

Project Orenetes

Introduction

The House Martin is a bird of the order Passeriformes and belongs to the family of the Hirundinids. It has an average length between 13.5-15 cm and the wingspan 26-29 cm with an average weight of 15-21 g. The completely white belly and throat stand in contrast to the black tail and the black, iridescent upperparts. The white rump stands out and gave the oreneta cuablanca its Catalan name.

The house martin is a migratory species with a wide distribution throughout the Eurasian continent and two great wintering regions in sub-Saharan Africa and the Malay Peninsula. In Catalonia it starts arriving in the second half of March and with a leaves between August and the end of October. The catalan population is estimated at between 137 129 and 204 510 couples and the european population at between 9.5 and 31 million couples. It is one of the most widely distributed birds and is found in about 92% of the territory. The monogamous bird lives in small colonies of around 5, sometimes even 20, individuals. The original habitat of the house martin is in natural environments with nests on bluff and cliffs build in up to more than 2000 m above sea level in the Pyrenees. But since many years they have adapted to the urbanization and also breed on the facades of buildings. This dependence makes the population concentrated mainly in the great plains and in the more humanized valleys. In large cities they usually colonize the peripheral areas whereas in smaller towns they can be found in every street. Limiting factors for their distribution are food availability and the distance to mud supply points for nest building. The nests are spherical bowls made of clay attached to a wall on one side and a roof or something similar on top. They are completely closed except for a small opening at the top of about 2-3 cm in diameter.

The Orenetes project is an initiative of the Catalan Institute of Ornithology (ICO) based on citizen participation to study and monitor the house martin and their nests in their urban environment. The presence and abundance of house martin nests is strongly linked to building characteristics, human respect for nests, and environmental conditions, including air quality and mud availability, this means that the house martin represents an excellent environmental indicator. The project is carried out in order to know the current state of the population of the house martin in the different municipalities of Catalonia and to study its evolution over time, to know the ecological requirements of the species, including the needs it has when selecting the sites to build the nest, to have useful data when defining the management and protection measures of the species, including those related to urban issues.

Materials and methods

The project conduct by ICO volunteers took place from the 3rd of June to 31st of July 2023 in Sant Celoni, Santa Maria de Palautordera, Seva and Llinars de Vallès. Each census consisted of walking through each and every street and group of buildings included in the sampling unit in search of House martin nests. A “sampling unit” was represented by a combination of squares of 200x200m that defined the exact area of the town or city and it was created from the web portal (www.orenetes.cat). The census focused on counting only the nests that were in full construction and in good condition, broken nests or those occupied by other species didn’t count, as reported in the Figure 1.

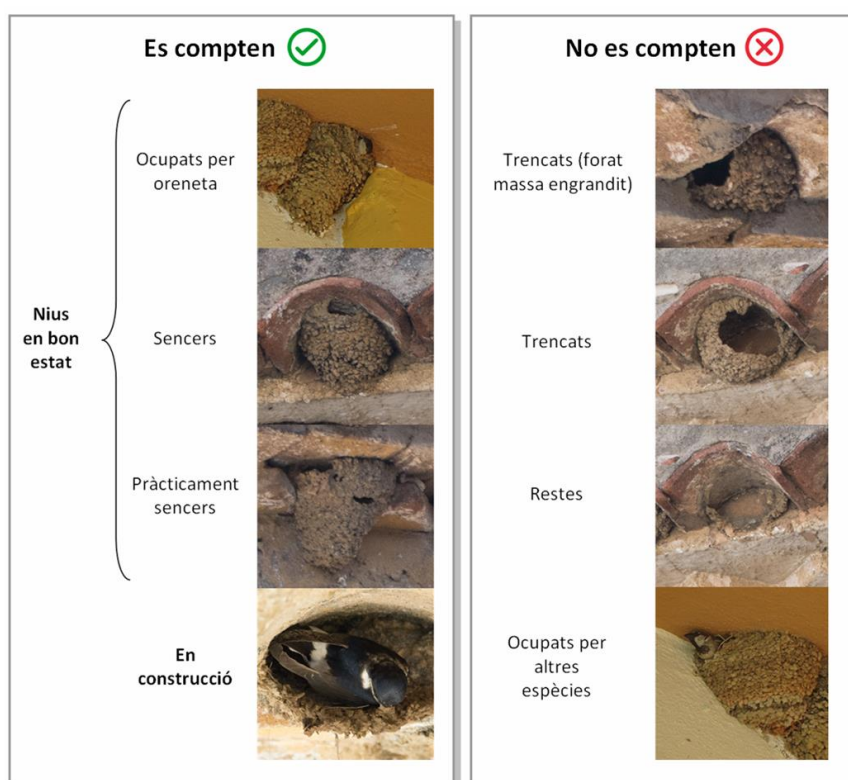


Figure 1 Examples of house martin nests in different quality condition, on the left the nest in good condition that could be count, on the right nests didn't count in the census.

Data from the census day, like Sampling unit, date, starting and ending time, and observers were annotated. As well as census data: address where the nests were located, building type (residential, commercial buildings or other), total number of nests in good condition, number of active nests (among those in good condition), number of nests under construction, and observation time. This information was entered automatically using the project application at the same time of the census.

Results

Censuses were conducted in 4 different towns in Catalonia between the 3rd of June and the 28th of July 2023 by the EB Montseny volunteers. In total, 162 squares were censused and 1608 nests in good condition were found, of these 886 were active, as reported in the *table 1*.

The figures (*Fig. 2, Fig. 3, Fig. 4, Fig. 5*) show the disposition of the nests within the sampling units in each city. The size of the marker is in accordance with the number of nests.

Table 1 census data recorded and entered on www.orenetes.cat

City	Number of squares	Nests in a good condition (Total)	Active nests	Nests in construction	observation time (minutes)	Population	Density (hab/Km ²)
Sant Celoni	100	870	356	3	351	18285	280.44
Santa Maria de Palautordera	13	435	314	0	162	9777	578.52
Llinars del Vallès	19	221	179	0	80	10205	369.75
Seva	30	82	37	0	47	3736	122.89
Total	162	1608	886	3	640	-	-

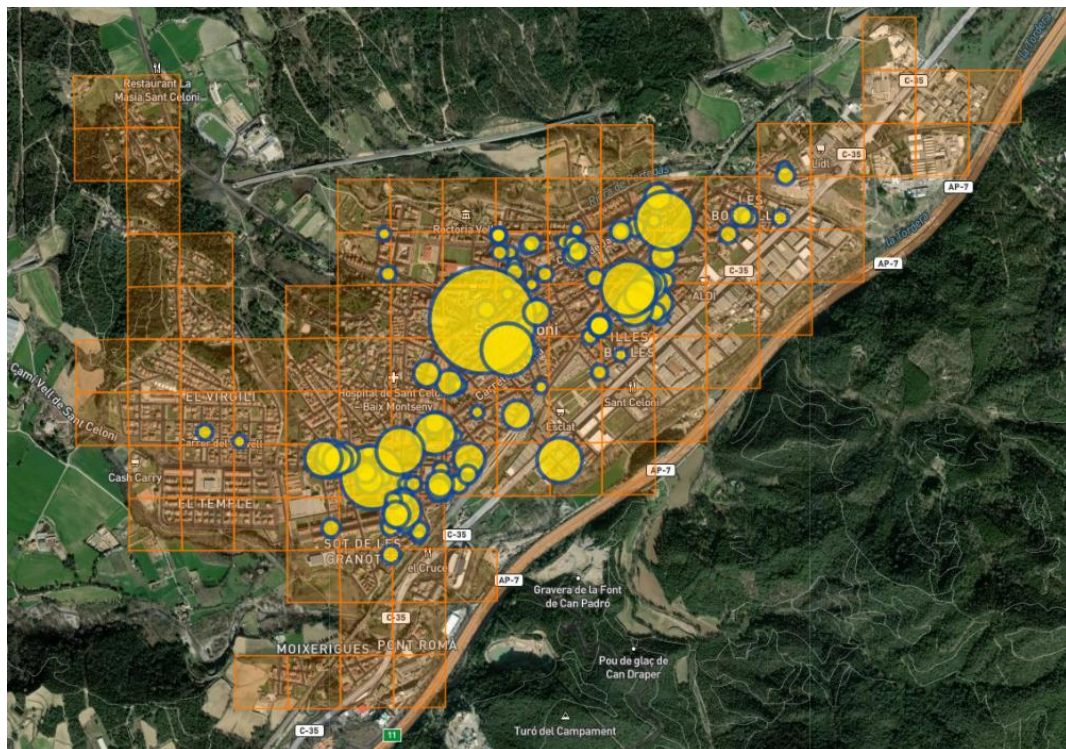


Figure 2 Map of Sant Celoni, Catalunya.



Figure 3 Map of Santa Maria de Palautordera, Catalunya.

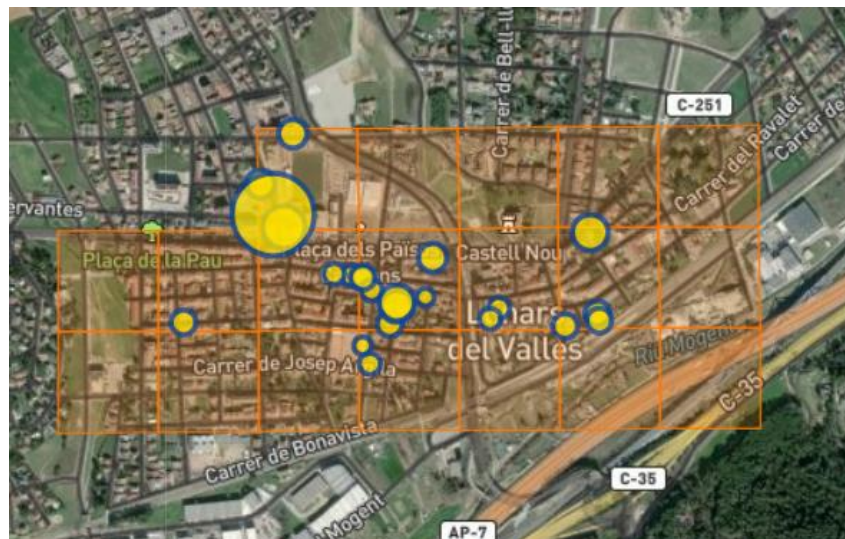


Figure 4 Map of Llinars del Vallès, Catalunya.

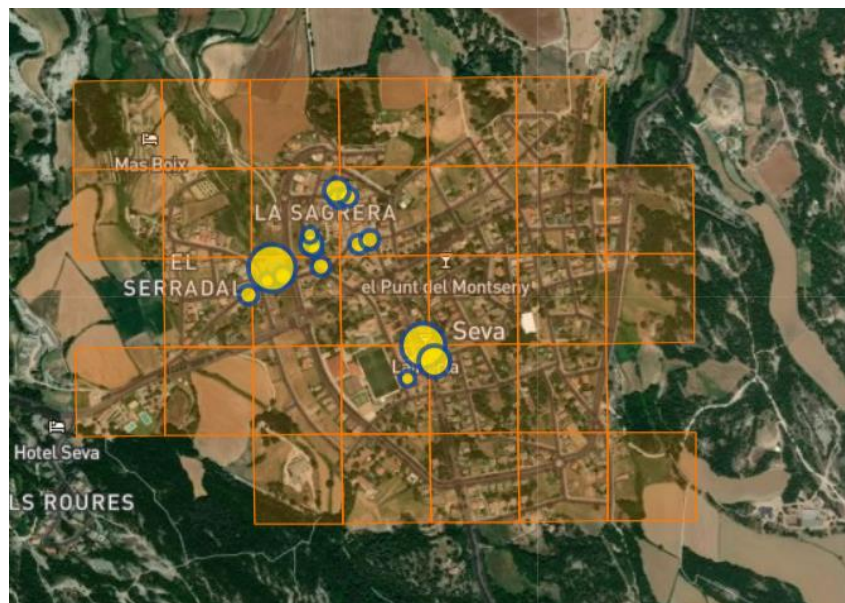


Figure 5 Map of Seva, Catalunya.

Figure 6 and figure 7 show the comparison between the four cities in terms of the number of nests counted and in relation to the number of inhabitants (Fig.6) and the number of squares in each city (Fig. 7). Sant Celoni which has a larger number of inhabitants and a bigger number of squares also has a larger number of house martin nests. Santa Maria de Palautordera with a medium number of inhabitants presents a big number of nests in few squares (less than the other three cities). Instead, Seva has a few inhabitants, more squares than Santa Maria de Palautordera, but a very low number of house martin nests.

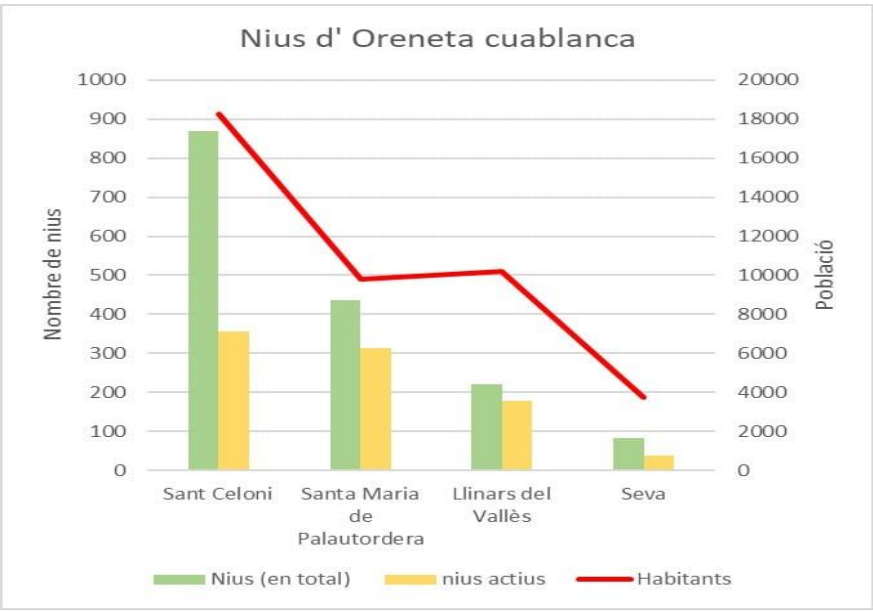


Figure 6 Comparison of cities in relation to the number of nests and the number of inhabitants.

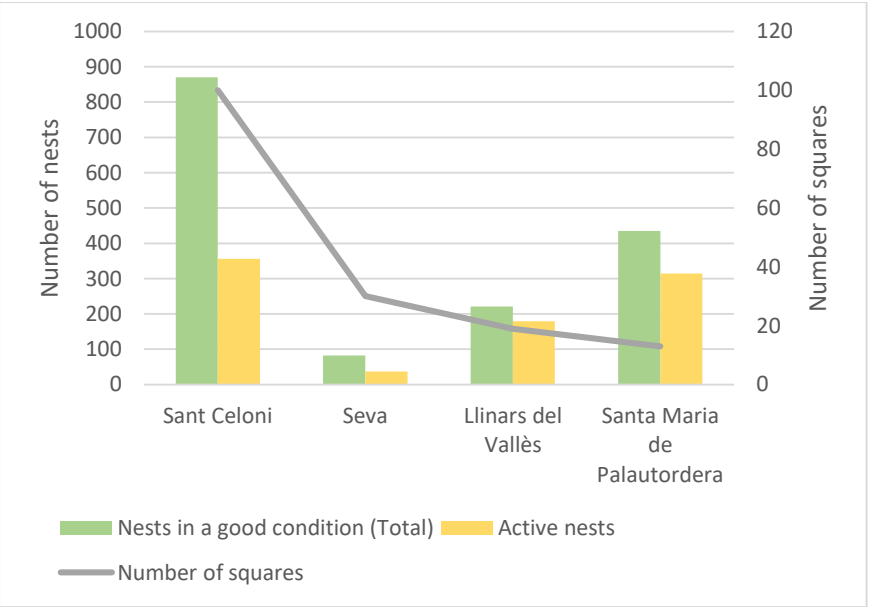


Figure 7 Comparison of cities in relation to the number of nests and the number of squares.