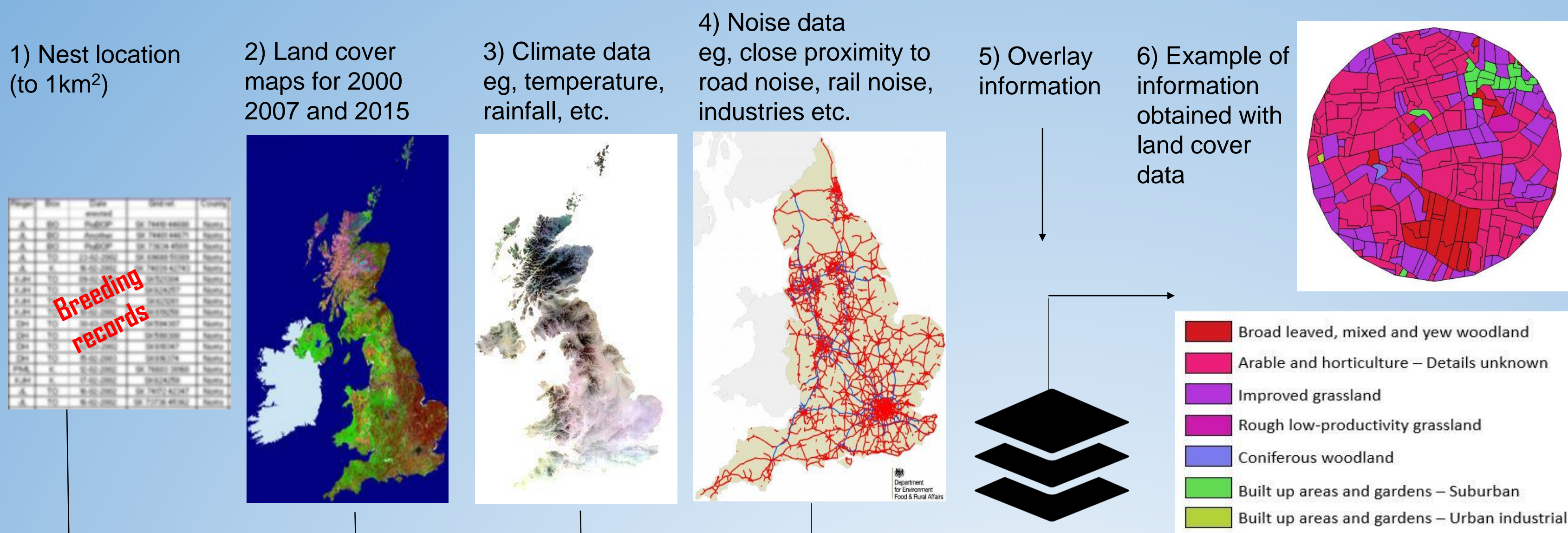


Fitness and breeding performance of raptors in agricultural landscapes

We would be grateful for any of the following data

1 Breeding records - impact of landscape, climate and noise on reproductive success

We would like your permission for BTO to share farmland raptor nest record data and any associated ringing records of both adults and pullus with a special focus on Barn Owls. ***Locations will be recorded to the 1km grid square and will not be published and will remain strictly confidential!***



Breeding performance of farmland raptors will be associated with land use, climatic conditions and noise.

We will determine the effects of land use, climate and noise on site fidelity, reproductive success and fitness of raptors.

2 Moulded feathers – barn owl condition in different landscapes

- Please collect undamaged, moulted **flight and tail feathers (from the current breeding season)** from in and around nest sites, and place them in bags that will be provided. Please label with the associated nest record.

Stress hormones will be analysed from the feathers to determine the impact of long-term stress on breeding performance.

Feather growth bars (alternate light and dark markings denoting 24 hours of growth) indicate the nutritional condition of birds.

Approximate data collection time <1min



3 Pellets – prey in different landscapes

Approximate data collection time <2min



- Please collect reasonably fresh pellets from in and around nest sites, and place them in bags that will be provided. Please label with the associated nest record.
- If there are fresh prey items present in the nest boxes, please weigh (in total), identify and record fresh prey items. For example, one barn owl nestbox had 25 prey items weighing 692g!

By analysing food pellets, prey cache weight, we will identify the prey type and prey requirements of each raptor species with respect to land use.

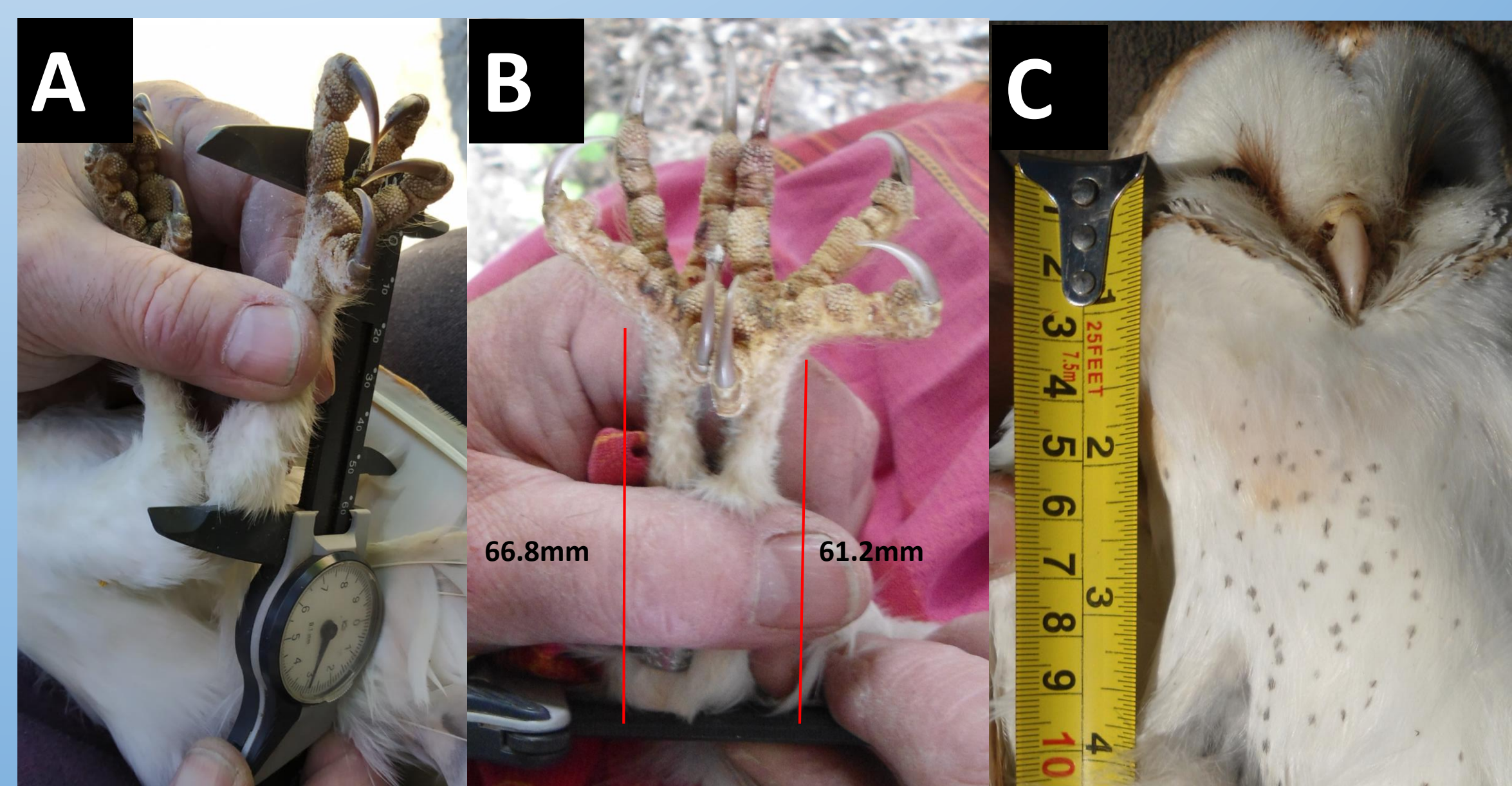
4 Bilateral body measurements of barn owls – fitness in different landscapes

Approximate data collection time <5min

- If you capture an adult barn owl, please record the sex, age and body mass of each bird.
- Please measure maximum wing chord length, and tarsus length – notch to notch (see A) on both the right and left side of each bird.
- If possible, please photograph the breast of the bird with a ruler to help examine plumage pigmentation (see C). This will allow us to measure plumage pigmentation on the computer.

Plumage pigmentation in barn owls is an indicator of reproductive fitness.

Subtle differences in right and left measures of wing chord and tarsus length is an indicator of fitness: less difference = better fitness (see B).



****Measuring equipment such as wing rulers, spring balances, cameras and callipers will be provided (subject to number of participants).***