



DIET AND REPRODUCTION OF THE GALÁPAGOS PINK LAND IGUANA (*CONOLOPHUS MARTHAE*): IMPLICATIONS FOR SPECIES CONSERVATION

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37th Cycle - A.Y. 2021/2022

Galgápagos pink land iguana (*Conolophus marthae* Gentile & Snell, 2009) is a recently described species, which is rapidly became a flagship and one of the most iconic animal of the Galápagos archipelago. The species is only found on the top of Wolf Volcano on Isabela Island. *C. marthae* has an extremely restricted range and a very small population size, and thus the species is classified as Critically Endangered in the IUCN Red List of Threatened Species. The major threats for the pink iguana include the presence of invasive alien species, climate change effects, and extreme geological events, such as volcanic eruptions. As most of recently described species, the pink iguana suffers from a lack of information on its ecological needs. *C. marthae* is syntopic with a population of *C. subcristatus*, which shows similar ecological traits. According to the competitive exclusion principle, two species with the same ecological niche can not stably coexist without diversificate their habitat and resource use. However, the potential competition between the two land iguanas species is still under-investigated. This project aims to study the diet and the reproduction of *C. marthae*, in order to provide the best instruments for implementing future conservation measures. In particular, the main purposes of the research include i) the definition of the ecology and reproductive biology of *C. marthae*; ii) the evaluation of the trophic competition between *C. marthae* and *C. subcristatus*; iii) the development of a new generation GPS device ("Wireless Sensor Node" - WSN) for iguanas tracking, in collaboration with the Department of Electronic Engineering (Tor Vergata) and E.S.C.A.P.E SOC. COOP. In order to obtain the data necessary for achieving the abovementioned goals, the project plan include several field sessions on Isabela Island, during which occurrence data and environmental samples (faeces and plants) will be collected, and the position of the nesting sites will be identified. Moreover, a new version of the WSN will be attached to the captured individuals of *C. marthae*. The occurrence data collected during the field activities will be employed to evaluate the species habitat suitability and distribution through the application of Ecological Niche Models. The faecal and plant samples will be analysed using morphological and metabarcoding approaches for assessing the diet composition and the trophic niche differentiation between *C. marthae* and *C. subcristatus*. Finally, the information gained by the new WSNs attached on iguanas will be used to further develop the new GPS devices. The results of the study will provide a fundamental knowledge for implementing future conservation programmes. In particular, the identification of current and future suitable areas and nesting sites of *C. marthae* will be essential to select high priority preservation patches and carry out future repopulation actions. Moreover, the project activities will lead to the development of a new generation GPS device which could have high relevance in scientific and economic sectors, both at national and international level.