 'bog' and 'fen' column? Tropical peat is either 'bog' or 'fen', its not a separate peat type. Or if it is considered as separate peat type explain why: e.g. because of the 'nature' of the peat: forest remains (lignin), compared to low vegetation remains in the temperate and boreal zones. | Attachment_2 0050.pdf   | Accepted with modification |                                      |
| 30452 | Freibauer, Annette                | 3                | Table 3.2  |           | 3           | the 95% confidence interval is to be given, not the standard deviation. None of the Efs significantly differs from zero - why not use zero as Tier 1?  |                         | Accepted with modification | Statistical analysis will be re-done |
| 30453 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.2  |           | 3           | would add (as has been done for methane) a list of references where the EF's are based on (in Annex 3.1).  | Attachment_2 0050.pdf   | Accepted                   |                                      |
| 30454 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.2  |           | 3           | consistency between the different table in using capitals or not for ha-1 yr-1.  | Attachment_2 0050.pdf   | Accepted                   |                                      |
| 30455 | TIEMEYER, Barbel                  | 3                | Table 3.2  |           |             | References and number of sites are missing.  |                         | Accepted                   |                                      |
| 30456 | TODD, Kimberly                    | 3                | Table 3.2  | Table 3.3 |             | The values seem to be acceptable, but I suggest that the references used are indicated for transparency.   |                         | Accepted                   |                                      |

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|-------|-----------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---|
| 30457 | Freibauer, Annette                | 3                | Table 3.3  |          | 3           | what are "uncertainty ranges"? 95% confidence interval is required. The units seem wrong, I assume you mean g C m <sup>-2</sup> yr <sup>-1</sup> .   |                         | Accepted        |   |
| 30458 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.3  |          | 3           | 3rd column: add uncertainties as reported in table 2.2 of chapter 2.   | Attachment_2 0050.pdf   | Accepted        |   |
| 30459 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.3  |          | 3           | add units in 4th column and perhaps remove it from the top of the table.   | Attachment_2 0050.pdf   | Accepted        |   |
| 30460 | TIEMEYER, Barbel                  | 3                | Table 3.3  |          |             | Given that DOC fluxes are only a relatively small part of the C-balance of drained peatlands (in contrast to natural ones), simple emission factors not depending on precipitation seem to be advisable, especially as temperature seems to be a second variable in Table 2A.2. Furthermore, data for temperate sites is sparse and cannot be simply extrapolated from boreal sites with the same amount of precipitation. |                         | Accepted        | Cross cutting Chapter 2 with new categories and equation including precipitation included only for Tier 2 |
| 30461 | TIEMEYER, Barbel                  | 3                | Table 3.3  |          |             | Apart from the applicability for reporting, the classes 700-900 mm and > 900 mm are defined by two studies each. I doubt this is enough stratification.  |                         | Accepted        | See comment above 30460   |
| 30462 | TIEMEYER, Barbel                  | 3                | Table 3.3  |          |             | DOC_Flux_Natural: wrong units (g C/m <sup>-2</sup> ), but it would be advisable to use the same unit throughout the document.  |                         | Accepted        |   |

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|-------|-----------------------------------|------------------|------------|-----------|-------------|---|-------------------------|-----------------|--|
| 30463 | TODD, Kimberly                    | 3                | Table 3.3  | Table 3.4 |             | There is a unit mistake: it should be DOCFLUX_NATURAL (tonnes C ha-1 yr-1) instead of DOCFLUX_NATURAL (tonnes C m-2 yr-1)   |                         | Accepted        |  |
| 30464 | Freibauer, Annette                | 3                | Table 3.4  |           | 3.2.2       | what is "p.m." in tropical zone?  |                         | Noted           | This is be replaced by default EF  |
| 30465 | TIEMEYER, Barbel                  | 3                | Table 3.4  |           |             | What is p.m. for tropical peatlands?  |                         | Noted           | This is be replaced by default EF  |
| 30466 | TODD, Kimberly                    | 3                | Table 3.4  |           |             | The values look fine, but I again suggest to cite the references used for transparency. Are there really 41 data sets on the annual methane emissions of rewetted temperate bogs and 63 data sets on that of rewetted fens available? Why is the uncertainty not indicated? |                         | Accepted        | All references will be confirmed, uncertainty included as 95% confidence interval and n for sites and data points will be stated |
| 30467 | Schreir & Silvius, Arina & Marcel | 3                | Table 3.A1 |           | 3           | Last two rows: numbers have to be shifted between columns 4 and 5 I think. See also table 2A. 3 in Chapter 2 where DOC values in drained sites are always higher than in undrained sites. Maybe also add the references from chapter 2, table 2A.3 to this table.           | Attachment_2 0050.pdf   | Accepted        | Table will be revised.   |
| 30468 | TIEMEYER, Barbel                  | 3                | Table 3A.1 |           |             | As it is assumed that DOC fluxes return to the natural level, the DOC concentrations are not really necessary.  |                         | Rejected        | Doc concentrations in this table demonstrate our argument to use undrained DOC values (see annex 3A.2).                          |
| 30469 | TIEMEYER, Barbel                  | 3                | Table 3A.1 |           |             | DOC concentration levels are not really usefull in this context as re-wetting frequently changes the water balance (including the discharge) of the peatland  |                         | Rejected        | Doc concentrations in this table demonstrate our argument to use undrained DOC values (see annex 3A.2).                          |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|---|--|
| 30470 | TIEMEYER, Barbel               | 3                | Table 3A.1 |          |             | All references are missing in the list of reference (lines 478 ff)   |                         | Accepted  |  |
| 30471 | TIEMEYER, Barbel               | 3                | Table 3A.1 |          |             | Waddington et al. (2008) compare "undrained" and "restored", not "undrained" and "drained".  |                         | Noted   | Error noted but Waddington actually compare Drained with restored  |
| 30472 | TIEMEYER, Barbel               | 3                | Table 3A.1 |          |             | IF it is assumed that DOC_flux_natural = DOC_flux_restored, values of restored peatlands should be used for the derivation of DOC_flux_natural (Table 2A.2). However, I would not support this approach, but rather classify DOC fluxes by land use / hydrology (natural, drained, re-wetted). |                         | Accepted with modification                      | Consistency will be kept between Chapter 2 and 3   |
| 30473 | Kolka, Randy                   | 3                |            |          | 3           | I suggest combining chapters 2 and 3, there is considerable overlap in text and even the tables (e.g. 3.3). Both Chapters are very well done.  |                         | Noted with appreciation but suggestion rejected | As drained and re-wetted wetlands behave differently   |
| 30474 | ORR, Harriet                   | 3                |            | 159      |             | section 3.3 this appears to be repeating similar text from other chapters - can this be lumped somewhere to avoid repetition?  |                         | Accepted with modification                      | Guidance specific to re-wetted sites is provided, which may be similar in some cases with that provided for drained sites. When this happens, guidance is as consistent as possible. |
| 30475 | Pipatti, Riitta                | 3                | 158        | 191      |             | In Chapter 5 (5.3.2) a transition period of 10 years is suggested - need to harmonise?   |                         | Rejected  | Expression "transition period " will be removed  |
| 30476 | Pipatti, Riitta                | 3                | 190        | 252      |             | What is meant with "detailed information on rewetting" - area data and CS representative EFs? Should the decision tree start with the question "Has rewetting occurred in the country?"  |                         | Accepted  |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---------------|
| 30477 | Pipatti, Riitta                | 3                | 250        | 459      |             | Expand the guidance on choice of activity data - how to get historical data (from how long ago is this need?), time series, be more precise, e.g. some other international organisations may have requirements on rewetting and reporting of the areas??? |                         | Accepted        |               |
| 30478 | Pipatti, Riitta                | 3                | 459        | 476      |             | It is good that representativeness is addressed -- but how to ensure representativeness when even global data is scarce, some guidance would be appreciated (and should be included in all chapters).   |                         | Accepted        |               |
| 30479 | Pipatti, Riitta                | 3                | 472        |          |             | Please expand to include guidance on interannual variability, or refer to guidance on this in the 2006 IPCC GLs.  |                         | Accepted        |               |
| 30480 | GARNEAU, Michelle              | 3                | 7          |          |             | Changes letters in CAPITAL  |                         | Accepted        |               |
| 30481 | GARNEAU, Michelle              | 3                | 18         |          |             | bookmark not defined  |                         | Accepted        |               |
| 30482 | GARNEAU, Michelle              | 3                | 27         |          |             | Changes letters in CAPITAL  |                         | Accepted        |               |
| 30483 | GARNEAU, Michelle              | 3                | 39         |          |             | Add title to Table 3.1  |                         | Accepted        |               |
| 30484 | Joosten, Hans                  | 3                | 50         |          |             | a nice, concise and straightforward chapter, a big contrast with chapter 2....  |                         | Noted           | Thanks        |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30485 | Troxler, Tiffany               | 3                | 56         | 60       |             | "such conditions"? Wet conditions? Or conditions of hydrological and biogeochemical processes? If it is the former, please replace "such" with wet, if it is the latter, then I'm not sure what the difference is between rewetting and rehabilitation.  |                         | Accepted                   | Text will be clarified.  |
| 30486 | Troxler, Tiffany               | 3                | 58         | 64       |             | No ecosystem exists in a permanent state. Restoration indeed implies a return to a previous state. I think this section would benefit greatly from some citations.   |                         | Accepted with modification | Scope of chapter 3 will be clarified.  |
| 30487 | Troxler, Tiffany               | 3                | 61         | 67       |             | I don't see how a previously drained wetland can be rehabilitated without some form of rewetting. Revegetation of a drained wetland is exactly that, not rehabilitation of a wetland. In any case, citations here would provide some justification for the statements made - currently, they are unjustified. Perhaps defining reclamation separately from rehabilitation would further clarify this - these are not the same activities. Please, citations. |                         | Accepted with modification | Scope of chapter 3 will be clarified.If rehabilitation includes re-wetting, then guidance on re-wetting can be used. |
| 30488 | Troxler, Tiffany               | 3                | 66         |          |             | the current state of the text in lines 53-64 could be more helpful in defining what is intended to be covered - as it is currently written, I believe it too narrowly restricts how guidance in this chapter can be used.  |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30489 | Troxler, Tiffany               | 3                | 67         | 70       |             | could you consider please restating line 67 as "including rehabilitation where rewetting occurs." |                         | Accepted with modification | Scope of chapter 3 will be clarified.If rehabilitation includes re-wetting, then guidance on re-wetting can be used. |
| 30490 | Srivastava, Nalin              | 3                | 70         | 70       |             | "Chapter 7", "Volume 4", "2006 IPCC Guidelines"   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|--|
| 30491 | Srivastava, Nalin              | 3                | 70         | 75       |             | <p>1) I think it is confusing to combine all pools into one EF as this is not consistent with the approach followed in the 2006 IPCC Guidelines and other chapters in the Wetlands Supplement. The approaches followed in Chapter 2 and 3 need to be consistent. This is of particular importance in the case of land-use change categories where this "integrated" approach cannot be used as changes in various C pools as a result of land use change need to be estimated. Compatibility of this approach with the pool-wise reporting requirements need to be examined.</p> <p>2) It is better to be specific on the inclusion of moss in the C pools. The IPCC Guidelines definition for litter includes humic and fumiic material as well as live fine roots below the threshold diameter used to define below ground biomass if they cannot be distinguished empirically from litter empirically. Similarly Soil C pool is defined to include live fine roots below the threshold used to define below-ground biomass if they cannot be distinguished empirically. I think we need to look at and suitably modify the definition of C pools provided in the 2006 Guidelines and GPG LULUCF to include moss (whether dead or otherwise). They could be potentially be included in either DOM (litter) or Soil C provided it is done consistently across land use categories. Just for information, the only defaults for litter are provided in Table 2.2 of 2006 IPCC Guidelines. It would be worthwhile to see what they include.</p> |                         | Accepted with modification | Consistency with 2006 GLs and other chapters will be improved as much as possible. |
| 30492 | Joosten, Hans                  | 3                | 75         | 75       |             | dead organic matter -> you mean "litter". Unify terms over the entire document!  |                         | Rejected                   | DOM is the accepted IPCC pool  |



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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30493 | Joosten, Hans                  | 3                | 75         |          |             | replace "moss species" by "mosses" because you refer to a concrete not an abstract entity.  |                         | Accepted                   |  |
| 30494 | GARNEAU, Michelle              | 3                | 76         |          |             | I would remove "northern"   |                         | Accepted                   | Word removed                               |
| 30495 | Srivastava, Nalin              | 3                | 80         | 87       |             | "2006 IPCC Guidelines"  |                         | Accepted                   |  |
| 30496 | JENKINS, Jennifer              | 3                | 87         |          |             | delete "should"   |                         | Accepted                   |  |
| 30497 | GARNEAU, Michelle              | 3                | 87         |          |             | have been re-wetted ARE encouraged  |                         | Accepted                   |  |
| 30498 | Srivastava, Nalin              | 3                | 89         |          |             | According to the FAO classification followed by the IPCC Guidelines, "Climate domain" and "Climate region" have specific meanings. It should be "Climate domain" in Table 3.1 |                         | Accepted with modification | Subject to consistency with 2006 IPCC GLs. |
| 30499 | Srivastava, Nalin              | 3                | 91         |          |             | "land-use"  |                         | Accepted                   |  |
| 30500 | Srivastava, Nalin              | 3                | 93         | 94       |             | "greenhouse gas" should be used here and everywhere instead of "GHG"  |                         | Rejected                   | Convention is to use GHg                   |
| 30501 | Srivastava, Nalin              | 3                | 93         | 95       |             | "Forest Land", "Cropland", "Grassland", "Wetlands"  |                         | Accepted                   |  |
| 30502 | Joosten, Hans                  | 3                | 95         | 125      |             | replace "have" by "has"   |                         | Accepted                   |  |
| 30503 | Srivastava, Nalin              | 3                | 102        | 106      |             | Please see comment for line 70.   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|----------------------------|--|
| 30504 | Troxler, Tiffany               | 3                | 103        | 125      |             | Equation 3.1 - the result computed using this equation is the same as that computed with Eq 3.2 but using different input parameters - please resolve   |                         | Accepted                   | good point; check pools carefully  |
| 30505 | Troxler, Tiffany               | 3                | 123        | 125      |             | does this statement intend to convey that the guidance in Chapter 3 should not be used for peatlands with perennial woody biomass or should be used in combination with guidance in Vol 4?                              |                         | Noted                      | Guidance for woody biomass is found elsewhere  |
| 30506 | Srivastava, Nalin              | 3                | 125        |          |             | "Volume 4" and "Chapter 2,4,5 and 6"  |                         | Accepted                   |  |
| 30507 | WINDHAM-MYERS, Lisamarie       | 3                | 127        | 145      |             | This section needs some discussion of the lability of this DOC. There are thousands of different types of DOC - some so recalcitrant that they remain in ocean water for months and some that are consumed immediately. |                         | Accepted with modification | Further discussion will be provided in the text but so far not enough scientific work to differentiate on the basis of DOC lability. |
| 30508 | Troxler, Tiffany               | 3                | 143        |          |             | Equation 3.2 - the result computed using this equation is the same as that computed with Eq 3.2 but using different input parameters - please resolve   |                         | Accepted                   |  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|----------------------------|-------------------------------|
| 30509 | GARNEAU, Michelle              | 3                | 175        |          |             | values for (raised) bogs. Raised is not necessary to specify. Bogs versus fens is OK                         |                         | Accepted                   |                               |
| 30510 | GARNEAU, Michelle              | 3                | 199        |          |             | Sphagnum   |                         | Accepted                   |                               |
| 30511 | GARNEAU, Michelle              | 3                | 200        | 210      |             | Remove Phragmites as it is not representative of boreal and subarctic. Just mention Cyperaceae and Gramineae |                         | Accepted with modification |                               |
| 30512 | Srivastava, Nalin              | 3                | 210        |          |             | "Bogs" and "Fens" in Table 3.2   |                         | Accepted                   |                               |
| 30513 | GARNEAU, Michelle              | 3                | 230        |          |             | Annex X - ?  |                         | Accepted                   |                               |
| 30514 | GARNEAU, Michelle              | 3                | 239        | 239      |             | Table 3.3 : EF DOC_rewetted: 3rd line, remove _  |                         | Accepted with modification | Table to substantially edited |
| 30515 | Srivastava, Nalin              | 3                | 239        | 248      |             | "DOCFLUX_NATURAL" at the bottom of the Table 3.3   |                         | Accepted                   |                               |
| 30516 | Srivastava, Nalin              | 3                | 248        | 257      |             | "Volume 4, Chapters 3-5"   |                         | Accepted                   |                               |
| 30517 | Joosten, Hans                  | 3                | 257        | 261      |             | add conservation organisations, as they will often have initiated major rewetting projects.                  |                         | Accepted                   |                               |
| 30518 | Srivastava, Nalin              | 3                | 261        |          |             | "based on the time"  |                         | Accepted                   |                               |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|---|---|
| 30519 | Srivastava, Nalin              | 3                | 270        |          |             | "CH4" here and in rest of the text.   |                         | Accepted                                |   |
| 30520 | GARNEAU, Michelle              | 3                | 291        | 291      |             | Table 2.X   |                         | Accepted to be confirmed with chapter 2 |   |
| 30521 | Srivastava, Nalin              | 3                | 291        | 298      |             | "Table 2.X" needs to be renamed.  |                         | Accepted to be confirmed with chapter 2 |   |
| 30522 | Joosten, Hans                  | 3                | 293        |          |             | skip: full repetition of text just above.   |                         | Accepted                                | Paragraph deleted   |
| 30523 | GARNEAU, Michelle              | 3                | 297        | 309      |             | Table 2.X   |                         | Accepted to be confirmed with chapter 2 |   |
| 30524 | Srivastava, Nalin              | 3                | 309        |          |             | Italicization should be removed.  |                         | Accepted                                |   |
| 30525 | GARNEAU, Michelle              | 3                | 315        | 320      |             | There are others wetlands than bogs and fens such as in the tropics. Use into sub-categories e.g. bogs, fens, swamps etc        |                         | Accepted with modification              | Clarify text as it applies to tropical sites, probably linked to vegetation (forest, Papyrus, etc.). Default value will lump all sites together for tropical with additional guidance in text and future methods development sections |
| 30526 | Joosten, Hans                  | 3                | 320        | 329      |             | ...distribution. is that so if you also include inundated areas (as originate locally after rewetting of relief rich peatland)? |                         | Noted                                   | When flooded sites are included distribution is more complex  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30527 | GARNEAU, Michelle              | 3                | 325        | 328      |             | Peat temperature is also an important factor to consider in the CH4 emissions: see Cliche-Trudeau, N., Garneau, M. and Pelletier, L. (in press) in Biogeochemistry. Methane fluxes from a patterned fen of the northeastern part of the La Grande river watershed, James Bay, Canada |                         | Noted           | Temperature is reflected in climate zone, but is not a practical parameter for use in national inventory |
| 30528 | Joosten, Hans                  | 3                | 328        |          |             | Couwenberg et al., 2010 -> 2011, I presume.... Actually it is better to combine the Couwenberg references with the Augustin and Glätzel ones, because both reviews also point at high flux values.   |                         | Accepted        |  |
| 30529 | GARNEAU, Michelle              | 3                | 328        | 334      |             | Couwenberg & Fritz 2012; Couwenberg et al., 2010: not in the references.   |                         | Accepted        | References to be checked throughout chapter for completeness   |
| 30530 | GARNEAU, Michelle              | 3                | 333        |          |             | HahnSchöffl et al., 2011: not in the references.   |                         | Accepted        | References to be checked throughout chapter for completeness   |
| 30531 | GARNEAU, Michelle              | 3                | 335        | 339      |             | Waddington and Day, 2007 : not in the references.  |                         | Accepted        | References to be checked throughout chapter for completeness   |
| 30532 | Joosten, Hans                  | 3                | 339        |          |             | remains -> plural (data)   |                         | Accepted        |  |
| 30533 | GARNEAU, Michelle              | 3                | 346        | 359      |             | Augustin and Joosten 2007: not in the references.  |                         | Accepted        | References to be checked throughout chapter for completeness   |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|--|
| 30534 | GARNEAU, Michelle              | 3                | 352        |          |             | Cited references and not in the bibliography. They should be in even if included in Couwenberg et al, 2011 |                         | Accepted        | References to be checked throughout chapter for completeness                           |
| 30535 | WINDHAM-MYERS, Lisamarie       | 3                | 353        | 354      |             | Also Alnus glutinosa, Gauci et al. 2010 (see references at end)  |                         | Accepted        | Reference to be included   |
| 30536 | Joosten, Hans                  | 3                | 354        | 359      |             | replace "Equistem" by "Equisetum"  |                         | Accepted        |  |
| 30537 | Srivastava, Nalin              | 3                | 359        |          |             | "Couwenberg & Fritz 2012"  |                         | Accepted        |  |
| 30538 | GARNEAU, Michelle              | 3                | 375        | 376      |             | Couwenberg et al., 2010: verify the year (2010) 2011 in the references list                                |                         | Accepted        | 2010 is the correct year   |
| 30539 | Srivastava, Nalin              | 3                | 376        | 378      |             | It should be "Climate domain" in Table 3.4   |                         | Rejected        | Climate zone is more consistent with Chapter 3 of volume 4 of the 2006 IPCC guidelines |
| 30540 | Srivastava, Nalin              | 3                | 378        |          |             | "country-specific"   |                         | Accepted        |  |
| 30541 | Srivastava, Nalin              | 3                | 396        | 426      |             | "N2O" here and in rest of the text.  |                         | Accepted        | Correct to subscript   |

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|-------|--------------------------------|------------------|------------|----------|-------------|---|-------------------------|-----------------|---|
| 30542 | Srivastava, Nalin              | 3                | 396        | 401      |             | The section does not provide any methodology for N <sub>2</sub> O soil; only mentions it.       |                         | Accepted        | Correct - no T1 EFs could be derived for soil; other sources are estimated using methods in 2006 GLs. Additional text will be provided. |
| 30543 | Joosten, Hans                  | 3                | 401        |          |             | replace "less" by "higher" to avoid confusion that "less" may mean "lower"                      |                         | Rejected        | This sentence do not make confusion by using "below the surface"  |
| 30544 | GARNEAU, Michelle              | 3                | 415        | 416      |             | 2006 GLs- change for the whole 2006 Guidelines  |                         | Accepted        | Correct to "2006 IPCC Guidelines"   |
| 30545 | Srivastava, Nalin              | 3                | 416        | 421      |             | Forest Land, "Cropland", "Grassland", "Wetlands"  |                         | Accepted        | Correct to "Forest Land, Cropland, Grassland, Wetlands"   |
| 30546 | Joosten, Hans                  | 3                | 421        |          |             | motivate why in particular tropical climate   |                         | Rejected        | Because N <sub>2</sub> O emission in tropical climate is potentially high.  |
| 30547 | GARNEAU, Michelle              | 3                | 423        | 448      |             | Nagata et al., 2006: verify the year(2006), not the same in the reference (2005)                |                         | Accepted        | Correct to " Nagata et al., 2005"   |
| 30548 | GARNEAU, Michelle              | 3                | 447        | 465      |             | Footnotes: Hendriks et al., 2005: verify the year (2005 ), not the same in the reference (2007) |                         | Rejected        | should be 2007  |

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|-------|--------------------------------|------------------|------------|----------|-------------|--|-------------------------|-----------------|---------------|
| 30549 | Joosten, Hans                  | 3                | 465        | 465      |             | replace "plus" by "including"  |                         | Accepted        |               |
| 30550 | Joosten, Hans                  | 3                | 465        |          |             | the chapter gives too much attention to "the industry". This reflects a geographical bias. It might be so that in Canada and Lower Saxony (Germany) indeed the peat extraction industry is the major implementor of peatland rewetting (after peat extraction), but in other parts of the world nature conservation, forestry (rewetting of uneconomically drained forested peatlands), agriculture (rewetting of peatlands that have become undrainable) water management and even direct climate mitigation aims are the major actors. |                         | Accepted        |               |
| 30551 | Joosten, Hans                  | 3                | 478        | 549      |             | list does not include all papers referred to in text. Check and complete!  |                         | Accepted        |               |
| 30552 | GARNEAU, Michelle              | 3                | 548        |          |             | Koehler et al., 2010: verify the year (2011), not the same in the text footnote , line 709-710 (2010)  |                         | Accepted        |               |
| 30553 | GARNEAU, Michelle              | 3                | 606        |          |             | Wilson et al 1989 - not cited in the text  |                         | Accepted        |               |
| 30554 | GARNEAU, Michelle              | 3                | 616        |          |             | Annex 3A.1: in the compiled references should be added: Pelletier, L., Garneau, M. and Moore, T. 2011 Interannual variation in net ecosystem exchange at the microform scale in a boreal bog, Eastmain region, Quebec, Canada. Journal of Geophysical Research - Biogeosciences doi:10.1029/2011JG001657   |                         | Accepted        |               |



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| 30555 | GARNEAU, Michelle              | 3                | 628        |          |             | peatland type : e.g. bog, fens as they are not exclusive   |                         | Accepted                   |   |
| 30556 | Troxler, Tiffany               | 3                | 635        | 640      |             | why not plot the tropical data on figure 3A.1 so that they can be considered for inclusion? And why not apply a method like that proposed in Chapter 2 as to not omit coverage of tropical peatland rewetting (but with the assumption the soil C EF is similar for rewetted and natural peatlands)? How would those estimates compare with flux data cited here? There is already consistency in DOC methods - this is great! |                         | Accepted with modification | Tropical organic soils will be further discussed in so far as only one study shows rewetting flux data and this is not even a successful rewetting. Used of data from undrained sites will be considered. |
| 30557 | Joosten, Hans                  | 3                | 640        |          |             | replace "common" by "commonly"   |                         | Accepted                   |   |
| 30558 | Troxler, Tiffany               | 3                | 645        |          |             | please provide x axis label  |                         | Accepted                   |   |
| 30559 | GARNEAU, Michelle              | 3                | 659        |          |             | Glatzel et al. (2003): not in the references.  |                         | Accepted                   |   |
| 30560 | GARNEAU, Michelle              | 3                | 662        |          |             | Zak and Gilbrecht, 2007: not in the references.  |                         | Accepted                   |   |
| 30561 | GARNEAU, Michelle              | 3                | 663        |          |             | Worrall et al., 2007: not in the references.   |                         | Accepted                   |   |
| 30562 | GARNEAU, Michelle              | 3                | 663        |          |             | Table 3A.X   |                         | Accepted                   |   |
| 30563 | GARNEAU, Michelle              | 3                | 665        | 667      |             | Annex X  |                         | Accepted                   |   |

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| 30564 | GARNEAU, Michelle              | 3                | 666          | 667      |             | Wallage et al (2006): not in the references.   |                         | Accepted        |  |
| 30565 | GARNEAU, Michelle              | 3                | 666          | 667      |             | Armstrong et al (2010) : not in the references.  |                         | Accepted        |  |
| 30566 | GARNEAU, Michelle              | 3                | 666          | 667      |             | Gibson et al (2009): not in the references.  |                         | Accepted        |  |
| 30567 | GARNEAU, Michelle              | 3                | 666          | 667      |             | Höll et al (2009): not in the references.  |                         | Accepted        |  |
| 30568 | GARNEAU, Michelle              | 3                | 666          | 667      |             | Waddington et al (2008): not in the references.  |                         | Accepted        |  |
| 30569 | GARNEAU, Michelle              | 3                | 666          |          |             | O'Brien et al (2008): not in the references.   |                         | Accepted        |  |
| 30570 | GARNEAU, Michelle              | 3                | 669          | 710      |             | Annex 3A.3: In the compiled references should be added Cliche-Trudeau, N., Garneau, M. and Pelletier, L. (in press) Methane fluxes from a patterned fen of the northeastern part of the La Grande river watershed, James Bay, Canada (Biogeochemistry. |                         | Noted           | This reference will be included if it provides annual CH4 estimate. Currently searching for paper, may not yet be available online |
| 30571 | GARNEAU, Michelle              | 3                | 709          |          |             | footnotes: Roulet et al., 2007: not in the references.   |                         | Accepted        | All references to be updated   |
| 30572 | WINDHAM-MYERS, Lisamarie       | 3                | Figure 3.A.1 |          |             | Axes were not readable so graphic not reviewable   |                         | Accepted        |  |

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| 30573 | Hunt, Patrick G                | 3                | general    |          |             | This chapter considers the restoration and greenhouse gas emissions from organic soils. The introduction is concise and provides the information needed to be quickly associated with the topic of organic soils. It is clear when and where this information can or cannot be used to calculate gas emissions. The references are very current, which is important in discussing any gas emission estimates. The only issue is the description of where to use Tier 3 feels ambiguous at times and the N2O section is not quite as in depth as the CO2 or CH4 sections.  |                         | Accepted        |  |
| 30574 | Troxler, Tiffany               | 3                | general    |          |             | chapter 2 uses a new gain-loss method for soils and flux data and Chapter 3 uses flux method for soil EFs - what are the implications? Can authors consider presenting both for inclusion in guidance for both drainage and rewetting and other wetland types? At an ecosystem level, they yield similar results, but do they? By providing both, does this enable more countries to apply country-specific data given that some countries may have more ready access to one type of data or another (pools vs. fluxes)? At a minimum, data on pools must be provided to follow GPG methods. COnsider publications by Chapin et al 2006, Randerson et al 2002, others to ground this in published approaches. |                         | Rejected        | Default EF for rewetting can only be developed based on flux data; scientific data based on stock change methods are insufficient to develop EF. Additional clarifications will be provided. |

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| 30575 | WINDHAM-MYERS, Lisamarie       | 3                | recommended references |          |             | Gauci, V., D.J.G. Gowing, E. R.C. Hornibrook, J. M. Davis, N. B. Dise. 2010. Woody stem methane emission in mature wetland alder tree. Atmospheric Environment DOI:10.1016/j.atmosenv.2010.02.034   |                         | Accepted        | See response to comment 30535   |
| 30576 | WINDHAM-MYERS, Lisamarie       | 3                | recommended references |          |             | Fleck, J.A., M.S. Fram and R. Fujii. 2007. Organic Carbon and Disinfection Byproduct Precursor Loads from a Constructed, Non - Tidal Wetland in California's Sacramento - San Joaquin Delta. San Francisco Estuary and Watershed Science 5(2): 1 - 24 (escholarship.org/uc/item/4pb185j7.pdf) |                         | Noted           |   |
| 30577 | WINDHAM-MYERS, Lisamarie       | 3                | Table 3.3              |          |             | Again, DOC lability is a question - mangrove wetlands may export more recalcitrant DOC than other systems.  |                         | Noted           | Forwarded to chapter 4  |
| 30578 | WINDHAM-MYERS, Lisamarie       | 3                | Table 3.4              |          |             | Uncertainty was not noted. With n=80 - 374, uncertainty should be fairly low.   |                         | Accepted        | Uncertainty will be determined as 95% confidence interval for asymmetrical data distribution as outlined in 2006 guidelines |

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| 30579 | WINDHAM-MYERS, Lisamarie       | 3                | Table 3A.1 |          |             | Loads are more important than concentrations, as dilution effects remain unquantified. Table should include data from the California Sacramento - San Joaquin delta, where DOC g C m <sup>2</sup> y <sup>1</sup> loads are an order of magnitude higher than those presented (drained = 29 and rewetted = 146 g C m <sup>-2</sup> y <sup>-1</sup> ). See Fleck et al. 2007. |                         | Noted           | But concentrations not used to derive EF |