

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	Vu Ngoc Ut
Project title	Assessment of shellfish biodiversity in the mangrove ecosystem impacted by shrimp intensive culture in the Mekong Delta, Vietnam
RSG reference	22.01.07
Reporting period	2007-2008
Amount of grant	4957
Your email address	vnut@ctu.edu.vn
Date of this report	4 Feb, 2009

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

Objective	Not achieved	Partially achieved	Fully achieved	Comments
To investigate the biodiversity of shellfish group including crustaceans and molluscs in the mangrove ecosystem that could be impacted by intensive shrimp culture			12 months of sampling were complete and a total of 46 species were identified to present in the mangrove ecosystem, in which 63% are crustacean and 37% are molluscs	No significant differences in species compositions of shellfish between the mangrove ecosystems of protected areas and shrimp culture impacted areas. This may indicate that shrimp culture activities in the adjacent areas have not severely impacted the biodiversity of shellfish in the mangrove.
Identification of the reproduction cycle of some species		Analysis of sizes and gonad development of <i>Gelonia erosa</i> for reproduction performance using histological study method. Histological analysis is still going on		This species is living deep in mud and needs special handling technique to catch by experienced fishermen, however in the protected area fishermen are not allowed to come inside fishing, therefore additional samples were purchased from fishermen sampling enough samples for analysis were difficult. Unforeseen problem of histological analytical equipment was also contributed to slow progress of the work. However, it has been solved and histological analysis will be accomplished the end of the February 2009.
Investigation of water quality in mangrove ecosystem between areas closed to shrimp farms and protected areas			A set of water parameters including BOD, TN, TP, TAN, N-NO ₂ ⁻ , N-NO ₃ ⁻ , H ₂ S in the protected mangrove area and shrimp farming area was accomplished.	Results of water parameter analysis in two areas did not show significant differences
Raising awareness of resources protection among local people		One more workshop still has to be accomplished when all data are analyzed and complete		It would be very helpful to show local people all species associated with the mangrove ecosystem and ways to protect them from overexploiting and environmental impact from intensive aquaculture

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

One species of clam (*Gelonia erosa*) targeted to investigate their reproduction cycle were difficult to collect from the sampling area. According to the fishermen this animal is living deep under the mud bottom and only caught by experienced fishermen. Thus, samples of this clam were not easy to obtain during the sampling period. They had to be collected (purchased) in the areas where fishermen often gather them to sell. This may affect the results in terms of selective samples. However, random collection of samples from the fishermen may reduce the bias.

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

- A set data of shellfish species including crustacean and molluscan groups present in the mangrove ecosystem. This will serve as database for more study on biodiversity of aquatic organisms in the mangrove ecosystems and important information for teaching purposes.
- The reproduction cycle of the clam *Gelonia erosa* which is concerned as rare species and need to be protected will provide information for monitoring in other mangrove areas where they are being hunted. Management can be made based on the reproduction seasons or periods found in this project
- Local people know and aware of species existing in the area and important species should be protected and the way to protect them in order to maintain biodiversity and healthy environment of the mangrove ecosystems which are very sensitive to environmental condition changes

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

Local community, especially staff working in the two research areas were very enthusiastic in helping us to collect samples as well as providing information related to the study. They are also aware of the importance of the study as crucial information base for their future management policy. The local fishermen were also helping sampling specimens.

5. Are there any plans to continue this work?

Study some biological and ecological characteristics of some importantly valuable species in order to establish culture technology in terms of artificial reproduction and culture technique to prevent from overexploitation of these species in the wild but still fulfil demand of food of people

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

Final scientific report will be made and uploaded on internet, and through workshop/seminar to disseminate the results. The local authorities will be provided with reports and some recommendations for their management. Students will be given information on the biodiversity courses

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

From June 2007 to December 2008, it was 6 months longer than planned due to some personal family problems and technical problems

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	Budgeted Amount	Actual Amount	Difference	Comments
Monthly travel by car to Camau and back	600	660	-60	Increased fuel costs led to increased transportation costs
Boat from Camau to the mangroves and back	600	660	-60	Increased fuel costs led to increased transportation costs
Sample analysis				
pH meter	100	100	0	
sampling bottle	60	60	0	
water quality analysis	600	720	-120	increased price of analysis
Chemicals for gonad analysis				
Ethanol reagent	9.2	9.2	0	
Heomotoxylin	95	95	0	
Formalin solution	4	4	0	
Eoxin solution	28	28	0	
Full time assistant for sampling, identification and dissecting the shellfish samples	1440	1440	0	Adjusted well with plan
Accommodation during sampling period	720	720	0	Some support from local people
Workshop preparation and organization	200	100	+100	Still one more workshop held after data completed
Leaflet (preparation and printing)	500	100	+400	Photos of species specimens have been taken and leaflets will be prepared and printed for the final workshop when data are completed

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

- Helping local authorities to build up a conservation programme based on the findings of this project.
- Continuing study more deeply on some ecological and biological of the most common and important species as database for more researches on reproduction and culture technology.
- Establishing a small museum of all species living in the mangrove ecosystem with emphasis on endangered species for protection and conservation.