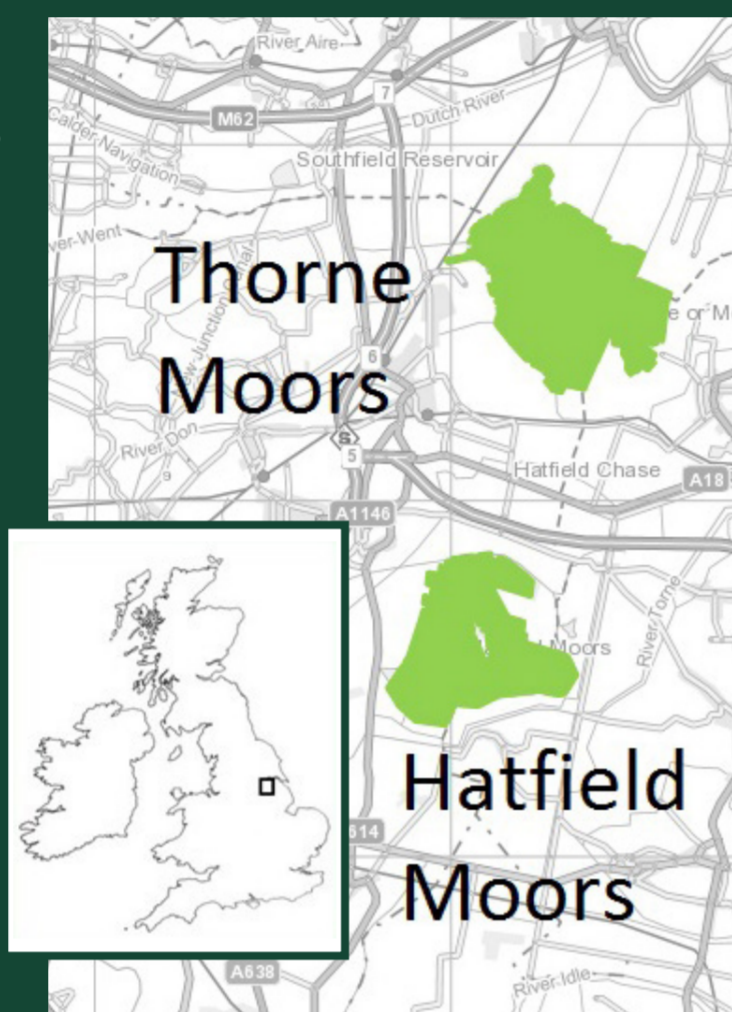




# Monitoring bog restoration on the Humberhead Peatlands LIFE project

## Introduction

- 4-year LIFE project (2014-18), across 2 sites, on the Humberhead Peatlands National Nature Reserve (NNR).
- England's largest complex of lowland raised bog (c. 3,300 ha).
- Designated as Special Area for Conservation (degraded raised bog) and Special Protection Area (European Nightjar).
- Restoration aim 1: to stabilise water levels at  $\pm 20$ cm of ground surface, using contoured peat bunding, dams, tilting weirs and a new pumping station.
- Restoration aim 2: to reduce evapo-transpiration losses of water and allow mire vegetation to recover, by clearing (and preventing regeneration of) 560ha of rhododendron and birch scrub.

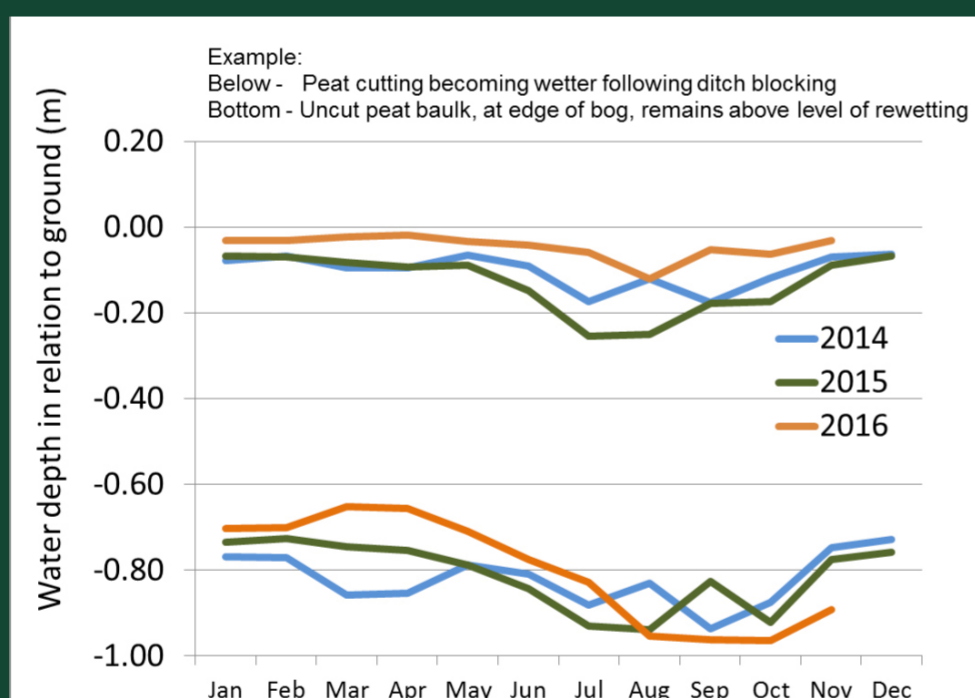


## Vegetation

- Paired 'control' and 'scrub clearance' plots at 8 sites to distinguish effects of scrub removal and water level changes.
- Assessed cover of positive and negative mire associated plants winter 2015 / 16 and autumn 2017.

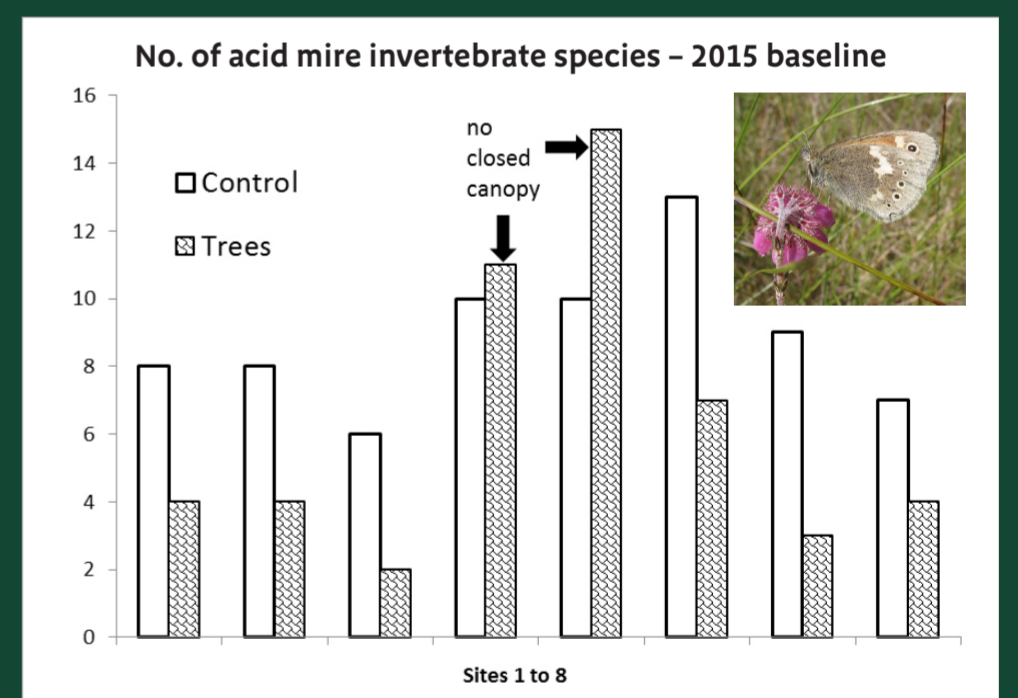
## Water levels

- Baseline monitoring across 27 boreholes, using In-Situ TROLL 100 data-loggers.
- Water monitoring network expanded to 70 stations in winter 2016 / 17.



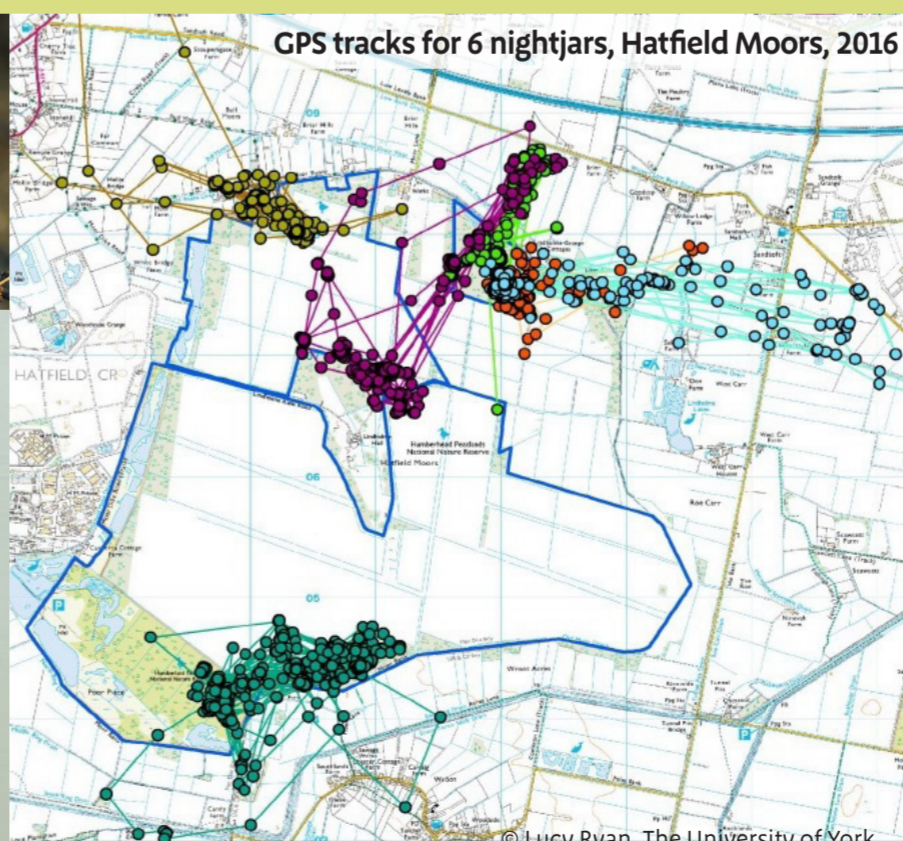
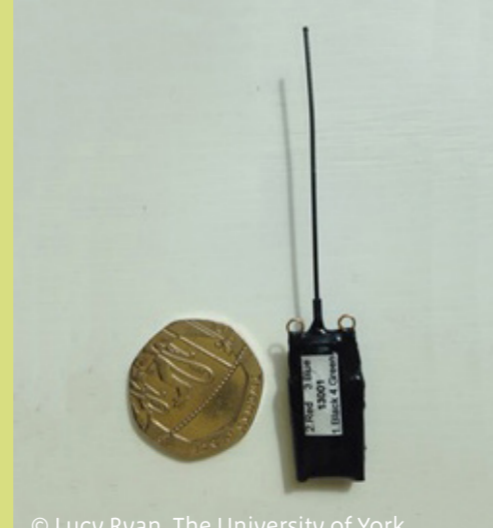
## Invertebrates

- Assemblage of acid mire invertebrates (beetles, spiders, flies) studied by pitfall and water trapping at 8 sites.
- Before scrub clearance (2015 baseline), fewer acid mire species at sites with tree cover – but sites without closed canopies had higher numbers compared to controls.



## European Nightjar (*Caprimulgus europaeus*)

- The Humberhead Peatlands hold >1% of the UK population, 80-90 pairs - determined by census of 'churring' males.
- Monitoring how nightjar population responds to increased nesting habitat and re-vegetation of exposed peat surfaces.
- Nightjar nesting and foraging behaviour studied using GPS satellite tags (n= 30 birds, 2015-17), recording every 3 mins at night, and by radio telemetry (n=13, 2017).
- Further information:  
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## Cultural Ecosystem Services

- Measured via questionnaires and visitor-employed photography.
- Cultural activities translated into CES values, e.g. educational, recreational, social, spiritual, therapeutic.
- Values mapped onto environmental features on the peatlands to forecast effects of restoration.

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