



Darwin Initiative: Half Year Report

(due 31 October 2014)

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| Project Ref No | 19-009 |
| Project Title | Galapagos marine invasive species: prevention, detection and management |
| Country(ies) | UK, Ecuador |
| Lead Organisation | University of Southampton |
| Collaborator(s) | Charles Darwin Foundation (CDF), Galapagos National Park Service (GNPS), the Navy's Oceanographic Institute (INOCAR), National Direction of Aquatic Spaces (DIRNEA), Ecuadorian Agency for Quality Assurance (AGROCALIDAD) and University of Dundee. |
| Project Leader | Dr Ken Collins |
| Report date and number (eg HYR3) | 13.11.14 HR3 |
| Project website | http://www.southampton.ac.uk/oes/research/projects/galapagos_marine_invasive_species_prevention_detection_and_management.page? www.facebook.com/darwinfoundation www.darwinfoundation.org/en/science-research/invasive-species/marine/ |

1. Outline progress over the last 6 months (April – Sept) against the agreed baseline timetable for the project (if your project has started less than 6 months ago, please report on the period since start up to end September).

Through May-June 2014 Keith was retained by the National Park to lead the underwater evaluation of the ecological impact caused by the grounding of the M/V "Galapaface I" in Punta Carola, San Cristobal Island. {*Eduardo Espinoza, Inti Keith (Charles Darwin Foundation), Freddy Narvaez (ABG), Juan Pablo Muñoz (USFQ). (2014) Evaluation of the ecological impact caused by the grounding of the M/V "Galapaface I" in Punta Carola on San Cristobal Island. Galapagos National Park Directorate Technical Report CUEM-MEM-2014, 6 June 2014.*}

In June 2014 the Galapagos Conservancy awarded CDF \$25,000 to support our marine invasives programme, including an enhanced end of project dissemination workshop Feb 2015. The GC funding has enabled a marine invasives socio-economic impact study by Conservation International, Galapagos (Oct-Dec 2014).

At the end of June 2014 Keith made a special trip was made to Darwin and Wolf to assess the numbers of Crown of Thorns starfish previously reported there.

Through summer 2014, Keith and Martinez continued training of National Park and Agency staff in marine invasive species survey techniques and identification. The international and local shipping movements database was completed.

Keith visited UK August-October 2014 to participate in scientific meetings in Glasgow (3rd International Marine Conservation Congress) and Edinburgh (MASTS), and further her PhD studies in Dundee and Southampton.

Report submitted: *Priscilla Martinez & Inti Keith (2014) Addressing the threat of Marine Invasive Species and possible severe El Niño event. Interim Report from the Charles Darwin Foundation to Galapagos Conservancy, September 1, 2014.*

Collins met with Swen Lorenz, Executive Director CDF in September and October 2014 to discuss the future of the Galapagos marine invasives programme.

October 2014 modelling study completed: *Lian Xie and Bin Liu (2014) A modelled geospatial time-series for Ocean Circulation in the Eastern Tropical Pacific and Galápagos Marine Reserve region over past and future climate scenarios. Report to CDF & University of Southampton by the Coastal Fluid Dynamic Group, North Carolina State University.* The modelling results (~1 TB) are hosted by a THREDDS data server (<http://cfdl.meas.ncsu.edu:8080/thredds/catalog/etpgmr/>).

Through this half year we have been working with Prof Jim Carlton, founding editor of Bioinvasions to expand the planned local end of project dissemination meeting into an International Workshop on Marine Bioinvasions of Tropical Island Ecosystems, Charles Darwin Research Station, Puerto Ayora, Galapagos, 24-27 February 2015 with confirmed participants from the USA, Caribbean, Azores and New Zealand. Announcement: <http://www.darwinfoundation.org/en/science-research/invasive-species/marine/>

2a. 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 delivery of and final payment for the sub-contracted study by North Carolina State University (Oct 2014) was originally budgeted for within Y2. So as not to create a Y2 underspend the allocated sum (\$US14K) was instead spent on Keith's PhD support. Overall budgeting is back on track in Y3. The direct sub-contracting of NCSU by Southampton (instead of through CDRS as originally proposed) with no net change in the budget was agreed with Eilidh in Feb 2013.

It was anticipated that there would be a number of Ecuadorian students working with the project. Funding to support these students normally comes from the profits from the CDRS shop. The income from the shop with an external manager was well below expectations, so early 2013 the contract was bought out, a new shop built and opened early 2014. This was immediately closed by local political pressure and has remained so ever since. Lengthy political and legal negotiations are in progress, but the net result has been that no funding for Ecuadorian students has been available through most of this project. This has no financial implication for the project but constrains the anticipated output of Standard measures 1B & 2 - Number of people to attain other qualifications (Bachelors & Masters degree)

2b. Have any of these issues been discussed with LTS International and if so, have changes been made to the original agreement?

Discussed with LTS: Yes, Feb 2013.

Formal change request submitted: No, because no change in overall budget

Received confirmation of change acceptance see above

3a. Do you currently expect to have any significant (eg more than £5,000) underspend in your budget for this year?

No

I anticipate an overspend on travel, especially now with the falling US\$/£UK exchange rate, but will use my personal university consultancy income to cover this.

3b. If yes, then you need to consider your project budget needs carefully as it is unlikely that any requests to carry forward funds will be approved this year. Please remember that any funds agreed for this financial year are only available to the project in this financial year.

If you anticipate a significant underspend because of justifiable changes within the project and would like to talk to someone about the options available this year, please indicate below when you think you might be in a position to do this and what the reasons might be.

4. Are there any other issues you wish to raise relating to the project or to Darwin's management, monitoring, or financial procedures?

First response to annual report review submitted 7 July 2014. Revision of Y2 report to follow.

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 can be discussed in this report but **should also be raised with LTS International through a Change Request.**

Please send your **completed report by email** to Eilidh Young at Darwin-Projects@ltsi.co.uk . The report should be between 2-3 pages maximum. **Please state your project reference number in the header of your email message eg Subject: 20-035 Darwin Half Year Report**