

The effect of drought on moorland fire severity

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INTRODUCTION

Summer drought is projected to become more common in the UK, which may lead to increased fire severity.

OBJECTIVES

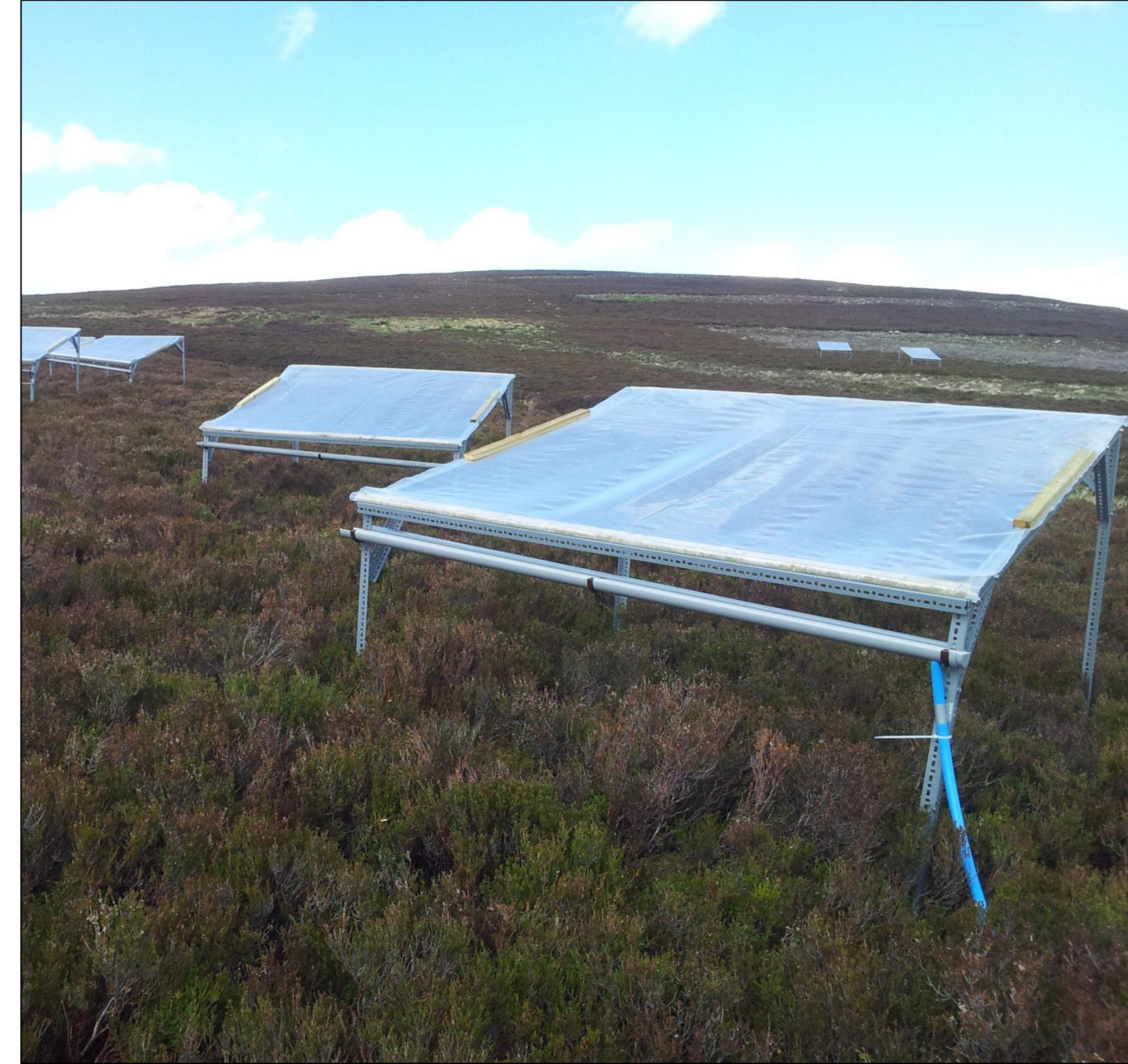
This project aims to study:

- Changes in **fire severity** between treated (rainfall deprived) and control plots.
- The effect of drought on **fuel moisture content**.
- The effect of differences in fire severity on **vegetation regeneration**.
- The effect of differences in fire severity on **peat carbon dynamics**.

EXPERIMENTAL SITES



METHODOLOGY



Drought shelters were used to simulate summer drought, lowering fuel moisture content.



Smouldering observed for extended periods in locations covered by drought shelters.

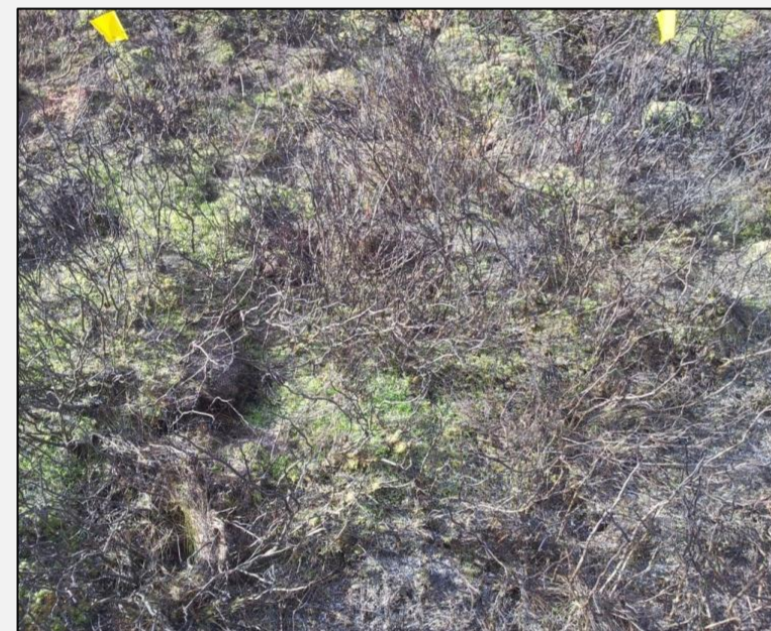
RESULTS

DRY HEATH

WET HEATH

Control

Control



Drought

Drought



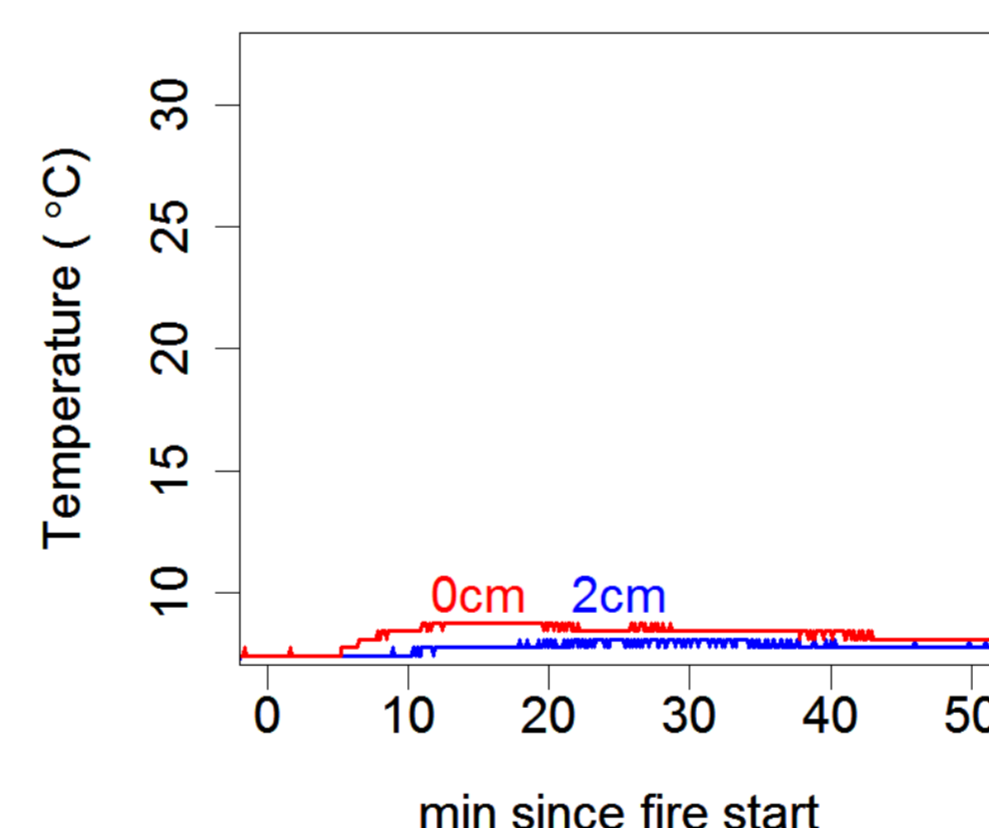
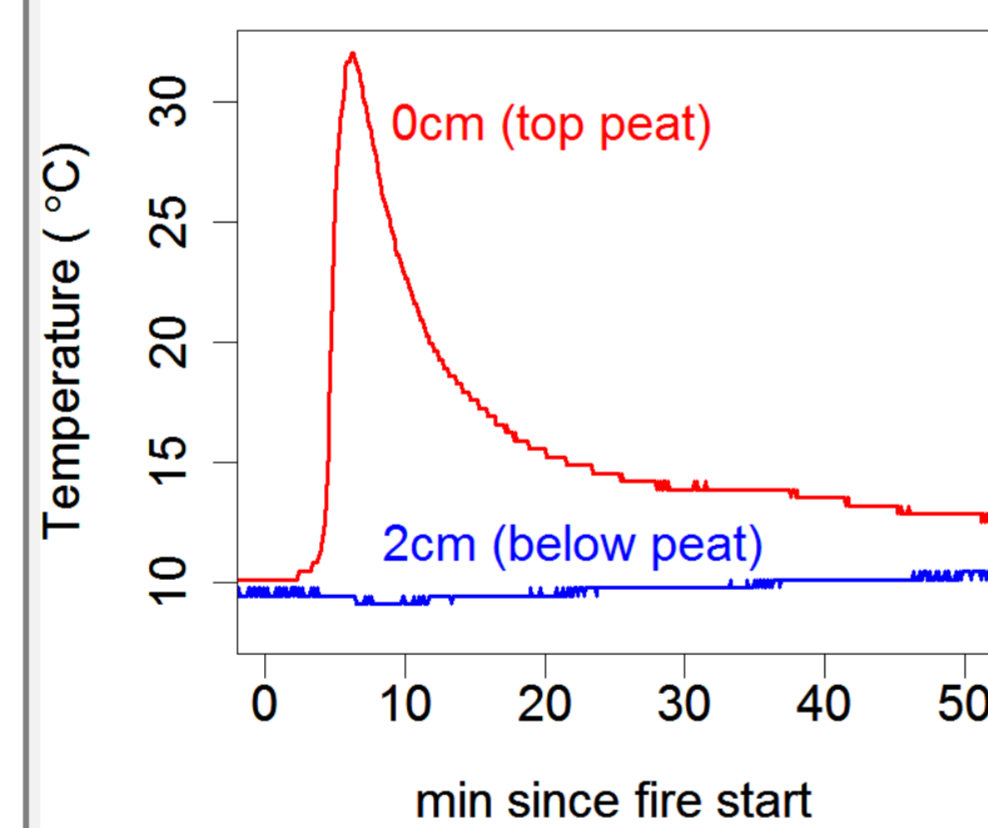
Moss consumption was intensified in plots covered by drought shelters, except for Sphagnum mosses.

DRY HEATH

WET HEATH

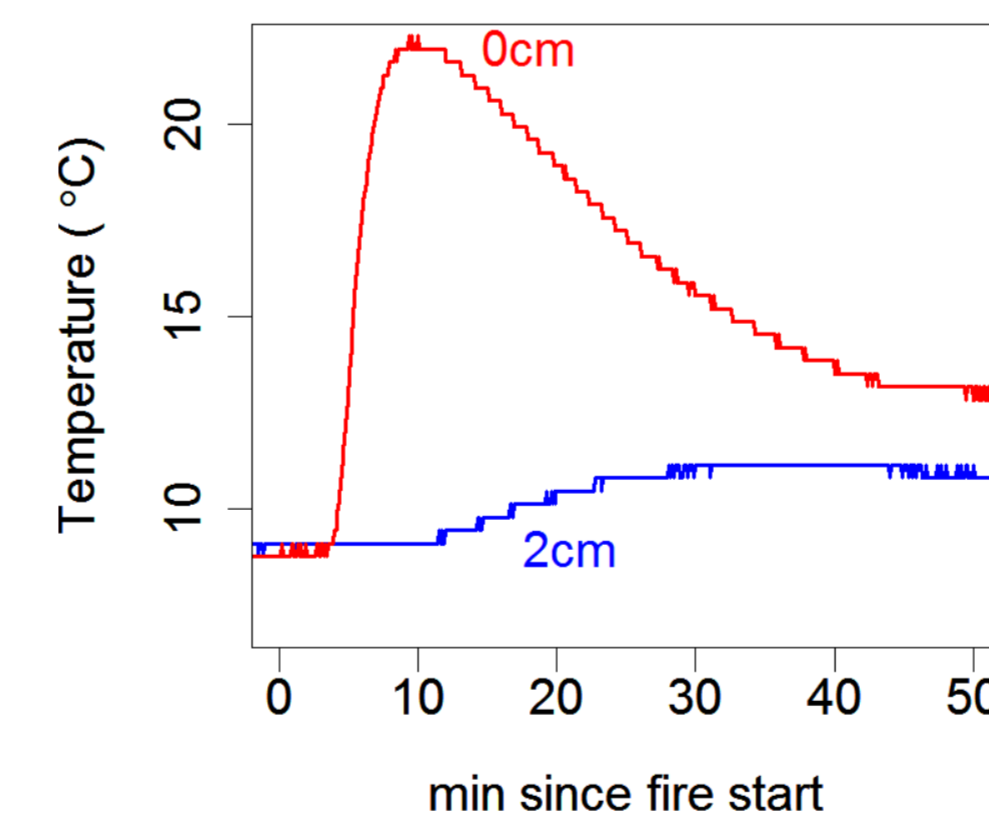
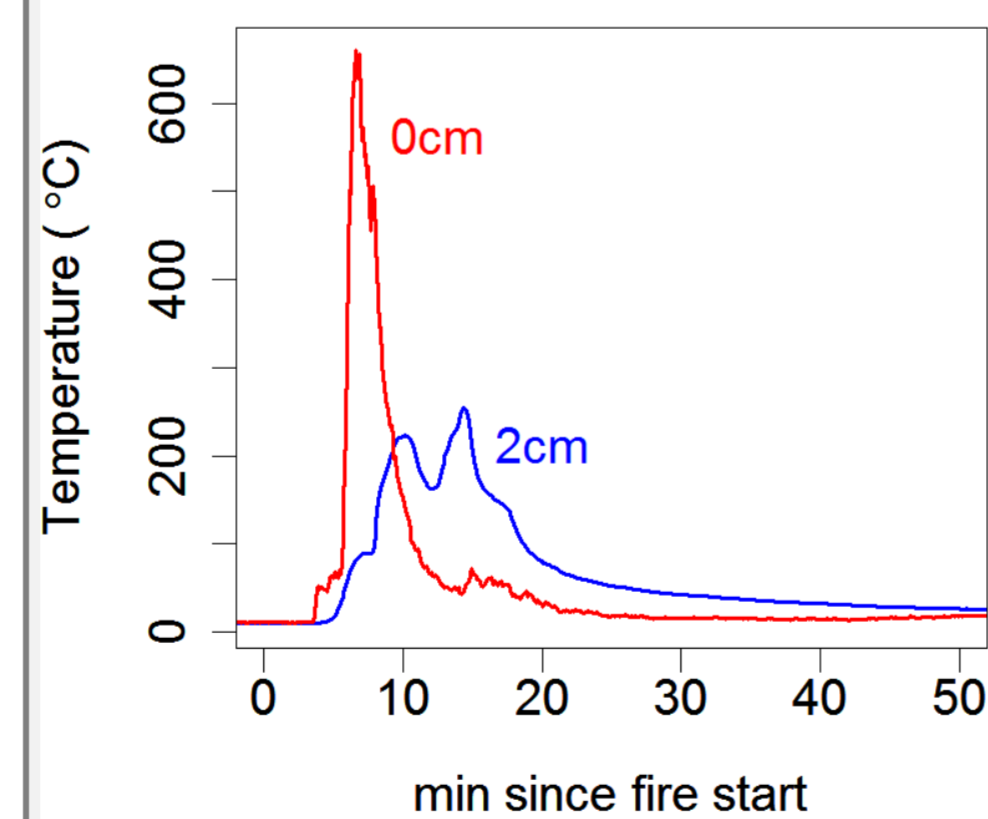
Control

Control



Drought Treatment

Drought Treatment



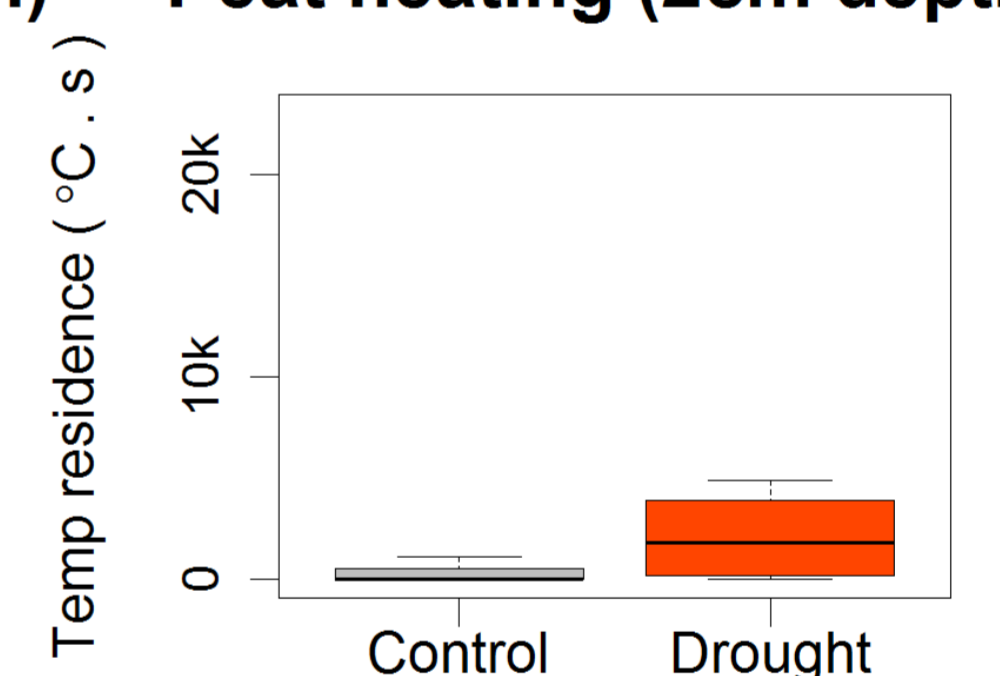
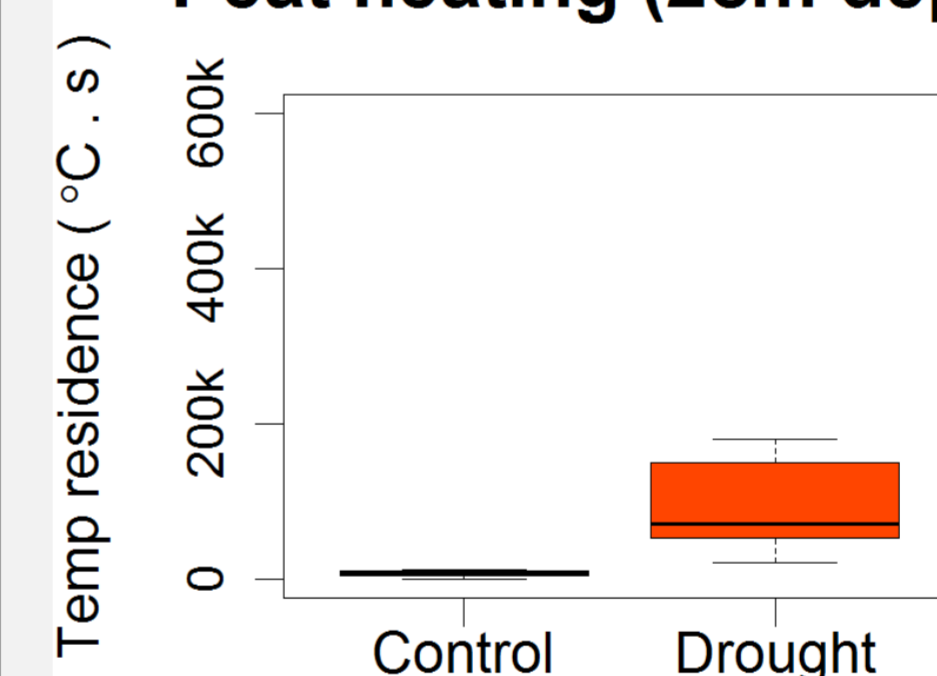
Higher temperature pulses during fire both at the top of the peat and 2cm below.

DRY HEATH

WET HEATH

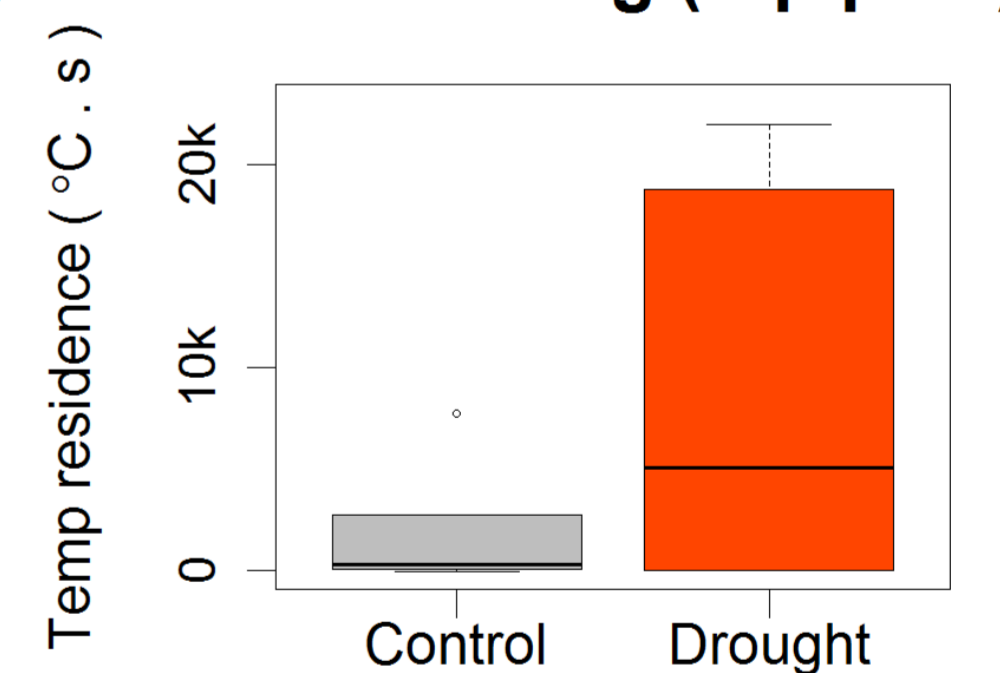
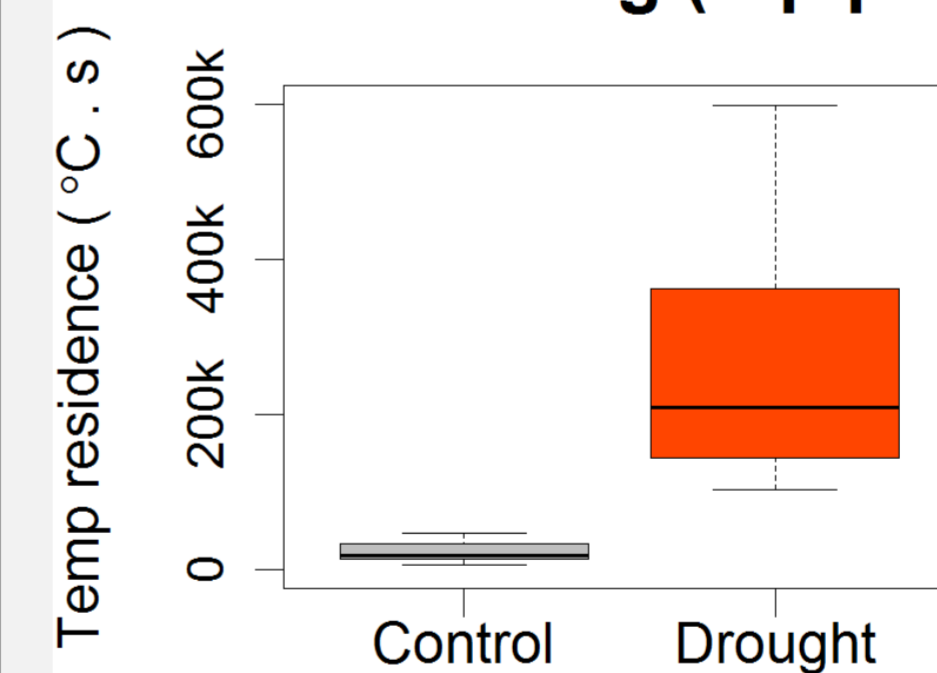
Peat heating (2cm depth)

Peat heating (2cm depth)



Peat heating (top peat)

Peat heating (top peat)



Fire severity (as temperature increase and residence time) was significantly higher on drought treated plots.

SUMMARY

Our results show that summer drought lead to a significant increase in peat heating and moss consumption. The rise in fire severity is of a greater magnitude in dry heaths than in wet heaths. Further monitoring will be carried out to assess the impact of more severe fires on vegetation regeneration and peat carbon dynamics.