Department of Agriculture, Food and the Marine
An Roinn Talmhaíochta, Bia agus Mara

NDP NATIONAL DEVELOPMENT PLAN

CoFoRD

Final Report

Forestry Management for the freshwater pearl mussel *Margaritifera* (FORMAR)

DAFM Project Reference No: D1.6 Freshwater Pearl Mussel (*Margaritifera margaritifera*)

Start date: 1/12/12

End Date: 30/7/13

Principal Coordinator and Institution: Dr Norman Allott, TCD
Email: nallott@tcd.ie

Collaborating Research Institutions and Researchers: Dr Evelyn Moorkens

Please place *one* "x" below in the appropriate area on the research continuum where you feel this project fits

Basic/Fundamental → Applied/Pre Commercial						
					X	

Please specify priority area(s) of research this project relates to from the National Prioritisation Research Exercise* (NRPE) report;

Priority Area (s)	Priority Area I - Sustainable Food Production and Processing

Key words: *(max 4)*

Forestry / Sustainable / *Margaritifera* / water quality

1. Rationale for Undertaking the Research

This section should outline the rationale for carrying out the research and identify the need / problem to be addressed

This project rationale was to assess Irish and international research and best practice and to identify appropriate site and catchment-level forest management measures which will advance the conservation of *Margaritifera* and which are appropriate within the Irish forestry context.

Fine sediment and nutrient loss from land into the freshwater environment are known to be the key cause of the loss of sustainable *Margaritifera* populations, thus a strong emphasis was needed on an extensive review of the soil and nutrient conservation values of alternative forest management systems that are relevant to Irish forestry.

2. Research Approach

Specify the research methodologies employed, emphasising novel techniques and also outline any modifications from the original approved project proposal

The original project proposed was for a literature review, but this was modified (before project approval) to include site visits to 4 important catchments with *Margaritifera* experts, Coillte, Forest Service and NPWS. As well as the literature review and recommendations, the project produced GIS layers of the forest resource for two of the most important catchments in the country.

3. Research Achievements/Results

Outline main results achieved

The project brought together the published work on forestry management for sustainable river water quality, case histories of approaches from other countries, and key potential approaches and methodologies recommended for the Irish context.

4. Impact of the Research

A summary of the impact of the research should be provided through the project outputs and outcomes however please provide a synopsis of the benefits / improvements the research has made to the area under investigation. Outline the benefits of the research to end users, e.g. industry, consumers, regulatory authorities, and scientific community etc

It is hoped that when the project report is published, it will provide a resource that will be of use to the forest managers in *Margaritifera* catchments to assist them in their choice of forestry activity appropriate to their site, and the regulatory authority in assisting with the assessment of

whether licenses can be given for proposed forestry measures in different sites. The regulatory authority should also benefit from the GIS approach in the formulation of their catchment plans and in the assessment of potential cumulative effects.

4(a) Summary of Research Outcomes

(i) Collaborative and Industry links developed during this research

The project highlighted the importance of field site visits in sensitive sites by the forest managers, regulatory authority and conservation scientists, and the importance of having sufficient hydrological investigations to assist decision making.

(ii) Outcomes where new products, technologies and processes were developed and/or adopted

Some forestry techniques that have not previously been used in Ireland have been recommended for trial so it is hoped that this will be supported in future research projects.

(iii) Outcomes with economic potential

Some forestry techniques have been recommended that would improve the economic potential as well as the conservation potential. The importance of grazing control to prevent economic and conservation loss was highlighted.

(iv) Outcomes with national/ policy/social/environmental potential

The project highlighted the extreme requirements of *Margaritifera*, and recommended that policy be adopted that is commensurate with the importance of the *Margaritifera* population. The project also recommended a policy to adopt a designation of "protective forest" status in Ireland, as this has been very successful in other countries and could be of great benefit in Ireland.

4 (b) Summary of Research Outputs

(i) Peer-reviewed publications, International Journal/Book chapters.

Acceptable Format: Walsh, D.R., Murphy, O., Cosgrave, J. (2008). Echinococcosis - an international public health issue. Research in Veterinary Science 774, 891-902.

None to date

(ii) Popular non-scientific publications and abstracts including those presented at conferences

This study was referred to at Margaritifera conferences in Finland and Donegal.

(iii) National Report

A full report was submitted on the literature review, results and recommendations of the project and the full GIS dataset has been transferred to the Forest Service.

(iv) Workshops/seminars at which results were presented

Interreg IV A North project: RAAKKU! - RESTORATION OF THE FRESHWATER PEARL MUSSEL POPULATIONS WITH NEW METHODS. End seminar at Arktikum, Rovaniemi, Finland 13-15 May 2014. (Presentation from Evelyn Moorkens)

Interreg IV A project: Practical Implementation of Freshwater Pearl Mussel Measures. End of Project Conference. Belfast 18-19 June 2014. (Presentation from Paddy Purser).

(v) Intellectual Property applications/licences/patents

None

(vi) Other

5. Scientists trained by Project

Total Number of PhD theses: ____0

Please include authors, institutions and titles of theses and submission dates. If not submitted please give the anticipated submission date

Total Number of Masters theses: ____0

Please include authors, institutions and titles of theses and submission dates. If not submitted please give the anticipated submission date

6. Permanent Researchers

Institution Name	Number of Permanent staff contributing to project	Total Time contribution (person years)
Total	0	

7. Researchers Funded by DAFM

Type of Researcher	Number	Total Time contribution (person years)
Post Doctorates/Contract Researchers	3	0.92
PhD students		
Masters students		
Temporary researchers		
Other		
Total	**3**	**0.92**

8. Involvement in Agri Food Graduate Development Programme

Name of Postgraduate / contract researcher	Names and Dates of modules attended
N/A	

9. Project Expenditure

Total expenditure of the project: **€ 76,570.79**

Total Award by DAFM: **€78,558.00**

Other sources of funding including benefit in kind and/or cash contribution(specify): (NPWS staff time equivalent) **€5,000.00**

Breakdown of Total Expenditure

Category	TCD	Name Institution 2	Name Institution 3	Name Institution 4	Total
Contract staff					
Temporary staff					
Post doctorates	23,459.54				
Post graduates					
Consumables					
Travel and subsistence	1103,18				
Sub total	24,562.72				
Durable equipment					
Other	45,867.38				
Overheads	6,140.68				
Total	**76,570.78**				

10. Leveraging

Summarise any additional resources'/funding leveraged by this award from other sources i.e. Additional Staff, National/EU funding secured, EI Commercialisation Fund

11. Future Strategies

Outline development plans for the results of the research.

It is hoped that some of the novel forestry management methodologies will be trialled in future projects. The results have been taken into consideration by the new *Margaritifera* LIFE project KERRYLIFE. Methodologies for forestry operations for this project will be chosen in 2015.

12. Consent to Publish Final Report on the DAFM Website and/or Through Other Dissemination channels

I consent to this report being made available to the public, through the Department's website and other dissemination channels. *

Yes x No ☐

13. Declaration

I declare that the information contained in this final report is complete and true to the best of my knowledge and belief.

Signed: Norma Abbott Project Coordinator

Date: 13/8/14

*IPR sensitive information that the coordinator does not wish to make public should be highlighted in red font. All text in red font in this report will not be made publicly available by DAFM.