



Red-eared slider turtle

(Trachemys scripta elegans)

Testing management methods for red-eared slider turtles on the Courpain site (Loiret department)

Maison de Loire du Loiret (MLL)

- The non-profit organisation, founded in 1987, aims to raise awareness and inform on environmental issues (hikes along the Loire, teaching projects, exhibitions, etc.) and to run studies and monitoring programmes on the plants and animals in the Loire ecosystem.
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Intervention site

- The Courpain site is a former gravel quarry (17 hectares), located in the town of Ouvrouer-les-Champs, between the Loire River and its dike.
- When the quarry ceased operation in 2007, the redevelopment project for the site that was awarded to the Institut d'Écologie Appliquée in Saint-Jean-de-Braye and MLL was brought into the project. MLL was assigned the task of organising naturalist monitoring of the site.
- The Courpain site comprises numerous habitats capable of supporting rich biodiversity, including reed beds, meadows, woods, briars, etc. It is a wintering and nesting site for many bird species (163 species have been observed, including ospreys [*Pandion haliaetus*], reed buntings [*Emberiza schoeniclus*] and the Eurasian hoopoe [*Upupa epops*]).
- In 2012, MLL signed a three-year Natura 2000 contract with the French State to restore the site and manage it. The organisation set up a programme to restore the environment, including work on the river banks, cutting of poplars, removal of sand dunes, etc.
- In 2016, the site was purchased by the Loiret Departmental council. A long-term (20-year) administrative lease was granted to MLL. The site is now managed in the framework of the river-basin contract with the Val Dhuy Loiret SBMP.

Disturbances and issues involved

- Red-eared slider (RES) turtles were imported massively to France as pets in the 1980s and 1990s. Numerous persons subsequently released the adult turtles to the natural environment.



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1. Map showing the Courpain quarry.

- The species can have a major, adverse impact by competing with protected, native turtle populations (the area is highly favourable for European pond turtles [*Emys orbicularis*]).
- The omnivorous species can also affect invertebrate populations when it is present in high densities (Prévoit-Julliard *et al.*, 2007).
- Its reproductive capacity is currently considered fairly low in France, however its life span is very long.
- On the Courpain site, RES turtles have been regularly observed since 2007 during ornithological monitoring visits.

Intervention

- On 20 August 2014, during a visit to monitor odonata, a juvenile turtle was found dead on the banks of the pond. The probability that the species had reproduced on the site was discussed.



- A meeting was organised in March 2015 with the National agency for hunting and wildlife (ONCFS) and the Departmental territorial directorate (DDT) to set up an experiment to capture and study the population of RES turtles on the site.
- Prefectoral authorisation to shoot the turtles was granted on 7 April 2015.

■ Trapping in 2015

- Two different types of traps were laid on 15 April 2015:
 - two semi-floating hoop nets, installed two metres from the bank, in the area where RES turtles had most frequently been seen on the site. Bait (a dead fish) was placed inside each trap;
 - two cage traps, installed on the bank in the area where RES turtles had most frequently been seen on the site. A dead fish was again placed inside each trap.
- The traps turned out to be ineffective (no captures) and were removed after eight weeks.
- Two new traps were laid on 5 August 2015. The first was a floating, cage trap and the second a sundeck trap.
- The traps, checked on 19 August, were again empty. The sundeck trap was moved to a different place and the cage trap had its flotation system and stability improved, but they still did not produce a single capture.
- The two traps were removed from the site on 30 September.

■ Shooting operations

- On an experimental basis and in compliance with the conditions laid out in the prefectoral authorisation, ONCFS ran shooting trials on the site.
- Seven sequences were organised over the spring and summer of 2015, from May to August.
- Each sequence lasted about one hour and involved two technicians, one with a .222 rifle equipped with a scope and the other serving as an observer for safety reasons. The turtles were located using binoculars.
- Two RES turtles were shot and killed, one on 6 May and the second on 15 May.

■ Monitoring a nest

- On 4 June 2015, during an ornithological monitoring visit, a RES turtle was observed while laying its eggs. The turtle was removed and placed under the custody of an authorised holder, but the eleven eggs were left on site to see if they were viable.
- After a few days, some of the eggs contained dead fetuses and some others appeared not to have been fecundated, but five living turtles finally hatched in mid-August, confirming that RES turtles could reproduce on the site (the young turtles were removed and transferred to the authorised holder).

■ Trapping in 2016

- A new type of trap was tested in 2016, the Fesquet cage trap. Results using this type of trap were positive on the Or Pond (Hérault department) and its wide entry, flat on the ground, is thought to facilitate captures.
- Two cages were set up near the pond in the spring of 2016.
- Unfortunately, they turned out not to be suitable for the site given that two juvenile Eurasian beavers were captured two weeks later (without injury). They were immediately released.
- Prior to their capture, no turtles were captured using the Fesquet cage traps.



2. Aerial view of the quarry.
 3. The quarry in May 2007, prior to the rehabilitation.
 4. The quarry in June 2014.
 5. The juvenile turtle found on 20 August 2015.
 6, 7. Setting up the floating trap.

Results and assessment

■ Results

■ Five trapping techniques were tested, but did not result in any captures. Two turtles were shot and killed during the shooting project run by ONCFS.

■ Assessment

■ Most of the time spent monitoring the cages occurred during ornithological monitoring visits to the site. Consequently, it is difficult to estimate the cost. A number of visits were also made by volunteers.

■ The estimated cost to build the cages was approximately 150 euros for the materials, plus a half-day to build the cages and place them on site.

■ The number of man-days has been estimated at twelve in 2015 and eight in 2016.

■ With the exception of the ONCFS shooting campaign, this operation was entirely financed by MLL.

Information on the project

■ An article was published in the *Chéloniens* journal.

■ An article will be published in the *Recherches Naturalistes* journal.

■ Articles have been published in the press.

■ A management report on the project was presented to the ONCFS invasive alien species group at the Centre Val de Loire environmental directorate on 17 December 2015.

Outlook

■ It would appear that sundeck and floating traps are the best suited to the site because the devices must be capable of adapting to the changing water level of the Loire River. However, a larger number of traps is required and they must be set up in the beginning of the season (end of March, early April).

■ A new, larger floating sundeck (2 x 2 metres), equipped with netting rather than a grid, will be tested in 2017.

■ The shooting campaign will not be repeated given the small number of turtles shot with respect to the time spent.

Regulations

■ The decree dated 30 July 2010 prohibits the release of the species to the natural environment in France.

■ The species may not be imported into the European Union (EC 349, 25 February 2003) and it is also listed as an invasive alien species of Union concern (European regulation 1143/2014).

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This management report was drafted in January 2018 by the work group for biological invasions in aquatic environments, set up by the French biodiversity agency and IUCN France, in addition to those already presented in the second volume of the book titled "Invasive alien species in aquatic environments, Practical knowledge and management insights", in the Knowledge for action series published by the French biodiversity agency (<http://www.onema.fr/sites/default/files/EN/EV/cat7a-EEE-vol2.html>).



8. Shell of a shot turtle.
9, 10. Eggs of a RES turtle laid on the site.

For more information

■ Maurer, C. 2015. Projet expérimental de capture et d'étude d'une population de « Tortues de Floride » - Trachémydes à tempes rouges. Maison de Loire du Loiret, 13 pp.

■ Maurer C. 2015. La reproduction *in natura* de la Trachémyde à tempes rouges, *Trachemys scripta elegans*. Cheloniens n°39.

