

Pearl Mussel Project

Annual Report
May 2018 – June 2019



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1 Introduction

The Pearl Mussel Project is a European Innovation Partnership (EIP) project funded by the Department of Agriculture Food and Marine as part of Ireland's Rural Development Programme 2014-2020. The Pearl Mussel Project Ltd. was appointed to administer the project through a competitive tender process. Work commenced in May 2018 and will run until December 2023. The aim of the project is to develop a results-based agri-environmental programme to ensure the long-term co-existence of freshwater pearl mussel populations and farming in the top eight freshwater pearl mussel catchments in Ireland. This report summarises the work undertaken by the project team during the first year of the project. The main achievement after the first year is the development and roll-out of the Pearl Mussel Programme (PMP), a results-based payment scheme designed for farming within sensitive freshwater pearl mussel catchments.

1.1 Geographical Scope

The PMP is a voluntary agri-environmental programme open to farmers in the 'Top 8' Freshwater Pearl Mussel catchments in Ireland; Glaskeelan, Co. Donegal, Bundorragha, Co. Mayo, Dawros and Owenriff, Co. Galway, Currane, Caragh, and Kerry Blackwater, Co. Kerry, and Ownagappul, Co. Cork (see Figure 1).

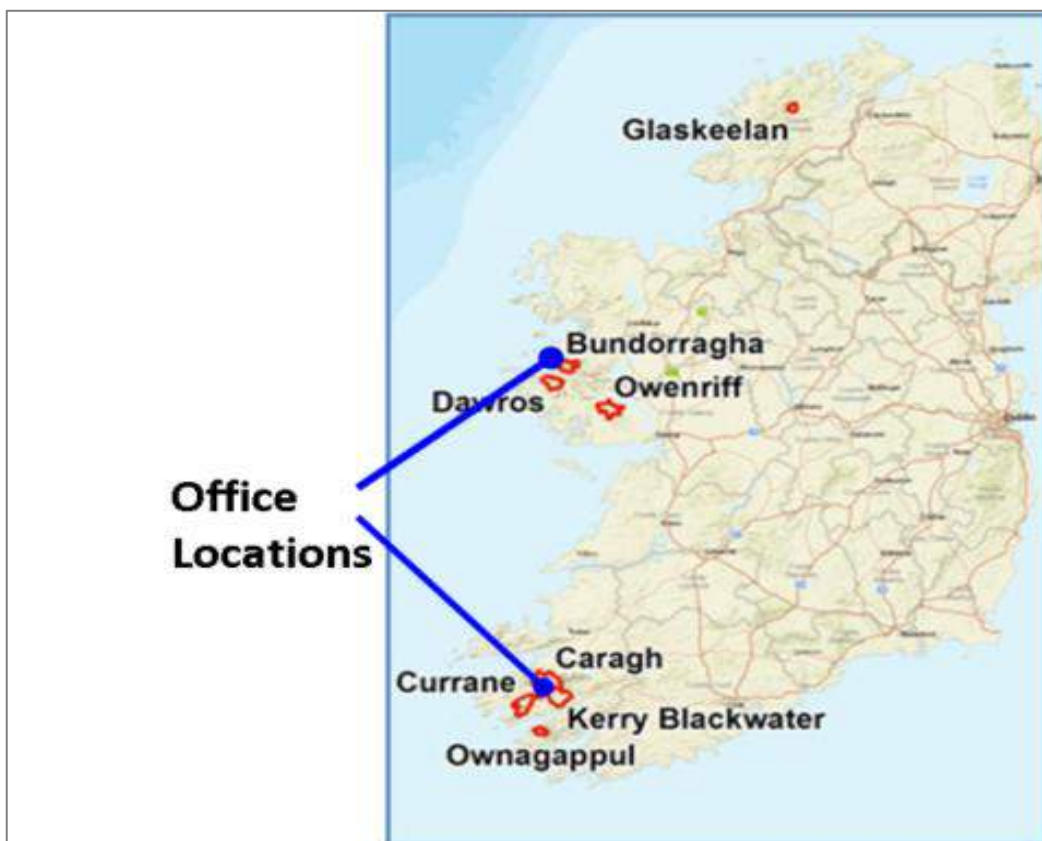


Figure 1. Top eight freshwater pearl mussel catchments.

2 Project Team

The Pearl Mussel Project Ltd. has two project partners, Wetland Surveys Ireland Ltd. (Environmental Consultancy) and O'Connor Pyne & Co. Ltd. (Accountants). The PMP also has a number of external advisors that specialise in the areas of agriculture, aquatic ecology, hydrology, and freshwater pearl mussel biology and ecology. The PMP employs six staff, and project offices are located in Kenmare, Co. Kerry and Westport Co. Mayo (see Figure 1 and Figure 2).

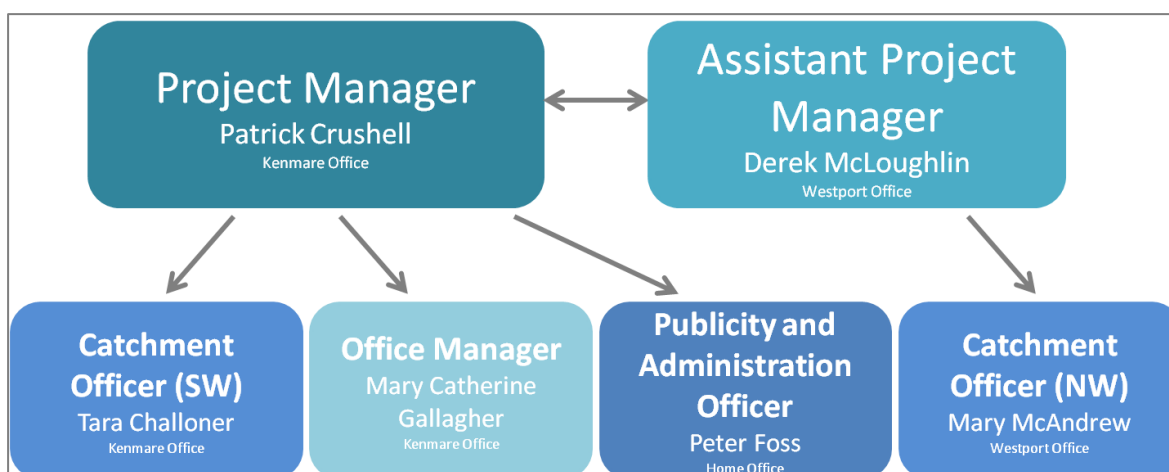


Figure 2. Pearl Mussel Project staff structure.

2.1 Project Start-up and Team Training

PMP Ltd. signed contracts with DAFM in May 2018 to deliver the Pearl Mussel EIP, a results-based agri-environment programme. During the start up phase of the project (summer 2018), the project team set up the project website (PearlMusselProject.ie), produced a general information leaflet, attended a number of public events, and commenced stakeholder consultation and programme design. A project start-up and training meeting was held in June 2018. This two day event involved PMP staff, members of the KerryLIFE team (Richard O'Callaghan, Padraig Cronin, and Paul Phelan), Con Curtin (agricultural consultant), Daireann McDonnell (aquatic ecologist), and Evelyn Moorkens (freshwater pearl mussel expert). The event included an information sharing workshop between the PMP team, KerryLIFE and Evelyn Moorkens, followed by a visit to a KerryLIFE farm. It focused on the pressures facing freshwater pearl mussel in the 'Top 8 catchments' and a discussion of how these issues could be tackled through a results-based payment approach. It also included Phase 1 and 2 survey training for freshwater pearl mussel, under licence from NPWS.

2.2 Project Staff Recruitment

Two catchment officers were appointed in November 2018 and commenced work in early December 2019. Mary McAndrew was appointed as the North West Catchment Officer and is based in the Westport office, while Tara Challoner was appointed as the South West Catchment officer and is based in the Kenmare Office.



Plate 1: Members of the PMP team surveying a section of the Kerry Blackwater river, Co. Kerry.



Plate 2: Catchment officers Tara Challoner (left) and Mary McAndrew (right) with assistant project manager Derek McLoughlin (centre) surveying high nature value farmland near Glencar, County Kerry.

2.3 Steering Group

The purpose of the Steering Group (SG) is to support and advise the project team in the development and operation of the project. Participants on the SG represent a broad selection of key national stakeholders and experts, as listed below in Table 1. The PMP SG was established during the summer of 2018 and met on four occasions during the first year (August 2018, November 2018, January 2019, and May 2019). It is intended that the SG will continue to meet on a quarterly basis for the duration of the project and participant farmer representation is planned for 2020.

Table 1: List of representatives on the Steering Group.

Individual	Organisation	
Patrick Crushell	Pearl Mussel Project - Project Manager	
Derek McLoughlin	Pearl Mussel Project - Assistant Manager	
Margaret Murray	DAFM - Locally led section	 Department of Agriculture, Food and the Marine An Roinn Talmhaíochta, Bia agus Mara
Bridgeena Nolan	DAFM	
Kevin Collins	DAFM - Forest service	
Rebecca Jeffrey	DCHG – NPWS	 National Park & Wildlife Service
Catherine Keena	Teagasc	 Teagasc AGRICULTURE AND FOOD DEVELOPMENT AUTHORITY
Evelyn Moorkens	Freshwater Pearl Mussel Expert	
James Moran	GMIT	 GMIT GALWAY-MAYO INSTITUTE OF TECHNOLOGY INSTITIÚID TEICNEOLAÍOICHTA NA GAILLIMH-MAIGH EB
Richard O'Callaghan	Kerry Life Project	 Kerry LIFE
Con Curtin	Agricultural Consultants Association	 ACA Agricultural Consultants Association
Gary Free	EPA Catchments Unit	 epa Environmental Protection Agency An tAidmheallán um Chaosrúnaíocht
Bernie White	LAWSAT (Local Authority Waters Support and Advice Team)	 Waters & communities Healthy Waters supporting Vibrant Communities



Plate 3: Members of the PMP Steering Group in session.

3 Programme Design and Development

Much of the work undertaken by the project team during the first year was centred around designing the results-based agri-environmental programme. The major challenge in designing the programme was to adapt the results-based model for use on an aquatic target species.

3.1 Consultation

3.1.1 Farmer consultation

Consultation was a key aspect of the project design that encouraged stakeholder buy-in and ensured that the expertise, advice, and concerns of farmers in the target catchment areas were incorporated into the Programme at an early stage. Meetings were held in each of the eight catchments in November and December 2018 (Table 2).

All attendees completed an initial questionnaire at the start of each meeting, of which a summary of some of some aspects are presented in Figure 3. The questionnaire aimed to capture the opinions and perceptions of farmers towards a results-based agri-environmental approach and towards freshwater pearl mussel conservation in general. The PMP team presented key elements of the ecology of the freshwater pearl mussel in Ireland, the importance of the top 8 catchments, and the primary threats to its survival. The key principles of the results-based payment approach was also presented. Open-floor discussion then followed for the remainder of the meeting and all points were

recorded. The outcome of consultation meetings was collated into a report that is available to download from the project website (PearlMusselProject.ie¹).

Table 2: PMP consultation meeting details.

Catchment	Date	Meeting venue	Attendance
Ownagappul	26/11/2018	The Caha Centre, Ardgroom, Co. Cork	31
Kerry Blackwater	27/11/2018	The Blackwater Tavern, Blackwater, Co. Kerry	38
Currane	28/11/2018	Dromid Day Centre, Waterville, Co. Kerry	21
Caragh	29/11/2018	Glencar Community Centre, Glencar, Co. Kerry	30
Dawros	03/12/2018	FORUM Connemara, Letterfrack, Co. Galway	10
Bundorragha	04/12/2018	Glen Keen Farm, Louisburgh, Co. Mayo	36
Owenriff	05/12/2018	The Boat Inn, Oughterard, Co. Galway	24
Gliskeelan	06/12/2018	Colmcille Heritage Centre, Churchill, Co. Donegal	19

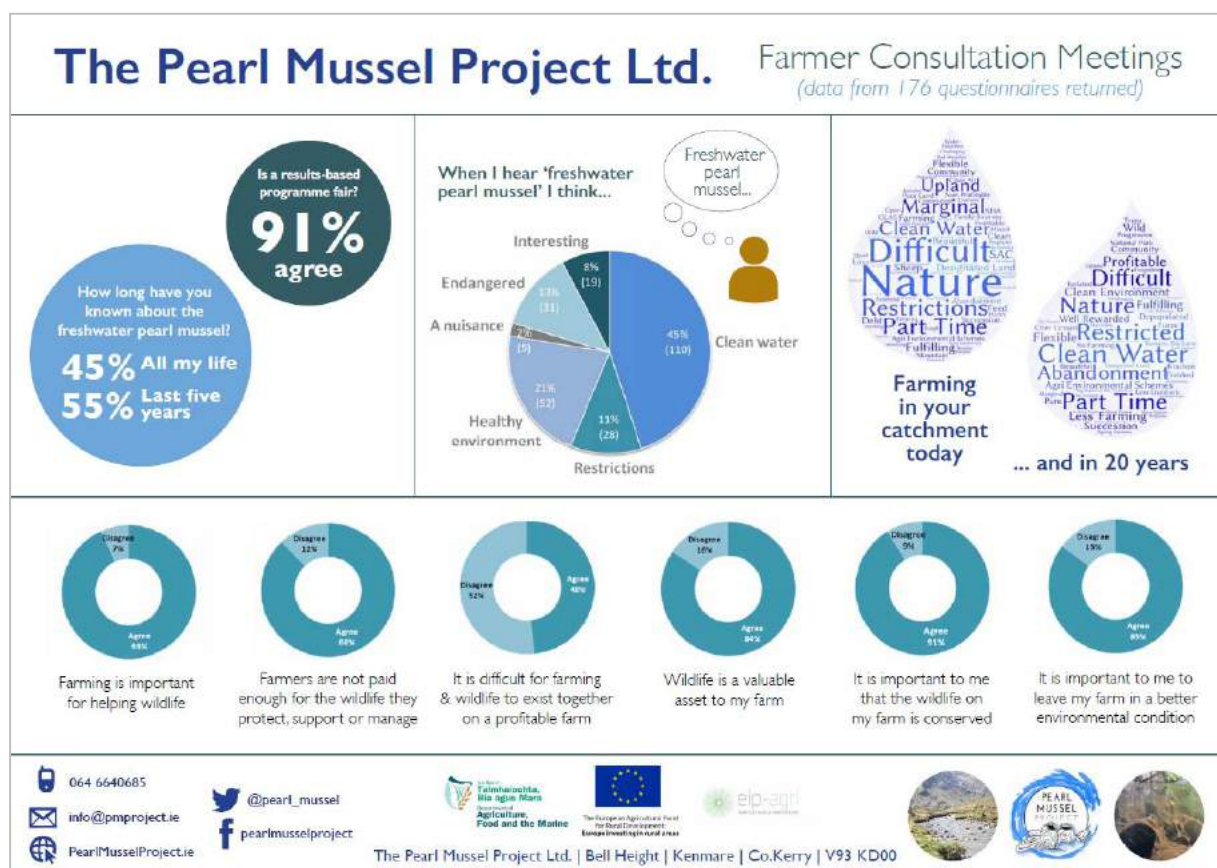


Figure 3: Key findings from questionnaire survey at consultation meetings.

¹ http://pmproject.ie/pmp_consultationmeetingrepo.pdf



Plate 4: Farmer consultation evening in the Bundorragha catchment, Co. Mayo.

3.1.2 Other stakeholder consultation

A series of consultation meetings were also held with other relevant stakeholders during the Programme design phase. These meetings were important not only in getting input and feedback on the Programme, but also in introducing the PMP team and our rationale and approach. During this consultation phase PMP met with individuals and organisations including:

- Farm advisors
- Local representatives
- Irish Farmers Association
- Irish Creamery Milk Suppliers Association
- Local Authorities Water Programme
- ASSAP(Agricultural Sustainability Support and Advice Programme)
- Inland Fisheries Ireland
- KerryLIFE
- South Kerry Development Partnership
- National Parks and Wildlife Service (regional and national personnel)
- Department of Agriculture Food and Marine (staff from BPS and inspectorate)



Plate 5: Members of the Pearl Mussel Project in consultation meetings with stakeholders.

3.2 Pilot Farmers

Nine pilot farmers were recruited during the summer of 2018. One pilot farmer was selected per catchment, with a second in case of the Kerry Blackwater catchment, where one KerryLIFE participant farmer and one non KerryLIFE farmer were chosen. The nine pilot farmers provided the PMP team with access to their land in addition to feedback on Programme proposals during the design process. The nine farmers represent a diverse range of farm enterprises of varying sizes, and provided the PMP team with a good overview of the challenges and potential opportunities that would be encountered during the course of the Programme. The PMP team developed and tested result indicators that reflect the relative benefits to freshwater pearl mussel on each of the pilot farms during the design phase. This exercise provided high-quality habitat and whole-farm scorecards ready for roll-out of the overall programme across the eight catchments.

3.3 Finalising Programme Design

Following on from the consultation process, the PMP team incorporated solutions to the concerns and issues raised during the consultation meetings into the final Programme design. For example, the introduction of payment bands according to area was introduced to ensure that small farmers got a worthwhile payment, whilst still ensuring that larger farmers continue to receive payment on extensive areas of land that provides important environmental services. It is important to note that

the PMP EIP is a pilot programme, and the project team have the flexibility to adapt certain aspects if issues arise during the course of the programme. An advanced programme design was trialled on the nine pilot farms to determine their scores and resulting payments. Meetings were then held with the pilot farmers to discuss the outcome and seek input before finalising the design.

Some fundamental features of the programme adopted to overcome challenges presented by the aquatic target species and to ensure that participating farmers are adequately incentivised to improve include the following:

- Quality of terrestrial habitats is used as a result indicator subject to adjustment following a 'whole-farm assessment'.
- The 'whole-farm assessment' focuses on watercourse condition and nutrient and farmyard management. The assessment result influences final payment thereby creating a major incentive to improve watercourse and farmyard and nutrient management.
- Lower scoring plots are paid at the highest payment rates. This approach incentivises farmers to improve the management of their lowest scoring plots.
- Floodplain payment is incorporated to reflect the importance of these features to the conservation of freshwater pearl-mussel.

The Programme design stage culminated with the publication of an illustrated information booklet and Terms and Conditions document, both of which can be downloaded from the project website (PearlMusselProject.ie)².

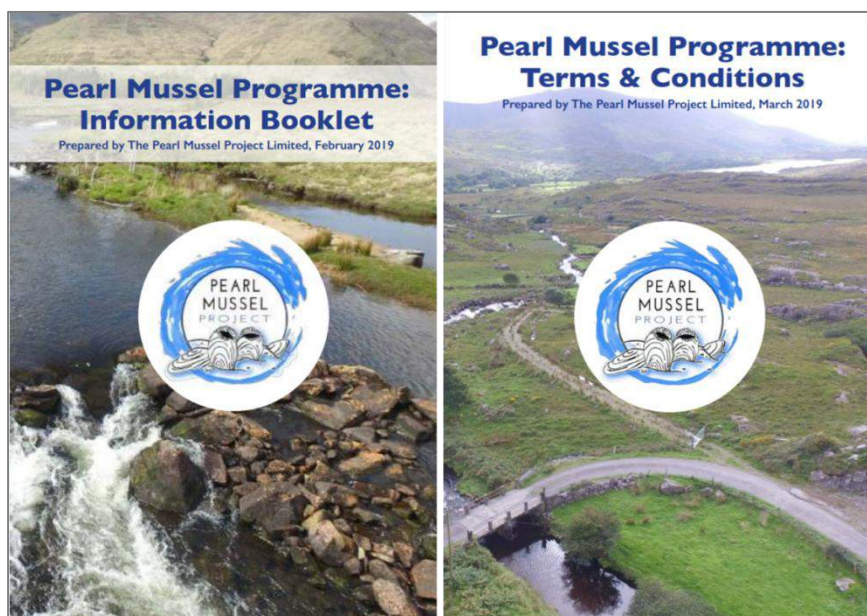


Figure 4: Information booklet and terms and conditions document published during Spring 2019.

² <http://pmproject.ie/resources/publications.html>

3.4 Programme Launch

Minister for Agriculture Michael Creed launched the Programme in Ardgroom on March 29th 2019. Other speakers included local pilot farmer Sean Sullivan, Michael Davoren (Burren Programme farmer), and Patrick Crushell (PMP Project Manager). There was a turnout of approximately 100 individuals, with pilot farmers, members of the Ownagappul catchment, children from Eyeries National School, representatives from DAFM, local representatives, and representatives from various regional and national stakeholder organisations present.



Plate 6: Pearl Mussel Project team with Minister Michael Creed (left). Attendees at project launch (right).

4 Farmer Information Meetings

Following the publication of the information booklet, a series of farmer information meetings were held across the eight catchments in February 2019 (see Table 3). These meetings aimed to present the details of the programme and address farmer questions and concerns. A letter was sent via DAFM to all farmers with land within the eight catchment areas, informing them of the upcoming farmer information meetings in their area. Expression of interest forms were available for farmers to complete on the night or to take with them and to submit at a later date. A copy of the information booklet was given to each farmer in attendance.

Table 3: Farmer information meetings held during February 2019.

Catchment	Date	Meeting Venue	Attendance
Owenriff	11/02/2019	The Boat Inn, Oughterard	70
Bundorragha	12/02/2019	Glen Keen Farm, Louisburgh	45
Glaskelán	13/02/2019	Colmcille Heritage Centre, Church Hill	38
Dawros	18/02/2019	FORUM Connemara, Letterfrack	41
Ownagappul	18/02/2019	Caha Centre, Ardgroom	45
Kerry Blackwater	19/02/2019	The Blackwater Tavern	47
Caragh	25/02/2019	Glencar Community Centre	ca 50
Currane	26/02/2019	Dromid Day Centre	47

5 Participant Recruitment

PMP opened its call for submission of Expressions of Interest (EOIs) in February 2019. The deadline for receipt of EOIs was the 31st of April 2019. During this period the PMP received 485 EOIs, of which 370 were successful. On receipt of each EOI, the individual farm was reviewed using GIS mapping and assigned a priority ranking based primarily on watercourse connectivity.

Applicants were deemed to be unsuccessful for one of the following reasons:

- No land within the programme catchment areas;
- Commonage-only shareholder with a shareholding in a non-priority commonage³; and
- No herd number.

On review of all EOIs and together with budget consideration it was decided that all valid applications by private farmers could be accommodated by the Programme regardless of the outcome of priority ranking. A contract offer (including a farm plan prepared using desktop study) was prepared for each successful applicant and posted, along with a booklet of Terms and Conditions, to them in late May / early June 2019. The deadline for receipt of signed contracts was the 12th of July 2019 and 342 signed contracts had been returned by this date (92% uptake rate) (see Figure 5).



Figure 5: Overview of PMP applications and contract offers.

³ For details on the prioritisation process, see PMP Terms and Conditions document

6 Spatial Coverage of Programme Participants

The following is a summary of the spatial coverage of the Programme based on the participants under contract during 2019:

- The total area of farmland in the Programme is 21,405ha (total area of farmland in PMP catchments 40,756ha) - 53% of farmland is under contract across all catchments.
- Total area of private land in the Programme: 16,495ha (total in PMP catchments 26,740ha) - 62% of private farmland in catchments is currently under contract.
- Total area of priority commonage in the Programme: 4,970ha (total area of commonage in PMP catchments 14,016ha) - 35% of commonage land in catchments currently under contract.

The maps presented in Figure 7 and Figure 8 show the coverage of participating farms within each catchment.

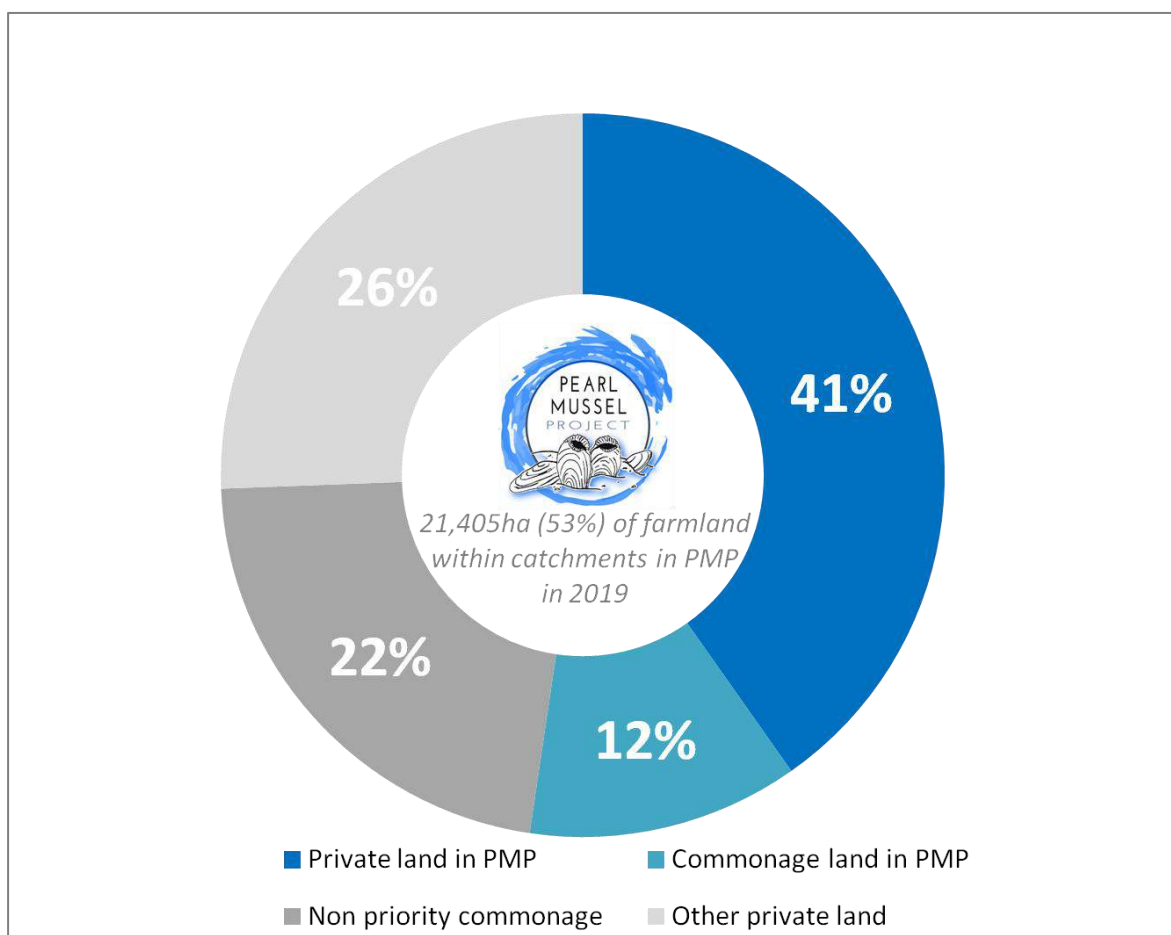


Figure 6: Summary of farm land participating in the Pearl Mussel Project in 2019.

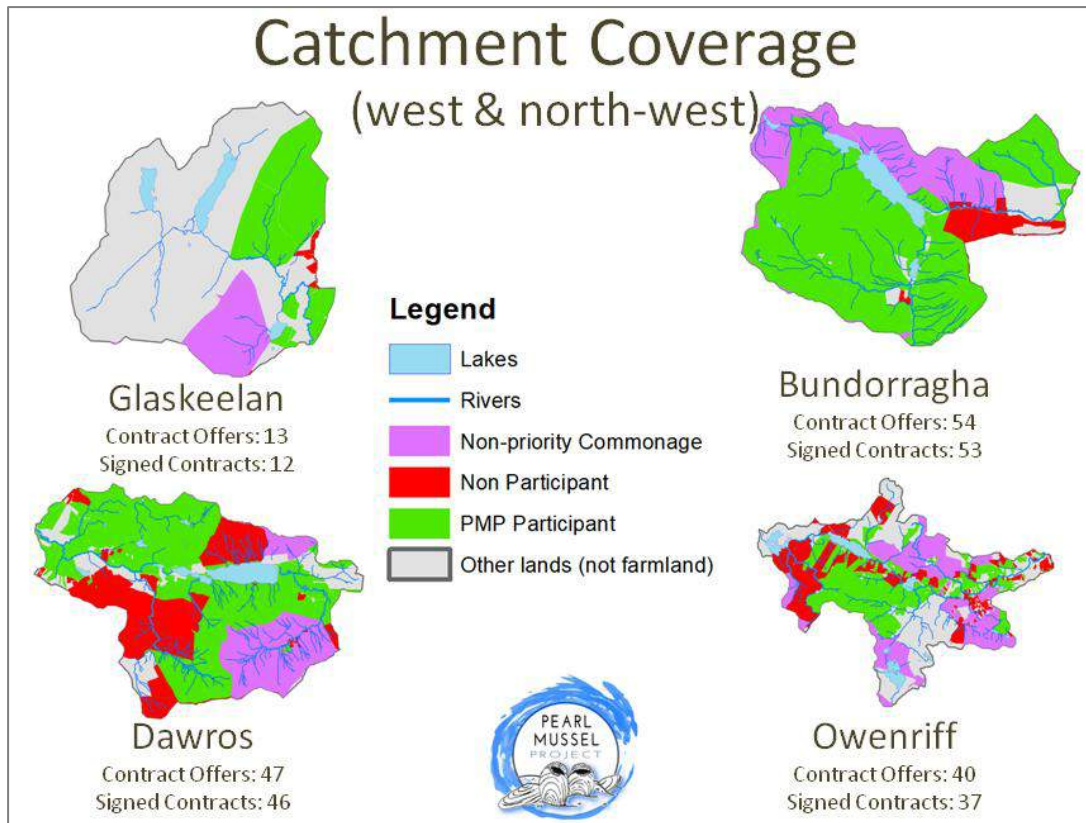


Figure 7: PMP Participation in south-west catchments.

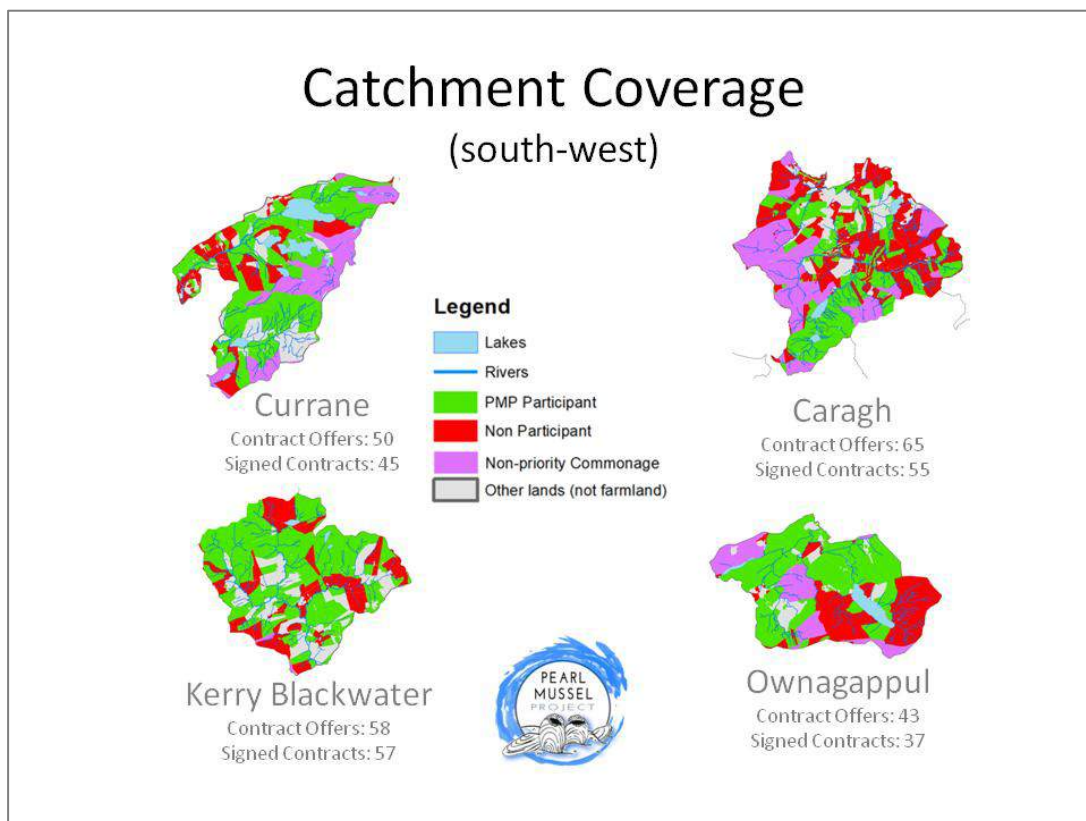


Figure 8: PMP Participation in west north-west catchments.

7 PMP Farm Advisors

A total of 61 farm advisors completed PMP training in 2019, 53 of which are on the PMP Approved Farm Advisor list. Some advisors did not wish to appear on the approved advisor list due to other work commitments or lack of clients in the Programme catchments. Participant farmers must select an advisor from the approved list to work with during the course of the Programme.



Plate 7: Farm advisors identifying positive indicator plant species from the PMP scorecard.

In order to become a PMP approved advisor, farm advisors were required to complete three days of training run by the project team: one classroom based day and two field training days. Classroom training events were held in Kerry (x2), Galway (x1), and Sligo (x1). Field training days were held in Kerry (x1), Galway/Mayo (x1), and Donegal (x1). Advisors had to complete two exams; one at the end of the first classroom training day, and the second at the end of field training, to ensure that they were familiar with the programme and the scoring system. A series of documents were prepared by the project team to assist and support advisors during the programme. The role of advisors is summarised in Figure 9.

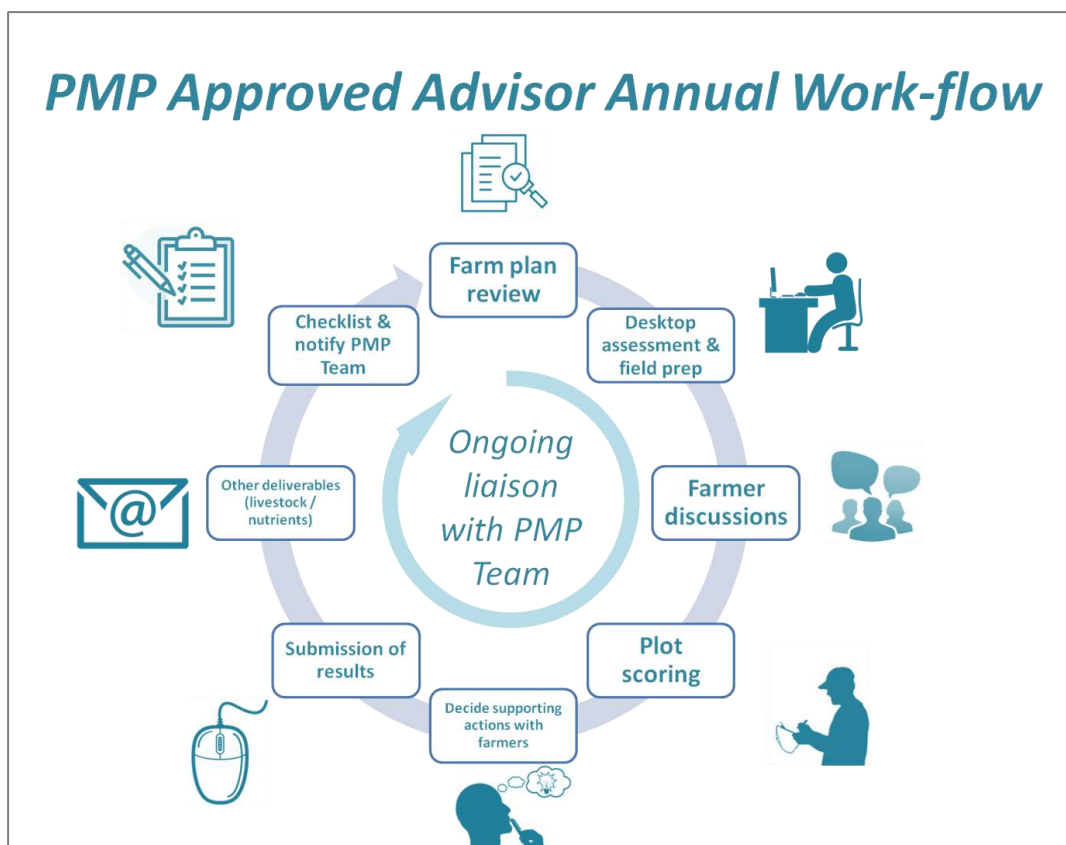


Figure 9: Work flow in fulfilling the role of farm advisor on the Pearl Mussel Programme.

8 Data Management System

The successful and efficient delivery of the Pearl Mussel Project (PMP) requires the acquisition, management, and use of a large and ever increasing volume of data. The project team have spent considerable time and resources during the first year in designing and developing an integrated data management system to securely store and use this information. The data includes personal or sensitive information as well as geographic information relevant to participant farms. The data management system aims to minimise any risk of data being used incorrectly or data being made available to those who are not authorised to view it. The data management system also aims to:

- provide a user friendly interface for the accurate input of data;
- avoid duplication of data;
- allow queries by applying filters to retrieve and work with relevant data;
- generate standard reports such as farm plans; and
- minimise error on data entry and processing.

The data management system comprises two related databases, one of which stores text and numerical data (PMP Farm Plan Database (Filemaker Pro software)) while the other stores geo-spatial data (maps) (Geographic Information System (GIS) database (ESRI ArcGIS software)). An

overview of the structure of the data management system is presented in Figure 10. Both databases are summarised in the following sections.

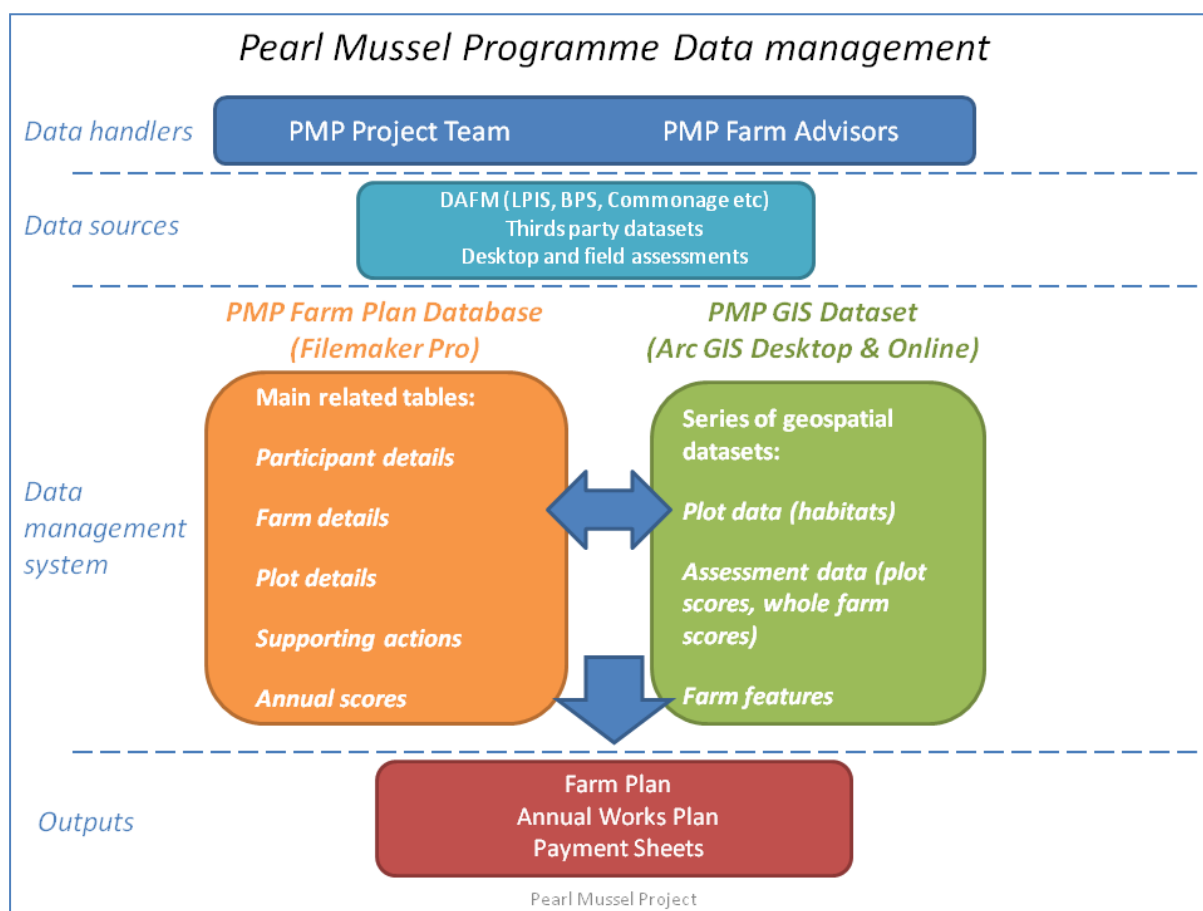


Figure 10: Overview of PMP Data Management System.

8.1 Farm Plan Database

There is a series of related tables within the main 'PMP Farm Plan Database'. Tables within the 'PMP Farm Plan Database' are populated by data received from various sources including: participant farmers (participant details); the Project Team and approved farm advisors (farm details, supporting actions, annual scores); and the Department (participating farm information via the project GIS dataset). Input of data into the database via form layouts, allows for consistency in data entry and streamlines data management.

Different form layouts can be used for varying project tasks that involve analysing and interrogating data (see Figure 11 and Figure 12). Project data is stored within only one table and then displayed in related tables or forms (as required) via lookups thereby avoiding data duplication, reducing the potential for error, and minimising file size. The data can be easily searched, using specific search criteria and filters, allowing for easy data analysis and validation.

Farm plans are produced directly as an output from the Farm Plan Database. In addition, the payments due to farmers are automatically calculated by the use of calculation fields and summary annual payment sheets are produced directly from the Farm Plan Database. The database has facilitated the efficient preparation of 370 individual farm plans that were prepared for all successful expressions of interest. We foresee the resources committed to the development of a robust data management system in year one will pay dividends by ensuring efficient and secure data use as the programme evolves and the volume of data increases.

The screenshot displays the FileMaker Pro interface for the 'Pearl Mussel Project 2018-2023 - Farmer Participant Overview'. The form is divided into several sections:

- Navigation and Search:** Includes buttons for 'Find current Record', 'Create New Record with contact code', 'Back to Start', 'Farmer summary list', 'Open Approved Farm Advisor dbase', and 'Open Farm Plan dbase'. It also shows a search bar with '10 / 319 Found (Unsorted)' records.
- Participant Information:** Fields for PMP Farmer ID (073), Date farmer added to contact dbase (07/03/2019), Herd Number, PMP Contact Code (PMP1175), Title (Mr), Christian name, Surname, Address (Killarney Co. Kerry), email primary, email secondary, phone home, phone work, Mobile number (10), and Fax number.
- Assessment and Selection:**
 - 1. Expression of interest form:** Fields for Expression interest form received (26/02/2019), Expression interest form processed (07/03/2019), Processed by, Expression interest form preferred advisor, Approved Farm lookup name, and PMP Contact Code No.
 - 2. Farmer application assessment:** Fields for Farmer application assessment processed, Application assessment processed by, Farm in KerryLIFE (radio buttons), PMP Pilot Farm (radio buttons), Priority Commonage (radio buttons), Relevant Commonage Codes (if Priority), Private Connectivity (1 to 5 or NA), Watercourse to area ratio, Overall Private Rank, and Private ranking within catchment.
- Summary and Status:**
 - Fields for Farm in KerryLIFE, Farm in TAMS, Farm in OFS Organic scheme, and Farm in Glas, each with radio buttons and exit date fields.
 - A 'Farmer participant summary project data' section with fields for Expression of interest, Expression interest form received (26/02/2019), and Application Assessment.
 - A table summarizing application outcomes:

Farmer Application Successful	Farmer Application Deferred	Farmer Application Unsuccessful
<input type="checkbox"/> Successful	<input type="checkbox"/> Deferred	<input type="checkbox"/> Unsuccessful
Items to include with Successful farmer	Items to include with Deferred farmer	Items to include with Unsuccessful farmer
* Acceptance letter * Contract (PMPF2) * TAC.doc	* Deferred letter	* Unsuccessful letter

Figure 11: Screen grab showing the form layout of the farmer participant database. This form is used in the selection of applicants to join the Programme.

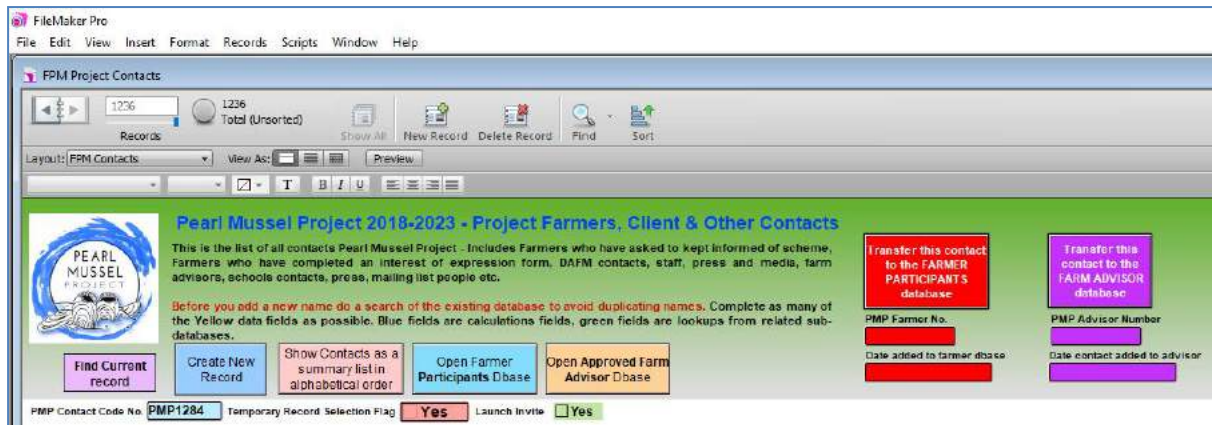


Figure 12: Transfer buttons can be used to move key data from one table in the database to another.

8.2 Online Mapping System

The PMP Team have developed an in-house web-based mapping application for use by advisors during the course of the Programme (see Figure 13 and Figure 14). The application is a desktop resource accessed through any web browser and is being used by advisors to submit all information relating to farm assessments and farm planning to the Project Team. The system also allows advisors to print farm maps for use in the field. All information gathered by advisors is submitted to the PMP Project Team through this interface. The work flow associated with the use of the Online Map by advisors and the Project Team is illustrated in Figure 15 below. Once received by the Project Team the submitted data is incorporated into the project's farm plan and GIS databases.

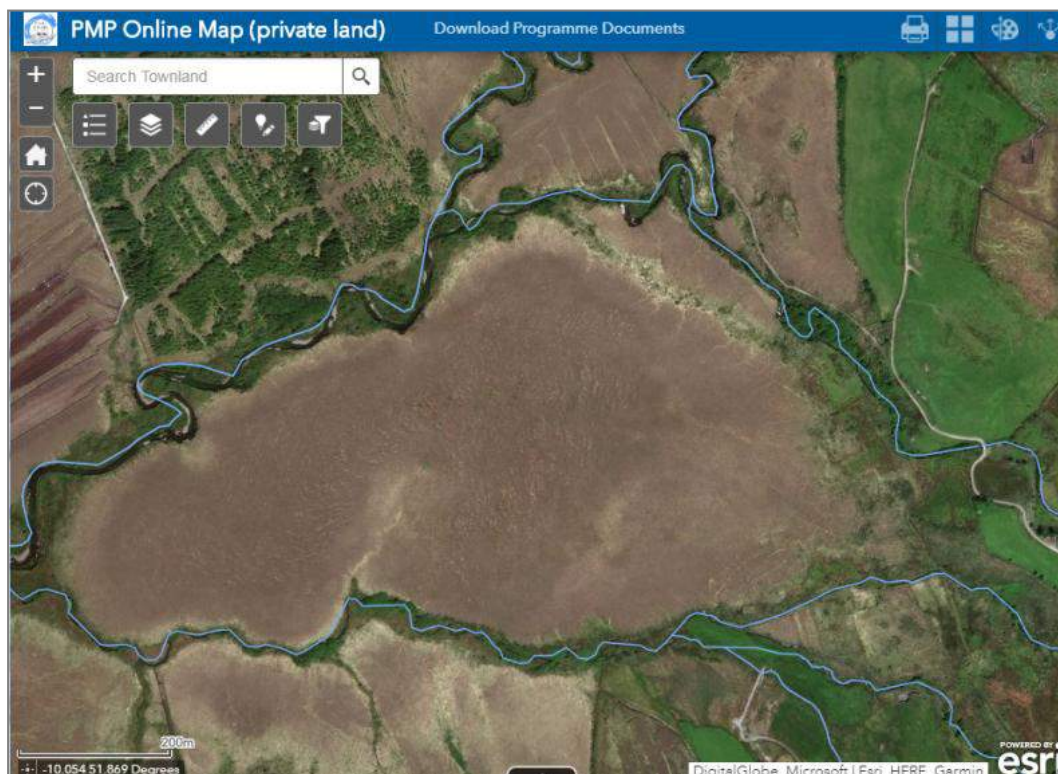


Figure 13: Pearl Mussel Programme web map application.

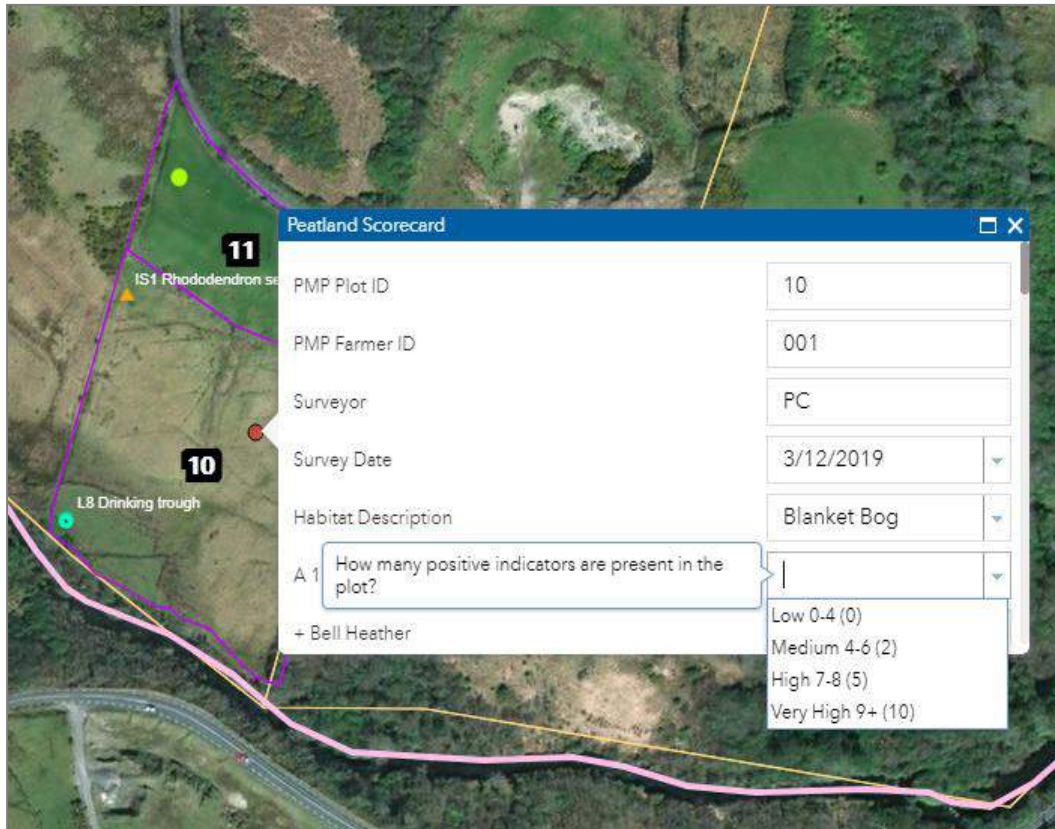


Figure 14: Data entry sample using web map application.

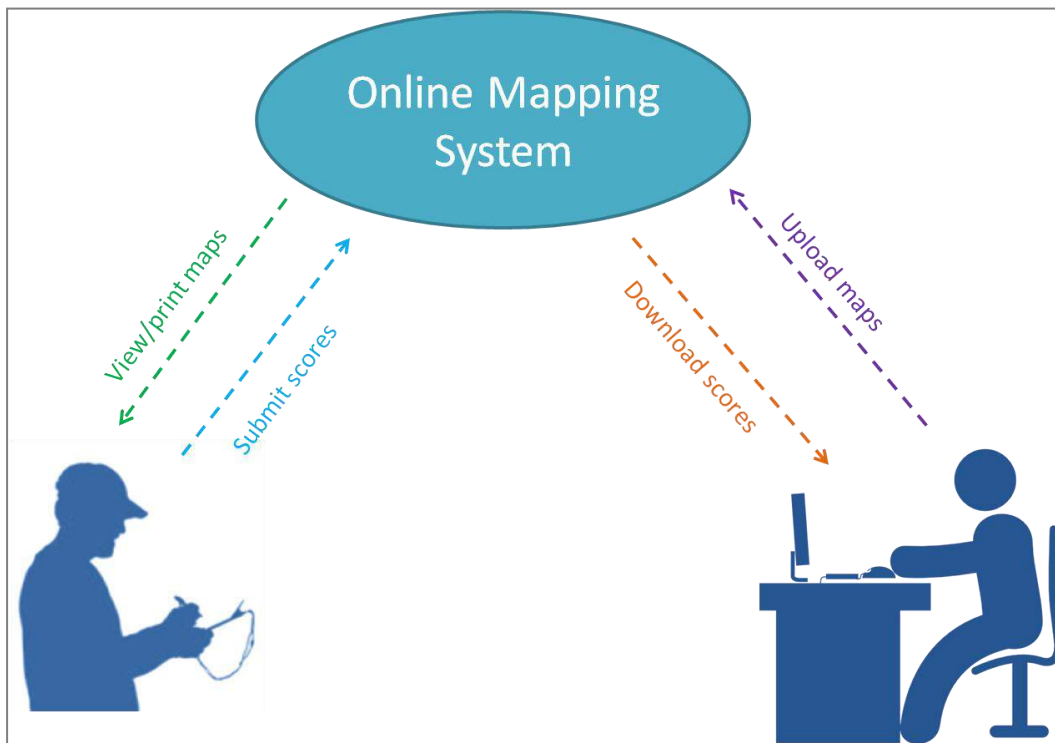


Figure 15: Using the online mapping system to share information between the PMP Approved Advisors (left) and the PMP Project Team (right).

9 Monitoring

Environmental monitoring during the first year of the Programme focussed on developing a robust baseline dataset of farm habitats and watercourses.

9.1 Baseline Habitat Scores

The PMP team aim to survey a large proportion of farms during the 2019 field season with a view to developing a robust baseline and inform score verification on the advisor submitted data.

9.2 Baseline Watercourse Surveys

The PMP are undertaking detailed mapping and characterisation of all watercourses on participating farms. As the watercourses on a farm are the key conduit between the land and rivers, their condition is of considerable importance and influences the whole-farm score. Since April 2018, Cathal Dowling (SW) and Mark O'Connor (W/NW) have been carrying out baseline surveys of watercourses throughout the eight PMP catchment areas. These surveys identify previously unmapped watercourses and will determine the connectivity, condition, and pathways of these watercourses, and those that have been previously mapped, to freshwater pearl mussel habitat. This information on the drainage network is an important component of the monitoring of the PMP impacts on water quality through the provision of baseline data. In future years the data will provide advisors with a database of the drainage network, thus reducing their time input and subsequently reducing the administrative costs for farmers.



Plate 8: Mapping of drains and watercourses is a key aspect of the baseline surveys.

10 Publications

The PMP team have produced an extensive list of publications, all of which can be viewed and downloaded on the resources section⁴ of the project website (PearlMusselProject.ie).

- General Information Leaflet
- Teagasc Open Day Poster
- Tionscadal na nDiúilicíní Péarla - Eolas i nGaeilge
- Farmer Consultation Meetings Report
- Information Booklet
- List of Priority Commonages
- Terms and Conditions
- List of Approved Advisors
- Habitat Scorecards and Species Guides (Peatland, Grassland, and Woodland / Scrub)
- Whole Farm Assessment Scorecard and Tip Sheet
- Advisor Work-flow and Checklist
- Online Map User Guide

11 Publicity

11.1 Conferences and Outreach Events

Members of the PMP have attended and participated at a wide variety of conferences, shows and meetings since May 2018. The Programme has also received coverage in local and national media (radio interviews and newspaper articles). Some of the events attended by the Project team include:

- Teagasc Beef and Sheep Shows 2018
- National Ploughing Championships 2018
- RBAPS conference
- AranLIFE Conference
- Burren Winterage Festival
- Connemara Green Festival
- Launch of Droimeann Cattle Herd Book
- Radio Kerry Interview on Agritime
- Connemara Community Radio interview
- Article in Irish Examiner
- Interview on Galway Bay FM

⁴ <http://pmproject.ie/resources/publications.html>

- Article in Connacht Tribune
- Article in Donegal Democrat
- Article in Irish Times
- Article in Kenmare News
- LAWPRO Conference
- Study tour to River Ehen, UK with KerryLIFE and Evelyn Moorkens
- Mayo farmer group visit with KerryLIFE and PMP
- Connemara National Green Flag Award Ceremony
- School visit to Eyeries National School
- National Biodiversity Conference
- CIEEM Conference
- EIP Launch
- Agriculture Knowledge and Innovation System meeting
- Corrib Beo
- KerryLIFE Conference
- Talk for Sneem Tidy Towns as part of Biodiversity Week 2019



Plate 9: Project team in attendance at various conferences and events throughout the year.

11.2 Website and social media

The official PMP website (<http://www.pearlmusselproject.ie>) was launched in late May 2018. The website contains a range of information relating to the Pearl Mussel Project including: a general introduction to the project; information and contact details for the project team; detailed farmer information on the programme and its operation; information on the 8 catchments covered by the project; facts about the freshwater pearl mussel and its biology; a news section covering key project activities; a resources section where all general, farmer and farm advisor publications are available to be viewed and downloaded as well as a photographic project gallery.

There are two interactive maps available for the public to view on the website, one to determine if your land is within a PMP catchment (Eligible Areas map) and one to display the location of priority commonages (Priority Commonage map).

Since its launch the PMP website has been regularly updated and refined. In the period May 2018 to July 2019 it has had over 9,200 unique visitors and 30,800 page views.

The PMP also have an active presence on social media, with both Facebook (@pearlmusselproject) and Twitter (@pearl_mussel) pages. These social media accounts have been regularly updated with project events and news features and are the main source of updating interested parties on on-going project developments. Relevant posts from third parties, in Ireland and overseas, working in the area of freshwater pearl mussel protection have also been posted to our Facebook and Twitter pages (not included in the figures presented below).

The PMP Facebook page was launched in June 2018. The page currently has 518 followers. Over 230 PMP posts have been made to the page since its launch. Posts to the page have reached over 83,000 users, with 3,200 post likes and 460 post shares. Fourteen project posts have each reached over 1,000 users.

The PMP Twitter page was established in January 2019. The page currently has 268 followers. Over 100 PMP posts have been made to the page since its launch. Thirteen posts are notable for their high visitor numbers, likes and re-tweets.

12 'Settling-in period' and Next Steps

The approach of the Pearl Mussel Project is a results-based payment model that is a novel, innovative and fair method of paying farmers for the environmental services provided by their lands. This, in many cases, is a considerable change from the traditional measures-based approach, and a 'settling-in period' of one to two years is required before all participants fully understand the process of scoring, implementation of supporting actions, and the potential for subsequent increased payments.

Farmers will receive their scores and respective payments for the current year in December 2019. At this point they are encouraged to apply for supporting actions payments in order to increase their farm scores and payments. Any increases in scores will then be reflected in their 2020 payments.

The work of the project team has largely moved from the design and development phase to the operational phase of the Programme. Key work areas and medium term milestones include:

- Support advisors during field season 2019 (Jun – Sep '19)
- Complete training events for all PMP participating farmers (Jul – Oct '19)
- Continue field verification checks throughout the 2019 field season (Jun – Aug '19)
- Verify all farm data submitted by advisors (Aug – Oct '19)
- Analyse and process all watercourse data collated during 2019 watercourse survey (Sep – Nov '19)
- Further development of monitoring strategy (Sep '19 – Jun '20)
- Issue results-based payments to all 2019 participants (Nov – Dec '19)
- Compile specifications for standard supporting actions (June – Nov '19)
- Process supporting actions for 2020 and develop Annual Works Plans for participating farms (Nov '19 – Feb '20)
- Advisor meetings to gather feedback from year 1 of the Programme (Dec '19)
- Additional participant recruitment (Jan – Mar '20)
- Farmer training events on implementation of supporting actions (Jan – May '20)
- Farm advisor refresher training (May '20)