

Peer Review Report

Review Report on Organic carbon burial in constructed ponds in southern Sweden

Original Research, Earth Sci. Syst. Soc.

Reviewer: Peter Gilbert

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Article DOI: 10.3389/esss.2023.10061

EVALUATION

Q 1 Please summarize the main findings of the study.

The authors have investigated sediment carbon concentrations and calculated carbon stocks from 6 small ponds in southern Sweden. The authors found carbon stocks and accumulation in range with other literature.

Q 2 Please highlight the limitations and strengths.

The study is currently topical and the data collected would be of use to the wider scientific community working in this field. However, the poor consistency in the reporting of the results throughout the manuscript undermines the discussion and conclusions (see below for details)

Q 3 Please comment on the methods, results and data interpretation. If there are any objective errors, or if the conclusions are not supported, you should detail your concerns.

The methods employed in this study are in line with those used in other studies, however, further clarification on some points would have added to the manuscript (see detailed report for details). Throughout the paper the consistency and accuracy of reporting the results is rather poor. Reporting of the results is basic with rarely any min-max or standard deviation reported. There is no statistical analysis at all, leaving the results/discussion lacking in justification. The figures are of poor quality, with no explanation of what error bars show, inconsistent units with comparable results in the text, and moreover, the reported results often do not match the values shown in the figures. As such, I was frequently questioning where reported values came from, and subsequently had little confidence in the results/discussion. While I do not believe this was intentional of the authors, it makes it difficult for a reviewer to validate the authenticity of the findings, and I do not believe this is of a high enough standard for publication without substantial alterations to the results and discussion.

Q 4 Check List

Is the English language of sufficient quality?

Yes.

Is the quality of the figures and tables satisfactory?

No.

Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes.

Are the statistical methods valid and correctly applied? (e.g. sample size, choice of test)

No.

If relevant, are the methods sufficiently documented to allow replication studies?

No.

Are the data underlying the study available in either the article, supplement, or deposited in a repository? (Sequence/expression data, protein/molecule characterizations, annotations, and taxonomy data are required to be deposited in public repositories prior to publication)

No.

Does the study adhere to ethical standards including ethics committee approval and consent procedure?

No.

If relevant, have standard biosecurity and institutional safety procedures been adhered to?

Not Applicable.

Q 5 Please provide your detailed review report to the editor and authors (including any comments on the Q4 Check List):

See attached document

QUALITY ASSESSMENT

| | | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|
| Q 6 Originality | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q 7 Rigor | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q 8 Significance to the field | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q 9 Interest to a general audience | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q 10 Quality of the writing | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Q 11 Overall quality of the study | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |