

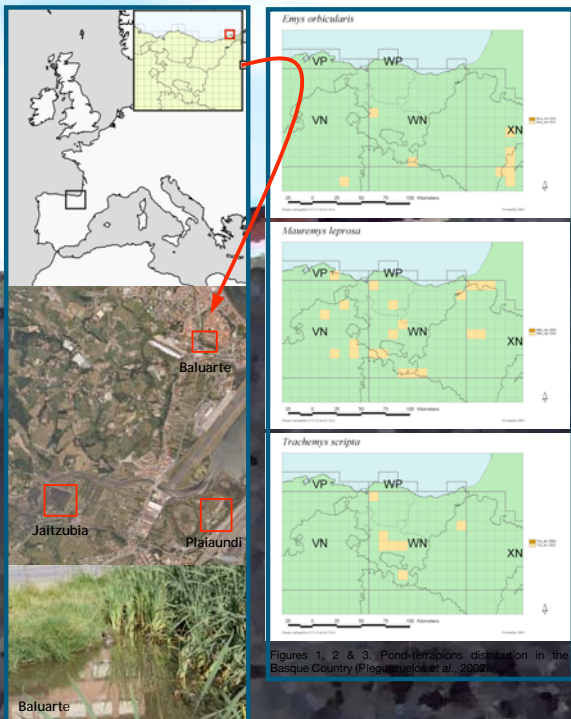


## of the pond-terrapins of the Bay of Txingudi (Northern Spain)

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Figures 1, 2 & 3. Pond-terrapins distribution in the Basque Country (Pleguezuelos et al., 2002).

### INTRODUCTION

The bay of Txingudi forms a natural border between Spain and France as well as being the principle means of communication between the two countries. This results in it being densely populated and much altered. Nevertheless it has been possible to recover two areas of marshland due to their high ecological interest. These areas are Plaiaundi Ecological Park (1998) and the Marshland of Jaitzubia (2005). These spaces have been declared Special Protected Areas for birds (Zona de Especial Protección para las Aves - ZEPa), Area of Community Interest (Lugar de Importancia Comunitaria - LIC) and Marshland of International Importance (Ramsar Agreement). Exotic turtles have been spotted in some sweet-water areas and there is also evidence of their presence in the town park of Baluarte de la Reina, in Hondarribia.

This Project was activated in 2005 due to the lack of a register of natural or naturalised areas (Pleguezuelos et al., 2002). Below are the preliminary details on identified species, the campaign for the capture of these exotic turtles, and their reproductive habits.

### MATERIAL AND METHODS

A visual census was carried out in town park marshes as well as on the outskirts of these towns. The locations were chosen bearing in mind the presence of two sweet water areas where turtles had been seen: The Baluarte de la Reina (2006) and Plaiaundi Ecological Park (2007), where campaigns have been carried out for specific captures to determine how the communities are composed.

The capture was carried out manually or with hoop traps. The specimens that were captured were marked and sexed, the basic biometric variables were noted down, as was the weight (Tw). At the end of the campaign and once all the details had been registered, all the specimens were returned to their natural habitat, in the same pond where they had been found.

To calculate the population, 3 consecutive captures were performed without returning the specimens to the pond. The two ponds were considered as a closed community. There were no additions to the population nor deaths during the period of capture (4 days) (Seber & White, 1970).

### RESULTS

Species	Baluarte	Jaitzubia	Plaiaundi
Localisation (UTM 10x10 km)	30TWP97.0 1	30TWP96.0	30TWP96.00
<i>Emys orbicularis</i>	✓	✓	✓
<i>Mauremys leprosa</i>	✓	✓	✓
<i>Trachemys scripta elegans</i> (T.s.e.)	✓	✓	✓
<i>Trachemys scripta scripta</i> (T.s.s.)	✓	✓	✓
<i>T.s.s. x T.s.e. hybrid</i>	✓	✓	✓
<i>Trachemys ornata</i>	✓	✓	✓
<i>Trachemys sp.</i>	✓	✓	✓
<i>Mauremys sp.</i>	✓	✓	✓

Table 1. Observed species.



Figure 4. *Trachemys ornata*.

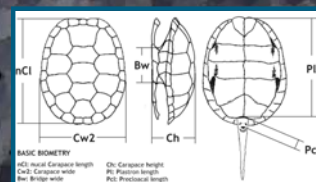
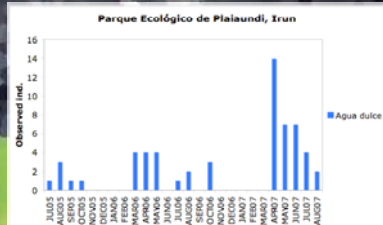


Figure 5. Basic biometric variables corresponding to the turtles collected during captures carried out in the area under study.



No captures were obtained in the campaign carried out in August 2007. In July 2006, a fertile nest which became unviable was found of the species *T. s. elegans*. The embryo did not completely develop. In April 2007, a newborn *T. scripta* sp. was captured (Tw: 4.00 gr; nCl: 28.04 mm; Cw2: 29.19 mm; Ch: 14.57 mm).

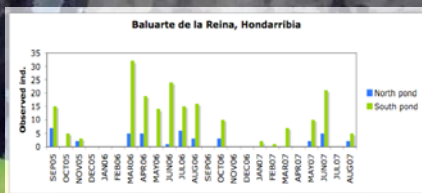
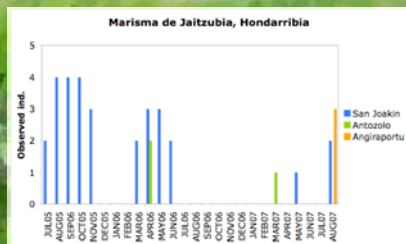


Figure 8. Absolute frequencies obtained in Baluarte de la Reina through direct observation and referring to the day when the highest quantity of sightings occurred.

It is common to find that turtles are abandoned in the mentioned ponds by members of the town neighbourhood. The repair work currently being carried out on the walls of the Baluarte de la Reina has seriously affected the turtle community inhabiting these ponds, leading to a decrease in the number of individuals sighted. There is evidence of at least 3 deaths produced in the turtle community in August 2007 caused by the repair work being carried out.

Figure 6 & 7. Absolute frequencies obtained through direct observation and referring to the day when the highest quantity of sightings occurred.



Jaitzubia marshland was recovered in early 2005. Despite the prohibition on liberating turtles, a number have been sighted. The San Joakin pond is an enclosed area, thus preventing transit of the turtles. This is not so in Antozolo. The pond of Aingiraportu was recovered in late 2006 but it has not as yet been fenced off. In the summer and autumn period of 2006, no individuals have been sighted.

A total of 31 terrapins were captured in the Baluarte de la Reina in August 2006, two of which were autochthonous and 29 allochthonous species or sub-species, mainly *T. s. elegans* (n=10). The three series of captures give an estimate of a population of 43 individuals (range: 18-68; p=0.337). This would represent a density of population of 1,246.36 ind./ha. The majority of the individuals captured are fairly large in size, except for the two young specimens (nCl < 100 mm). During research carried out prior to the period of investigation (2002-2004) a newborn *T. s. elegans* was captured (Tw: 5.00 gr; nCl: 30.00 mm; Cw2: 30.00 mm; Ch: 20.00 mm). In the South pond, A small specimen (nCl < 50 mm) of *T. s. scripta* was spotted in the same pond in 2006.

### CONCLUSIONS

The town park of Baluarte de la Reina is totally accessible to the public. This, together with the fact that it is not forbidden to liberate terrapins in the pond, results in the increase of its community of terrapins in comparison to the suburban areas of Plaiaundi and Jaitzubia.

Newborn terrapins have been sighted, as has a fertile nest, and the various attempts they make to lay eggs suggests that these exotic terrapins are going through a process of naturalization. This means that a successful biological cycle can probably be completed in the future.

It is necessary to carry out a course of action to deal with the terrapins that are set loose, before they become an ecological problem or even a health risk.

### ACKNOWLEDGEMENTS

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SPECIE	VISUAL CENSUS	CAPTURE	BALUARTE DE LA REINA, HONDARRIBIA											
			BASIC BIOMETRY OF CAPTURED INDIVIDUALS											
			nCl				Tw							
			n	JU	♂	♀	Mean	S.D.	Max	Min	Mean	S.D.	Max	Min
T.s.e.	x	x	11	0	1	10	147.78	28.59	199.90	100.58	576.82	260.95	1158.00	182.00
T.s.s.	x	x	7	1	1	5	107.18	28.87	131.56	51.10	257.50	132.48	400.00	32.60
T.s.e. x T.s.s.	x	x	6	0	0	3	141.93	31.38	189.74	106.67	428.83	203.20	799.00	218.00
E.o.	x	x	2	0	0	2	115.95	7.77	121.44	110.45	257.00	52.33	294.00	220.00
M.I.	x	x	1	0	0	1	166.94	--	--	--	704.00	--	--	--
T.o.	--	x	2	0	0	2	140.75	18.99	150.64	130.86	478.00	76.37	532.00	424.00
T.sp.	x	x	1	1	0	0	89.53	--	--	--	140.50	--	--	--
G.sp.	x	--	0	0	0	0	--	--	--	--	--	--	--	--
N Total:			30											

Table II. Species found in the study area and basic biometry of captured species (Abbreviations: Tw: weight; T.s.e.: *Trachemys scripta elegans*; T.s.s.: *Trachemys scripta scripta*; T.s.e. x T.s.s.: *Trachemys scripta elegans* and *Trachemys scripta scripta* hybrids; E.o.: *Emys orbicularis*; M.I.: *Mauremys leprosa*; T.o.: *Trachemys ornata*; T.sp.: *Trachemys sp.*; & G.sp.: *Graptemys sp.*).