Effect of Heather Brash Cutting on Bog Vegetation Quality

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Fig 1: Brash spread on bare peat following gully reprofiling

Introduction

- Bare peat on moorland can increase CO_2 released into atmosphere and increase particulate and dissolved organic carbon in water courses[1]
- Heather brash is used to stabilise bare peat and aids its revegetation[2]
- Concerns about effects of brash cutting on bog vegetation quality

Aim: to assess effect of cutting on quality

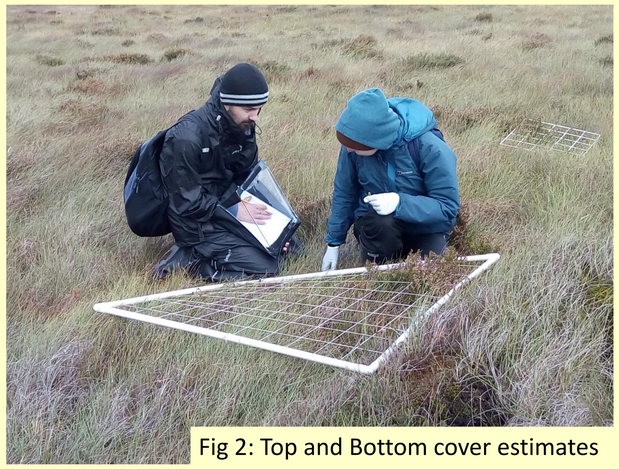

Fig 2: Top and Bottom cover estimates

Methods

- In Feb 2018, M18 (*Erica tetralix-Sphagnum papillosium* raised and blanket mire) NVC vegetation community on Lampert Moss, SSSI in Northumberland National Park was cut for brash
- Sept 2018: 6 1m^2 quadrats divided into 100 10cm^2 cells located on cut and adjacent uncut area
- Pin dropped in centre of each cell – first and last species pin hit were recorded (top and bottom cover)
- Wet Bog Quality Index (WBQI) ecological index calculated for each quadrat for top and bottom cover[3]
- The WBQI was divided by 200 to give a value between -1 & 4 where 4 is high quality

Results

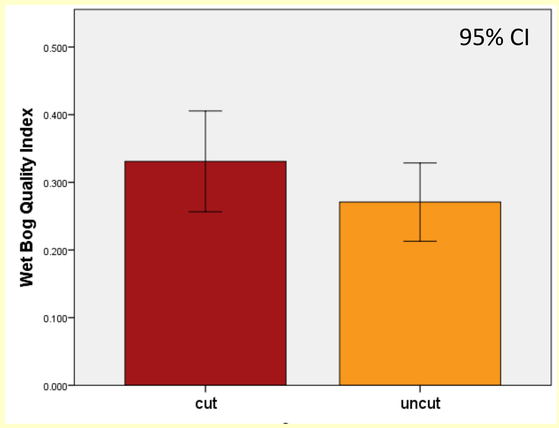

Fig 3: No significant difference between quality on the cut compared with the uncut bog, though trend suggests cut may improve quality slightly

Fig 4: Area recently cut for brash on Lampert Moss - Spring

Discussion

- Cutting may reveal species that score more highly in the WBQI e.g. *Sphagnum*
- Reduction of the dominant layer may favour less competitive species e.g *Sphagnum*[4]
- Will be repeated in subsequent years

Conclusion: No evidence of damage to vegetation to date

Fig 5: Same area as Fig 4 - Autumn

References

1.Stimson A, Allott T, Boult S, Evans M, Pilkington M, & Holland N. (2017) Water quality impacts of bare peat revegetation with lime and fertiliser application. *Applied Geochemistry,* **85**, 97-105; 2. Parry L, Holden J, Chapman P. (2014) *Journal of Environmental Management* **133** 193-205; 3. O' Reilly. J., (2015), Design of a vegetation monitoring scheme for the Border Mires: A report for Natural England. UK. 4. Malmer N, Svensson B, and Wallén B. (1994) Interactions between Sphagnum mosses and field layer vascular plants in the development of peat-forming systems. *Folia Geobot. Phytotax Praha* **29**: 483–496.