Geophysical Research Abstracts
Vol. 19, EGU2017-19279, 2017
EGU General Assembly 2017

Long term net gains in coastal blue carbon stocks: A search for terrestrial drivers?

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Peat and Organic soils covers nearly 66% of Scotland, representing over 50% of the UK's soil carbon stocks. Natural processes such as peatland erosion are accelerated by human activities, such as land management and potentially by the impacts of climate change. We present evidence from the isle of Shetland's west coast voes (sea lochs or fjords) to suggest this process may have accelerated since medieval times. This work is supported by the analyses of short sediment Craib cores (triplicate coring) recovered from 17 sites. We present preliminary chronologies supported by radiocarbon dating and sediment characteristics that highlight both changes in the rate of accumulation and source of sedimentary organic carbon to the west coast Shetland voes during the late Holocene. Scottish coastal sediments contain a significant blue carbon stock, a significant proportion of which derives directly from terrestrial sources. The loss of peatland carbon represents a potentially important contribution (i.e. net gain) in refractory carbon within the marine environment and we present preliminary estimates to assess the significance of these large scale transfers and the subsidy of carbon to the coastal ocean.