

UHI Research Database pdf download summary

Carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment

Howe, John; Austin, William

Published in:
EGU General Assembly

Publication date:
2016

Publisher rights:
© Author(s) 2016. CC Attribution 3.0 License

The re-use license for this item is:
CC BY

The Document Version you have downloaded here is:
Publisher's PDF, also known as Version of record

[Link to author version on UHI Research Database](#)

Citation for published version (APA):

Howe, J., & Austin, W. (2016). Carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment. *EGU General Assembly*, 18, 14043.
<http://adsabs.harvard.edu/abs/2016EGUGA..1814043H>

General rights

Copyright and moral rights for the publications made accessible in the UHI Research Database are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights:

- 1) Users may download and print one copy of any publication from the UHI Research Database for the purpose of private study or research.
- 2) You may not further distribute the material or use it for any profit-making activity or commercial gain
- 3) You may freely distribute the URL identifying the publication in the UHI Research Database

Take down policy

If you believe that this document breaches copyright please contact us at RO@uhi.ac.uk providing details; we will remove access to the work immediately and investigate your claim.



Carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment

John Howe and william austin

Scottish Association for Marine Science, Biogeochemistry and Earth Science, Oban, United Kingdom
(john.howe@sams.ac.uk)

The role of marine ecosystems in storing blue carbon has increasingly become a topic of interest to both scientists and politicians. This is the first multidisciplinary study to assess Scotland's marine blue carbon stores, using GIS to collate habitat information based on existing data. Relevant scientific information on primary habitats for carbon uptake and storage has been reviewed, and quantitative rates of production and storage were obtained. Habitats reviewed include kelp, phytoplankton, saltmarshes, biogenic reefs (including maerl), marine sediments (coastal and shelf), and postglacial geological sediments. Each habitat has been individually assessed for any specific threats to its carbon sequestration ability. Here we present an ecosystem-scale inventory of the key rates and ultimate sequestration capacity of each habitat. Coastal and offshore sediments are the main repositories for carbon in Scotland's marine environment. Habitat-forming species on the coast (seagrasses, saltmarsh, bivalve beds, coralline algae), are highly productive but their contribution to the overall carbon budget is very small because of the limited extent of each habitat. This study highlights the importance of marine carbon stores in global carbon cycles, and the implications of climate change on the ability of marine ecosystems to sequester carbon.