FEHILY TIMONEY

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APPENDIX 8.B3

Freshwater Pearl Mussel Survey Report

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FRESHWATER PEARL MUSSEL (*Margaritifera margaritifera*) SURVEY

IN WATERCOURSES DOWNSTREAM OF

BALLINAGREE WINDFARM SITE

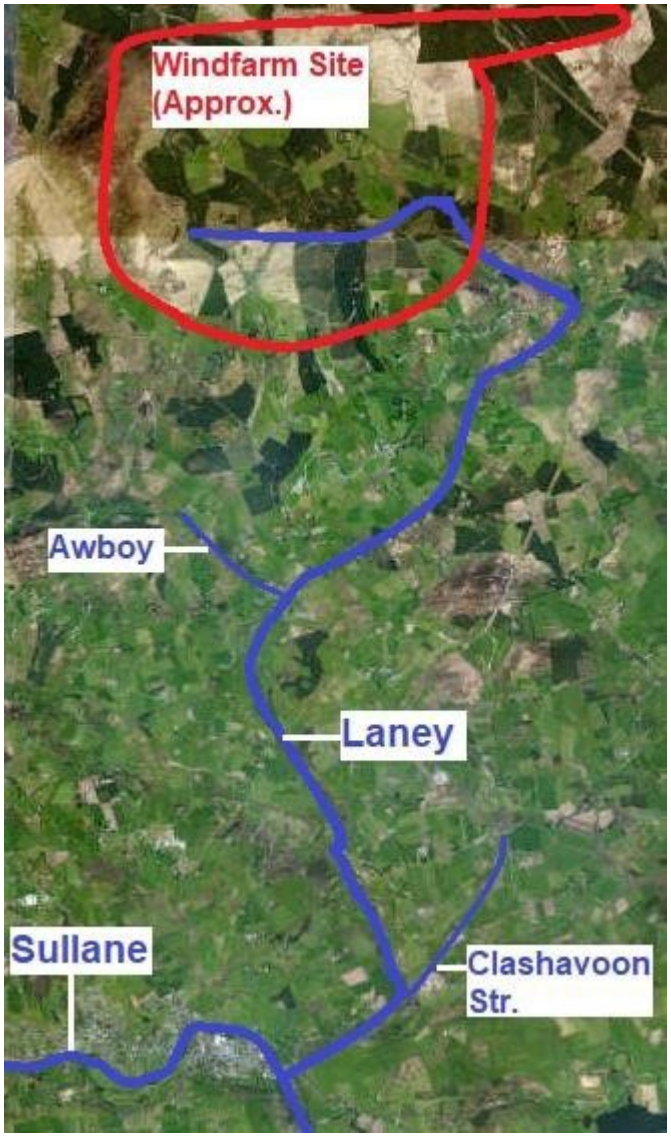
23 July 2020

TABLE OF CONTENTS

1.0 INTRODUCTION

The purpose of this report is to assess the occurrence of the legally protected freshwater pearl mussel (*Margaritifera margaritifera*) in the Laney River catchment downstream of the proposed Ballinagree Windfarm site in the Derrynasaggart Mountains. The windfarm site and proposed cable route are entirely within the catchments of the River Laney (EPA Code 19L01) (Fig. 1).

Figure 1: Watercourses



2.0 METHODOLOGY

2.1 DESKTOP ASSESSMENT

Available data on freshwater pearl mussel occurrence and water quality of the River Laney and tributaries downstream of the proposed windfarm site, or to be crossed by the grid route were examined.

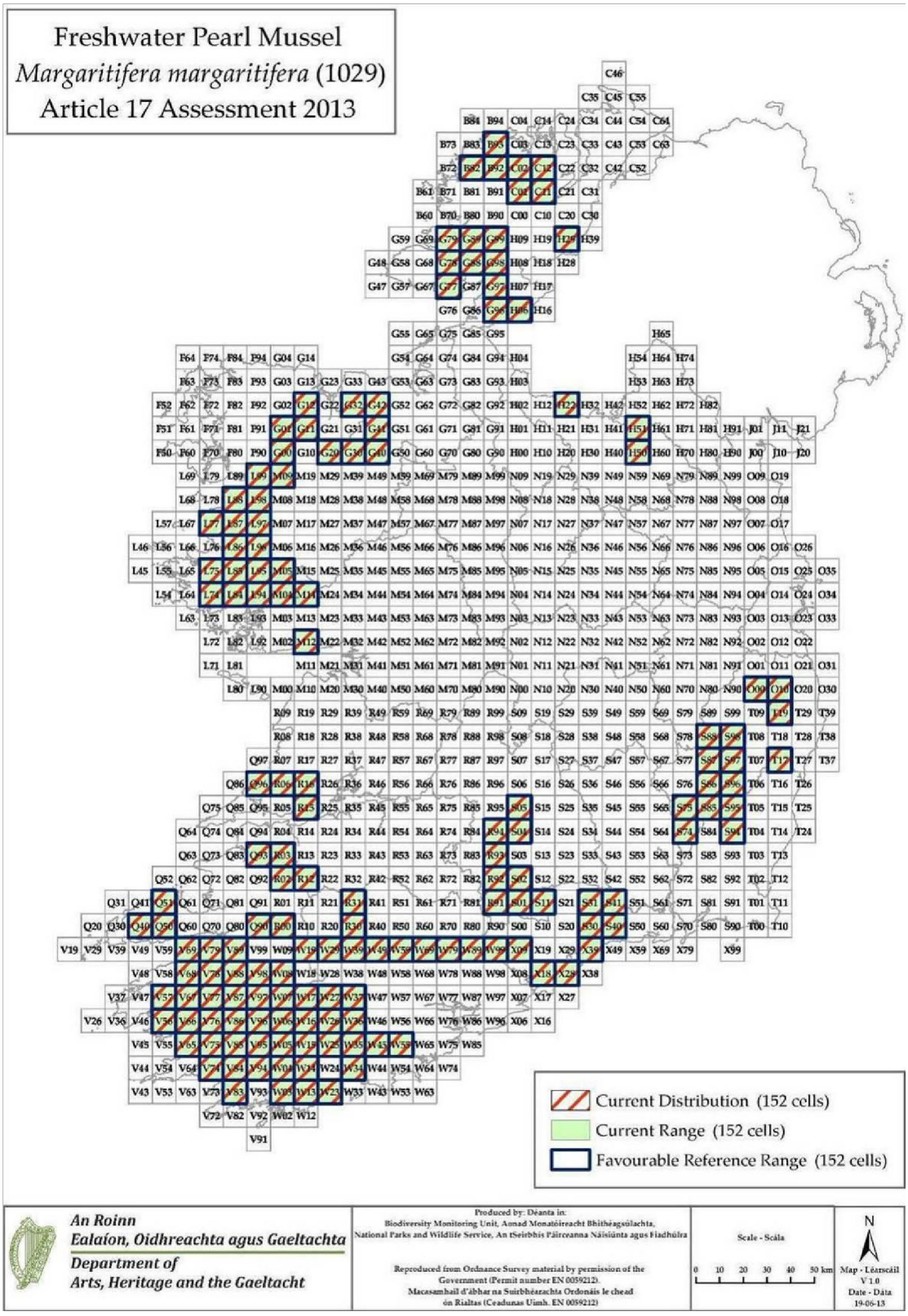
2.1.1 NPWS Distribution Data

The 2013 National Parks and Wildlife Article 17 report, indicates the presence of freshwater pearl mussels in the W37 10km square, where the downstream end of the River Laney flows into the Sullane River, but not in the W38 square, where the wind turbine site is proposed (Figure 2).

2.1.2 Previous Surveys

In the 1980's, while assessing EPA sites for biological water quality, John Lucey (*pers. comm.*) recorded mussels at Clonavrick Bridge (ITM 534615 578298), Morris's Bridge (ITM 535620 575686) and at Laney Bridge (ITM 535270 572808). In the only previous comprehensive survey of freshwater pearl mussels in the River Laney (Moorkens, 2007), a low population density was found, with the most upstream mussels located in the vicinity of Clonavrick Bridge (ITM 534615 578298), c. 10km downstream of the proposed wind turbine site and the highest density, estimated at approximately, 30 mussels per km, downstream of the Clashavoon Stream, but none at Morris's Bridge where they had been present in the 1980's.

Figure 2: Current distribution of Freshwater Pearl Mussel (*Margaritifera margaritifera).* From NPWS (2013) Article 17 report.


Freshwater Pearl Mussel
Margaritifera margaritifera (1029)
Article 17 Assessment 2013
Current Distribution (152 cells)
Current Range (152 cells)
Favourable Reference Range (152 cells)
An Roinn Ealaíon, Oidhreachta agus Gaeltachta
Department of Arts, Heritage and the Gaeltacht
Produced by: Déanta in:
Biodiversity Monitoring Unit, Aonad Monatóireacht Bhithéagsúlachta,
National Parks and Wildlife Service, An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra
Reproduced from Ordnance Survey material by permission of the Government (Permit number EN 0059212).
Macasamhail d'ábhar na Suirbhéarachta Ordonáis le cead ón Rialtas (Ceadunas Uimh. EN 0059212)
Scale - Scála
0 10 20 30 40 50 km
N
Map - Léarscáil V 1.0
Date - Dáta 19-06-13

2.2 FIELD ASSESSMENT

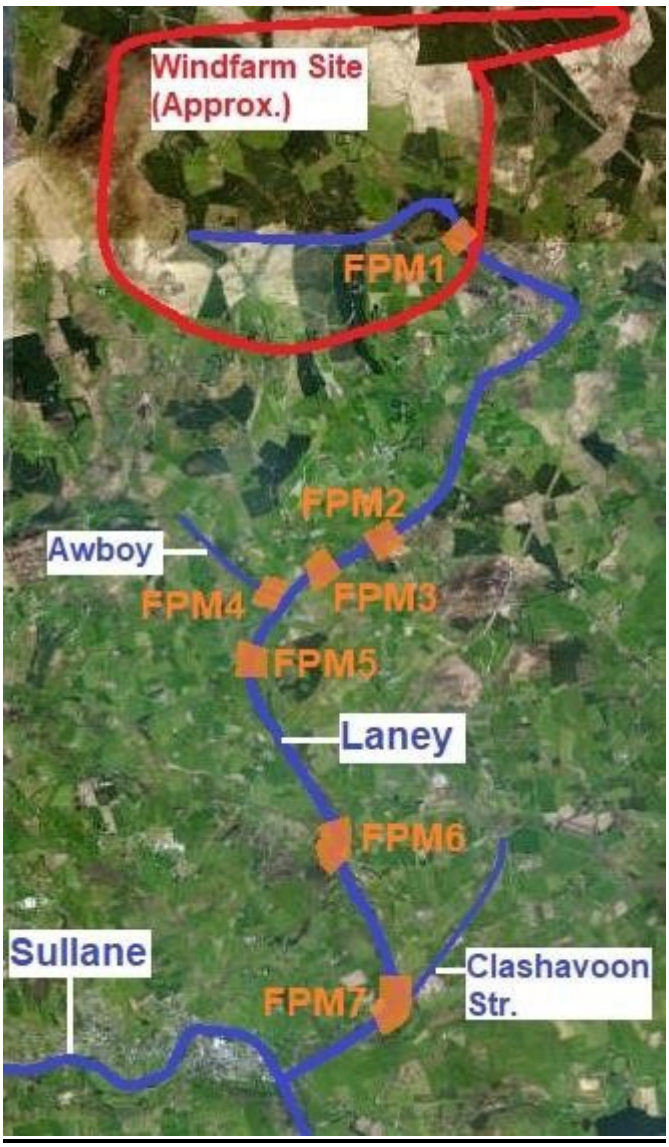
2.2.1 Survey Sites

Seven sites were selected for field surveying. Site locations are presented in Table 1 and illustrated in Figure 3. Site Photographs are presented in Appendix 1.

Table 1: Survey Sites

River Name	Site Code	Site Name	Grid Ref. upstream end (ITM)	Stretch Surveyed	Photos
Laney	FPM1	Windfarm Site downstream of turbines	538025 583419	Ford to 200m downstream	1
Laney	FPM2	Lacknahaghny Br.	536896 579983	Bridge to 100m upstream and downstream	2, 3, 4
Laney	FPM3	Knocknagappul Br.	535467 579825	Bridge to 200m downstream	5
Awboy	FPM4	Awboy Br.	534902 579260	Laney confluence to 100m upstream	6
Laney	FPM5	Clonavrick Br.	534592 578381	100m upstream to 100m downstream of bridge.	7, 8
Laney	FPM6	Morris's Br.	535701 575743	100m upstream to 100m downstream of bridge.	9, 10, 11
Laney	FPM7	Downstream of Clashavoon Stream confluence	536731 573787	Stream confluence to 200m downstream.	12, 13

Figure 3: Survey Sites FPM1 to FPM7



2.2.2 Survey Methods

Field surveys were carried out under Licence No. C15/2020, issued by the National Parks and Wildlife Service, downstream of the wind turbine site, in the vicinity of proposed cable route stream/river crossing points and at locations farther downstream where mussels were recorded in the past. The survey methodology used was in accordance with the guidelines given in Irish Wildlife Manual No. 12, NPWS (Anon., 2004). Surveying was carried out from June 8th and 9th, 2020, in bright weather, with good visibility. Following an initial safety inspection of stretches of river with habitat suitable for freshwater pearl mussels, the riverbed was examined visually with a bathyscope

and/or by snorkelling, depending on water depth. Biosecurity measures were strictly adhered to, with all equipment in contact with river water washed down with Virkon Aquatic disinfectant between sites. Assessments were made of the habitat suitability for freshwater pearl mussels, based on the criteria of Hastie *et al.* (2000) and Skinner *et al.* (2003).

3.0 Results

3.1 Freshwater Pearl Mussel Survey Results

No live freshwater pearl mussels were found at any of the sites surveyed.

The Awboy River, which would be crossed by one of the cable route options, does not have sufficient flow to support freshwater pearl mussels. The habitat in the River Laney should be excellent for mussels. However, the amount of silt present is greater than would be expected in a river of this type.

4.0 Conclusions

There is no indication of the current presence of freshwater pearl mussels in the River Laney.

The loss of the small population of freshwater pearl mussels from the River Laney is likely to be at least partly due to the amount of silt observed. Three possible sources of silt are considered: Forestry: An increase in suspended sediment loadings in rivers can occur during forestry operations (Allott et al., 2005).
Dredging and bankside clearance: This was observed in the upstream section of site FPM2 (see Photo 3).
Quarry discharge: A quarry in the Ummera townland discharges to the Clashavoon Stream. This stream has been seen to flow with a heavy silt load (Niamh Sweeney, *pers. comm.*). As the stream enters the River Laney at the upstream end of the section where Moorkens (2007) found the best population of mussels in the river, silt insults are the most likely cause of their demise here.

Another damaging activity to the River Laney is dumping. There are thousands of pet food cans in the river, dumped in from Clonavrick Bridge, where there is a considerable concentration of them, many still with paper labels intact (see Photo 9). Cans can be found all the way down to the confluence of the River Laney with the Sullane River.

Appendix 1 Photographs

Photo 1: Site FPM1

Photo 2: Site FPM2 upstream

Photo
3: Dredging and bank works at Site FPM2 upstream

Photo 4: Site FPM2 downstream

5: Site FPM3

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Photo

Photo 6: Site FPM4, Awboy river

7: Site FPM5 upstream

Photo

Photo 8: Site FPM5 downstream

Photo 9: Pet food cans in the river downstream of Clonavrick Br.

Photo 10: Site FPM6 upstream

Photo 12: Site FPM7 upstream

Appendix 2 References

Allott, N., Mcginnity, P. and O'Hea, B., 2005. Factors influencing the downstream transport of sediment in the Lough Feeagh catchment, Burrishoole, Co. Mayo, Ireland. Freshwater Forum 23: 126–138.

Anon (2004). *Margaritifera margaritifera*. Stage 1 and Stage 2 survey guidelines. *Irish Wildlife Manuals*, No. 12. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland.

Hastie L.C., Boon P.J. and Young M.R. (2000). Physical microhabitat requirements of freshwater pearl mussel *Margaritifera margaritifera* (L.). *Hydrobiologia* 429 59-71

Moorkens, E. (2017). Survey and Condition Assessment of the population of the freshwater mussel *Margaritifera margaritifera* in the Sullane River, County Cork. Unpublished Report to the National Parks and Wildlife Service, DAHRRGA, Dublin.

Skinner, A, Young M. & Hastie, L. (2003). Ecology of the Freshwater Pearl Mussel. Conserving Natura 2000 Rivers Ecology Series No. 2 English Nature, Peterborough.