



## DATA ON GEOGRAPHICAL DISTRIBUTION AND HABITATS OF THE RANA EPEIROTICA IN ALBANIA

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### SYNOPSIS

Two green frogs' species, *Rana balcanica* and *Rana epeirotica* with their cross-breeding hybrid coexist in the aquatic habitats of Saranda-Delvina lowland area in the south-western part of Albania. *Rana epeirotica* is a near endemic species of the amphibian fauna.

The boundary of its distribution is in southnorthern part of this area. Coexistence, similar reproductive features and partial outcry of the reproductive period with *Rana balcanica* have led to this species cross-breeding. *Rana epeirotica* mostly lives in the smooth water habitats or slow flows, above 0-100 m sea level. They are common to be found in marshes, hollows, ditches, rivers'mouths that is covered by plants. Until the 60-s, the above-mentioned area was covered by marshes which later were systematized and therefore it became a considerable decrease on habitats of *Rana epeirotica* and its hybrid.

### INTRODUCTION

In the watery environments of the lowland (field) area of Saranda, Delvina regions, located in the Southwestern part of Albania, at an altitude of 100m above the sea level lives epirus frog (*Rana epeirotica*), a type of green frogs. As a distinction from the other kinds, this type is rarely seen in non-watery areas. This type of frog is also found in the Northwestern part of Greece and such it is a sub endemic type for Albania. In this area, *Rana epeirotica* co-exists with another type of green frogs, *Rana balcanica* as well as another hybrid resulting from the hybridization among them. (BRUNO 1989; SCHNEIDER & HAXHIU 1992; HAXHIU & ORUÇI 2004; ORUÇI 1999; ORUÇI 2004; SCHNEIDER et al. 1984; HAXHIU 1987).

This zone is characterized from a Mediterranean climate, thus being considered as "the natural hothouse of our country" (PLAKU et al. 1982). During the fifties, XX century, a major part of this zone was covered by 1100 ha of bogs and 1164 ha of quags (SELENICA 1928). At the end of fifties and beginning of sixties of XX century, the main parts of bogs and quags were meliorated and as a result three rivers (that of

Pavlo, Bistrica and Kalasa rivers) were deviated, many draining ditched of various sizes were created and a lot of hills were deforested allowing the obtained land from melioration to become cultivated (ORUÇI 1999); HAXHIU & ORUÇI 2001). The illegal collection of green frogs, the bad functioning of draining ditches, the use of water for irrigation without norms as well as the climate changes and global warming lead to transference and reduction of the living areas of frogs especially for *Rana epeirotica*.

## MATERIAL AND METHODS

For this study, alive samples have been gathered during field expeditions in 1992-1994 and 1996-1999 as well as field observations have been undertaken to collect data on zoo-geographic, biologic, reproductive, bioacoustics character and data on physico-climatic status of habitats where *Rana epeirotica* lives, starting from 1996 and on (ORUÇI 1999; ORUÇI et al. 1998). The data have been compared continuously with those of other authors and their situations in the field (SCHNEIDER et al. 1992). The obtained samples have been taxidermied and analyzed in order to gain morphometric data and are kept (protected) at the Museum of Natural Sciences of University of Tirana (GRUP AUTORËSH 1997; HAXHIU 1982).

## RESULTS AND DISCUSSION

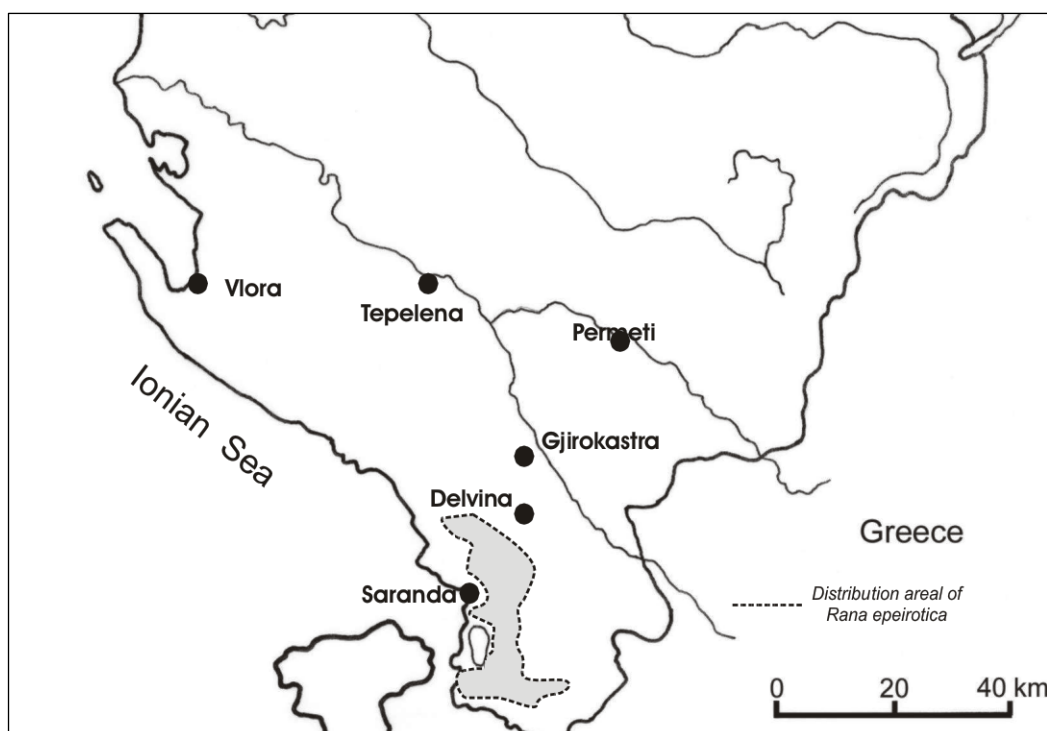
### Zoo-geographic data

In order to define the borders of distribution of *Rana epeirotica*, we have considered the distribution of gathering areas, meeting places encountered during the field expeditions and comparisons with other authors (ORUÇI 1999; SOFIANIDOU & SCHNEIDER 1989). It is of significance the assessment of frogs' screams (especially during the period of reproduction), laying of eggs and comparisons of habitats of dwelling. (SCHNEIDER & HAXHIU 1992). From the data analyses, it results that *Rana epeirotica* lives in co-existence with *Rana balcanica* and their hybrid in watery environments.

The northern borders of distribution are the fields around the middle flow of Kalasa river (between Vane and Bajkaj villages). The western part of Delvina, Vurgu and Mursi are divided by Ionian Sea, by the range of hills of Volloderit, Gjashta, Çuka, Berdenesh-Ksamil and Ionian coast. The southern border of distribution is Pavlo river (after its deviation) in the downward flow in field area. The eastern part of this area is spread along the bottom-part of the western side of Milese mountain and Kulluricë, Halos, Caush, Vrion and Finiq hills (Map 1). The area of distribution is located almost at those bordering areas where used to be bogs and quags areas. One part of *Rana epeirotica* area is located within a protected land (National Park of Butrint Lake), however the protected measures for the amphibo-fauna especially for *Rana epeirotica*

have resulted as being insufficient. According to the Red Book of the Albanian Fauna (Tirana, 2006) based on Threatening Category (IUCN, 1994), the status of *Rana epeirotica* is vulnerable (VU), yet the sub-criteria data are not fully completed (ANONYMOUS 2006).

Map 1. Distribution areal of *Rana epeirotica* in South Albania



#### Habitats of *Rana epeirotica*.

The habitats where *Rana epeirotica* lives, based on the morphology of vegetation in watery areas and in their sides as well as in the situation of waters in biotope, are classified as follows:

1- Ditches of various sizes which are connected or in-flowed in bogs and quags areas, lakes and rivers. These biotopes are with less plants in surface of water, but for the part of the plants at the side of watery areas, they are vastly developed especially the class of *Phragmitetea* of *Phragmites communis*. The flow of water is of a slow move.

2- The bogs, quags areas, lakes and deviated rivers beds which are of big watery areas, high degree of vegetation inside and less vegetation on the surface. The waters are calm and with a very slow move. The hydrophilic plants belong to *Potametæ* class as well as the swimming plants of *Lemnetalia* rank which create movable layers on the waters' surface. At the side of stagnant and calm waters, the

plant associations of shavery (*Typha.sp*) and that of alliance of *Glyceris-Sparganion* are grown, which are also rich in mineral substances.

3- Biotopes at lowlands at the side of rivers where there are a few watery and side-watery plants and the water flow is not too slow or of a medium move. At these biotopes there are a few individuals of *Rana epeirotica*.

4- Biotopes with temporary watery areas such wholes, small reservoirs, artificial ditches which have water and plants only during the winter-spring period. The majority of these biotopes are created by the interference of anthropogenic factor in nature therefore it can be changed (ORUÇI 1999; HAXHIU 1994).

The biotopes, according to the above classification, where *Rana epeirotica* can be mostly encountered are points 1 and 2. These biotopes are threatened continuously by: the climate changes and global warming (water's vaporization and plants' dryness especially in point 1, 3, 4); the intervention in the terrain of the anthropogenic factors (agriculture, drains system, usage of water for irrigation etc); illegal hunting without criteria of green frogs.

## CONCLUSIONS

*Rana epeirotica* is a sub-endemic type for Albania where it has the northwestern border of its distribution.

It is the type of green frogs which likes water the most, but because of the limited areas and because of the interference of some non-favoring climate and anthropogenic factors, it is under pressured to be lost in the terrain.

The climate changes and the agricultural intervention of mankind have considerably decreased the habitats of *Rana epeirotica*.

Both species and their hybrid are being chased for food and export. The major part of this amphibian widespread area is located at the protected area of Butrinti Lake (RAMSAR site), but the protective measures haven't proved successful so far.

Referring to the Albanian Fauna Red Book, the actual status has vulnerable (VU).

The awareness and publication about the *Rana epeirotica*'s importance should be increased as well as protection level of its habitants in the natural areas.

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