

# Darwin Initiative: Half Year Report

(due 31 October 2008)

<b>Project Ref. No.</b>	15-018
<b>Project Title</b>	Developing land snail expertise in South and Southeast Asia
<b>Countries</b>	Sri Lanka, India, Nepal, Thailand, Laos, Vietnam, Malaysia
<b>UK Organisation</b>	The Natural History Museum
<b>Collaborator(s)</b>	The Wildlife Heritage Trust (WHT), Sri Lanka Ashoka Trust for Research in Ecology and the Environment (ATREE), India Centre for Biological Conservation (CBC), Nepal Chulalongkorn University, Thailand National University of Laos Hanoi University of Science, Vietnam Universiti Sains Malaysia UK: University of Nottingham
<b>Project Leader</b>	Fred Naggs
<b>Report date</b>	27 <sup>th</sup> October 2008
<b>Report No. (HYR 1/2/3/4)</b>	3
<b>Project website</b>	<a href="http://www.nhm.ac.uk/tropicalsnails">www.nhm.ac.uk/tropicalsnails</a>

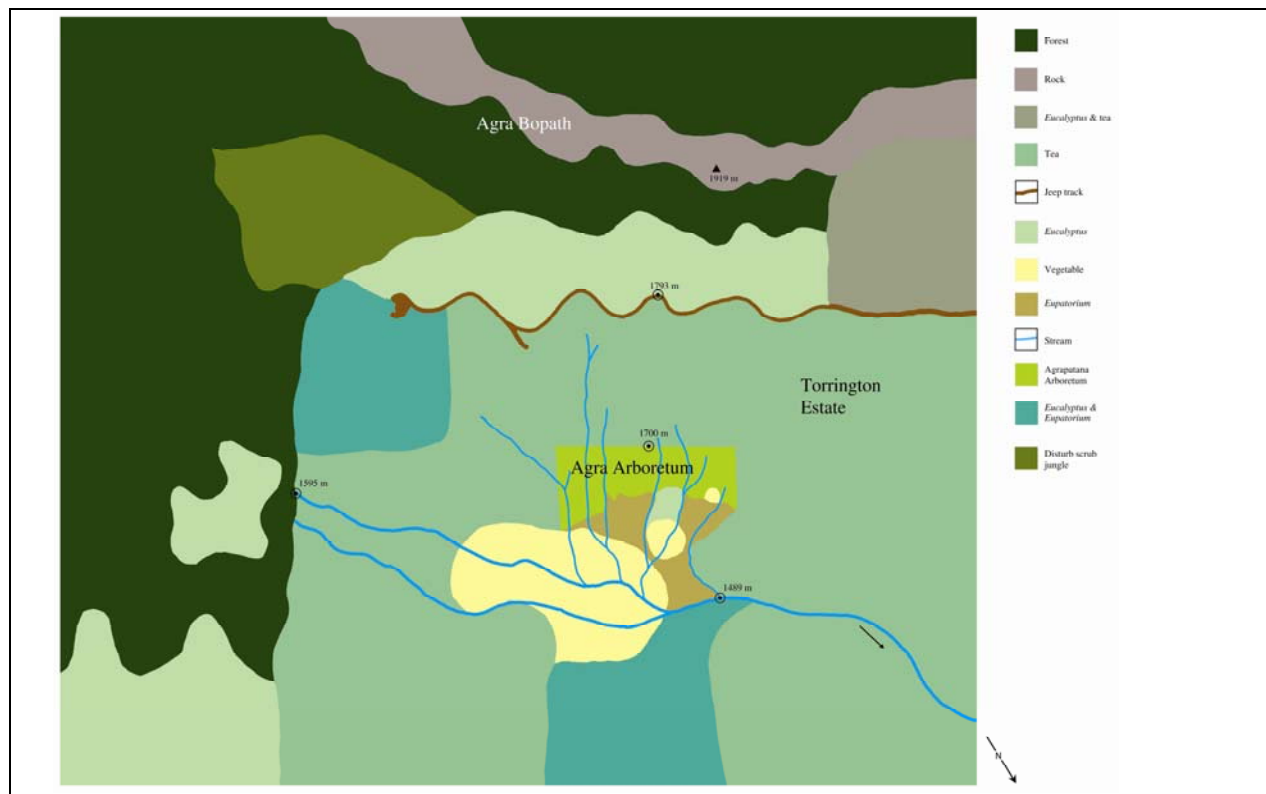
## 1. Outline progress October 2007 to September 2008 [covering period before and after MTR]

Field programmes are under way in partner countries as planned with UK project staff joining field surveys and giving presentations in India, Sri Lanka and Vietnam. Laminated folding guides are under preparation for all partner countries. A database, including images, is being prepared for the Thai fauna and this will be web based. Illustrated species lists are in preparation for Nepal and for the Western Ghats, India.

**Nepal** (<http://cbcnepal.org.np/awards.php>): field surveys have been carried out in Central Nepal from 167m-4500m, covering Langtang, Chitwan and Shivapuri National Parks and including hills surrounding Kathmandu and Phulchoki. Extensive collections have been made including many new species and undescribed genera. A reference collection is being established at the Central Department of Zoology Museum in Tribhuvan University where Prem Bhudda has now been appointed as a fulltime lecturer and is running Masters courses in malacology and taxonomy.

### **Sri Lanka:** WHT: Interim Progress Report 2007-2008

The Agra Arboretum and surrounding area consists of three major habitats: degraded natural montane forest, forest and scrub regenerating on land intensively cultivated in the past and monoculture tea. The arboretum itself is largely composed of regenerating forest (i.e. c. 25 years old), whereas natural forest and currently cultivated monoculture tea is found outside the arboretum, in the surrounding area (Fig.1). Surveys were carried out of the land-snail faunas of these three habitats using a combination of casual sampling and 5 m x 5 m quadrat-based sampling. Surveys commenced in late 2006 and are ongoing. To date we have found that species richness is lowest in the monoculture tea (1 species), intermediate in the regenerating forest of the arboretum (8 species) and highest in the natural forest (17 species).



**Fig. 1.** Major habitat types in and around Agra Arboretum, Sri Lanka.

Only *Euplecta hyphasma*, which ranges from altitudes of c. 200-1700 m was recorded in all three habitats. Available data suggests that the seven species recorded from both natural and regenerating forest but absent from the tea lands (*Euplecta partita*, *Euplecta semidecussata*, *Euplecta travancorica praeeminens*, *Cryptozona ceraria*, *Mirus stalix*, a *Philalanka* sp. and *Theobaldius* sp.) are able to recolonise early successional forest. The natural forest in immediate proximity to the Agra Arboretum is highly degraded, having been subjected to selective extraction of timber and fuel wood for many decades. Nevertheless the land-snail fauna is relatively diverse both at species-level and at genus- and family- level, suggesting that many montane forest land snails are relatively tolerant of forest degradation.

Our results imply that forest regenerating on intensively cultivated lands is only slowly recolonised by Sri Lankan montane forest land snails. This may reflect the lack of physical connectivity between the arboretum and natural forest (see Fig. 1) and/or the dominance of the arboretum's regenerating vegetation by exotic plant species. It may also be that the natural rate of floristic and faunistic succession is slower in the Sri Lankan highlands relative to the lowlands in response to the more extreme climatic conditions prevalent at higher elevations.

Further sampling of natural forest and cultivated habitats from a more extensive geographical area will be carried out over the remaining duration of the project to assess richness and turnover across a larger spatial scale. We also intend to put together a computerized catalogue of all the land-snail material collected during the course of the project. This will form an important baseline collection for future monitoring and taxonomic studies.

#### India Provisional Report 2007-08

#### Sampling

Sampling was carried out at following sites

Sl no	Site	State	Slope	Altitude (m)	Vegetation
1	Kabbinala	Karnataka	West	100 to 550	Evergreen forest
2	Male Mahadeshwara Hills	Karnataka	East	1000	Moist deciduous
3	Annamalais	Tamil Nadu	East	500- 1500	Moist deciduous and

					Evergreen forest
4	Hariharapura	Karnataka	East	650	Home gardens, Semi evergreen forest
5	Sirsi	Karnataka	East	700	Evergreen forest
6	Udupi	Karnataka	West	10	Semi evergreen forest

#### Presentations

1. "Micro mollusks of the Western Ghats: distribution and threats" at World congress of Malacology, Antwerp, Belgium. July 15 to 20, 2008
2. "Ecological Census Techniques", at National Workshop on biodiversity Assessment, Mangalore University, Mangalore. February 15 to 17, 2008

#### Education

1. Two Masters Students from Department of Applied Zoology has studied land snails of the sacred groves of Udupi District, Karnataka, India.
2. Co-sponsored National Workshop on biodiversity Assessment, Mangalore University, Mangalore. February 15 to 17, 2008.
3. Initiated "Achatina Watch" a web based tool for mapping the distribution of Invasive African Giant Snail.
4. Travel Grant from "Unitas Malacologica", USA to attend "World Congress of Malacology, Antwerp, Belgium.

#### Publications

1. Prathapan, K. D. Priyadarsanan Dharma Rajan, T. C. Narendran, C. A. Viraktamath, K. A. Subramanian, N. A. Aravind and J. Poorani. 2008. Death sentence on taxonomy in India. *Current Science*, 94: 170-171.
2. Aravind, N. A., Rajashekhar K. P. and N. A. Madhyastha. Micro mollusks of the Western Ghats: Distribution and Threats. *Zootaxa* (Under Review)

#### Others

1. Bibliography on Non-marine mollusks of Indian region.
2. Curation of land snails of the Western Ghats at ATREE Museum
3. Visit to Natural History Museum, London and Zoology Museum, Cambridge to study land snails of the Western Ghats.

**Thailand:** an extensive field programme has been undertaken throughout Thailand, Lao, National Parks in Central Vietnam and areas of central and northern peninsular Malaysia. Collaboration with Malaysian partners has been particularly successful and very close cooperation established. Many new species, genera and a new family have been discovered. Over 400 species have been recorded and stored as dry and spirit preserved material and more than 100 are stored in frozen collections. The snail museum at Chulalongkorn University has been greatly expanded with many species on display. A guide to Thai snails has been published in Thai and a much more detailed and enlarged version in English is under preparation. Land snails have been introduced as a high profile component in national education as a result of the groups' involvement in Thai education programmes.

**Additional funding:** A number of small grants were obtained to run additional workshops, small research projects, and for travel to international meetings. An application for funding from the MacArthur Foundation to support a project in Vietnam was unsuccessful but three years funding to support exchange visits between Malaysian and UK projects partners was awarded by the British Council.

#### Publications:

Raheem, D.C., Naggs F., Preece, R.C., Mapatuna, Y., Kariyawasam, L., and Eggleton, P. 2008. Structure and conservation of Sri Lankan land-snail assemblages in fragmented lowland rainforest and village home gardens. *Journal of applied Ecology* **45**: 1019-1028.

Budha, P.B., and Naggs F. 2008. The Giant African Land Snail *Lissachatina fulica* (Bowdich) in Nepal. *The Malacologist* **50**: 19-21. [ [View as PDF](#) ]

and modified habitats. *The Malacologist* **50**: 26-27. [ [View as PDF](#) ]

Naggs, F., Raheem, D and Budha, P. 2008. The carnivorous slug *Testacella* in Cambridgeshire. *Nature in Cambridgeshire* **50**: 48-51..

Sutcharit, C., Naggs, F. and Panha, S. 2007. Systematic review of the land snail genus *Neocepolis* Pilsbry, 1891 (Pulmonata: Camaenidae) from North Vietnam. *Journal of Natural History* **41**: 619-631.

Wade, C.M., Hudelot, C., Davison, A., Naggs, F. and Mordan, P.B. 2007. Molecular phylogeny of the helicoid land snails (Pulmonata: Stylommatophora: Helicoidea), with special emphasis on the Camaenidae. *Journal of Molluscan Studies* **73**: 411-415.

Tumpeesuwan, C. Naggs, F. and Panha, S. 2007. A new genus and new species of Dyakiid snail (Pulmonata: Dyakiidae) from the Phu Phan Range, Northeastern Thailand. *The Raffles Bulletin of Zoology* **55**: 363-369.

**2. Give details of any notable problems or unexpected developments that the project has encountered over the last 6 months. Explain what impact these could have on the project and whether the changes will affect the budget and timetable of project activities.**

The knock on effect to project outputs of not having a dedicated data basing post filled was addressed in the MTR as was the polarisation between SE Asian and South Asian projects and the resultant impact on project purpose.

**Have any of these issues been discussed with the Darwin Secretariat and if so, have changes been made to the original agreement?**

Both of these issues have been discussed with the Darwin Secretariat as part of the MTR process. Approval for a modification to project purpose is under consideration.

**Discussed with the DI Secretariat:**                      no/yes, in..... (month/yr)

**Changes to the project schedule/workplan:**      no/yes, in.....(month/yr)

**3. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures? No**

**If you were asked to provide a response to this year's annual report review with your next half year report, please attach your response to this document.**

**Please note: Any planned modifications to your project schedule/workplan or budget should not be discussed in this report but raised with the Darwin Secretariat directly.**

Please send your **completed form email** to Eilidh Young, Darwin Initiative M&E Programme at [Darwin-Projects@ectf-ed.org.uk](mailto:Darwin-Projects@ectf-ed.org.uk) . The report should be between 1-2 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 14-075 Darwin Half Year Report**