#Associate editor's comments

Dear authors,
thank you for the revised version of your MS. I believe it is now of the quality required for publication, although I think reference to the paper of Deirmendjian et al. 2019 https://doi.org/10.1016/j.scitotenv.2019.01.152 could be helpful for the interpretation of your data at some places in the discussion, as it provides some additional insights on the transfer mechanisms of CO2 and CH4 from groundwaters to first order streams in crops and forest ecosystems. Please tell me if my suggestion is relevant or not, so we can complete the editorial process.
With best regards
Gwen Abril, BG associate editor

Response: Thank you for your overall comment and the reference suggestion. It was beneficial to explain some of our GHG seasonal trends in forested and cropland catchments, and we have now included them in the revised version.

"The decline in CO_2 concentrations in summer was most apparent at the non-forested stream sampling points, with higher canopy cover in the forested areas likely limiting *in situ* stream photosynthesis due to shading effects. These non-forested sites also had higher instream dissolved inorganic nitrogen concentrations, nutrient conditions previously shown to favor macrophyte photosynthetic uptake of CO_2, resulting in lower *in situ* stream CO_2 concentrations (Deirmendjian et al., 2019)."

"The high GHG emissions of streams and ditches in agricultural and settlement areas are likely due to elevated hydrological inflow (e.g., via groundwater and interflow) of nitrogen and labile carbon (e.g., Lambert et al., 2017; Deirmendjian et al., 2019; Mwanake et al., 2019) or terrestrially originating dissolved GHGs linked to lower vegetation cover compared to forested catchments (e.g., Deirmendjian et al., 2019; Mwanake et al., 2022). This interpretation could be supported by the significant positive relationships that we found between percentage agriculture and stream CO_2, CH_4, and N_2O, as well as nitrate concentration and a positive trend for DOC (Figure 5)."