



Comhairle Cathrach
& Contae **Luimnigh**

Limerick City
& County Council



*Building Resilience
into Your Farm*

Foreword

Our primary focus during the visit to your farm is on water quality and to discuss actions, which might be taken to reduce potential threats to waters arising from farming practices. Up until recently, the focus of farm inspections has been on the farmyard and detection of point source pollution. It is now clear that diffuse pollution is a significant pressure on water quality from run-off from land of both nutrients and silt.

The European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (as amended) sets out the minimum standards for farming practices to realise the Water Framework Directives ambition of achieving 'Good' status for all waters by 2027. Limerick City and County Councils role is to oversee implementation of these Regulations and to ensure that farming practices do not negatively affect waters.

This booklet is a compendium of articles, prepared by various agencies, which focus on topics such as water quality, biodiversity and agricultural emissions. The articles contained in this guide are by no means an exhaustive list, but it is hoped that they will shed some light on the main issues affecting our environment and will help you to build greater resilience into your farming operations.

Aidan Leonard
Agricultural Scientist Limerick City & County Council



The information contained within this booklet has been compiled with information freely available from the following bodies:

- Teagasc
- Local Authority Waters Program (LAWPRO)
- Environmental Protection Agency (EPA)
- Department of Agriculture, Food and the Marine
- Irish Farm Film Producers Group (IFFPG)
- National Biodiversity Data Centre (NBDC)
- Cover Images – Andrew Holmes

Contents:

- Farm Inspection
- Ecological Status of Waters
- European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022, as amended.
- Important Dates & Stocking Rates
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- Pressures on Watercourses from Agriculture
- Critical Source Areas
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- Invasive Species
- Environmental Impact Assessments (Agriculture) Regulations (E.I.A's)
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European Union (Good Agricultural Practice for Protection of Waters)

Regulations 2022, as amended

Limerick City & County Council is the primary agency with responsibility for the implementation of the above Regulations (also referred to as “The GAP Regulations”) within its functional area. Every year the Council selects a number of farms for inspection to ensure that facilities and management practices on these farms comply with the requirements set out in the Regulations.

Your farm has been selected for inspection.

During the inspection, Council staff will carry out the following:

Part 1 – Farmyard Inspection

- Inspection of facilities on the farmyard (including measurement of tanks) to ensure that all effluents arising are collected, stored and managed in accordance with the Regulations.

Part 2 – Farm Walk

- A brief farm walk will be undertaken to check the potential for effluent to enter watercourses e.g. inspection of farm roadways, field drains, cattle access points at waters, etc.

If you have the following available on the day of inspection, it would be of great assistance (it can also be forwarded to the Council in advance of inspection):

- Copy of an Effluent Management Plan for your farm
- Farmyard Layout Plan showing all buildings on yard
- Copy of N&P Statements for 2022 and 2023 to date
- Copy of Record 3 showing exports / imports of organic effluents where relevant
- Stock Numbers for 2022 and 2023 to date set out in format similar to Figure 1:

					Monthly Stock Report 2021								
Animal Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
Dairy Cow Milking													
Dairy Cow Dry													
Dairy Cow Total													
Suckler Cows													
Total Cattle 0-6mths													
Total Cattle 6-12mths													
Total Cattle 12-24mths													
Total Cattle 24mths													
Total													

Figure 1. Sample of Monthly Summary Stock Report.

Where the above information is not available on the day of inspection, it can be submitted to the Council where required.

All submissions to be sent to:

Mr. Aidan Leonard Agricultural Scientist,
 Environmental Strategy,
 Environment, Recreation & Climate Change Department,
 Limerick City & County Council,
 Merchant's Quay,
 Limerick
 V94 EH90

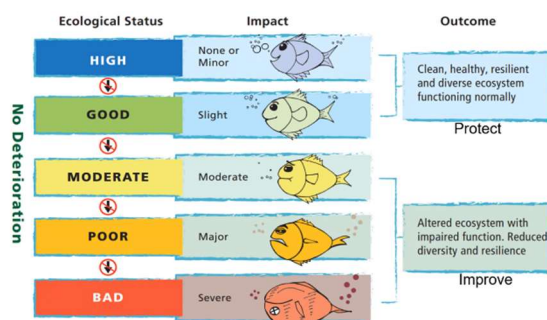
You are reminded that all farming activities must be carried out in accordance with the ***European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 as amended.***

Waterbody Ecological Status in County Limerick

<u>Waterbody Name</u>	<u>EcoStatus</u>	<u>Waterbody Name</u>	<u>EcoStatus</u>
AHACRONANE_010	Poor	DEEGERTY_020	Good
AHACRONANE_020	Poor	DEEL (NEWCASTLEWEST)_040	Moderate
AHALAHANA_010	Good	DEEL (NEWCASTLEWEST)_050	Moderate
AHAVARRAGA STREAM_010	Bad	DEEL (NEWCASTLEWEST)_060	Poor
AHERLOW_010	Good	DEEL (NEWCASTLEWEST)_070	Good
AHERLOW_020	Moderate	DEEL (NEWCASTLEWEST)_080	Moderate
AHERLOW_030	Moderate	DEEL (NEWCASTLEWEST)_090	Moderate
AHERLOW_040	High	DEEL (NEWCASTLEWEST)_100	Moderate
ALLAGHAUN_010	Good	DEEL (NEWCASTLEWEST)_110	Poor
ALLAGHAUN_020	Good	DEEL (NEWCASTLEWEST)_120	Poor
ALLAGHAUN_030	Good	DEEL (NEWCASTLEWEST)_130	Moderate
ALLAGHAUN_040	Good	DEEL (NEWCASTLEWEST)_140	Poor
ANNAGH (TIPPERARY)_020	Good	DOOGLASHA (CAPPAMORE)_010	Moderate
ANNAGH (TIPPERARY)_030	Good	DOON STREAM_010	Good
ARRA_010	Poor	DOONCAHA STREAM_010	Poor
AWBEG (BUTTEVANT) (EAST)_010	Moderate	DROMLOHAN_010	Unassigned
AWBEG (BUTTEVANT) (EAST)_020	Good	DRUMCOMOGE_010	Poor
BALLYANIA STREAM_010	Poor	EAST CARRIG_010	Moderate
BALLYCULLANE (Limerick)_010	Moderate	FAIRYFIELD_GLEBE_010	Unassigned
BALLYNACLOGH_010	Poor	FARAHY_010	Moderate
BALLYNAMONA_010	Moderate	FARAHY_020	Moderate
BALLYSALLAGH_010	Unassigned	FARRANMILLER_010	Good
BARNAKYLE_010	Poor	FEALE_030	Good
BARNAKYLE_020	Moderate	FEALE_040	Good
BEHANAGH_010	High	FEALE_050	Good
BILBOA_010	Moderate	FEALE_060	Moderate
BILBOA_020	Good	FEALE_070	Good
BROADFORD STREAM_010	Moderate	FINGLASHA STREAM_010	Moderate
BUNOKE_010	Moderate	FLEMINGSTOWN STREAM_010	Good
BUNOKE_020	Good	FOYNES_010	Good
CAHER (LIMERICK)_010	Moderate	FUNSHION_010	Good
CAHERNAHALLIA_020	Good	FUNSHION_020	Good
CAMOGGE_010	Poor	GALEY_010	Good
CAMOGGE_020	Poor	GALEY_020	Good
CAMOGGE_030	Poor	GALEY_030	Moderate
CHARLEVILLE STREAM_010	Poor	GLASHACLOONARAVEELA_010	Good
CHARLEVILLE STREAM_020	Poor	GLASHAWEE (ALLOW)_010	Good
CLONSHIRE_010	Poor	GLENBANE WEST STREAM_010	Moderate
CLONSHIRE_020	Moderate	GLENCORBRY_010	Moderate
CLONSHIRE_030	Poor	GOATISLAND_010	Moderate
CLONSHIRE_040	Poor	GORTNAGERAGH_010	Good
COOLAGOWAN_010	Poor	GREANAGH STREAM_010	Moderate
DEAD_010	Poor	GREANAGH_010	Poor
DEAD_020	Moderate	GROODY_010	Moderate
DEEGERTY_010	Moderate	ISSANE_010	Good

Waterbody Ecological Status in County Limerick

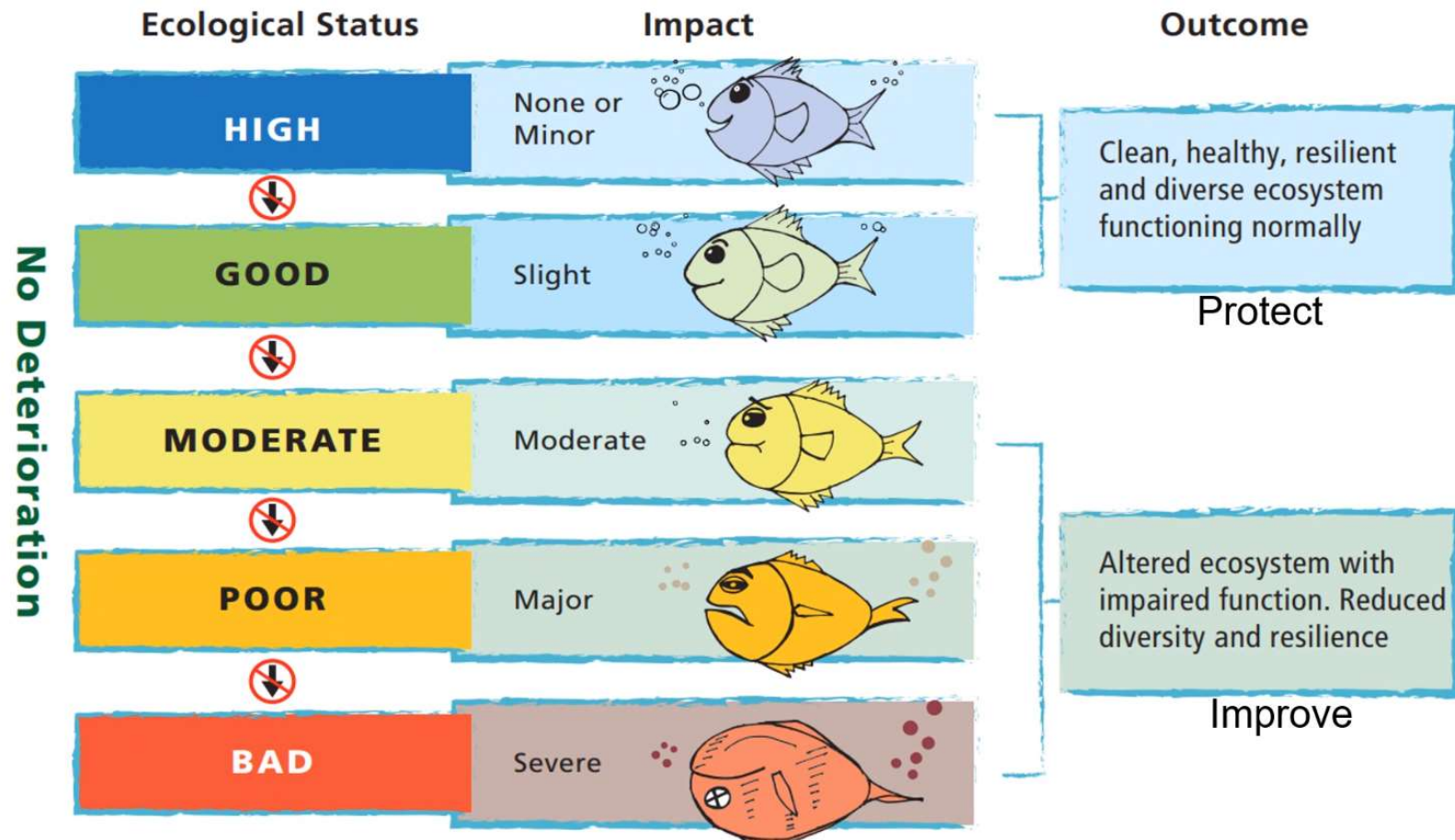
<u>Waterbody Name</u>	<u>EcoStatus</u>	<u>Waterbody Name</u>	<u>EcoStatus</u>
KILLEENGARRIFF_010	Good	TOBERMURRY_010	Good
KILMOREEN_010	Good	TOEM STREAM_010	Poor
KILTEERY_010	Good	TONLEGEE_010	Good
KNOCKFINNISK_010	Good	WEST LISKENNETT_010	Moderate
LISMAKEERY STREAM_010	Poor	WHITEHALL_010	Moderate
LOOBAGH_010	Good		
LOOBAGH_020	Moderate		
LOOBAGH_030	Good		
MAHORE_010	Moderate		
MAHORE_020	Moderate		
MAIGUE_010	Moderate		
MAIGUE_020	Moderate		
MAIGUE_030	Moderate		
MAIGUE_040	Moderate		
MAIGUE_050	Moderate		
MAIGUE_060	Moderate		
MAIGUE_070	Moderate		
MAIGUE_080	Poor		
MAIGUE_090	Moderate		
MONDELLIHY_010	Poor		
MORNINGSTAR_010	Good		
MORNINGSTAR_020	Good		
MORNINGSTAR_030	Good		
MORNINGSTAR_040	Good		
MORNINGSTAR_050	Poor		
MORNINGSTAR_060	Moderate		
MULKEAR (LIMERICK)_010	Good		
MULKEAR (LIMERICK)_020	Good		
MULKEAR (LIMERICK)_030	Good		
MULKEAR (LIMERICK)_040	Good		
MULKEAR (LIMERICK)_050	Good		
OGEEN_010	Good		
OOLAGH_010	Good		
OOLAGH_020	Good		
OWENSKAW_010	Moderate		
OWVANE (LIMERICK)_010	Good		
OWVANE (LIMERICK)_020	Good		
OWVANE (LIMERICK)_030	Poor		
SHANAGOLDEN STREAM_010	Poor		
SHANNON (LOWER)_060	Moderate		
SHEEP_010	Good		
SHEEP_020	Good		
SHEEP_030	Good		
SLEWAUN STREAM (NORTH BRANCH)_010	Poor		
SOUTH DRUMLOUGHAN_010	Poor		





Ecological Status Categories – Water Framework Directive

By 2027 All Waters to be of minimum Good Status





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Limerick City
& County Council

Ecological Status in County Limerick (2016-2021)

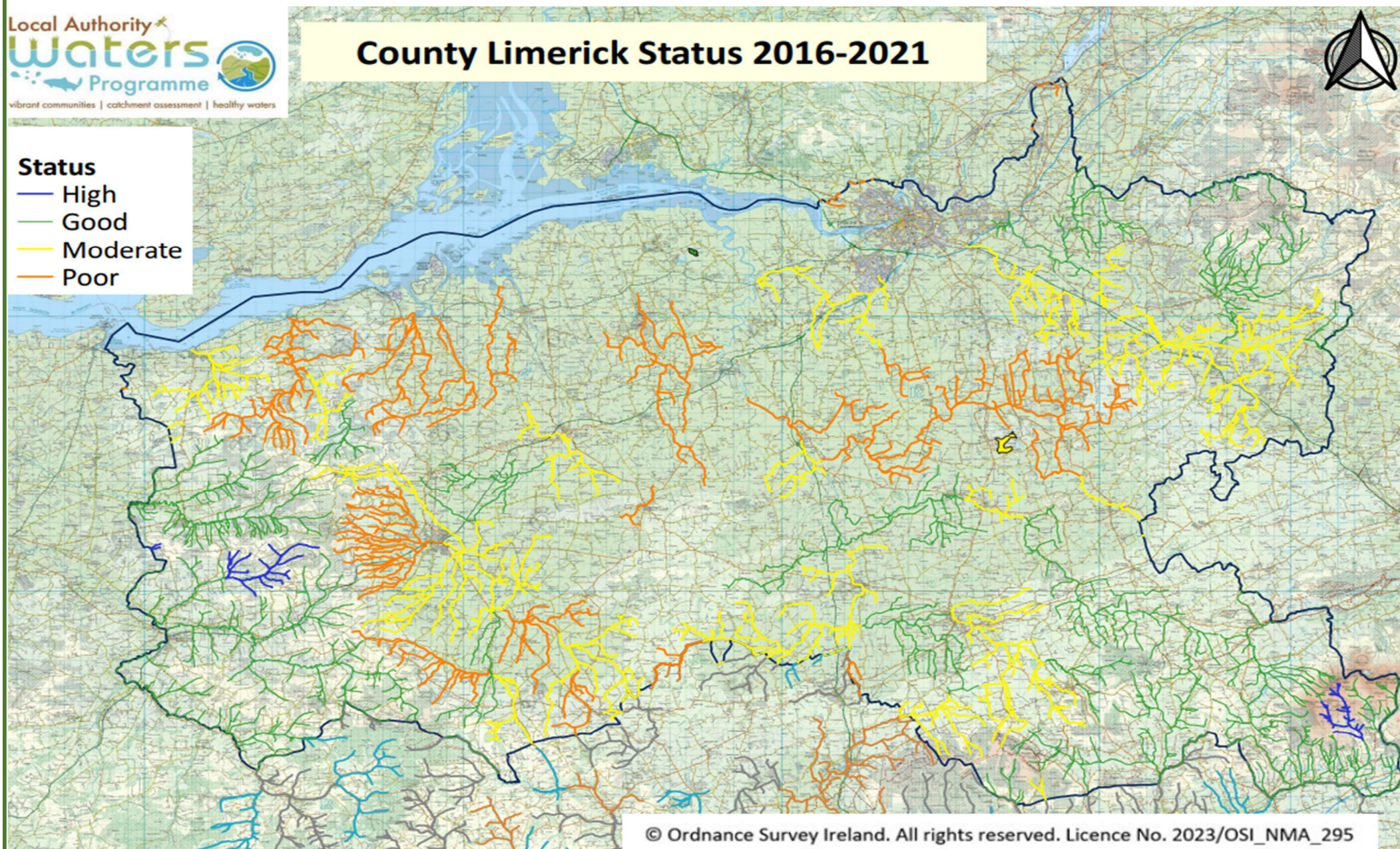
Environmental Strategy,
Environment, Recreation &
Climate Change Department,
Limerick City and County Council,
Merchant's Quay, Limerick
V94 EH90



County Limerick Status 2016-2021

Status

- High
- Good
- Moderate
- Poor



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Pressures on the Aquatic Environment

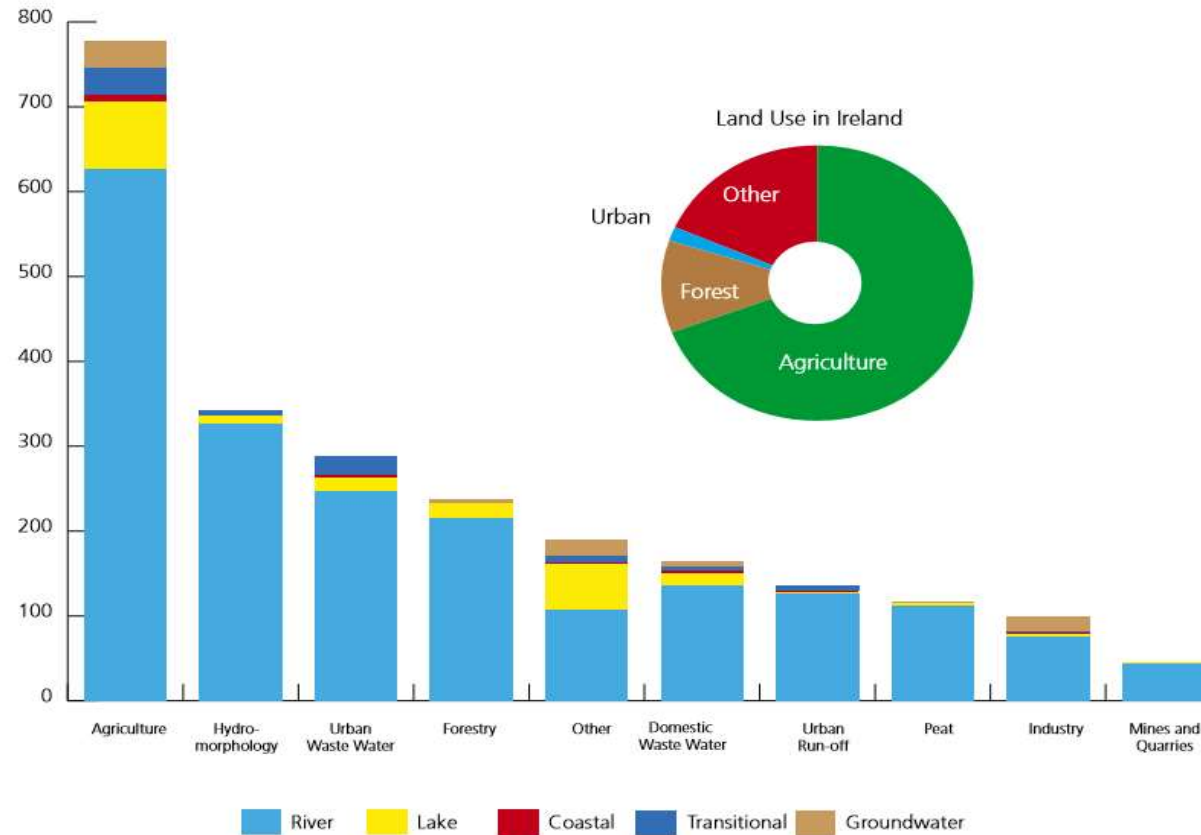


Figure.8.1: Significant pressures on Ireland's aquatic environment.

European Union (Good Agricultural Practice for Protection of Waters) Regulations 2022 (as amended)

You should be aware of the following:

- **SLURRY** shall not be land spread between 1st October and 15th January.
- **CHEMICAL FERTILIZERS** shall not be applied between 15th September and 29th January.
- **SOILED WATER** shall not be spread between 10th and 31st December 2023 for all milk producers.
 - 1st January 2024 - (except winter milk producers) soiled water shall not be spread between 1st-31st December.
 - 1st January 2025 – for winter milk producers soiled water shall not be spread between 1st – 31st December.

Please Note some important upcoming changes and timelines:

- Storage Capacity for “**Soiled Water**” requirement:
 - **From 01 December 2023** - a minimum of three weeks storage capacity
 - **From 01 December 2024** - a minimum of 31 Days storage capacity
 - Exception is for winter/ liquid milk producers where the 31 Days storage capacity must be in place by **01 December 2025**.

Use of LESS (Low Emission Slurry Spreading) equipment:

- **LESS** (Low Emission Slurry Spreading) equipment must be used for the application of slurry on holdings with stocking rates of 150kgN/ha or above from grazing livestock manure prior to export of livestock manure from the holding from **January 1 2023**.
- **LESS** (Low Emission Slurry Spreading) equipment must be used for the application of slurry on holdings with stocking rates of 130kgN/ha or above from grazing livestock manure prior to export of livestock manure from the holding from **January 1 2024**.

- **LESS** (Low Emission Slurry Spreading) equipment must be used for the application of slurry on holdings with stocking rates of 100kgN/ha or above from grazing livestock manure prior to export of livestock manure from the holding from **January 1 2025**.

Buffer Zone

- **Slurry:** 10m buffer zone to be maintained when slurry is spread between 17th September to the 30th September and between the 15th January to 29th January
- **Chemical Fertiliser:** 3m buffer adjacent to waters

Remember

- When spreading slurry and other farm effluents ensure:
 - No heavy rainfall forecast within 48 hours
 - Land is not waterlogged
 - Ensure adequate buffer zones are maintained along all waters including surface waters, water extraction points, lakes, etc.
 - Ensure that all operators are aware of their responsibilities
- **Derogation Farmers:** - At least 50% of slurry applied by 15th June.
- **Soil Samples:** Mandatory for all farmer stocked >130kg N/ha

NOTE

- It is advisable that slurry and farm effluents be applied earlier in the growing season for optimum nutrient uptake and reduced risk to waters and atmosphere.
- It is advisable that you contact your agricultural advisor in relation to new banding rates for dairy cows.
- Every effort must be made to minimize soiled water generation on your farm. Clean water and soiled water must never mix.

SOURCE- PATHWAY- RECEPTOR Continuum

Understanding the issues

Attached you will find a map relevant to your lands.

This has been provided to help you understand **S-P-R** so that you might be better informed when it comes to applying slurry / fertilizers to your lands and how to minimize risk to waters.

S - Source – Nutrient Source such as Slurry, Farmyard Manure, Soiled Water, Silage Effluent, Chemical Fertilizers etc.

P - Pathway – Think of rain falling on lands. Where does water flow? This is the pathway. It is connected either to surface waters or to ground waters. You will observe flow paths during a heavy rainfall event. It is the flow of water off lands.

- **Heavier soils** – Pathway is generally overland to surface water.
- **Free-draining soils** – Pathway is generally to groundwater.

R - Receptor – Drains, Streams, Rivers, Groundwater etc.

Attached Map:

This map shows P flow paths and P delivery points for your farm (**Critical Source Areas**) – they may have been altered due to drainage works carried out in the past. The best way to identify C.S.A's is to stand on lands during a significant rainfall event and identify where run-off flows to waters.

What benefit is this knowledge to me?

- Do not spread slurry or effluents on CSA lands when there is a risk of run-off to waters.

BREAK THE PATHWAY (at P delivery Point) by:

- Move fence out – minimum of 1.5meters from tops of bank along waters (mandatory for Derogation Farmers).
- Prevent cattle access to waters.
- Grass / Vegetative Strips at flow delivery points.
- Low level Earthen Bunds.
- Trees / Hedging in vicinity of flow delivery points.
- Settlement Ponds and associated wetland.

REDUCE THE FLOW - Reducing the velocity of water flowing off lands provides time for sediment and nutrients to settle-out before entering waters.

For further information on your local catchment go to Catchments.ie

You can find your catchment on the Maps page and you can find more information about the current status of your local river and the pressures impacting on it.

Prior to construction of Wetlands and Settlement Ponds, you must consult your Agricultural Advisor and submit a proposal to the Council for approval.

Farm Map

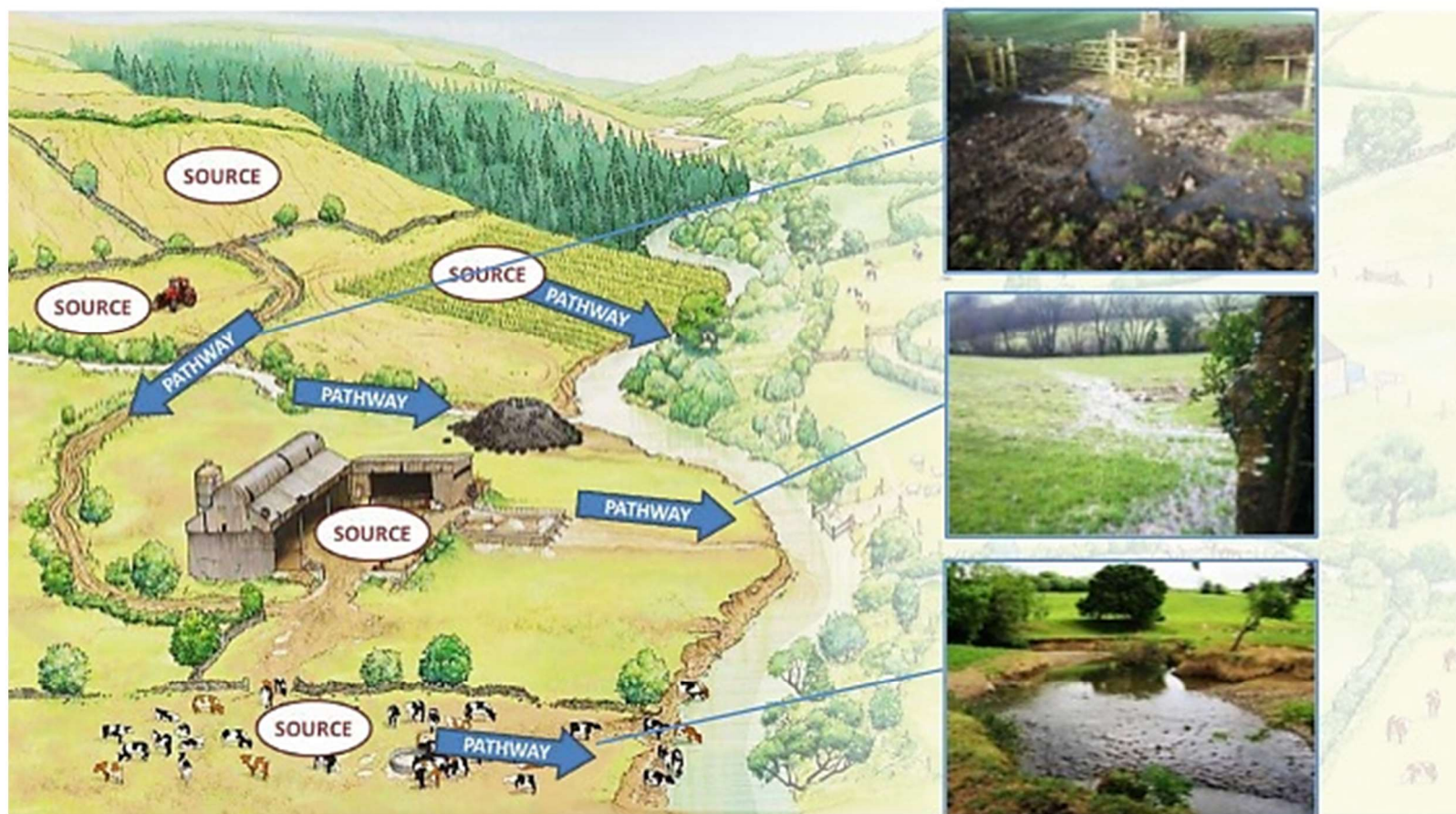
Pressures from Farming

SOURCE

PATHWAY

RECEPTOR

Pollutant Level + Mobilisation + Connectivity = Pollution risk





Identify runoff points and reduce the flow

Collect all farmyard effluent



Sources

Low Emission Slurry Spreading L.E.S.S



Silage Pit Diversion

Ensure only **clean water** is diverted to clean water out fall.



Regularly check discharge points from your yard



Breaking the Pathway

Fencing – 1.5 meters from top of river bank



Grass Strip/Margin



Earthen Bund or Bank

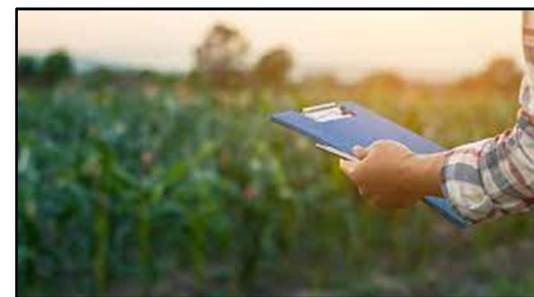
To reduce to prevent
overland flow entering
the watercourse.

Breaking the Pathway

Woodland for Water Scheme



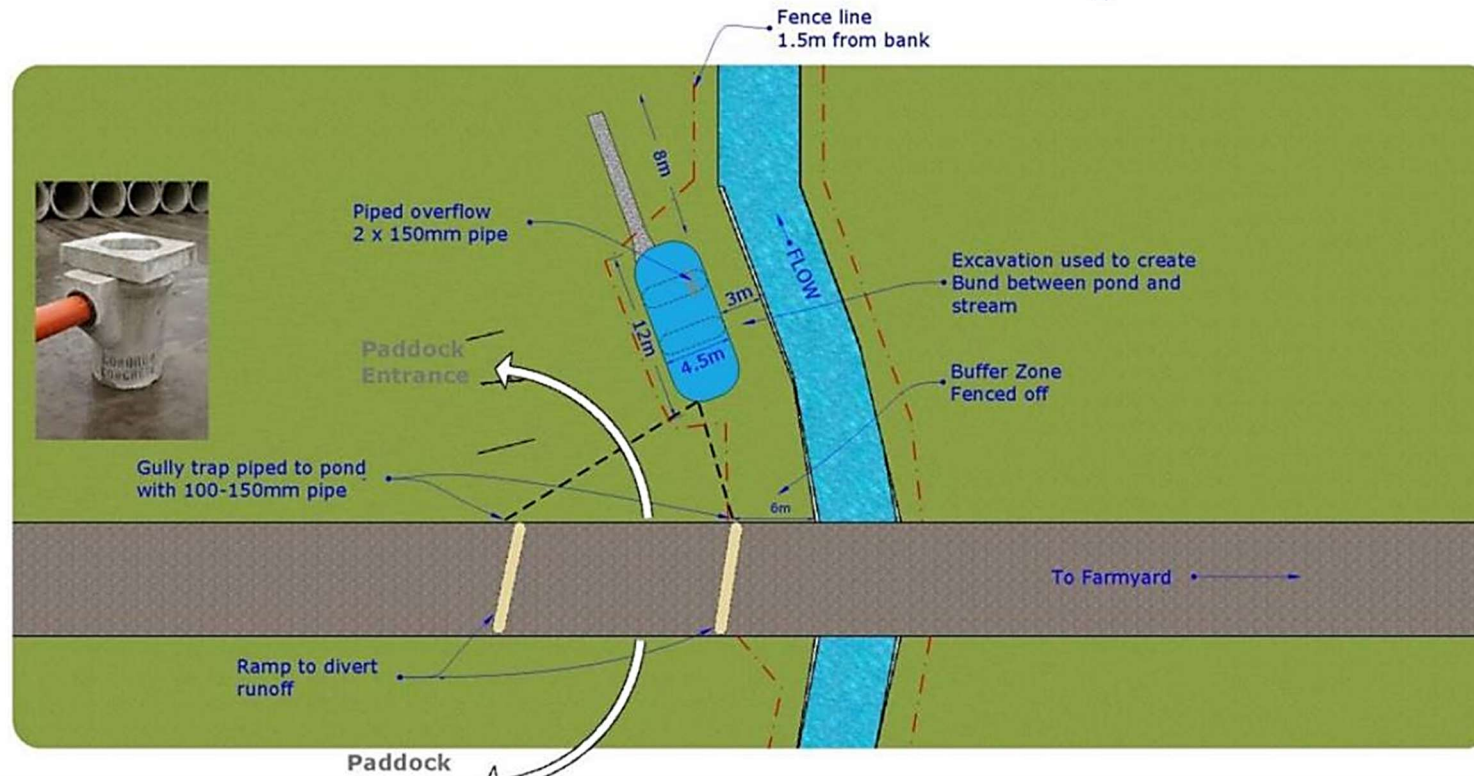
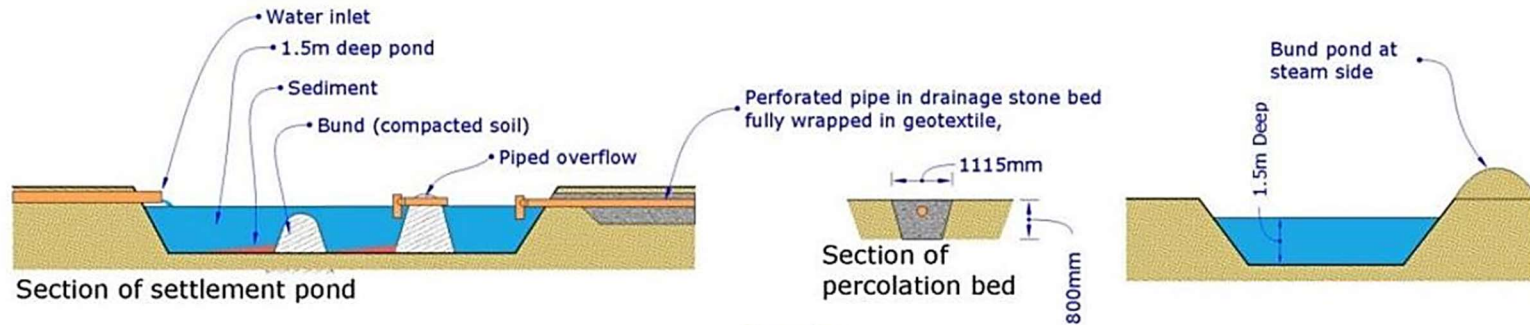
Your Nutrient Management Plan



Roadways – divert runoff away
from watercourses to the field



Break the Pathway - Settlement Ponds & Sediment Traps



Break the Pathway - Settlement Ponds & Sediment Traps



Sediment Trap - During construction

Sediment Trap - After construction



Break the Pathway - Settlement Ponds & Sediment Traps



Settlement Ponds

Settlement ponds designed to retain fine silt
& sediment and prevent it from entering waters.

Settlement Ponds with Reed Bed

Nutrient removal (P) prior to entry to waters
Cultivation & harvesting of reeds ensure P
capture and prevents eutrophication of waters.



BREAK THE PATHWAY – FIX THE ROADWAY!



- From January 1 2021, it is an offence to allow direct run-off of soiled water from farm roadways to “waters” (“waters” includes drains, streams, rivers, etc.).
- You are advised to walk your farm roadways during a rainfall event to determine if soiled water is flowing to “waters” (i.e. - **Establish the “Pathway”**).
- Where soiled water is observed entering “waters” you must take steps to prevent this happening (i.e. - **Break the “Pathway”**).
- Please refer to Department of Agriculture Food and Marine Building Specification S.199 – “*Minimum Specification for Farm Roadways*” (January 2021). This can be downloaded from Department of Agriculture Food and Marine website (www.gov.ie/agriculture).
- Your Agricultural Advisor is there to help.
- Failure to satisfactorily deal with this issue could have significant consequences for your Basic Farm Payment.

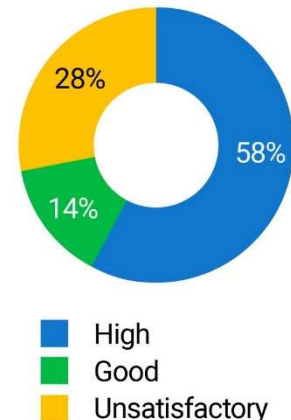
Water Quality Issues

- Water Framework Directive – **By 2027 all waters to be of Good Status**
- Nationally only 50% of waters are Good Status and some of these are “trending” downwards
- EPA Indicators Report (June 2023) – Nationally nitrate concentration too high in 40% of Rivers (>8mg/l NO₃) and Phosphorus concentrations too high in 28% of rivers. Excess Phosphorous and siltation are the main issues affecting the Maigue & Deel.
- Agriculture as a sector – Exerts major pressure on waters. Must build resilience into farming systems to ensure Agriculture satisfactorily addresses **water quality, biodiversity and climate** issues.

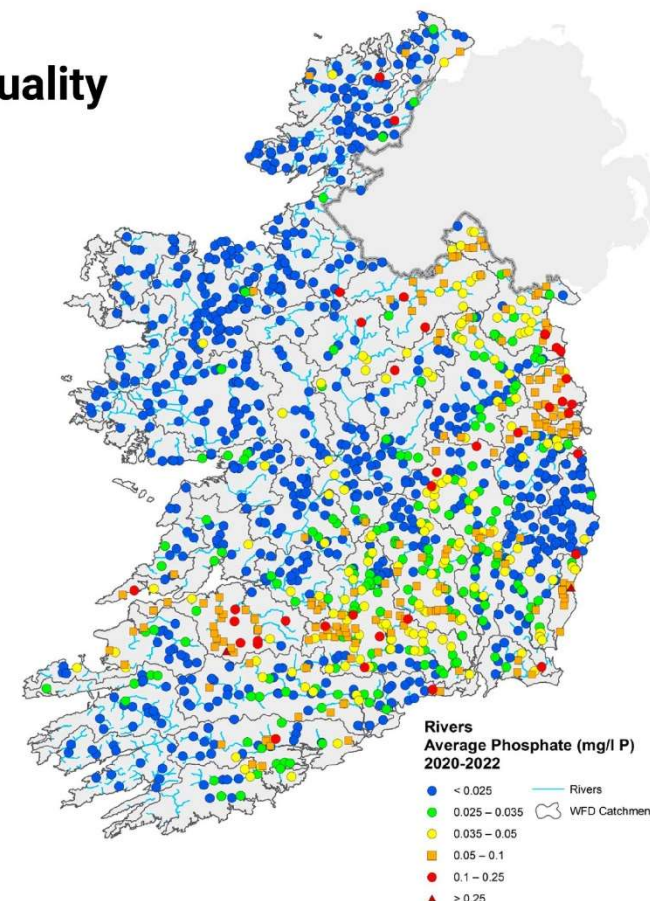
Phosphorus

- P loss to waters – occurs mainly on “heavier” type soils.
- Slurry spreading - major impact on waters if spread under inappropriate conditions e.g. water-logged soils / when heavy rainfall is forecast, dissolved P and P attaching to clay particles are washed to surface waters.
- Excess P results in Eutrophication = excess plant growth which uses oxygen = negative impact on aquatic life.
- When silt / sediment enters water it interferes with spawning beds = negatively impacts on macro-invertebrate life.

River Phosphate quality 2020-2022



■ High
■ Good
■ Unsatisfactory



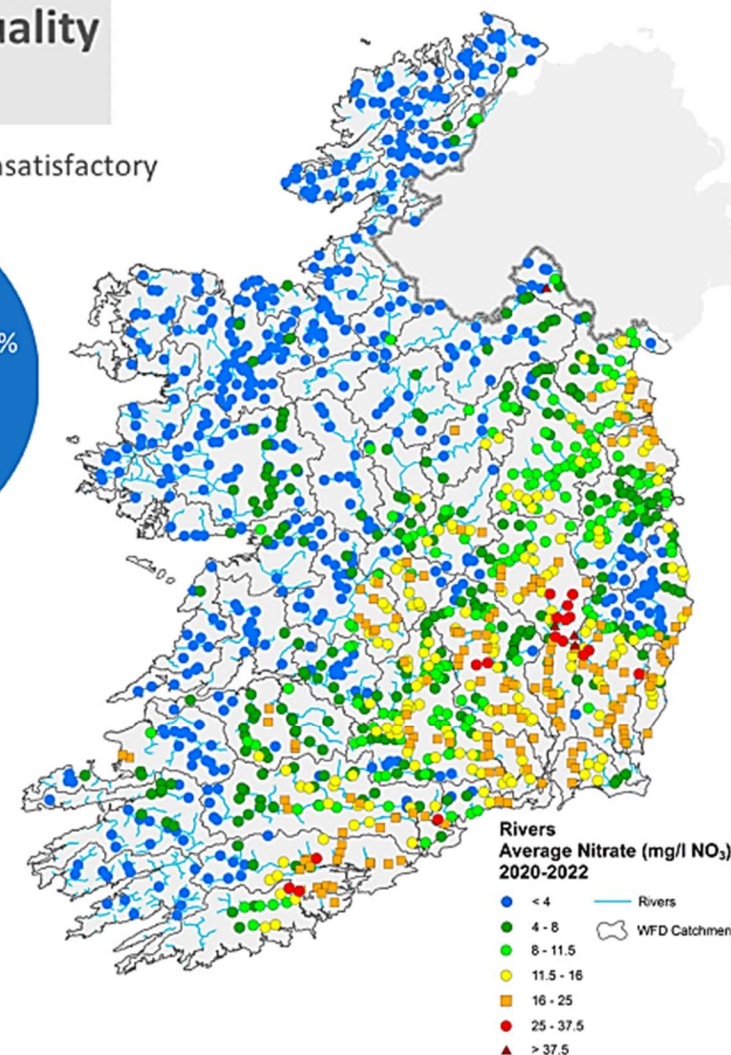
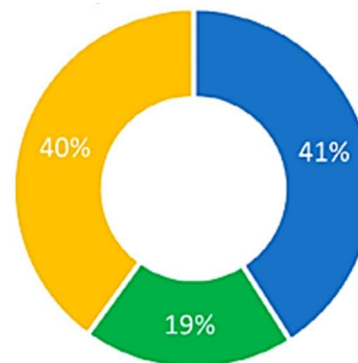
Water Quality Issues

Nitrates

- Nitrates mainly associated with free-draining soils. Impact on groundwater.
- Evidence seen in mainly estuarine waters – excess plant growth = Serious issue in many coastal areas.
- Ensure Nutrient Management Plan is carefully followed.
- Only apply in accordance with crop requirement.
- Do not apply nitrogen in drought conditions as soil micro-organisms mineralize organic matter in soil leading to a flush of N during a rainfall event.
- Thin soil cover = risk of both N & P contamination of ground waters

River Nitrate Quality 2020-2022

■ High ■ Good ■ Unsatisfactory



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Slurry Spreading / Fertiliser Application



- **Right Time** - Soil Temp / Rainfall forecast
- **Right Location** – Avoid Critical Source Areas
- **Right Rate** – Optimum vs Maximum application (Nutrient Management Plan)
- **Right Product** – Protected Urea

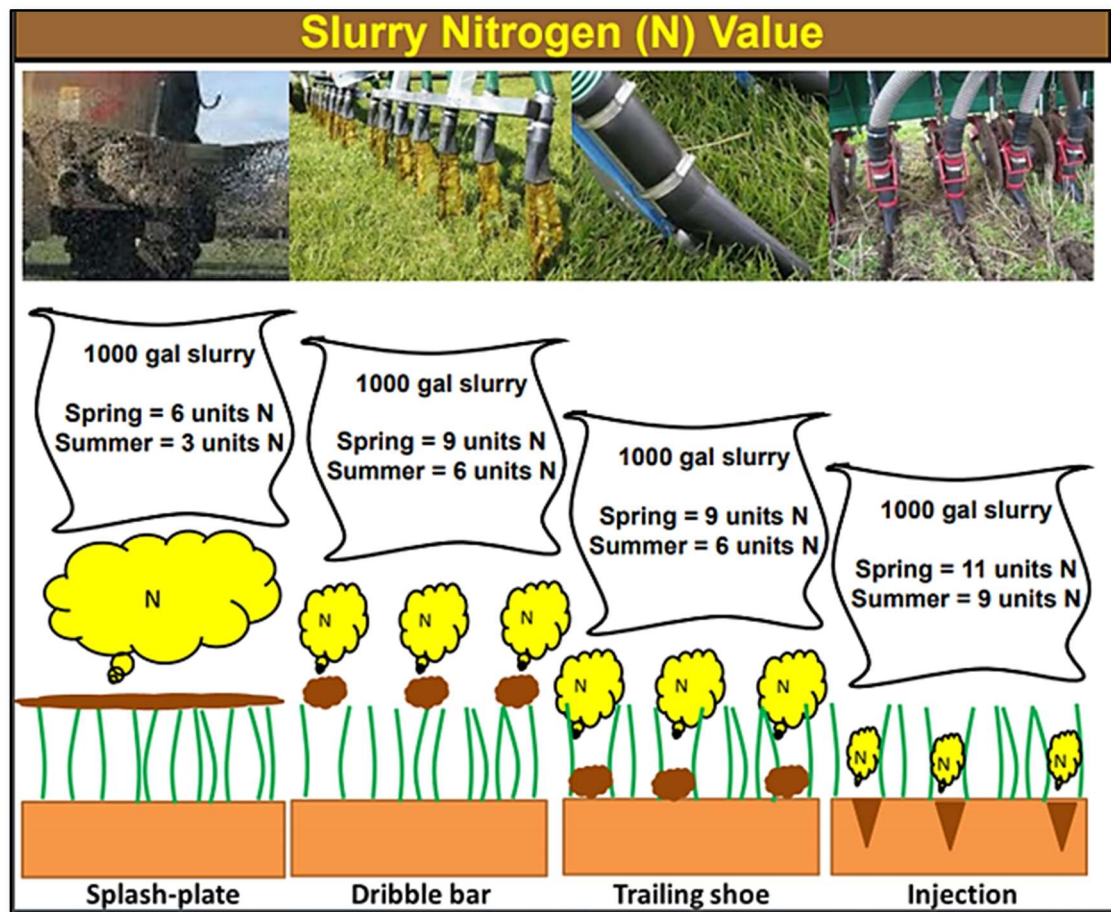
- Reduce reliance on chemical N - LESS / Clover / Multi-species swards etc.
- Apply Fertilisers / farm effluents under optimum conditions.
- **DO NOT apply** to waterlogged soils / forecasted heavy rainfall.
- Apply slurry early in the year - Dry fields – especially in Spring. Avoid Critical Source Areas.
- Maintain adequate **buffer zones** - to reduce nutrient loss and prevent nutrient entering waters.
- Understand and follow your **Nutrient Management Plan**.
- Slurry and fertilizers used for Optimum not Maximum Production.
- Soil pH - soil sample & lime application for optimum pH.
- Prevent stock access to waters.
- Ensure that farm roadways do not provide a pathway for effluent run-off to waters.
- Source-Pathway-Receptor Continuum – understand and intervene correctly to break the pollution pathway.
- Pollution Impact Potential Maps for your farm – know Critical Source Areas - only apply (organic and chemical) when conditions are optimal.
- Minimum effluent storage capacity - Some parts of the County the minimum 18 weeks slurry storage requirement is not adequate.
- All effluents – collected, stored and managed to prevent loss to waters.
- Routinely check drains to ensure **only clean water** is flowing in them. If contamination observed - identify the source of the contamination and intervene to ensure any discharge is addressed.
- Drain contamination: Evidence of Sewage Fungus – a grey dirty mass of growth (see above photo) in drains indicates nutrient enrichment. Possible source – effluent from yard run-off / discharge from silage effluent diversion system / run-off arising from “trafficking” on yard over winter period.



Sewage Fungus

L.E.S.S – Low Emissions Slurry Spreading

To achieve targets we need to know and understand the benefits.



You can make way better use of your slurry, reduce your chemical usage and improve the environment all in one application!

- LESS increases the Nitrogen (N) recovered from Slurry. This allows farmers to reduce chemical N applications on the farm. There is a large loss of nitrogen when using a splash plate as the slurry is spread over a large area, which leads to bigger losses from the weather, wind and the effect of the sun. The process of loss is mainly through **Ammonia volatilization**, the nitrogen in the form of ammonia is potentially a dangerous pollutant to both human health and the environment as well as being a substantial economic loss from the farm. LESS reduces the spread width by minimising the surface area to which slurry is applied and puts the slurry directly on the ground/soil.
- Research shows that by changing to LESS technology that the overall **ammonia N losses can be reduced** by up to 60%.
- In terms of the fertiliser value compared to the traditional splash plate based system, one thousand gallons with LESS will give on average 50% extra nitrogen compared to a splash plate. Financially **the extra nitrogen alone is worth €5 per one thousand gallons**. So at two thousand gallons per acre, this is equal to €10 per acre just for the extra fertiliser before you factor in the savings on chemical fertiliser application.
- Another large benefit is the **flexibility** of slurry applications on grazed pasture with **lower levels of contamination** and faster recovery of grass / silage swards.
- **More accurate application** with LESS give farmers the confidence to replace expensive compounds with home sourced organic fertilisers.

Ten steps to fertiliser savings on grassland

1 **Spread lime**

Why
Soils at pH 6.5+ and P & K Index 3-4 will release more nitrogen

When – Year-round on grazing ground; after the 2nd cut on silage ground

Saving – Up to 80 kg N/ha (64 units N/ac) of chemical N annually

2 **Continue to use P & K**

Why
Not spreading P & K will reduce N use efficiency

3 **Make a fodder budget**

Why
Know your silage needs so you can plan the area for first and second cuts and budget your fertiliser requirements

4 **Use LESS, time your slurry application**

Why
Low Emission Slurry Spreading (LESS) recovers 50% more N than splash plate. Spring spreading can recover 50% more N than summer. These are additive.

Savings
Spring spreading with LESS can recover up to 6 units N/1,000 gallons more than summer spreading with a splash plate

5 **Cull poor performers**

Why
Cull the poorest performing 5% of animals to reduce feed and fertiliser requirements, while maintaining farm profits

Savings
Reducing stocking rates by 5% could help reduce fertiliser applications by between 5 and 10%

When – As soon as animals are saleable

6 **Prioritise silage ground**

Why
75% of the nutrient value of slurry is in the P & K; get maximum value by spreading it on silage ground

Savings
Most farms have slurry for 50% of the land area at a rate of 2,500 gallons/ac. This will supply 28 kg N/ha (23 units N/ac)

7 **Spread protected urea**

Why
Protected urea is the most cost effective source of chemical N

Savings
No difference in herbage production compared to CAN
Switching from CAN to protected urea will reduce the cost of fertiliser N by ~20%

8 **Grow clover**

Why
Incorporate 5 kg/ha (2 kg/ac) of clover in new reseeded or existing swards to halve chemical N requirements from May onwards

Savings
Good clover content, 20%+ in the sward, will replace up to 100 kg N/ha (80 units N/ac) of chemical N per year

9 **Reduce rates in spring**

Why
A small reduction in March chemical N rates should not substantially reduce grass growth

Saving
Cut the March rate from 59 kg N/ha (46 units N/ac) to 50 kg N/ha (40 units N/ac). This will reduce annual chemical N by 3%

10 **Trim rates in summer**

Why
Reduce N fertiliser applications on highly stocked farms to 25 kg N/ha (20 units N/ac) or to a rate of one unit N/day from April for the length of the summer grazing rotation

Protecting Drinking Water from Pesticides

Important points to note

ONLY use pesticides if necessary and as part of an integrated pest management strategy. Consider non-chemical methods instead or in tandem with pesticides.

Consult a registered Pesticide Advisor.

ALWAYS read and follow the product label.

If a buffer zone is indicated on the label, there is a legal requirement to comply with it. This applies to all types of surface water bodies regardless of whether or not the water body is used to supply drinking water.

RESPECT statutory no-use zones (safeguard zones) around drinking water abstraction points.

These range from 5 metres to 200 metres depending on the size of the supply. Your Local Authority or The National Federation of Group Water Schemes can advise on this. Safeguard zones are mandatory around drinking water abstraction points but they are not indicated on product labels.

REMEMBER!

- A **SINGLE** drop of pesticide lost to a water body such as a typical small stream (1m wide, 0.3m deep), for example, can be enough to breach the legal limit for pesticides in drinking water of 0.1 part per billion along 30km of its length.
- Always read and follow the product label.
- Be aware of how near water bodies (ditches, streams, ponds, rivers, lakes and springs) are to where you are working.
- Find out if the treatment area is in the vicinity of a drinking water abstraction point or well.

For further information on related topics such as container storage, triple rinsing, Integrated Pest Management or a list of approved Pesticide Advisors visit:

www.pcs.agriculture.gov.ie, www.teagasc.ie
or www.epa.ie

A **SINGLE** drop of herbicide can breach the drinking water limit in a small stream for 30 km

Protecting Drinking Water from Pesticides Advice for Farmers and Other Professional Users

Promoting best practice in the use of pesticides to protect drinking water



Protecting Drinking Water from Pesticides

Pesticides* and drinking water

Drinking water monitoring results for Ireland show that a number of commonly used pesticides are being detected more frequently in recent years. Careless storage, handling or use of pesticides, or improper disposal of empty pesticide containers, can easily cause breaches of the legal limit for pesticides in drinking water.

It is essential to take great care and follow best practice procedures when using any pesticide.

How do pesticides get into drinking water?

Pesticides can enter water bodies from:

- **Point sources** – leaks from storage areas; spills or drips from handling operations such as mixing, filling and washing equipment; or
- **Diffuse sources** – releases that occur during or after application, such as spray drift, runoff or drainage inputs.

Water bodies are particularly vulnerable to runoff or washoff inputs from hard or compacted surfaces.



* Pesticides is a broad term which encompasses various types of pest control agents including herbicides, fungicides, insecticides, seed dressings and rodenticides.

DOs when using pesticides:

- DO** read the product label instructions carefully and plan the treatment in advance, taking care to ensure strict compliance with the specified conditions of use. Follow all health and safety instructions.
- DO** inform yourself of the location of all nearby water bodies (ditches, streams, ponds, rivers, lakes and springs).
- DO** find out if any groundwater body or surface water body in your locality is used as a drinking water source and, if so, the location of the nearest abstraction point. Ensure compliance with the safeguard (no-use) zones around drinking water abstraction points.
- DO** ensure that the pesticide products are stored in a secure, dry area which cannot result in accidental releases to drains, wells or water courses.
- DO** ensure that any pesticide application equipment used is properly calibrated and in good working order.
- DO** take every precaution during mixing and preparation of pesticides for application to avoid spills and drips. Minimise water volumes (rain and washings) on the handling area.
- DO** consider using drift-reducing nozzles if spraying. Keep the spray boom as low as possible to the ground and use the coarsest appropriate spray quality.
- DO** clean and wash down application equipment at the end of the day, preferably in the field and well away from water bodies or open drains. Tank washings should be sprayed onto a previously sprayed area, on a section far away from any water body, observing the maximum dose for that area.

DOs when using pesticides:

- DO** ensure that empty, triple-rinsed containers and foil caps are disposed of in accordance with the Good Practice Guide for Empty Pesticide Containers.

DON'Ts when using pesticides:

- DON'T** fill application equipment directly from a water body.
- DON'T** perform handling operations (filling, mixing or washing the sprayer) near water bodies, open drains or well heads. A distance of at least 10 metres should be maintained and preferably 50 metres, where possible.
- DON'T** spray if the target area is wet or if heavy rain is forecast within 48 hours after application.
- DON'T** apply pesticides during windy conditions.
- DON'T** apply pesticides near open drains, wells or springs.
- DON'T** apply pesticides on waterlogged or poorly draining soils that slope steeply towards a water body or on any other vulnerable area that leads directly to water.
- DON'T** apply pesticides if field drains are flowing.
- DON'T** discard washings from application equipment down a drain or onto an area from which they can readily enter a water body.

SMR 7

SMR 7 Proper and Safe Use of Plant Protection Products

What is SMR 7 about?

SMR 7 applies to **all** users of plant protection products. The aim of SMR 7 is to ensure that where pesticides are used, that their use is necessary, and that they are used in a manner that minimises risk to the user, the environment and the food chain. This means the application of the principles of Good Plant Protection Practice and compliance with the product label.

Pesticides, which are also referred to as Plant Protection Products (PPPs), include herbicides, fungicides and insecticides that are used to protect plants from damage caused by pests, e.g., insects, fungi, weeds, etc., and may also regulate growth.

What is Good Plant Protection Practice?

Good Plant Protection Practice (GPPP) is a set of principles which provide the basis for the proper and appropriate use of PPPs.

All professional users of PPPs must apply the general principles of Integrated Pest Management (IPM) and maintain records to demonstrate the application of these principles as shown in Figure 17:

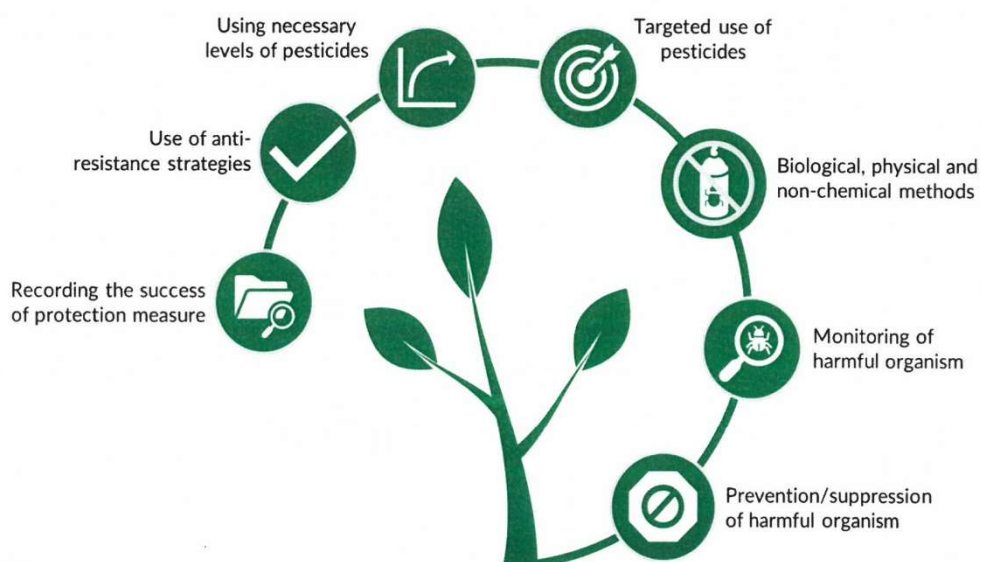


Figure 17: General principals of integrated pest management.




SMR 7

For more information visit:

<https://www.pcs.agriculture.gov.ie/sud/integratedpestmanagement/> 

What will a farm inspector check?

The farm inspector will check:

- Are pesticide usage records completed correctly and do they include the following:
 - Date of application
 - Product name and PCS number
 - Crop/situation
 - Location/LPIS no.
 - Area/tonnage treated
 - Application rate
 - Water volume
 - Method of application
 - Buffer zone applied
 - Nozzle type
 - Rationale/reason for use
 - Applied by/PU number
- Adherence to the required buffer zones when spraying pesticides:
 - **A minimum 3m no spray buffer zone must be respected where PPP cannot be applied.**
 - A PPP authorisation may prescribe a buffer zone which is greater than 3m, in this case the buffer zone prescribed on the product authorisation/label may be reduced to 3m, only where it can be verified that the DAFM STRIPE initiative is used by the professional pesticide user
 - The STRIPE initiative currently cannot be used to reduce the 3m no spray buffer zone as per the GAEC 4 (Establishment of Buffer Strips along Watercourses) Standard
 - Further information on the STRIPE initiative can be found at:
<https://www.pcs.agriculture.gov.ie/sud/waterprotection/stripe-surfacewatertoolforreducingtheimpactofpesticidesintheenvironment/> 
- Are the principles of IPM being applied and do the records demonstrate this?

SMR 7

Is there anything else to remember?

- Your sprayer must **never** be filled or loaded/mixed near any watercourse (river/drain/well/spring/etc).
- You must keep your pesticide application records up to date.
- Conditions of use of a PPP are detailed on the product label, an example of which is shown in Figure 18.

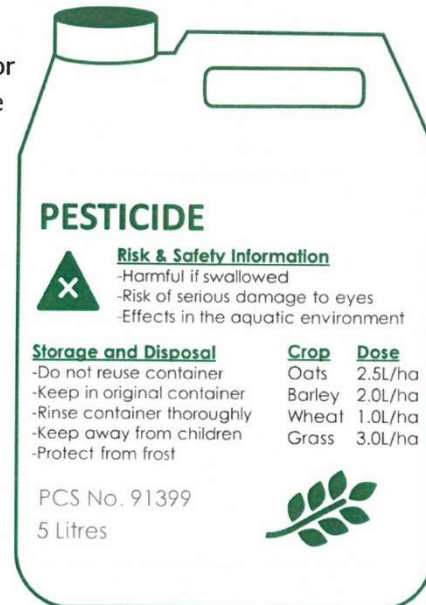


Figure 18: Examples of conditions of use on plant protection product label.

Further Information

For further information on approved plant protection products, Good Plant Protection Practice (GPPP) and record keeping requirements click on the following link:

<https://www.pcs.agriculture.gov.ie/sud/professionaluserssprayeroperators>

SMR 8

SMR 8 Sustainable Use of Plant Protection Products

What is SMR 8 about?

SMR 8 builds on SMR 7 (Proper and Safe Use of Plant Protection Products) regarding safe pesticide use in ensuring farmers meet certain requirements of the EU Sustainable Use (of pesticides) Directive. The Sustainable Use Directive (SUD) is focused on further reducing the risks and impacts of pesticide use on human health and the environment.

What does this mean for you?

If you use pesticides, you must:



User

- Complete professional pesticide user training & have a certificate to verify this.
- Be registered with the DAFM as a professional user & have a PU number.
- Contractors applying pesticides on behalf of a farmer must be registered with the DAFM as a professional user & have a PU number.

Equipment

- Calibrate sprayer at least once a year & keep a record of calibration checks.
- Ensure sprayer is tested by a DAFM registered equipment inspector.
- Sprayer more than 5 years old must be tested every 3 years.

Application

- Conduct a written risk assessment prior to considering pesticide use in an area used by the general public or vulnerable groups.
- Restrict pesticide use in protected areas defined in the WFD & Natura 2000 sites.
- Adopt IPM techniques, where possible.

Disposal

- Ensure safe disposal of packaging and remnants, tank mixes or rinsate.
- Ensure obsolete products are disposed of as hazardous waste.
- Triple rinse empty containers and dispose of them correctly.



SMR 8

The Sustainable Use Directive– Directive 2009/128/EC establishing a framework for Community action to achieve the sustainable use of pesticides.

What will a farm inspector check?



Some of the checks carried out under SMR 8 are shown in Figure 19 below and include the following:

- Do you have a dedicated storage area for the pesticides you use?
- Do you have pesticides segregated from food and feed?
- Your pesticide store must be:
 - Lockable and bunded.
 - Labelled with a warning sign.
 - Separate from food and feed storage.
 - Equipped with a spill kit (e.g., bucket of sand/peat).
 - Equipped with appropriate personal protective equipment (PPE), e.g., gloves, goggles, face shield/mask, coverall, etc.
- Do you have appropriate dedicated measuring equipment for weighing/measuring pesticide product?
- Do you store powdered pesticides above liquids to avoid contamination?
- Do you store products in their original containers and are all the products in your store within their expiry date?
- Is there evidence that the sprayer has been filled directly from a watercourse?
- Does the pesticide mixing, filling, and handling area present a risk to groundwater, drains, waterways or drinking water supplies?
- Do you have records of purchase and/or disposal of pesticide products?
- Does a contactor/third party provide and apply pesticide products?
- Has the sprayer/operator completed the necessary training and registered with DAFM as a Professional User?
- Has the pesticide application equipment used, been inspected and calibrated at the appropriate intervals?

SMR 8



Figure 19: Pesticide storage requirements.

Is there anything else to remember?

- If you need to dispose of out of date or revoked pesticides, you must ensure this is carried out by a licensed Hazardous Waste Disposal Operator.
- If using a contractor, they must be trained and registered as a Professional User (PU) and use appropriately tested and calibrated application equipment. IPM records must also be available for inspection.

Further Information

For further information on the Sustainable Use Directive (SUD), Integrated Pest Management (IPM) and risk assessments click on the following link:

<https://www.pcs.agriculture.gov.ie/sud>





STATUTORY INSTRUMENTS

S.I No. 155 of 2012

EUROPEAN COMMUNITIES (SUSTAINABLE USE OF PESTICIDES)

REGULATIONS 2012.

Schedule 1

Equipment	Standard
Boom Sprayers in excess of 3m wide	EN Standard 13790-1:2003
Orchard and Blast Sprayers	EN Standard 13790-2:2003

Schedule 2

Table indicating distance from open wells, open boreholes, water abstraction points

Water Source	Distance
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m ³ or more of water per day or serving 500 or more persons,	200m
Abstraction point of any surface waters, borehole spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m ³ or more of water per day or serving 50 —500 persons,	100m
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 1-10m ³ of water per day or serving 10-50 persons.	25m
Abstraction point of any surface waters, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 1m ³ or less of water per day or serving 10 or less persons,	5m

Farm Plastics

Save on disposal costs and **TRIPLE RINSE!**



Unrinsed pesticide & dairy hygiene containers are hazardous and
UP TO 5 TIMES MORE EXPENSIVE TO DISPOSE OF!



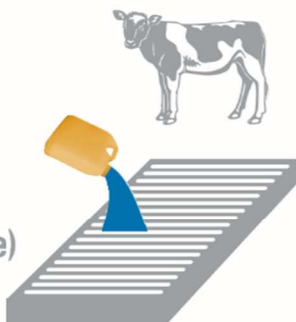
STEP 1.
Fill the empty, dirty
container 20%
full with water



STEP 2.
Shake the container
vigorously



STEP 3.
Empty into sprayer
(pesticide) or dirty
water collection
system (dairy hygiene)



x3
Repeat this procedure
three times



**Good farming practice, good for the
environment and good for the pocket!**

**Bring your rinsed waste containers to your farm
plastics collection centre in a half tonne bag**

**JUST €15
PER FILLED HALF
TONNE BAG!**



**YOU ARE LEGALLY
RESPONSIBLE FOR
THE WASTE THAT YOU
HOLD ON YOUR FARM**

Understanding greenhouse gas emissions on Irish farms

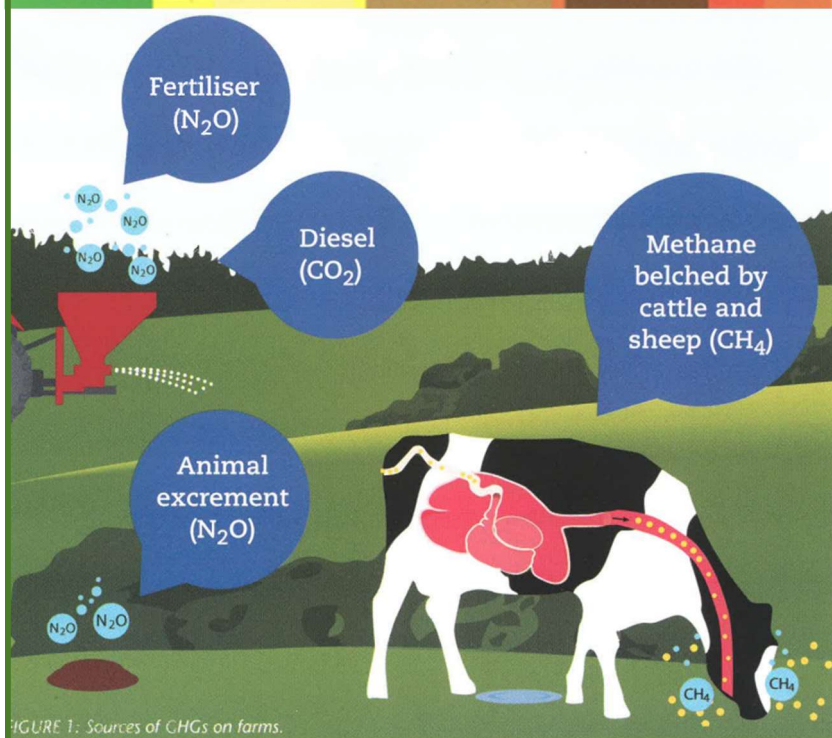


FIGURE 1: Sources of GHGs on farms.

Agricultural GHG emissions 2021 (EPA).

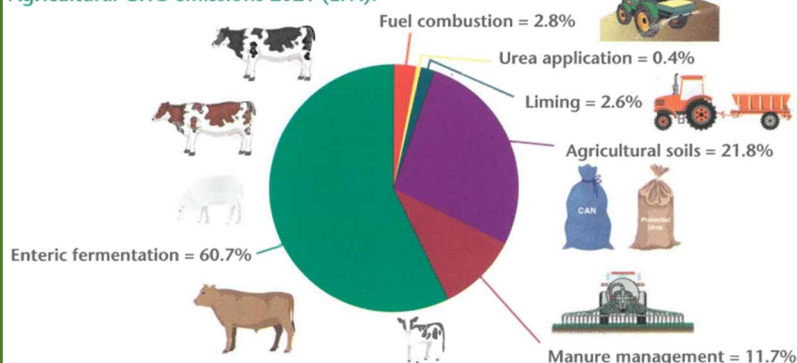


FIGURE 2: Sources of Irish agricultural emissions.

Teagasc Climate Action Strategy – the road map for agriculture.

Teagasc has set out opportunities to reduce GHG emissions in three phases. In Phase I, initial implementation of the technical measures in the current marginal abatement cost curve (MACC) for agriculture 2019 can bring the sector about one-third of the way to the 2030 target. Almost ready technologies (Phase II) and early-stage technologies (Phase III) are required for the remaining two-thirds.

What is Climate Change?

Climate is the average weather in a place over many years. Climate change is a shift in those average conditions. It is driven predominantly by an increase in global temperatures caused by emission of greenhouse gases (GHG's) from human activities.

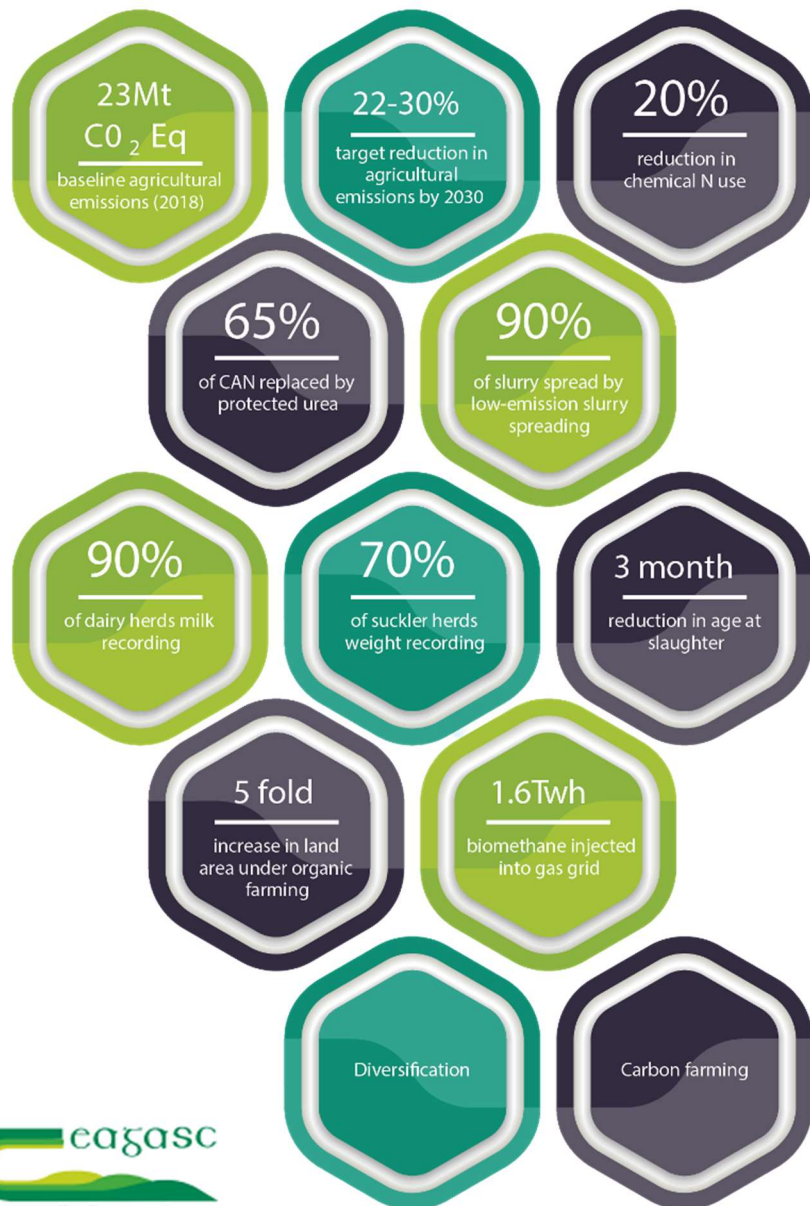
What are the main GHG's relevant to agriculture?

There are three main GHGs: carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O). While CO_2 is released mostly from burning fossil fuels, for agriculture, the main GHGs are methane (65%) and nitrous oxide (30%). In Ireland, agriculture currently contributes 37% of the total GHGs emitted. GHG emissions on Irish farms come primarily from methane belched by cattle and sheep, fertiliser use, animal excrement and carbon dioxide from diesel (Figure 1). Figure 2 presents the breakdown of the emissions from Irish Agriculture.



Agricultural Emissions

Target GHG mitigation measures for agriculture



How do the GHG's cause an increase in temperature?

GHGs act like a blanket around the Earth. That's because heat from the sun reflects off the Earth and is trapped by layers of these gases in the atmosphere. Without this, the Earth would be frozen. Increased amounts of GHGs in the atmosphere in recent decades have meant that more heat is trapped within the atmosphere, leading to the so-called greenhouse effect. This has caused global temperatures to rise, which causes climate change.

Temperature change in Ireland over the last 120 years

Below is a visual representation of the change in temperature in Ireland as measured over the past 120 years. Each stripe represents the average temperature over a year. The blue indicates cooler than average annual averages, and red warmer than average. Similar to most nations, the warming being observed for Ireland has intensified in the past two decades. Ireland's average air temperature in 2019 was around 10.5°C, which was 0.9°C above the 1961-1981 long-term average.



National Emissions Inventory

The national inventory is an accounting system, overseen by the Environmental Protection Agency (EPA), which accounts for the total GHG emissions released within the border of Ireland during a given year. The EPA reports national GHG emissions across a number of sectors, one of which is agriculture.

In contrast to other sectors, which are dominated by carbon dioxide, the Irish agricultural sector is dominated by methane and nitrous oxide, contributing over 90% of total agricultural GHG emissions. The figure below provides an overview of the GHG emission sources from the agricultural sector reported in the national inventory.

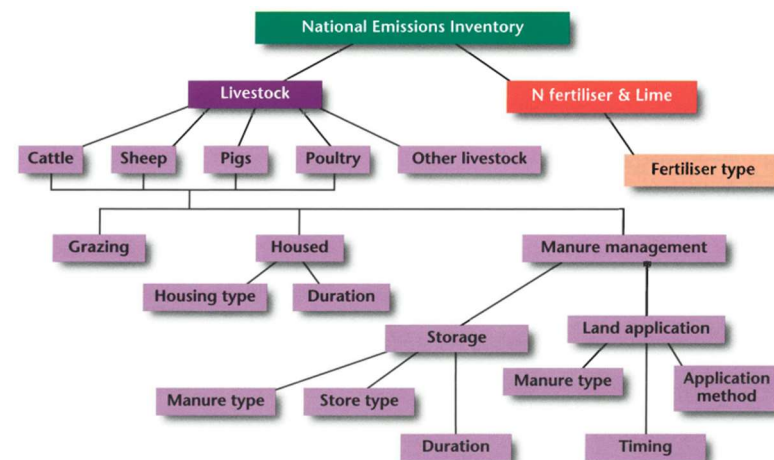


FIGURE 4: Overview of agricultural GHG emission sources in the national inventory.

Agricultural Emissions

Why Engage with Climate Change?

Social responsibility - We are fortunate to live in a beautiful and diverse part of the world. Our children, and all future generations of farmers, local communities and the wider society, deserve the same opportunity.

Policy - We are bound by international agreements, EU and national policies to reduce GHG emissions. These policies will lead to the implementation of regulations in the coming months and years to achieve the targets set.

Protect our markets - Climate change is central to our licence to farm and to supply our quality food products onto international markets.

Climate change will impact how we farm - We will have wetter winters, drier summers, more extreme weather events as well as increased risk of pests and disease.

Improved farm profitability - Many of the technologies farmers are being asked to implement to reduce emissions will also reduce costs and improve profitability. Farmers are part of the solution to emissions; this will create opportunities for income generation.



Did you know?

The two primary sources of GHG's from Agriculture are animals and Nitrogen (N) fertiliser. The emissions associated with animals relate to emissions directly from animals, as well as emissions associated with grazing, housing and manure management. Emissions associated with fertiliser relate to the quantity and type of N fertiliser used.

Where do I start?

1. Register for the Signpost Advisory Programme.
2. Establish a baseline assessment of the current actions being implemented on your farm.



3. Identify the total emissions figures for your farm (**Know Your Number**) using the Sustainability Digital Platform. This is an important starting point. It's hard to change what you don't measure.
4. Develop an action plan for the farm in conjunction with an advisor (**Make My Plan**). Being able to assess, select and commit to the actions that are most appropriate to the farm will help in creating this action plan.
5. You will be supported to enable you to make the plan happen through a range of advisory supports, including both group based and individual follow-up and advice.



Know my number

Top Tips to Utilising Slurry N Efficiently

1. Apply to fields with a large nutrient demand i.e. Silage Fields.
2. Apply under cool & damp conditions.
3. Apply with trailing hose or shoe.















4. Spring application is best.
5. Dilution with water will increase slurry N efficiency.
6. Test slurry to determine nutrient content.
7. Adjust chemical fertiliser N rate & make cost saving.

Dairy Emissions

Where are you
on the 12 Steps to
reduce Gaseous
Emissions on
YOUR FARM?

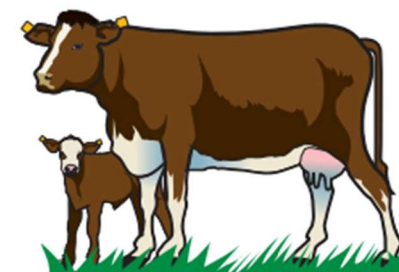


Action needed













12. Incorporate clover

 11. Finish cattle earlier

 10. Reduce age at first calving

 9. Increase milk solids/cow

 8. Improve dairy herd quality

 7. Improve animal health

 6. Better grassland management

 5. Reduce chemical N by 10kg/ha

 4. Use 100% LESS

 3. Build or maintain soil fertility

 2. Apply lime

 1. Use protected urea

- Action needed**
- Incorporating 5 kg/ha (2 kg/ac) will replace up to 100 kg/ha (80 units/ac) of chemical N/year
 - Use Dairy Beef Index (DBI) to produce earlier finishing cattle
 - Calf heifers at 22 to 26 months and aim for 20% replacement rate
 - Milk record, cull poor cows and aim for 305 day lactation
 - Use high EBI bulls and increase herd EBI by >€10/year. Use sexed semen to accelerate genetic gain
 - Create a herd health plan
 - Weekly farm walk, measure grass and extend grazing season
 - Apply lime, incorporate clover and make best use of slurry / FYM
 - Apply slurry in spring / early summer using Low Emission Slurry Spreading Technology (LESS)
 - Continue to use P & K fertilisers such as 18:6:12
 - Identify fields low in pH using soil analysis
 - Apply protected urea instead of CAN/straight urea

Beef Emissions

Where are you
on the 12 Steps to
reduce Gaseous
Emissions on
YOUR FARM?



Action needed

12. Incorporate clover

 11. Reduce age at slaughter by 1 month

 10. Reduce age at first calving

 9. Increase calf output/cow

 8. Improve suckler herd quality

 7. Improve animal health

 6. Better grassland management

 5. Reduce chemical N by 10kg/ha

 4. Use 100% LESS

 3. Build or maintain soil fertility

 2. Apply lime

 1. Use protected urea

- Action needed**
- Include clover in all reseed mixtures (5 kg/ha / 2 kg/ac) and consider oversowing clover in suitable fields
 - Aim for a combination of improved beef genetics, better grassland management and better health management
 - Calve heifers at 22 to 26 months and aim for 20% replacement rate
 - Improve calving rate by keeping records, creating a breeding season plan and culling poor/empty cows
 - Select 4 and 5 star beef sires on replacement/terminal indices
 - Create a herd health plan, including an annual vaccination plan, in consultation with your vet
 - Install paddock infrastructure, walk farm weekly and extend grazing season
 - Apply lime, incorporate clover and make best use of slurry / FYM
 - Apply slurry in spring / early summer using Low Emission Slurry Spreading Technology (LESS)
 - Continue to use P & K fertilisers such as 18:6:12
 - Identify fields low in pH using soil analysis and apply lime to correct deficiency
 - Apply protected urea instead of CAN/straight urea

Farmland:

actions to help pollinators

All-Ireland
Pollinator Plan
www.pollinators.ie



Implementation coordinated by the

National Biodiversity Data Centre



National
Biodiversity
Data Centre



Restoring Ireland's Wildlife



An initiative by

Bord Bia
Irish Food Board

pollinators.ie

Guidelines 5

pollination

poli'neiʃ(ə)n/

noun

The movement of pollen to allow plant fertilisation

'Bees are our most important insect pollinators'

Pollination, which plays a vital role in the reproductive cycle of flowering crops and wild plants, brings substantial economic benefits to agriculture, tourism and exports, as well as human health and wellbeing.

Why do we need pollinators?

Pollinators are important to farmers who grow pollinator-dependent crops and to those of us who want to grow our own fruits and vegetables. Even if we don't currently grow these crops, we should aim to retain the ability to do so for future generations.

We know that 78% of our wildflowers also benefit from being pollinated by insects – without bees we will lose the colourful and distinct natural beauty of our landscape, which makes it a pleasant place to live, an attractive destination for tourists, and a selling point for our agricultural produce abroad.

All-Ireland Pollinator Plan

Unfortunately our pollinators are in decline, and the problem is serious. **On the island of Ireland, we have one managed pollinator, the honeybee, and over 100 different types of wild bee. 20% of them are bumblebees and 80% are solitary bees. One third of these wild bee species are threatened with extinction.**

If we want them to be here to pollinate crops and wild plants for future generations, we need to manage the landscape in a more pollinator-friendly way and create a network of diverse and flower-rich habitats. The All-Ireland Pollinator Plan is supported by over 100 governmental and non-governmental organisations who have pledged to deliver actions to achieve this goal and make Ireland, North and South, more pollinator friendly. It is a shared plan of action. Everyone, from farmers to councils, local communities, businesses, schools, gardens and transport authorities have a role to play in the Pollinator Plan.

It is farmers, as keepers of the countryside, on whom we are most reliant to make the Pollinator Plan work.



There are over 100 different types of bees in Ireland:



Honeybee



Bumblebees



Solitary bees

Pollinators on farms

Traditional farming was very pollinator friendly because it was naturally flower-rich. There were hay meadows, annual flowers in cereal crops, more wildflowers along lanes and in field corners due to less spraying, more flowers in hedgerows due to less mechanisation and we grew more of our own fruits and vegetables. In the past 50 years, advances in farming have reduced the amount of flowers and it is inevitable that we now have fewer bees. The Pollinator Plan is not about 'returning to days of old' or reversing progress, but about working out new ways to provide enough food for our pollinators in the modern farmed landscape.

Taking actions to support bees on your farm will benefit *farmers* by:

- ▶ Reinforcing Ireland's vital green image in premium markets.
- ▶ Contributing towards Bord Bia's Sustainability Criteria, a component of their Quality Assurance schemes.
- ▶ Maximising production value via increased yields of crops.
- ▶ Saving time and money in many cases.
- ▶ Providing additional benefits such as improving natural pest control or protecting watercourses by creating pesticides/fertiliser buffer zones.
- ▶ Keeping farming options open for your children and their children's children. The value of many pollinator-dependent crops has increased by approximately 20% just in the past decade. Given our changing climate and the volatility in global markets it is hard to predict the most profitable way for future generations to farm. In the future, pollination services may be even more important to how your land is farmed.
- ▶ Maintaining a healthy and sustainable farm ecosystem and ensuring your land remains in as good, or better, a natural state as when you got it.

“ In ABP Food Group, we understand the influence a healthy ecosystem has on the agri-food sector. The All-Ireland Pollinator Plan offers an accessible, measurable framework that allows us to log our actions for biodiversity and effect change. The integrity of our natural environment is a pillar of our sustainable future, in which we all have a stake.”

ABP Food Group

WHO are our pollinators?

Pollination occurs when pollen is moved between flowers, leading to fertilisation and successful seed and fruit production for plants. For crop producers this means reliable yields of high quality produce, and for consumers it means the availability of a range of fruit and vegetables at an affordable price. It also means a diverse and plant-rich natural landscape that is wildlife friendly.

Most insect pollination on the island of Ireland is carried out by bees, and in fact, most is provided by *wild bees* - bumblebees and solitary bees. Research shows that reliable pollination services depend not only on healthy honeybee populations, but also on an abundance and diversity of wild bees and other insect pollinators.

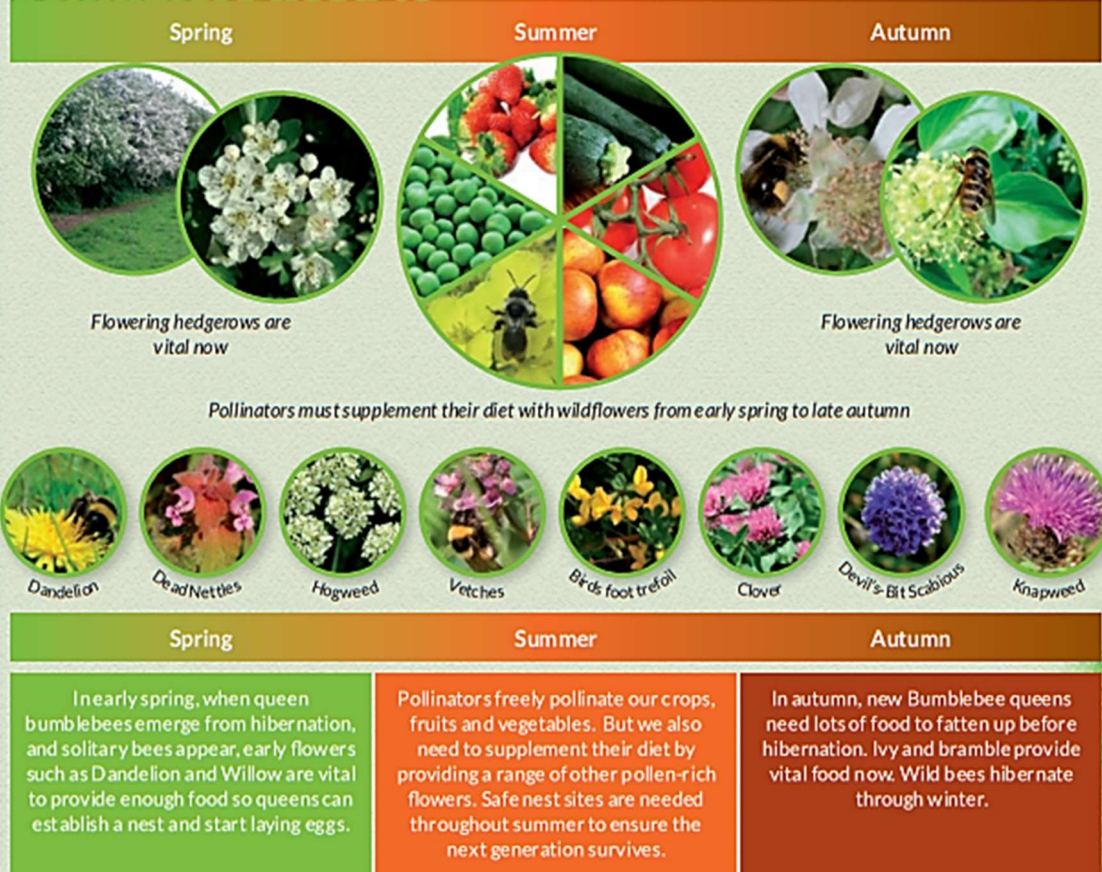
survive?

Food: Lack of food is a major cause of pollinator declines. Bees feed only on pollen and nectar from flowers. Nectar gives the adults energy for flying and they feed pollen to their young. To have a healthy balanced diet, bees need to be able to feed on a range of different flowers from MARCH right through to OCTOBER. Spring is when bees are most at risk of starvation.

Shelter: Bumblebees nest in long grass (often at the base of hedgerows). Most solitary bees nest by making little tunnels in bare soil, while a small number nest in existing cavities in dry stone walls, masonry or wood.

Safety: Bees need to be protected from insecticides. Equally, they need areas of food and shelter that are free from herbicides and fungicides.

WHAT do our pollinators need to



*This guideline document, developed with farmers, and in consultation with farming organisations, explains 5 actions you can take to help pollinators. All these actions are evidence-based, i.e. scientific studies show these actions have a positive impact on pollinators. These actions are about farming **with** nature. Often they are 'do not' actions rather than 'do', so that nature itself can do the work.*

5 actions for *bee-friendly* farming:

- 1 Maintain native flowering hedgerows
- 2 Allow wildflowers to grow around the farm
- 3 Provide nesting places for wild bees
- 4 Minimise artificial fertiliser use
- 5 Reduce pesticide inputs



The following pages provide more details on these five actions.

Landscapes that support high quality dairy, beef, lamb and cereals are also capable of supporting pollinators

Small changes → huge impact!

Maintain native flowering hedgerows

As landscape features, hedgerows are synonymous with our green image that is so important in selling our produce abroad. Flowering hedgerows are vital to the survival of pollinators, providing food, shelter and transport corridors.



Minimum target for pollinators

- ▶ Allow your hedgerows to flower.
- ▶ Allow at least one Whitethorn/Hawthorn in each hedgerow to grow into a mature flowering tree.
- ▶ Plant some pollinator friendly trees to grow as individual mature specimens around the farm.

Benefits to your farm:

- Maintaining good native hedgerows supports our green image in international markets.
- Hedgerows provide animals with both shelter from freezing winds in winter and shade during the summer months. This can help mitigate against stress related illnesses (Milk Fever, Grass Tetany, Mastitis, Heat Stroke, and Photosensitisation).
- Hedgerows provide a drainage mechanism, helping to soak up excess water on the land. A reduction in surface water in paddocks is known to help reduce a variety of animal diseases and the organisms that cause disease such as Liver Fluke.
- Help to act as a physical barrier to the movement of animals, which can decrease the spread of disease through animal-to-animal contact.
- Using hedgerows to slow winds and reduce excess soil moisture can increase grass growth to further enhance grazing quality and quantity.
- Provide a habitat for other beneficial insects that help with natural pest control.
- Hedgerows provide privacy and can abate smell/noise pollution.

“For most farmers, working with nature is their favourite part of the job. We view the land and plants as part of the family, we are all attached. We need proper information. If we don't know what harm we are doing, we won't see the need to change.”

H. Harris, Tillage Farmer

Blackthorn

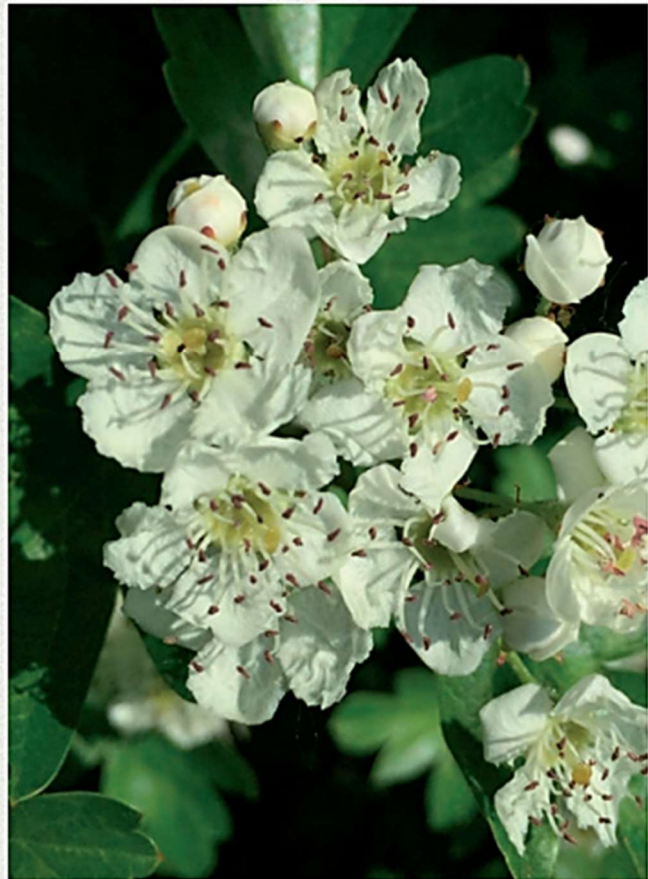


Benefits to pollinators:

On farmland, hedgerows are vital to the survival of pollinators. Good hedgerows can provide food (flowers) from spring right through to autumn, shelter for nesting and overwintering, and act as corridors that help pollinators move through the landscape. This action is about protecting what native hedgerows you already have on your farm, but making sure they are allowed to flower.

“With 7 million cattle to feed daily on this island, providing space for wildflowers or bees or wildlife will always be a challenge, but what a great legacy to leave our children if we can pull it off!”

Agricultural Advisor



Whitethorn/Hawthorn is also called the May bush. It is easy to see from a distance which hedgerows are pollinator friendly as they will be white in May.



Hedgerows provide shelter for livestock.

Often overlooked for its wildlife value, Bramble is a very important food source for bees.



What does a pollinator-friendly hedgerow look like?

- Contains a mix of native pollinator-friendly trees/shrubs that provide food.
- Managed so that as much as possible is allowed to flower each year.
- A 1.5-2m border at the base is protected from fertiliser and pesticides. This allows wildflowers to grow and provide food. This long grass will also provide nesting habitat for bumblebees.
- It may have small areas of south or east-facing exposed bare earth at the base to provide areas for mining solitary bees to nest.



The ideal native hedge is made up of 75% Whitethorn and 25% of at least 4 other species.



Intensively managed hedgerows don't offer flowers for bees or shelter for livestock.

In springtime each bumblebee queen needs to visit 6,000 flowers a day to get enough energy to raise her first batch of young. Hedgerows that are allowed to flower are the most important sources of food for these bees in spring. If the colony doesn't get off to a good start there will be fewer bees around when we need them to pollinate our crops, fruits and vegetables later in the summer.

Native flowering hedgerow plants that are good for pollinators:



Willow (Mar-May)



Blackthorn (Mar-May)



Whitethorn/Hawthorn (Apr-Jun)



Wild Cherry (Apr-May)

Spring

Hedgerow Management advice:

Cutting to encourage flowering

- Leave at least one mature Whitethorn/Blackthorn tree within each hedgerow.
- Where possible, cut hedgerows on a minimum 3-year cycle. Cutting annually stops the hedgerow flowering and fruiting.
- Where possible, cut in rotation rather than all at once as this will ensure some areas of hedgerow on your farm will always flower (Blackthorn is white in March. Whitethorn flowers at silage time in May).
- Hedges managed for pollinators should ideally be cut between Nov-Jan. If they must be cut outside this, cut in rotation, so some areas remain undisturbed.
- Let some Bramble and Ivy grow in hedgerows. They are key nectar and pollen sources in summer and autumn.
- Where hedgerows must be cut along the roadside for safety, allow the inside to flower.
- Aim for a hedgerow that is as high as possible, but at least 2.5m above ground level or above the bank.
- Let some of your hedgerows grow wild, side-trimming only.

Hedgerow base

- Avoid spraying the hedgerow base, use mechanical weed control and spot spray only in exceptional cases
- Leave an unfertilised buffer margin at the hedgerow base

A pollinator-friendly hedgerow should be flowering, at least 2.5m in height, and should be trimmed in an A-shape.



Willow is a very important food source in early spring when queens emerge from hibernation. Having Grey/Goat Willow, Whitethorn, Whitebeam, Crab apple or Wild Cherry as individual mature trees around the farm will provide important food for pollinators.



Autumn

Allow wildflowers to grow around the farm

By avoiding over-management of non-productive areas, you can increase wildflowers in non-farmed areas and ensure that you have food sources for pollinators throughout the year.

'Non-farmed' areas include farmyards, farm laneways, field margins, arable margins, watercourse margins and field corners.



Minimum target for pollinators

- Ensure there are always some wildflowers flowering in non-farmed areas from spring right through to autumn.

Benefits to your farm:

- Wildflowers help create a colourful and distinct rural landscape that creates a pleasant place to live and work and is a selling point for agricultural produce abroad.
- Increases the biodiversity value of your farm in areas where there will be no loss to production.

Benefits to pollinators:

- Having flowers available across the seasons on the farm will help pollinators survive throughout their entire annual lifecycle. Wild bees don't make honey, so they are never more than a few days away from starvation – they need an uninterrupted source of wildflowers for food. Additional flowers are particularly important in summer after hedgerows have finished flowering.

Important wildflowers from spring to autumn

Dead Nettle



Vetches



Dandelion



Hogweed



Ox-eye daisy

Spring

A flower-rich field margin

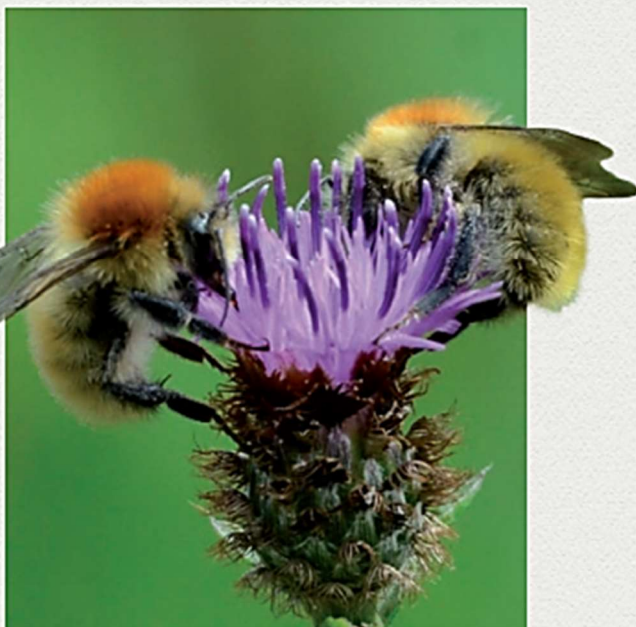
This action will also benefit all other wildlife on the farm



Managing non-farmed areas to be pollinator friendly:

- Allow wildflowers to flower. Cut these areas once a year in autumn, after flowering, and remove toppings (to avoid soil enrichment – wildflowers thrive in lower fertility soils). Do not spray or fertilise. If managed in this way, they will gradually become more flower-rich over time. In areas where one annual cut is not possible, reduce your cutting to at least allow Dandelions bloom in spring and Clovers in summer.
- Avoid 'over-neatness'. Remember bees and other wildlife see and need a very different landscape to humans.
- If you have to control noxious weeds in these areas, pull or use spot treatment.

Fertilised and reseeded vs. natural regeneration on a farm in Co. Galway.



Large carder bee on Knapweed.

Selfheal



Clover



Woundwort



Knapweed



Bird's-foot-trefoil



Meadow Vetchling



Devil's-Bit Scabious



Autumn



Protect flower-rich areas

All other naturally flower-rich areas on your farm —like old pastures that have not been reseeded in living memory, wet grasslands, edges of ponds, woodland edges or areas of bogland— should be protected and maintained as they are vital for pollinators and other wildlife.

Hay meadows

Managing some hay meadows (however small) can be an important action both historically and culturally, but also for conserving our pollinators, wildflowers and other wildlife. If the weather should be unfavourable for hay making then haylage is fine. The important thing is to have a later cutting date than for silage as this lets the wildflowers bloom.



Heath bumblebee collecting pollen. Dandelion is one of the most important food sources for our pollinators in spring.



If not over-managed, farm laneways and other non-farmed spaces can offer pollen-rich wildflowers throughout the year for bees.

Research has shown that when you double your wildflowers, you can increase the abundance of bees up to 16-fold!



Bumblebee and hoverfly on thistle.
This hoverfly (right) is a bumblebee mimic

Thistles need to be managed but are very good sources of food for bees when they flower and for birds when they go to seed. Keep areas with Bramble or Ivy – these are extremely important food sources in late summer and autumn.

The farm garden

The farm garden can be important for pollinators. Growing some of your own fruit and vegetables can save money and is a way of helping children connect with nature. Grow pollinator-friendly fruits and vegetables like currants, blackberries, raspberries, strawberries, tomatoes, courgettes, field/runner beans, pumpkins. Consider having a small farm orchard with apples and damson plums – select a mix of early, mid and late flowering varieties.

Plant a range of ornamental plants or shrubs that will flower from spring through to autumn to provide additional food for bees. Keep your garden pesticide and fertiliser free so that it is a safe spot for pollinators.

The All-Ireland Pollinator Plan has a set of guidelines for making gardens pollinator friendly. It includes lists of ornamental shrubs, plants and bulbs that provide food for bees. See www.pollinators.ie



Provide nesting places for wild bees

Creating good nesting habitats is simple and inexpensive. It is also completely safe; wild bees do not live in large colonies that need to be defended as honeybees do. Wild bees have no interest in humans, are not aggressive and pose no threat.



Minimum target for pollinators

Create/maintain some nesting habitat for bumblebees, mining solitary bees and cavity-nesting solitary bees on the farm. It is important to keep all nesting habitat free from pesticides.

Benefits to your farm:

- ▶ Ensuring that wild bees can survive on your farm protects your ability to grow certain crops and many fruits and vegetables.
- It will also create habitats for other insects, many of which are beneficial for pest control.
- It is very low cost and could be a way of including children in activities on the farm.

Benefits to pollinators:

- Provides safe areas for wild pollinators to hibernate, nest and breed.
- No matter how many flowers grow on your farm, without suitable nest sites, bees can't survive there. When creating nesting habitat think carefully about where to put it and ensure that there are flowers nearby.

Bumblebees commonly forage within 1km of their nest.

Solitary bees commonly forage within 300m of their nest.

Studies have shown that an increase in 150m between nesting site and food plants can reduce the number of viable offspring by more than 70%



How to provide nests for Bumblebees

Bumblebees nest in long or tussocky grass.

- Leave long grass along the base of hedgerows, along lanes or in field margins and corners uncut from March until October.
- Bumblebee colonies die off in October/November (while mated queens go into hibernation) so it is okay to cut or manage these areas in late autumn/winter.



How to provide nests for Mining Solitary bees

About 85% of our solitary bees are mining bees. They nest by making tiny burrows in bare earth (soil, sand, clay and peat). They will nest in flat well-drained areas, but generally prefer sheltered banks that are south, southeast, or southwest facing.

- Where there is exposed bare earth at the base of hedgerows allow these areas to remain, particularly where they are south, east or west-facing.
- In winter, create new earth banks elsewhere by scraping away top layer of soil – they just need to be stable and free draining. Areas can be from 10cm² to 1m². The larger the area scraped back the better. It will save time going back every few months to clear back the overgrown vegetation. Avoid creating these areas anywhere that is vulnerable to soil erosion e.g., on steep slopes near watercourses.
- If you have old gravel pits, avoid levelling these out as they provide excellent nest sites for mining bees.



How to provide nests for Cavity-nesting Solitary bees

About 15% of our solitary bees are cavity-nesting bees. They make their nests in existing cavities in south-facing stone walls, masonry, wooden structures or commercially available bee nest boxes.

- Drill small holes in untreated wooden fences or concrete structures. Avoid north facing aspects.
- Alternatively, create your own bee box by drilling 10-30 holes in untreated wooden blocks and attaching them to an outdoor structure. Installing a number of small boxes is better than one large one because it minimises the risk of disease and predation.
- Holes should be 10cm in depth and 4-10mm in diameter at a height of at least 1-2.5m. It is important to have holes of different sizes for different bees.

For additional information see our 'How-to-guide: Creating wild pollinator nesting habitat' www.pollinators.ie

Minimise artificial fertiliser use

Pastures that included Clover and other legume rotations were more common before the arrival of chemical fertilisers, and are becoming relevant again as a way of reducing costs.



Minimum target for pollinators

- Only use fertilisers where required and do not spread unnecessarily in awkward corners, turning circles, buffer strips, etc.
- Ensure accuracy in fertiliser spreading and avoid spreading close to the base of hedges or hedgerow margins – fertiliser here prevents the growth of pollinator-friendly wildflowers.
- Use clovers, peas/beans or other herbal leys in some areas of the farm instead of chemical fertilisers.

Benefits to your farm:

- Legumes like Clover will naturally fix Nitrogen, reducing demand and cost of artificial N from fertiliser
- Planting a multi-species sward with a diverse range of productive grasses, herbs and legumes can provide benefits to soil structure, drought resistance, nitrogen fixation, season-round yield, and more balanced mineral and protein content.
- Reduction in chemical fertilisers will prevent waste and reduce costs.

Benefits to pollinators:

- When they flower, Clovers and other native legumes (such as Bird's-foot-trefoil) are excellent food sources for pollinators.

Most wildflowers thrive on lower fertility soils. Keep fertilisers away from non-farmed areas to encourage wildflowers. Be sure not to replace existing areas that are already good for wildlife. Always try to preserve any areas on the farm that are already naturally flower-rich.



The multi-species leys on the farm have proven beneficial to a multitude of bees. They have enhanced the quality of the fodder for the animals and helped improve the health and fertility of the herd, ultimately making our farm a more pleasant and sustainable place to work and live."

K. & M. McCall, Suckler Farmers



Recent Irish research shows that multi-species swards, with lower levels of N fertiliser used, have higher dry matter yields and significantly less emissions of the potent greenhouse gas Nitrous Oxide (NO) per tonne of herbage than perennial ryegrass swards.

Using clovers

- A mix of ryegrass and 3 white clovers (small, medium and large varieties) allows clover to compete and provide naturally fixed N in a wide variety of sward heights.
- For pollinators, including some wild clover is preferable as it tends to be longer lived and flower for a longer period than agricultural cultivars.
- In annual mixes, annual Crimson Clover is recommended for bees as perennial clovers won't provide much pollen and nectar in the first year.
- Clover and other legumes only present a risk of pasture bloat in areas with more than 50% clover.
- Allowing clover to flower, even for a short period, is extremely beneficial to bees.

Recent Irish research shows that lambs reared on more diverse, lower input swards grew significantly faster, had lower intestinal worm burden, were slaughtered earlier and had a higher kill-out percentage than those reared on higher nitrogen input perennial ryegrass.



On tillage farms, legumes like peas and beans can be used to fix Nitrogen, as well as providing important food sources for pollinators during flowering.

Herbal Leys

Other options include the use of Herbal Leys. These are a mix of grass, legume, and herb seeds. They usually contain a mixture of native and non-native plant species. These can produce well-balanced forage across the season as opposed to a spike of productivity which is typical of single grass species systems. Many of the species used in herbal leys are deep-rooting and can unlock resources from the subsoil that are not accessible by the shallow-rooted grass-only systems currently favoured. Well balanced multi-species mixtures do not require high fertiliser

inputs and should provide increased levels of minerals and vitamins to livestock. Also, if herbal leys are grown for approx. 5 years they will substantially improve and restore the soil's natural fertility and improve soil drainage structure due to deep root action. Leys with plants high in tannins, such as Sainfoin, Bird's-foot-trefoil or Chicory are also effective at reducing worm loads in livestock. These plants are excellent sources of food for pollinators.



Reduce pesticide inputs

*Insecticides can harm pollinators directly, killing them outright or affecting their behaviour and ability to complete their life cycle. Fungicides and herbicides harm pollinators indirectly: **herbicides** can greatly reduce the wildflowers that pollinators depend on for food, while **fungicides** can increase the toxicity of some insecticides.*



Herbicides: minimum target for pollinators

- ▶ Avoid spraying close to the base of hedgerows. If necessary, these areas should be strimmed/mowed instead, and if possible the grass should be removed.
- ▶ Avoid spraying non-farmed areas where wildflowers are or could grow.
- ▶ Where weed control is necessary, pull or use selective spot treatment where possible.
- ▶ Avoid spraying pollinator nesting sites such as soil banks or stone walls



Insecticides: minimum target for pollinators

- ▶ Reduce the number and frequency of pesticide applications in accordance with an appropriate integrated pest management strategy.
- ▶ Spray pesticides only in calm weather and use low-drift nozzles to avoid pesticide drift onto wildlife areas and to reduce costs. Do not spray when bees and other insects are most active during the middle of the day.
- ▶ Inform your local beekeeping association in advance of crop spraying so that beekeepers can take action to protect any hives in the vicinity, e.g. see BeeConnected www.beeconnected.org.uk

Pesticides play a role on most modern farms but should always be used sustainably under the relevant policies across the island of Ireland. Even if you do use pesticides, there may be small actions that could be taken to reduce their use and help pollinators.



Benefits to your farm:

- ▶ Reducing pesticide use can save time and money.
- ▶ Reducing chemical inputs can improve the 'green' credentials of your produce.
- ▶ Reducing use as part of an integrated pest management strategy can help prevent pesticide resistance building up in the pest population.
- ▶ Reducing pesticide use can ultimately increase natural enemy abundance and thus natural pest control.
- ▶ Reducing herbicide use in grassland can increase abundance of naturally beneficial herbage, giving livestock a more balanced diet.

Benefits to pollinators:

Reducing pesticide use will ensure there are more wildflowers for pollinators to feed on, and will increase overall bee health.

Seed treatments:

Many seeds come pre-treated with systemic insecticides and fungicides to protect both the young seedlings and later the adult plants.

Although research is still being carried out, many studies have shown that seed treatments can persist in the soil, leach into waterways and harm pollinators and other wildlife. Ask your supplier if your seed is treated, and with what, so that you are not inadvertently using insecticides that are not required.



Organic farmers cannot use any synthetic pesticides or fertilisers and will reach the AIPP gold standard on actions 4 and 5. For more information please see www.iofga.org, the website of the Irish Organic Farmers and Growers Association.



The Large carder bee is vulnerable across Europe making Ireland's populations even more important to protect.



More flowers + less chemicals = more bees!

This booklet is one of a series of Farming Guidelines produced under the All Ireland Pollinator Plan. For more information and other useful resources, such as our 'How-to-guides', please see www.pollinators.ie



You can also record all the actions you have taken on your farm for pollinators on our Actions for Pollinators mapping system. See <http://pollinators.biodiversityireland.ie/>

Text: Úna FitzPatrick, Jane Stout, Melina Quinn and Juanita Browne. Thanks to Erin Jo Tiedeken, Dara Stanley, Jerome Walsh, Catherine Keena and John Fogarty. Special thanks to all those farmers, farming organisations and others who contributed to this document during the consultation phase. Design: Vitamin Studio, Waterford

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About the National Biodiversity Data Centre

The National Biodiversity Data Centre is a national organisation that collects and manages data to document Ireland's wildlife resource, and to track how it is changing. Find out what biodiversity has already been recorded in your local area: maps.biodiversityireland.ie

Help us to build up the knowledge of biodiversity in your local area by submitting sightings to records.biodiversityireland.ie

Photos generously provided by: Mairéad Crawford, Tom Cuffe, Zoë Devlin, Steven Falk, Áine Fenner, John Fogarty, Aidan Foran, Neil Foulkes, Michael Keating, Olivia Liveen, Sallyann Maron, George Monteith, Oisín Duffy, Michael O'Donnell, Bryan Pinchen, Donna Rainey, Les Reed, Donal Sheehan, Dara Stanley, Liam Stenson, Leon van der Noll, Anneke Vrieling

Invasive Species

National Biodiversity Data Centre

Documenting Ireland's Wildlife



Have you seen these invasive species?

Help tackle the threat of these invasive plants to our wildlife, health, property and economy.

- Photograph and report sightings.
- Do not expose bare skin to Giant hogweed, it causes severe blistering!
- Cutting knotweed can spread it.
- Seek advice on control.
- It is an offence to cause or allow these species to spread.



Newly emerging Japanese knotweed © GBNNSS



Stem is zig-zag formation



Japanese knotweed in flower

Japanese Knotweed

Fallopia japonica

Japanese knotweed along roadside



Leaf comparison of the different invasive knotweeds



Report your sighting

<http://records.biodiversityireland.ie> or Biodiversity Capture app



National Biodiversity Data Centre

Documenting Ireland's Wildlife



Have you seen these invasive species?

Giant hogweed

Heracleum mantegazzianum

Hairy bristles on purple blotched stem
© Wiki commons



Deeply serrated and large leaves of giant hogweed
© RPS group Plc



Giant hogweed can grow to 5 meters © Tom Richards Wye and Usk Foundation

Himalayan balsam

Impatiens glandulifera

Distinctive flowering head



Red toothed edges to leaves



Dense stand of Himalayan balsam in a wet woodland

Report your sighting

<http://records.biodiversityireland.ie> or Biodiversity Capture app





Environmental Impact Assessment(Agriculture) Regulations Information Leaflet for Farmers



What are the Environmental Impact Assessment (Agriculture) Regulations?

The European Communities (Environmental Impact Assessment) (Agriculture) Regulations 2011 came into effect on the 8th September 2011 and were amended on 19th September 2017. The Regulations apply to three different types of on-farm activities:

(1) Restructuring of rural land holdings (2) commencing to use uncultivated land or semi-natural areas for intensive agriculture and (3) land drainage works on lands used for agriculture (excluding drainage or reclamation of wetlands).

The Regulations provide for an assessment of the environmental impact of certain projects before they can proceed. Projects not captured by the screening criteria set out overleaf can proceed without Department approval.

What is “screening”?

Screening is the cost-free process whereby the Department of Agriculture, Food and the Marine (DAFM) examines the proposed activities for environmental impact to determine if the activities can proceed without the need for an Environmental Impact Assessment (EIA). Where the activities are likely to have a significant effect on the environment a full EIA will be required.

What activities are covered by the Regulations?

1. Restructuring of rural land holdings:

(a) Removal of lengths of field boundaries such as hedgerows, hedgerows on clay banks, stone walls etc.

(b) Re-contouring of land covers, for example, levelling off hills or infilling of hollows (by removing or shifting earth or rock that originates from within the farm-holding).

NOTE: Exempted activities – which do not need DAFM approval:

- Maintenance work on existing stone walls and hedgerows
- Removal of post and wire fencing (barbed wire or electrified wire)



2. Commencing to use uncultivated land or semi-natural areas for intensive agriculture:



Works carried out to enhance or intensify the agricultural productivity of (a) **uncultivated land** or (b) **semi-natural areas**, include:

- Mechanical cultivating e.g ploughing;
- Adding or significantly increasing levels of organic or chemical fertiliser used;
- Sowing seed;
- Clearing existing vegetation.

NOTE: Exempted activity:

- Controlling vegetation such as invading briars does not require DAFM approval

3. Land drainage works on lands used for agriculture including:

- Installing open drains
- Installing field drains (not open)
- Opening of a short distance of watercourse

NOTE: Exempted activity:

- Cleaning of existing open drains does not require DAFM approval

Note: Wetlands (as defined in the EIA Guidance Document) *are not covered by the EIA (Agriculture) Regulations*. Planning permission is required for the drainage or reclamation of wetlands in excess of 0.1 hectares (or below that having a significant effect on the environment). For more detail see www.environ.ie.

Thresholds for screening applications and mandatory EIA

(Areas (or lengths) of works undertaken in any one year or the sum of such areas over a 5-yr period, beginning 8.9.2011.)

Type of on-farm activity:	Screening by DAFM required:	Mandatory EIA
Restructuring of rural land holdings		
- Length of field boundary to be removed	Above 500 metres	Above 4 kms
OR - Area of lands to be restructured by removal of field boundaries	Above 5 hectares	Above 50 hectares
- Recontouring (within farmholding)	Above 2 hectares	Above 5 hectares
Commencing to use uncultivated land or semi-natural areas for intensive agriculture	Above 5 hectares	Above 50 hectares
Land drainage works on lands used for agriculture	Above 15 hectares	Above 50 hectares



When do I need to apply for screening?

- If the proposed activity exceeds the thresholds outlined above;
- If the proposed activity is within, is near, or may affect a proposed **Natural Heritage Area or nature reserve**;
- If the proposed activity **may have a significant effect on the environment**. (*Examples of what constitutes 'significant effect on the environment' are outlined in the EIA Guidance Document*).
- If the proposed activity is identified as 'requiring consent' or is a 'notifiable action' in a **European site (e.g. Special Area of Conservation or Special Protected Area), or an NHA**. In such circumstances, the National Parks and Wildlife Service (NPWS) may direct you to apply to DAFM for screening in the case of sub-threshold works that have been brought to their attention (via notifiable actions system or otherwise) or
- If the proposed activity **may impact on an archaeological monument**, the National Monuments Service may direct you to apply for screening in the case of sub-threshold works that have been brought to their attention.

If you have doubts that any works that you propose to carry out may be subject to the requirements of the Regulations, you should apply to DAFM for screening. For further information, consult your agricultural adviser or DAFM.

What do I have to do to apply for screening?

- Complete an **Application for an EIA Screening Decision** form and submit, together with a map identifying the area where the proposed works are to take place, to the address at the bottom of this page.
 - There is no cost involved in the application process.
 - A Department official may arrange to visit your farm.
 - A decision from DAFM will issue to you promptly (generally within 4 weeks)
- If permission is not granted and you wish to proceed with the proposed activity, a full Environmental Impact Assessment will be required.*

Further information

The **EIA Guidance Document and Application Form** is available from all local DAFM offices (including Johnstown Castle) and is available on the DAFM website www.agriculture.gov.ie - follow the links under Rural Environment / Environmental Impact Assessment. It is also available from local Teagasc/ACA offices.

For further information on **Nature reserves, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Natural Heritage Areas (NHAs)** and proposed Natural Heritage Areas (pNHAs), contact your local Conservation Ranger, National Parks and Wildlife Service or see the NPWS website www.npws.ie.

For further information on **archaeological monuments**, please see www.archaeology.ie and <http://webgis.archaeology.ie/NationalMonuments/FlexViewer/>

**EIA Section,
Department of Agriculture,
Food and the Marine,
Johnstown Castle Estate,
Co. Wexford
Tel: 053-9163444**



ORGANIC DAIRY FARMING

Introduction

Organic dairying is a relatively small but growing sector within the dairy industry in Ireland.

It offers an excellent opportunity as a profitable enterprise option, but success is dependent on you having a good interest in organic methods and having a market price secured for your milk. Important issues include grassland management, winter feeding, housing and cow health. For full interpretation of the rules and regulations governing organic dairy farming, it is

essential to study the 'Organic Food and Farming Standards in Ireland' document, which is available from the organic certification bodies (OCBs) – the Irish Organic Association (IOA) and the Organic Trust.

The market for organic milk looks positive and is growing globally. Presently, most milk is supplied domestically. There are a number of established commercial dairies handling most of the organic milk. Demand exists for both summer and, in particular, winter milk.



Average stocking rate is in the region of 1.4LU/ha.

Profitability

Organic dairy farming compares favourably to conventional systems. Typically, organic dairy farmers are stocked in the region of 1.4 LU/ha and therefore, require access to more land compared to the average conventional dairy farmer. On a return per litre basis, some of the most profitable dairy farmers in the country are farming organically. This is clearly in evidence at Teagasc/Department of Agriculture, Food and the Marine (DAFM) organic demonstration farm walks. Maintaining high output levels, coupled with lower production costs, and achieving a premium market price for milk contribute to higher margins on organic farms.

Organic conversion period

Grass-based farms go through a 24-month conversion period on the land, during which time it must be managed to full organic standards, but milk cannot be supplied to an organic market. The cows must be managed to full organic health and welfare/housing standards. Animals must be fed to full organic standards (100% feed from organic sources) for at least the last six months of conversion. Note: from the conversion start date, all feed must be genetically modified organism (GMO) free.

Breed type

Breed choice, just like for the conventional farmer, is down to personal preference and what suits your farm the best. Important factors to consider for organic dairy farmers are the market demand for volume vs milk solids (fat and protein), and exploring with the processor any bonuses that may be available for the latter. The capacity of the animal to adapt to local conditions, their resistance to diseases and your ability to grow quality grass-clover and other legume-based forages for feed are important factors which should also be considered.

01: ORGANIC DAIRY FARMING



Housing and bedding

More space is generally required over conventional standards. In organic farming, animals must have access to a bedded area. A 100% slatted area is not permitted. Cubicles are also permitted but they must have dry bedded material on top of the cubicle. Rubber mats alone on cubicle beds are not a substitute for bedding. Straw (conventional is permitted), sawdust (untreated), and woodchips for bedding of animals are permitted.

Animal health

An animal health plan is prepared by your veterinary surgeon and submitted as part of the conversion plan to the organic certification body prior to conversion. In essence, animals are treated if a treatment is required but under more formal arrangements. Withdrawal periods may have to be doubled or trebled under organic

standards. For mastitis, antibiotics can be used in clinical cases with permission from your vet, and where no other treatments would be effective. Two courses of antibiotics within 12 months are permitted, otherwise the cow is removed from the milking herd.

Replacement heifers

On conversion, permission may be sought to source replacement heifers from non-organic farms up to a maximum of 10% of the herd size or in special circumstances, up to 40% of the herd size, e.g., in the latter case, a major extension of stock on the farm, breed change or new livestock specialisation. Therefore, prior to conversion, prospective organic dairy farmers are advised to source appropriate breeds of livestock that are required for breeding purposes on their organic holding.

AI and use of a bull

Organic farmers are permitted to buy a bull from a non-organic farm for breeding purposes. Use of artificial insemination (AI) is also permitted. Sexed semen is permitted once the semen is not chemically separated.

Weed control

As all herbicides are prohibited in organic farming, weed control must be achieved by management practices and mechanical methods. Maintenance of good levels of soil fertility and appropriate soil pH, regular topping, and rotation of silage and grazing ground can help achieve good control. A dense, well-managed sward will minimise infestation since seedling weeds are poor competitors to grass-clover swards.

Feed

As 100% of the feed must be from organic or in-conversion sources, you need to ideally produce all your feed from the farm. Organic grain and compound ration is fairly widely available. Prices for organic concentrate feed are generally around double the price of conventional. Contact details of where to buy organic feed may be found on the OCB websites.

Soil fertility

Good clover swards (especially white clover for grazing and red clover for quality silage), and targeted use of lime, farmyard manure and slurry mean that coping without chemical fertiliser can effectively be managed. Soil fertility inputs that are commonly imported onto organic farms

include:

- lime;
- cattle slurry from another grassland-based farmer (either organic or conventional farmer; derogation farm source >170kg N/ha is also permitted);
- organic and/or free-range chicken manure;

- dairy sludge from an approved dairy processing plant; and,
- certain mineral sources of fertilisers, e.g., ground rock phosphate and basic slag.

Note: organic manures from factory farms including commercial pig and non-organic or non-free-range chicken farms are not permitted.

Further information

For further information please contact your local Teagasc advisory office.

The following resource is also helpful:

● www.teagasc.ie/organics

Other useful fact sheets in this series:

Steps to Organic Conversion
Organic Cattle and Sheep
Organic Horticulture
Organic Cereals
Organic Poultry

www.teagasc.ie/ruraldev



ORGANIC CATTLE AND SHEEP

Introduction

The organic drystock sector is the largest of the organic enterprises in Ireland, with about 70% of all organic producers involved in either cattle and/or sheep production. This is mainly because the transition at farm level

from conventional methods is relatively straightforward compared to other enterprises like tillage, dairying or horticulture. Soluble mineral fertilisers are prohibited, but some inputs such as lime and rock phosphate are permitted. Manufactured agro-chemicals (e.g., herbicides) are prohibited.

For full interpretation of the rules and regulations governing organic drystock farming, it is essential to study the 'Organic Food and Farming Standards in Ireland' document, which is available from the organic certification bodies (OCBs) – the Irish Organic Association (IOA) and the Organic Trust.



Conversion to organic drystock farming is more straightforward than in other farming systems.

Factors to consider

There are a number of factors that you need to take into account when considering the transition.

Housing

Many farmers, especially cattle farmers, find that the greatest alterations that need to be made at farm level are changes to winter housing. More generous space allowances are required – for cattle the rule of thumb is that 1.0m² is required for every 100kg liveweight. All cattle and sheep must have access to a

dry-bedded lying area. Up to 50% of this area can be slatted, but the rest must be solid floor. Conventional straw may be used for bedding.

Breed selection

It is recommended that you establish your breeding herd and/or flock prior to entering conversion. Once in the system, you are generally only allowed to buy in 10% of your adult herd or 20% of your flock each year as non-organic. Soil type and location will affect your breed choice. Carry out research with

the processors to find out what breeds are most suitable. For cattle, there is a market for both traditional and continental breeds. Generally, a continental-type cow is recommended using a traditional breed of bull. For sheep, organic farmers tend to choose breeds with a high tolerance to worms (e.g., Texel). A crossbred ewe can be crossed with either Texel, Suffolk or Charolais to increase growth rate.

Feed

As 100% of the feed must be from organic or in-conversion sources, you need to ideally produce all your feed from the farm. However, you can source organic grain and compound ration when required.

Veterinary treatments

Protecting animal health is the number one objective of the organic drystock farmer. Routine treatment of animals with anthelmintics is prohibited, and a rotational grazing system should be in place to minimise

03: Organic Cattle and Sheep

worm burden. This is particularly the case for sheep-only farms, due to parasite build-up, especially stomach worms. Permission has to be sought to carry out any mutilations and an appropriate anaesthetic/analgesic must be used. The vet is an important advisor on your farm. If a problem occurs, faecal analysis is recommended and the vet can sign-off the appropriate treatment on the organic certification record book. The animal health plan, produced as part of the conversion plan, deals with mineral deficiencies and vaccination issues.

Buying stock

Weanlings and store cattle can be purchased from a number of dedicated organic marts, which run throughout the country (see OCB



Sheep grazing helps to control weeds and encourages white clover.

websites for information). Private farm-to-farm sales between organic farmers are becoming increasingly popular. If you plan on buying in store animals for finishing over the summer, you require good linkages and advanced planning with store cattle sellers.

Soil fertility

Good clover swards (especially white clover for grazing and red clover for quality silage), and targeted use of lime, farmyard manure and slurry, mean that coping without chemical fertiliser can be managed effectively. Soil fertility inputs that are commonly imported onto organic farms include:

- lime;
- cattle slurry from another grassland-based farmer (either organic and conventional farmer; derogation farm source >170kg nitrogen (N)/ha is also permitted);
- organic and/or free-range chicken manure;
- dairy sludge from an approved dairy processing plant; and,
- certain mineral sources of fertilisers, e.g., ground rock phosphate, basic slag.

Note: organic manures from factory farms, including commercial pig and non-organic or non-free-range chicken farms are not permitted.

Organic markets



Speak to processors about organic markets.

Speak with other organic farmers and processors about potential markets. Major factory outlets for organic beef are Good Herdsmen, Slaney Meats and ABP. The major outlet for organic lamb is Irish Country Meats. Premium prices of 15-20% have generally been achievable for organic beef and lamb in recent years. Some organic farmers successfully sell meat directly.

Profitability

Organic drystock production can be a relatively profitable enterprise. Costs of production can be significantly reduced with no artificial fertiliser and reduced veterinary costs. Although the cost of concentrates is higher compared to conventional methods, this can be

reduced by growing tillage crops on the farm and/or choosing earlier-maturing breeds that require lower levels of feed. Housing built to meet organic standards may also add to the expense, but on-farm capital investment grants may be available from the Department of Agriculture, Food and the Marine (DAFM).

The key components to achieving profitability are a decent level of production using grass/legume swards, achieving a premium price for your animal, and an efficient low-cost system of production, which includes good grassland management, a herd health plan and prudent use of organic manures and other permitted fertiliser inputs.

Further information

For further information contact your local Teagasc advisory office.

- www.teagasc.ie/about/farm-advisory/advisory-regions
- www.teagasc.ie/organics
- +353 (0)59 917 0200
- info@teagasc.ie

Other useful fact sheets in this series:

- Steps to Organic Conversion
- Organic Cereals
- Organic Poultry
- Organic Horticulture
- Organic Dairy Farming

www.teagasc.ie/ruraldev



Minister Hackett announces enhanced rates for Organic farmers effective from 1 January 2023

From [Department of Agriculture, Food and the Marine](#)

Published on 20 July 2022

Last updated on 21 July 2022

The Minister of State at the Department of Agriculture, Food and the Marine, Senator Pippa Hackett, has today announced proposed new enhanced rates for farmers participating in the Organic farming scheme. These are subject to approval by the European Commission as part of the ongoing discussions on approval of Ireland's CAP Strategic Plan, and would apply from 1 January 2023.

Announcing the new rates the Minister said:

"The budget proposed for this scheme under the next CAP is a 5-fold increase on what was previously available. This is my commitment to growing and investing in the Irish organic sector. Feedback from the CAP consultative committee, the reconvened Organic Strategy forum and interested stakeholders has made it clear that enhanced payment rates are needed to support farmers converting to and maintaining organic farming."

The Minister added:

"Organic farmers incur additional expenses on an annual basis such as attending training and constantly upskilling themselves in soil health and animal management. In recognition of these costs I am proposing an annual participation payment, which will be €2,000 in the first year of conversion and €1,400/year thereafter. This will support farmers as we achieve the targets set out in the Programme for Government of farming 330,000 ha organically."

In order to allow farmers and advisors assess the increased level of support of these new rates a payments calculator has been developed and will be available at <https://cap-calculators.apps.rhos.agriculture.gov.ie/> This calculator allows them to assess the value of converting to organic.

Minister Hackett also noted:

"I have engaged with stakeholders and industry and there is broad acceptance that the environmental and socio-economic benefits of Organic farming are needed now more than ever. The new enhanced rates are reflective of my commitment to ensure that our

Programme for Government target of 7.5% of farmland to be under organic production by the end of the CAP cycle of 2027 is achieved. I am confident that these new rates will entice in many new farmers to organic farming and I would encourage every farmer to consider it and be ready for when the new scheme opens this autumn."

Speaking on the new rates, the Agricultural Consultants Association President Noel Feeney commented:

"ACA welcome the very positive news on the increased payments for organics. ACA have commenced our National advisory training programme and in the forthcoming months, our members will have significant contact with Irish farmers. The discussions and promotion of organics with our clients are greatly helped with this announcement and we look forward to assisting Minister Hackett and her officials with the sectoral objectives."

Teagasc Director Professor Frank O'Mara also welcomed the news stating:

"Organic farming offers a viable farming option for many farmers around the country. Today's announcement will make it more attractive. Teagasc are increasing the staff resource allocated to the team providing organic advice, through the recruitment of a number of additional advisers and a specialist. This enhanced team will support existing organic farmers, those converting to organic, and those farmers considering the option in the future."

Notes

The EU Green Deal sets a target of 25% of the EU's agricultural area to be farmed organically by 2030. Ireland's current area is approximately 2% of the agricultural area, circa 110,000 hectares.

Ireland's Programme for Government has set a target of more than tripling the organic land area by 2027 to approximately 330,000 hectares. This target has been incorporated into Ireland's CAP Strategic Plan, Food Vision 2030 and Climate Action Plan.

For a 40ha dry stock farmer total payment over the 5 years of the organic farming scheme will be 54% higher than under the previous CAP.

The aim is to reach this target by supporting farmers to convert to organic farming through the Organic Farming Scheme (OFS), enhanced advisory support and increased promotion as well as developing market demand.

The overall objective of the Organic Farming Scheme is to deliver enhanced environmental and animal welfare benefits and to encourage producers to respond to the market demand for organically produced food.

A total budget of €256 million has been allocated to the OFS over the lifetime of the new CAP.

Enhanced Organic Payments 2023

	Year 1-2 In-Conversion ≤ 70ha €/ha	Year 1-2 In –Conversion >70ha €/ha	Year 3-5 Fully Converted ≤ 70ha €/ha	Year 3-5 Fully Converted > 70ha €/ha
Dry stock	300	60	250	30
Tillage	320	60	270	30
Dairy	350	60	300	30
Horticulture	800	60	600	30

In addition to the above:

Lump Sum Payment

	Year 1	Year 2
Payment	€2000	€1400 per annum for an unspecified number of years

Farm Plastics

The Irish Farm Film Producers Group (IFFPG) is Ireland's compliance scheme for recycling farm plastics.

Farm plastics include silage plastics for pit silage and baled silage. They also include fertiliser bags, feedbags, chemical containers, netting and twine, all of which are categories of plastics that are collected and subsequently recycled.

To book a request collection contact IFFPG at 01 4089966. Please see further information on www.farmplastics.ie.

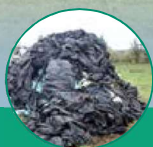
In addition to request collections, collection points are arranged in conjunction with Local Authorities throughout the spring and summer on a countrywide basis. For a full list go to <https://farmplastics.ie/pick-up-dates/>.

In order to prepare for recycling of chemical containers, please consult the EPA Good Practice Guide and the triple rinse guide.

Please Note: The burning of farm plastics and all other types of waste is strictly prohibited under the Waste Management Act 1996. For more information about burning waste go to:

<https://www.limerick.ie/council/services/environment/environmental-control/burning-waste-illegal>.

What do we recycle?



**Silage
wrap & pit
covers**
(delivered loose
to bring-centre)



**Large
fertiliser &
feed bags**
(delivered
in used bulk
fertiliser bag
with the liners
removed to
bring-centre)



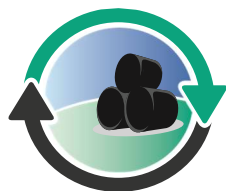
**Small
fertiliser &
feed bags**
(delivered
in used bulk
fertiliser bag to
bring-centre)



Drums
(delivered triple
rinsed in used
bulk fertiliser
bag to bring-
centre)



**Netting &
Twine**
(delivered
in used bulk
fertiliser bag to
bring-centre)



IFFPG
IRISH FARM FILM PRODUCERS' GROUP

For charging info visit www.farmplastics.ie or call **01 408 9966**

IFFPG: Your national, not for profit, farm plastics recycling scheme.