

Pearl Mussel Programme: Information Booklet

Prepared by The Pearl Mussel Project Limited, February 2019



Introduction

The Pearl Mussel Project is a pilot agri-environment programme that seeks to improve the quality of watercourses to benefit the endangered freshwater pearl mussel. It is locally adapted, results-based and focuses on the top eight freshwater pearl mussel catchments in Ireland.

Farmers will be rewarded for their environmental services whilst having the freedom and flexibility to farm. This will in turn improve the outcomes and long-term sustainability of agri-environment schemes for biodiversity, and for rural communities. It is hoped that this approach will form the basis for future schemes in these areas.

Peatland, grassland, and woodland habitats are used as result indicators. The higher the quality of these habitats, the higher the payment farmers receive. The quality of watercourses on the farm will also influence the final payment. This approach has the effect of creating a market for biodiversity, and provides an opportunity and incentive for farmers to manage their farm habitats to produce higher quality biodiversity.

The Programme, which has a budget of €10million, is being run by the Pearl Mussel Project Team, based in counties Kerry and Mayo. Support will be provided to farmers by their advisors, who will be trained in the Programme delivery. The Project Team will provide support to farmers and advisors.



The programme will run until December 2023.

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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.



1. The Freshwater Pearl Mussel

The freshwater pearl mussel (*Margaritifera margaritifera*) is a large filter-feeding bivalve, which is found in near-pristine freshwater habitats. They are Ireland's longest living animal living for up to 140 years.

The mussels are filter feeders, inhaling and expelling up to 50 litres of water per day through siphons, while retaining food particles. This filtering activity means that pearl mussels can help to maintain and improve water quality.

Adult freshwater pearl mussels can reach lengths of 12-15cm, and live partially buried in the river bed.

European freshwater pearl mussel populations have declined by 90% over the past century.

The top eight catchments in Ireland support 80% of the total Irish freshwater pearl mussel population. All of these catchments are however, undergoing a slow population decline, and several face extinction unless action is taken.

The main reason for this decline is the low survival of juvenile mussels, which are extremely sensitive to changes in environmental conditions. This is leading to an ageing population. Juveniles depend on a clean, well oxygenated gravel river bed, with little silt, or algal growth, and moderate flows.

Activities that cause changes in river flow, increased levels of silt, and increased levels of nutrients, can contribute to the decline.

In addition to drainage and changes to river channel morphology, increased intensification of land use in the catchments threaten future survival of freshwater pearl mussel.

Key pressures on freshwater pearl mussel from farming in the top 8 catchments include:

- Drainage
- Sediment losses from farmland
- Nutrient losses from farmland



Life-cycle of freshwater pearl mussel

2. Results-Based Approach

Payments are linked to the nature quality of your farm
Higher nature quality = Higher payment level

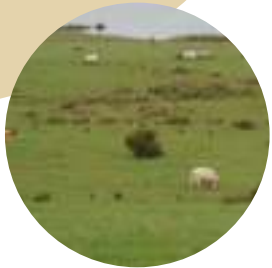


Each plot (field) is scored out of 10 using a scorecard that captures high and low quality habitat which reflect past and current management.

Habitat quality

The management of farmland has a direct influence on the freshwater environment within pearl mussel catchments. Higher quality farmland habitats provide better conditions for freshwater pearl mussel in the main rivers. For this reason the three main farm habitats (grassland, peatland, and woodland) are used as results indicators for the Programme. The result is determined following a 'habitat quality assessment' of the farm.

Habitats assessed are grasslands, peatland, and scrub/woodland:



GRASSLANDS



PEATLANDS



SCRUB / WOODLANDS

Floodplain quality

Lands that flood (floodplains) along freshwater pearl mussel rivers are important for maintaining good conditions for freshwater pearl mussel during periods of high flow. A functioning floodplain has the effect of slowing the rate and reducing the volume of flow. This is best achieved where high quality habitats occupy the floodplain. The provision of high quality floodplains along freshwater pearl mussel rivers will therefore be rewarded through the Programme. The result is determined following a 'floodplain assessment' of the farm.



Watercourses and farm management

Other farm features and activities which contribute to water quality within freshwater pearl mussel rivers include; condition of watercourses (drains, streams, and rivers), farmyard management, and nutrient application. The Programme has incorporated these features and activities into an overall farm result which determines the final results-based payment. The result is determined following a 'whole-farm assessment'.

ASSESSMENT OF RESULTS

Habitat quality assessment

Habitat quality will be assessed at the plot (field) level using a scorecard for each habitat. The score cards award marks for various aspects of the habitat which reflect quality such as; plant species, vegetation structure, wetness, exposed soil, and damaging activities.

Habitats achieve a final score on a scale of 0 (low) to 10 (high). Better quality habitats will obtain higher scores and result in higher payments.



Pearl Mussel Programme results-based payment scale

Floodplain assessment

Those lands prone to regular river flooding which occur along the main freshwater pearl mussel river channel qualify as floodplains in the Programme.

The result achieved is based on the average habitat quality score of all floodplain plots on an individual farm.

Whole-farm assessment

Each farm (or parcel in the case of commonage) is subject to a whole-farm assessment of water quality impacts and risk.

There are three assessments that give rise to the final result:

Watercourse condition. All watercourses (streams, rivers, drains) are assessed in relation to risks arising from flow, livestock, sediment, and nutrients. Watercourses are scored according to four categories from poor to excellent.

Farm nutrient balance. This assessment applies mainly to those farms where cattle are housed over winter. It considers the number of animals housed (slurry generated), appropriate nutrient application rate, and the extent of available spread lands. The outcome of this assessment is scored according to three categories from poor to adequate.

Application of chemical Phosphorus (P) within freshwater pearl mussel catchments presents a major risk to water quality. The use of chemical P by participants is only permitted following provision of soil samples demonstrating deficiency and subsequent approval by the Project Team.

Farmyard management. This assessment identifies any risk of point source pollution to watercourses.

The outcome of the whole-farm assessment fits into one of four categories as follows:

poor | inadequate | **good** | **excellent**

This result is used to determine the final results-based payment to the farmer.

3. Payment Streams

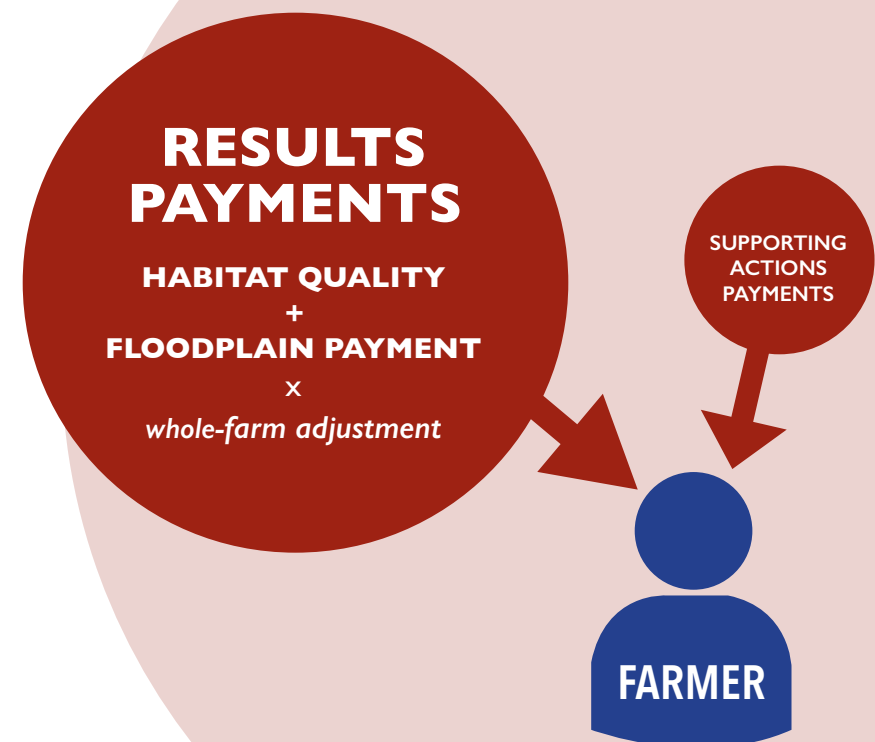
Participating farmers can draw from two payment streams:

Results-based payment

This payment is based on the sum of habitat and floodplain quality, with an adjustment made depending on whole-farm result.

Supporting Actions Payment

For farm measures completed by the farmer aimed at improving habitat quality and reducing risk of impacts on downstream watercourses.



Habitat quality payment

Where a plot scores 0 to 3, this will not receive a payment, regardless of area.

The payment scale increases in varying steps with, for example, the increase between 7 and 8 being much greater than that between 8 and 9. This is to incentivise the farmer to achieve a score of 8 across as much of their lands as possible.

A score of 8 out of 10 represents high quality habitat which is likely to make a significant contribution towards watercourses that support freshwater pearl mussel populations.

Most plots can progressively increase their environmental score and associated payment over the lifetime of the Programme.

Top payment of 10
will only be achieved where the habitat is considered to be in **optimal condition** and therefore deserving of highest payment for delivering environmental benefits.

Payment rates according to quality per ha (€)				
Plot score	A 0-15 _{ha}	B >15-30 _{ha}	C >30-60 _{ha}	D > 60 _{ha}
<4	0	0	0	0
4	68	41	15	4
5	79	47	18	5
6	90	54	20	6
7	101	61	23	7
8	180	108	40	12
9	203	122	45	14
10	225	135	50	15

Payment rates for quality score achieved across four bands

Habitat quality payment rates

Payment rates decline across four bands as participant area increases as follows: 0-15ha, >15-30ha, >30-60ha, and >60ha.

In calculating results-based payments, the lowest scoring lands will be paid at the highest rate. This adds a strong incentive to improve lower scoring lands as any increase in habitat quality (score) will be paid at the highest rate. The same payment rates apply to private lands and commonage lands. In the case of commonages, the payment bands are applied at the LPIS parcel level.



Example of high quality peatland

Floodplain payment

The payment rewards farmers for maintaining active floodplains on their lands where they occur along freshwater pearl mussel habitats (see PearlMusselProject.ie for maps), which provides an important ecosystem service.

Payment rates vary according to habitat quality, as indicated by average habitat quality score of relevant plots, and are paid across three bands related to floodplain river bank length. Payment rates across the three payment bands are shown in the table below:

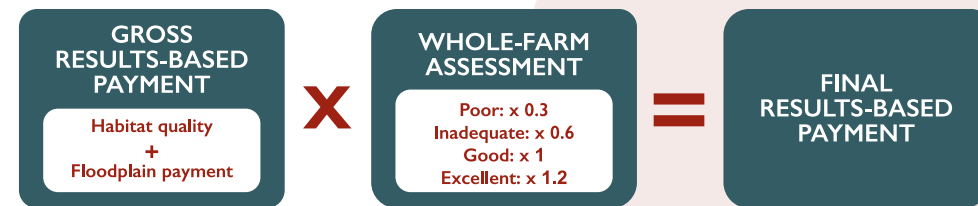
Length of river channel (m):	Average plot score:							
	<4	4	5	6	7	8	9	10
< 250m	€ 0	200	225	250	275	300	325	350
250-1000m	€ 0	280	315	350	385	420	455	490
>1000m	€ 0	400	450	500	550	600	650	700

Floodplain payment for plots prone to river flooding in three length bands

This payment relates only to farmers with plots that regularly flood along the main river channels with freshwater pearl mussel habitat. Where a participant or commonage has multiple plots along the river, an average score of all plots will be used. This payment will be added to the farmer's gross payment, which will then be subject to an adjustment based on the outcome of the whole-farm assessment (see page 12).

Whole-farm payment adjustment

Once the whole farm score is determined, a corresponding correction factor is applied to the total overall results-based payment as outlined below.



Application of whole-farm assessment in calculating final results-based payment

In the case of commonage parcels, a modified 'whole-farm assessment' will be completed.

Quality correction factor

Poor: × 0.3

the overall results-based payment is *reduced by 70%*

Inadequate: × 0.6

the overall results-based payment is *reduced by 40%*

Good: × 1

no reduction applied to the overall results-based payment

Excellent: × 1.2

a *bonus payment of 20%* is applied to the overall results-based payment

RESULTS-BASED PAYMENT

Calculation of results-based payment

All farm plots will be ranked according to field score in increasing order.

The habitat quality payment will then be calculated by multiplying area of lands by the corresponding payment rate (see figure below).

Where applicable, the additional floodplain payment is then calculated according to the rates in the payment rates table, shown below.

In order to calculate the final results-based payment, the sum of both habitat quality and floodplain payments is then adjusted according to the whole farm result achieved (see figure below).

The payment for single commonage parcels will be calculated in the same way as for individual private farms. Shareholders will be entitled to a share of the final result-based payment proportional to their shareholding in the commonage.

Payment rates according to quality per ha (€)				
Plot score	A 0-15ha	B >15-30ha	C >30-60ha	D > 60ha
<4	0	0	0	0
4	68	41	15	4
5	79	47	18	5
6	90	54	20	6
7	101	61	23	7
8	180	108	40	12
9	203	122	45	14
10	225	135	50	15

Payment rates for quality score achieved across four bands

Length of river channel (m):	Average plot score:							
	<4	4	5	6	7	8	9	10
< 250m	€ 0	200	225	250	275	300	325	350
250-1000m	€ 0	280	315	350	385	420	455	490
>1000m	€ 0	400	450	500	550	600	650	700

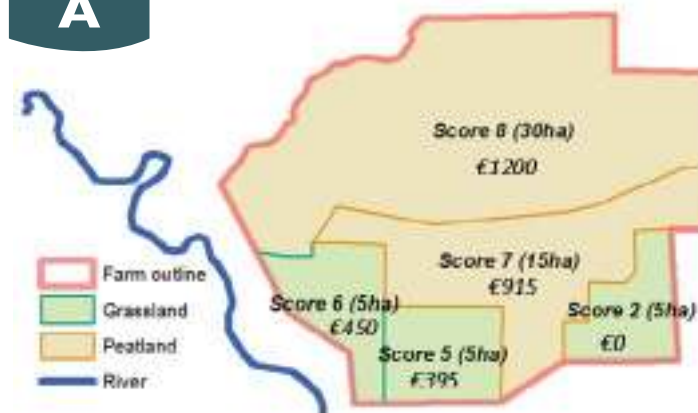
Floodplain payment for plots prone to river flooding in three length bands

RESULTS-BASED PAYMENT

Sample farm payment calculation:



Mixed livestock farmer
Total farm area: 60ha
Without freshwater pearl mussel habitat floodplain

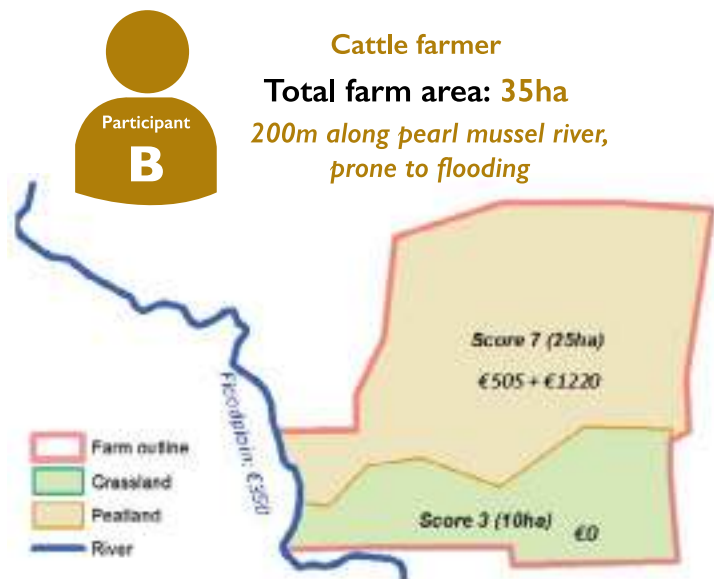


Payment band	Plot area	Plot quality score	Payment due
A (0-15ha)	5ha grassland	Score 2	€0 (5ha @ €0/ha)
	5ha grassland	Score 5	€395 (5ha @ €79/ha)
	5ha grassland	Score 6	€450 (5ha @ €90/ha)
B (>15-30ha)	15ha peatland	Score 7	€915 (15ha @ €61/ha)
C (>30-60ha)	30ha peatland	Score 8	€1,200 (30ha @ €40/ha)
Total habitat quality =			€2,960
Floodplain payment:			n/a

X Whole-farm score: good (x 1)

Total result payment: €2,960 x 1 = €2,960

Sample farm payment calculation:



Payment band	Plot area	Plot quality score	Payment due
A (0-15ha)	10ha grassland	Score 3	€0 (10ha @ €0/ha)
	5ha peatland	Score 7	€505 (5ha @ €101/ha)
B (>15-30ha)	20ha peatland	Score 7	€1,220 (20ha @ €61/ha)
Total habitat quality = €1,725			

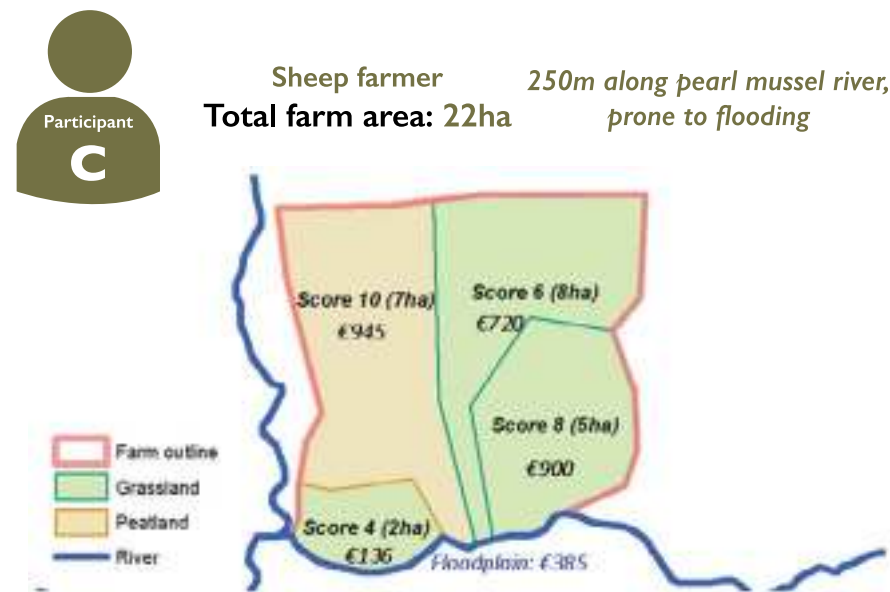
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Floodplain payment: €350 (average score 6, 0-250m band)
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X Whole-farm score: inadequate (x 0.6)

Total result payment: €2,075 x 0.6 = €1,245

Sample farm payment calculation:



Payment band	Plot area	Plot quality score	Payment due
A (0-15ha)	2ha grassland	Score 4	€136 (2ha @ €68/ha)
	8ha grassland	Score 6	€720 (8ha @ €90/ha)
	5ha grassland	Score 8	€900 (5ha @ €180/ha)
B (>15-30ha)	7ha peatland	Score 10	€945 (7ha @ €135/ha)
Total habitat quality = €2,701			

+

Floodplain payment: €385 (average score 7, 250-1,000m band)
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X Whole-farm score: excellent (x 1.2)

Total result payment: €3,086 x 1.2 = €3,703

Supporting actions are voluntary measures that a farmer may choose to undertake with the aim of improving habitat quality or whole-farm score.

The Programme adopts a flexible and adaptive approach to farm management. Farmers are free to choose whether to undertake supporting actions or not, and can choose the most appropriate actions to suit their farm.

Each participant in the Programme receives an annual allowance based on their area of land within the catchment in order to undertake supporting actions.

There is a standard list of typical supporting actions that will be funded by the Programme such as **livestock drinking facilities, fencing, invasive species control, re-wetting, and drain-blocking**. In addition to this, the Project Team will consider funding other actions that are likely to help meet the project aims subject to value for money and the necessary consents being in place.

Rate of support

The annual allowance is €50 per ha up to an annual maximum of €1,200.

Actions which directly enhance habitats which support freshwater pearl mussel and have little or no direct agricultural benefit may be 100% funded subject to the overall cap on funding for actions.

A list of available actions can be provided by the Project Team.

Project Team approval for supporting actions is required prior to works commencing.

The participant can submit a claim for payment to the Project Team as soon as works are completed.

Farm infrastructure that enhances the farmer's capacity to deliver environmental benefits can be co-funded by the Programme to the value of 25-50%.

The Project Team will encourage and support farmers to propose innovative bespoke solutions that may suit certain site specific situations. In certain instances the Programme may allow such measures to exceed the annual allowance outlined above.

Example of some supporting actions:

Fencing
Drinking facilities
Farm access
Drain plugs



Drain plugs

The Project Team may refuse, attach conditions, or modify a proposed action as outlined in the Terms and Conditions document. Payment for actions are made following declaration by the participant that the works have been delivered.

Supporting actions on commonage

Applications for supporting actions on commonage are cross-checked against the relevant Commonage Management Plan to avoid double funding.

Participants proposing actions on commonage will need to ensure that all necessary permissions are obtained from all other relevant shareholders in the commonage.

The Project Team will encourage and support groups who wish to work together to deliver supporting actions on commonage lands.

Examples of some supporting actions:



Fencing



Drinking facilities



Drain plugs



Before



- A** Silt from poached ground reaching river.
- B** Open drains leading directly to river.
- C** Patches of heavy grazing.
- D** Rhododendron encroaching on peatland.
- E** Cattle in river.

After



- Supporting actions:**
- A** Plugs in drain to slow run-off to river.
 - B** Cattle drinking trough.
 - C** Fencing barrier near river bank.
 - D** Rhododendron dying back following treatment.

The results-based approach rewards & encourages the continuation of good management practices.

Supporting actions payment allows farmers to increase their results-based payment.

4. Who can apply?

All farm land within the top eight freshwater pearl mussel catchments can be considered for payment with the exceptions of buildings (and their curtilage), extensive water, farmyards, quarries, and commercial forest.

Detailed maps of the catchments can be provided by the Project Team or can be viewed on the project website (*PearlMusselProject.ie*).

An overview map showing the location of the catchments in Ireland is provided on the back cover of this document.

Lands should be declared on the applicant's current Basic Payment Scheme (BPS) application to be considered for the Programme. Leased or rented land must have been declared on the applicant's 2018 BPS application.

Commonages

The project team have reviewed all commonages within the catchments and selected those of highest priority for entry into the Programme during 2019. This list of commonages and the means of selection is described in the Terms and Conditions document. Depending on budget, commonage parcels outside of this priority list will be added in future years.

Eligible commonage shareholders in the priority parcels are encouraged to apply to join the Programme during the initial recruitment window (spring 2019).

On commonage lands, the fraction declared by the participant on their current BPS application that will be considered for payment. *Where the catchment boundary splits a land parcel, only the proportion within the catchment boundary will be paid on.*

5. How do I apply?

- > Complete and submit the single page expression of interest form.
- > Prior to applying, all applicants should read this guide and the Programme 'Terms and Conditions' document.
- > Where an applicant is successful, the Project Team will prepare the Pearl Mussel Programme Farm Plan and issue a contract offer to the farmer. This offer must then be accepted by the farmer within one month.

Unsuccessful applicants will be notified at the end of the recruitment period.

The eight catchments included in the Pearl Mussel Programme include:

- Blackwater, Co. Kerry
- Bundorragha, Co. Mayo
- Caragh, Co. Kerry
- Currane, Co. Kerry
- Dawros, Co. Galway
- Gliskeelan, Co. Donegal
- Ownagappul, Co. Cork
- Owenriff, Co. Galway

6. Selection Criteria

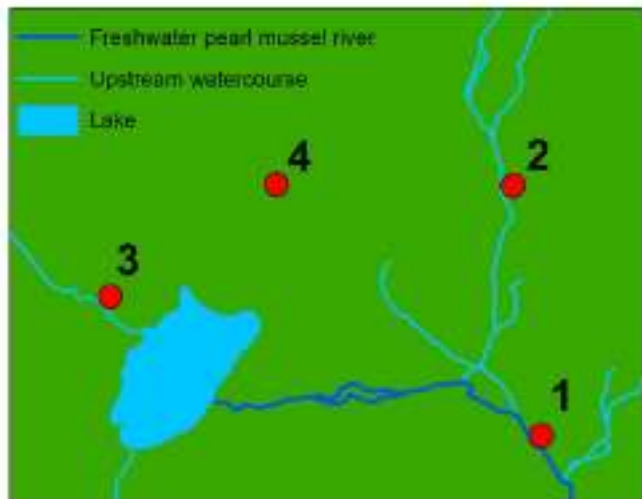
As funding is limited, it may not be possible to accommodate all eligible applicants.

For each catchment, applicants will be ranked by the Project Team according to the criteria outlined below with further information in the Programme Terms and Conditions document.

The highest ranked applicants will be shortlisted for acceptance at regular intervals during the recruitment phase.

Unsuccessful applicants will automatically roll over to be considered again for the next round of recruitment, therefore it is recommended that prospective applicants submit an application at the earliest possible time to increase their chances of being accepted.

The proximity and connectivity to freshwater pearl mussel habitat will be used to prioritise applicants as follows:



- 1 Main freshwater pearl mussel river
- 2 Watercourse upstream of main river
- 3 Watercourse upstream of lake
- 4 No mapped watercourses

Following this, applicants will then be individually ranked within these four categories according to the ratio of length of mapped watercourse to land area. This means that within each category the highest rank will be assigned to the applicant with the highest length of watercourses in relation to land area.

Participating farmers with private lands within the catchment will only get paid on their commonage shareholdings where they relate to a priority commonage parcel (see page 19 - Who can apply?).

7. Programme participation

Nominate approved advisor

At contract acceptance the participant farmer must nominate an approved Pearl Mussel Programme farm advisor to work on the farmer's behalf. The Project Team will issue a copy of the farm plan to the farmer and advisor.

Farm assessment

On an annual basis the advisor, working with the farmer, will carry out a review of the farm operation, score all habitats on the farm, complete the whole farm assessment, and make recommendations with regards future management.

Submit results

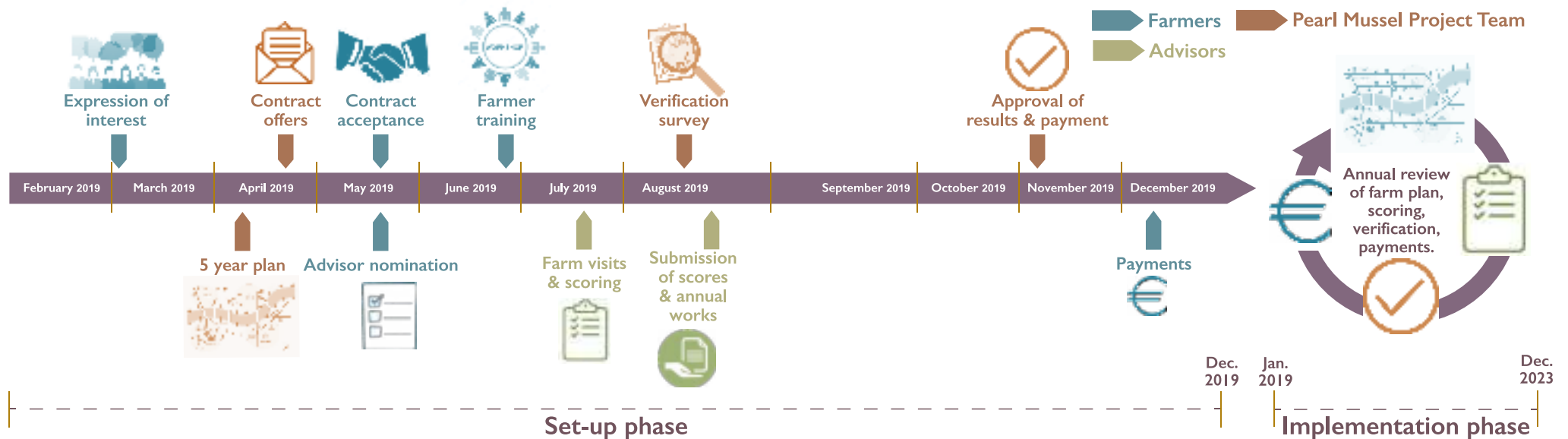
The results of the advisors assessment will be submitted to the Project Team for review and payment. All payments will be made directly to the farmer's nominated bank account by the Project Team and a summary of payment calculations will be sent to the farmer and advisor.

Annual work plan

The farmer, supported by the advisor, may also propose supporting actions in the form of the annual works plan to be submitted by the end of each year. Once approved by the Project Team these actions will be undertaken by the farmer during the following year and the associated payment will be issued on satisfactory completion.

Farmer training

All participants are required to attend a training course in each year of the Programme, training will cover such topics as; scoring of habitats, freshwater ecology, nutrient and farm management guidance. The participant will receive a payment of €100 for attendance at a full day training course. Where the farmer is unable to attend then they need to nominate a named representative to attend on their behalf. In the case of non-attendance by farmers (or a representative), a 10% reduction on all payments in that year will be applied.





Frequently asked questions

1. How do I apply?

Submit a completed expression of interest form to the Project Team. Detailed Terms and Conditions can be downloaded from the project website (PearlMusselProject.ie).

2. I'm already in GLAS, will I still be eligible for a Pearl Mussel Programme payment?

Yes, however, to avoid the risk of double payments, when the participants are in the Low Input Permanent Pasture (LIPP) or Traditional Hay Meadow (THM) measures in GLAS, there is a reduction of Pearl Mussel Programme payment by 40% for LIPP and 20% for THM. Prior to any supporting actions being approved, the potential for double payment against GLAS measures (such as Riparian Margins).

3. Will my BPS be affected?

The payments will be in addition to other supports such as BPS, GLAS, and ANC. The Programme recognises the importance of farming in sustaining a high quality environment in the catchments. We do not foresee lands becoming ineligible for payment under BPS due to the Programme.

4. Do you need a farm advisor to get into the Programme?

Yes. The farmer nominates an approved Pearl Mussel Programme advisor to support them during the Programme. A list of trained approved advisors will be provided by the Project Team. In the case of commonages, a single advisor will be nominated.

5. Can I use my existing GLAS advisor?

Yes, provided they have completed Pearl Mussel Programme training and have been approved by the Project Team.

6. Who pays the advisor?

The farmer will pay the advisor. The cost of advisor input has been factored into the results payment.

In the case of commonage, the advisor fee will be paid directly to the advisor prior to farmer receiving payment. For small farms with low payments an administrative allowance may be paid by the Programme.

7. Does my land have to occur next to the river?

No. Farmers with any lands that occur within any of the eight project catchments are eligible to apply to join the Programme. Lands that occur alongside the main rivers will however be prioritised for entry to the Programme. A detailed map of the catchments can be viewed on the project website (PearlMusselProject.ie).

8. Does my land have to be designated SAC?

No. All farm land within the catchments are included. Payments do not differ between designated or non-designated lands.

9. Can I apply if I only have a commonage shareholding in the catchment?

Yes. However, your shareholding must be associated with a priority commonage that has been selected for the Programme. The list of priority commonages can be provided by the Project Team or downloaded from the project website (PearlMusselProject.ie).

10. Do all shareholders in the commonage have to participate?

No. All shareholders in priority commonages are invited to apply to join the Programme. The payment on commonages will be divided amongst participants in proportion to their shareholding in that commonage.

11. Do I have to attend training and do I get paid to attend?

Yes. All participating farmers are required to attend at least one training course per year. Courses will be delivered by the Project Team. You will receive a payment of €100 for attending a single day training course.

12. What measures do I have to do?

This is a voluntary results-based Programme whereby the farmer gets paid according to the biodiversity result achieved. The approach allows for a high level of flexibility for the farmer. The farmer can choose the means by which they manage their lands in order to achieve the result.

13. How can I achieve a higher result and increased payment?

It is ultimately up to the farmer as to how they manage their farm. The farmer will attend annual training during the Programme. The Project Team can advise and there are a series of voluntary supporting actions that the farmer may choose to undertake in order to help improve the result. These actions are co-funded by the Programme.

14. Where can I get further information on the Programme?

Further details on the Programme including, detailed Terms and Conditions can be provided by the Project Team or are available on the project website (PearlMusselProject.ie).



Overview map showing the location of top eight catchments included in the Pearl Mussel Programme

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