

TAWNY OWL PROJECT

Introduction

Montseny Natural Park is mainly made up of a variety of forests (holm oak, conifers, beech, etc.) but also cliffs and few open areas. In the park, six species of owls can be found; Tawny owl (*Strix aluco*), Eagle owl (*Bubo bubo*), Barn owl (*Tyto alba*), Long-eared owl (*Asio otus*), Scops owl (*Otus scops*), and Little owl (*Athene noctua*). For this project, we focused primarily on Tawny owl, but we also allocated time to survey for Eagle owl and Barn owl at habitats we thought suitable for each species respectively.

The owl project began on the 7th December 2022. The aim was to determine the distribution and density of the Tawny owl in the massif, its preferred habitats and evolution over the years – as well as that of Eagle and Barn owls.

Tawny Owls (*Strix aluco*) are medium-sized nocturnal birds that are commonly found in wooded areas and are highly territorial (Animalia, 2023). They mainly nest in tree cavities but have been known to use rock cavities or man-made environments. As the Montseny Natural Park is mainly made up of forests, Tawny owls make extensive use of the environment. Eagle owls tend to use cliff habitats, where they build their nests on the ledge (iNaturalist, 2023). The barn owl is more suited to open habitats such as farmland and fields (Woodland Trust, 2023). All three species are nocturnal which is why we carried out the surveys at least an hour after the sun had set each time, roughly between 1900 and 2300 hours.



Figure 1: Observing Tawny owl in Montseny Natural Park

Methodology

The Tawny owl census was carried out between 7th December 2022 and 9th February 2023 on the some of the major roads of the Montseny Natural Park (Fig.2). Our methodology was as follows:

- Begin the census an hour after the sun has set
- At each point; park the car somewhere safe, listen for owl calls for 2 minutes in silence, play recording of Tawny owl call from a speaker for 2 minutes, listen for 2 minutes, play for 2 minutes, listen for 2 minutes (10 minutes total)
- Note the following information: date, weather, GPS coordinates, start and end time, habitat type (open, semi-open, closed), tree type (Sclerophyll, Coniferous, Deciduous, Mixed), number of owls contacted and whether owls heard were reported on ornitho.cat (Fig. 3)
- If a Tawny owl call was heard before the 10 minute period is complete, note it on the field sheet and it is advised to move on to the next point so as not to waste time
- Drive approximately 1km and repeat the above steps

Due to Tawny owls being extremely territorial birds, playing a recording of their call from a speaker proved very effective as any individuals in the area would come closer to the sound and respond to it in an attempt to scare off the owl in the recording that they believed to be encroaching on their territory.

A total of 96 listening points were carried out across 7 evenings (Fig. 2).

Two times (06/12/2022 & 13/02/23), a listening point was set up for Eagle owl at the Mirador de Gualba's waterfall (Fig. 2). Occasionally, when a favourable open habitat was present at one of the points, the call of the Barn Owl was played, shown on Fig. 2 as yellow circles.

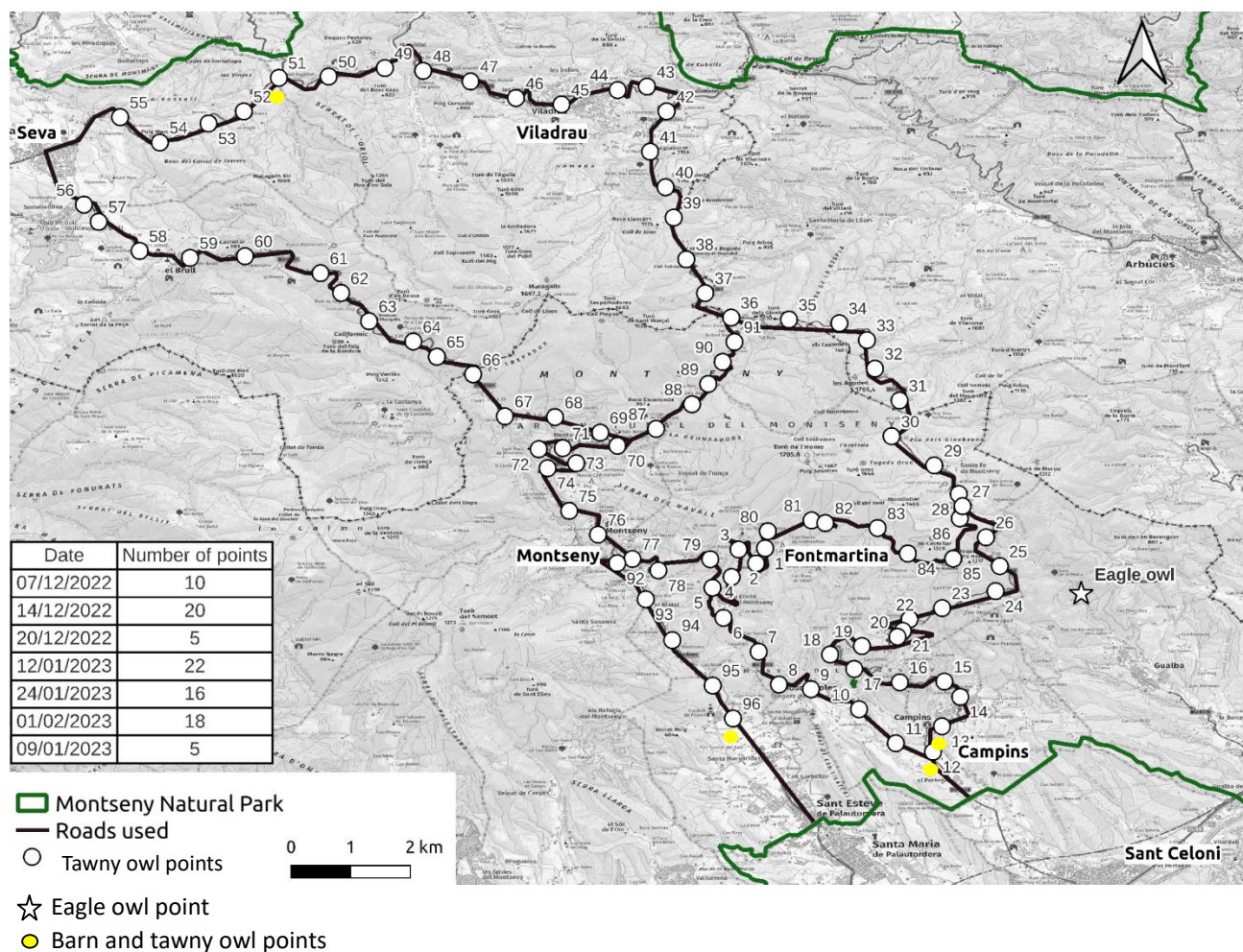
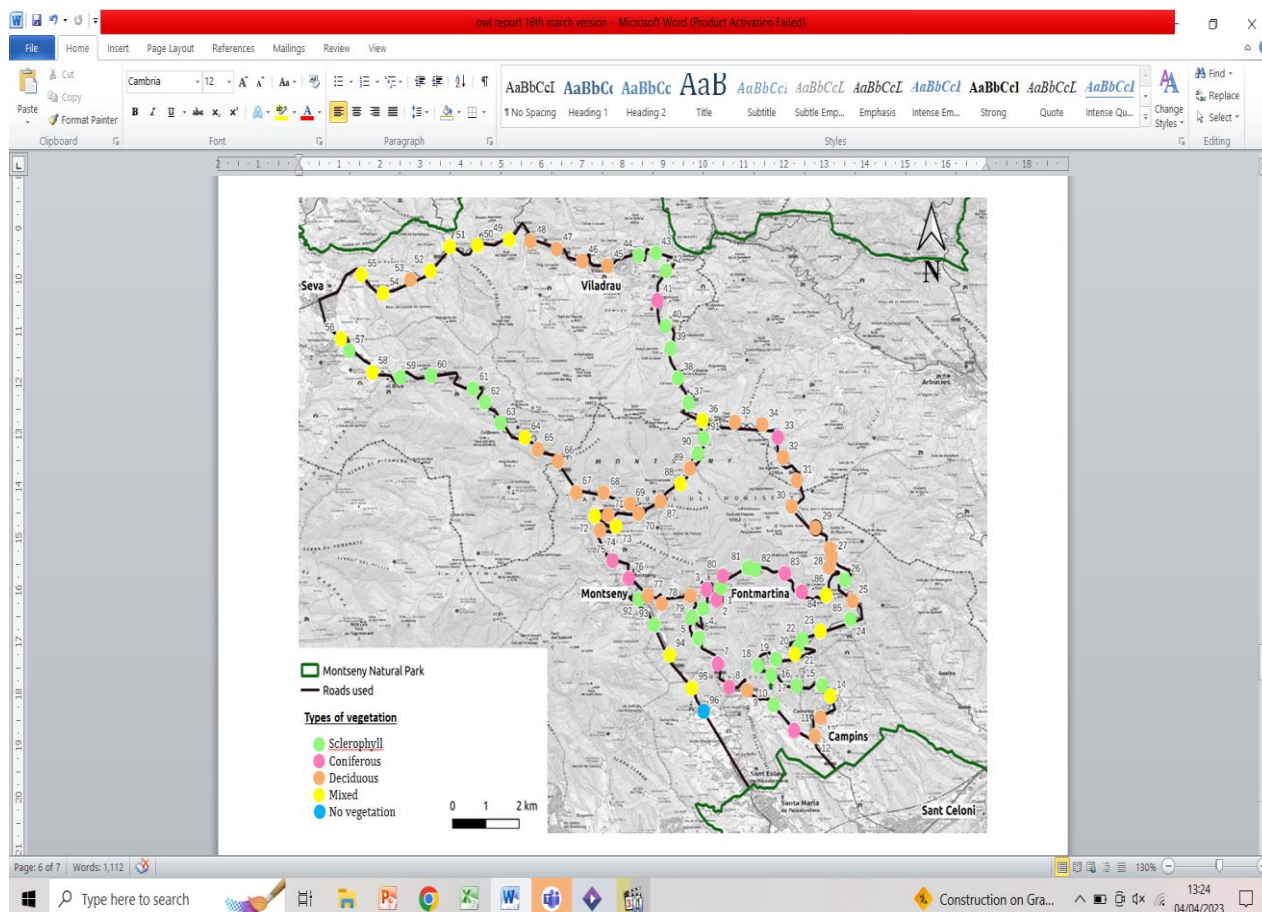


Figure 2: Study area, roads used and points counts for Tawny owl and Barn owl, as well as the listening point for Eagle owl.

DATE				WEATHER			
LONGITUDE, LATITUDE	START TIME	FINISH TIME	TAWNY OWL HEARD	HABITAT [OPEN, SEMI-OPEN, CLOSED]	TYPE OF THE FOREST [DECIDUOUS, CONIFEROUS, SCLEROPHYLL]		COMMENTS

Figure 3: Tawny owl Project field sheet

Figure 4: Study area, roads used and vegetation types of each listening point



Results and Discussion

Tawny owl

Out of the 96 listening points, 43 revealed the presence of tawny owls. At 40 of these 43 points, only one individual was heard at each point. At points 27 & 83 two individuals were heard simultaneously, and three individuals were heard at point 29. The presence of the species is distributed over the study area, with a higher concentration of Tawny owls on the eastern side of Montseny Natural Park (Fig. 5). It can be assumed this is because the majority of these points fall within Sclerophyll or Deciduous forest which are the two most favoured vegetation type by Tawny owls in our census (see Figure 6).

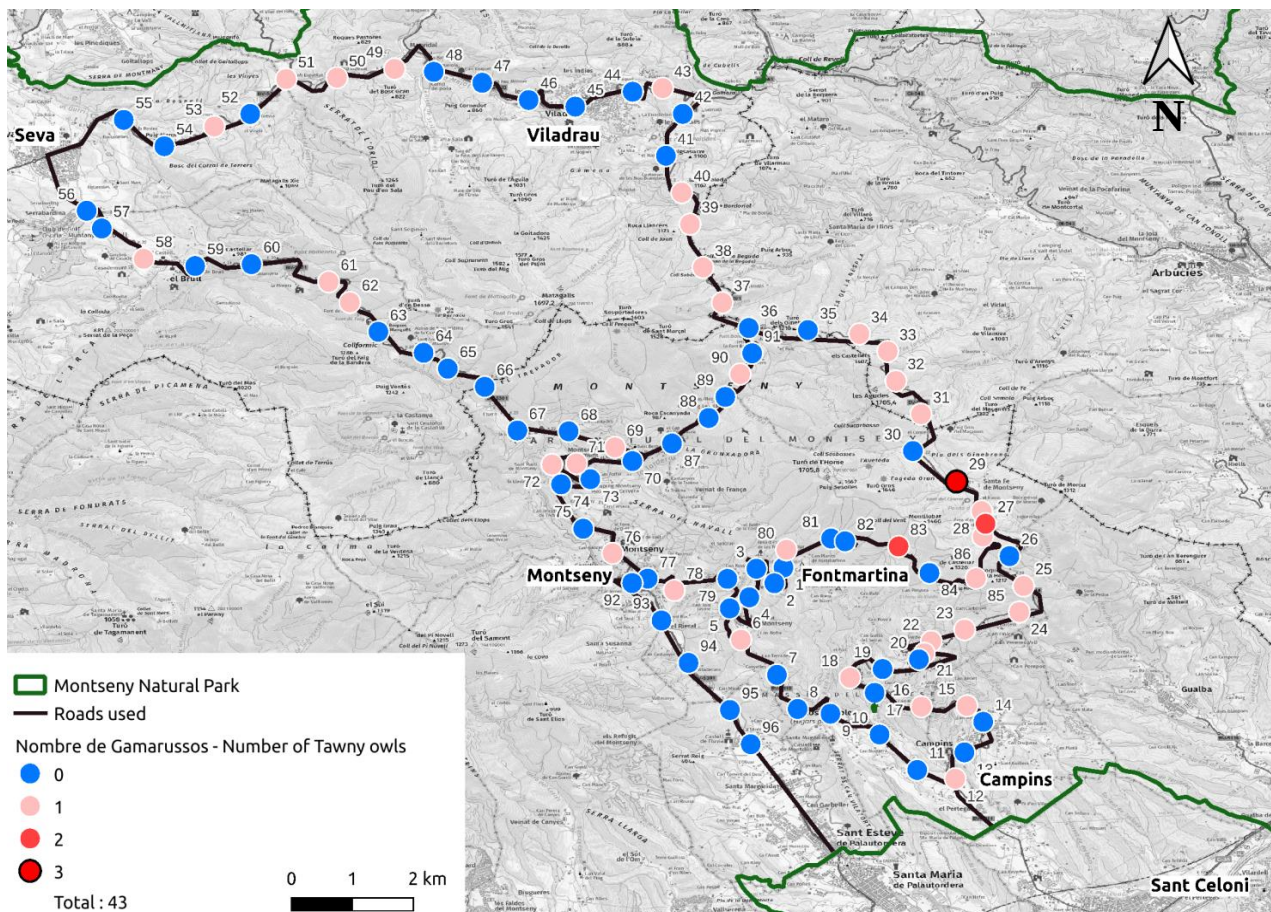


Figure 5: Map of Tawny Owl census points depicting number of Tawny owls present

According to the results (Table 1 and Fig 6), Sclerophyll was the preferred vegetation type for Tawny owls within the park, followed by Deciduous, Mixed vegetation, Coniferous and No vegetation respectively.

Type of vegetation	Points with tawny owls present	Points with this vegetation type	Proportion of points with tawny owls present (%)
Sclerophyll	15	33	45.45454545
Coniferous	4	12	33.33333333
Deciduous	13	31	41.93548387
Mixed	7	19	36.84210526
No vegetation	0	1	0

Table 1: Presence of Tawny owls across different vegetation types

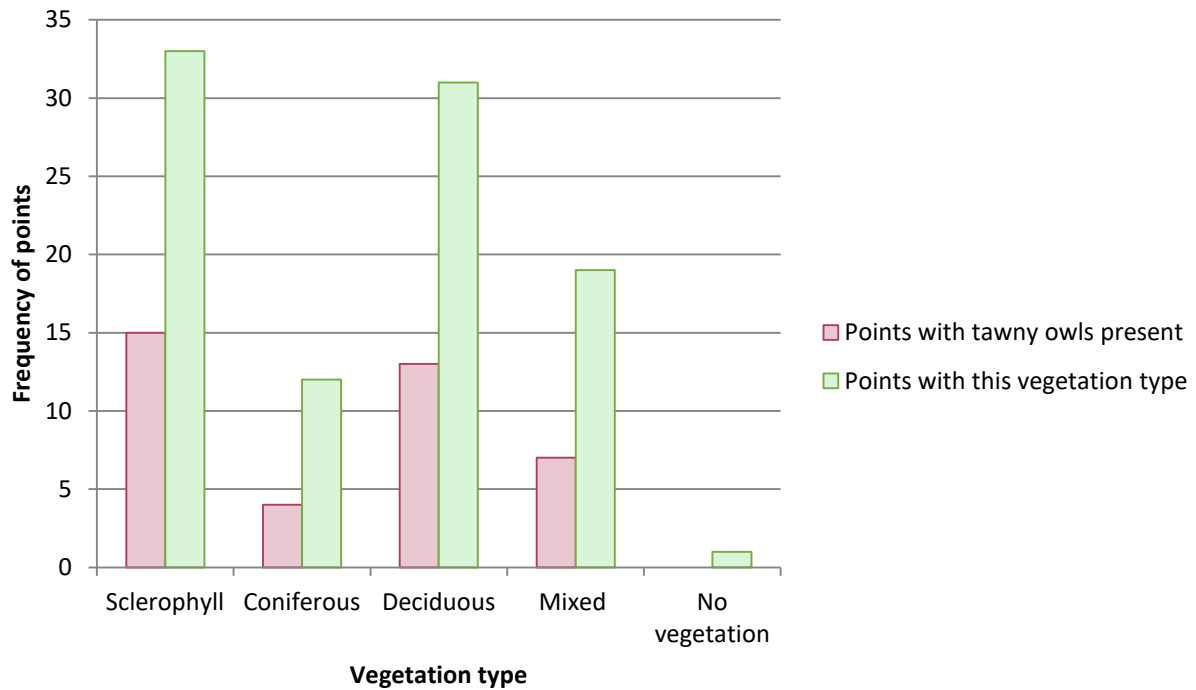


Figure 6: Frequency of points which Tawny owls are present in each different vegetation type within Montseny Natural Park

As expected, there is a positive correlation between increased forest cover and frequency of tawny owl presence (Fig 7). This is due to there being more suitable forest habitat for the owls to make use of in areas of closed forest cover.

Type of forest cover	Points with tawny owls present	Points with this forest cover	Proportion of points with tawny owls present (%)
Closed	24	60	25
Semi-open	12	30	12.5
Open	3	6	3.125

Table 2: Presence of Tawny owls across a range of forest cover

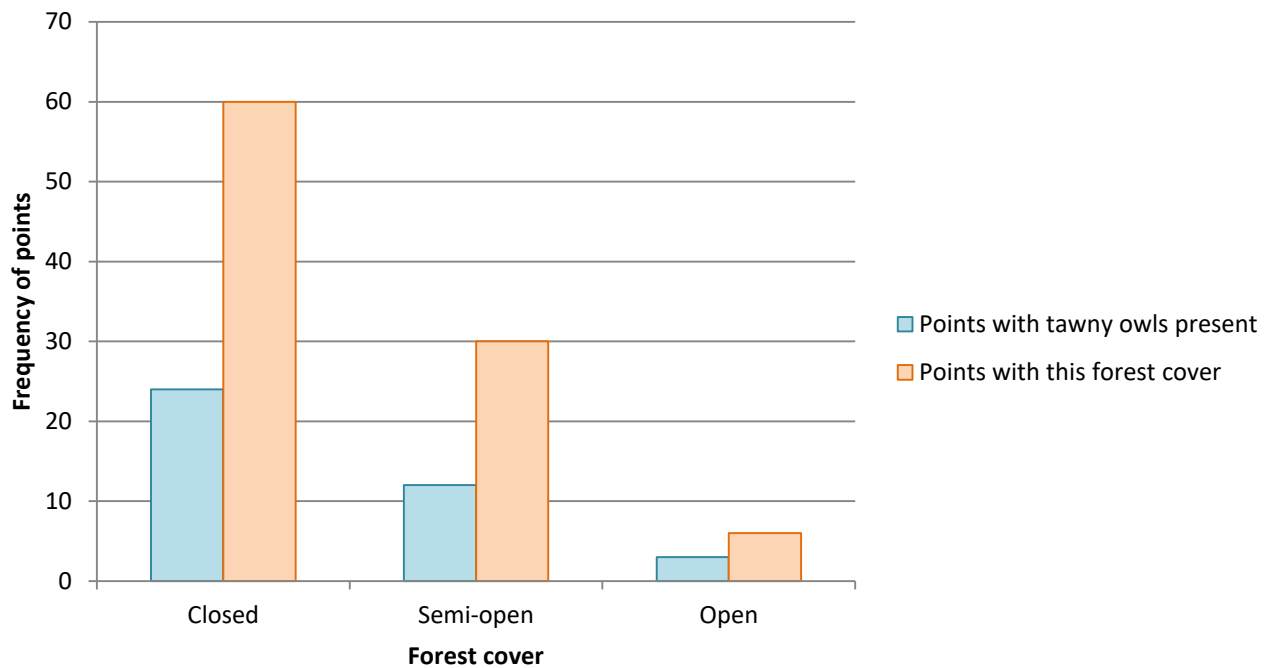


Figure 7: Number of points at each type of forest cover, and the number of points with tawny owl present

Other species

Despite the attempts to detect Barn owls at points with suitable habitats for the species (Figure 2) by playing recordings of both adult and juvenile barn owl calls from a speaker in the hopes of drawing possible individuals out, we were unable to report any individuals.

Despite previous records of eagle owls in the Mirador de Gualba canyon, no eagle owls were found on the two 30 minute occasions that Eagle owl calls were played from a speaker. A more extensive search effort for both of the above species might show better results.

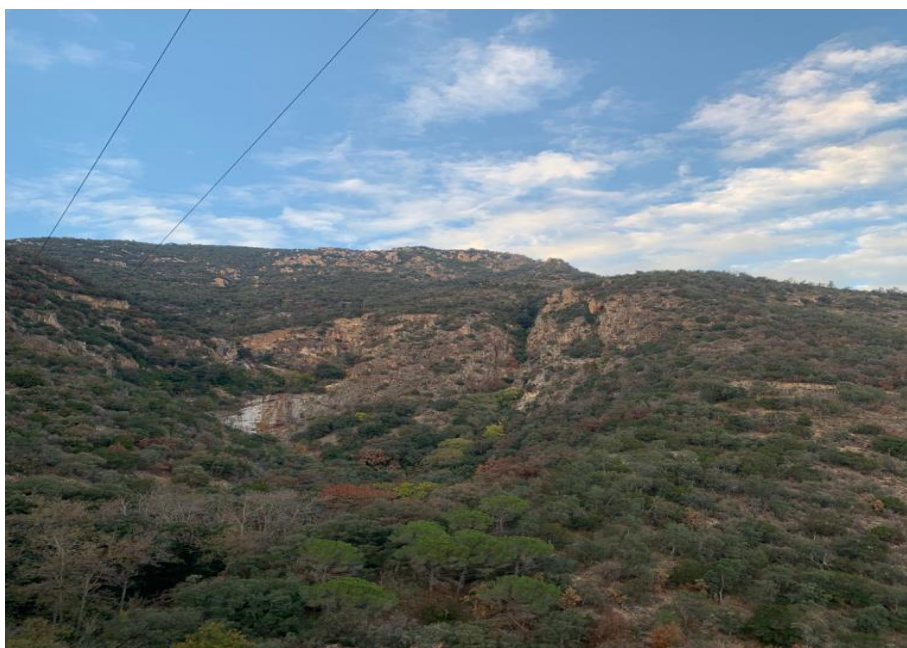


Figure 8: Potential Eagle owl habitat - Mirador de Gualba

References

- *TAWNY OWL* (2023) Available at: <https://animalia.bio/tawny-owl> (Accessed: 06/03/2023)
- *BARN OWL* (2023) Available at: <https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/animals/birds/barn-owl/> (Accessed: 06/03/2023)
- *Eurasian Eagle Owl*(2023) Available at: https://www.inaturalist.org/guide_taxa/21659 (Accessed: 06/03/2023)