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Supplementary Material

The influence of urban encroachment on squirrel gliders (*Petaurus norfolcensis*): effects of road density, light and noise pollution

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1. Site attributes recorded at each survey tree

Attribute	**Details/ Comments**
Tree height	Measured with a laser rangefinder.
Tree girth (DBH)	Tree diameter measured at breast height using a diameter tape
Distance to nearest tall tree (> 10 m height)	These trees form potential ‘connections’ for movements; distance measured with a laser rangefinder.
Distance to nearest hollow-bearing tree (> 70 cm DBH)	Trees > 70 cm DBH assumed to contain hollows, potential shelter for gliders; measured using a laser rangefinder.
Hollow-bearing tree density	An estimate of the density of hollow bearing trees within gliding distance; observed count within 50 m arc of survey tree.
Shrubs	A count of the number of shrubs within 50 m – a major food source.
Road type	The type of road was measured; sealed, unsealed, or absent.
Street lights	A count of the number of streetlights in a 50 m arc of the tree.
Noise	• Recorded using a Handheld Digital Sound Level Meter C-DSM1. Noise measurements taken between 4-6 pm (busiest time of day), 6-8 pm (busiest time of night) and 10 pm-12 am (quiet night measurement). • Minimum and maximum readings taken within a 15 second period. • To obtain a site mean reading; three measurements were taken during each time period, the sound meter was first pointed towards the apparent loudest source, then rotated 120^{O} clockwise, and again a further 120^{O} (following Mockford & Marshall, 2009). • Measurements were taken only when the wind was absent (Brumm, 2004).

Light	• An LX-1108 - Light Meter was used to measure light between 6-8 pm and 10 pm-12 am. • Readings taken at low point in lunar cycle • Three measurements were taken in each time period to obtain an average, using a similar method to noise measurements (above); meter pointed towards the brightest source of light first (not moon if visible), then rotated 120^{O} clockwise, taking a third measurement after a further 120^{O} rotation. • The maximum and minimum were obtained from these measurements. • Nights with significant cloud cover were avoided, as this may influence true results.

2. Landscape attributes recorded for each camera survey tree location.

Attribute	**Details/ comments**
Percent vegetation cover within 250 m	Greater tree cover is thought to provide better habitat for gliders. Using ArcGIS, a 250 m buffer was created around each survey tree, which was intersected with the habitat layer, to calculate percentage of vegetation within 250 m of the tree.
Housing density	Direct count of house lots surrounding the tree, using Albury City Council aerial imagery, indicating the level of urbanisation with a 250 m buffer surrounding the tree.
Road density	As a measure of urbanisation, the total length of roads within 250 m was calculated (a proxy for road density).
Distance to perennial creeks	Distance to riparian vegetation has shown to be an important factor influencing the presence of squirrel gliders (Crane et al., 2010). Distance to perennial creeks was calculated with 'Near' analysis tool in ArcGIS (Base layer: NSW Government: Land and Property Information, 2010).
Distance to Hume Highway	A major barrier located on the western side of the study area. Measured to indicate whether this major road impacted upon occupancy and activity (in terms of noise).
Distance to urban edge	Calculated to urban boundary as mapped in ArcGIS

3.. Squirrel glider monitoring setup using a Reconyx camera.

To enable easy manipulation of camera angle, the camera was mounted using either a Reconyx camera mount, Python cable locks (shown in image below), or manufacturer elastic straps, as suitable for each tree. Choice of mounting equipment would largely depend on tree branch attributes and accessibility using a large industrial ladder and ‘cherry picker’ raised platform equipment as required. The camera in this setup is also locked to the tree using a bike lock. The camera is positioned to face a bait station on an opposing branch of a large Eucalypt tree, to lure the animal into the field-of-view of the Reconyx camera.

Camera triggering and battery status was checked after installation, and then left to operate for approximately 17 nights. Previous camera trapping based studies on arboreal fauna are few, where we selected a suitable camera duration based on similar studies (Meek *et al*. 2012; Harley *et al*. 2014) which suggest a minimum survey period of 2 weeks (14 nights). Our choice of 17 nights (maximum) was influenced by logistical constraints, particularly battery life, where limited access to high trees prevented regular maintenance. Battery fatigue was affected by false triggering (largely from branches falling past the field of view, particularly in high winds) which also served to fill the memory cards. A further study constraint was deterioration of baits. Where necessary, an additional spray of honey and water was applied to the tree above the funnel when maintenance was performed (every 4-5 days).