

Effects of ecosystem modifiers on greenhouse gas fluxes

Two-day course including lectures, student presentations and an interactive workshop.

Lecturers: Prof. dr. Leon Lamers and dr. Sarian Kosten from Radboud University, The Netherlands

Learning objectives:

After this course, the students will have improved:

- Knowledge about aquatic biogeochemistry;
- Knowledge about the effect of ecosystem modifiers on greenhouse gas emissions;
- Critical reading of scientific papers;
- Scientific presentation skills in English;
- Discussing science skills.

Preparation:

Some species have the capacity to strongly modify the functioning of ecosystems, which may include effects on greenhouse gas fluxes. We ask you to send in two papers to the class dealing with the impact of ecosystem modifiers on greenhouse gas emissions. Please follow the next steps:

1. Pick an organism of your choice (can be anything ranging from macroinvertebrates and zooplankton to plants and fish).
2. Pick key-words that you will use to find a paper regarding that organism and its relation to greenhouse gas emissions, note down these key-words. Be creative here, and think of different greenhouse gasses and different processes that may be influenced by your organism of choice.
3. Use a search engine like web of science or google scholar to look for papers on this topic and by scanning the titles and the abstracts pick a paper that appeals to you. If at this point there are no papers that appeal to you, you can start again from step 1 or 2.
4. You do not need to read the entire paper, you will have time for that during the course. Please send the papers **before November 4th 12:00** to l.lamers@science.ru.nl and s.kosten@science.ru.nl. In the rare event your papers overlap with those of others, we may ask you to search for others.

We are very much looking forward to see you in this course. Please do not hesitate to attend even if you are not confident in speaking English!

Warm regards,

Leon and Sarian

Schedule:

Day 1: November 5th 2018

9:30 - 11:00

- Personal introduction of students and lecturers
- Lecture: General introduction in biogeochemistry (LL)

13:30 - 16:00

- Lecture: Effects of ecosystem modifiers on greenhouse gas fluxes (SK)
- Reading: paper of your choice on ecosystem modifiers and greenhouse gas fluxes, with opportunity to ask questions

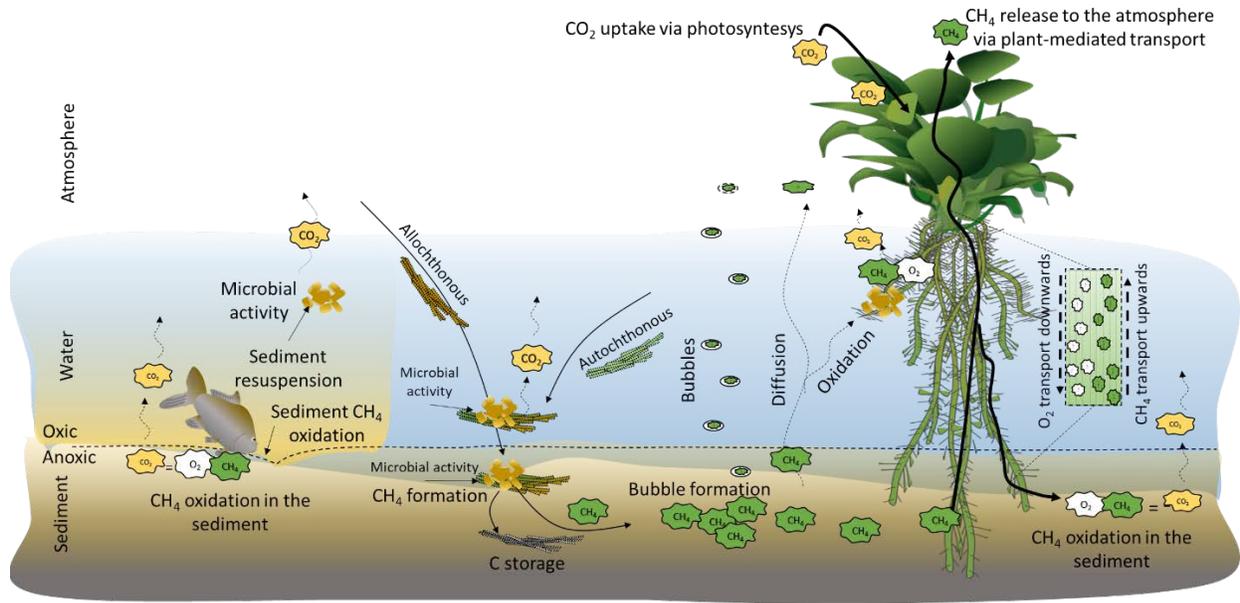
Day 2 November 6th 2018

9:30 - 11:00

- Student present the paper of their choice. Each approximately 10 minutes with time for discussion after each presentation.
Issues to address after a short introduction: 1) Research question; 2) Methods; 3) Results and Discussion; 4) Reflection: Critical notes regarding research/paper set-up, possible points for improvement, questions you may have, discussion points you want to bring up.

13:30 - 16:00

- Continuation of presentations (if not finished)
- Discussion on the importance of ecosystem modifiers for the regulation of greenhouse gas emissions in comparison with other drivers.
 - Can we answer this question quantitatively?
 - Can we add new processes to the ones depicted below?



Carbon cycling in a freshwater system and the processes influenced by ecosystem modifiers (Sobreira Oliveira Junior 2018).

References:

Sobreira Oliveira Junior, E. 2018. Digging in shallow waters: Effects of ecosystem modifiers on greenhouse gas fluxes. [SI: sn].