

CARLES CONEJERO FUENTES

INTRODUCTION AND OBJECTIVES

Currently, in the context of urban areas, wild boars are approaching cities and neighbourhoods comfortably, without expressing any sign of fear against human presence. Wild boar presence is common in La Floresta, a neighbourhood from Sant Cugat del Vallès (Barcelona), the animals in the study and their offspring were accustomed to human presence. This adaptation to a new environment has led them to consume anthropogenic resources and thereby exposing themselves to human-related risks, such as collisions or urban poaching. Our aim is to get an approach to understand wild boar adaptation to urban areas, their reproductive parameters and spacial distribution. In this study we demonstrate male dispersion and female reproduction success.

Group	Minimum convex polygon (MCP) (Km ²)	Identification	Sex	Age (months)	Weight (Kg)	Capture date
1	1,024	H1	Female	16-18	58	27/5
		Ha	Female	>36*	70*	-
2	0'3454	M2	Male	12-14	51	4/6
		M3	Male	12-14	57	11/6
4	0'2282	H4	Female	26-28	72	11/6
5	0'4290	H5	Female	14-16	45	17/6
		Hb	Female	14-16*	35-45*	-
6	0'0586	H6	Female	>36*	>85*	17/6

MATERIALS AND METHODS

Just after farrowing season (May-June 2015), four females and two males of urban wild boar were marked using ear-tags and measured for weight and age. Each marked female belonged to a different female group; we tracked 4 entire female groups.

During one year, all females (H1, Ha, H4, H5, Hb and H6) and males (M2 and M3) were tracked by weekly visual recapture over the period. We followed an itinerary which crossed all the urban area through three hot spots where most of the visual re-captures were recorded.

Table 1: Identification and characteristics of each animal, *values are estimated.

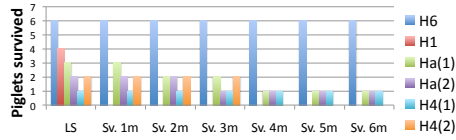
RESULTS

Female tracking

Graph 1 the four females tracked gave birth at least once (H1, Ha, H4 and H6). H4 and Ha experienced a second farrow in September-October. Ha raised only one piglet from each farrowing (1) and (2), and H4 only raised one piglet from the first farrowing H4(1).

We observed that most of the piglets died before four months, due to human interaction (Graph 1).

All females tracked produced nine piglets that reached the age of six months. H6 registered 100% of piglet survival and the smallest distribution area (Image 1).



Graph 1: The columns indicate number of piglets that survive to each month by farrowing. The first columns indicate litter size (LS) and all others indicate piglet survival (Sv.) to each month until 6. Ha and H4 gave birth in two occasions, first in Spring (1) and the second in Autumn (2). View Table 2.

Identification	N° of farrow	Farrow date*	Litter size	6 month survival
H1	1	5/5/15	4	0
	2	08/04/2016	3	-
Ha	1	15/4/15	3	1
	2	28/10/2015	2	1
H4	3	08/04/2016	4	-
	1	28/03/2015	1	1
H6	2	09/03/2015	2	0
	1	04/15/2015	6	6

Table 2: Values plotted in graph 1; Female farrowing during one year of tracking, *values are estimated.

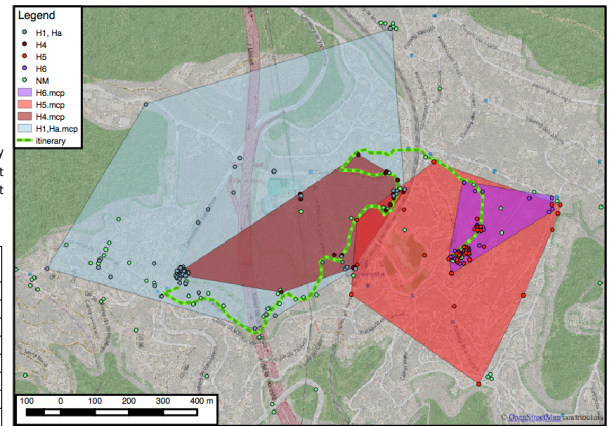


Image 1: Female tracking and distribution area. Points are related to visual re-captures and areas are the minimum convex polygon (MCP) out of visual re-captures. H1 and Ha group show the widest range, H6 show the smallest range. NM are visual captures of non-marked animals.



Photo 1: Autumn 2015, H4 with two litters, one from spring, the last from September.



Photo 2: June 2015, H1 and Ha grazing anthropogenic resources.



Photo 3: October 2015, H6 and her litter foraging in urban area.

Male tracking

M3 was recaptured three times inside other urban areas (1, 2 and 3; view Image 2 and Table 3), and M2 was recaptured with M3 once (Image 1: point 1) and M2 was never caught again by visual recapture after 02/07/15.

Date	Hour	Place	X	Y	Males	Distance from LF(Km)	Action
4/6/15	18:00	La Floresta	422893	4588591	M2	0	Capture and ear-marking M2
11/6/15	18:20	La Floresta	422705	4588801	M3	0	Capture and ear-marking M3
(1) 20/6/15	13:00	Molins de Rei	417773	4585479	M2+M3	5.63	Recapture M2 i M3
26/6/15	20:45	Molins de Rei	418598	4585472	M3	5.2	Visual capture
27/6/15	19:59	Molins de Rei - Parc de l'Alzina	418325	4585175	M3	5.5	Visual capture
(2) 28/6/15	12:00	Espugues del Llobregat	423822	4581524	M3	12.71	Re-capture M3
(3) 8/7/15	5:42	Barcelona	428769	4581119	M3	9.58	Re-capture and Euthanasia M3

Table 3: Male re-captures, (1), (2) and (3) are related to numbers 1, 2 and 3 at Image 2.



Photo 4: June 2015, M3 and M2 exploring urban areas.

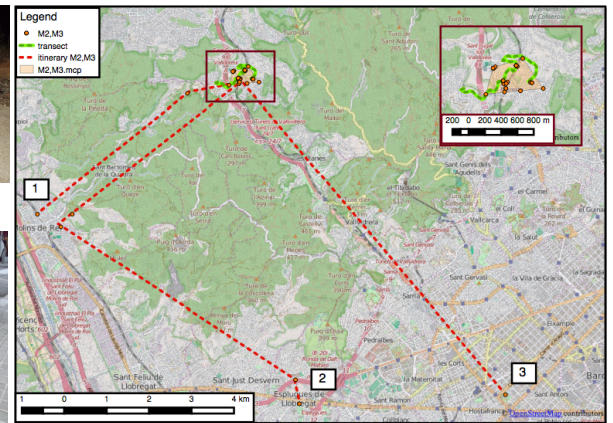


Image 2: Male tracking, points 1, 2 and 3 are related to re-captures (1), (2) and (3) of table 3.

CONCLUSIONS

Urban wild boars are exposed to this extra-territorial trade-off, where they can reach anthropogenic resources in exchange for exposure to human threats. Our results indicate the tendency for the wild boars to have a higher reproductive success rate when the animal is less exposed to human threats from within urban areas (H6).

La Floresta is an exemplar of a 'donor' area, donating wild boars to other nearby urban areas. As we expected, the wild boars raised in urban areas tend to disperse to other urban areas with similar characteristics and is then when they become problematic wild boars.