New Hope for Dominican Frogs: PROYECTO RANA RD.

By Sixto J. Incháustegui

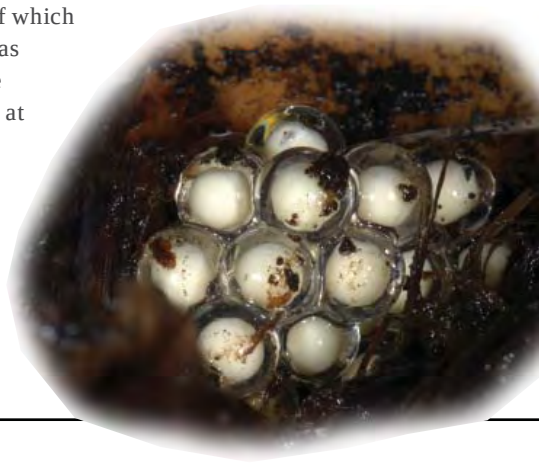
The Caribbean region is considered among the top five biodiversity hotspot. Hispaniola contributes in great extent to this, due to the high number of endemic fauna and flora that it possess. One of the taxa contributing more to this are the amphibians, with nearly 100 % endemic species. At the same time, Cuba and Haiti are among the 20 countries of the world with highest numbers of threatened amphibian species (47 and 46 species), and Haiti and the Dominican Republic are the two top countries of the world with highest percentage (92, 86) of threatened species (Stuart et al, 2008). This high amphibian diversity is due mainly to a single genus, *Eleutherodactylus*, which laid eggs on land and has direct development. The physiography of Hispaniola with mountain ranges running east to west and the intermountain valleys and lowlands has allowed for a magnificent radiation and speciation of this group of frogs. In particular, many are mountain species, with small geographic distribution. Hispaniola has the highest mountains in the insular Caribbean, the highest reaching above 3,000 m asl. Some of the species, like *Eleutherodactylus patriciae* are confined to high elevations of the Cordillera Central, reaching above 3,000 m asl.

Amphibians in the Dominican Republic are poorly known, as it is reflected in the latest book on the Natural History of West Indies Amphibians and Reptiles (Henderson and Powell, 2009). But still, they are much less known by the general citizen, and by many, feared. Endangering factors are not, in any case, cause by direct human actions to the individuals. They have no market value and are in most cases away from humans. Most species are not even known to exist, and in general, all frogs have a single common name, “maco”, a Dominican word for frog of pre-Columbian origin. Threats, then, come mostly from habitat destruction, to which now potential climate change impacts most be added. The results of the 2004 Global Amphibian Assessment (GAA) have shown that amphibians are the single most endangered vertebrate group at present, and among them, sadly as number one fauna assemblage, the Hispaniolan species. These results are telling us, that rapid actions must be taken if we want to support this important group of animals. Many of the species are protected within the national parks and protected areas, but there is not a national assessment of the situation.

The Dominican Government, taken all this into consideration, and through the Minister of Higher Education, Science and Technology FONDOCYT, (National Fund for Innovation and Scientific-Technical Development) approved a three year project, PROYECTO RANA-RD (DR-FROG Project – Dominican Republic Frog Project). This project (FONDOCYT 2008-1-A2-102) is implemented through Grupo Jaragua and the National Museum of Natural History of Santo Domingo. The leading team is integrated by Sixto J. Incháustegui (Grupo Jaragua and ASG/IUCN), Luis M. Diaz (Museo de Historia Natural de La Habana, Cuba and ASG/IUCN), Nils Navarro (Sociedad Cubana de Zoología) and Cristian Marte (Museo Nacional de Historia Natural de Santo Domingo). Among students, it is worthy to mention outstanding student Marcos Rodriguez.

PROYECTO RANA-RD seeks to review the conservation status of the Dominican frogs; to establish 3 field long term monitoring stations; to develop a participatory conservation action plan; and produced the manuscript of a book on the amphibians of the Dominican Republic. While achieving this, broad education actions should be taken at the national level about the importance and need for amphibian conservation and the creation of capacity building for amphibian biology and conservation.

First field campaign was carried on 2010, and preliminary results presented in the VII Caribbean Biodiversity Congress (Incháustegui et al, 2010; Navarro et al, 2010; Landestoy et al, 2010). Work was carried in 20 field stations, allowing collecting and photographing 27 of the 44 species present in the country, of which 13 were recorded. This has allowed to increment the collection of amphibians at the National Museum of Natural History of Santo Domingo. Secondarily, field work is also collecting data and specimens of reptiles. All together, a database of over 4,000 photos



in raw files, both in the wild and in the laboratory, is already available. New species have also been discovered and are in the process of being described.

First field trip was to the type locality of *Peltophryne fluviatica* in the north west of the Dominican Republic. This toad was first described by Schwartz in 1971 and has not been collected thereafter (Hedges and Diaz, 2010). Unfortunately, we could not find it. The type locality was visited, but no evidence of the toad was found. Other herpetologist have search for it, with the same results. Nonetheless, it is expected that under heavy rains the species would be found. Another trip was to the other side of the country, the eastern Dominican Republic, near Higuey , where *Eleutherodactylus ruthae* was collected and recorded. This frog belongs to a group of now seven recognized species which excavate underground burrows, from which males call, and females deposit their eggs. Very little is known about the natural history of these species. This frog had not been collected since 1963 (Hedges and Diaz, 2010).

The two most relevant amphibian assemblages are those of the Cordillera Central and the Sierra de Bahoruco, and thus, were the two geographic areas where major efforts were carried. The Cordillera Central has 16 known species, of which 10 are endemic to this mountain range, living between 600 and 3,000 masl. Five are critically endangered (CR), 7 endangered (EN) and 1 is vulnerable (1). We collected and photograph 9 of these species. These include the highest living frogs of the insular Caribbean. Sierra de Bahoruco has 16 known species, of which 11 are endemics. Six are critically endangered (CR), 4 are endangered (EN) and 3 vulnerable (VU). We were able to collect and work with 12 species.

PROYECTO RANA RD offers new hopes for the conservation of amphibians in the Dominican Republic. For the first time, a project of this nature is being fully financed by the Dominican Government. It is also the first time that broad educational campaign for amphibians conservation are to be taken, and most relevant, a Conservation Action Plan is to be produced by the end of the third year (2012). The information being produced will serve to support the production of educational materials, as well as the action plan.

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Photographs
Top Left: *Eleutherodactylus patriciae* EN
Middle Left: *Eleutherodactylus ruthae* EN
Bottom Left: *Eleutherodacytuls wetmorei* clutch of eggs VU
Top Right: *Eleutherodactylus leoncei* CR
Middle Right: *Eleutherodactylus jugans* CR
Bottom Right: *Eleutherodactylus wetmorei* VU
Photos: Proyecto Rana-RD/Luis M.

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Eleutherodactylus portoricensis. Photo: R. L. Joglar.

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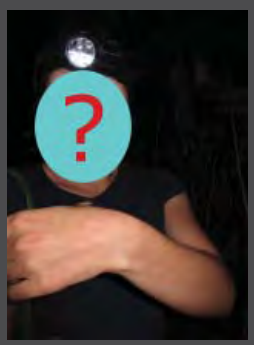

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