



SOE 6: Nature

Safeguard nature and wild places as a national priority and to leave a legacy for future generations.

ACTIONS – WHAT IS NEEDED?

Nature and wild places are at risk in Ireland and need to be better safeguarded, both locally and in protected areas. The next Biodiversity Action Plan needs to be more ambitious and identify the pathway to transformative change for nature protection in Ireland. It needs to develop and further strengthen the protection of our national network of protected areas for future generations and to reverse wider current trends in biodiversity and habitat loss.



Protect Ireland's Habitats & Species

A habitat is the place where a plant or animal naturally lives, grows and reproduces. Different plants and animals are suited to different kinds of habitats. Having diverse and healthy habitats in Ireland is crucial to preserving and restoring our biodiversity.

The European Habitats Directive is one of the most important pieces of legislation governing the conservation of biodiversity in Ireland and Europe. The Directive requires Member States to take action to maintain or restore natural habitats and wild species listed in the Annexes to the Directive. These habitats and species must be restored to at least favourable conservation status. Some of the habitats and species are considered threatened in the EU territory. The National Parks and Wildlife Service compiles a report to Europe every six years on the conservation status of the natural habitats and species in Ireland covered by the Habitats Directive. Map 1 below shows the extent of the habitats data collected by the National Parks and Wildlife Service, extending into marine and offshore habitats. The habitats and species that are referenced by the EU Habitats Directive are considered threatened in Ireland. They are listed in the Directive for that very reason.



Sources
Ireland's Environment: An Integrated Assessment 2020.
NPWS (National Parks and Wildlife Service), 2019. The Status of Protected EU Habitats and Species in Ireland.
Volume 1: Summary Overview. Unpublished report. NPWS, Dublin.
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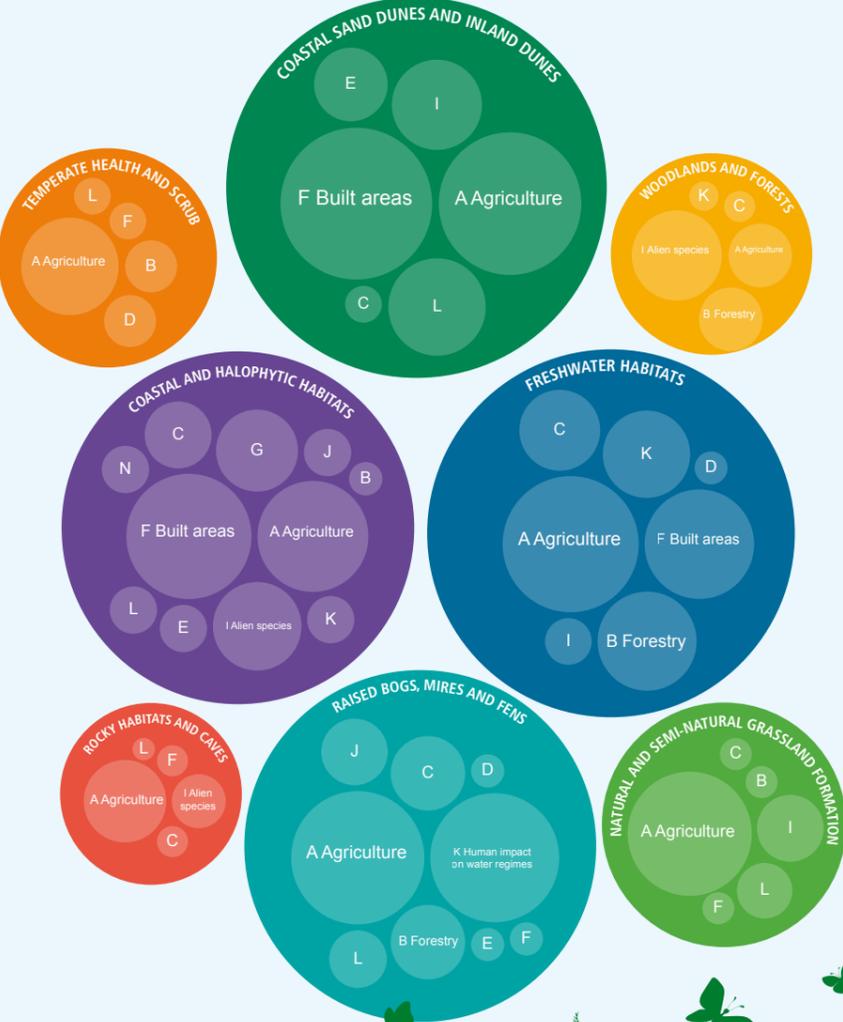
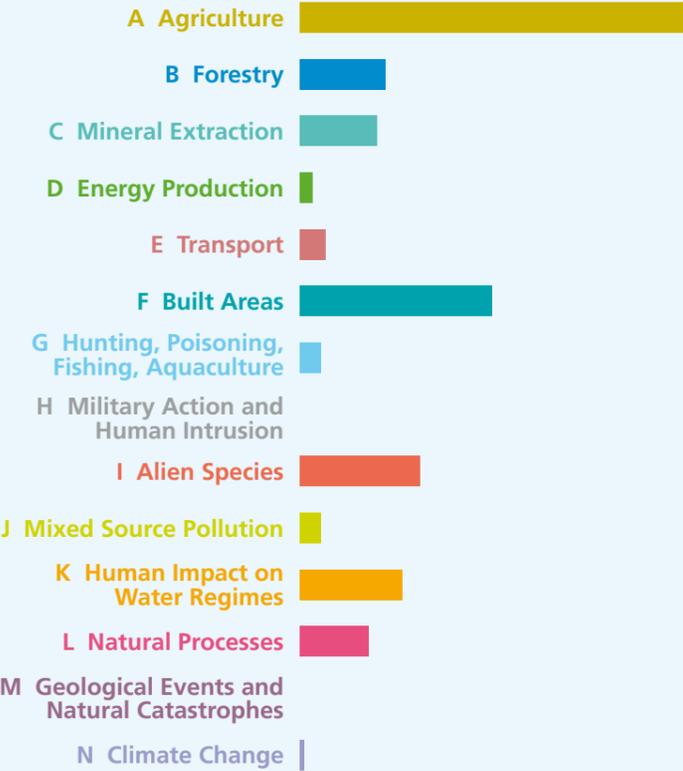
Changing land use, pollution and unsustainable exploitation pressures are degrading and fragmenting habitats and impacting species.

The main pressures on Ireland's protected habitats are agriculture and other land uses such as extraction of resources (including minerals and peat), forestry, urbanisation, recreation and invasive species.

It is likely that pressures due to climate change, agricultural system changes and invasive species will increase unless action is taken now.

The bar chart (below left) shows the occurrence of different kinds of pressures in Ireland's protected habitats.

The circles chart (below right) shows the counts of each pressure in each habitat type. Each large circle represents a habitat type. The smaller circles within each habitat type are the pressures that are counted in that habitat type. The relative size of each of these smaller circles corresponds to a habitat pressure: for example, A (Agriculture) is the biggest pressure on Temperate Heath and Scrub habitats. The letter in each smaller circle corresponds to a pressure (see the list of letters and pressures in the bar chart to the left).



Stories of decline

As habitats degrade, our wildlife has fewer places to live. Some of the places that remain are not healthy enough to support full and thriving populations. Here are three of the stories behind some of the species that have suffered decline.



Thriving meadow at Clonmacnoise, Co. Offaly with vegetation of varying lengths (photo by Jim Martin, 2015; © NPWS). This type of habitat, as long as there are some patches of bare earth and/or small pools also, can provide ideal habitat for lapwing. Healthy semi-natural grasslands such as this are very species-rich, with high numbers of plant species, which in turn support a wide range of insects, mammals and birds. They also perform a range of ecosystem services such as providing pollinator and soil invertebrate habitat, flood attenuation, and climate mitigation.

Thriving grasslands are home to a wide range of plants (including wildflowers), insects, birds and animals. When grasslands degrade the range of plants declines, as do the insects that live and feed on them, and the birds and animals that need the plants and insects to feed on.



This area in Co. Leitrim was formerly Molinia meadow, (photo by Jim Martin, 2016; © NPWS). Land use changes such as forestry plantations on meadows and breeding wetland bird habitat will completely change these habitats. The wide range of plant species which would formerly have been present in the meadow will be almost totally lost, as well as most of the invertebrates which lived there. The ability of this area of land to perform a range of ecosystem services has been severely impaired, and the possibility of habitat restoration is low.

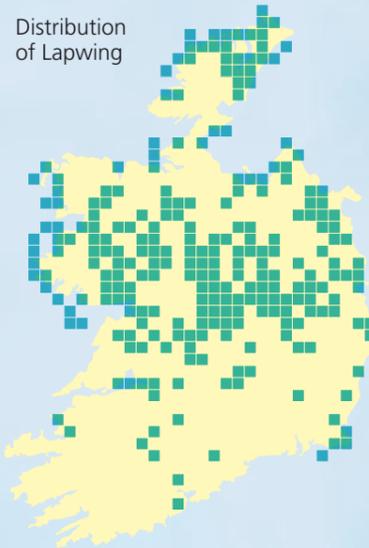
Lapwing

Lapwing (*Vanellus vanellus*) are one of Ireland's most familiar breeding waders. They nest on the ground, most commonly in open grasslands. Lapwing show a preference for wet grasslands as they provide soft, moist soil that adults and chicks require for finding invertebrate prey. Sadly, the lapwing breeding population in Ireland has declined by approximately 95% since the early 1990s and they are now a red-listed species of urgent conservation priority in Ireland.

The degradation of grassland habitats is a primary factor in lapwing declines. Grasslands have become much more intensively managed since the 1980s. Earlier and more frequent mowing, and higher stocking rates, result in high nest destruction and chick mortality. Widespread drainage and pesticide use reduce the amount of food available to adults and chicks. Furthermore, lapwing nests and their chicks are suffering high rates of predation from animals such as foxes and mink. These increases in predation are linked to changes in land use, such as the conversion of grasslands to forestry.

Semi-natural grasslands are also home to a wide range of biodiversity besides lapwing, and a diverse suite of plant and animal species are being negatively impacted by grassland degradation. More sensitive and appropriate grassland management (rather than intensification, or indeed abandonment) is needed to help support all of these species.

Distribution of Lapwing



Lapwing are unmistakable, with their black, white and green plumage, and distinctive head crest. They are known to many by their Irish name, Pilibín.



Bumblebees

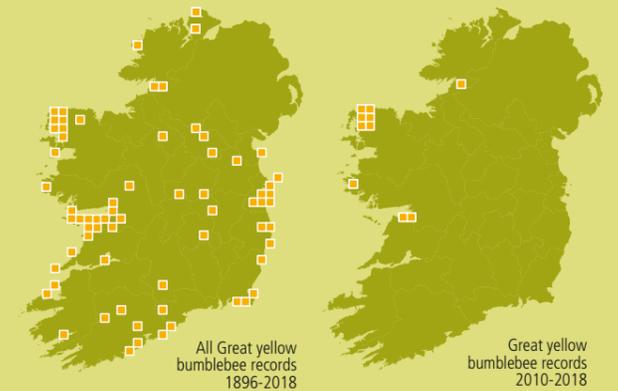
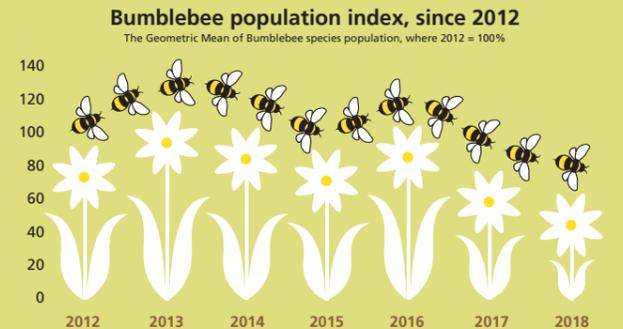
Bees are essential to food production because they help to pollinate our crops and fruit. One third of our bee species are threatened with extinction.

One reason bee populations are in decline is because changes in land use and agriculture means there are fewer places for bees to feed and live.

Great Yellow Bumblebee

The great yellow bumblebee has never been common in Ireland but in the 1960s it was found across the island: Now healthy populations are only found in the Mullet peninsula in Mayo, with some sightings in Clare and Donegal.

The great yellow bumblebee species is strongly associated with flower-rich grassland habitats. While all bee species need plenty of flowers to feed, the great yellow bumblebee emerges later than other species – this means this species has even less time to complete their lifecycle. A shortage of flowers means they are at greater risk of not being able to produce enough offspring in time.



The All-Ireland Pollinator Plan

The National Biodiversity Data Centre created an All-Ireland Pollinator Plan to set out actions for gardeners, farmers, local authorities, schools and businesses to protect Ireland's bees and other pollinators (like butterflies, hoverflies and moths).

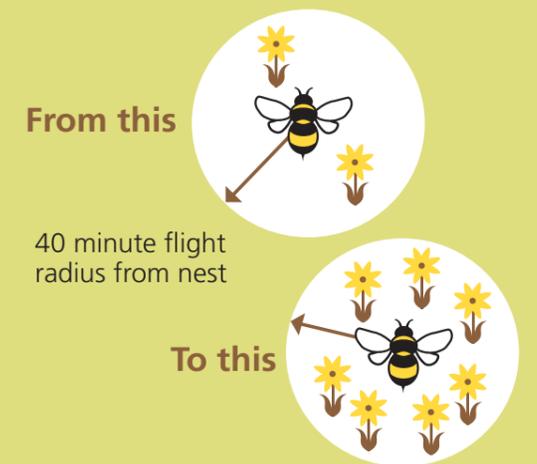
The first plan was created in 2015. An updated All-Ireland Pollinator Plan for 2021-2025 was launched in March 2021.

This plan is important because it includes all sectors of Ireland in actions that address the reasons why our bee – and other pollinator – populations are declining. It includes actions like avoiding the use of weedkillers and pesticides, planting nectar-rich native plants, keeping hedgerows in place and allowing wildflowers to grow in gardens, along road verges and in other green spaces.

As well as conserving and restoring bee habitats, we need to ensure bees have enough food to survive and reproduce. Wildflowers (like dandelions) are important food sources.

A typical bumblebee has a maximum flight time of 40 minutes in which to find enough food. If there aren't enough food sources within a 40 minute flight radius of the bumblebee's home it will starve and die.

A queen bumblebee may have to visit as many as 6000 flowers every day to get enough nectar to maintain the heat needed to brood her eggs. Without enough nectar-rich flowers, the queen can't produce new bumblebees for the following year.



Sources
Ireland's Environment: An Integrated Assessment 2020.
NPWS (National Parks and Wildlife Service), 2019. The Status of Protected EU Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished report. NPWS, Dublin.
Text, images and data from NPWS and National Biodiversity Data Centre.
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National Biodiversity Data Centre, 2021. All-Ireland Pollinator Plan 2021 - 2025 <https://pollinators.ie/aipp-2021-2025/>

Marine life affected by habitat degradation

Large Shallow Inlets and Bays

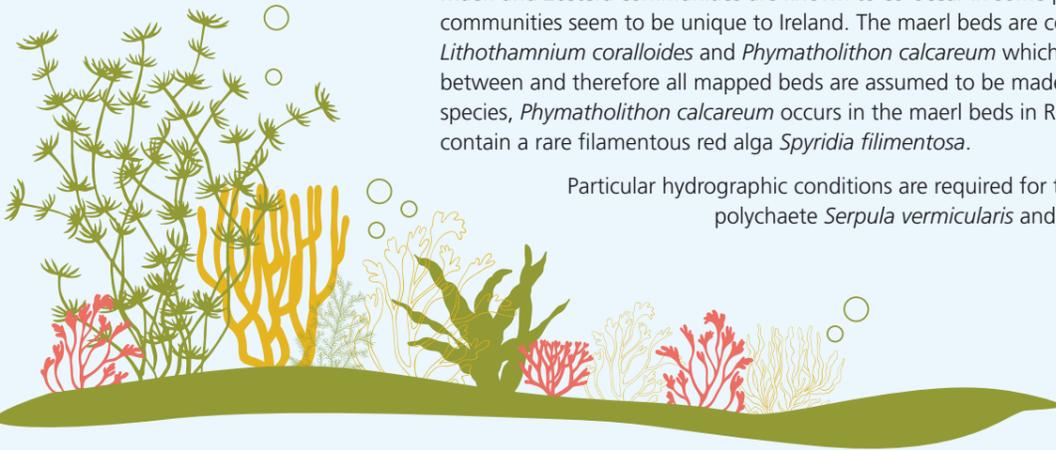
Large shallow inlets and bays are indentations in the coastline which are entirely marine and are not influenced by rivers and estuaries. Although they are found all around the coast the largest of the inlets and bays are on the north, west and southwestern coasts of Ireland.

Within these inlets and bays a variety of species communities occur. These are considered to be Keystone communities because of their importance to the overall ecology and biodiversity of the habitat.

In Irish waters, examples of such communities include: sea grass *Zostera marina*, free living coralline algae also known as maerl, reefs formed by the polychaete *Serpula vermicularis* and the large tube dwelling anemone *Pachycerianthus multiplicatus*.



Fig 1 Shallow Inlets and Bays



Maerl and *Zostera* communities are known to co-occur in some places, and these resulting communities seem to be unique to Ireland. The maerl beds are comprised largely of two species *Lithothamnium coralloides* and *Phymatholiton calcareum* which are very hard to distinguish between and therefore all mapped beds are assumed to be made up of these two species. A third species, *Phymatholiton calcareum* occurs in the maerl beds in Roaringwater Bay, some of which also contain a rare filamentous red alga *Spyridia filamentosa*.

Particular hydrographic conditions are required for the formation of reefs by the polychaete *Serpula vermicularis* and such reefs are rare in Ireland.



Zostera marina meadow with maerl © MERC



Rich and diverse maerl beds © MERC



Reef formed by the polychaete *Serpula vermicularis* © MERC

Taking action: A conservation case study

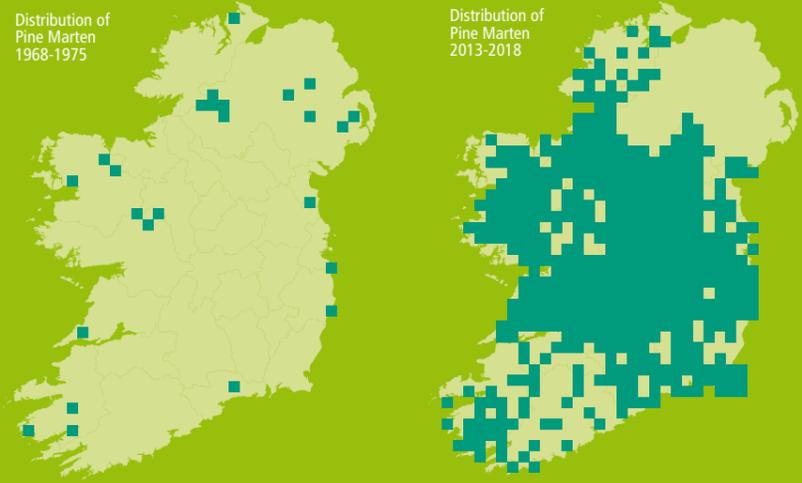
Nature can and will recover when efforts are made to protect and restore habitats and species. A good example of this is Ireland's Pine Marten.



The pine marten (*Martes martes*) is native to Ireland. It thrives in broad-leaved woodland where it feeds on small mammals, berries, birds and invertebrates. When Ireland was covered with woodlands, the species was widespread, but as forest cover declined, falling as low as 1% at the beginning of the 20th century, the pine marten's range and population also shrank. Habitat loss was compounded by persecution and, in particular, the use of poisons to control predators. By the 1970s the species was on the brink of extinction, restricted to small areas in the west and south.

Legal protection (under the 1976 Wildlife Acts), the banning of strychnine poison and the gradual increase in forest area have allowed the pine marten population to recover. The last 20 years have seen significant gains and the species' range now extends again across much of the country. While it continues to rely on forested areas for its dens, the species has adapted to the Irish landscape, commuting and foraging along the network of hedgerows, preying on farmland rodents and even, in some places, taking up residence in farm buildings.

The spread of the pine marten is at least partly responsible for the recent decline in grey squirrels (due to predation) in the Irish midlands. This in turn has allowed the red squirrel to recolonise areas where it has been absent for decades.



Bays and inlets in Ireland are vulnerable to human activity both in terms of water quality and also physical disturbance of their vulnerable communities. In the course of monitoring surveys between 2016 and 2018, a decline in the quality and extent of sea grass beds and maerl beds was noted at a number of Ireland's inlets and bays. Decline in sea grass was largely attributed to water quality. Decline in maerl beds has been attributed to poor aquaculture practice. Decline in a *Serpula* reef in one of the Natura sites has been attributed to fishing activity.



Serpula reef before fishing activity



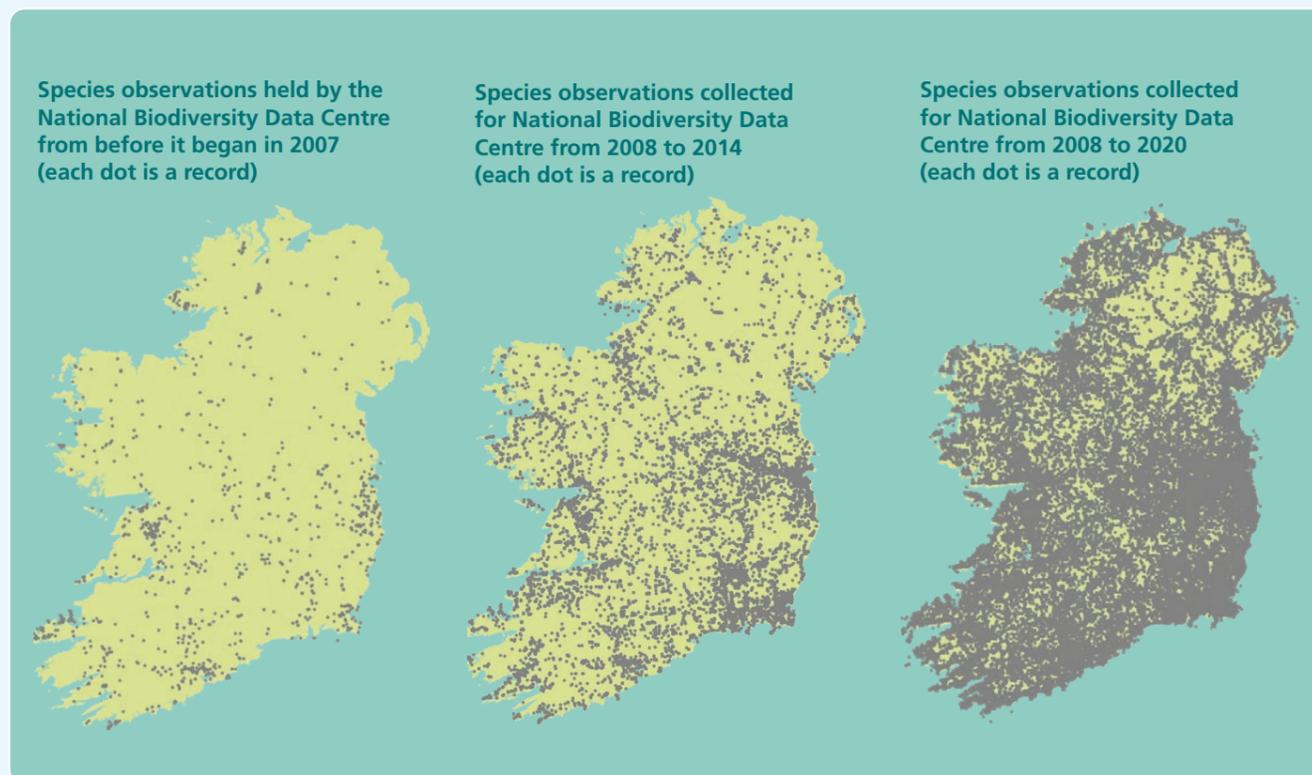
Serpula reef after fishing activity

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Ireland's Environment: An Integrated Assessment 2020.
NPWS (National Parks and Wildlife Service), 2019. The Status of Protected EU Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished report. NPWS, Dublin.
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Taking Action to protect and restore nature

Ireland needs to prioritise actions to protect nature. Nature requires far more serious consideration in every step of development, sectoral plans and policies.

Education and communication are some of the most powerful tools we have at our disposal and there is evidence that awareness of biodiversity issues is increasing. The National Biodiversity Data Centre (NBDC), set up in 2012, plays a vital role in increasing people's engagement with nature. The maps below show the volume of records that citizens have submitted to the NBDC, via its website or using its smartphone app. Each dot on the map is a record of a plant or animal. All over Ireland, there are more than 3000 people engaging with Ireland's wildlife and supplying invaluable data about it. This type of engagement helps people to connect with nature and learn more about its importance to our lives. National bodies that manage nature need to be resourced for the long term to ensure that this vital work can continue and accelerate.



Encourage farming practices that restore and enhance biodiversity through agricultural policies and schemes.

Examples like the Pearl Mussel Project show that it is possible to adapt farming methods to restore and protect biodiversity.



Pearl Mussel Project Catchments

Working with farmers in eight priority catchments, the Pearl Mussel Project is developing and implementing an agri-environmental programme aimed at conserving freshwater pearl mussel and supporting overall environmental health.

Freshwater pearl mussels are critically endangered, being on the verge of extinction across western Europe. The species is dependent on river systems that are in a near natural state with moderate flow, and low sediment and nutrient loads. The programme is locally adapted to suit the type of farming and the natural characteristics of the catchments, which are all dominated by peat soils and sustain high status watercourses.

The programme has adopted the results-based approach, in that the better the environmental result on the farm in the priority catchment the higher the annual payment to the farmer.

This approach encourages farmers to improve the quality of the environment on and around their farms with a focus on delivering good conditions for freshwater pearl mussels in surrounding rivers. It will provide sustainable benefits for biodiversity and river ecosystems, while supporting local agricultural communities in these marginal areas.

The Programme will run for five years (until end of 2023) and currently has 342 participant farmers. It is a European Innovation Partnership (EIP-Agri) with a total budget of €10 million. It is funded by the Department of Agriculture, Food, and the Marine under the Rural Development Programme 2014-2020.



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 Ireland's Environment: An Integrated Assessment 2020.
 NPWS (National Parks and Wildlife Service), 2019. The Status of Protected EU Habitats and Species in Ireland. Volume 1: Summary Overview. Unpublished report. NPWS, Dublin.
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