

CEPF SMALL GRANT FINAL PROJECT COMPLETION REPORT

I. BASIC DATA

Organization Legal Name: EcoCARE Pacific Trust

Project Title (as stated in the grant agreement):

Assessment of invasive pathogens in relation to the distribution of introduced mosquitoes:
potential threats to biodiversity

Project Dates (as stated in the grant agreement): 30th July 2006

Date of Report (month/year): 30th July 2006

II. OPENING REMARKS

Provide any opening remarks that may assist in the review of this report.

The project consisted of a preliminary survey of larval mosquito habitats in the Kingdom of Tonga. A total of 41 sites were sampled on six islands. The distribution of 8 mosquito species have been identified, at least three of which are known vectors of animal pathogens. Initial analysis indicates that these vector species are found near likely ports of entry into Tonga i.e. the International Airport, the Capital (a major port) and at a secondary port on a frequently visited island group. Mosquito habitats are generally more abundant in villages than in the surrounding farmland, and within villages the primary habitats are man-made i.e. car tyres, 44 gal drums and disused storage water tanks. We have formulated a number of inexpensive, simple methods which could be adopted to markedly reduce the availability of mosquito habitat in Tonga, thereby reducing the threat of mosquito-borne pathogens to indigenous biodiversity.

The project received funding in late April 2006, laboratory identification of mosquito species were completed at the end of June. We are currently developing publications, posters and pamphlets for distribution to the community in Tonga. The process of dissemination of the information gathered from our project to the people of Tonga is only just beginning.

III. NARRATIVE QUESTIONS

1. What were the initial objectives of this project?

Initial objective: To quantify the distribution and abundance of invasive mosquitoes and identify their breeding habitats.

Expected Outcomes

1. Identify the invasive mosquito species present in Tonga.
2. Determine relative importance of man-made v. natural habitat for the spread of these invaders.
3. Improve information and understanding among the Tongan government and people about invasive mosquito and their relationship to disease.
4. Determine the feasibility of mosquito habitat removal as a means of reducing the spread of animal diseases, thus conserving biodiversity.
5. Collect blood samples from both female mosquitoes for analysis of blood parasites (longer-term objective).

2. Did the objectives of your project change during implementation? If so, please explain why and how.

No, our objective and outcome aims remained the same.

3. Briefly describe the methods used in achieving the objectives of this project.

We conducted two studies;

1. An extensive field survey of 41 sites spread across six islands sampling as many potential larval habitats as possible.
2. We intensively surveyed 20 randomly selected grids (20m x 20m), 10 in towns and 10 in country areas. All water bodies in each grid were identified, sampled and where possible basic water chemistry measured.

4. Was your project successful in achieving the expected objectives? If no, explain why not. If yes, please explain how the project was successful and the key factors that contributed to its success.

Yes, the project was successful in 4 out of our 5 expected outcomes. We consider this a realistic level of success considering our time and financial constraints. We now have a sound understanding of the distribution of mosquito species on a number of the main islands and have been able to confirm the presence of several potential pathogen vectors. We are in the process of developing a number of publications which will be provided to the Tongan Government, Church, Schools, community and other agencies to inform them about these invasive species and how they might reduce their populations by affecting habitat availability. We have identified a number of affordable and simple strategies that can be employed by local people and the Government to reduce mosquito habitat and populations and consequently, reduce the spread of disease, conserving biodiversity.

5. Describe what was achieved in terms of:
 - a) capacity development;
 - b) developing partnerships;
 - c) raising awareness of invasive species and generating community support for their management;
 - d) involving the local community and other stakeholders;
 - e) providing benefits to the local community and other stakeholders.

This project is not only concerned with the gathering of information on a particular topic. If research of this type is to have an impact on the hugely worrisome areas of invasive species, conservation, biodiversity, health etc, in any developing nation then it is vitally important that the community at large is informed and that they have the information and desire to affect change. Simply, going to a place like Tonga and carrying out research on a funded topic without going to the effort to disseminate the information that has been gathered will have little or no impact on the population at large and will therefore achieve few, if any of the projects recommended changes. EcoCARE Pacific Trust and the team of researchers from the University of Canterbury, led by Dr. Jon Harding, have endeavored to involve the government, churches, community and schools in this project as much as possible. Members of the trust and university went to Tonga prior to the research team arriving to speak about invasive species and other environmental issues with the Prime Minister, Deputy Prime Minister, Ministers of Health, Environment, Fisheries and Education, we held public presentations that received television, press and radio coverage, we met with church leaders and members of the communities to ask their permission and to inform them of the project. When the research team arrived we went about our work and endeavored to

involve the communities and schools as much as we could. Once the project has been written up and posters and pamphlets have been printed we intend to return to Tonga and disseminate the information to the government and into the communities through a series of meetings and presentations. We intend to take the educational facilities that we have developed into schools and to encourage students and teachers to design their own projects around the topics of invasive species, biodiversity, conservation and the environment.

6. What was the impact of the project at the local level?

The project received considerable interest from locals among the 37 villages we sampled. The mosquito problem is a very real and constant issue for the Tongan people, and that was made abundantly clear to us by the interest shown by people in the villages. As a result of the extensive work done during the introductory visit locals were already aware and supportive of our project and what we were trying to achieve before the research team arrived.

7. What was the impact of the project (if any) at the national level?

Our project was aired on Tongan television, Tongan radio and the press. We meet and had discussions with Prime Minister, Deputy Prime Minister, Ministers of Health, Environment, Fisheries and Education. We met with the heads of both the Catholic and Methodist churches. We meet with nobles and community officers as well as giving presentations to the community at large. We met with the Governor of the Vava'u Island Group and co-ordinated with the national Water Board. The project received a high degree of Governmental support and was positively received by national and local government and local communities.

Did your team experience any disappointments or failures during implementation? If so, please explain and comment on how the team addressed these disappointments and/or failures.

We were unable to go to all of the areas that we would have liked to have visited. This was simply a case of transport schedules not being as punctual as we would have liked but this is a symptom of the environment in which we were working. We recognized that sometimes schedules need to be adjusted and that we should allow a bit more time to do things in Tonga.

8. Describe the key positive and negative lessons learned from this project that would be useful to share with other organizations interested in implementing a similar project.

Remember why you are doing the research. To affect change it is imperative that the information be gathered and communicated adequately to the community.

Be humble, ask permission to do your work as you are a visitor in a foreign land and your hosts should be treated with due respect. To a large degree apply the saying that when in Rome do as the Romans do.

Spend a good amount of time communicating with the people and remember that you are not in first world city, things may take time to happen and schedules may change by the hour. Allow yourself an extra day in each location.

Tongan people are extremely friendly and helpful. This was both positive, and to some degree negative. Some times people were so polite and helpful that on occasions they might not provide entirely accurate (perhaps perceived as impolite) advice.

We learned that if you are doing research in a developing country, you should provide and bring your own equipment. Despite the good will of central government they were simply not able to provide some equipment – we over came those issues.

We knew that our 5th expected outcome was somewhat ambitious, and when we arrived in Tonga it became apparent that we would need much more time and greater logistics to undertake this aspect of the field work.

9. How has the project been promoted? (Please enclose/attach press clippings, brochures, publications, videos, websites, photos, etc). Please describe the products developed during the project and how and to whom these were disseminated.

All 3 TV stations, news papers and radio stations covered our trip and I will be happy to pass on any clippings and video footage plus posters and pamphlets if you want.

10. Describe any follow-up activities you wish to implement and how you intend to do so (eg other invasive species management actions you wish to pursue, or how you plan to scale up the project to a broader area).

It our intention to continue this project and others. We would like to complete our “expected outcomes” by assessing the occurrence of animal pathogens in Tonga. This will require more intensive fieldwork and laboratory work. We would also like to extend the survey to include other island groups and Pacific Nations. Much more needs to be done with education and implementation of mosquito habitat removal, currently we have only identified the scope of the problem, now we need to do something.

We have collected some base line data on invasive marine species while we were in Tonga and would like to pursue this topic further with more extensive studies.

We have also identified that unlike other pacific neighbors there appear to be no coconut crabs on inhabited islands in Tonga. We suspect that the reason for this is possibly related to introduced or invasive domestic and/or wild animals.

I would like to look at biosecurity management and implementation in Tonga and throughout the Pacific. There is almost no biosecurity at the border or within Tonga and the transportation of invasive species such as ants can occur when ever anyone travels between islands. Travelers are able to bring almost anything into Tonga as there is little if any baggage checking done. This applies to visiting ships also.

Projects that look at the effect of introduced and invasive species on natural populations are desperately required as the impact of aggressive invasive species on the small number of island species that have evolved little or no defense against such highly aggressive invaders that can be devastating as islands generally have few species anyway (species to area curve) with little refugia. If there are native populations that survive they should be on islands that are difficult to access. These are the most likely source of natural populations of native fauna.

11. Please provide any additional information you think may assist CEPF in understanding any other aspects of your completed project.

IV. ADDITIONAL FUNDING

Provide details of any additional donors who supported this project and any funding secured for the project as a result of the CEPF grant or success of the project.

Donor	Type of Funding*	Amount	Notes

***Additional funding should be reported using the following categories:**

- A** *Project co-financing (Other donors contribute to the direct costs of this CEPF project)*
- B** *Complementary funding (Other donors contribute to partner organizations that are working on a project linked with this CEPF project)*
- C** *Grantee and Partner leveraging (Other donors contribute to your organization or a partner organization as a direct result of successes with this CEPF project.)*
- D** *Regional/Portfolio leveraging (Other donors make large investments in a region because of CEPF investment or successes related to this project.)*

Provide details of whether this project will continue in the future and if so, how any additional funding already secured or fundraising plans will help ensure its sustainability.

V. ADDITIONAL COMMENTS AND RECOMMENDATIONS

Thanks to CEPF and PII, EcoCARE Pacific Trust and the research staff from the University of Canterbury have been able to develop a significant, mutually beneficial relationship with the people of the Kingdom of Tonga.

This relationship benefits both the people of Tonga and the trust and UC staff. Benefits to the people of Tonga include; access to expert information, facilities and in the longer term I anticipate that postgraduate studies will be developed using Tongan students. Benefits to the trust and UC include; recognition of the importance of communicating information throughout the community, identifying the importance of working within the local culture, establishing close ties and relationships with communities and encouraging a desire to do projects in other Pacific nations.

Thanks again. I hope that this project will enable us to work in other areas of concern and progressively increase the information base available to local communities and educators.

VI. INFORMATION SHARING

CEPF aims to increase sharing of experiences, lessons learned and results among our grant recipients and the wider conservation and donor communities. One way we do this is by making the text of final project completion reports available on our Web site, www.cepf.net, and by marketing these reports in our newsletter and other communications. Please indicate whether you would agree to publicly sharing your final project report with others in this way.

Yes _____

If yes, please also complete the following:

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