Alpine accentor Project

Introduction

The Alpine accentor (*Prunella colaris*) is a bird from the Order Passeriformes and family Prunellidae. It has an average length of 15-17cm and an average wingspan between 30-32.5cm. Common phenotype characteristics are black-brown upperparts, grey head and breast with reddish flanks and belly with whitish streaks. The wing coverts have a dark brown tint with white specks forming a pair of stripes. The base of the bill is yellow/orange and the legs are robust and pale. Youngs are quite like adults differing in the red tones of the underparts which is smaller for adults. It presents a fast and undulating flight, somewhat similar to that of a thrush.

When taking flight, it emits a trill alike the ones from larks (e.g., “drrü drrü, drip”, “tschirr”). The song is long, creaky, and trilling without a defined structure. Usually, it chants it when it is perched but it can be heard during flight.

The alpine accentor both in breeding season and winter is found in alpine areas of the Pyrenees. Nevertheless, it often appears in areas of the pre-Pyrenees, the pre-coastal mountain ranges, and the coastal mountains. In winter this species is mainly found between 1.500-2.700m on ridges and mountain tops. The estimated winter population (2006-2009) in Catalonia is of 3.759-4.700 birds.

As for ecological requirements this species needs steep, rocky slopes, screes, and other rocky habitats above the treeline for nestling and low vegetation surfaces and grasslands for foraging.

The project’s goal was to access the overall number of individuals of this species during the winter months in Montseny.

Methodology

The Alpine accentor Project began in 14 of January 2022 and ended in 11 of January 2023. According to the project’s aim, censuses were only practised during the winter months on the aforementioned period, i.e., January, February, November and December.

Censuses were made in the peaks of Matagalls, Turó de l'Home and Les Agudes. The date, site, latitude, longitude, altitude and number of individuals found were recorded. Since one ringed individual was observed (06J), an effort was made to search for this specific individual whenever censuses took place. In the date of 16 od December 2022, there was a ringing attempt with one mist net with the use of recorded vocalizations and ground nets with bait. One individual was captured and ringed (Fig.1).

Fig.1. Photograph of ringed alpine accentor

Results

Censuses were performed from the 14th of January 2022 and ended on the 11th January 2023. After the latest date, a snowfall occurred and as a consequence the road leading to the peaks was closed, making field work impossible. For the year 2022, three censuses were made in January, two in February, 19 in November and 22 in December. As for the year 2023, six censuses were made in January (Table. 1).

Table.1. Table of the number of censuses performed on each month in the year of 2022 and 2023 and total numbers.

	January	February	November	December	Total
2022	3	2	19	22	46
2023	6	-	-	-	6
Total	9	2	19	22	52

In total, 52 censuses were performed, and 250 observations of alpine accentors (aa) were registered. There is no possible way to say how many of these 250 individuals were repeated counts. An average of 4.81 ± 4.11 (mean ± SD) aa were observed on each census, with a maximum number of 20 individuals and a minimum number of one individual. For January 2022 there was an average of 6 ± 1.41 (mean ± SD) aa observed, for February 2022, 5 ± 1.00 (mean ± SD), for November 2022, 3.74 ± 2.61 (mean ± SD), for December 2022, 2.27 ± 5.42 (mean ± SD) and for January 2023, 5.83 ± 3.08 (mean ± SD) (Fig.2).

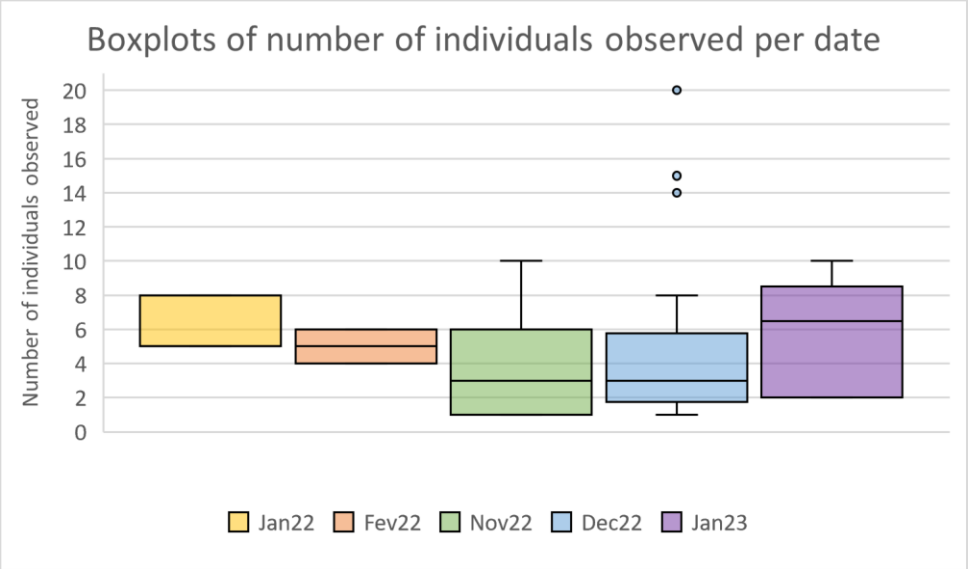

Fig.2. Boxplots of the number of individuals observed per month in the year 2022 and 2023. “Jan” stands for January, “Feb” stands for February, “Nov” stands for November, “Dec” stands for December, “22” refers to the year 2022 and “23” to the year 2023. All

A frequency of the number of individuals seen per census was tallied by dividing the total number of individuals seen in a given month per the total number of censuses performed on that month (Table 2) (Fig.3).

Table 2. Table of the total number of censuses performed on each month of the year 2022 and 2023, the total number of individuals observed, and the respective frequency obtained by dividing the total number of individuals by the total number of censuses. “Jan” stands for January, “Feb” stands for February, “Nov” stands for November, “Dec” stands for December, “22” refers to the year 2022 and “23” to the year 2023.

Date	Total number of censuses	Total number of individuals observed	Frequency
Jan/22	3	18	6.0
Fev/22	2	10	5.0
Nov/22	19	71	3.7
Dec/22	22	116	5.3
Jan/23	6	35	5.8

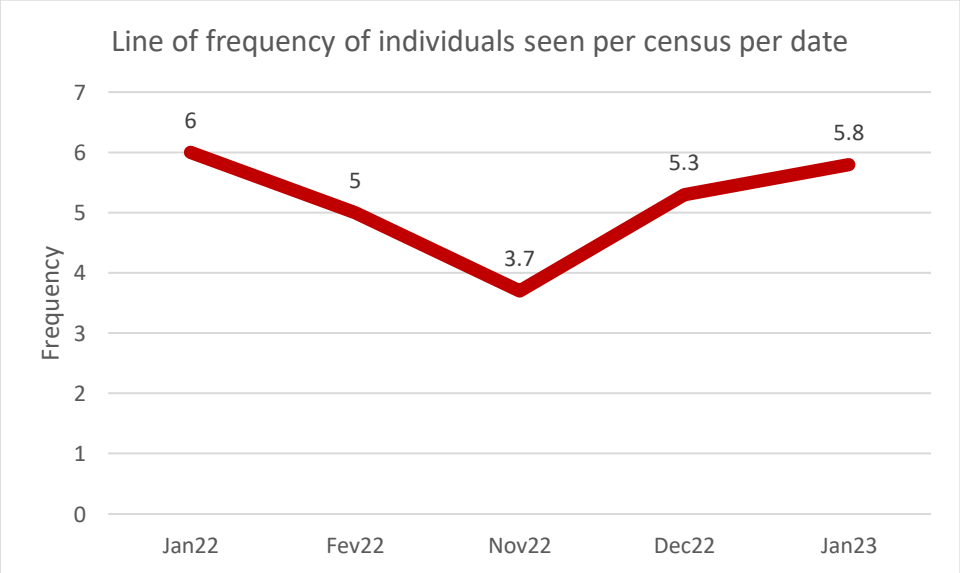

Fig.3. Line of the frequency of individuals observed per number of censuses per date. “Jan” stands for January, “Feb” stands for February, “Nov” stands for November, “Dec” stands for December, “22” refers to the year 2022 and “23” to the year 2023.

Lastly, the total number of censuses and total number of observations was also calculated according to the location where they were retrieved (Turó de l'Home, Les Agudes and Matagalls). As before, a frequency of individuals seen per census per location was tallied by dividing the total number of individuals seen in a given location per the total number of censuses performed on that location (Table 3) (Fig.4).

Table 3. Table of the total number of censuses performed on each location, the total number of individuals observed, and the respective frequency obtained by dividing the total number of individuals by the total number of censuses.

Location	Total number of censuses	Total number of individuals observed	Frequency
Turó de l'Home	28	171	6.1
Les Agudes	9	29	3.2
Matagalls	15	50	3.3

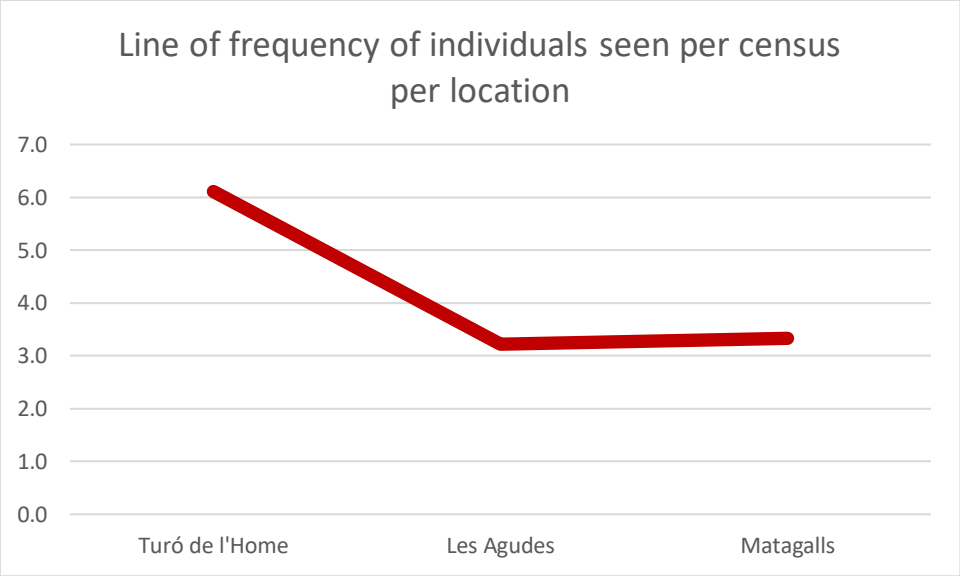

Fig.4. Line of the frequency of individuals observed per number of censuses per location.

Per location an average of 6.11 ± 4.35 (mean ± SD) aa were observed per census in Turó de l'Home, 3.22 ± 2.90 (mean ± SD) for Les Agudes and, 3.33 ± 3.38 (mean ± SD) for Matagalls (Fig.5).

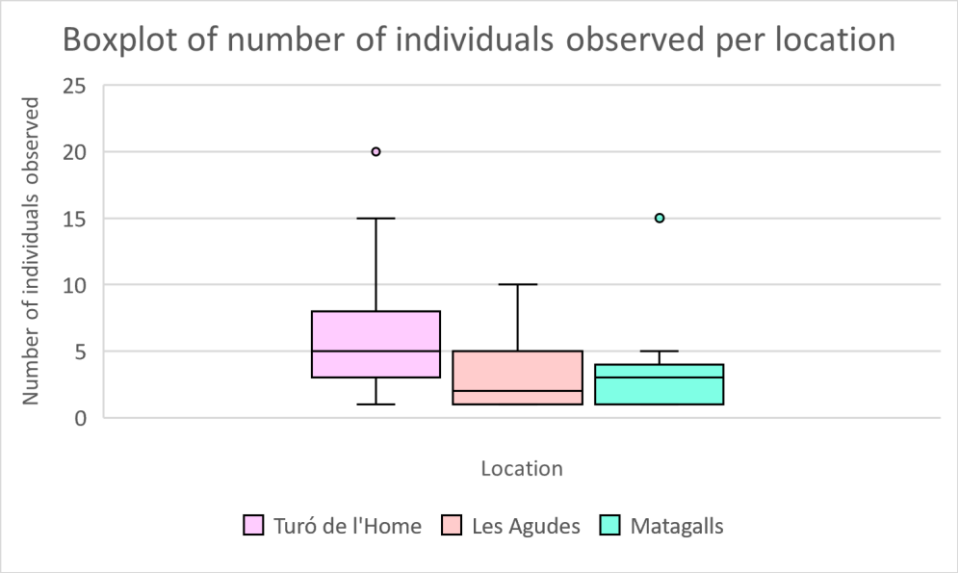

Fig.5. Boxplots of the number of individuals observed per location. All boxplots present a mean line.

Conclusion

The data collected seems to indicate that Turó de l'Home holds the highest numbers of alpine accentors (aa) between all three locations. January also seems to be the month where aa can be seen in higher frequencies of individuals, both January 2022 and 2023 held a frequency close to six aa per census. Followed by December who held a frequency of five aa per census.

However, these values should be taken with a grain of salt since the discrepancy of censuses per month and also per location are very high (e.g., three in January 2022 vs. 22 on December 2022 plus 28 in Turó de l'Home vs. nine in Les Agudes).

Nonetheless, the values indicating that November holds the least amount of aa are in line with what is expected since aa appear in Montseny only in winter, thus in this month many individuals should still be arriving the location.

Finally, the locations differ gravely, with Matagalls being a widespread space with many different possible paths and Turó de l'Home and Les Agudes having one main path to follow. This should also be taken into account since it not only varies the chance of seeing a group of individuals but also, aa may approach humans in order to look for food, thus a path repeatedly used by people could lead to a learnt behaviour of aa to be close to said locations.