

## TURTLE TRAPS – EFFICIENCY FOR *TRACHEMYS DORBIGNI* (CHELONIA, EMIDIDAE), IN SOUTHERN BRAZIL

Eficiencia de las trampas para tortugas en el caso de *Trachemys dorbigni* (Chelonia, Emididae), en el sur de Brasil

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### RESUMEN

El punto inicial en trabajos sobre la ecología de quelonios, principalmente cuando el énfasis es la dinámica poblacional o el crecimiento, consiste en la elección del método adecuado para la captura-marcación-recaptura (CMR). Este trabajo resulta de una extensa investigación bibliográfica y muchas pruebas en campo para identificar los métodos y materiales en que se obtienen los mejores resultados de las capturas para una área de diques eutrofizados. El mejor resultado toma en cuenta el costo y comodidad de uso y número de capturas que se encontraron en el uso de "basking-traps" y trampas de metal.

### ABSTRACT

The initial point in works about the chelonian ecology, mainly when the emphasis is the dynamic populational or the growth, consists of the choice of the method adapted to the capture-marking-recapture (CMR). This work is resulted of extensive bibliographical research and tests a lot in field to identify the methods and materials with better capture result for an area of eutrophysed dams. The best result, taking into account the cost, use easiness and number of captures were found in the use of basking traps and metal snares.

KEYWORDS: Turtles. *Trachemys*. Dorbigni. Trap. Brazil.

### INTRODUCTION

The initial problem in papers about chelonians, mainly when the emphasis is in its populational dynamics or growth consists in the choice of the adequate method for capture and marking of individuals. The related literature brings out many examples and methods for both situations. However, the practice has shown that a case's success can not always be applied "ipsis literis" to another one. Success or failure of a particular technique depends on environmental factors.

### METHODS

The present results are based partially on Pereira's Master Degree Dissertation Thesis (1999) presented at CPG Ecologia, which took place in Guaíba, RS, southern Brazil (30°11'S and 51°22'W). The studied area consists in an approximated 1.5 ha pound with maximum depth of 1.5 m, almost entirely covered with *Egeria* sp. (Brazilian Elodea).

First of all, diverse methods described on literature for chelonians' arresting para capture, such as terrestrial entrapments (Gibbons & Semlich, 1981), many kinds of nets (Gibbons, 1968, 1990), floating blind (Bider & Hoek, 1971), and manual capture, were tested.

Among these, terrestrial entrapments and steady nets weren't used due to the facts that the studied area was used for cattle breeding and there were a large amount of submerse vegetation, which hin-

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ders persecution and capture of turtles. Only two capture systems had shown efficiency in the present study:

- a) Basking traps.
- b) Baited traps.

We selected these two methods after extensive pilot tests of all the other methods previously mentioned.

A description of both methods follows:

**a) Basking Traps** (fig. 1): Based on Petokas' model (1979), it consists in a wood square approximately one squared meter sized, constructed in a 45° high inclination in its internal side. Light PVC flakes (in order to avoid heating) were fixed in the internal lateral sides of the wood flakes and folded with a 90° inclination. This device is needed to prevent bigger turtles to lean in the internal wood rim and run away. In the internal side a wire net was fixed in all around its extension. Floaters of approximately 10 cm in diameter (PVC tubes sealed and/or dischargeable plastic bottles) were inserted in the wood flakes' internal sides to help in floating and balance. This entrapment was put in clean points of the coverage of *Egeria* sp. in the pond and fixed by ropes to the shore.

**b) Baited traps (snares):** (Fig. 2): Stainless metal traps (50x30x30 cm) with mobile door, originally used as rodents' traps. Pieces of raw fish were used as baits. The traps were daily visited. The snares were put at the bank, only 2/3 submersed and daily reviewed in order to avoid the possibility of drowning by a rise in the water level. Santos (1990) informs that the average time of survival of *T. dorbigni* in submersion is around 13 hours, so that a period of 24 hours to check the snares is reasonable.

Two basking traps were used during a two month period, resulting in a capture of 97 individuals, an average of 6 turtles (range from 0 to 10 individuals) by occasion, with variable size ranging from 10.9 to 19.8 cm of plastron length, in an estimated population of 485 individuals (Pereira, 1998).

Four snares disposed in pairs at opposite banks of the pond, caught 8 turtles (range from 0 to 2 captures by occasion), during a 1-month period. In these, only big individuals (more than 16cm of length) were caught.

The effectiveness of both methods as quantitatively compared above is based on the works of Pereira (1998) which clearly showed that the basking traps not only samples a large range of individuals' size and captures a larger number of individuals.

## RESULTS

The arresting para capture system called Basking Trap was the best choice in aquatic, eutrophic systems, with reasonable extension. The system appeared to be inconsistent for newborns and very young individuals, who do not show a basking behavior. However, alternative methods were not efficient either. In comparison with larger individuals, young turtles stay at the shores covered by macrophytes, feeding on the leaves and invertebrates, protected by possible local predators such *Hoplias malabaricus* (fish), *Caiman latirostris* (crocodilian) and some birds. The success in arresting by basking traps is strongly influenced by external factors as temperature, insolation and diverse local disturbances.

The snares system (baited traps) was effective only for large individuals, besides demonstrating a lower success rate than that of basking traps. However, it is an alternative or ancillary capture system in the studied environment.

## CONCLUSIONS

Analyzing both methods, it can be said that the positive aspects of the basking trap are: its facility of retrieval of captured animals and its low cost of confection, in addition of its allowance of a more sporadic collection. On the other hand, due to its dimensions, the transportation is difficult. The snares are easy transportable, allow easy collection, but have a higher cost, need daily reviews and only one individual is caught by the trap each time.

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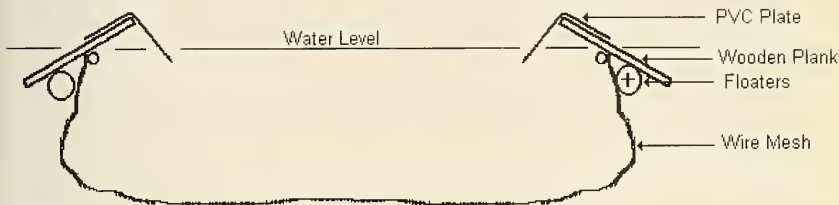


FIGURE 1. Cut view of the Basking-Trap.

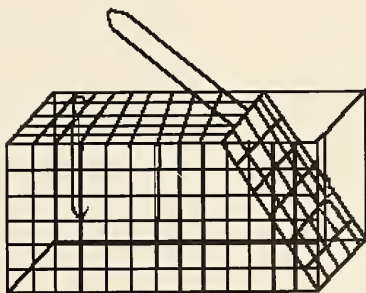


FIGURE 2. Schematic perspective view of Baited-Trap.