The control of western Hermann’s tortoise nest predation

Vilardell A.1,2, Capalleras X.2,3, Budó J.2,3 and Pons P1.
1Departament de Ciències Ambientals. Universitat de Girona. Campus de Montilivi, 17071 Girona, Catalonia.
2Grup d’Estudis i Protecció de les Tortugues (GEPTO), Can Laporta Centre Cultural de l’Albera, 17700 La Jonquera, Catalonia.
3Centre de Reproducció de Tortugues de l’Albera. Santuari del Camp, 17780 Garriguella, Catalonia.
e-mail: albertvilardellbartino@gmail.com

15th European Congress of Herpetology  28 September-2 October 2009 Kuşadası/Aydın/TURKEY

Introduction
The Western Hermann’s tortoise Testudo hermanni hermanni is currently considered to be globally endangered. Its last native population in the Iberian Peninsula occurs in the Albera mountain range, where extensive shrubland encroachment has been occurring for decades. As a consequence of this process, open areas necessary for the tortoise nesting are scarce. The high nest concentration in a few suitable nesting areas probably entails the high rate of nest predation found in Vilardell et al. (2008).

Objectives
The aims of this work were:
1. To identify potential predators of Western Hermann’s tortoise nests with trail cameras.
2. To test the efficacy of two chemical repellents in the control of Hermann’s tortoise nest predation.
3. To test the efficacy of the creation of new nesting areas in the species natural range to diminish nest concentration.

1. Potential predators of Western Hermann’s tortoise nest

Thirteen trail Cameras (Wildview Xtreme 2) were placed in areas with a high breeding concentration, where a high number of nest predation had been previously discovered. Eight artificial nests (containing three quail Coturnix coturnix eggs filled with soil, replicating a natural nest) were spaced in front of each trail camera to identify potential predators.

The pictures obtained show the main predators:

- Eastern green lizard (1%)
- Wild boar (28%)
- European badger (28%)
- European badger (37%)
- Beech marten (6%)
- Fox (6%)

Cumulative percentage of depredated artificial nests.

European badger Meles meles
Beech marten Martes foina
fox Vulpes vulpes
wild boar Sus scrofa

2. Efficacy of two chemical repellents to control nest predation

We tested the relative efficacy of two commercial chemical repellents claimed to be efficient at repelling potential predators of Hermann’s tortoise nests. 128 artificial nests were evenly distributed among eight rectangular 625m² plots (16 nests per plot) that were spaced 15 to 20 m apart.

Study area comprises a grassland habitat with a high breeding concentration.

The repellents we used delayed predation for a brief period but, even so, after four days almost all the nests were depredated.

The results we obtained, unsatisfactory for reducing nest predation, forced the nature reserve’s management to look for other methods of predator control. One alternative could be to manage the natural habitat to create new nesting areas in order to diminish nest concentration.

3. Efficacy of the creation of new nesting areas to decrease nest predation

This study aims to test the hypothesis that nest predation may be lower when nests are more widely distributed in the landscape. To this aim, 27 plots of 2x2 m, 5x5 m and 10x10 m, distributed in three locations within the Albera Nature Reserve, were cleared (70-80% of the shrub cover was removed). After clearing, nine artificial nests (containing three quail eggs) were distributed in the plot centre. Moreover, nine additional nests were located in the corner of the 5x5 m and 10x10 plots. Plots were visited daily during the first *** days after nest installation.

All the artificial nests were depredated by wild boar and beech marten during the first four days.

Nowadays, we are working towards protected areas, fencing in all the plots of one location to assess the efficacy of the barrier in the control of Hermann’s tortoise nest predation. This wild life fence is a barrier which can fenced out the predators while can be crossed by the tortoise.

These studies have been supported by: