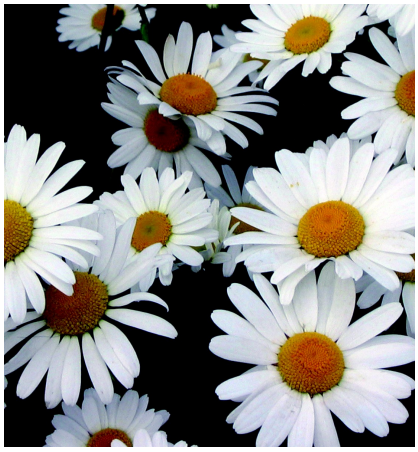
ecoseeds
wildflowers

Catalogue 2023



Welcome to the EcoSeeds catalogue for 2023

In the following pages you will find information about the various wildflower seed mixes we supply.

You will also find information on a range of other services we provide including a comprehensive Project Consultancy package.

Current prices for our products are included along with information to help you calculate the correct amount of seed mix.

To place an order please email us at **info@ecoseeds.co.uk**

For all other enquiries please telephone us on **+44 28 4488 1227**

Our office hours are Monday to Friday 9 am to 1 pm

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Hi-Colour Mixes

Our 'Hi-Colour' mixes provide the ideal combination of visually attractive wildflowers that also benefit biodiversity.

Aside from benefits to wildlife these mixes provide a more sustainable planting regime because less management is required compared to typical bedding plant schemes. Wildflowers are also more resilient to very wet or very dry conditions.

One Year Hi-Colour mixes
These mixes contain annual species only, are reliable to grow, and provide a high density of colour over a long flowering season. They are available in two variations:

- Hi-Colour Standard
- Hi-Colour Enhanced.

Flowering information

- Contain a mix of Corn Poppy, Corn Marigold, Corn Chamomile, Cornflower, and Corncockle.
- Enhanced mix includes in addition cottage garden species such as Linum and Calendula, etc. It has been specifically designed with urban areas in mind to provide a cost effective alternative to three-season bedding planting. It provides a long growing season of full colour ideally suited to amenity planting schemes in public places.
- Flowering - typically May to October for a period of one year (after autumn sowing).
- Colours include white, blue, yellow, red, orange, purple, and pink.
- Attractive to insects such as bees and butterflies.
- Enhances biodiversity.

Perennial Hi-Colour mixes

These mixes last for a minimum of four years and contain a mix of 70% wildflowers with 30% fine-leaved grasses. They provide colourful, cost-effective solutions for larger areas and can be used to create semi-permanent wildflower meadows.

The mixes were designed following research conducted in conjunction with Greenmount College (CAFRE). The composition of the mixes can be adapted to particular soil or site conditions. They are available in two variations:

- Hi-Colour Standard
- Hi-Colour Enhanced.

Flowering information

- Contain a mix of annuals, biennials, perennials, and appropriate fine-leaved meadow grasses.
- Enhanced mix includes in addition cottage garden biennials and perennials attractive to insects. It is designed for urban areas and includes naturalised species that are attractive to wildlife.
- Flowering – spring through autumn for a minimum of four years.
- Attractive to insects such as bees and butterflies.
- Enhances biodiversity.

Flowering sequence

Year 1:	High colour annuals
Year 2:	Biennials and faster growing perennials such as Ox-eye Daisy and Red Campion
Year 3:	Slower growing perennials such as Scabious species
Year 4 onwards:	As year 3 but consider introduction of Yellow Rattle if grass is beginning to dominate

Ecological Habitat Mixes

These mixtures contain 70% grasses with 30% long lasting perennial wildflowers. They are specifically designed for habitat restoration projects with the aim of providing maximum benefit to biodiversity. Each mix contains over 15 native species.

Stock is collected with special permission from a variety of existing sites throughout the country - hence the seeds are of local provenance. Flowering takes place in the second year and - like species rich meadows - the colour range varies from spring through to summer and is more subtle compared to the vibrant 'Hi-Colour' mixes. Careful management and maintenance regimes are required over the first three years in order to achieve success. Please refer to our Project Consultancy page for further information.

The available mixes are as follows:

- Ecological meadow mix
- Damp meadow mix
- Woodland edge/semi-shade mix
- Clay soil mix

Bee Seed Mix

Each year we hear more about the decline in numbers of native bees and pollinators. Bee populations are declining primarily due to habitat loss, changing farming practices, and diseases. Bees need food in the form of nectar and pollen throughout the year. However there are key times of the year - often referred to as “the hunger gap” - when less of this 'food' is available. That is why we have developed a new wildflower mix to help bees survive and thrive.

Our new mix is similar in composition to our Meadow Mix but is focused more on species that flower during this 'hunger gap'. The feeding of wild birds is well established in popular culture. We believe that growing native wildflowers to feed bees and other pollinators provides an opportunity to do something positive for the environment and should also become embedded in our culture.

We can offer this as a 'pure' mix (no grasses) or as a mixture containing fine leaved grasses.

Bespoke Habitat Mixes

We have designed a range of high quality wildflower seed mixes that are suitable for many sites and projects. However there are occasions when a more specific tailored mix is required.

Harvested mixes
Using our specialised seed collection machinery we can harvest seed from existing habitats for use in habitat creation projects. For example from existing wildflower meadows, nature reserves, etc. This technique can provide a unique mix that contains many species of local flora that are not available commercially.

This technology was employed in the habitat restoration project at Castle Espie. A brush harvester was used to collect seed with permission from Killard Point National Nature Reserve. This site contains a broad spectrum of local flora including some rare species. The seed was processed and then sown at Castle Espie by hydroseeding. For more information on the machinery and processes used please refer to our Seed Harvesting and Hydroseeding information sheets.

Customised mixes
Using seed stock from a wide range of native wildflower species we can provide customised seed mixes suitable for specific habitat types and habitat restoration projects. With our knowledge of growth cycles, interactions, and requirements of different wildflower species our mixes can deliver the maximum benefits for biodiversity over a long growing season.

For example specific meadow grass mixes were designed and provided for a habitat restoration project at Castle Espie Wildfowl and Wetland Centre. The mixes were tailored to suit mesotrophic and calcareous soils. For more information about this project please refer to our case study for the site.

Yellow Rattle

Rhinanthus minor

Yellow Rattle is an attractive native plant that can reduce the dominance of grass species and increase the population of wildflowers.

One challenge with some wildflower meadows is that grasses tend to take over after a number of years. Yellow Rattle is a native plant that feeds off the roots of these grasses reducing the amount of grass and providing a better environment for wildflowers.

Yellow Rattle:

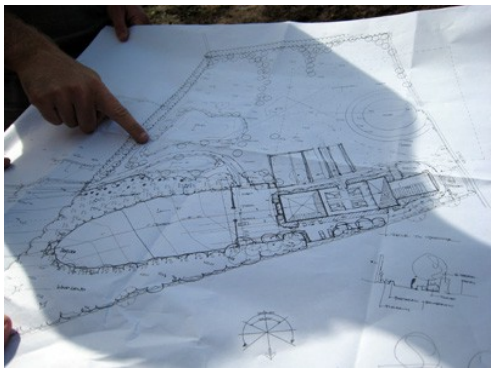
- Can often be used to complement existing wildflower mixes (for example, the Perennial Hi-Colour mix) and to extend the longevity of previously sown sites
- Can be sown as part of a mixture or on its own into established meadows or grassland
- Once established can reduce the competitive vigour of certain grasses by up to 50% thereby providing a more balanced habitat
- Must be sown in the autumn because it needs to be chilled through the winter to trigger germination

Management with Yellow Rattle

Yellow Rattle is an annual species with short-lived seed and therefore it needs a chance to set seed each year. Cutting or grazing between April and mid-July must be avoided because these actions will prevent seeding. It is important that the management of your site takes these needs into account.

Project Consultancy

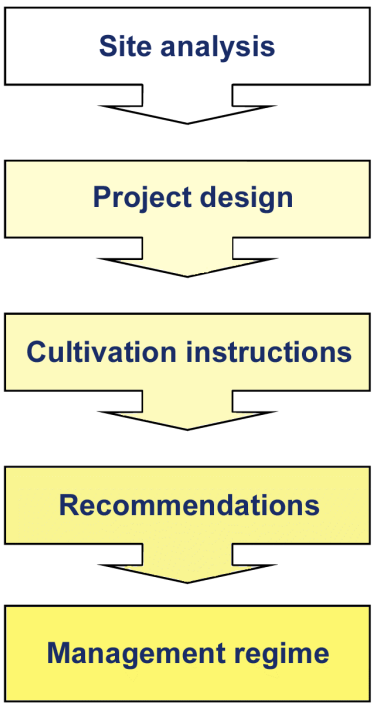
Our unique project consultancy service offers a 'one-stop-shop' of services and recommendations to manage a project from start to finish.



Each site is unique and each consultancy is therefore tailored to the specific needs of the site. Our all-inclusive consultancy package typically includes site analysis, planting design, recommendations, preparation and management instructions, and a range of specialist services.

In our experience the most successful projects adhere to the following system:

1. Site assessment - including fertility testing, pH analysis, etc.
2. Site specific project report including design plan, timetable of actions, community engagement, etc.
3. Detailed ground and seed bed preparation instructions - (ploughing, rotovation, etc).
4. Recommendations on the species or products, how they should be sown, and any other specialised services required.
5. Site specific instructions on seasonal cutting regimes, weeding advice, etc.



Although this is the standard process a customised consultancy package can be provided for research projects, experimental investigations, etc. For examples of such projects please refer to the Case Studies page on our website.

We work in association with a number of specialist contractors and advisors with expertise in related areas. For example, landscape contractors, landscape architects, soil scientists, ecologists, structural engineers, construction industry contractors.

Hydroseeding and Erosion Control

Hydroseeding is a unique method of seed sowing that creates the ideal environment for germination and growth. It typically uses a blend of water, paper/wood, and biodegradable bonding material ('tackifier') to suspend the seed in a secure '3D' matrix. By creating the optimum growing conditions hydroseeding provides a more reliable method of ensuring successful germination and establishment.

Advantages include:
Quick, even, and accurate coverage

- Faster, more successful germination and establishment
- Constant mixing ensures even distribution of seed of various sizes
- Application at almost any time of year including times when conventional sowing methods can't be used
- Protects the seed after application - less seed is lost to run-off in wet weather. Conversely the moisture retaining properties of the blend permit application during dry conditions.
- Can be used in areas that are difficult or impossible for conventional machinery to access
- Erosion control - effective on steep gradients, slopes, riverbanks, etc. Can also be used in conjunction with geotextiles for stabilisation on very steep slopes

How it works
A biodegradable mixture of seed and selected components is sprayed onto the required area. This mixture can be tailored specifically to the needs of each site. For example, by varying the components of the blend to provide stabilisation and erosion control on steep gradients.

We have three hydroseeding machines which allow us to cater for small, medium, and large sites. These are all suitable for areas that are inaccessible to standard horticultural machinery.

Disc Seeding

This is a new service which we have trialled for several years and can now offer. It is used for sowing Yellow Rattle and for the 'over seeding' of other mixtures.

Conventional seeding methods typically do not introduce most of the seed to the proper place in the soil: Some seeds will be sown too deeply and will subsequently die; other seeds will be sown too shallow and ultimately do not develop sufficient root structure. Consequently only a small percentage optimally develops relative to the quantity sown and the labour involved.

The disc seeder essentially carries out three tasks:

- Sows seed accurately into slits at the correct depth. Even the finest seeds can be precisely metered thus providing economical and efficient seed distribution.
- Opens the sward to allow air and moisture to penetrate.
- Rolls the sward or seed bed to ensure good seed / soil contact.

Invasive Species Management

Restoration strategy

The approach we adopt in restoring areas after treatment of invasive species is to view each site as unique. Therefore each requires careful assessment and preparation prior to sowing or planting. We can provide a site specific project service that offers a 'one-stop-shop' approach to manage a project from start to finish.

A typical project report would include the following:

- site assessment
- site specific ground preparation instructions
- species and seed mix recommendations
- sowing methodology
- 3 year management instructions and advice on remedial actions
- action plan for local community engagement.

After the invasive species has been sprayed off there is the possibility that it may grow back from seed, roots, or tubers, etc. Therefore we use several methods and strategies to establish vegetation as quickly as possible. These strategies aim to improve the integrity of the soil base by introducing vigorously rooting native species well suited to local conditions.

In addition, the invasive species seed bank can be out-competed because the introduced seed will have the best conditions for germination and rapid growth. Biodiversity can also be enhanced because the native species are chosen for their value to local flora and fauna.

Standard seed mixes
Our 'off the shelf' seed mixtures contain 70% of the appropriate grass species and 30% perennial wildflower species.

River corridor mixes
These mixes contain more aggressive, taller species that have vigorous root systems capable of holding a river bank together. They include:
Reed canary grass, Smooth stalked meadow grass, Rough stalked meadow grass, Timothy, Reed canary grass, Creeping Bent.

Brush harvested mixes
These mixes are specifically for habitat restoration projects on sensitive areas. We would harvest appropriate species when they are available and process the seed to prepare it for sowing. Please refer to our case study on Habitat Restoration and our data sheet on Seed Harvesting.

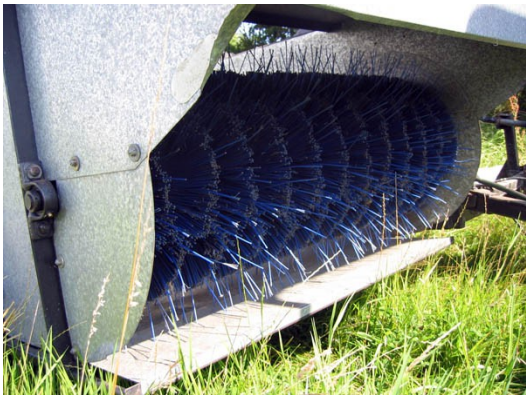
Seed Harvesting

Collecting native wildflower seed from approved local sources is an important part of our activities. As well as harvesting for individual species we collect unique seed mixes from existing natural habitats for use in habitat restoration and enhancement projects.

Brush harvesting

This unique machine operates - not by cutting - but by gently removing seed using specially designed rotating brushes. As a result donor species and invertebrates experience negligible impact. The machine is also typically pulled by a small, low-impact vehicle such as a quad or mini-tractor causing minimum interference on the site. A brush harvester:

- Collects from a range of habitats (e.g. meadows, heathlands, wetlands)
- Can be adjusted to collect from 10cm up to 2m in height enabling individual species to be targeted more specifically
- Can cover up to 3 Ha per day.



The Brush Harvester can be used to collect seed from existing areas such as wildflower meadows and nature reserves – thereby providing a unique mix containing many species of local flora that are not available commercially. The machine has also recently been used to collect heather seed for regeneration projects.

Plot combine

Where greater volumes of seed are required or for larger areas (i.e. greater than 1 Hectare) a plot combine is used. The plot combine is specifically designed to collect seed for use in large scale habitat restoration projects. This machine was part funded by the Northern Ireland Environment Agency to assist in meeting targets within the NI Biodiversity Action Plan.

Our operational policy ensures minimum disturbance to wildlife. Harvesting is conducted using sustainable methodologies that seek to maintain the integrity of the donor site or species.

Experimental Research

Working with native flora species is a unique subject area which provides the opportunity for innovative research projects. Using our specialised knowledge and practical expertise we have conducted various experimental research activities.

Some of these research projects have included:

- habitat creation and restoration trials
- enhancing germination success of native flora
- increasing heather seed establishment rates
- soil and substrate design and development
- comparisons of different sowing methodologies

Some planting projects will require experimental research as part of their design and implementation. However we are also happy to conduct or to participate in stand-alone research activities unrelated to any particular project.

To discuss please contact us on:
+44 28 4488 1227 or **info@ecoseeds.co.uk**

Ground Preparation and Weed Elimination

It is vital to prepare a proper seed bed before sowing wildflowers. This can be completed using organic or non-organic methods. Although many people leave this step until the last minute, ground preparation should be done as early as possible (March/April for Spring sowing and July/August for Autumn sowing). However beware of doing damage to the soil if the site is too wet.

Please note: For large areas - greater than 1,000 m^2. - we strongly recommend a consultancy report to detail specific ground preparation instructions. (Please refer to page 10.)

Organic Method: De-turfing (do not use this method if the site is generally waterlogged and make sure you have properly risk assessed the work when working in groups).

- Cut existing vegetation to ground level (as low as possible) using a strimmer or lawnmower)
- Remove turves either by hand or using a turf-stripping machine
- Fork over or rotovate area to loosen soil to a depth of 10 cm and then rake to achieve a fine tilth
- Using a hand rake to break up the soil particles and open up the soil so it will accept seed
- Remove stones greater than 5 cm diameter
- Sow the seed
- Roll seed bed to ensure good seed / soil contact

Non- Organic Method

- Cut and remove existing vegetation to ground level
- Spray the area using a suitable herbicide. (make sure to follow the manufacturer's instructions on quantities and safety precautions.)
- Wait 3 – 4 weeks then rotovate or fork to a depth of 10 cm
- Remove stones greater than 5 cm diameter
- Wait 3 – 4 weeks or when there is regrowth, re-spray all growth with a suitable herbicide
- Wait until herbicide has taken effect then prepare the seed bed by very lightly raking to achieve a fine tilth (but not deep enough to bring more seed to the surface)
- Sow seed
- Roll seed bed to ensure good seed / soil contact

To discuss please contact us on: **+44 28 4488 1227** or **info@ecoseeds.co.uk**

Price List – 2023

Wildflower Seed mixes	Code	Sowing rate (grams / square metre)	100 g	1 kg
EcoSeeds Pure All Ireland Pollinator Mix (100% wildflowers)	EP1	1 g/m2	£80	£229
EcoSeeds All Ireland Pollinator Mix (70% wildflowers, 30% fine grasses)	EP2	2 g/m^2	£65	£193
EcoSeeds habitat mixes (20% wildflowers, 80% fine grasses)				
Meadow mix	EM1	4 g/m2		£90
Damp meadow mix	ED1	4 g/m2		£90
Woodland edge mix	EW1	4 g/m2		£90
Clay Soil Mix	EC1	4 g/m2		£90
Dry / Sandy Mix	ES1	4 g/m2		£90
Bee Mixes				
with grasses	EB1	3 g/m^2	£37	£112
with annuals	EB2	2 g/m^2	£59	£168
Perennial Hi-Colour (70% wildflowers, 30% fine grasses)				
Standard	EH1	3 g/m^2	£43	£146
Enhanced	EH2	3 g/m^2	£58	£194
One Year Hi-Colour (100% wildflowers)				
Standard	EA1	2 g/m^2	£28	£85
Enhanced	EA2	2 g/m^2	£52	£170
Yellow Rattle	EY1	1.5 g/m^2	£58	£319

Please note:
Prices are quoted exclusive of VAT and postage & packaging.

VAT at 20% will be added to all orders.
VAT Registration number: GB 912 4003 77

Placing an Order

How much seed do I need?

When you have determined the area you wish to sow use the recommended sowing rates above to calculate how much seed mix you will need.

For example to sow 400 m^2 with Perennial Hi-Colour will require:

400 m^2 x 3 g/m^2 = 1,200 g (1.2 kg)

To sow the same area with Yellow Rattle will require:

400 m^2 x 1.5 g/m^2 = 600 g

To order seed mixes, plug plants, or woodland bulbs please contact us on:
+44 28 4488 1227 or email **info@ecoseeds.co.uk**

Office hours: Monday to Friday 9 am to 1 pm.

If possible please provide brief details about your site or project.

Terms & Conditions
All seed mixes and bulbs offered are subject to availability and being unsold at time of ordering. We guarantee that our seeds are of high viability and purity, true to type, and of the correct weight when delivered. Seed found not to meet these standards may be returned in full, undamaged, within 30 days, for a replacement or refund. The performance of our seeds will be influenced by the storage conditions after delivery and site conditions after sowing.