

Interactive comment on “The riverine source of tropospheric CH₄ and N₂O from the Republic of Congo, Western Congo Basin” by Robert C. Upstill-Goddard et al.

Anonymous Referee #2

Received and published: 2 December 2016

The brief paper by Upstill-Goddard presents a dataset on riverine dissolved CH₄ and N₂O concentrations from a range of rivers and streams in the western Congo Basin, an area from which few data exist. For the wet season sampling, the dataset includes some complementary data such as nitrate and ammonia concentrations, and dissolved O₂. While not really providing much novelty in terms of identifying drivers of the CH₄ and N₂O balance in this type of systems, as the amount and type of ancillary data is rather limited and restricted to the wet season sampling, the dataset is valuable and merits publication – but I strongly agree with Reviewer #1 that it is crucial that the full data are made available in digital form, there is little point in collecting these data and leaving a legacy of just average or mean values in a summary Table.

C1

My comments and suggestions are relatively minor and should be straightforward to incorporate.

-Title: I find the title a little awkward, the ‘riverine source of tropospheric CH₄ and N₂O’ is somewhat misleading as the paper does not focus on budgeting sources of tropospheric CH₄ and N₂O, it looks at CH₄ and N₂O exchange (source, or sink in some cases for N₂O) between surface waters and atmosphere. I suggest to rephrase the title.

-L19-20: ‘predominantly supersaturated’: with an average of 100% saturation, why call this ‘predominantly oversaturated’ ?

-L22: The abbreviation ROC is used here for the first time – spell it out here.

-L32-33: awkward sentence, not clear what the authors are trying to say here (‘was coincident with’)

-L70: what do you mean with ‘seasonal emissions’ ?

-L124: inoculated: poisoned

-L240-264: I suggest deleting this entire section, not relevant for freshwater systems as pointed out by Reviewer #1.

Interactive comment on Biogeosciences Discuss., doi:10.5194/bg-2016-404, 2016.

C2