

Pearl Mussel Project

Annual Report June 2020 to June 2021





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Contents

PEARL MUSSEL PROJECT AT A GLANCE: JUNE 2020 TO JUNE 2021	3
1. Introduction	4
1.1 Project team	4
1.2 Steering group	4
1.3 DAFM Audit	4
2. Participant Farmers	5
3. Participant recruitment	5
4. Farmer Training	5
4.1 Farmer Update Meetings	6
5. Farmer Scoring	8
5.1 Habitat Quality	8
5.2 Whole Farm Assessments and Commonage Unit Assessments	9
6. Annual Results-based Payments	10
7. Annual Works Plans & Supporting Actions	11
8. Refining Programme Design	12
9. PMP Farm Advisors	13
10. Monitoring & Research	14
11. Publicity	16
11.1 Conferences & Outreach Events, and Publicity	16
11.2 Education Resources	16
11.3 Video Resources	17
11.4 Project Newsletter	
11.5 Project Calendar	
11.6 Website & Social Media	19
12. Next steps	20





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The Pearl Mussel Project is an EIP (European Innovation Partnership) Locally Led Scheme. The Project is funded by the Department of Agriculture, Food and the Marine as part of Ireland's Rural Development Programme 2014-2020.

Pearl Mussel Project at a glance: June 2020 to June 2021

Over **€1.6 million** in payments issued to farmers during the year

473 participant farmers

Over **34,000ha** of farmland assessed and scored during summer 2020

Over **80%** of eligible farmland in catchments participating in programme

100% retention of participants between 2020 and 2021

Additional **19 new contract offers** issued in May 2021

Continuing to support and work with 61 approved farm advisors

174 Annual Work Plans with approved farm actions issued to farmers

Farmers have completed over **240 supporting actions** leading to improved environmental outcomes

1. Introduction

This report describes the work of the Pearl Mussel Project (PMP) team in year three of the project (June 2020 through June 2021). This was the second full year in the operational phase of the PMP farm programme. Despite the challenges presented by the Covid-19 pandemic, the project continued to reach major milestones including farm scoring, issuing of results-based payments, development of annual works plans, payment of supporting actions claims, advisor training, farmer training, education and outreach.

1.1 Project Team

In May 2021, Michael Chapman joined the project team as a seasonal assistant catchment officer for the South West catchments. Michael will be working closely with SW catchment officer Stephen O'Shea over the summer months scoring farms and verifying supporting actions.

Assistant Project Manager, Derek McLoughlin, finished working with the Pearl Mussel project in November 2020 to take on a new role as project Manager of the Wild Atlantic Nature LIFE Project. We look forward to collaborating with Derek and his new project team in the future.

1.2 Steering Group

The project steering group held three online meetings during the period (July 2020, November 2020, and March 2021).

1.3 DAFM Audit

DAFM completed an audit of the PMP in December 2020. The objective of the audit was to ensure that the controls, processes and procedures applied throughout the programme are fit for purpose. It included a review of a random selection of scorecards and supporting actions from the programme in addition to field verification and farm visits. All additional information requested by the auditors was submitted following the audit. The programme met all of the requirements of the audit.



2. Participant Farmers

As of June 2021, there are 473 active participant farmers in the Programme. There has been a very high level of retention of participant farmers from year to year. In 2020-2021 a total of four farmers withdrew from the Programme. In the case of these four farmers their land was transferred to another farmer who became a participant in the Programme.

3. Participant Recruitment

There was an opportunity for new farmers to join the Programme in 2021. A total of 26 additional Expression of Interest (EOIs) forms received up to March 5th 2021 were assessed and contract offers were issued to 19 new participants. All farmers that had eligible farmland within the catchments were offered a place on the Programme. Those applicants that were unsuccessful either had no land declared on BPS 2020, had a shareholding in a non-priority commonage, or did not have a significant amount of eligible land in the Programme catchment areas. All those offered contracts in 2021 joined the Programme, bringing the total number of participants to 473.

4. Farmer Training

A small number of outdoor farmer training events were held in July 2020 (Table 1). However, we were unable to hold outdoor training events in all catchments due to Covid-19 restrictions. Instead of face to face farmer training, we held three online farmer training events in October 2020 (Table 1). These online training events were not compulsory, however, we did encourage all participants to attend. Recordings of each of these training events are available to view through our project website and on our Pearl Mussel Project YouTube channel. Given the unusual circumstances, and the fact that not all participants were able to participate in online training, we did not apply the 10% deduction in participant's annual results-based payment for non-attendance at training in 2020. As of May 2021, we intend to hold outdoor training events for all participants in summer/autumn 2021 in accordance with public health guidelines.

Catchment	Date	Attendance
Face to face training events:		
Dawros	10/08/2020	21
Bundorragha (private landowners)	11/08/2020	7
Owenriff	12/08/2020	20
Online training events:		
Participants with commonage shareholdings	19/10/2020	21
Participants with private land	20/10/2020	68
New participants	27/10/2020	25
Total attendance:		162

Table 1:. Farmer training attendance in 2020.

4.1 Farmer Update Meetings

Online farmer update meetings were held in February 2021 via Zoom (WNW: 23/02/2021; SW: 24/02/2021). The purpose of these meetings was to provide a Programme update to participants, while also providing an opportunity for participants to provide feedback to the Project Team. A total of 165 participants attended these two update meetings. Considering the constraints associated with holding online events to farmers in our remote locations, the attendance and level of interaction is relatively high.

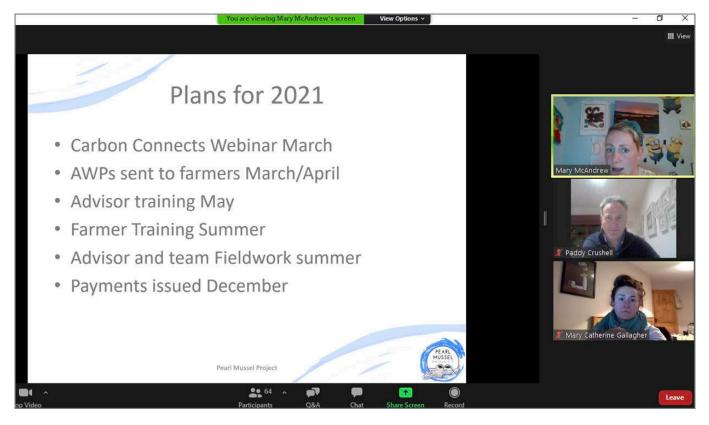
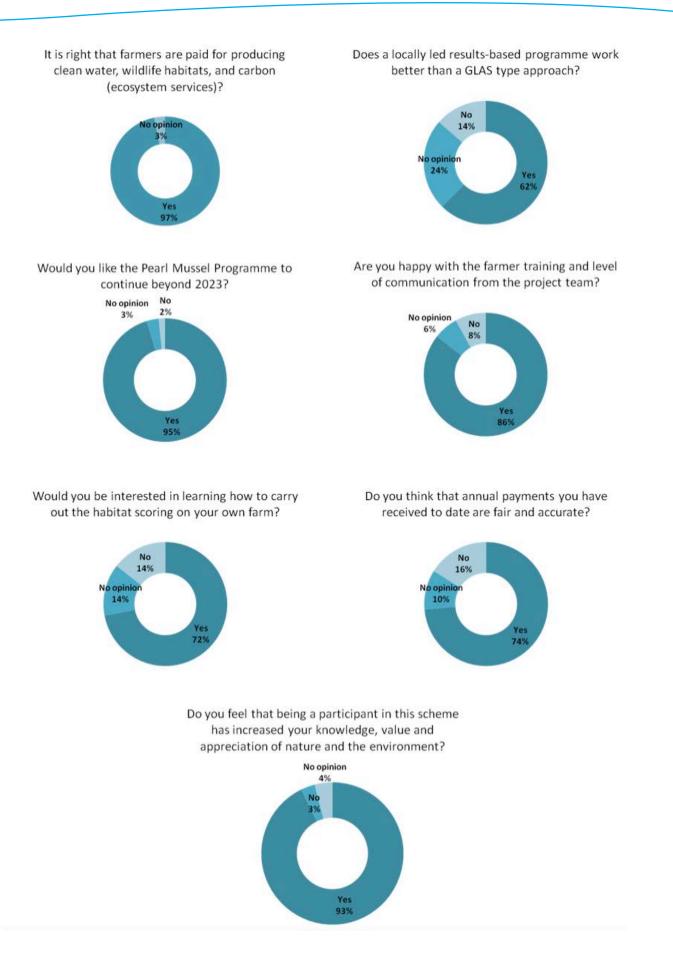


Figure 1:. Online farmer update meetings were held in February 2021.

During the feedback session at the end of the meetings (Figure 2):

- **95%** of participants indicated that they would like to see the Pearl Mussel Programme extended beyond 2023.
- **62%** felt that a results-based programme works better than a GLAS type approach.
- 72% would be interested in learning how to carry out habitat scoring on their farms.
- **74%** felt that their annual results-based payments are fair and accurate.
- 86% were happy with farmer training and level of communication from the project team.
- **93%** felt that participating in the Programme increased their knowledge and appreciation of nature and the environment.



5. Farm Scoring

Farm scoring took place between the 1st of June and the 15th August 2020. Advisors walked the land of each private farm/commonage they had been assigned and submitted habitat scorecards and whole farm assessment score cards for each of these via the programme scoring app. Although 2020 was the second year of habitat scoring, it was the first year that advisors submitted scores using the mobile app.

While private habitat plots are scored every year, commonage plots are only scored every second year. Therefore, the score for 2019 priority commonages was applied to those commonages again in 2020. New commonages that entered the programme in 2020 (2020 priority commonages) were all scored in the field in 2020. In 2021, the 2019 priory commonages will be scored in the field, while the 2020 score will be applied to 2020 priority commonages. A small sample of 2020 commonages will be scored in summer 2021 as part of the programme verification process.

All private land and commonage land scores were subject to a desktop verification and over 10% of these were subjected to field verification by a member of the project team.

5.1 Habitat Quality

A total of 2,503 plots (private and commonage) were scored in the field during the 2020 scoring season.

The average habitat plot score for private plots was 6.4, an increase from 6.1 in 2019 (scores are rounded to the nearest whole number for the purpose of payment). It should be noted that it is difficult to make a direct comparison between the 2019 and 2020, due to the addition of new participants, a major increase in commonage lands, and some changes in land ownership, and plot boundaries. However, comparing the proportion of assessed plots, there was a decrease in the number of plots scoring < 4 in 2020, while the proportion scoring 4-7 and 8-10 both increased in 2020. As in 2019, the majority of habitat plots attained scores between 4-7 in 2020 (Figure 3).

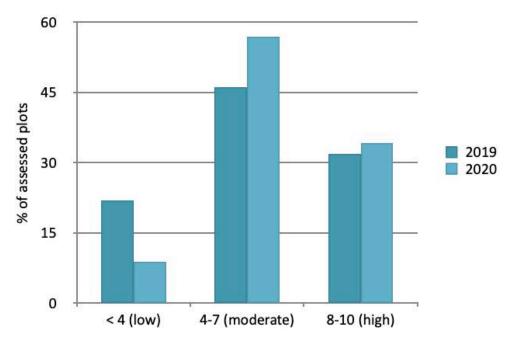
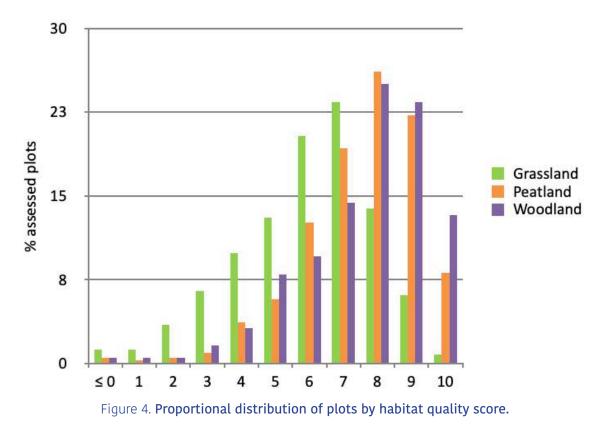


Figure 3: Summary of plot scores in 2019 and 2020.

The average score for the three different habitats assessed increased in comparison to 2019. Grassland habitat plots had the lowest average score of 5.9 in 2020, an increase from 5.6 in 2019. The average score for peatland plots also increased from 7 in 2019 to 7.4 in 2020, while average woodland scores remained the same at 7.4.

The increase in average score across all habitat types is promising, and is likely the result of changes in management practices by participant farmers, in addition to the implementation of supporting actions on some plots. In general, commonage plots tend to score higher than private plots.



5.2 Whole Farm Assessments and Commonage Unit Assessments

The whole farm assessment (or Commonage Unit Assessment in the case of commonage units) captures the overall risk of impacts from the farm or commonage to water quality. Given the aquatic target species of the Programme, this is seen as an extremely important part of the scoring system. The whole farm assessment considers the condition of watercourses (flow, buffer zones, and damage), nutrient balance on the farm / commonage, and where applicable, farmyard management. The result of the assessment is expressed as one of four categories; Excellent (1.2), Good, (1), Inadequate (0.6), or Poor (0.3). The result of the whole farm assessment is used a multiplication factor on the results-based habitat payment due to the farmer, with Poor or Inadequate results leading to lower payments, and Good and Excellent results leading to higher payments.

A total of 321 whole farm assessments and 67 commonage unit assessments were carried out in 2020. The majority (65%) of whole farm / commonage unit assessments carried out in 2020 achieved a Good assessment result. 22% received an Excellent assessment, while just 14% received a result of Poor or Inadequate (Figure 5).

An indicative comparison of whole-farm scores between 2019 and 2020 shows that the overall trend is positive, with a higher proportion of private farms achieving Good and Excellent results in

2020 compared with 2019 and the majority of private farms and commonage units achieving Good and Excellent results. This is due to changes in management by some farmers in addition to the implementation of targeted supporting actions on farms with low WFA scores.

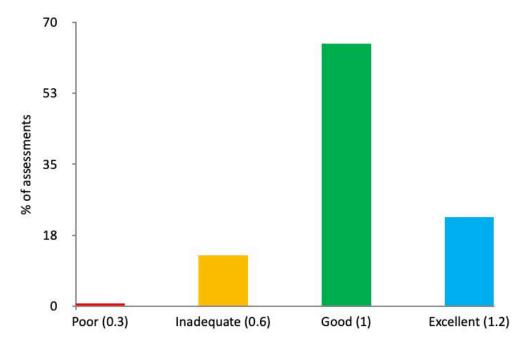


Figure 5. Whole farm assessment and Commonage Unit Assessment results in 2020.

6. Annual Results-based Payments

Over $\leq 1,500,000$ was paid out in results-based payments for 2020 scores. This is a significant increase on the 2019 payments of approximately $\leq 600,000$. There are a number of reasons for this major increase in payments, including the inclusion of over 100 new farmers in 2020, the addition of additional 2020 priority commonages, alterations to the payment structure, and actual increases in plot scores and whole farm assessment outcomes (as outlined above). The average results-based payment received by farmers was $\leq 3,451$, a significant increase from an average payment of $\leq 2,000$ in 2019. Payments varied significantly above and below the average as evident by the number of payments across five payment bands presented in Table 2.

Payment	Number of farmers
< €1,000	87 (19%)
€1,000 - €2,500	138 (30%)
€2,500 - €5,000	108 (24%)
€5,000 - €10,000	105 (23%)
> €10,000	16 (4%)

Table 2. Summary of payments received by PMP participants in 2020.

7. Annual Works Plans and Supporting Actions

PMP approved farm advisors were asked to submit any supporting actions for their clients by August 31st 2020 (the same deadline as score submission). A second window to submit supporting actions was then opened In January 2021, to allow for any additional actions to be included following the 2020 results-based payments being issued. Farmers were sent management advice reports with their annual payment sheets.

A total of 385 new supporting actions were submitted by advisors via the online mapping system. Each of these measures was reviewed by the PMP Team and were either approved or declined. Following on from this, 118 new annual works plans were issued to participants in early 2021 (some of these were entirely new plans, and some were revised plans with additional actions). A total of 45 annual works 2020 plans were reissued to participants with no changes.

Supporting actions claims are processed by the PMP Team on a quarterly basis. A total of €56,958 has been paid for supporting actions completed between June 2020 and June 2021.

The most common measures included on plans are: Gates (98 approved), Rhododendron control (91 approved), post and wire fencing (96 approved), alternative drinking sources (76 approved), and livestock footbridges (63 approved).

Since the start of the Programme a total of 1,033 supporting actions have been submitted on behalf of farmers either by PMP approved advisors or by the Programme Team. The current status of those actions is shown in Figure 8. Some examples of supporting actions that have been implemented across PMP farmers are illustrated in Figure 9.

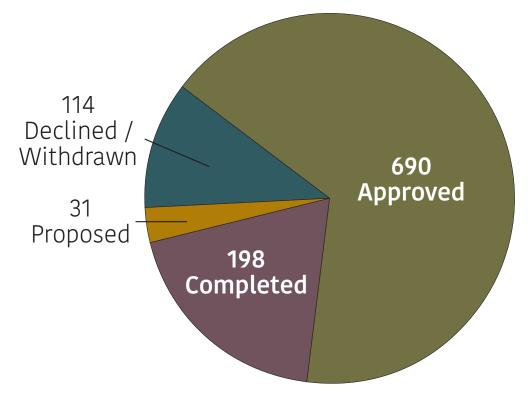


Figure 8. Status of all supporting actions received by the PMP Team as of May 2021.



Figure 9. Examples of supporting actions under taken on a farm in the Kerry Blackwater catchment. The installation of peat plugs (left) and livestock crossings (centre) have helped to reduce silt and sediment runoff. The in-ditch wetland installed on improved grassland (right) intercepts silt and sediment, and will also act as a nutrient trap when the ponds are colonised by vegetation. The combined benefits of these supporting actions have contributed to an increase in whole-farm assessment from 0.6 to 1, resulting in increased payments for the farmer while improving environmental conditions.

8. Refining Programme Design

Changes to the Programme payment structure and floodplain eligibility were implemented for the first time when calculating the 2020 results-based payments. This was one the factors which resulted in increased payments to farmers in 2020 (see Section 6 for more details).

Verifying results from the 2020 scoring season comprised a significant workload for the project team. Following this, the project team held online feed-back and update meetings with advisors with a view to improving advisor supports from the project team and streamlining and improving the assessment and administrative workflows.

In addition to field training for advisors (May 2021), one to one training will be provided for any PMP approved advisors who require additional support. To encourage enhanced performance by advisors the project introduced a potential 10% deduction in farmer payments in the case where advisors are deemed to have submitted incorrect results due to poor performance.

A number of other changes to the Programme structure are being considered by the PMP Team, however, they will not be implemented this year. It is possible that they may not be implemented during the lifetime of the Programme, but would be factors to consider if the Programme was to be rolled out at a wider scale. These changes include:

- The Programme paying PMP approved advisors directly for their work on private lands. The fee would be deducted from the farmer payment before it is issued. Interestingly, 96% of advisors were in favour of being paid directly by PMP, while only 49% of participant farmers were in favour of this. The level of payment was not discussed at these meetings.
- Combining private and commonage lands when calculating farmer payments, currently payments on private lands and commonage lands are calculated separately / independently.

9. PMP Farm Advisors

An online advisor update meeting was held in January 2021, which 33 PMP approved advisors attended. The purpose of this meeting was to provide an update to advisors on the Project, including the issue of annual results-based payments, while also providing a valuable opportunity to get feedback from advisors on the Programme.

In a feedback survey 86% of advisors indicated that they would like to see the Programme expanded over a wider area, 93% found Pearl Mussel Project training useful, 100% found using the app to submit scores user friendly, and 89% felt that farmers understand the Programme and participation has resulted in changes in their attitudes towards nature (Figure 10).

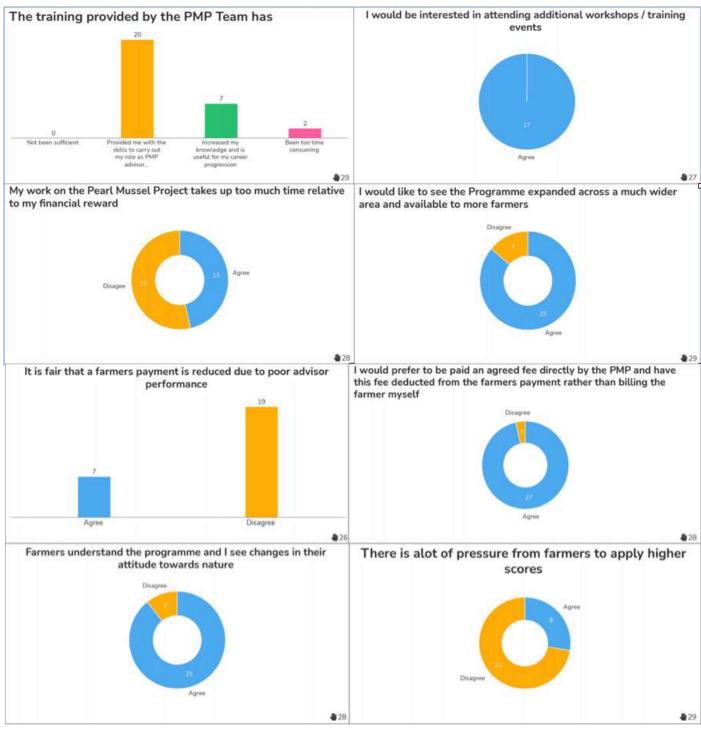


Figure 10. Selected feedback from advisor feedback meeting held in January 2021.

The PMP Team held outdoor field training for advisors in May 2021 (Figure 11). Given Covid-19 restrictions, only those advisors that are actively working on the Project were invited to attend field training. All advisors were invited to attend the "indoor" part of the training which was held online via Zoom.



Figure 11. Advisor field training in May 2021.

The main focus of the field training was to ensure that all advisors were comfortable with using the scorecards and understood what was meant/required by each question on the scorecards. The online training covered a wide range of topics including; project update, new contract offers, project deadlines, nutrient balance calculation on the WFA scorecard, verification issues, the mobile app, online map, and supports available for advisors during the scoring season.

10. Monitoring and Research

Field surveys carried out by the PMP Team during the summer of 2020 built on the data collected in 2019. This monitoring will continue throughout the project and allows for an evaluation of the impact of the Programme within the catchment areas.

Additional baseline watercourse surveys were carried out during the summer of 2020 on new land that was included in the programme (private land and 2020 priority commonages). Baseline watercourses surveys will be undertaken on additional lands that enter the Programme in 2021. It is also hoped to repeat these baseline watercourse surveys at the end of the programme to determine the impact of the Programme on watercourses within the catchment areas.

Monitoring of Freshwater Pearl Mussel populations is generally carried out every 4-5 years. Surveys were completed on the Bundorragha and Dawros Rivers in 2020 by Evelyn Moorkens and Ian Killeen on behalf of National Parks and Wildlife Service.

The PMP continues to facilitate a wide range of scientific research which is evaluating the ecosystem and attitudinal impacts of the programme, including collaboration with the EU INTEREG Carbon Connects Project and supporting two PhD students, Poppy Overy and Verena Berard of Sligo Institute of Technology and Galway-Mayo Institute of Technology. The Carbon Connects project is modelling carbon gain on one of our participant farms in the Owenriff catchment. Initial modelling results suggest a reduction of up to 6 tonnes of CO2 per hectare per year between low and high scoring peatland. The relationship between score and CO2 demonstrates the multiple benefits being captured in the scorecards, from which PMP payments are derived. Additional drain intervention works were undertaken at the project site under the supervision of the PMP team.

Hydrological research is also being undertaken on one of our participating commonages in Co. Mayo where a peatland recovery project is underway. In November 2020 a flume and rain water gauge were installed at the site (Figure 12). The data collected at this site will allow for a better understanding of the relationship between vegetation recovery and hydrological recovery of a degraded blanket bog. This will also allow us to quantify the environmental benefits provided by farmers when managing peatland habitats sensitively.



Figure 12. Flume and rain water gauge installation at Bundorragha commonage restoration site.

11. Publicity

11.1 Conferences, Outreach Events, and Publicity

Given the ongoing restrictions as a result of the Covid-19 pandemic, conferences and outreach events have mainly been online over the past year. Members of the PMP Team have attended and presented at a variety of conferences and outreach events in 2020-2021. A selection of conferences, outreach events, and other publicity emanating from the project during 2020-2021 included:

- Burren Winterage Festival
- Radio Kerry interview
- Article in Kerry's Eye
- Feature on RTE's Ear to the Ground
- Farmer's Journal video with participating farmer
- Articles in the Farmer's Journal
- Farming for Water Quality: Selecting Appropriate Actions (LAWPRO training held for PMP advisors)
- PMP participant Tom Keane shortlisted for 2020 Farming for Nature awards
- PMP participant Colm Gavin nominated for 2021 Farming for Nature awards
- "Bringing Biodiversity Back to the Farm" (online webinar)
- Carbon Connects webinar
- International workshop on results-based payments hosted by the Interreg Baltic Sea Region Waterdrive programme
- Various presentations to DAFM and other stakeholders.
- Regular meetings with other EIP groups to share learnings and disseminate results.

11.2 Education Resources

The PMP team published the second in a series of interactive story maps and activity sheets in April 2021. The second resource pack is focused on the theme of biodiversity and can be used on its own, or in conjunction with the first resource pack which focused on the Freshwater Pearl Mussel. Since its publication just over one month ago, this new story map has already been viewed 350 times. The third and final resource in this series will be published in the coming year.

In addition to this, an Irish language translation (Paca Oideachais na nDiúilicíní Péarla Fionnuisce i nGaeilge Seolta) of the first education pack (Why Pearl Mussels Need our Help) was published in October 2020 and has had over 600 views to date. We hope that this resource will be of particular use to schools in PMP catchments that occur within, or in proximity to, Gaeltacht areas including Glaskeelan, Owenriff, Dawros, Caragh, and Currane.

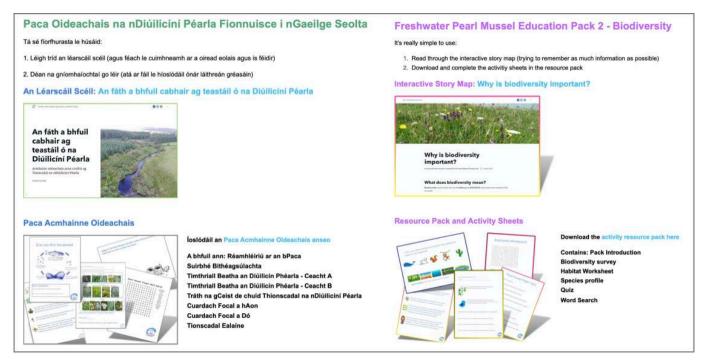


Figure 13: New Education resources available on the Pearl Mussel Project website.

11.3 Video Resources

A number of new video resources have been added to the project YouTube channel (links available through the project website) including videos focusing on the ecology and conservation of the Freshwater Pearl Mussel. We now have a total of 22 videos available to view on the website ranging from advisor resources, to project updates and webinar recordings.

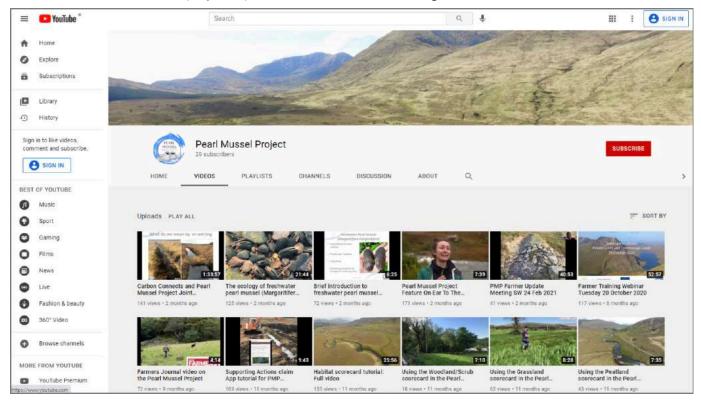


Figure 14: Pearl Mussel Project YouTube channel with 22 videos covering training and project update topics for farmers and PMP advisors.

The following videos were added to the YouTube channel during the year:

- Rhododendron clearance (728 views)
- Carbon Connects webinar (141 Views)
- The Ecology of Freshwater Pearl Mussel (126 Views)
- Brief introduction to Freshwater Pearl Mussel (76 Views)
- Ear to the Ground (174 views)
- Advisor Training; a total of 12 videos were created on use of scorecards, advisor apps etc. (670 total views)
- Farmer Update Webinar (74 Views)
- Farmer Training Oct 2020 (117 Views)
- Farmer Supporting Actions Claims App Tutorial (103 views)
- Management Videos (Teagasc sheep dipping video)

11.4 Project Newsletter

The project newsletter has continued to be produced on a biannual basis, with an issue published in November 2020 and March 2021. The newsletter is sent to all project contacts that have indicated that they want to receive project updates. All published newsletters are also available to view on the project website. In the latest issue of the newsletter (March 2021) a new section profiling a PMP approved advisor was included.



Figure 15: Issue 3 of the Pearl Mussel Project newsletter.

11.5 Project Calendar

Throughout 2020 PMP participants and members of the public were invited to send in photographs from the project catchment areas under the theme "farming for nature in a pearl mussel catchment". Over 30 entries were received and the winning entries were selected for inclusion in the PMP 2021 calendar, which was sent to competition winners, pilot farmers, steering group members, and other interested parties.

11.6 Website and social media

The official PMP website (<u>http://www.pearlmusselproject.ie</u>) was regularly updated and refreshed during 2020-2021, including updates to programme project news updates, resources, publications, videos, and additional educational resources.

In the period May 2020 to April 2021 inclusive the website had over 12,644 unique visitors and 47,300 page views.



Figure 16: Summary of website and social media activity.

The PMP maintained an active presence on social media during 2020-2021 via the project Facebook (@pearlmusselproject) and Twitter (@pearl_mussel) pages. These social media accounts have been regularly updated with project events and news features and are the primary means of updating interested parties on project developments. Relevant posts from third parties working in the area of freshwater pearl mussel protection in Ireland and abroad have also been posted to our Facebook and Twitter pages.

Since its launch in June 2018 the PMP Facebook page has gained 1,000 followers, an increase from 722 in May 2020. During 2020-2021, 118 posts were made, reaching 75,600 people and achieving 2,660 post likes and 450 post shares. Since its launch in 2018, posts on the PMP Facebook page have reached 225,295 users.

The PMP Twitter page was established in January 2019 and currently has 950 followers, an increase from 521 in May 2020. During 2020-2021, 92 posts were made to the page, reaching 259,000 users, with

3,061 post likes and 870 post re-tweets. Since its launch in 2019, posts made through the PMP Twitter account have reached a total of 439,000 users, with 4,500 post like and 1,400 re-tweets.

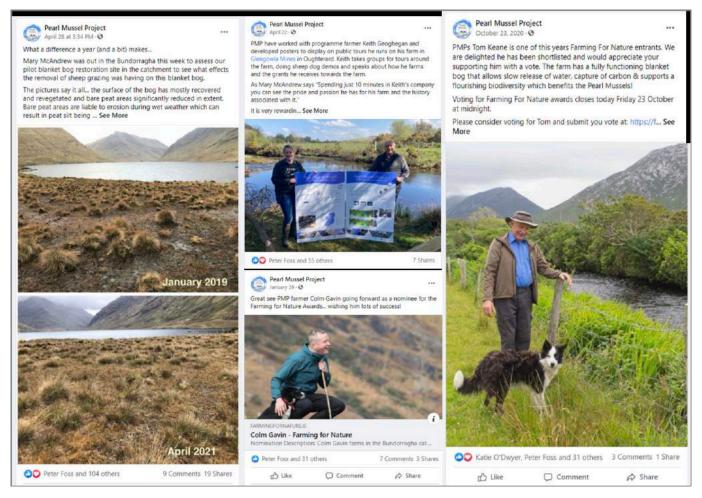


Figure 17: A selection of some of the most popular PMP Facebook posts in 2020-2021.

12. Next Steps

2020-2021 was the second year of the "implementation phase" of the Programme. Additional participants, in addition to changes in the payment structure, meant that there was a significant increase in farmer payments this year. Although the ongoing Covid-19 pandemic has meant that there has been limited face-to-face interaction with participant farmers, we have been delighted with the attendance and interaction at online events. We hope to be able to hold outdoor farmer training later in 2021 and to have an increased presence on the ground in the catchment areas over the summer months.

Throughout all stages of the Programme we have taken feedback from farmers, advisors, and the Programme steering group on board, and tried to address any issues raised. There will be no major changes to the Programme this year, with the exception of some minor changes relating to advisor performance and score submission.

We hope that as the Programme continues to be implemented, participant farmers will grow in their understanding of the Programme and its benefits (both financial and environmental). We hope to see a continued trend of improvements in habitat plot scores and whole farm assessments in 2021-2022 resulting in better environmental conditions and increased payments for farmers.

The past year has seen the roll-out of supporting actions and it is foreseen that the trend in number of actions being approved and claimed continues to rise throughout the next year (2021-2022).

The next steps outlined below are key milestones for 2021-2022 and each subsequent year of the Programme. As these main tasks and work areas are completed each year we foresee the processes becoming more efficient and streamlined.

The key work areas and medium term milestones for 2021-2022 include:

- Support advisors during field season 2021 (Jun Sep '21)
- Complete training events for all PMP participating farmers (Oct '21)
- Complete field verification checks throughout for 2021 field season (Jun Oct '21)
- Verify all farm data submitted by advisors (Aug Oct '21)
- Issue results-based payments to all participants (Nov Dec '21)
- Process supporting actions for 2021 and develop Annual Works Plans for participating farms (Feb-April '21)
- Farm advisor refresher training (May '22)
- Continue community outreach
- Share our experience and learnings with DAFM and other interested stakeholders with a view to informing agri-environmental policy in the next CAP