

17 YEARS OF MONITORING THE MAJORCAN MIDWIFE TOAD, *Alytes muletensis*. A GROWING TENDENCY OF THE GLOBAL POPULATION

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Introduction

The Majorcan midwife toad (*Alytes muletensis*) is a small Discoglossidae native from the Tramuntana Mountain Range (Fig. 1) at the island of Mallorca in the Balearic Islands, Spain. It was discovered as a fossil in 1977 and rediscovered alive in 1980.

Practically from their discover the Nature Conservation Administration and NGOs have carried out conservation actions like a breeding program in captivity, the creation of new localities with the bred captive animals, the rebuilding of some localities and the control of the predators like the Viperine Snake (*Natrix maura*). But the most important action is that from the beginning of the First Recovery Plan of the Majorcan midwife toad, *Alytes muletensis*, (1991-1994) it has been carried out an annual monitoring of all the existing populations to know the tendency of the population in all its occupational area.

In this poster we present the results of 17 years of monitoring the whole population of the Majorcan Midwife Toad that it is, in fact, one of the oldest and longest series of annual amphibian monitoring in Europe.



A detail of an *Alytes muletensis* adult

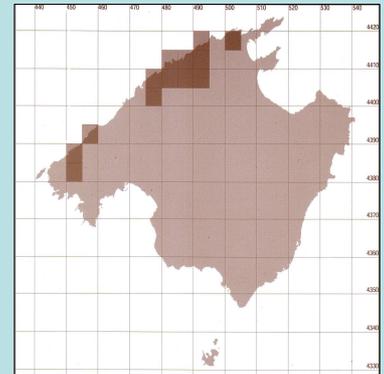


Figure 1. Distribution map of Majorcan midwife toad in 2006 from the BIOATLES Project.



Methods

The present study compares the size of the tadpole populations among them during the seventeen years (1991-2007) of field work. The indicator to evaluate the global population tendency that has been chosen is the number of tadpoles counted through the annual census.

The census consists on visiting, during the summer season, all the known populations and counting all the tadpoles found visually from out of the pools and from inside them, helped with a water torch and a diving suit and glasses.

In each visit a field sheet is filled not only with the number of tadpoles and adults found in a single pool but with more information about other parameters: accompanying species (especially their predators) or physical parameters about the pool where the tadpoles inhabit (Fig. 2).

◀ A view of a torrent in the Tramuntana Mountain Range where a natural population inhabits.

Results

The number of tadpoles counted in the annual census show that during the period 1991-1994 exists a decreasing of the tadpole population to a historical minimum (9,049 tadpoles). From 1994 to nowadays the global population has been increasing constantly except during the years 2000 and 2005 that the population suffered a reduction, probably related with the dry conditions of the weather and the scarce rain that reduced the number of reproductive pools.

The growing tendency observed in figure 3 is related not only with the increasing of the tadpole population size in each locality but also the increasing of the number of the population sites (Fig. 4). Thus, in 1991 the tadpole population counting in all localities started. It was summarized a global population of 14,915 tadpoles in 11 populations, while in 2007 a historical record was obtained with 30,924 tadpoles in 35 populations. One of the actions planned to increase the global population size during the period 1991-2007 was to create new populations by introducing adults and tadpoles in human made pools, torrents and springs.

The weight in the global population of the new created populations has been increasing lightly through the years (Fig. 5), though it never reached to more than 20 % of the global population.

Discussion

It is clearly evident that the global population has a growing tendency. Since the beginning of the census in 1991 with 14,915 tadpoles to the recent historical record in 2007 with 30,924 tadpoles, the number has been duplicated. Furthermore the number of localities has been triplicated. Thus, in 1991 there were 11 populations while in 2007 there were 35 populations.

The actions for conservation carried out through the years has guaranteed, by the moment, a good conservation status of *Alytes muletensis*. In fact the IUCN reduced their Red List Category from Critically Endangered in 1996 to Vulnerable in 2004.

Though it must be remembered that approximately the 80 % of the global population lives in natural localities. Thus, a warming of the weather and a scarce rain could reduce the useful reproductive pools. Furthermore the discover of the killer fungus (*Batrachochytrium dendrobatidis*) in 2004 in 2 natural localities (in 2007 there were 4 localities with its presence) could affect seriously the populations. By the moment only a single infected population has decreased in a 25 % of tadpole population size, the rest of them do not seem to be affected in the tadpole population size.

Note:

All the information of this poster is been taken from the annual reports of the Nature Conservation Administration of the Balearic Government from 1991 to 2007

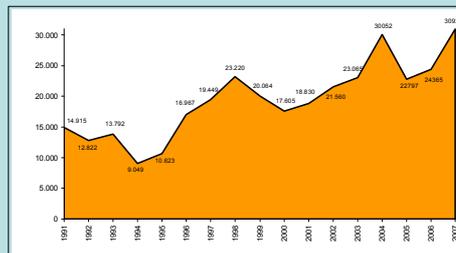


Figure 3. Annual census of *Alytes muletensis* tadpoles from 1991 to 2007.



▲ During the annual census is frequent to find tadpoles metamorphosing.

Acknowledgements

To all the people that during the last seventeen years has participated in the annual census and has contributed to the conservation of this emblematic Majorcan toad.



Fitxa de camp: FERRERET

Govern de les Illes Balears
Conselleria de Medi Ambient

ALLIBERAMENT CONTROL N.º
 RECOMPTE HORA: DATA:

TORRENT: _____ N.º _____

GADES DEL GORG: N.º AGUA: _____
MARE: _____ m. PROFUNDITAT: _____ m.
LLARG: _____ m. TRANSPARENCIA DE L'AGUA (0-5): _____

Número d'individus: 1a 2a 3a Adults

ALTRES ESPÈCIES ANIMALS: N.º aprox. _____

VEGETACIÓ: Cobertura % _____

DEPRIDORS I COMPETIDORS: N.º aprox. _____ Parais: _____ Mares: _____

OBSERVACIONS: _____

ANÀLISIS D'AGUA

N.º MOJESTRA: _____
VOLUM: _____
T: _____
PH: _____
CONDUCTIVITAT: _____

OBSERVADOR: _____

Figure 2. Data sheet used in the field work.

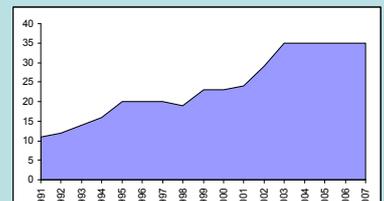


Figure 4. Evolution of the number of localities during the period (1991-2007).

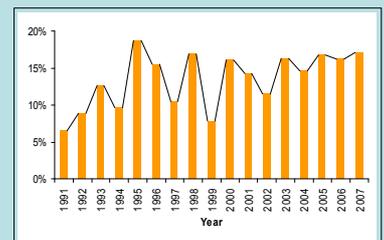


Figure 5. % of tadpoles counted in introduced populations respect the global tadpole population size during the census from 1991 to 2007.