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Interactive comment on "The riverine source of tropospheric CH_4 and N_2O from the Republic of Congo, Western Congo Basin" *by* Robert C. Upstill-Goddard et al.

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I would like to add some additional comments regarding the use of references in this work, since overall more care needs to be given that statements are worded accurately:

L41-42: Hartmann et al. 2013 does not describe the impacts of CH4 on oxidizing capacity and other atmospheric species. Myhre et al. 2013 is a suitable reference

L47-48, also L53-54: This is the global surface mean, not the tropospheric mean, which would be slightly lower. Chapter 2 of AR5 (Hartmann et al. 2013) is a better citation than Chapter 6 (Ciais et al. 2013) since it details the data sources where these numbers are derived from. Also, simply say "150%" rather than "more than 150%".

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L48-49: It is not clear why “soils, freshwaters and coastal waters” is given. Freshwater and coastal waters were not explicitly discussed in the reference, and this excludes important sources they do give including animal waste management, biomass burning, oceans, and energy systems.

L50-51: This has several issues and does not follow from the previous sentence. 1) rivers, estuaries, and coastal zones was already included as a source category for N2O in IPCC AR4 (see Denman et al. 2007), though the sentence seems to imply it was added in AR5. 2) it is not that they switched the classification from natural to anthropogenic, but that sufficiently reliable data became available on the anthropogenic component.

L60-61: “based on warming potentials and atmospheric lifetimes” -> “based on a 100-year Global Warming Potential” would be more descriptive

L60-62: Kirschke et al. 2013 gives a bottom-up value of 40 [8-73] Tg/yr for freshwater sources, and a total source of 678 [542-852] Tg/yr, giving a mean freshwater contribution of about ∼6% along with a wide uncertainty range. The estimates given of ∼30-47% for natural and ∼12-20% total sources seem to be miscalculated. In addition, it is unclear why we are asked to ignore the range of 10 – 100 Tg/yr given on L57 for freshwater, which would yield an even larger range of uncertainty

L63: Please double check this. It does not seem to be consistent with Figure 2 in Le Quéré et al. 2015 which suggests a combined sink of ∼5.5 x 10ˆ15 g C yr-1

L159-160: Same comment about being surface rather than tropospheric mean CH4 and N2O. Also unclear how to access the referenced data using the link given at http://www.eea.europa.eu/data-and-maps/

L269: supersaturations -> super-saturations (for consistency with usage in the rest of the text)

L383: Melack et al. 2004 and Bastkviken et al. 2010 both missing from References list

L396-398: It is clear there are issues with emissions estimation that need to be addressed in the future, but it is not clear with the issue is with CH4 and N2O measurement and data calibration. It seems that standard, accurate, techniques are available for collection of samples and subsequently measuring CH4 and N2O concentrations - please remove or clarify this point.

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