

The Rufford Small Grants Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Small Grants Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Sven Vrdoljak
Project title	Using innovative techniques and citizen science to drive evidence-based fisheries management in the Zambezi Heartland
RSG reference	10004-1
Reporting period	February 2012-February 2013
Amount of grant	£ 5854.00
Your email address	sven@wildtracks-zambia.com
Date of this report	28 February 2013

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Level of achievement			Comments
	None	Partial	Full	
Develop and test a Cybertracker routine to collect catch data on handheld GPS devices.			✓	A Cybertracker routine was successfully designed and tested on the Trimble Juno handhelds. This allowed detailed information to be collected on fish caught and released as well as precise measurement of fishing effort by tracking time fishing and distances covered during fishing trips. However, using these devices on a wider scale is limited by the expense of the hardware, so for most participants, conventional pen and paper record keeping will probably be more suitable. Other means of data collection are being explored (see below).
Develop more conventional 'pen and paper' alternatives for keeping catch records.			✓	Initial discussions with lodge managers and fishing guides revealed that for many, a pen and paper approach would be the best means to record fish catches. With this in mind, fishing logbooks were designed, printed and distributed to fishing guides. Despite some initial difficulties in terms of differing levels of literacy among the guides, the system appears to work well. There are still some issues to be resolved in terms of streamlining the submission of completed logbooks and records, but the logbooks are a simple and effective way to collect data.
Explore other, innovative data collection methods		✓		Development of the Cybertracker routine for recording fish catches will be ongoing. Cybertracker recently released an Android client that will allow users to run routines on devices running the Android OS. This will make the programme more accessible as users who already have tablets or smart phones will not have to purchase other more costly devices. LZCRI is also developing a partnership with the Roam Free initiative (www.fishtube.tv) who have developed an app and web platform for smartphone users to record and upload catch records to a dedicated social media site for anglers. This provides another stream of catch data, as the Lower Zambezi is actively promoted on the Roam Free site as a catch-and-release fishing destination

<p>Locate, assess and collate existing catch records and other information held by operators and authorities in the area.</p>	<p>✓</p>		<p>The Lower Zambezi has had a poor history in terms of catch record keeping. None of the lodges keep detailed catch records although there are a few catch records books available these are filled in on an ad-hoc basis and do not represent a very reliable or complete record. Efforts were also made to collect records from fishing competitions with limited success. The records from two competitions held in 2012 were obtained from the organisers, but unfortunately the records from previous years that were held by the Zambia Sports Fishing Association were lost due to a recent computer failure. Species distribution records are available from other sources such as SAIAB and spot surveys done by organisations such as the AWF.</p> <p>As far as we are aware, there is no formal record keeping practiced by artisanal or commercial fishers in the area.</p>
<p>Develop a database of catch records based upon existing information and data generated during the testing phase.</p>	<p>✓</p>		<p>Cybertracker database: Cybertracker allows rapid collection of electronic data. In a single season, over a thousand records were collected including 104 hours of fishing logged and 139 catch and release records. In this format, data is easy to process and analyse (see attached examples).</p> <p>Logbooks: In this format, data checking and entry is somewhat more laborious as the data needs to be manually checked and entered. Returned sheets are being processed but an estimated 1 500 catch records were returned. The system does require some streamlining in terms of facilitating submission of catch records and completed logbooks, as well as data processing.</p>
<p>Assess stakeholder (lodge operators, local communities, local conservation agencies) attitudes to the current state of fisheries in the Lower Zambezi</p>	<p>✓</p>		<p>Fishing is an emotive issue in the Lower Zambezi and while most stakeholders share concerns about conserving fish stocks, there is also tension between various stakeholder groups. A meeting was hosted at Wildtracks Lodge in March 2012 to discuss these issues in an open forum with tourism operators, representatives of the local community and local and national authorities (including representatives of Chieftainess Chiyaba, the Chiawa Community Resources Board, Zambia Wildlife Authority, the Department of Fisheries and Conservation Lower Zambezi). Most parties share concerns of increased fishing pressure and declining fish stocks but getting everyone to work together is difficult. A resolution was taken to regulate fishing in the area as far as possible (see attached letter). Lodges present at the meeting also provided logistical support to Department of Fisheries patrols in the area subsequent to the meeting.</p>

				<p>Informal discussion with fishing guides, lodge managers and local residents indicate a generally favourable attitude towards doing "something" towards conserving fish stocks in the area, but there needs to be more consensus built around a cohesive management plan for the area.</p>
Educate and inform anglers and guides about catch-and-release			✓	<ul style="list-style-type: none"> • Information sheets about various aspects of catch-and-release were compiled and made available on the LZCRI webpage (see examples at www.wildtracks-zambia.com/index.php/lzcri-more). • Lectures on proper catch-and-release procedure and the science behind catch-and-release were presented candidates at the 2012 Lower Zambezi Safari Guide (LZSG) training course held at CLZ in March 2012. • A workshop covering the same material presented at the LZSG training was held in April 2012 at Kanyemba Lodge, for guides who had not attended the previous course. • Mini workshops were held at each lodge during the recruiting phase to discuss catch-and-release with the guides using the logbooks. • Catch and release factsheets were distributed to some 40 angler's participating in the 2012 Zambezi Tiger Cup (an annual catch-and-release fishing competition) held at Mvuu Lodge in October.
Create a platform for disseminating catch-and-release information			✓	<p>The LZCRI has an information page at www.wildtracks-zambia.com/index.php/LZCRI where further information is available. Fact sheets and guidelines are available here for download in pdf format. There is also an LZCRI Facebook page (www.facebook.com/LZCRI) and Sven Vrdoljak posts as a fishing guide on www.fishtube.com, as part of "Roam Free" another community-based conservation initiative promoting catch-and-release and record keeping.</p>
Engage local stakeholders (in particular tourism operators) to support an ongoing programme.			✓	<p>Twelve lodges on the Zambian bank of the Zambezi between Chirundu and the eastern boundary of the LZNP were approached to participate in the LZCRI. Of these, nine contributed fully to the programme, completing and submitting catch records.</p> <p>At a meeting of the Lower Zambezi Tourism Association (LZTA) (an umbrella body for tourism operators in the area) early in early February 2013, issues around the sustainability of the Lower Zambezi fishery were placed high on the agenda. The LZTA resolved to include catch-and-release and catch record keeping in the operational guidelines being developed for its members</p> <p>Operators on the Zimbabwean bank of the river have also expressed interest in participating in the LZCRI</p>

Seek further funding to support an ongoing programme		✓	Although funding is yet to be confirmed, small grants should be made available the Civil Society Environment Fund in Zambia. A partnership is also being developed with Wildfly and the Roam Free initiative that will provide some material support in terms of promotional material and incentives for fishing guides to participate in the programme. Application will also be made for continuation of the RSFG funding. At this stage, project expenses can remain relatively small as the focus will remain on developing and promoting participation which does not require specialised equipment or large capital expenditure.
This initial pilot phase focused mainly on developing data collection tools and laying the groundwork to develop a broader network of participants to collect catch data. This proved to be very successful, with good participation from most of the tour operators approached. More specific objectives and outcomes are outlined in the above table.			

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Although not entirely unforeseen, it is difficult to design a data collection system that works for everyone. Among fishing guides were varying levels of literacy and ability to deal with data collection and using forms. The data collection forms were made as simple as possible, with very little writing needed to complete a record. This problem could usually be solved in direct consultation with a particular group of guides by assigning a more senior or literate guide to assist those with difficulty in maintaining their records.

Regularity of record keeping is also difficult to keep tabs on across all participating lodges. This is largely dependent on deferring checking on guides to managers at the lodges, which in turn depends on the priorities of the lodge management. Interest in the programme varied across managers and catch record keeping is not always high on the "to-do" list. There is also a high turnover of lodge staff, maintaining performance requires re-establishing relationships at the beginning of each season where staff have changed. These problems will require ongoing effort. Some options that are being developed include formalising record keeping through a unified policy to be adopted by members of the Lower Zambezi Tourism Association, and providing an incentive scheme that reward guides directly for submitted record (in discussion with other sponsors).

3. Briefly describe the three most important outcomes of your project.

Establishing a platform to promote catch-and-release in the Lower Zambezi Valley.

Although most lodges on the Zambian bank of the Zambezi practice catch-and-release to varying extents, there has been no formal attempts at promoting the practice or setting standards to which operators adhere to. The LZCRI provides a focal point for information about catch-and-release as well as establishing the foundation of a database of catch records that can, over time, be used to assess and monitor the some of the impact of recreational fishing activities on the Zambezi

Engaging nine lodges in promoting catch-and-release establishing formal catch record keeping.

Of the 12 operators initially approached, nine lodges (Mvuu Lodge, Baines River Camp, Chongwe River Camp, Chongwe House, Royal Zambezi Lodge, Chiawa Lodge, Sausage Tree Lodge, Mwambashi River Lodge) engaged fully in the programme with their fishing guides actively participating in

collecting data on the fish that they catch on excursions during the fishing season. It is hoped that as more guides become used to practicing good catch-and-release technique and keeping catch records that this will develop into a standard routine for Lower Zambezi fishing guides.

Contributing to the training and development of more than 42 Lower Zambezi fishing guides.

Catch-and-release theory was introduced into the course material for the annual Lower Zambezi Safari Guides certificate training. Twenty-two new guides attended training in March 2012. A further twenty guides attended a subsequent workshop held at Kanyemba lodge. In addition, informal discussions and presentations were given to guides at all participating lodges. Understanding the theory behind catch and release equips guides to better protect the welfare of the fish that they catch and release. As the major contact point for guests and anglers fishing from lodges, guides with extended knowledge are better able to explain and promote catch-and-release to their clients.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

Most of the guides working at lodges in the Lower Zambezi come from the local community (Chiawa and surrounding areas). Much of the direct contact and catch-and release training has been with these guides. In addition to working with lodge guides, Sven Vrdoljak has also worked with the local NGO Conservation Lower Zambezi, to develop content and set examinations for the Lower Zambezi Safari Guide (LZSG) training, contributing directly to skills development in the area. In addition to LZSG training, Dr Vrdoljak has also consulted on and written material on sustainable fishing and river ecology for CLZ's environmental education programme aimed at local school children. In 2013, this outreach will continue through guide's training, ongoing workshops with fishing guides and participation in an upcoming sustainable fishing workshop organised by the African Wildlife Foundation.

5. Are there any plans to continue this work?

Yes. The LZCRI is planned to continue through the 2013 fishing season and beyond.

6. How do you plan to share the results of your work with others?

The results will be shared via the platforms set up for the dissemination of project material, including LZCRI web and Facebook pages. We will also existing contacts within other organisations (such as Conservation Lower Zambezi and Lower Zambezi Tourism Association) to send out information through their own networks. Results will also be communicated directly to participating lodges operators through reports and feedback on catch numbers and release performance once records have been fully collated and analysed.

7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

The RSG was used over the course of approximately a year (2012). An expected life span for the project would be four to six years to adequately develop the program to a point where catch record keeping has become an entrenched part of lodge routine and where sufficient data have been collected to be able to make meaningful comparisons across fishing seasons. Ultimately, it would be desirable that the project become self sustaining as part of the corporate-social/environmental responsibility of the lodges operating in the valley, but this would take time to establish.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Amount (GBP)* Budgeted £	Actual £	Difference £	Comment
Trimble Juno SB x 2	1103	1034	69	
Trimble Juno SB accessories	184	20	164	The originally specified accessories were not available from the supplier, so alternatives were used
Notebook computer	610	532	78	A similar spec Fujitsu laptop was bought for project use.
Fish weighing and measuring equipment	256	259	-3	This included measuring boards, scales, and fish grips and rubberised landing nets for handling fish without injury.
Boat running costs	1920	1663	256	In total 104 hours were logged fishing and testing the Cybertracker routine. These hours were charged at the budgeted rate of ZMK 124 000/hour.
Park entry fees		65	-65	Park entry and vehicle fees charged on occasion when lodges in the park were visited by vehicle rather than by boat.
Vehicle costs	1625	1625		As a Wildtracks Company Ltd vehicle was used, vehicle usage was charged on a monthly basis, calculated on an average usage of 350 km per month (1 trip to Lusaka, and additional mileage in the Lower Zambezi).
Cellular communications	156	155	1	Prepaid cellular airtime. This was supplemented at ZMK 100 000 per month.
Printing: fishing logbooks		364	-364	Although these were not in the original budget, for many participating guides, pen and paper were the most suitable means of data collection. Money saved from other line items were diverted to having logbooks printed.
Printing: factsheets for distribution at Zambezi Tiger Cup 2012		85	-85	As the only true catch-and-release fishing competition held in the Lower Zambezi, an LZCRI presence was important. Funds saved from other line items were diverted to cover this expense.
Total:	£5 854	£5 719	£50	

*All amounts were calculated using the rates used in the original funding application in 2011. Most project costs were incurred in Zambia, although some items were purchased from South Africa. Zambian Kwacha amounts were converted at GBP 1 = ZMK 7751.98. South African Rand amounts were converted at GBP 1 = ZAR 14.09

9. Looking ahead, what do you feel are the important next steps?

It will be important to maintain the momentum of the programme through the coming year. As the new tourism season begins in April, key tasks throughout the year will include:

Secure participation by reaffirming partnerships formed with participating lodges and guides last year.

Increase participation. This entails establishing new partnerships, recruiting new participants, and broadening the exposure of the programme among tourism operators and the general public. This will require direct contact with anglers and fishing guides, disseminating information through other channels such as fishing shops and sport fishing associations.

Reduce impact the impact of sports fishing events. Fishing competitions are another source of catch record, but also represent a potential impact on fish stocks. Although competition organisers to make some effort towards incorporating "catch-and-release" into competitions, these measures are often inadequate and are unlikely to significantly reduce the impact of such events.

Incorporate catch-and-release through policy. Although catch-and -release is not defined in the current fisheries act of Zambia, there is scope for self regulation through the tourism industry itself. The Lower Zambezi Tourism Association (LZTA) is in the process of formalising standards, policies and operational guidelines for its members. This presents a good opportunity to develop guidelines that can be incorporated more formally into lodge operations.

Streamline reporting and record submission. While paper forms work better for most guides, they do require more data processing than electronic submissions. This is something that needs to be addressed and developed in 2013 to make data collection more efficient. Limited or intermittent telephonic communications at many lodges also makes electronic submissions difficult.

Communicate data and results to participants. Returning tangible results to participating lodges will help maintain interest in the programme. This would include developing templates for summary reports from submitted records. It also depends on a more streamlined data submission system to facilitate swifter processing of catch records.

10. Did you use the RSGF logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

The RSGF logo appears on the LZCRI web page and in the footer of the LZCRI factsheets that were published on the website and distributed to lodges and fishing competition participants. RSGF was also acknowledged on any audiovisual material used during LZCRI presentations given to lodges and at the Lower Zambezi Safari Guides training.

11. Any other comments?

Zambia, like many other countries in Sub-Saharan Africa faces growing demands on natural resources yet lacks the capacity to properly manage these resources. Participation from the private sector can play an important role in addressing this shortfall. This participation however does need to be coordinated. The LZCRI aims to act as a focal point for individuals and organisations who are concerned about the impact of recreational fishing and seek to minimise the effects of their own



activities and contribute towards protecting the resources that support their livelihoods (in the case of tourism operators or their sport (in the case of recreational anglers).