Small mammal trapping at Tubney Fen, Cambridgeshire

In March 2026, by kind permission of The National Trust, a live trapping survey of small mammals was carried out at Tubney Fen nature reserve. Tubney Fen is owned by The National Trust and is located along the west bank of Reach Lode either side of the National Cycle Route. It consists of contrasting habitats, including grazed and un-grazed compartments. See appendix 2.

The aim of the survey was to illustrate the impact of grazing on small mammal populations and to compare presence or absence across two different areas of managed and un-managed vegetation. The areas chosen for the survey were: A) Compartment 300, an enclosed, 3 hectare un-grazed field in transition from fen grasses and reed beds to Elder car (fen on which bushes and trees grow). B) Compartment 301 an enclosed, 8.5 hectare grazed field of short grasses with a central water logged marsh. Compartment 301 is grazed by domestic cattle at a density of 0.25 cows per hectare from May to October every year. You are referred to (Schmidt, Olsen, Bildsoe, Sluydts and Leirs 2004) for a detailed study of the effects of grazing on small mammal populations.

The survey was carried out between Saturday 21st and Tuesday 24th March 2026, by Christopher Smith, a member of The Cambridge Mammal Group. The traps were set on Saturday afternoon at 4pm without pre-baiting and then inspected twice daily until Tuesday morning at 8 am when they were collected after the final results were recorded. During the survey period traps were checked a total of five times, presence or absence of mammals was recorded and traps were replenished with fresh bedding and food where necessary.

Longworth traps were used; the methodology was consistent with the Mammal Society's practical guidance booklet, Live Trapping Small Mammals by J. Gurnell and J. R. Flowerdew. Weather conditions during this period were suitable, air temperatures ranging from 4 to 13.8°C. Records were made of species, weight, sex and reproductive state (males: testes abdominal or scrotal; females: oestrus or diestrus). Bank Voles (*Myodes glareolus*) Field Voles (*Microtus agrestis*) and Wood Mice (*Apodemus sylvaticus*) were marked by fur clipping before release so as to identify recaptures, Common Shrews (*Sorex araneus*) and Water Shrews (*Neomys fodiens*) were not marked.

A total of 40 Longworth traps were set at five meter intervals, in two lines 20 in trap line A and 20 in trap line B. In accordance with the groups protocol each trap was supplied with hay for bedding, casters (fly pupa, *Musca domestica*), carrots and crushed oats for food. Contamination of the site was avoided by not including any seeds that could possibly germinate.

Trap line A Located in compartment 300, consisted of 20 traps 5 meters apart. This line passed through areas of mixed grasses, sward length up to 60 cm, a reed bed and encroaching Elder bushes.
O.S. Grid Ref: TL 563867811 heading south west.
WTW idealist.farmed.fracture

Trap line B Located in compartment 301 consisted of 20 traps 5 meters apart. This line passed from a boundary hedge across the grazed field, sward length up to 15 cm.
O.S. Grid Ref: TL 55741 67674 heading south west.
WTW lengthen.importers.passion

A list of flora along both trap lines was made, see appendix 1.

Results:

Table 1 shows the total numbers of small mammals captured (discounting re-captures for the mice and voles) during the two and a half day survey period:

Table 1:

Trap line A:	**Trap line B**
Wood Mice 2	Wood Mice 1
Field Voles 2	
Bank Voles 5	
Common Shrew 1	
Water Shrew 1	

Both field Voles and one Bank Vole were caught during the day.
Four Bank Voles, the three Wood Mice and both the shrews were caught overnight. The Water Shrew appeared in trap A8 located 78 meters from Reach Load, however it was close to an area of waterlogged ground completely overgrown with a dense reed bed. The single Wood Mouse that appeared in compartment 301 trap B1, was located within 1m of the boundary hedge/scrub and was caught on the last morning. No recaptures were made.

Discussion:

Although capture numbers were low there appears to be a difference in presence and absence of small mammal between the two compartments. Populations of at least five small mammal species are present in the un-grazed compartment; these include Field Voles, Bank Voles, Common Shrews, Water Shrews and Wood Mice. Whereas results indicate a complete absence of small mammals in the grazed compartment, with the exception of the boundary hedge in which one Wood Mouse was observed.
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It has been demonstrated that the abundance and diversity of small mammals can be affected by grazing. This is either due to decreased food availability, decreased soil suitability for building burrow systems due to trampling and increased predation risk in the structurally simpler grazed areas. (Torre, Diaz, Marinez-Padiia, Bonal, Vinuela, Fargallo, (2006)

As can be seen in the lists of plant species, see appendix 1, both compartments appear to support a diverse number of flora. Therefore food availability or quality is unlikely to be an issue for herbivorous small mammals.

Soil compaction was not measured during the survey, however at 0.25 cows per hectare trampling may or may not be significant.

Increased predation risk due to a lack of cover appears to be an issue. The vegetation in compartment 300 has height sward heights up to 60 cm and volume created by layers of dead and decaying plant material that provide a thatch which offers shelter and protection from predators. Compartment 301 however has only short new green growth, sward heights of around 15 cm. This offers little or no shelter to species of small mammals, therefore the higher risk of predation may discourage them from using the area in comparison to compartment 300 with a higher sward height.

I'd like to thank the National Trust for welcoming the Group and particularly Joe Holt the ranger for his assistance. I'd also like to thank the following members of the group for their help with the trapping, Michelle Gault, Jeremy Pustilnik, Clara, Matt West, particularly Emily Skinner for her lists of plant species and Andrew Smith for the maps.

APPENDIX

1.

Plants using DAFOR scale of abundance (D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare)

Un-grazed compartment 300

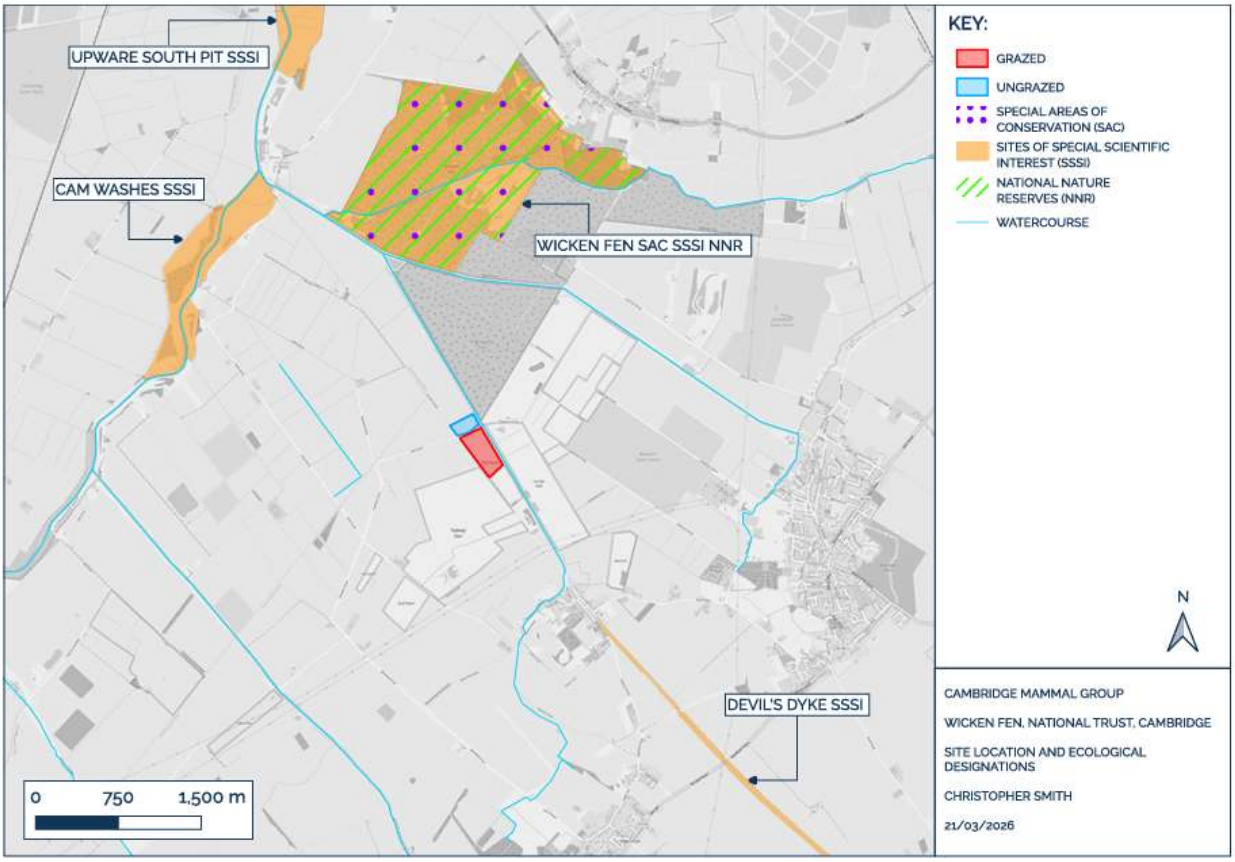
Nettle F
Cocksfoot A
Common reed F
Cleaver F
Elder O
Cocksfoot A
Creeping thistle O
Red dead nettle R
Burdock sp. R
Hogweed R
False oat grass A
Teasel O
Dandelion R
Creeping buttercup R
White dead nettle R
Mugwort R
Comfrey sp. R

Grazed compartment 301

Cocksfoot A
Red dead nettle O
Cow parsley O
Cleavers O
Nettle O
Geranium sp. O
White dead nettle R
Hard rush O
Creeping buttercup R
Mugwort R
Lettuce sp R
Dandelion R
Creeping thistle R
Ground ivy R
Mouse ear R
Fescue sp. O
Rose sp. R
Vetch sp. R
Common field speedwell R
Curled Dock R

2.

Maps showing the location of Tubney Fen and the trap lines.



REFERENCES

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