Can't see the deer for the trees?

Behavioural ecology of fallow deer (*Dama dama*) in a human-altered landscape

Amy Gresham[1], Owain Barton[1], Simon Creer[1], John R Healey[1], Markus P Eichhorn[2], Adam Algar[3], Graeme Shannon[1]
1. Bangor University, UK 2. University College Cork, Ireland, 3. University of Nottingham, UK

Introduction

Deer are an important feature of our landscape. As large herbivores, they influence nutrient cycling, plant species diversity and structure of woodlands[1,2,3]. These effects can scale up to affect woodland wildlife such as birds and invertebrates[4]. Deer populations are expanding in the UK[5].

To manage expanding deer populations better, we need to know more about the decisions they make and how these change throughout the year.

Q1. Which woodlands do the deer prefer?

Q2: What do the deer eat?
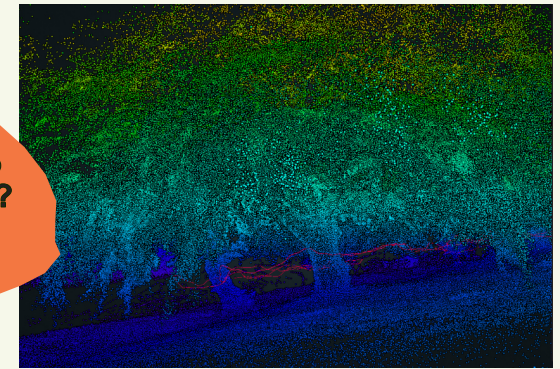
Q3. Does their behaviour change seasonally?

Figure 1: Side view of a point cloud from a scan of a wooded parkland (GeoSLAM). The tree trunks can be discerned from the dense foliage above. The understorey is open with little ground vegetation or lower branches.

Fallow deer in the Elwy Valley, North Wales

1500 deer estimated to be present in the area

100 years since the deer were released from private estates

**10** study woodlands monitored with camera traps

Methods

- Camera trapping to monitor deer activity.
- Identifying diet contents through DNA metabarcoding of deer faeces.
- Surveying woodland understorey structure with Terrestrial Laser Scanning (Figure 1).
- Surveying tree species composition and size structure.
- Surveying seasonal ground flora cover.

Hypotheses

1. Deer activity levels will be higher in woodlands with heterogeneous understorey structure due to good quality shelter and foraging resources. Species composition of the tree community will influence this.

2. Deer activity levels in woodlands will vary with seasonal changes in disturbance, food availability and the reproductive cycle.

3. Grasses will be the main component of the diet, but trees and woodland ground flora will vary in importance with season.

@amygresham48

amy.gresham@bangor.ac.uk
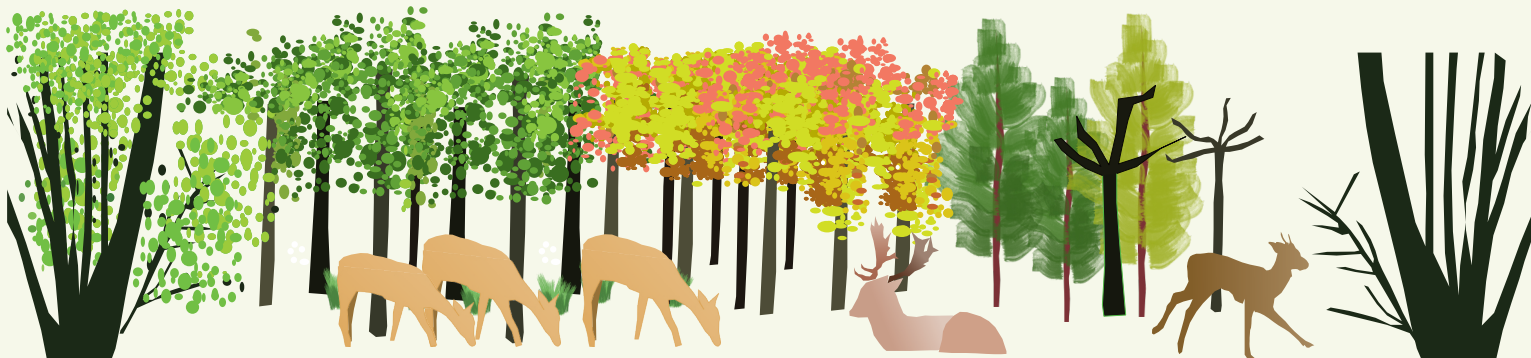
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