Scottish Greenhouse Gas Statistics

Future revisions to data associated with the incorporation of the IPCC Wetlands Supplement (2013)

Introduction

1. The purpose of this paper is to prepare users of the Scottish Greenhouse Gas Statistics[1] publication for some major revisions to previous estimates that will affect the publication in its next release in June 2021.

2. As many users will be aware, for a number of years preparations have been made for a fundamental change in the scope of official statistics on emissions for all parts of the UK. These changes are being made in response to the implementation into the UK inventory of Intergovernmental Panel on Climate Change (IPCC) 2013 wetlands supplement[2] to the 2006 guidance on the compilation of greenhouse gas emissions data.

3. This change in scope relates to additional emissions, not previously included in the GHG inventories, associated with the historical drainage and rewetting of peatlands and the impact that such activity has had, and continues to have, on the level of net GHG emissions.

4. Since the publication of the IPCC wetlands supplement, a programme of research has been undertaken by UK Government to consider how these new emissions can be measured appropriately. This culminated in the publication of a scientific report in 2019[3] on the upcoming implementation of wetlands to the GHG inventory.

5. The results of this report have been used internally within the Scottish Government for modelling and other activities in support of climate change planning. However, UK Government research on this topic continued to be improved upon after this report was published.

6. On 02 February 2021, the Department for Business, Energy and Industrial Strategy (BEIS) released estimates of UK GHG emissions for the period 1990-2019 which included the final results of the programme of research into the additional wetlands emissions and the implementation of these into the UK inventory. As a result of this, the Scottish Government is now in a position to advise users on the expected specific impact of this change on the previously published Scottish GHG emissions statistics for the period 1990-2018.

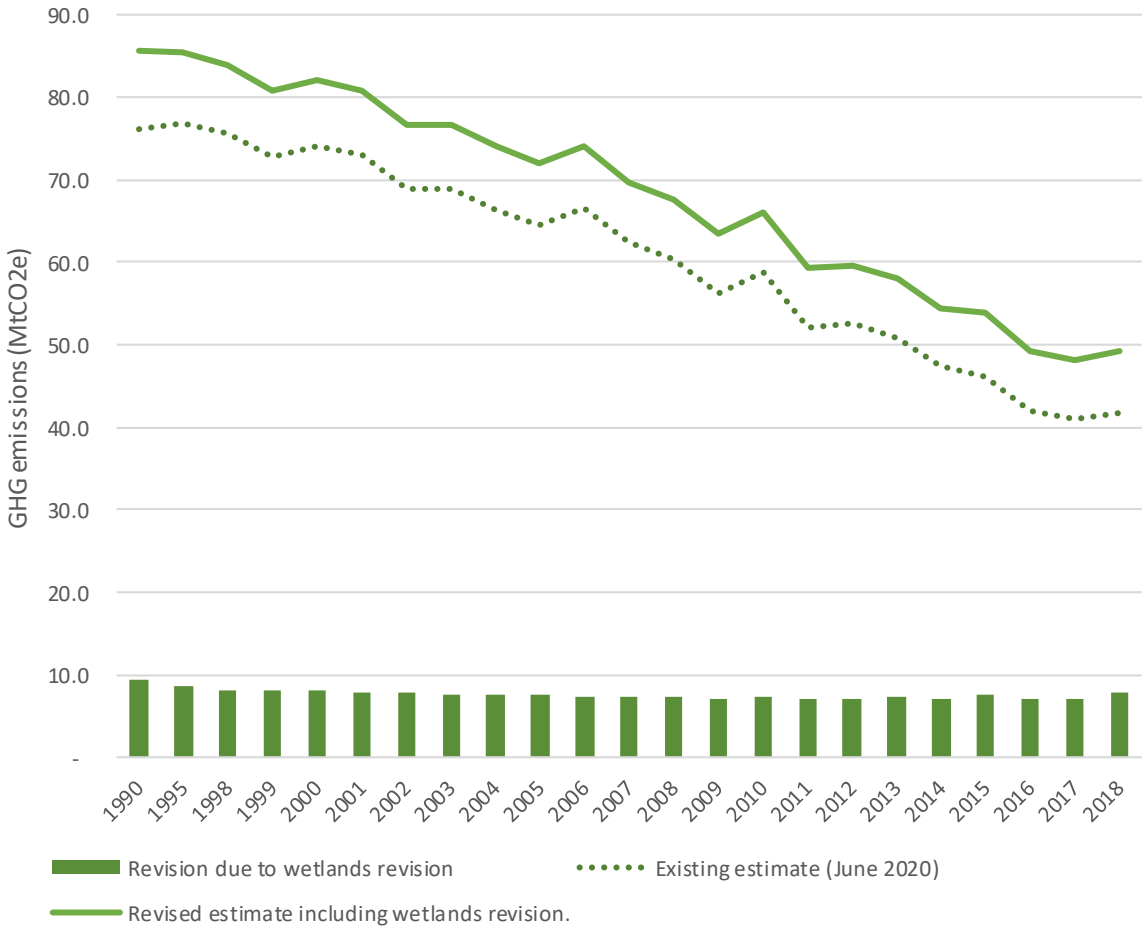
7. The final figures will be published in June 2021, and users should be aware that other inventory revisions always remain a possibility.

[1] https://www.gov.scot/publications/scottish-greenhouse-gas-emissions-2018/
[2] https://www.ipcc-nggip.iges.or.jp/home/docs/wetlands/Wetlands_Supplement_precopyedit.pdf
[3] http://uk-air.defra.gov.uk/reports/cat07/1904111135_UK_peatland_GHG_emissions.pdf

Impact of the inclusion of wetlands changes on the Scottish GHG emissions statistics.

8. Chart 1 below shows the expected impact of the finalised wetlands changes if they were to be applied to the last published statistics on total Scottish GHG emissions, covering the period 1990-2018. All units are presented in million tonnes of carbon dioxide equivalent.

CHART 1 - REVISION TO TOTAL SCOTTISH GHG EMISSIONS (1990-2018)

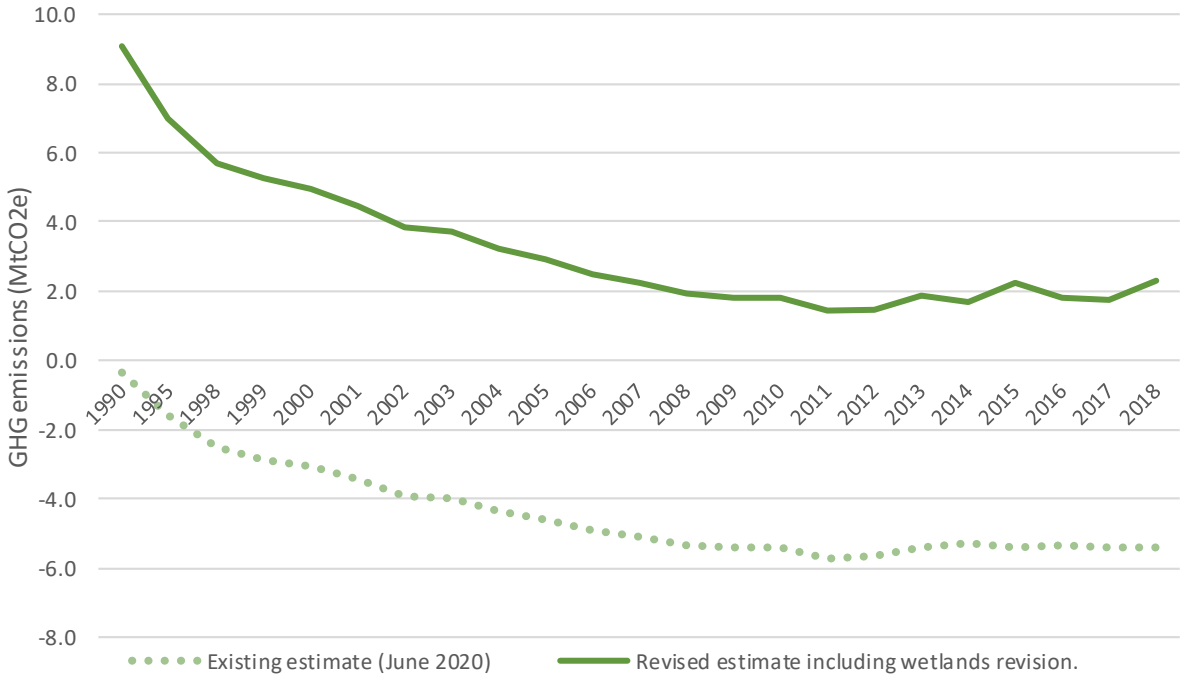


9. The addition of these additional wetlands estimates results in a substantial increase in emissions for all periods. The largest expected increase in emissions is shown in 1990 where an additional 9.4 MtCO2e is added to previously-published estimates in which they rise from 76.2 MtCO2e to 85.6 MtCO2e.

10. Following 1990, there is a general reduction in the expected scale of revision until 2014 when 7.0 MtCO2e would be added to previous estimates before increasing again to an additional 7.7 MtCO2e in the latest year (2018).

11. Chart 2 below isolates these changes by concentrating solely on the effect of this revision on the Land-Use, Land-Use Change, and Forestry (LULUCF) category in the greenhouse gas emissions statistics.

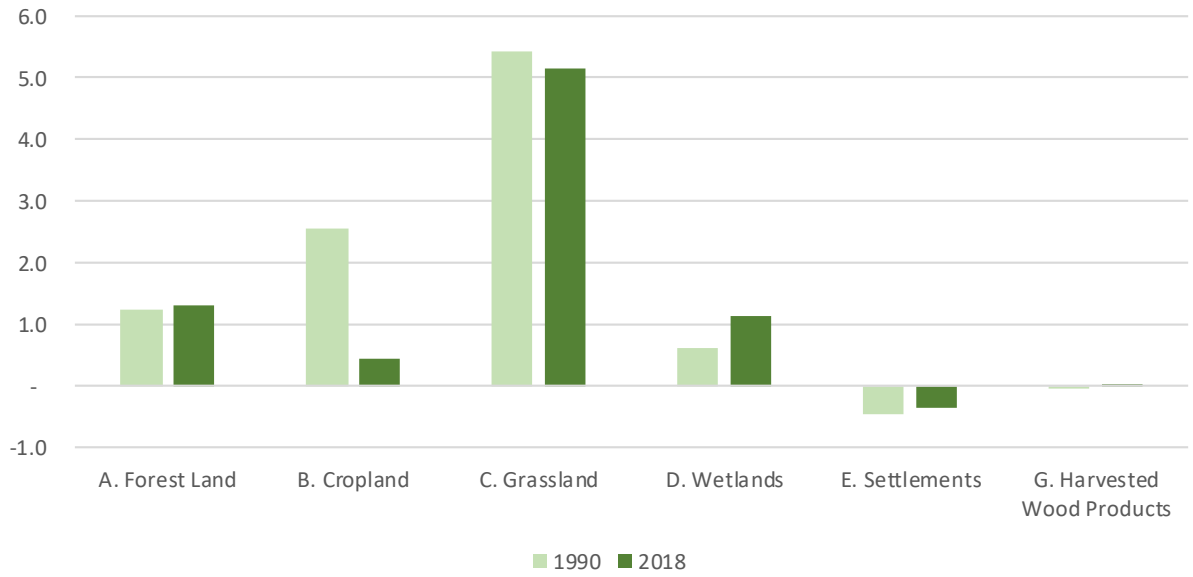
CHART 2 - REVISION TO NET LULUCF EMISSIONS (1990-2018)



12. Chart 2 shows that the LULUCF sector in Scotland, as currently published, is a net carbon sink for all periods. Upon the incorporation of these new estimates for wetlands, LULUCF is expected to become a substantial net carbon source for all periods.

13. Chart 3 below shows the anticipated impact of these changes to the individual components of the LULUCF sector in the latest year (2018).

CHART 3 – REVISION TO COMPONENTS OF THE LULUCF SECTOR IN 1990 AND 2018



14. The expected impact on individual components of the LULUCF sector is largely common to all years. The majority of the total wetlands revision (+7.7 MtCO2e) in the latest year is associated with the historical drainage of peatlands to form grasslands (+5.2 MtCO2e) which is generally used for the grazing of animals.

15. In 1990, historical drainage of peatlands to form cropland is expected to have a substantial impact upon previously published statistics, increasing by 2.6 MtCO2e. However, by 2018, this revision will lessen to 0.4 MtCO2e of additional emissions.

16. The use of historic peatlands for forestry is expected to add an additional 1.3 MtCO2e of emissions to the Scottish GHG inventory in 2018 when compared to the existing calculation of afforested organic soils.

17. The existing inventory already included emissions associated with the extraction of peat for a limited number of purposes including fuel-use and horticultural purposes – labelled "Wetlands" in the chart above. Under this revised treatment, net emissions will be raised by 1.1 MtCO2e in 2018.

18. Land use for settlements will show a consistent reduction of 0.4 MtCO2e against previous estimates for all years.

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