

<b>Project Period</b>	06/01/2011 - 12/31/2012
<b>Award Amount</b>	\$37,599.96
<b>Matching Contributions</b>	\$45,600.00
<b>Project Location Description (from Proposal)</b>	Distribution of the Best Practices Manual will occur throughout the Wider Caribbean. Training workshops will take place in the Bahamas, Mexico and US with participation from around the region.
<b>Project Summary (from Proposal)</b>	Translate and disseminate a best practices manual and organize and conduct hands-on training workshops for marine protected area/resource managers to address invasive lionfish in the Wider Caribbean.
<b>Summary of Accomplishments</b>	<p>The focus of this project was to conduct lionfish collecting and handling workshops and to disseminate the most up to date and accurate information on control strategies via these workshops and translation of the best practices Invasive Lionfish: A Guide to Control and Management.</p> <p>Highlights of this work have included:</p> <ul style="list-style-type: none"> <li>• 3 separate workshops for resource managers with more than 41 participants from 28 different countries. Workshops included both classroom and field components and targeted resource managers and their designees in a train the trainer format. Field exercises included hands-on experience in using a variety of collecting tools and methods as well as dissection protocols and practice in preparation of lionfish as a foodfish.</li> <li>• Dissemination of more than 900 printed copies of the lionfish guide. Following completion of the printing of Invasive Lionfish: A Guide to Control and Management, as the first in a new GCFI publication series, over 900 copies of the guide were distributed to every country in the region via the 65th GCFI conference in Columbia.</li> <li>• Translation of the lionfish guide into Spanish with distribution through printed and electronic media. Following the English printing of the guide, Spanish translation, printing and distribution were undertaken through a partnership with SPAW-RAC and CONANP. Copies were distributed to all Spanish speaking countries in the region and electronic version posted for free download on the GCFI site.</li> </ul>
<b>Lessons Learned</b>	<p>Working in partnership with the GCFI and Campam provided excellent opportunity for identifying key invitees and collaborating with existing programs at the GCFI event. Even though the lionfish workshop was concurrent with the conference, participation greatly exceeded expectations. While increased interest and participation was a good thing, it also posed challenges in organizing the field portion of the workshop for invited vs last minute participants.</p> <p>Funding partial travel was a significant challenge for many invited participants. Our proposal identified funds to be used for per diem and materials/supplies and a portion of travel, however, some invited participants could not fund the balance of travel expenses. In hindsight it may have been better to fund full travel for fewer individuals.</p> <p>Weather and logistics of the field portion of the workshop also posed quite a challenge. Hurricane Rina brought heavy winds and rains immediately prior to the workshop and sea conditions and visibility</p>

were not conducive to field training activities. Lionfish populations were also not suitably high enough for all participants to engage in all aspects of collecting. Even with these conditions, the group did manage to dive and collect a number of lionfish using tools and techniques covered in the classroom. Collected specimens were utilized on land to discuss handling and collecting and provide opportunities for participants to experience first-hand handling of live lionfish.

Conservation Activities	Translate Best Practices Manual into Spanish
Progress Measures	Other (# of Spanish speaking countries with access to BPM)
Value at Grant Completion	10
Conservation Activities	Conduct hands-on training workshops
Progress Measures	Other (# of managers participating in the workshops)
Value at Grant Completion	41
Conservation Activities	Dissemination of translated Best Practices Manual
Progress Measures	Other (# of copies of BPM distributed)
Value at Grant Completion	500
Conservation Outcome(s)	Experiences and best practices available to resource managers dealing with lionfish
Conservation Indicator Metric(s)	Other (# of managers having access to the manual (hard copies or on-line access))
Baseline Metric Value	0
Metric Value at Grant Completion	200
Long-term Goal Metric Value	400
Year in which Long Term Metric Value is Anticipated	2012
Conservation Outcome(s)	Managers trained and able to develop Best practices locally against lionfish
Conservation Indicator Metric(s)	Other (# of managers trained directly during workshops and indirectly through local replication of training)
Baseline Metric Value	0
Metric Value at Grant Completion	36
Long-term Goal Metric Value	360
Year in which Long Term Metric Value is Anticipated	2012
Conservation Outcome(s)	Effective control and response programs developed, thus reducing the impacts of lionfish
Conservation Indicator Metric(s)	Other (# of national/local control programm developed)
Baseline Metric Value	0
Metric Value at Grant Completion	5
Long-term Goal Metric Value	30
Year in which Long Term Metric Value is Anticipated	2013

## Final Programmatic Report Narrative

**Instructions:** Save this document on your computer and complete the narrative in the format provided. The final narrative should not exceed ten (10) pages; do not delete the text provided below. Once complete, upload this document into the on-line final programmatic report task as instructed.

### 1. Summary of Accomplishments

In four to five sentences, provide a brief summary of the project's key accomplishments and outcomes that were observed or measured.

The focus of this project was to conduct lionfish collecting and handling workshops and to disseminate the most up to date and accurate information on control strategies via these workshops and translation of the best practices *Invasive Lionfish: A Guide to Control and Management*. Highlights of this work have included:

- 3 separate workshops for resource managers with more than 41 participants from 28 different countries
- Translation of the lionfish guide into Spanish with distribution through printed and electronic media
- Dissemination of more than 900 printed copies of the lionfish guide

### 2. Project Activities & Outcomes

#### Activities

- Describe the primary activities conducted during this grant and explain any discrepancies between the activities conducted from those that were proposed.

#### 1) **Lionfish collecting and handling workshops -**

For this project, a series of three hands-on lionfish collecting and handling workshops were proposed and conducted in Puerto Morelos, Mexico, the Florida Keys and Eleuthera, Bahamas. For logistical reasons, the Florida Keys workshop was replaced by an additional workshop in the Bahamas. Each two-day workshop was divided into classroom sessions and field practical sessions. Topics covered included background of the lionfish invasion, biology/ecology and impacts, control tools and techniques, collecting and handling procedures, dissection, and discussion of management/regulatory issues and lionfish as a food fish. In addition, each invited workshop participant was provided with a set of collecting equipment including puncture resistant gloves, collecting nets, collecting spear and collection bag.

The first workshop was held in conjunction with the 64<sup>th</sup> annual GCFI conference in Pto Morelos, MX as a special workshop. Key invitees for the workshop were identified through a collaborative process between SPAW-RAC, GCFI, CAMPAM and REEF and included 22 participants from the following countries: Bahamas, Barbados, Bonaire, Cayman, Columbia, Costa Rica, Dominican Republic, Grenada, Guadeloupe, Honduras, Jamaica, Mexico, Panama, St Kitts/Nevis, St Lucia, St Vincent, Tobago, the UK, the US, and Venezuela

Ten of the invited participants were jointly funded through CAMPAM's Caribbean Challenge program and individual countries (St Lucia, Cayman, Barbados) or programs (CEI, CABI, SPAW). In addition to the invited participants, 8 Cuban biologists were funded through the Harte Institute to take part in the program.

During the conference, the workshop was held as a special concurrent session and many GCFI conference attendees chose to sit in on the classroom portion of the program as well. Total attendance during the classroom sessions exceeded 51 persons. The field component of the project was a bit more challenging. Local inclement weather due to a recently passed hurricane left limited options for field work and visibility was poor during collection dives. Even with poor conditions, the team was able to conduct field collecting dives both from shore and from chartered dive vessels. A number of lionfish were collected during the dives and time following the dives was spent on detailed debriefings and hands-on discussions of lionfish collecting with specimens in hand.

Learning from the logistical challenges of the 1<sup>st</sup> workshop, the 2<sup>nd</sup> and 3<sup>rd</sup> workshops were scheduled at the Cape Eleuthera Institute in south Eleuthera, Bahamas. Even though the number of participants were limited in each workshop, the field logistics were much more appropriate for hands-on learning. The 2<sup>nd</sup> workshop was held in May, 2012 with 10 participants from: Trinidad and Tobago, Dominica, Bahamas, Guadeloupe, BVI, Dominican Republic, Barbados, Saba, Columbia, and Martinique. The 3<sup>rd</sup> workshop was held in December, 2012 with 9 participants from: Jamaica, Canada, Antigua, Curacao, Bahamas, US, Columbia and Turks and Caicos.

During both of these workshops, participants were able to take part in shallow water dives with good visibility and numerous lionfish. Skills learned in the classroom were honed during practical session in the water using both scuba and snorkeling. Lionfish collected during the field sessions were dissected in the evenings and a special lionfish tasting was organized by the Cape Eleuthera Institute for participants to be able to prepare and taste their lionfish.

## 2) **Translation and Distribution of *Invasive Lionfish: A Guide to Control and Management***

This portion of the proposed work involved translating, printing and distributing the highly acclaimed *Invasive Lionfish: A Guide to Control and Management* into Spanish. The English version of the guide was completed in late summer 2013 and was published as the first in a new series of GCFI Science publications. Over 900 printed copies were distributed to every country in the region at the 2013 GCFI in Santa Marta, Columbia. Electronic versions of the guide were also made available for free download and distribution as ebooks, pdf and mobile documents through the GCFI website ([www.gcfi.org](http://www.gcfi.org)).

The translation work of this guide was initiated following the English printing and was lead by the SPAW-RAC in Guadeloupe, FWI. Translation was completed in early January 2014 and Spanish language electronic versions following the same ebook, pdf and mobile docs were posted on the GCFI site in February, 2013. Printing of the book was organized and conducted through the Mexican CONANP and over 1,000 copies are being printed and are distributed through Spanish speaking Caribbean and Latin America countries including Guatemala, Honduras, Venezuela, Columbia, Nicaragua, Panama, Dominican Republic, Costa Rica, Puerto Rico and Mexico.

## **Outcomes**

- Describe progress towards achieving the project outcomes as proposed and briefly explain any discrepancies between your results compared to what was anticipated.

All outcomes were met as proposed and there were no discrepancies. One location was changed from the Florida Keys to the Bahamas as the collaboration with CAMPAM's train the trainers did not occur in the Keys. If anything, the additional collaborations resulted in more participation and productivity than originally anticipated.

- Provide any further information (such as unexpected outcomes) important for understanding project activities and outcome results.

N/A

## **3. Lessons Learned**

Describe the key lessons learned from this project, such as the least and most effective conservation practices or notable aspects of the project's methods, monitoring, or results. How could other conservation organizations adapt similar strategies to build upon some of these key lessons about what worked best and what did not?

One of the most useful lessons learned through this project related to the collaborative nature of much of the proposed work. Collaboration can be a double edged sword. Too many people or organizations involved in the process can be inhibiting, though certainly there were benefits in working closely with certain partners. Assignment of specific areas of responsibility and respecting those boundaries would be helpful to organizations working on collaborative projects.

Hands-on field training was very useful following classroom lessons. Participants were able to put knowledge to the test and learn through experience. It is rare that a classroom session can cover the entirety of possible field scenarios and having the opportunity to experience the field component was a great benefit to participants.

#### 4. Dissemination

Briefly identify any dissemination of project results and/or lessons learned to external audiences, such as the public or other conservation organizations. Specifically outline any management uptake and/or actions resulting from the project and describe the direct impacts of any capacity building activities.

Long term benefits of the workshops were primarily post facto. Participants returned to their countries with a strong knowledge and practical experience relative to the lionfish issue. Many participants have utilized this information in conducting workshops in their respective locations as well as informing decision makers and the public.

Translation and Dissemination of the Lionfish Guide has been well received with more than 900 copies distributed at the GCFI and broad distribution via electronic copies. The guide was conceptually introduced at a special presentation of the 64<sup>th</sup> GCFI in Mexico by the General Director of the CONANP, Sr. Alfredo Arellano Guillermo and debuted in a special presentation by Sra. Ana María González, from the Ministry of Environment, at the 65<sup>th</sup> GCFI in Columbia.

#### 5. Project Documents

Include in your final programmatic report, via the Uploads section of this task, the following:

- 2-10 representative photos from the project. Photos need to have a minimum resolution of 300 dpi;
- Report publications, Power Point (or other) presentations, GIS data, brochures, videos, outreach tools, press releases, media coverage;
  - a. *Invasive Lionfish: A Guide to Control and Management* (English and Spanish)
  
- Any project deliverables per the terms of your grant agreement.

***POSTING OF FINAL REPORT:*** *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as “PROTECTED” and provide an explanation and complete citation to the statutory or regulatory source for such protection.*