



Red-eared slider turtle

(*Trachemys scripta elegans*)

Management programme for red-eared slider turtles on Corsica (Corse)

Corse nature conservatory

■ The Friends of the Corse regional nature park association (non profit), created in 1972 and a member of the Federation of conservatories for natural areas since 1992, became the Corse nature conservatory (CENC) in 2011.

■ The main missions include:

- sustainably managing and preserving the ecologically important natural sites through land purchases and controlled use;
- improving knowledge on the habitats and species present on natural sites, whether managed or not by CENC;
- promoting sustainable development of the island by reconciling the preservation of natural areas with human activities;
- enhance the value of the natural environment in the eyes of the general public through events, on-site developments and naturalist excursions.

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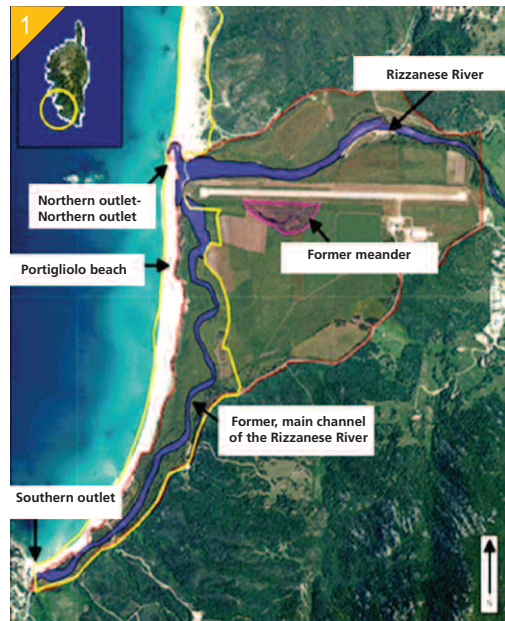
Management programme for red-eared slider turtles 2009-2011

■ The programme was funded by the Corse regional environmental directorate and the Rhône-Méditerranée-Corse water agency.

■ A scientific committee for the project included members from the National scientific research centre (CNRS) in Montpellier and from INRA in Rennes.

■ The project consisted of two main parts:

- “preparation of a method to manage and limit the populations of *Trachemys scripta elegans*” by acquiring knowledge on the biology and ecology of the subspecies in the area where it was introduced, acquiring experience in trapping and by testing the devised method;
- “raising awareness and informing on the issues concerning the subspecies and new pets in general”.



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1. The sectors where trapping took place.

Intervention site

■ The programme study and work site (outlined in red on the map) is located at the mouth of the Rizzanese River, at the southern end of the Gulf of Valinco in the town of Propriano.

■ On arriving near the coast, the Rizzanese River forms a vast wetland of 180 hectares. The mouth of the river was divided into two outlets by the construction of the Tavarica airport in 1974:

- the channelised, northern outlet that became the main outlet;
- the southern outlet located at the end of the former, main channel of the river that is now a string of small water holes that are periodically interconnected. The old channel and the Portigliolo beach are listed as a type-1 ZNIEFF (natural zone with high ecological value) and are part of the Rizzanese outlet and Olmeto beaches Natura 2000 zone (outlined in yellow on the map) that is managed jointly by CENC, the Seaside and Lake Conservation Trust and the Corse-du-Sud departmental council.

■ In 2009 and 2011, studies were conducted on several sectors of the site whereas in 2010, the studies dealt exclusively with a former meander now cut off from the river (outlined in pink on the map).

Disturbances and issues involved

■ Red-eared slider turtles (*Trachemys scripta elegans*) were first observed and captured on the study site during a study on European pond turtles (*Emys orbicularis*) conducted from 2002 to 2008.

■ Management of the invasive subspecies is an important ecological issue in that it can impact native turtle species and European pond turtles in particular, the sole freshwater turtle in Corsica listed in Annexes II and IV of the Habitats directive and listed as “near threatened” in the Red list of threatened species in France (reptiles and amphibians) drawn up by IUCN France.

■ To date, the impacts have not been extensively studied and not a great deal is known, however a number of studies, including those by Cadi and Joly (2003, 2004) and Verneau *et al.* (2007 and 2009 not published; 2011) indicate that:

- competition exists and is being won by red-eared slider turtles, particularly for access to sunning spots, which leads to loss of weight and higher mortality rate for European pond turtles;

- exogenous parasites carried by the red-eared slider turtle are transferred to native turtles, including the European pond turtle.

■ In 1998, the EU prohibited the import of red-eared slider turtles into Europe (EC No 2473/98). In France, possession of the *Trachemys* species is subject to authorisation (ministerial decree dated 10 August 2004) and since the decree dated 30 July 2010, it has been prohibited to release red-eared slider turtles to the natural environment.

Interventions

■ Study of animal populations

■ To improve the available knowledge on red-eared slider turtles and set up an effective management technique, CENC launched a study on the population on the Rizzanese site in the framework of the 2009-2011 programme.

■ The objectives of the study were to:

- determine the population size and structure, and its success in reproducing;
- learn more on the phenology of the subspecies;
- monitor site occupation and the movements of individual turtles;
- inspect upstream sites to detect any isolated population groups.

■ The methods employed included:

- capture-marking-recapture (CMR);
- radio-monitoring;
- observations using binoculars to assess the relative abundance in each type of environment.

■ Trapping campaign

■ In order to offer managers with an effective management technique for red-eared slider turtles, CENC conducted tests in different phases.

■ **Phase 1 in 2009.** Trapping test to compare four different types of traps (fyke nets, sundeck turtle traps, cage traps, hoop nets) in two different types of environment.

Study protocol:

- CMR technique;
- traps of one type were laid in each of the four sectors for one week;
- four trapping sessions were conducted during the month of July;
- the captured turtles were measured, weighed and marked. Their sex and age were estimated..



2. Red-eared slider turtle (*Trachemys scripta elegans*).

3. Work sectors (Phase 1). Free-flowing river circled in blue and stagnant areas in green.

4. Hoop net.



■ **Phase 2 in 2010.** Attempt to eradicate the turtles in the former meander and assessment of the attempt. The meander was selected because it is isolated and because of the large number, on the basis of the population study, of red-eared slider turtles living there.

Protocol:

- traps were set along the banks, one trap every 15 metres, including 38 hoop nets from 8 June to 31 August, 5 fyke nets and 15 sundeck traps from 1 to 16 September;
- traps were removed two weeks after the last capture;
- they were checked once daily, toward the end of the day;
- the captured turtles were euthanised (frozen).

■ **Phase 3 in 2011.** Trapping campaign in three sectors in the northern part of the site.

■ The protocol was the same as for Phase 2, but only hoop nets (approximately 40) were used.

Results and costs

■ Study of animal populations

■ Main results of the three-year study period:

- 84 turtles were identified (including one dead) on the site, with 35 juveniles and 48 adults, of which 70% were female;
- in the former meander, the estimated population consisted of 46 red-eared slider turtles and 120 European pond turtles;
- the preferred habitats are stagnant waters surrounded by reed beds, located in the northern part of the study zone (with maximum densities in the former meander);
- three red-eared slider turtles were observed upstream of the study zone.

■ Trapping campaign

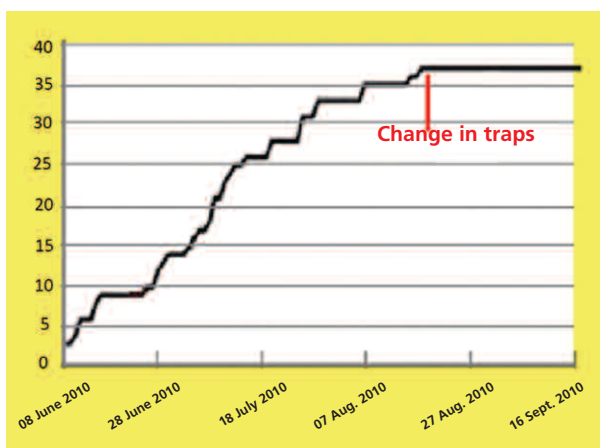
■ Phase-1 results:

- hoop nets were the most effective in the two types of environment;
- turtles were caught in the hoop nets on a regular basis throughout the trapping campaign;
- a larger number were captured in the area around the former meander.

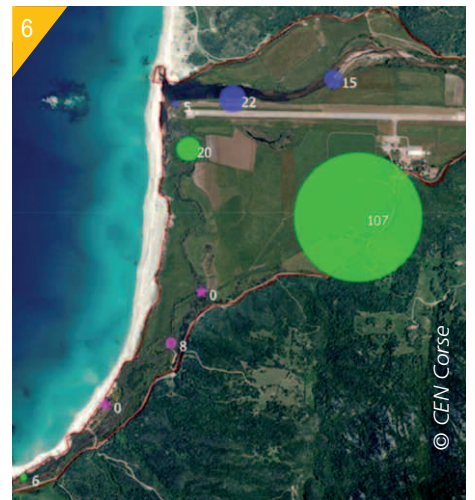
■ Phase-2 results:

- a total of 37 turtles were captured over the 101 days (out of the estimated 46 turtles present), including 12 juveniles and 25 adults;
- more captures were made in narrow, sunny sectors out of the wind, with natural sunning areas.

Cumulative number of captured turtles (Phase 2).



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5. Work sectors (Phase 3).

6. Distribution of observed turtles according to the type of habitat (green = reed bed, blue = running water, pink = stands of salt cedar/irises).

7. Informational poster.

■ Phase-3 results:

- a total of 34 turtles were captured;
- the results confirmed and provided further information on the data from 2010. A large number of turtles were captured in areas around reed beds, in narrow (side) channels with steep banks, deep water (at least 1.5 to 2 metres), out of the wind, but well exposed to the sun.

■ Results of the "management" section of the programme

- In the lower Rizzanese valley, the red-eared slider turtle population is capable of reproducing and dispersing, and has been observed upstream.
- The trapping technique is effective in confined and isolated areas, but did not eradicate the species. During the project, only 72 of the 84 identified turtles were captured.
- Management costs over the 3-year period amounted to 79 500 euros (34 500 in 2009, 25 000 in 2010 and 20 000 in 2011).

Outlook

- The distribution map for the subspecies in Corsica will be updated.
- A network of managers will be created to feed a joint database and share results and information.
- The stakeholders in the network will be trained on monitoring and capturing red-eared slider turtles.
- A technical guide will be drafted for the managers.
- Trapping will be conducted in Corsica.e.

Information on the project

- Informational documents were prepared and distributed from 2010 to 2012:
 - a three-part document (5 000 copies), comprising a description of the subspecies, a presentation of the work done and an observation sheet, was distributed to organisations involved in protecting and/or managing natural areas, stores and veterinarians;
 - an exhibition with a total of six panels;
 - an informational poster (1 000 copies) with a sticker;
 - teaching material (booklet and kit) for the "Turtles and more" campaign intended for school children and the general public;
 - pages on the CENC site on the red-eared slider turtle programme, providing access to the informational documents and an occasion for the public to comment on the programme.
- The "Turtles and more" presentation, lasting 45 minutes and including three workshops, is intended for school children and the general public.
- Information for the managers of natural areas:
 - an information sheet was sent by mail to the partners (nature reserves, ONCFS, the Seaside and Lake Conservation Trust, etc.);
 - information on the protocols drafted and the results obtained during the population study and the tests to trap and eradicate the animals is available on the internet site;
 - assessment information on the management programme is also available on the internet site.

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