

Darwin Initiative: Half Year Report

(due 31 October 2010)

Project Ref No	DPLUS001
Project Title	Bermuda Invasive Lionfish Control Initiative
Country(ies)	Bermuda
UK Organisation	Bermuda Zoological Society
Collaborator(s)	Bermuda Institute of Ocean Science, Ocean Support Foundation, Bermuda Government Department of Environmental Protection
Project Leader	Dr. Gretchen Goodbody-Gringley
Report date	October 31, 2013
Report No. (HYR 1/2/3/4)	1
Project website	NA

1. Outline progress over the last 6 months (April – September) 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).

Output # Status

- 1.1** A total of 40 out of the anticipated 100 sites have been surveyed to date. These include 12 sites at 10m, 12 sites at 20m, 10 sites at 30m, 2 sites at 45m, and 4 sites at 60m. Based on the rate of survey completion in Q1 and Q2 it is anticipated that all surveys will be completed by the end of Year 2 Q2 as originally projected in the baseline timetable.
- 1.2** Repeated surveys are scheduled for year 2 as agreed in the baseline timetable.
- 1.3** No drop camera surveys have been completed. It is anticipated that the camera system will be purchased in the next quarter and surveys completed in Q1-3 of Year 2.
- 1.4** Distribution map is scheduled to be completed at the latter part of Year 2
- 2** All aspects of Output 2 are scheduled for Q3&4 of Year 1 and 2. However, trap development has begun and cooperative networks are currently being organized with local fishermen for trap deployment in Q3 and Q4 as scheduled. Cameras have been deployed on lobster traps to gain insight into the way that lionfish interact with them. This will refine development of the lionfish traps.
- 3.1** Prey fish surveys have been completed at 34 of the 100 anticipated sites. These include 12 sites at 10m, 12 sites and 20m and 10 sites at 30m. Additional surveys are anticipated to be conducted on a continual basis, weather permitting, into year 2. Based on the rate of survey completion in Q1 and Q2 it is anticipated that all surveys will be completed by the end of Year 2 Q2 as originally projected in the baseline timetable.
- 3.2** Thus far gut content analysis has been conducted on 116 lionfish.
- 3.3** Samples have been collected from 141 fish for stable isotope analysis. Analyses will take place in Year 2 as outlined in the baseline timetable.
- 3.4** The ovaries of 57 females have been weighed. The reproductive condition of 50 females has been determined and the gonads of 50 females have been fixed and await processing to estimate maturity, fecundity, reproductive seasonality and reproductive capacity.
- 3.5** Light traps have not yet been deployed as anticipated. However, traps will be purchased in the next quarter with deployment expected in Year 2.
- 3.6** Scheduled for Year 1 Q4 and Year 2
- 3.7** Scheduled for Year 2
- 3.8** Processing of otolith samples for demographics work has begun, and is ongoing.
- 3.9** Population model completion is scheduled for the end of Year 2
- 4** All aspects of Output 4 are scheduled for Year 2. However, dissemination has occurred through participation in a Lionfish Workshop organized by JNCC, at which co-PI J. Pitt represented the DPLUS001 and presented information on lionfish trap development. C. Eddy will attend the GCFI meeting in November to present current data on distribution and abundance patterns.

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.

1. Costs associated with diving to complete lionfish and prey fish surveys have been more than originally expected. Likewise, coordination of divers schedules to complete surveys has limited the number of days that surveys could be conducted. Furthermore, use of the BZS boat, Endurance, has proven to be logistically difficult in term of coordinating gear for conducting surveys, thus shallow surveys have been performed exclusively on BIOS small boats.
2. Drop cameras have not been deployed. It was originally expected that use of a colleague's camera already on island could facilitate deployment in year 1, however this is logistically impossible and thus drop camera deployment is expected to be pushed back to Year 2.
3. Light traps have not been purchased or deployed. Based on the increased cost of diving, the team had hoped to find juvenile fish during surveys. However, very few to no juvenile lionfish have been encountered on the surveys and thus we anticipate deploying light traps in Year 2.

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

No

Discussed with LTS: No, in..... (month/yr)

Formal change request submitted: No, in.....(month/yr)

Received confirmation of change acceptance no/yes in.....(month/yr)

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

Yes No

If yes, and you wish to request a carryforward of funds, this should be done as soon as possible. It would help Defra manage Darwin funds more efficiently if you could give an indication of how much you expect this request might be for.

Estimated carryforward request: £ 22,000

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

We have learned that Co-PI James Gleason, representing the Ocean Support Foundation, will be leaving the island in Q4 and will thus be stepping down as a co-PI. He has nominated our technical diver and OSF representative Alex Chequer to take his place. All project collaborators have agreed to this transition and thus we request formal change of personnel.

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 LTS International directly.

Please send your **completed form by email** to Eilidh Young at Darwin-Projects@ltsi.co.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: 17-075 Darwin Half Year Report**