Waters of LIFE



Pilot Agri Environmental Programme

Supporting Actions Specifications V5

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An Roinn Tithíochta, Rialtais Áitiúil agus Oidhreachta
Department of Housing, Local Government and Heritage

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1. Introduction

Waters of LIFE is a pilot results-based agri-environment programme that rewards farmers for the environmental services provided by their land and for taking actions to address issues of concern for stream ecosystem health.

Water flowing across farmyards and farmland can gather and carry pollutants, such as sediment, nutrients, pathogens (e.g., *E. coli*) and agrichemicals (e.g., pesticides). Therefore, funding for supporting actions is available to complement the "Runoff Risk Assessment" and scorecard results, which help farmers identify suitable locations for mitigation measures on their farm. Supporting Actions are voluntary measures that a farmer may choose to undertake. This document sets out the Supporting Actions that are available to farmers within the Programme.

Approval and Installation of Supporting Actions

The Runoff Risk Assessment and scorecard(s) can result in proposed supporting actions, which are submitted to the project team for approval by the advisor via the online mapping system. Supporting actions details should include the location and quantity of the works proposed. In the case of bespoke measures, a costing should be included. It is important that the landowner (and their advisor) engage with the project team to scope the details and costs associated with bespoke measures. Once received by the project team, the proposed supporting actions will be screened and approved if they are assessed as being appropriate and they align with the relevant specification.

No supporting action associated works should be undertaken prior to receipt of the Water Quality Farm Works Plan from the Waters of LIFE project team. Upon receipt of the Water Quality Farm Works Plan, the farmer can proceed with the works and submit a payment claim following completion. The submission for payment should comprise of a declaration that works have been completed in accordance with the Water Quality Farm Works Plan, with all relevant supporting documentation together (e.g., receipt as proof of purchase, geo-tagged photograph, etc.). The documentation required varies by Action, and can be seen in Table 1, as well as in the specification of each individual action listed in this document. The Waters of LIFE team will visit a proportion of farms to verify the works are completed in line with programme specifications.

A list of standard Supporting Actions is presented in Table 1. There are several actions that due to their variable nature and site-specific conditions, will need to be costed individually in consultation with the project team. These measures will be costed based on standard rates for labour, machinery, and materials as published by DAFM schemes, such as TAMS.

There are six categories of Supporting Actions as follows;

1) Farm Infrastructure
2) Pathway Interception
3) Watercourse Crossing
4) Water Provision
5) Invasive Species
6) Other Actions

Integrating multiple actions to address specific issues (e.g., multiple actions along a flow pathway to improve each solution's effectiveness) is highly recommended to achieve a positive result**.**

The list of actions presented here is not exhaustive and it is foreseen that additional actions may be co-funded by the Programme. As individual farmers or groups of farmers may have innovative ideas for appropriate actions, participants and their advisors are encouraged to discuss these with Waters of LIFE team. Such bespoke actions would be costed individually in consultation with the project team. The actions and associated costings presented below may be revised throughout the programme.

General Requirements

1. All supporting actions are subject to screening for environmental impacts and appropriateness prior to approval by the Waters of LIFE team and no funded actions can be carried out until Waters of LIFE approval has been received.
2. All supporting actions must be retained for the duration of the project for the purpose they were funded, unless otherwise agreed with the Waters of LIFE team.
3. Where an investment/supporting action has been grant aided under TAMS or any other National/EU funded agri-environment or capital investment Scheme from 01 January 2018, it cannot receive additional funding under the Waters of LIFE. However, if the implementation of any action improves habitat scores over the course of the Waters of LIFE programme, this could contribute to higher annual payments.
4. Some actions may not be funded within certain scored plots see Table 1.
5. The person undertaking certain actions will need to be identified and will require relevant Waters of LIFE training (See Table 1).
6. Advance notice of the expected date of commencement of certain supporting measures must be given to the Waters of LIFE team (See Table 1).
7. Archaeological features must not be impacted by supporting actions.
8. A supporting action must not impact on SAC/SPAs, NHAs, pNHAs and Annex 1 Grasslands, or any other sensitive habitats. Any application for a supporting action will be subject to Appropriate Assessment and the relevant restrictions set out in Appendix I.

Table 1: List of Supporting Actions and Payment Rates

Ref	Action Name	Min	Max	Unit	Payment Rate
Farm Infrastructure					
01	Permanent Single Strand Electric	5	n/a	m	€2.90
02	Sheep Fence	5	n/a	m	€8.25
03	Sheep Fence Mountain Rate	5	n/a	m	€12
04	Barbed Wire Fence	5	n/a	m	€5.30
05	Solar Powered Electric Fencer	1	n/a	unit	€660
06	Gateway Measures	1	n/a	unit	€376
07	Two strainers with gate spring (electric fence gate alternative)	1	n/a	unit	€66
Pathway Interception Measures					
08	Waters Bars	1	n/a	unit	€213
09	Vegetated Bunded Drain	1	n/a	unit	€1,000
10	Earth Bund	5	n/a	m	€12
11	Sediment Trap	1	n/a	unit	€120
12	Hedgerow Establishment- Cross Slope on low earth bund (not including fencing – to be applied for separately)	5	n/a	m	€12.60
13	Grassland Cross Slope buffer	10	n/a	m	€5.45
14	Spatially Targeted Buffer Zone	100	2,000	m^2	€0.38
15	Tree Planting	5	n/a	whip	€16
16	Willow Beds	1	n/a	m	€34
17	Small Scale Wetland Pond	1	1	unit	1-150m^2: €5.44/m^2 151–400m^2: €4.76/m^2 401 –600m^2: €2.38/m^2
Watercourse Crossing					
18	Culvert	1	n/a	unit	€800
19	River, Stream Crossing/Bridge	1	n/a	50% of cost	Max: €7,500 (subject to review)
Water Provision					
20	Solar Pump	1	2	unit	€2,500
21	Pasture Pump	1	n/a	unit	€400
22	Water Trough	1	n/a	unit	€300
23	Water Supply Piping and Fittings	1	n/a	unit	€150
Invasive Species					
24	Non-Native Invasive Species	Case by case basis			
25	Conifer Removal	Case by case basis			
Other Supporting Actions					
26	Water Table Management on Peat soils	Direct payment by project			
27	Contractor Mobilisation Fee*	1	1	n/a	€300
28	Bespoke Measures	Case by case basis			
29	Host Farmer Payment	1	n/a	event	€180

2. Farm Infrastructure Actions

A1, A2, A3, A4 Fencing

Fenced off water bodies (such as rivers, streams, drains, ponds, and lakes) can be used to prevent access by bovine and ovine livestock. This will help reduce the impacts of nutrient and sediment enrichment, as well as prevent bank destabilisation. This measure can also be used to increase the width of a riverside habitat. This measure should only be recommended when it is expected to provide a significant benefit to water quality.

Requirements

1. Where the purpose is to exclude livestock from a watercourse, only applicable where grassland stocking rate <170kgN/ha.
2. Any new permanent fencing must be installed at least 2 m from the top of the riverbank.
3. Where permanent fencing is being replaced to increase the width of the riverside buffer, the resulting riverside buffer must be at least 2 m wider than the pre-existing riverside buffer.
4. To be eligible for this action, the minimum continuous length to be delivered is 5 m.
5. Remove all old fencing material before putting up the new fencing.
6. It is not permitted to use fencing options to divide an existing field into two or more parts.
7. All fences must be fit for purpose and the range of animals it is intended to exclude. The wire must be strained tightly between posts and use enough strands to control the livestock. It is recommended to follow the DAFM Minimum Specification for farm fencing S148 & Accepted Fencing Post Suppliers Specification S148A.
8. Fencing posts must consist of timber or alternative metal/PVC posts, it is not permitted to attach wire fencing directly to trees, use of pigtails or temporary posts not allowed.
9. Sheep fence requires sheep mesh topped with a single strand of wire. The lowest line of the sheep wire mesh must be 100mm above ground level to allow adequate clearance for wildlife.
10. Extensive removal of existing vegetation to facilitate fencing is contrary to the objective of this measure and therefore cannot be allowed within the Project.
11. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

A1 Permanent single strand electric fence: €2.90/m

A2 Sheep mesh and 1 strand of wire: €8.25/m

A3 Sheep mesh and 1 strand of wire: €12/m (mountain rate)

A4 Barbed wire fence: €5.30/m

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A5 Solar Powered Electric Fencer

If a mains-powered electric fence supply is unavailable, farmers may apply to the Water EIP for a solar-powered electric fencer. These provide a flexible and cost-effective solution for powering long sections of electric fencing. To be eligible for payment, applications must be made in conjunction with other relevant fencing measures.

Requirements

1. Fence must be purchased new with certification to ensure that the product conforms with health, safety, and environmental protection standards.
2. The initial location of the temporary electric fence must be identified and marked on the map.
3. The minimum standard is 0.4 Joule of stored energy.
4. The size of the solar-powered electric fencer should be based on the length of the fence to be electrified.
5. Once purchased, the unit must be retained for the remainder of the Waters of LIFE contract.
6. Where a Solar Electric Fence Unit has been grant aided under TAMS or any other National/EU funded Agri-environment or Capital investment Scheme from 01 January 2018, no further funding will be provided by Waters of LIFE.
7. To ensure adequate operation they should not be placed in the shade.
8. Must not be used for any other purpose.
9. Must indicate where it will be stored while not in use.

10. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€660/unit

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)
- Evidence of storage location (when unit not in use)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A6, A7 Gateway Measures

Gateways located close to surface water can deliver sediment and pollutants to these areas, particularly frequently used gateways. Redesigning the paddock or the gateway can have a positive impact on water quality. Gates may also be used to provide access to wide (>5m) riverside habitats for maintenance.

Requirements
1. All gateways must be fit for purpose and the range of animals intended to exclude.
2. Re-route the existing trackways associated with the old gateway and make good the disused sections.
3. Use new hanging and shutting posts in the new gateway.
4. Block up the old gateway using materials that match the character of the rest of the boundary.
5. Temporary storage of stone or excavated material must be suitably located away from any watercourse or drain.
6. All new gateways crossing surface water must be at least 5m from the edge of the water.
7. Where electric fencing is already in place or is being installed, the electric fence gate alternative measure (A7) should be considered.
8. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

A6 Gateway Measure: €376/unit

A7 Two Strainers with Gate Spring (electric fence gate alternative): €66/unit

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A8 Water Bars

Runoff from impermeable surfaces such as farm roadways must be managed to prevent flows into rivers and streams. Retrofitting water bars on existing farm roadways can mitigate runoff pathways by diverting water onto areas of higher permeability such as fields and verges or into sediment traps. Cross drains typically sit below the surface of the road, where as water bars sit above the surface.

Requirements

1. Water bars cannot direct run-off directly into anything that can convey water, surface drains, streams, watercourses, etc.
2. Use crushed stone/pencil, or reinforced concrete bars to create a smooth durable structure to direct water off the roadway.
3. Extend the ramp into the adjoining field to prevent run-off from entering back onto the roadway.
4. Structure must be fit for purpose.
5. Place the ramp at a slight angle (guidance 30 degrees) to the direction of the roadway to help divert run-off off the roadway.
6. If using crushed stone/pencil, compact it well.
7. If using crushed stone/pencil to create ramps, construct ideally in winter months when the road is in less use to allow for time to settle.
8. In longer stretches of roadway more than one water bar may be necessary.
9. For high-traffic areas a low and wide ramp is recommended. A minimum height of 15 cm and a width of 1 m may suit these locations.
10. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€213/unit.

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

3. Pathway Interception Measures

A9 Vegetated Bunded Drain

Ditches/drains represent a major pathway for the transport of water, sediment, and nutrients from the fields to receiving watercourses. There are opportunities to reduce the impact of these pathways by increasing sedimentation settlement processes and encouraging the growth of plants within the ditch/drain. Vegetated Bunded Drains help to maximise the retention of sediments and nutrients within ditches/drains and to create opportunities for infiltration of water into soils.

Requirements

1. Vegetated bunded drains are not suitable for streams or other permanent watercourses, or drains with a gravel bed. Inlands Fisheries Ireland (IFI) consider these drains as having potential for fish life. If in doubt, check with the Waters of LIFE project team.
2. This measure is not suitable in hilly areas where there is a high risk of flash flooding or in drains with high flow volumes.
3. Not suitable in free-draining areas unless the floor is sealed with impermeable clay.
4. A suitable ditch or drain, dry or wet must have a slope of less than 5%.
5. The best time to carry out work on farm drains is between July and September to avoid any unnecessary soil damage, sediment loss or disturbance to wildlife. Also bear in mind bird nesting season restrictions.
6. A sediment plug e.g. bale of straw/rushes, should be inserted downstream of the works during the construction phase to capture any sediment that becomes mobilised as result of the installation works.
7. Where suitable, excavate material from the base of the drain to create a sump within the drain approx. 60 cm (2 ft) deep. Use this material to create a bund downslope from the sump. Where no sump is created, the earth used to create the bund must be sourced from within the farm. If possible, the bund should be at least 90 cm (3 ft) wide. Ideally, widen the channel just up-slope from the bund to at least twice the original width. The slope of the bank should be re-profiled if the bank is steep.
8. The bunds cannot be used as a crossing point for livestock or machinery.
9. The number of bunds required will be site specific. The distance between bunds is dependent on the slope of the drain.
10. Introduce native wetland plants (Appendix II) from elsewhere on the farm or from a specialist supplier. Plant these at the waterline.
11. Removal of sediment & associated phosphorous should take place as necessary. Ongoing management is required to avoid these drains becoming sources of nutrients, rather than sinks.

12. Permission required prior to any work if within or close to any protected area, Natura 2000 site or Archaeological site.
13. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

€1,000/unit

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A10 Earth Bund

An earthen bund (bank) when properly positioned to intercept overland flow pathways, can temporarily pond field runoff water and sediments, targeting surface runoff or diverting clean rainwater away from farmyards. These features can trap significant amounts of sediment, including valuable topsoil. Unlike more permanent wetlands, earthen bunds have minimal impact on farming productivity, as they drain quickly after a storm.

Requirements

1. Earthen Bunds should be 0.5m high and will be paid on a per linear m basis
2. To ensure structural integrity the base of the bund should be 1.2 m wide at ground level and 0.5 m wide at the crest. Allow an extra 25% material for settlement of soil.
3. This measure is not suitable on known floodplains or within 20 m of EPA river line.
4. Ensure suitable compaction during the formation of the bank.
5. Typically, but not mandatory, a pipe is placed through the bund to aid with draining. The pipe can be raised to allow some water retention for longer periods (which allows more sediment to settle and can increase recharge into the ground).
6. The bank side slope gradient should be as shallow as possible to fit into the landscape, especially on the downslope side which could be eroded if it overtops.

7. The vegetated sods (turves) should be removed and left aside prior to construction and then replace on the earth bund to allow re-vegetation as soon as possible.
8. To be constructed from soil sourced on the farm, usually taken from directly up-slope of the earth bund.
9. Recommended to remove any silt/sediment that builds up over time.
10. Recommended if grass sods are not sufficient to cover the bund, to sow grass seed on the exposed earth surface to reduce the likelihood of erosion.
11. Permission is required prior to any work if within or close to any protected area, Natura 2000 site or Archaeological site.
12. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€12/m

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A11 Sediment trap

A sediment trap is a shallow basin with a slight slope on its base. It is typically used to intercept runoff from farm roadways travelled by livestock or machinery, allowing sediment or heavier materials to settle before being discharged to grassland, away from watercourses. The size of the sediment trap can vary depending on the estimated volume of runoff from the farm road that needs to be contained for enough time to allow sediment to settle out of suspension

Requirements
1. Site sediment traps in areas where there is a risk of sediment runoff into surface water.
2. The outlet from sediment traps cannot be directly connected to the drainage/river network. The outflow must be overland to maximise potential infiltration/settling.
3. Siting of sediment traps will need to account for the risk to groundwater. In such cases, keep the base of the sediment trap as high in the ground as possible, while still providing sufficient storage depth to catch and hold water.

Any soil used to seal the base of the sediment trap must be sourced from within the farm gate.

4. As a guideline the sediment trap should be 10-20% of the runoff area. Design and sizing of the sediment traps will be site specific. Suggested dimensions (internal base area) 4 m x 10 m x 1 m deep, with the inlet and outlet at opposite ends to maximise the flow-path through the basin. Works should be undertaken during the growing season & dry weather.
5. Remove sediment build-up in chambers as needed and do not spread contents within 20 m of surface water.
6. Create gently sloping banks (guidance 10 degrees) using soil from excavation to promote vegetation.
7. Fencing of sediment traps, where required, can be applied for separately under Action 1. Allow access points for management.
8. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€120/unit

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A12 Hedgerow Establishment (Cross Slope on Earth Bund)

Hedgerows are very effective in reducing the risk of land-spread material moving over sloped ground during heavy weather or cloud bursts, if planted across the slope in an overland flow pathway. The earthen mound increases water interception and storage at the base of the hedge.

Advisors should recommend this measure in the dominant flow pathways, i.e. the high and very high flow pathways as indicated on the EPA PIP P Flow Pathway Maps and verified by an advisor and farmer on the ground. The earthen mound should be sufficiently long to intercept and slow the overland flow. Be mindful when applying for this measure that the flow won't be diverted elsewhere to create a new flow pathway.`

Requirements

1. This measure cannot be located within an ACRES area-based action to avoid dual funding risks.
2. Identify and agree on locations in collaboration with the farmer, using tools such as the EPA PIP Maps, particularly on sloped ground or in areas like large open fields where significant overland flow occurs during wet weather.
3. Determine the most suitable native hedgerow species for the area by observing which species are thriving locally. For example, whitethorn and holly do not tolerate very wet soils, and whitethorn is not well-suited for high elevations. Blackthorn, in contrast, thrives better in heavy soils and on coastal, exposed sites. A list of native hedgerow species is given in Appendix III.
4. Plants must be of Irish Origin or Irish Provenance and purchased from DAFM registered professional operators. All plants must have accompanying plant passports.
5. To establish a mound, furrow or break the ground to loosen the soil, then build a low earthen mound at the base. The height of the mound will vary depending on the location, but it should generally be around 0.3 m high (with heights over 0.15 m still offering benefits), 1 m wide at the base, and 0.4 m wide at the crest. The slope of the bank should be as shallow as possible to blend into the landscape, especially on the downslope side, which could be prone to erosion if overtopped. Allow an additional 25% of material to account for soil settlement. Ensure proper compaction during the formation of the bank. Position the hedge just off the crest of the bank on the downslope side to prevent the trees from drying out. (Source: The Natural Flood Management Manual).
6. Plant whips in a double staggered row, 1ft between the whips and 1 ft between the rows (minimum 5 plants p/m).
7. The use of pesticides or herbicides is not permitted within 1.5 m of the hedge after planting, although spot treatment of noxious weeds is allowed. Biodegradable plastic can be used to suppress grass growth. If rabbits are an issue, consider using tree guards (preferably biodegradable) or a low electric fence for protection.
8. Failed or dead plants must be replaced during the following planting season.
9. The applicant must have control of and access to both sides of the new hedgerow to ensure proper maintenance.
10. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

€12.60/m

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A13 Grassland Buffer Cross-slope

Unfertilized mature grassland strips can help protect water quality from nutrient and sediment run-off by creating buffers that intercept nutrients and sediment. A grassland flow buffer is ideally placed along an existing wire fence further up a slope from surface waters in an area prone to runoff and erosion.

Requirements

1. This measure cannot be located within an ACRES area-based action to avoid dual funding risks.
1. This action is not suitable on species-rich grassland.
2. A grass strip should be located to intercept a flow pathway.
3. Chemical or organic fertiliser or lime is not permitted to be applied in the field margin.
4. A grass strip should be 3 m wide and a minimum continuous length of 10 m.
5. These areas must be fully vegetated with typical grassland species. No existing scrub or trees should be removed to create these areas.
6. These areas cannot be used as farm tracks and must not be located beside an existing adequately functioning buffer (hedgerow, earth mound etc.).
7. A grass strip should be stock-proof, with an access point for management. Permanent fencing measures can be applied for on one side only under Action 1.
8. Pesticides and herbicides are not permitted to be applied, except for the spot treatment of noxious/invasive weeds. In the second year after the grass buffer is created, you must cut the buffer between September and December. Alternatively, buffers may be managed by grazing, but this can only take place during the month of September and ensure that no poaching occurs.
9. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

€5.45/m

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A14 Spatially targeted riparian buffer zones

A spatially targeted riparian buffer zone is an area left uncultivated at flow delivery points adjoining surface water. They help to intercept sediment and nutrients from soil surfaces after they have been mobilised. These buffers are suited for mitigating overland flow pathways with point discharge to the drainage network, rather than sheet flow discharge. Linear riparian buffers are more suited to mitigating sheet flow discharges to the drainage network. Linear riparian buffers of up to 20 m can be installed and will be scored and paid for using the Riverside Habitat Scorecard. Spatially targeted buffers will be of various shapes and sizes. The sizing of the buffers will need to take into account the size of the flow pathway relative to the contributing upslope area.

It should be noted that adequate source control measures must be implemented on each farm to avoid riparian buffers becoming overloaded with nutrients. Riparian buffers are part of a wider catchment management plan to reduce overall loads.

The advisor will use the Runoff Risk Assessment tool (and the accompanying datasets) to identify focused flow delivery zones and points. These will need to be validated at the field scale. This process helps pinpoint pathways and areas in the landscape with the highest risk of phosphorous and sediment loss to water bodies.

Requirements

1. This measure can be sited within ACRES Low Input Permanent Pasture, Extensively Grazed Parcels and/or Management of Intensive Grassland next to a Watercourse at the reduced rates outlined below.
2. No organic/inorganic manures or lime are allowed in the spatially targeted riparian buffer zone.
3. No grazing allowed within the spatially targeted riparian buffer zone.
4. Grassland spatially targeted riparian buffer zones must be fenced off. Tillage buffer zones can be unfenced where no livestock are present.
5. It is strongly recommended to plant Spatially Targeted Buffer areas with native trees in conjunction with the tree planting measure. Additional funding is available to support this planting under Action 15.

6. Spatially Targeted Riparian Buffer Zones are irregular shapes and are site-specific. The shape & size of a spatially targeted buffer will be dictated by the overland flow pathway as per the EPA PIP maps, or seen on the ground.
7. Where required, maintenance of spatially targeted buffer zones should be carried out to ensure that they continue to function effectively. This may require periodic cutting/strimming and removal of vegetation as required (observe all legal requirements). Leave a gap handle or install a suitable gate to allow access for maintenance. Where gate access is required, this can be funded under Action 6 or 7.
8. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€0.38/m^2 (min area: 100m^2 max area: 2,000m^2)

Applicant may apply for a fencing action along with this action if required.

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A15 Tree planting

Planting trees on farms can help recover leached nutrients, stabilise river banks, increase soil infiltration rates, slow overland flow of water, and increase water retention. Where there is a peatland, this action is restricted to planted along watercourses to help stabilise riverbanks and prevent erosion or in small glens or gullies along upland streams.

In some circumstances Forests for Water (FT2) or the Native Tree Areas Scheme (NTA 1 or NTA 2) under the current Forestry Programme 2023-2027 may be a more suitable option. The Waters of LIFE have a Registered Forester who is available to provide further advice and support applications for funding via these schemes. Further information available using the links below or contact your Waters of LIFE Catchment Scientists directly.

https://www.teagasc.ie/media/website/crops/forestry/grants/Native-Tree-Area-Scheme.pdf

https://www.teagasc.ie/crops/forestry/grants/overview-of-forest-establishment-grant-rates/

Requirements

1. This action can be applied for in conjunction with a Spatially Targeted Buffers action (Action 14) and to intercept flow paths identified during Runoff Risk Assessment.
2. Applicants can also apply for this measure where planting of trees along surface waters has potential to lead to a water quality benefit and to improve scores on riverside habitat scorecard
3. The planting of trees under this measure does not contribute to the planting of trees as part of an Eco scheme for Pillar 1 payments.
4. Plants must be of Irish Origin or Irish Provenance and purchased from DAFM registered professional operators. All plants must have accompanying plant passports. Refer to the list of approved trees provided in Appendix IV.
5. Tree species should be suitable for the local soil type (Appendix V).
6. Plant a minimum of 3 species from the approved list of trees to increase diversity and rooting depth. Minimum spacing between trees of 3 m.
7. Min height of trees at planting is 60 cm. Tree guards/shelters required to ensure good establishment.
8. Failed trees must be replaced during next dormant season.
9. Do not remove existing trees, scrub or hedgerow to facilitate the tree planting action.
10. The area must be stock-proof, fencing options can be applied for under Action 1.
11. Access for management must be provided.

12. No fence line is permitted between the water feature and the strip of trees.
13. No grazing of animals.
14. Grass and competing vegetation must be controlled around the trees annually.
15. Site disturbance and inputs must be minimised. Trees should be pit planted in a vegetation free area (no heavy machinery and no drainage allowed).
16. Species selection must reflect the most appropriate native woodland type for the site (based on site, soil, drainage, elevation, etc.). For further details, please refer to DAFM's Forest Standards Manual/Native Forest Framework and the Teagasc website.
17. In arterial drained catchments, the OPW require certain banks to remain vegetation free. Consult with OPW prior to planting in these catchments. Similarly, prior consultation is required with NPWS for planting within a Natura 2000 site (action requiring consent).
18. Avoid potential tunnelling along rivers where both banks are densely planted with trees.
19. Where possible, plant trees on the southern bank of the waterbody to provide shade on the water as a climate change benefit.
20. Planting trees near salmonid rivers require consultation with Inland Fisheries Ireland and additional measures to reduce sedimentation to rivers, particularly during spawning seasons (November/December) and when eggs are in gravels (January-February), to protect these sensitive rivers.
21. Do not plant in the vicinity of overhead wires (see Appendix VI), 20 m of railway lines and with 60 m of a neighbouring dwelling house.
22. Do not remove existing trees, scrub or hedgerow to facilitate the tree planting action.
23. The planted area should be managed as follows:
    a. The area must be stock-proof, fencing options can be applied for.
    b. Provide access for management.
    c. No fence line is permitted between the water feature and the strip of trees.
    d. No grazing of animals.
    e. Grass and competing vegetation must be controlled around the trees annually.
24. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Additional Information on Tree Planting:

Forest land is defined as land under trees with a minimum area of 0.1 ha and tree crown cover of more than 20% of the total area (or the potential to achieve this cover at maturity). To remain in compliance with the Amendment of Forestry Act 2014 under Animal Health and Welfare and Forestry (Miscellaneous Provisions Act 2022), which facilitates the planting of native trees in areas not less than 0.1 ha and not greater than 1 ha without an afforestation licence, the total cumulative area of forest that can be planted on a holding is limited to 1 ha. This would apply to the combination of all tree planting actions that could be considered forests depending on planting layout and density i.e. planting trees in riparian buffer zones.

Payment Rate:

€16/whip

Where deer may be a problem, additional funding may be made available for deer proof tree guards.

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)
- Evidence of tree origin

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A16 Willow Filter beds

Willow beds are areas of densely planted willow trees. They help to slow the flow of water, allow sediment to settle out and any traces of dissolved nutrients to be taken up by growing vegetation. They act as a filter and allow for polishing of water from farm roadways and clean concreted yard areas.

All farms must adhere to the most current Nitrates Regulations regarding the storage of silage effluent, dairy washings, slurry and FYM. This measure is not to address any issues that are currently a GAP regulation requirement.

Requirements

1. Willow filter beds are a suitable measure for where small-scale wetland ponds may not be so effective due to the high infiltration rates; however, willow filter beds may be used in any circumstances where there is sufficient soil depth to get them established.
2. Willow filter beds are not suitable for streams or other permanent watercourses or drains with a gravel bed.

3. Willow filter beds can be sited in existing man-made farm drains that do not support or have the capacity to support fish life. If in any doubt contact IFI for clarification.
4. Willow filter beds can also be sited on green field sites. Ensure sufficient soil depth to establish willow cuttings and always consider suitability of location in terms of vulnerable aquifers, proximity to Karst Areas, proximity to waterways and tall hedgerows; soil type, percolation rate and depth; topography of the land and other similar factors.
5. The size of the willow filter bed should allow an internal effective area of ≥10% of the runoff area, whether from farm roads or clean yard areas.
6. Where possible, the willow filter bed should be long and thin but where more width is available or where awkward corners are being used, the shape may be amended. In these circumstances increase the size to 15% of the runoff area if possible, to compensate for reduced evapotranspiration effectiveness.
7. A wetland planted silt trap (10 m x 4-8 m wide) for fines should be installed, where appropriate, at the head of the willow bed, to protect the willow bed from silt accumulation over time. This includes a sump/scrape at the head of the wetland planted silt trap.
8. Any build-up of sediment in the initial planted silt trap should be removed periodically and as required to avoid the willow bed becoming a source of nutrients rather than a sink.
9. Site gradient must be considered in terms of the required number of bunds and the required number of willow filter beds. On sloping sites, place bunds at intervals to enable a series of basins (each level within their own bunded area) to be built with minimum of earth movement.
10. Bund height of 0.5 m but may be up to 1 m in certain scenarios. The higher bund will allow for more storage of water.
11. Ensure bunds are well compacted and allowed to vegetate.
12. Ensure that the bed of the basins used are level and that the embankments are not less than 300 mm high around the perimeter of each basin.
13. Ensure water flowing through the willow bed is dispersed evenly and is not making a single path through the willow bed. During storm events the water should sit to a depth of 10-30 cm across the entire bed, and then draw down afterwards to soil level.
14. Densely plant the willow filter bed with Sallix spp. Cuttings should be responsibly sourced from existing suitable willow trees locally. Ideally, stakes should be no more than 30 cm long and harvested from last year's growth.
15. Where plants are purchased they must have accompanying plant passports and from a DAFM registered professional operator.

16. Plant 6 rows of willows at 0.8 m – 1 m (80-100 cm) spacing between rows and 0.5 m (50 cm) spacing within each row. 2,400 willow cuttings required for an area 4-8 m x 200 m. 1,200 willow cuttings required for an area 4-8 m x 100m.
17. The willow trees should be coppiced on a 3-5 yr rotational basis, depending on inflow, to ensure active growth and uptake of any potential traces of nutrients. Use a circular saw or chainsaw for coppicing & remove cuttings. Cut willow may be chipped for use on the farm, cut for firewood if large enough and dried for 2 years before use, or piled up as a wildlife haven at a distance of ≥10m from the willow bed or any waterway.
18. For health and safety reasons, it is recommended to fence off the area. Funding for this can be applied for under Action 1.
19. Note minor adjustments may be required during installation depending on specific site conditions.
20. Permission required prior to any work if within or close to any protected area, Natura 2000 site or Archaeological site.
21. Please note site location could impact the effectiveness of the willow filter bed measure. The department guidance S133 provides some details on Site Restrictions at the following link:

    https://assets.gov.ie/95195/3f86e4a7-9a32-462c-8d46-9ab5298fa34c.pdf
22. For further details, see Appendix VII.
23. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€34/m.

Applicant must apply for fencing of the Willow Filter Bed separately through the fencing actions.

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A17 Small Scale Wetland Pond

Ponds and wetlands serve as diverse habitats for plants, insects, birds, mammals, and amphibians, while also acting as natural water filters. They slow water flow, deposit particles, and promote microbial degradation of pollutants in environments with high organic matter. This measure aims to create new wetlands and/or ponds to capture sediment, phosphorus (P), and nitrogen (N) losses along flow pathways to waters.

It should be noted that ponds are not the same as constructed wetlands i.e. they do not require planning permission or a discharge licence. They are not designed to deal with any substance that must be collected under the GAP regulations i.e. silage effluent, dairy washings, slurry etc.

Requirements

1. Small Scale Wetland Ponds must be no greater than 0.2 ha in size. If larger than this, they will become ineligible features under BISS (Basic Income Support for Sustainability Scheme).
2. Small scale wetland ponds can be applied for in ACRES measures Low Input Grassland, Extensively Grazed Pasture and Management of Intensive Grassland Next to a Watercourse where the reduced ACRES rate is applied for (see below).
3. Do not locate in existing areas of ecological benefit or in flood plains.
4. Ponds should be fenced off from livestock. Leave a gap handle to allow for maintenance. Fencing can be applied for under Action 1.
5. Ponds and wetlands are most suitable on impermeable soils where infiltration is limited. Where infiltration is insufficient to hold water permanently, consider a grass margin, willow bed or tree planting instead.
6. Wetlands should be designed to remain permanently wet and allowed to naturally revegetate with native wetland species such as reeds, bulrush, and flag iris (see Appendix II). Where possible, collect the seed heads of common reed, bulrush, etc., and use them to encourage new growth. Edges must have a gently sloping bank, a guide of 50 cm deep and soil must not be banked around the perimeter.
7. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

Payment rate is based on area as follows:

1-150m^2: €5.44m^2

151-400m^2: €4.76m^2

401-600m^2: €2.38m^2

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

4. Waters Crossings

A18 Culverts

The movement of animals, people and vehicles across drains damages banks and aquatic vegetation. This increases the risk of soil particles and plant nutrients entering the drain and the potential for these materials to be transported to a stream or river. Defecation from animals also increases pathogen loading in rivers, which is particularly important for the quality of our bathing and drinking waters. The installation of culverts is only permitted in field drains, not rivers or streams identified as a blue line on the OSI 1:5000 maps. It is the responsibility of the farmer to ensure that all relevant legal requirements are adhered to and relevant authorities consulted prior to any works being carried out.

Requirements

1. Select a suitable drain i.e. one that does not have a gravel bed.
2. Select a suitable location within the drain to avoid any overland flow pathways or critical source areas (CSAs).
3. Ensure crossing design does not impede high flows (consider storm events). Culverts are suitable for the safe passage of livestock/vehicles across land drains in small catchments and gentle slopes.
4. A box culvert is preferable to a piped (circular) culvert.
5. The movement of livestock should be controlled, as the culvert could become a choke point where frequent passage of animals leads to poaching near the drain.
6. Works should be carried out during the July to September time period.
7. IFI should be contacted regarding design and works methodology would need to be agreed between the contractor and the relevant Fisheries Environmental Officer in advance of the works. See guidance manuals at the following link:

   https://www.fisheriesireland.ie/sites/default/files/migrated/docman/2016/Guidelines%20Report%202016.pdf).
8. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

€800/unit

Validation:

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)
- Evidence (copies) of required permissions/licences

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A19 River and Stream Crossing/Bridges

River crossings by animals and farm vehicles can introduce sediment and pollutants into the river, especially when the crossing is part of a farm roadway. Replacing such crossings with a properly designed bridge can positively impact the river. The bridge should be fit for its intended purpose and constructed with materials that will not cause pollution (e.g., timber, pre-cast concrete, steel). It should also be appropriately sized for its use, such as for cattle or quad crossings. Clear-span bridges are preferred, as they eliminate the potential for interference with the riverbed.

Requirements

1. It is the responsibility of the farmer to ensure that all relevant legal requirements are adhered to & relevant authorities are consulted with prior to any works being carried out.
2. Planning permission and an Appropriate Assessment may be required for this measure. Please contact your local authority to ascertain what permissions are required.
3. Select a suitable location on the watercourse to avoid any overland flow pathways or CSAs.
4. Ensure bridge does not impede high flows (consider storm events).
5. IFI must be contacted regarding bridge design and works methodology.
6. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

50% of cost of bridge installation up to a max of €7,500 (subject to review)

Validation

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)
- Evidence (copies) of required permissions/licences

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

5. Livestock Water Provision

A20 Solar Pumps

Having an appropriate water supply, storage and provisioning system will prevent the need for livestock to access watercourses for drinking water. This will reduce damage to the channel banks and improve water quality. Water troughs provide alternative drinking points to natural water sources which can become damaged if overused by stock. Solar pumps can be a sustainable cost-effective method of supplying water to water storage and provisioning systems (only applicable where grassland stocking rate <170kgN/ha).

Requirements

1. To be eligible for this measure there must be a clear requirement to provide an alternative drinking water supply source for livestock.
2. Ensure there is no risk of double funding with TAMS.
3. The pump should abstract water from a watercourse or waterbody with an adequate supply. Over-abstraction can lead to environmental issues, poor quality water supply and pump failure.
4. Install a solar-powered fixed or mobile pump that is capable of pumping water from a safe supply to livestock water troughs and/or a water storage tank.
5. The solar pump must be purchased new with the system including a pump, solar panels, battery back-up, float switch and hose.
6. The pump should be suitably protected from livestock or wildlife damage.
7. The intake pipe from the stream should have a protective filter/gauze to prevent blockage of pumps.
8. It must be stored on the farm holding when not in use.
9. Where more than one solar pump is being applied for this will only be funded where there is a clear need for the additional equipment, i.e. it is not possible to provide sufficient water to livestock or it is not possible to connect a supply to a second location.
10. Where there is a requirement for several solar pumps across different holdings within close proximity, the advisor shall endeavour to facilitate farmers to come together to install the minimum number of pumps required to service the area.
11. This action can be matched with Action 24 to cover the additional costs of piping and fitting.
12. Solar pumps must be in situ where applicable and fully functional prior to payment being issued by the project team.
13. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€2,500/unit (min. 1, max. 2)

Validation
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s) of pump and closed-off drinking/animal access points
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A21 Pasture Pumps / Hydraulic Ram Pump

Pasture pumps or nose pumps provide alternative drinking points for livestock thus reducing the need for livestock access to watercourses or waterbodies.

This measure is only applicable to those with a Grassland Stocking Rate <170kgs/ha.

Requirements
1. To be eligible to apply for this measure there must be a clear requirement to provide an alternative drinking water supply source to livestock.
2. The pasture pump must be located at least 20 m from surface waters including open drains.
3. The intake pipe from the stream should have a protective filter/gauze to prevent blockage of pumps.
4. The pump should abstract water from a watercourse or waterbody with an adequate supply. Over-abstraction from a watercourse can lead to environmental issues, poor quality water supply, and pump failure.
5. The pasture pump must be purchased new and installed in accordance with the manufacturer's guidelines.
6. Install a fully functioning pasture pump (i.e., a pump operated by the action of the animal accessing the water supply).
7. Where a pasture pump has been grant aided under TAMS or any other National/EU funded Agri-environment or Capital investment Scheme from 01 January 2018, no further funding will be provided by Waters of LIFE.
8. Where more than one pasture pump is being applied for this will only be funded where there is a clear need for the additional equipment, i.e. it is not possible to provide sufficient water to livestock.

9. This action can be matched with Action 24 to cover additional costs of piping and fitting.
10. Pasture pumps must be fixed in situ where applicable and fully functional prior to payment being issued by the project team.
11. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

Actual cost up to maximum of €400/unit.

Validation

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s) of pump and closed-off drinking/animal access points
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A22 Water Troughs

Water troughs provide alternative drinking points to natural water sources which can become damaged if overused by stock.

This measure is only applicable to those with a Grassland Stocking Rate <170kgs/ha.

Requirements

1. To be eligible to apply for this measure there must be a clear requirement to provide an alternative drinking water supply source to livestock.
2. All troughs must be purchased new.
3. Water troughs should be located at least 20 m from surface waters or at the centre point of the field.
4. Troughs should be located away from wet or waterlogged ground which is easily poached or eroded.
5. Water troughs must not be located within sensitive habitats (e.g., deep peat, sphagnum lawns or mature heather) to ensure that the trough location doesn't result in additional trafficking in these areas.
6. Water troughs must be fully functional and connected to a piped supply or an adequate rainwater harvesting system. It is permitted to turn off the supply of water when animals are not present in the field.

7. Multiple troughs may be installed in a single field to increase water storage capacity and to facilitate rotational grazing systems.
8. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
Actual cost up to a maximum of €300/unit.

Validation:
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s) of trough and closed-off drinking/animal access points
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A23 Water supply piping and fittings

This measure is intended to cover the cost of necessary pipping and fittings to associated with the installation of pasture pumps and solar powered pumps with water troughs.

This measure is only applicable to those with a Grassland Stocking Rate <170kgs/ha.

Requirements
1. This action cannot be used in fields where livestock have access to surface waters.
2. This Action can be applied in conjunction with the water troughs, solar and pasture pump measures.
3. This is to help cover the cost of piping and fittings to farmers and should match what has been applied for in solar and/or pasture pump measure.
4. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:
€150/unit: to correspond with what is applied for in solar or pasture pump and water trough measures only.

Validation
Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

6. Invasive Species Control

A24 Non-native Invasive Species

Non-native invasive species such as Himalayan (Indian) Balsam, Japanese Knotweed and Giant Hogweed can spread rapidly along river corridors, out-competing native vegetation. These species die back in winter leaving large areas of bare soil which can easily erode and cause siltation of watercourses. Removing these species and allowing native vegetation to naturally recolonise these areas can improve both water quality and biodiversity.

Requirements

1. These actions can be identified through the habitat assessment.
2. Removal of invasive species requires specialist training. As a result, these works will generally be commissioned by the Waters of LIFE project team.
3. However, training will be offered through the project and landowners who have undergone this training may wish to carry out this work themselves.
4. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

In general, these works will be commissioned and paid for directly by Waters of LIFE. The landowner will benefit through increased habitat scores and higher associated payments.

Where a trained landowner wishes to carry out these works themselves, payment will be agreed on a case by case basis depending on the significance and type of infestation.

Validation

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s) showing clearly the area before and after treatment

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A25 Conifer removal

Conifers are cone-bearing trees that are generally evergreen. Common non-native species in the west of Ireland include Sitka Spruce and Lodgepole Pine. In the past, many peatland sites were planted with conifers as it was seen as an economic use of agriculturally poor land. This, however, resulted in significant ecological impacts

leading to increased siltation, nutrient inputs, and alteration of water flow in the catchment.

Under suitable conditions, non-native conifers can spread rapidly from adjacent plantations across peatland plots. This reduces the agricultural and ecological value of the peatland. The specific method for removal will depend on the site conditions, size and maturity of the conifers.

On private peatlands, the presence of self-sown conifers will reduce the habitat score. Conifer removal can therefore be recommended through the habitat assessment if the presence of conifers is identified as an issue. The presence of conifers on commonage should be referred directly to the Waters of LIFE project team for follow-up.

Requirements

1. Conifers should be hand-cut.
2. Depending on the nature/sensitivity of the ground conditions, the Waters of LIFE team may require conifers to be removed by hand or left on site (fell to waste).
3. Depending on the age of the conifers, a felling licence may be required. The Waters of LIFE project team will provide advice and assistance on the process of applying for a licence should it be required.
4. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

The payment rates for conifer removal will be assessed on a case by case basis. The level of payment will be dependent on the location of the trees, their number, size and maturity and method of removal. The landowner will also benefit through increased habitat score and higher associated payments.

Where conifers are self-sown on commonage, contact the Waters of LIFE project team.

Validation

- To be agreed with the Waters of LIFE project team on a case by case basis.

7. Other Supporting Actions

A26 Water Table Management on Peat Soils

Drained peat soils decompose over time, reducing the amount of soil available for farming and releasing carbon into the atmosphere. They can also be a significant source of sediment in water courses. Therefore, raising the water table in such soils not only protects the environment, it also protects an important farm asset: the soil.

Through the FarmPEAT project it was demonstrated that bringing the water table to within 400 mm of the ground surface confers significant environmental benefits while not impacting on the farm production.

This action can be recommended to either increase habitat score and/or to reduce sediment loss/runoff risk.

Requirements

1. This action can be recommended by the farm advisor either during the Runoff Risk Assessment or during the habitat scoring.
2. Once recommended a member of the Waters of LIFE project team will carry out a site assessment and provide site specific recommendations on the type and number of dams that should be used.
3. The Waters of LIFE project team will commission a contractor to carry out the works.
4. Appendix I outlines areas where restrictions may be applied to this action due to the conservation objectives of designated sites.

Payment Rate:

The Waters of LIFE will pay for these works directly. The benefit to the landowner will be in increased habitat scores and related results-based payments.

Validation

- N/A

A27 Contractor Mobilisation Fee

The fee is payable to facilitate the use of an excavator on a farm for putting in place the following measures:

- Water Bars
- Vegetated Bunded Drain
- Earth Bund
- Sediment Trap
- Hedgerow Establishment cross slope on low earth bund
- Willow Beds
- Small Scale Wetland Pond

- Culvert

Payment Rate:

A one-time payment of €300 covers the cost of transporting the excavator to the farm. It will be automatically applied where one or more of the following actions have been approved: 8, 9, 10, 11, 12, 16, 17 and 18.

Only one contractor mobilisation fee will be paid per year.

Validation

Once an approved action is implemented, the following information should be uploaded via the Waters of LIFE app:

- Geotagged photo(s)
- Proof of costs (invoices/receipts)

The information submitted will be assessed by the Water of LIFE team to ensure the implemented action aligns with the details set out in the Water Quality Farm Works Plan and this specification. Payment for the action will be processed following successful validation, or further evidence may be requested.

A28 Bespoke Measures

Farmers can apply for funding for bespoke measures which provide a water quality benefit. Individual or groups of farmers may have innovative ideas for appropriate actions to improve water quality, participants and their advisors are encouraged to discuss these with Waters of LIFE project team. Farmers can apply for funding for Bespoke Actions on a case by case basis.

Requirements

To receive funding the measure must demonstrate that:

1. It will provide a water quality benefit within the particular catchment area.
2. Bespoke Measures must be identified as part of the Runoff Risk Assessment or plot scoring to be considered for funding by the Project Team.
3. Have detailed costings of the proposed measure.
4. Provide guideline specifications as to how the measure will be installed & implemented.
5. Proof of compliance with legal obligations.
6. Potential restrictions due to the conservation objectives of designated sites will be assessed by the project team for bespoke actions, see Appendix I.

Payment

To be assessed and agreed on a case by case basis.

Validation:

- To be agreed with the Waters of LIFE project team on a case by case basis.

A29 Host Farmer Payment

To facilitate outdoor farmer training courses, suitable farms will be needed to host the events. These farms will be approved by the Water of LIFE project team, and a

host farmer application form must be submitted. The selected farms will serve as demonstration sites for various mitigation measures, helping to disseminate knowledge to other Waters of LIFE participants.

Payment Rate:

A farmer that hosts a Waters of LIFE course or event will be paid €180 for the use of his/her premises for the course or the event. Host farmers can receive this payment up to a max of 5 times during the lifetime of the project.

Validation

- Course/Event Host Farm form signed by the Waters of LIFE and host farmer

Appendices

Appendix I: Supporting actions with restrictions that mitigate for potential impacts on the conservation objectives of designated sites.

Supporting Action	Action not permitted where there is the following restriction
Permanent Single Strand Electric	Areas used by Geese & Migratory Swans, Breeding Wader Field, Turloughs, Mineral Flushes, Where No Field Scorecard available
Sheep Fence	Permitted, Riparian not permitted in SPA/SAC. Areas used by Geese & Migratory Swans, Breeding Wader Field, Curlew Nest Site < 500 m, Otter SAC & Natural Watercourse < 10 m, Turloughs, Mineral Flushes, Where No Field Scorecard available
Sheep Fence Mountain Rate	Permitted, Riparian not permitted in SPA/SAC. Areas used by Geese & Migratory Swans, Breeding Wader Field, Curlew Nest Site < 500 m, Otter SAC & Natural Watercourse < 10 m, Turloughs, Mineral Flushes, Where No Field Scorecard available
Barb Wire Fence	Areas used by Geese & Migratory Swans, Breeding Wader Field, Curlew Nest Site < 500 m, Turloughs, Mineral Flushes, Where No Field Scorecard available
Solar Powered Electric Fencer	Turloughs, Mineral Flushes
Gateway Measures	Turloughs, Mineral Flushes, Area of Action > 1 Ha & in HH Red Zone or NATURA Site
Two strainers with gate spring (electric fence gate alternative)	Areas used by Geese & Migratory Swans, Breeding Wader Field, Turloughs, Mineral Flushes, Where No Field Scorecard available
Waters Bars	Turloughs, Mineral Flushes, Where No Field Scorecard available, Area of Action >1 Ha & in HH Red Zone or NATURA Site
Vegetated Bunded Drain	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses < 50 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Turloughs, Mineral Flushes, Where No Field Scorecard available, Area of Action >1 Ha & in HH Red Zone or NATURA Site
Earth Bund	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes, Where No Field Scorecard available

Supporting Action	Action not permitted where there is the following restriction
Sediment Trap	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes, Where No Field Scorecard available
Hedgerow Establishment- Cross Slop on Earth Bund	Areas used by Geese & Migratory Swans, Breeding Wader Field, Breeding Wader Hotspot 1 km^2, Curlew Nest Site < 500 m, Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Cutover Bog, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes
Grassland Buffer Cross-slope	Areas used by Geese & Migratory Swans, Breeding Wader Field, Breeding Wader Hotspot 1 km^2, Curlew Nest Site < 500 m, HH Roost & Scorecard consideration, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes
Spatially Targeted Riparian Buffer Zone	Areas used by Geese & Migratory Swans, Breeding Wader Field, Breeding Wader Hotspot 1 km^2, Curlew Nest Site < 500 m, HH Roost & Scorecard consideration, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes
Tree Planting	Areas used by Geese & Migratory Swans, Breeding Wader Field, Breeding Wader Hotspot 1 km^2, Curlew Nest Site < 500 m, HH Roost & Scorecard consideration, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes
Willow Beds	Areas used by Geese & Migratory Swans, Breeding Wader Field, Breeding Wader Hotspot 1 km^2, Curlew Nest Site < 500 m, HH Roost & Scorecard consideration, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes
Small Scale Wetland Pond	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes, Where No Field Scorecard available
Culvert	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses < 50 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Turloughs, Mineral Flushes, Where No Field Scorecard available, Area of Action >1 Ha & in HH Red Zone or NATURA Site

Supporting Action	Action not permitted where there is the following restriction
River, Stream Crossing/Bridge	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses < 50 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Turloughs, Mineral Flushes, Where No Field Scorecard available, Area of Action > 1 Ha & in HH Red Zone or NATURA Site
Solar Pump	Turloughs, Mineral Flushes, Where No Field Scorecard available
Pasture Pump	Natural watercourses or Drain < 6 m, FPM Catchment (portion upstream of populations) & Drain < 12 m, Mature Woodland, Turloughs, Mineral Flushes, Where No Field Scorecard available
Water Trough	Natural watercourses or Drain < 6 m, Mature Woodland, Turloughs, Mineral Flushes, Where No Field Scorecard available
Water supply piping and fittings	Natural watercourses or Drain < 6 m, FPM Catchment (portion upstream of populations) & Drain < 12 m, Mature Woodland, Breeding Wader Field, Curlew Nest Site < 500 m, Turloughs, Mineral Flushes, Where No Field Scorecard available
Non-Native Invasive Species Management	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes, Where No Field Scorecard available, HH HLNA (Red Zones), HH Roost & Scorecard consideration, Area of Action >1 Ha & in HH Red Zone or NATURA Site, Curlew Nest Site < 500 m
Conifer Removal	HH Roost & Scorecard consideration, Mature Woodland, Turloughs, Mineral Flushes, Where No Field Scorecard available, Area of Action >1 Ha & in HH Red Zone or NATURA Site, Curlew Nest Site < 500 m
Water Table Management on Peat soils	Arterial Drainage Channels < 10 m, Natural watercourses < 10 m, Natural watercourses or Drain < 6 m, Freshwater Pearl Mussel Catchment (portion upstream of recorded populations) & Natural watercourse < 20 m, Bracken with Woodland Flora Understory, Forest < 200 m, Mature Woodland, Annex Quality Peatlands & Heathlands, Annex Quality Grasslands, Other Peatland Habitats, Turloughs, Mineral Flushes, Where No Field Scorecard available
Contractor Mobilisation Fee	Always paired with another supporting action which have appropriate rules matrix restrictions
Bespoke Measures	Categorised after submission, will always fail on initial screening, and sent to project team for further assessment, including Appropriate Assessment if required
Host Farmer Payment	No potential adverse impacts expected from this supporting action, no rules matrix restrictions required

Appendix II: List of Wetland Plants for Vegetated Bunded Drains (Action A9) and Small Scale Wetland Ponds (Action A17)

Taller Wetland Plants

Bulrush (typha latifolia)

Yellow Flag (Iris pseudacorus)

Blanched Burr Reed (Sparganium erectum)

Red Sweet Grass (Gltceria maxima)

Reed Canary Grass (Phalaris grundinacea)

Greater Pond Sedge (Carex riparia)

Lower Growing Species

Fools Cress (Apium nodiflorum)

Water cress (Nasturtium officinale)

Water mint (Mentha aquatica)

Water mint (Mentha aquatica)

Brooklime (Veronica beccabunga)

Brooklime (Veronica beccabunga)

For any location where these are required, have one tall species as a minimum, and ideally several tall species and also a selection of the lower growing species. Ideally harvest from within the farm or within a closer radius from existing farm drains or wetland areas (but outside of an SAC or SPA). Alternatively obtain from a specialist supplier of native Irish wetland plants.

Appendix III: List of Approved Native Hedgerow Species

1. Blackthorn (Prunus spinosa)
2. Dog Rose (Rosa canina)
3. Guelder Rose (Viburnum opulus)
4. Hawthorn/Whitethorn (Crataegus monogyna)
5. Hazel (Corylus avellana)
6. Holly (Ilex aquifolium)
7. Spindle (Euonymous europaeus)
8. Alder Buckthorn (Frangula alnus)

Appendix IV: List of Approved Native Species for Tree Planting Action

1. Alder Alnus glutinosa
2. Strawberry tree Arbutus unedo
3. Silver birch Betula pendula
4. Downy birch Betula pubescens
5. Hawthorn Crataegus monogyna
6. Holly Ilex aquifolium
7. Crab apple Malus sylvestris
8. Mc Griggors (Crab)
9. Cavan Sweet (Crab)
10. Lough Key (Crab)
11. Aspen Populus tremula
12. Wild cherry Prunus avium
13. Scots pine Pinus sylvestris
14. Burren Pine Pinus sylvestris
15. Sessile oak Quercus petraea
16. Pedunculate oak Quercus robur
17. Common Whitebeam Sorbus aria
18. Rowan Sorbus aucuparia
19. Irish whitebeam Sorbus hibernica

Appendix V: Tree Selection Depending on Soil Type form the Forestry Standards Manual Nov 2023

- Scenario 1: Podzols (Oak-Birch-Holly Woodland)
- Scenario 2: Brown Podzolics (Oak-Birch-Holly with Hazel Woodland)
- Scenario 3: Brown Earths (Oak-Ash-Hazel Woodland)
- Scenario 4: Gleys (Alder-Oak-Ash Woodland)
- Scenario 5: Highly Modified Peat & Peaty Podzols (Pioneer Birch Woodland)
- Scenario 6: Alluvial Floodplains (Alluvial Woodland)

Appendix VI: Tree Planting and Clearance Distance from Overhead Wires

Power line type	Clear distance (from centre of line)
Low voltage (230/400V)	5 m
10 kV and 38 kV	10 m
110Kv	31 m
220Kv	34 m
400Kv	37 m

Note: All trees must be outside their falling distance from line support structures.

Appendix VII: Willow Filter Beds

Willow Filter Beds for clean yard runoff, roof surfaces & farm roads.

Design Sizing and Layout

1. Size at ≥10% of the total contributory catchment area.

2. Select an area down-gradient of the farmyard/road for gravity flow.

3. Ideally keep the system width to between 4 and 8 m wide; but this may be flexible if there is an awkward corner that lends itself to use as a filter bed.

4. Place, where appropriate a wetland planted silt trap before the willow bed for suspended solids retention, sized at approximately 10-20% of the willow bed size.

5. Keep the ground level within each basin level, left to right and inlet to outlet.

6. Plan to build and plant the system between February and April, so that willow planting can commence immediately upon completion.

Construction Notes

1. Remove topsoil scraw (plants and roots) and set to one side for reuse in the base of the willow filter. Remove remaining topsoil and set to one side for reuse in the basin.

2. Mould the subsoil to the required layout. Allow for a maximum drop of 1 m between basins; and use internal bund walls to divide the area available into separate basins where gradients require it.

3. Track back and forth over moist clay for all made ground. This is more effective than simply compacting with the bucket of the digger. It is important that all water remains in the willow basin until it reaches the final outlet point and does not spill out over the field or other area.

4. Dig out the willow filter basin to a depth of 50 cm (or up to 1.5 m where deep clays or peats are present to protect ground water).

5. Replace top scraw (upper area of topsoil) into the base of the willow filter. Replace loose subsoil over this. Finally replace the weed-free topsoil across the upper level of the willow basin.

6. Let outlet pipes horizontal to allow free flow of water through the basins. This may be raised only after the willows have become well established - either in April of year 2, or earlier if needed to hold a bit more moisture during a dry summer in year 1.

Keep the willows weed-free in years 1 and 2. Thereafter the willow growth will keep weeds down. Do not use herbicides, which can be readily absorbed by the willow stems even in winter, killing your willows.

Planting and coppicing notes for willow filter

1. Lower any hedge lines within 5 m of the willow filter to maximise the exposure to light and wind to maximise evapotranspiration and effluent uptake. Keep maintained on an ongoing basis.

2. Willow trees are to be coppiced on a 3-yr rotation basis as set out below:

    - 1st February after planting: cut back all trees to 150 mm above bed level to encourage stem development.

    - 2nd February after planting: leave all willows uncut.

    - 3rd February after planting: cut back all three rows on one side of the filter area to 100 mm above the previous cut.

    - 4th February after planting: cut back all three rows on the other side of the filter area to 100 mm above the previous cut.

    - 5th February after planting: leave all willows uncut.

    - 6th February after planning: Repeat cycle from 3rd year.

3. Coppicing may be carried out with a loppers or brush cutter or tractor mounted hedge cutter.

4. Remove cut trees from the area and store away from drains to prevent re-entry of nutrients into watercourses.

5. Timber may be chipped or logged for fuel, used as a wildlife habitat log-pile, or for landscaping.

6. Note that if firewood is desired, leave cuttings to grow for 5 years rather than 3, and allow cut lengths to dry for 2 years prior to logging for firewood.