Red-eared slider turtle

(*Trachemys scripta elegans*)

Managing red-eared slider turtles in an urban setting (Navarra, Spain)

Herpetology department of the Aranzadi scientific society

■ The department strives to conserve amphibian and reptile populations and their habitats. It produces and disseminates scientific knowledge on the topic.
The objectives are to:
- establish specialised research teams;
- conserve amphibian and reptile populations;
- provide professional training in the field;
- inform the general public.

■ The study on the distribution and management of red-eared slider turtle populations in Navarra was conducted in a partnership with the city of Pamplona and the Navarra regional government.

Context and issues involved

■ Red-eared slider turtles were first observed in Spain in 1983 in a pond near Madrid, after having been released by people who no longer wished to keep their pet.

■ In 1997, the species was present in 45 towns, essentially in Catalonia and in Andalusia. In 2010, the species was observed in 32 provinces and 17 regions, an increase of 78% with respect to the previous survey.

■ Population groups are now found in all types of freshwater aquatic environments, both natural and artificial, including estuaries, rivers, ponds, irrigation reservoirs, etc. There are urban populations, the result of the turtles regularly released by people, and feral populations in natural environments located far from towns.

■ Red-eared slider turtles are seen as one of the most troublesome invasive species in Spain, due to their significant reproductive capabilities (between two and three spawns per year with 12 to 17 eggs per spawn in Catalonia) and their long life expectancy (up to 30 years in natural environments).

■ The species competes for food and habitats with native turtles such as Spanish pond turtles (*Mauremys leprosa*) and European pond turtles (*Emys orbicularis*).

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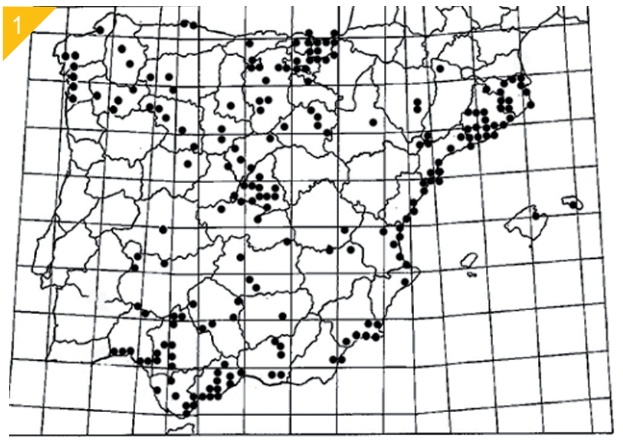

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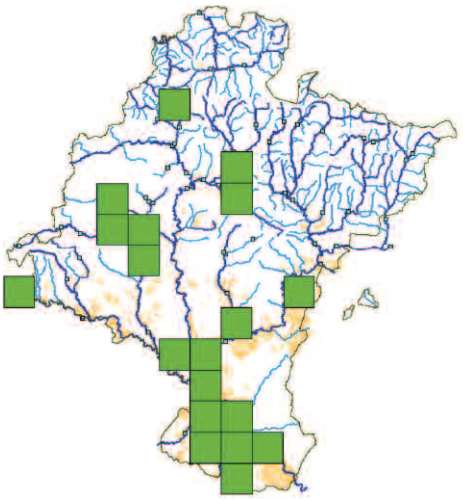

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1. Distribution of red-eared slider turtles in Spain in 2010.
2. Observations of red-eared slider turtles in the Navarra region.

Interventions

■ Test of trapping techniques

■ Several techniques have been developed to eliminate alien turtles, ranging from capture by hand to shooting and an array of trapping techniques. In certain regions of Spain, including Navarra, red-eared slider turtle populations are located in areas frequently visited by the public and close to urban centres, which makes management more difficult in terms of:
- access to private water bodies;
- finding sunning spots used by the turtles;
- people vandalising traps and releasing trapped turtles;
- limited possibilities for shooting.

■ In Navarra, the main objectives of the study conducted by the Herpetology department of the Aranzadi scientific society and the Navarra regional government were to:
- update the information on the distribution of red-eared slider turtles in Navarra;
- develop and test an effective trap for use in urban areas.

■ The sunning spots for the turtles were detected and characterised. They were located in areas where water depths exceeded 2 metres and where the turtles used emerged tree trunks to sun.

■ Several types of traps were laid and tested on the Arga River in the city of Pamplona.

■ A modified "Bolue" trap

■ The "Bolue" trap is a sundeck trap comprising a round, floating platform. The turtles climb up on the platform which tips over and the turtles find themselves caught in a net. The platform was originally made of wood, but subsequently cork was used. The netting under the platform was attached using fishing line to the bank so that the captured turtles could be easily retrieved.

■ "Aranzadi" turtle trap

■ This trap is an adaptation of the sundeck turtle trap that comprises a floating cage with a slippery inside frame that turtles cannot climb. The frame is made of PVC tubes on top of which cork is fixed. The traps are attached to the banks using fishing line. Some of the traps were baited.

■ The trapping campaigns took place from June to August 2008 in two sections of the Arga River in Pamplona. The two types of traps (modified Bolue and Aranzadi) were installed in sites where red-eared slider turtles had been frequently observed.

■ The baited traps were checked daily and the other traps were checked once weekly.

■ The captured turtles were weighed, had their sex determined, the shell measured, and were then euthanised (frozen).

■ Study of animal populations

■ In addition, population monitoring was conducted on all the rivers, dams and ponds of Navarra.

Results and assessment

■ Test of trapping techniques

■ A total of ten slider turtles were captured in the two test zones, including the subspecies *T. scripta elegans* and *T. scripta scripta*, as well as a hybrid of the two species.

■ In the areas where the traps were laid, the Aranzadi were the most effective with over 70% of the captures made.

■ One Aranzadi trap was vandalised during the trapping campaign and a Bolue trap was stolen.

■ The Aranzadi traps were effective in the sunning spots already used by the turtles, including in river reaches where the water was less than 2 metres deep.

■ The baited traps and the Bolue traps were not as effective due to the slow tripping mechanism which provided the turtles with enough time to escape and due to the wariness of the turtles concerning the most commonly used baited traps (notably hoop nets).

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3. Red-eared slider turtle.
4. Bolue trap.
5. 6. Aranzadi turtle trap.

■ The Aranzadi traps are cumbersome and difficult to move, which made them more difficult to steal in an urban setting.
■ The cork on the top of the traps attracted the turtles in the sunning spots.

■ Study of animal populations

■ The species was observed in areas used for sport fishing (ponds and reservoirs) and near dense urban areas (the cities of Pamplona, Tuedla, Estalla and Logrono). A single specimen was observed in a rural area, near a village with approximately 100 residents (Gallipienzo). Turtles of both sexes were observed in the Pamplona area. The species is therefore likely to reproduce in the area and monitoring is required.

Information on the projects

■ The results of the project were presented during a symposium on freshwater alien species introduced in the Iberian peninsula, held in Pamplona on 12-13 November 2009.

Outlook

■ A much larger project is currently under way in the framework of the LIFE + Trachemys (*Strategy and proven techniques for the eradication of freshwater invaders*) (LIFE09 NAT/ES/000529) programme. The project will deal with 13 sites around Valencia and 4 sites in Portugal, from 2011 to 2015.
■ Approximately 100 sundeck traps and hoop nets are used to trap the turtles. The objective is to capture 1 000 turtles per year.
■ The management techniques will be presented during seminars and training sessions in the other regions of Spain and in other countries confronted with invasive alien turtles.
■ A manual on management and capture techniques will be published. It will present the applicable legislation, how to set up an operational monitoring network, trapping protocols and techniques, and communication strategies for dealing with the general public.
■ The project will also work on improving available knowledge on the biology and reproduction of *Trachemys scripta elegans*. Finally, the LIFE + programme includes a project to reintroduce European pond turtles.

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For more information

■ LIFE Trachemys programme: http://www.cma.gva.es/web/indice.aspx?nodo=72096&idioma=I
■ Aranzadi scientific society: http://www.aranzadi-zientziak.org/
■ Verterbrados ibéricos: http://www.vertebradosibericos.org/reptiles/habitat/trascrha.html
■ Valdeón A., Crespo-Diaz A., Egana-Callejo A., et Gosá A. 2010. Update of the pond slider Trachemys scripta (Schoepff, 1792) records in Navarre (Northern Spain), and presentation of the Aranzadi Turtle Trap for its population control. Aquatic Invasions, 5(3) : 297–302.
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■ Zugadi I., Buenetxea X. 2004. "Trampa Bolue": Presentación de un nuevo modelo de trampa para la captura y observación de galápagos acuáticos en balsas de agua. Pp. 129-130. Dans : Libro de resúmenes del VIII Congreso Luso-Español, XII Congreso Español de Herpetología, Málaga, España.