

ITALY'S ENDANGERED CHELONIANS

# TESTING TIMES FOR TERRAPINS



Barely but tenaciously surviving in isolated populations with a patchy distribution, the European pond turtle is a threatened species in need of protection



Italian herpetologist Daniele Seglie checks if there are movements in the fish trap. Checks are carried out once or twice a day depending on the location.



A female specimen after being released in the capture location. Sometimes, before fleeing, the animal will remain still as to observe us.

TEXT AND PHOTOS  
BY RICCARDO CAVALCANTE

The *Emys orbicularis*, commonly called the European pond turtle or European pond terrapin, is a Chelone belonging to the family *Emydidae*. A timid inhabitant of wetlands, marshes and sluggish streams, it feeds on arthropods, occasionally supplementing its diet with algae and vascular plants. This species lives mainly in the western Palaearctic, but land reclamation, climate change, agricultural expansion and construction have dramatically reduced the surfaces of the natural environment suitable for its survival. This is the reason why *Emys orbicularis* is inserted into the Red List drawn up by the IUCN, and is classified as a species vulnerable to extinction. It is a species quite sensitive to environmental changes and pollution, and it is therefore to be considered - as several other animal and vegetable species - a reliable biological indicator of the overall health of ecosystems.

Unfortunately, because of the fragmentation of habitats, in large part of its range *Emys orbicularis* is present in small populations only, which survive in isolated areas, putting them at risk of

local extinction. In fact, habitat fragmentation is one of the main causes of population decline - by preventing individuals from migrating from one area to another the percentage of inbreeding will increase, producing as a result the genetic impoverishment of the populations. In the long term this can lead to the extinction of entire populations.

Another phenomenon to be reckoned with is the presence of alien species which have been introduced into our ecosystems. An example worth mentioning is that of the American pond terrapin, *Trachemys scripta*. When babies these tortoises are small as a coin, quite colorful and apparently undemanding. They used to be sold - and still are - as pets at fairs, country festivals and in shops. In fact *Trachemys scripta* can reach a considerable size - up to 28cm for an adult female - in 3 to 6 years, depending on feeding and temperature. It can live up to 30/35 years of age, so it is an animal that needs special attentions when kept as a pet in a home. This is the reason why many people free these terrapins in the

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A young specimen photographed during the release into the water and back to freedom in its natural habitat.



An adult female, about 8 years old, is preparing to flee after having been released. This beautiful specimen was found in an old abandoned quarry, where a project of re-naturalization is being successfully implemented.



Herpetologist Daniele Seglie transcribes the data collected during the measurements taken on the specimen portrayed in the photo.

environment thinking it is the right thing to do, unaware of the serious ecological damage that these animals, not present in our ecosystems in the past, can cause, competing with native species and interfering with the balance of our already highly stressed natural habitats. Even though there is no reliable evidence that the European pond terrapin is damaged by its coexistence with *T. scripta*, recent experimental studies show that, if the two species lived in the same area, there would begin a competition which would cause damage to the indigenous one (Cadi & Joly, 2003, 2004). Researchers reported cases where *Trachemys scripta* is dominant on *E. orbicularis* in the choice of thermoregulation sites, segregating the local species to poor basking spots.

In Piedmont, a North-Western region of Italy, the populations of this testudinate are significantly threatened so as to have it classified as a species in danger of extinction. Therefore the European pond terrapin is defined as "priority", and it requires systematic monitoring of the populations in the area. This is the purpose of the regular monitoring which has been required by the river Po and Orba Park authorities and authorized by the Ministry of the Environment, Land and Sea. For this reason, Daniele Seglie, herpetologist and expert in wetlands, and I, are monitoring some groups in order to correctly understand the current state of the health of the populations and to safely decide how to act in order to preserve them. Our

monitoring is a CMR type, which stands for "capturing, marking and recapturing". Net traps are then placed to capture animals with the minimum possible of stress. Trapped specimens are monitored, their state of health is assessed and then we carefully weigh and measure the length and width of the carapace and plastron (the dorsal and ventral components that make up the shell of the turtle), the tail is measured, then the animals are sexed and the age is determined. To count its years we use the growth lines which are present on the shields that make up the carapace. After all the necessary measurements have been taken, the turtles are marked by making notches on the marginal shields, according to a precise pattern that allows the recognition of each terrapin. This step is very important because it allows to estimate the growth, the movements and the health of each individual specimen. Everything is done on location, in the field, and all terrapins are set free where they have been captured.

This kind of field work has its advantages and its disadvantages, as it forces us to work in all types of weather conditions and in close contact with bloodsucking creatures - such as mosquitoes, horseflies and leeches - and all kinds of parasites, but the desire to give a new hope to animals populations in dire need of it and the unique opportunity to work closely with animals which are otherwise very difficult to see makes this job exciting!



After having identified the right location, the herpetologist positions the fish net trap used to catch the terrapins.



A specimen photographed in its natural habitat during thermoregulation.

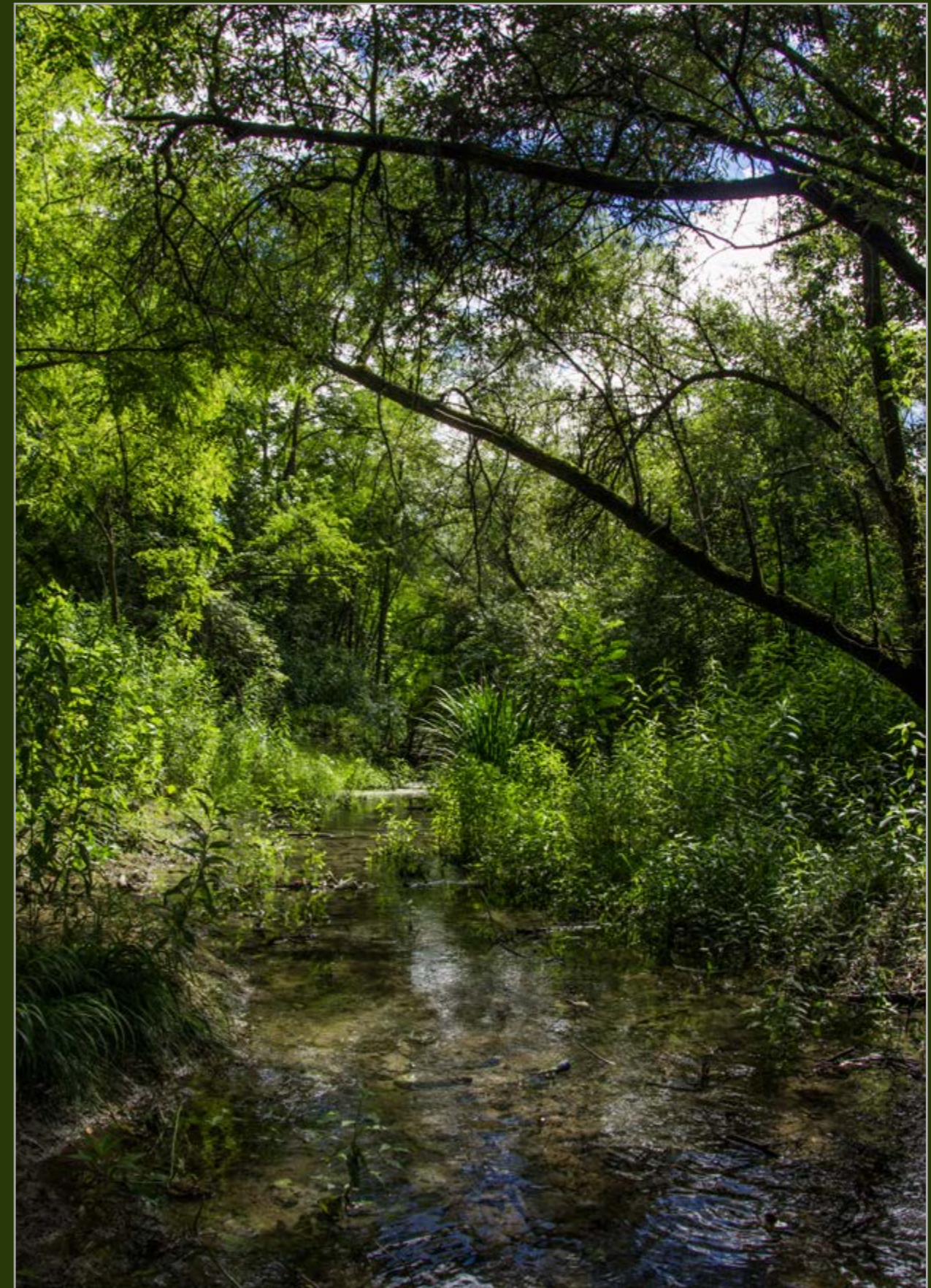


Measurement of the tail and the distance between its base and the cloaca.





Typical forested wetland habitat. In the foreground, behind the fallen tree trunk, a plant typical of these habitats, the bullrush *Typha latifolia*.



A small watercourse flows through the woods. There are no *Emys orbicularis* here, but they possibly use these brooks to move from one wetland to another.



A specimen is being carefully measured and checked, while two others try to escape. This is our field office and workstation!



Larval stages of the newt *Triturus carnifex* are commonly found in monitoring sites. These animals are a potential food source for *Emys orbicularis*.



Field measurement of the shell. Length and width of the carapace and plastron of each specimen are dutifully and carefully noted.



A female specimen of the Painted turtle *Trachemys scripta elegans*, most probably a former and illegally released pet. This extremely adaptable species, native to the central and southern USA, competes with native species, exposing *Emys orbicularis* to additional threats of extinction.

The same specimen of a previous photo as it is being released. The animal seems intrigued by the photographer and is reluctant to leave.



A young specimen of *Emys orbicularis*, about 4 years old, basking on a patch of moss. Young terrapins can be quite colorful.



A water-level shot attempting to show how *Emys orbicularis* sees its own environment.



The typical habitat of *Emys orbicularis* in Italy - an oxbow lagoon covered by Yellow Water-lily *Nupha lutea* in bloom, with a stretch of hydrophile woodland in the background.