

Project Update: January 2022

Summary

On January 6th 2022, I arrived at Charles Darwin Research Station to start the monitoring project of *Laterallus spilonota* on Santa Cruz Island, Galápagos (Figure 1). During the first week of field work, the local volunteers of Charles Darwin Foundation and I learned from Galapagos Land Bird Conservation Plan coordinator, Dr Birgit Fessl, how to apply monitoring methods to study the species population and how to assess the vegetation on the sampling points. Despite some delays due to COVID-19 we still reached this month goals.



Figure 1. Adult of Galapagos Rail (*Laterallus spilonota*) on its main habitat in highlands of Santa Cruz Island.

Fieldwork at Media Luna site

We started monitoring the Galapagos rail at Media Luna Highlands in the species' main habitat (Figure 2). This area encompasses the *Miconia* shrubland and fern-sedge zones, characterised by the endemic shrub species *Miconia robinsoniana*, densely covered by bryophytes on its branches and a ground layer composed by fern species, lycopods and herbaceous flowering plants (Figure 3).

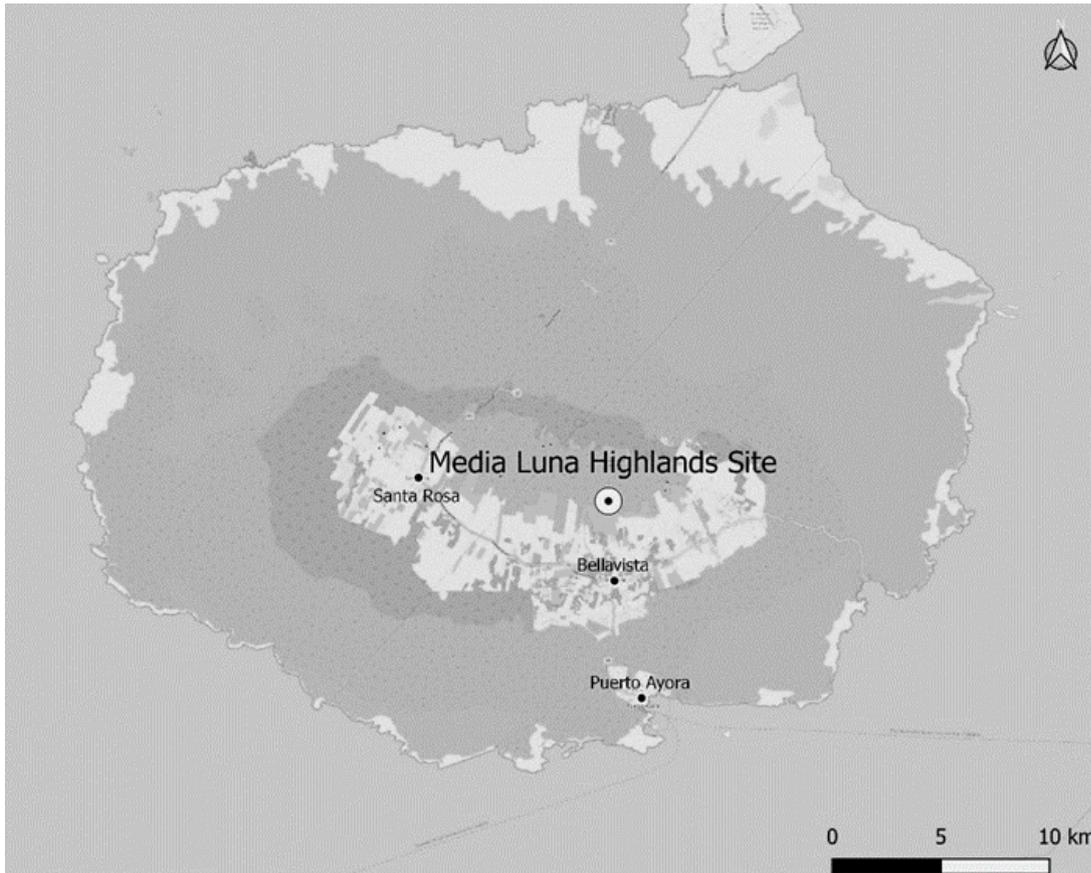


Figure 2. Santa Cruz Island with the main settlements (Puerto Ayora, Bellavista and Santa Rosa) and the location of the Media Luna Highlands Site.



Figure 3. Miconia shrubland on Media Luna Highlands Site with dense vegetation characterized by the endemic shrub species *Miconia robinsoniana* and different fern species.

Census

During January 2022, we covered 120 sampling points - 41% of the total. At each point, the observer was in the centre of the sampling point for 10 minutes. During the first minute, we registered sampling conditions information followed by 5 minutes of listening for spontaneous species calls. After that, we recorded answers to playback of *Laterallus spilonota* for 3 minutes. The calls were played for 15 seconds in the direction of each cardinal point. Figure 4 shows the order of the steps used and Table 1 shows the results from January 2022.



Figure 4. Sequence of the steps used to monitor the species and the time each step takes.

Vegetation assessment

Vegetation structure was assessed to describe the habitat surroundings of the sampling points. This task was performed by visually estimating the percentage of occupation by different flora species at each point. Three different layers of vegetation were considered:

- Tree layer: counting and identifying the number of trees present at the point.
- Shrub layer: visually estimating the percentage of shrubs species at the point as well as its average height.
- Ground layer: visually estimating the percentage of vegetation ground species at the point as well as its density.

Table 1. Number of Galapagos Rail and Paint-billed Crake recorded in the 120 monitored points during January 2022 and the total numbers of Galapagos Rail recorded during the last monitoring study in 2007.

Monitore site (Santa Cruz)	Galapagos Rail (2022)	Galapagos Rail (2007)	Paint-billed Crake (2022)
Media Luna (Highlands)	209 (n=120)	219 (n=193)	0 (n=120)
Media Luna (Perimetral)	0	0	0
Santa Rosa	0	0	0
Mina Roja	0	0	0
TOTAL	209	219	0

Volunteer participation



The Charles Darwin Foundation plays an important role in the local community, teaching about current social issues such as biodiversity decline, invasive species, nature conservation and climate change. Local volunteers participated in the project's activities to understand how we monitor the species, to be trained in census techniques and to learn about the species and its conservation. Table 2 shows the volunteers and other people who went to the field with the main researcher, during January.

Table 2. Name, role in Charles Darwin Foundation (CDF) and Origin of the people who joint the project's activities in January 2022.

Name	Role in CDF	Origin
Jonathan Cueva	Volunteer	Loja – Ecuador
Emilia Andrade	Volunteer	Quito – Ecuador
Mara Espinoza	CDF Staff	Galápagos - Ecuador
Ibeth Alarcón	CDF Junior Research	Quito - Ecuador
Birgit Fessl	CDF Staff	Austria



Figure 5. Main researcher, Hugo Miguel Silva, and the local volunteer Jonathan Cueva monitoring the species on Media Luna Highlands site.

Future goals

In February 2022, we want to finish the monitoring programme in Media Luna Highlands site and start the census of the species in the agriculture zone, namely on Santa Rosa and Mina Roja sites. We expect to obtain new data about the species in this area as well as data about paint-billed crake (*Neocrex erythrops*), as both rail species overlap their geographical distribution on this area. We also want to prepare some promotional materials to share the species with the local community and on Charles Darwin Foundation's social networks.

Acknowledgements

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