

## The Rufford Foundation

### Final Report

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Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to [jane@rufford.org](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
<b>Your name</b>	Maike Hernández Quinta
<b>Project title</b>	Distribution and Conservation status of the endemic land snails of the landscape limestone mounts of the Valle de Viñales, VNP, Pinar del Río, Cuba
<b>RSG reference</b>	14779-1
<b>Reporting period</b>	May, 2014 to April, 2015
<b>Amount of grant</b>	£6000
<b>Your email address</b>	maike.hernandez@gmail.com
<b>Date of this report</b>	25 April, 2015

**1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.**

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To obtain data about individual abundance of all endemic species by landscape of mogotes, the use of ecological substrates by the species.			x	In the samplings trips we studied the ecology of the live molluscs and we collected shells dead of individuals (great part of these, micromolluscs).
Determining and listing the causes that affect the distribution of the endemic species in the landscape.			x	
The proposal for the IUCN Red List of these species will contribute to their own conservation and to elevate the importance of the protected area.			x	We evaluate species more threatened, although we should confront with other colleagues.
The environmental education activities and resulted materials of the project will increase the knowledge of the local people regarding all endemic species.			x	We accomplish the pledged activities and we plan to accomplish a festival for the protection of the terrestrial molluscs of the park.

**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

During the development of the project, almost there was no difficulty, only the permission of access to the National Park delayed a little but we could accomplish the trip on time.

**3. Briefly describe the three most important outcomes of your project.**

We registered 79 species, 56 genera and 25 families. We report 20 new records for the National Park Viñales. More of 78 % of the species registered are endemic. Besides the use of some structural resources was studied; being rocks and the vegetation were the substrata more used (fig. 1). Distribution and density are showed in the Annexes 1 and 2. With this information we increment and update diversity and distribution of the land snails in the National Park Viñales, which is important for the management plans for the staff of the Park.

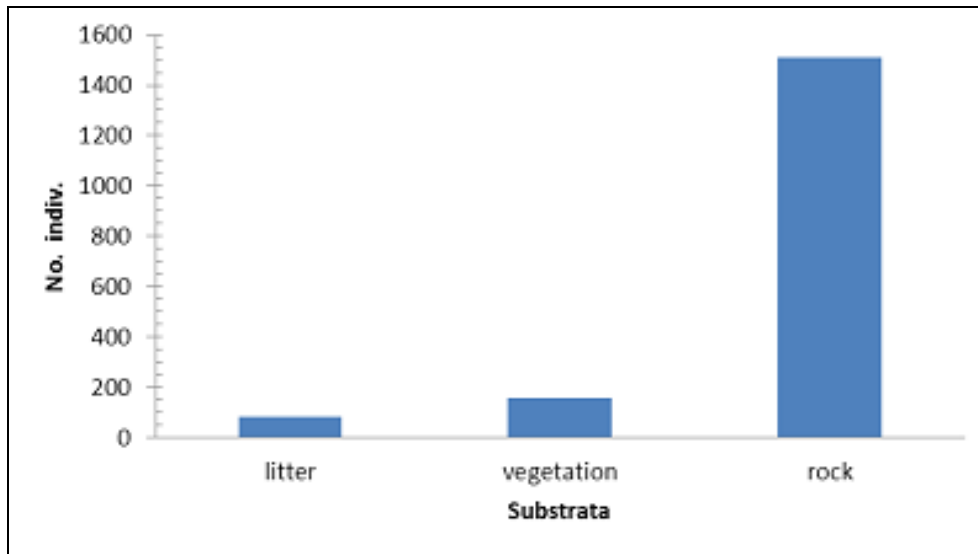


Figure 1. We show the use of the substrata sampled by the land snails.

We found a certain degree of deterioration of the vegetation of the mogotes. Of seven mogote studied, three were categorised as little degraded: Mogote Dos Hermanas, Mogote El Valle or Sierra de Tumbadero and Mogote Palmarito, and were appreciated a high riches and abundance of Molluscs. However the Mogote at north of the Mogote Dos Hermanas, Mogote at northwest of Sierra de Tumbadero and Mogote Coco Solo were categorized like fairly degraded, and they sowed a low riches and abundance of Molluscs.

During the study we found potential threats on the diversity of land snails (fig. 2):

- ✓ Patches inside the mogotes created by the residents for to sow different cultivations as root crops, coffee and banana.
- ✓ Loss of the native vegetation in the base of the mogotes.
- ✓ Animal husbandry (domestic pig, cows, goats).
- ✓ Invasive species like ants and rats inside and in the base of the mogotes.
- ✓ Intensive tourism for practice extreme sports like climbing.



Figure 2. We show some of the causes that threaten to the diversity of land snails.

In a general way we found that most of the species inside the National Park has some degree of threat, nevertheless we consider to *Liguus flamellus*, *Liguus fasciatus archeri*, *Chondropometes*

*vignalensis*, *Guladentia subtussulcata*, *Microceramus costellaris* as Vulnerable and *Blaesospira echina* as Endangered, according to the IUCN. This information is fundamental for the monitoring plans of the park.

**4. Briefly describe the involvement of local communities and how they have benefited from the project (if relevant).**

The communities are playing an important role in the project because one of the goals is inculcating conscience to the citizens toward the conservation of the land snails and landscape of the National Park Viñales.

Our fundamental work in this sense was the environmental education, motivating to the kids the land snails and "mogotes" protection highlighting that both are the symbols that identify the community. Also we stimulate to that your experiences had been to them toward their homes. The kids were given talks where teaching to them the main land snails that are distributed inside the National Park Viñales and the threats that affect the land snail and "mogotes", with the support of informative card. The other involucrate sector was the technicians of the National Park, which were given lectures to capacitate them as to the bringing up to date of the diversity of land snail, identification of the species and threats, with the support of informative card.

**5. Are there any plans to continue this work?**

Yes, this work will be continued. After this first experience, we plan to continue the work in two ways. The first would be to carry and implementing a festival on the "Protection of the land snails", in which more children and schools can be included, with the objective of sensitizing other people of the community. The second would be continuing working with the staff of the park but this time to create ecotourism routes in which implemented all of the knowledge acquired and with the support of a guide of field of land snails of the park.

**6. How do you plan to share the results of your work with others?**

For the moment we have realised two presentations in international meetings (International Convention of Environment, Congress of the Meso-American Society for the Conservation Biology and the International Symposium of Zoology) in that we have announced the obtained results and we will present a poster and oral presentation in the Event of ECOVIDA. There are in advanced phase of preparation of two publications derived from results of the project. Once obtained the publications will be sent. With the information acquired of the threatened species we will propose category of threats to be analysed by the IUCN.

**7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?**

The funds were used between May, 2014 and April, 2015 as it was planned initially in the project.

**8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Transportation (Havana- VNP, 4 persons)	500	450	50	We found an alternative with minor price for the last expedition
Food supplies (192 days, 5 persons)	1700	1650	50	We found an alternative with minor price for the last expedition
Fuel	400	400	0	
Batteries	110	100	10	
Battery charger	40	40	0	
Tent	60	60	0	
Laptop	500	550	-50	Market price varied
Printer	140	140	0	
Printer toners	150	150	0	
Sheets	100	100	0	
Data show	200	200	0	
Printing of informative cards of the species	600	600	0	
Professional Digital Camera	700	750	-50	Market price varied
Macro conversion lens	800	800	0	
Total	6000	5990	-10	Exchange rate: 1.50

**9. Looking ahead, what do you feel are the important next steps?**

- To continue with the process of the data, to publish its results and to keep sharing information in events and symposiums.
- To deliver all project information to park authorities to be included in the next park management plan.
- Designing the land snail fauna guides of National Park Viñales using the results of the project and picture bank.
- To apply for a second RSGF to develop and implementing a festival on the “Protection of the land snails” and to continue working with management and monitoring plans.
- To continue with research referred to conservation and ecology of land snails.

**10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?**

Naturally, the RSGF logo was included in all our presentations (meetings and symposiums), as well as in all lectures and talks in schools, pamphlets and informative cards, it will used in the land snail fauna guides of National Park Viñales and published in the acknowledgement of all written papers as result of the project.

Annex 1 Distributions of land snails in the National Park Viñales								
Species	Localities							
	1	2	3	4	5	6	7	8
<i>Helicina adspersa</i> Pfeiffer, 1839*	x	x	x	x	x	x	x	x
<i>Alcadia dissimulans</i> (Poey, 1858) *	x	x	x					x
<i>Alcadia minima</i> (d'Orbigny, 1842) *	x	x			x	x		
<i>Alcadia nitida</i> (Pfeiffer, 1839) *	x	x						
<i>Emoda sagraiana</i> (d'Orbigny, 1842)*	x	x	x	x	x	x	x	
<i>Viana regina</i> (Morelet, 1849)*	x	x	x	x		x	x	
<i>Viana laevigata</i> (Pfeiffer, 1865) *		x						
<i>Troschelviana chrysochasma</i> (Poey, 1853)*	x	x			x	x		
<i>Troschelviana rubromarginata</i> (Gundlach in Poey, 1858)*	x	x			x			
<i>Semitrochatella alboviridis</i> (Wright in Pfeiffer, 1864)*	x	x						
<i>Semitrochatella elongata</i> (d'Orbigny, 1842)*	x	x						
<i>Semitrochatella fuscula</i> (Gundlach in Pfeiffer, 1863)*	x	x	x					x
<i>Ustronia acuminata</i> (Velazquez in Poey, 1852)*	x	x	x					
<i>Proserpina depressa</i> (d'Orbigny, 1842)*	x	x			x			x
<i>Proserpina globulosa</i> (d'Orbigny, 1842)*	x	x	x		x	x		x
<i>Farcimen superbum</i> Torre & Bartsch, 1942 *	x	x			x			
<i>Farcimen s. vignalense</i> Torre & Bartsch, 1942*		x				x		
<i>Annularops coronadoi</i> (Arango in Poey, 1867) *	x	x			x			x
<i>Annularops semicanus organicolus</i> (Torre & Bartsch, 1941)*	x	x		x	x	x		
<i>Blaesospira echina</i> (Wright in Pfeiffer, 1864) *		x						
<i>Eutodorex troscheli</i> (Pfeiffer, 1864) *		x				x		
<i>Chondropometes vignalense</i> (Wright in Pfeiffer, 1863) *	x	x						
<i>Chondrothyra rutila</i> Torre & Bartsch, 1938*	x							
<i>Chondrothyretes affinis</i> (Torre & Bartsch, 1938) *	x	x						
<i>Chondrothyretes reticulata</i> (Torre & Bartsch, 1938)*	x	x	x	x	x	x		x
<i>Turrithyra echinulata</i> (Wright in Pfeiffer, 1863)*	x							
<i>Rhytidopoma wrightianum</i> (Gundlach in Arango, 1881)*	x							
<i>Rhytidothyra bilabiata</i> (d'Orbigny, 1842)*	x	x	x			x		
<i>Veronicella cubense</i> (Pfeiffer, 1840)*	x	x						
<i>Veronicella tenax</i> (Baker, 1931)*	x	x	x	x		x		
<i>Succinea cf. arangoi</i> Pfeiffer, 1866 *		x						
<i>Gastrocopta cf. rupicola marginalba</i> (Pfeiffer, 1840)	x	x			x			

<i>Liguus fasciatus archeri</i> Clench, 1934	x	x						
Cont.	1	2	3	4	5	6	7	8
<i>Liguus flammellus flammellus</i> Clench, 1934 *	x	x		x	x			
<i>Bialasmus bilamellata</i> Torre & Bartsch, 2008*	x	x						
<i>Capillacea capillacea</i> (Pfeiffer, 1863) *	x	x			x			x
<i>Liocallonia propinqua</i> (Gundlach in Arango, 1882) *	x	x			x			
<i>Nodulia nodulifera</i> (Torre, 1929)*		x						
<i>Nodulia vignalensis</i> (Wright in Pfeiffer, 1863)*	x	x	x		x	x		x
<i>Tomelasmus irroratus</i> (Gundlach, 1856) *	x	x						
<i>Microceramus costellaris</i> (Gundlach in Pfeiffer, 1863) *	x	x						
<i>Karolus consobrinus</i> (d'Orbigny, 1842) *		x						
<i>Subulina octona</i> (Bruguière, 1792)	x	x						
<i>Allopeas gracile</i> (Hutton, 1834)		x						
<i>Allopeas micra</i> (d'Orbigny, 1835)	x	x						
<i>Leptinaria cf. pallida</i> Adams, 1845	x	x			x			x
<i>Opeas pumilum</i> (Pfeiffer, 1840)	x	x			x			x
<i>Lyobasis blandianus</i> (Pilsbry, 1906) *	x	x						
<i>Lyobasis gundlachi</i> (Pfeiffer, 1863) *	x	x			x			x
<i>Laevoleacina straminea</i> (Deshayes, 1819) *	x	x	x	x	x	x	x	x
<i>Cuboleacina solidula</i> (Pfeiffer, 1840)	x	x	x	x	x			
<i>Oleacina incisa</i> Pfeiffer, 1867 *	x	x						x
<i>Oleacina cf. poeyana</i> Pfeiffer, 1866 *	x	x						
<i>Oleacina cf. subulata</i> (Pfeiffer, 1839) *	x	x						
<i>Oleacina cf. wrighti</i> Pfeiffer, 1866 *	x	x			x			x
<i>Rectoleacina cubensis</i> (d'Orbigny, 1842) *	x	x						
<i>Melaniella acuticostata</i> (d'Orbigny, 1842)*	x	x						x
<i>Melaniella cf. gracillima</i> (Pfeiffer, 1839)*	x	x						
<i>Pseudosubulina michaudiana</i> (d'Orbigny, 1842)*		x						
<i>Streptostele musaecola</i> (Morelet, 1860)		x			x			
<i>Hojeda boothiana</i> (Pfeiffer, 1839) *	x	x						
<i>Lacteoluna selenina</i> (Gould, 1839)								
<i>Helicodiscus apex</i> (C. B. Adams, 1849)	x	x			x			x
<i>Miradiscops cf. bregyi</i> Vanatta, 1920*	x	x			x			x
<i>Guppya gundlachi</i> (Pfeiffer, 1840)	x	x			x			x
<i>Deroceras laeve</i> (Müller, 1774)	x	x						

<i>Hawaiiia minuscula</i> (Binney, 1840)	x							
<i>Bradybaena similis</i> (Férussac, 1821)		x						
<i>Zachrysia auricoma</i> (Férussac, 1822) *	x	x					x	
<i>Zachrysia castanea</i> Aguayo & Jaume, 1954 *	x	x	x	x	x	x	x	
<i>Cysticopsis cf. letranensis</i> (Pfeiffer, 1857) *		x						
<i>Eurycampta pinarensis</i> (Aguayo, 1950)*	x	x	x	x	x	x		
<i>Jeanneretia parraiana</i> (d'Orbigny, 1842)*	x	x	x		x	x		
<i>Guladentia subtussulcata</i> (Wright in Pfeiffer, 1863)*	x	x	x			x		
<i>Setipellis stigmatica</i> (Pfeiffer, 1841) *	x	x	x			x		x
<i>Praticolella griseola</i> (Pfeiffer, 1841)	x	x						
<i>Thysanophora incrustata</i> (Poey, 1852)*	x	x						
<i>Thysanophora cf. saxicola</i> (Pfeiffer, 1840)*	x	x			x			
Total for Mogote	66	75	21	15	35	25	13	28

\*Endemic species

Localities: 1-Mogote Dos Hermanas; 2-Sierra de Tumbadero; 3-Mogote al Norte De S. Tumbadero; 4-Mogote al Norte de Dos Hermadas; 5-Mogote Coco Solo; 6-Mogote Palmarito; 7-Mogote del Cuajani; 8-Mogote Bodega.

The new records are show with "x" red.



## Annex 2

### Species density in calcareous thick walls (2x10 m)

Species	Density (indiv./m <sup>2</sup> )
<i>Alcacia dissimulans</i>	1.25
<i>Alcacia minima</i>	0.3
<i>Alcacia rotunda</i>	0.2
<i>Annularops coronadoi</i>	0.15
<i>Annularops semicana organicola</i>	1.4
<i>Chondropometes vignalensis</i>	0.3
<i>Chondrotyra asimilis</i>	0.05
<i>Chondrotyra reticulata</i>	4.55
<i>Emoda sagraiana</i>	0.75
<i>Farcimen vignalensis</i>	0.15
<i>Guladentia subtussulcata</i>	0.25
<i>Helicina aspersa</i>	0.15
<i>Jeanneretia parraiana depressa</i>	1.5
<i>Liguus flamellus flamellus</i>	0.1
<i>Melaniella acusticustata</i>	0.05
<i>Nodulia vignalensis</i>	6.1
<i>Nodulia nodulifera</i>	0.35
<i>Oleacina solidula</i>	0.05
<i>Oleacina straminea</i>	0.4
<i>Proserpina depressa</i>	0.05
<i>Proserpina globulosa</i>	14.95
<i>Rectoleacina cubensis</i>	0.05
<i>Rhytidothyra bilabiata</i>	0.35
<i>Semitrochatella fuscula</i>	0.65
<i>Setipellis stigmatica</i>	0.35
<i>Tomelasmus irroratus</i>	0.15
<i>Trochelviana chrysochasma</i>	2.4
<i>Ustronia acuminata</i>	2.4
<i>Veronicella tenax</i>	0.45
<i>Viana regina</i>	17.6
<i>Zachrysia Castania</i>	1.05

### Species density in plot (5x5)

Species	Density (indiv./m <sup>2</sup> )
<i>Alcacia dissimulans</i>	0.3
<i>Alcacia rotunda</i>	3.2
<i>Annularops coronadoi</i>	0.1
<i>Annularops semicana organicola</i>	3
<i>Chondrothyra reticulata</i>	2.4

<i>Emoda sagraiana</i>	2.9
<i>Farcimen superbum</i>	0.9
<i>Farcimen vignalensis</i>	1.4
<i>Guladentia subtussulcata</i>	0.1
<i>Helicina aspersa</i>	0.9
<i>Jeanneretia parraiana depressa</i>	1.9
<i>Liguus Flamellus</i>	0.1
<i>Melaniela acuticostata</i>	0.2
<i>Nodulia vignalensis</i>	8.5
<i>Oleacina straminea</i>	1
<i>Proserpina globulosa</i>	0.8
<i>Rectoleacina cubensis</i>	0.1
<i>Rhytidothyra bilabiata</i>	4.3
<i>Semitrochatella fuscula</i>	0.2
<i>Tochelviana rubromarginata</i>	0.9
<i>Tomelasmus irroratus</i>	1.3
<i>Trochelviana rubromarginata</i>	0.1
<i>Ustronia acuminata</i>	0.9
<i>Veronicella cf cubensis</i>	0.5
<i>Veronicella tenax</i>	0.6
<i>Viana regina</i>	17.6
<i>Zachrysia castania</i>	1.1