Mauremys leprosa with member amputations by *Lutra lutra* attacks

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Resumen: El galápago leproso (*Mauremys leprosa*) es una especie presente en la península ibérica, sur de Francia y norte de África. Presenta un claro carácter termófilo haciéndose más rara hacia el norte de España, y siendo común en el sur. Durante los últimos años hemos observado en Sierra Norte de Sevilla varios ejemplares con lesiones y amputaciones, y además hemos podido documentar un caso de ataque por parte de una nutria (*Lutra lutra*), especie reproductora en la zona. El consumo de *M. leprosa* por *L. lutra* ya está descrito con anterioridad, pero en esta nota describimos nuevas observaciones, interesantes de cara a aclarar en un futuro esta interacción.

Mauremys leprosa is a terrapin present in the iberian peninsula, Southern France and North Africa. In Spain it is more common in the South, where it presents high population density (Speybroeck *et al.*, 2016). During a study on *M. leprosa* and *Emys orbicularis* distribution and abundance in Sierra Norte de Sevilla Natural Park (Rodríguez-Rodríguez *et al.*, 2015), we have observed a lot of cases of individuals of *M. leprosa* showing amputations or teeth marks on the shell. Here we describe several cases with pictures in Rivera de Cala, Real de la Jara (UTM grid 10 x 10 QC40; 439 masl).

The first case was a female captured on May 01, 2014. This individual presented an amputation of the left hind limb. The animal showed good general health. The second case was another adult female, observed on October 15, 2016 with the amputation of both front limbs. In this case, the animal presented a normal activity and it looked in good condition. The wounds were healed (Figure 1). In addition, on March 02, 2016 we also observed a *L. lutra* attack on a *M. leprosa* individual (Figure 2) and on August 04, 2016 we found a carcass with external body parts consumed by any predator. It is remarkable that this carcass belonged to an individual marked in the Rodríguez-Rodríguez *et al.* (2015) study, a male captured on May 01, 2014. This last carcass could have been also consumed by other predators present in the area, but it is one more indication.

The first record of *M. leprosa* predation by *L. lutra* is from Ruiz-Olmo (1995). Macdonald & Mason (1982) found remains of *M. leprosa*

Figure 1: Adult female showing the amputation of both front limbs.
Figura 1: Hembra adulta con doble amputación de patas delanteras.

Figure 2: *Lutra lutra* attack on a *M. leprosa*.
Figura 2: Ataque de *L. lutra* a un ejemplar de *M. leprosa*.

and *E. orbicularis* in some *L. lutra* scats and García & Ayres (2007) have documented several cases of massive predation on *M. leprosa*, including until 200 animals carcass. In addition Saldaña & Prunier (2006) found the remains of 85 individuals where *L. lutra* had only eaten the external parts of the animal (outside the shell). There are more reports of this kind of interaction as those of Barrio & Bosch (1997), Clavero *et al.* (2004, 2005). All this information shows us that it is not unlikely that *L. lutra* was the author of this kind of wounds. Likely, the adult *M. leprosa*'s shell is too hard to *L. lutra*'s jaw, but arms and legs are accessible for this mustelid.

It seems that *L. lutra* behaves like an opportunistic predator, taking the more vulnerable preys and not the most abundant (Blanco, 1998), so populations of terrapins could be threatened in case of low densities of other kind of prey. It is also important to know if *L. lutra* preys on juveniles or on the threatened *E. orbicularis*, with few individuals in the area. Although Lanszki *et al.* (2006) described a massive hunt of *E. orbicularis* by *L. lutra*, it seems to occur only in extreme environmental conditions, so the apparent and continued decline of *E. orbicularis* is not allocable to the *L. lutra* if we consider the high abundance of other preys in the area.

We consider interesting to continue studying how this behavior affects terrapin populations and the concrete details of this kind of interactions, documenting for example how many animals are able to survive to this attack and how the injuries affect the fitness of the terrapin.

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