



Darwin Initiative Main Project Half Year Report (due 31 October 2015)

Project Ref No	22-014
Project Title	Maximizing benefits of marine reserves and fisheries management in Belize
Country(ies)	Belize
Lead Organisation	Wildlife Conservation Society (WCS)
Collaborator(s)	Belize Fisheries Department, Environmental Defense Fund (EDF), The Nature Conservancy (TNC), University of Miami
Project Leader	Janet Gibson
Report date and number (e.g., HYR3)	31 October 2015, HYR1
Project website/Twitter/Blog /Instagram etc	www.wcs.org
Funder (DFID/Defra)	DFID

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).

Output 1: *For Glover's Reef Marine Reserve (GRMR) and South Water Caye Marine Reserve, sustainable fishing regulations are implemented through no-take zones and license-based Managed Access programs that employ total allowable catch (TAC) quotas.*

Activity 1.1: Both catch log data collected by fishers and the sample catch data recorded by WCS data collectors have been collected at GRMR. Our fisheries scientist consultant, Dr. Babcock (University of Miami), completed an analysis of GRMR's conch fishery and presented results to the Fisheries Administrator in August 2015. Her analysis concluded that the conch fishery is focusing on relatively small, mainly immature individuals and fishing mortality is probably higher than the recommended rate to maintain sustainable exploitation. Her recommendation is that the current national quota should be set below last year's level. Furthermore, a precautionary approach should be adopted to reduce the level of fishing mortality and ensure that the spawning stock biomass is not depleted. To do this, we are embarking on further work that will provide the justification for reforming the size limit measures.

Activity 1.2: *Monitor trends in number of MA licenses issued annually at GRMR and SWCMR to understand how licensing criteria impact the number of fishes in each reserve.*

We continue to monitor the number of MA licenses issued each year at GRMR. Such licenses, however, will not be issued at SWCMR until June 2016 (see note below). There has been a significant decline in number of licenses issued to fishers at GRMR since the MA program began in mid 2011, dropping from 163 licences to 134 (see supplementary material). A slight increase in licenses occurred in 2015 because fishers from the community of Dangriga, who had originally not supported the MA program and not applied for licenses, asked to be granted licenses and were issued licenses if they met all of the licensing criteria.

Activity 1.3: WCS provided assistance to ensure the catch data from the fishers' catch logbooks were entered in the Fisheries Department database. GRMR's database is complete with entries

for the 2014 – 2015 lobster, conch and finfish seasons. We continue to monitor the total catch of lobster at GRMR against our recommended sustainable catch level of 22,810 lbs. – 26,358 lbs. We can report that the previous season's catch of 12,981 lbs. was well below the limit, although we note that this is likely an underestimate of the total catch due to the lack of complete reporting by fishers, as noted in the following section.

Activity 1.4: We continue to collect the monthly sample of catch data in both reserves. These data are being entered into our databases and will be analysed and reported on at the end of the respective lobster and conch fishing seasons.

Activity 1.5: The previously-appointed MA Committee for GRMR held its last meeting in May 2015 during which several applications for licenses were vetted. The Committee has been dissolved and new Committees for each of the nine MA fishing zones, which include GRMR and SWCMR, are presently being established that will have representatives from each fishing community. WCS is assisting the Fisheries Department with the elections of fisher representatives currently being held according to special guidelines approved by the Department.

Output 2: *Spatial Monitoring and Reporting Tool (SMART) is implemented in order to improve targeted enforcement efforts aimed at reducing illegal, unreported, and unregulated fishing.*

Activity 2.1: We held regional training sessions in SMART in Punta Gorda in April 2015 for the staff of the Fisheries Department (Punta Gorda office), the Sapodilla Cayes Marine Reserve, and the Toledo Institute for Development and Environment. A second session was held in San Pedro for the staff of the Hol Chan and Bacalar Chico Marine Reserves. In June 2015 we held a third training session for the staff of the SWCMR and also provided the reserve with a Garmin Montera tablet and training in its use. This tablet is IPX 7-rated and can withstand being submerged for up to half an hour to a depth of 1 meter.

Output 3: *Benefits of no-take zones and MA programs on coral reef ecosystems and resource-based livelihoods are better understood, strengthening adaptive management and community support.*

Activity 3.1: We conducted analyses of the independent sample datasets and prepared reports on the results for the 2013 – 2014 lobster and conch seasons for both reserves. These reports provide recommendations for policy changes and further research for each of these fisheries. Preliminary analyses have been conducted on the 2014 – 2015 logbook dataset for GRMR. These datasets have been shared with Dr. Babcock for updating the lobster and conch fishery models for GRMR.

Activity 3.2: We conducted surveys of the expanded Long Term Atoll Monitoring Program (LAMP) conducted in May and June 2015 at GRMR. This comprehensive monitoring includes assessment of benthic cover on coral reefs (lagoon patches, outer fore-reefs) and seagrass beds around patch reefs, commercial species including lobster, conch and finfish (e.g. Nassau grouper), and key herbivorous species such as *Diadema* urchins and parrotfish. The data collected have been entered in a database and will be analysed in 2016. Work is underway on preparing a publication on our long-term LAMP data for the period 2007 – 2013 that will focus on trends in target species revealing conservation benefits as well as strategies to improve our understanding of ecological dynamics and impacts of management from the no-take zones of GRMR.

Activity 3.3: The annual socioeconomic surveys were conducted during the licensing process for GRMR fishers. Data collected for surveys carried out in 2012 to 2015 have been analyzed and the results included in a brief report. In the 2014 and 2015 survey, questions on perceptions of fishers in relation to the MA program were included in the survey instrument. Encouragingly, the great majority of fishers felt that the catch data collection is very important for fisheries management.

Output 4: *New and expanded no-take zones in Belize's network of marine reserves are*

designated through statutory instruments and approved by relevant stakeholders.

Activity 4.2: WCS is coordinating the collaborative replenishment zones expansion program and has served as the secretariat for the program's Steering Committee, convening three meetings during the project period and providing the agendas and minutes. The Technical Sub Committee carried out community consultations on the first phase of the expansion, which focuses on the deep-water areas that are the greatest gap in the current reserve network.

Activity 4.3: WCS convened regular quarterly meetings of the Advisory Committees of both reserves over the past six months. The expanded zones for deep-water areas proposed as part of the phase one expansion will be presented to members at the GRMR Advisory Committee meeting scheduled for December 2015.

Please see additional material in the Annex that depicts some of the activities carried out during the first six months of the project.

2a. Give details of any notable problems or unexpected developments/lessons learnt 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.

Output 1: (1) The managed access (MA) program was not introduced at SWCMR as expected in June 2015, as the government decided to postpone its expansion from the pilot sites (GRMR and the Port Honduras Marine Reserve) until June 2016. Nevertheless, our WCS data collectors are carrying out the monthly sampling of catch data at SWCMR. This delay will mean that by the end of the project, the SWCMR MA program will only be in year 2 of licensing, which may affect the percentage of compliance with submitting their catch data logs. (2) We noted that at the opening of the lobster season in June 2014, fishers were not completing their logbooks properly. To address this, we have carried out additional training in the filling out of the catch data forms for fishers in Hopkins and have scheduled training sessions for the fishers in Sarteneja in the coming weeks.

Output 2: Based on a SMART training workshop that we held in March 2015 we learned that, although the reserve staff felt the tablets were very helpful in collecting data in the field, they were not performing well due to the harshness of the marine environment. WCS agreed that the issue of appropriate hardware needed to be considered a high priority. As a result, we investigated the availability of more robust tablets for field use and decided to test the Garmin Montera tablet. We do not expect this to have any impact on the budget.

Output 3: In 2014 86% of fishers stated their catches had improved but this declined to 62% in 2015. This catch decline was also recorded in the catch logs and may be linked to a decline in the conch catch, which was also reported on a national basis. If this decline in the conch fishery continues, it may affect the increase in fishing-related income anticipated by the end of the project, as conch is an important component of the total catch of fishers from GRMR.

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:	No
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Formal change request submitted:	No
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Received confirmation of change acceptance	No
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3a. Do you currently expect to have any significant (e.g., more than £5,000) underspend in your budget for this year?

Yes No Estimated underspend: £

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?

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 e.g., Subject: 20-035 Darwin Half Year Report**