

LIFE ON MACHAIR ~ NEWSLETTER 1

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Eithne Davis - Project lead



Having grown up around the coastal habitats of Sligo, Eithne is delighted to be working with the communities who preserve these beautiful landscapes and the species they support, and very happy to be presenting you with this, the first newsletter from LIFE on Machair.

“The LIFE on Machair team have been working hard over the last three years, in conjunction with the landowners, to learn more about these pilot sites and the farming systems that have sustained them. We’ve trialled various conservation actions, and continue to modify them as we go. It’s lovely to be able to share some of this story with you now. We’ll roll out more over the next few newsletters, so watch this space!”

Eithne is the Project Manager with LIFE on Machair. Holding a degree in Environmental Science, she has completed award-winning research on prioritisation and management tools for coastal erosion, and has a PhD in Applied Ecology.



Welcome to our first Machair newsletter!

Unique, beautiful, special, enthralling, vital - all words we have heard regarding the wonderful group of habitats that make up a machair system. A system that only exists on the west of Ireland and Scotland, a system that only functions thanks to a long-standing farming tradition.

Topics explored

In this edition we will explore how machair provides so much vital shelter for many wintering birds, we get to meet some of the team working with landowners to manage machair for nature (more intro’s next edition) and we take a deeper dive into how temporary predator fencing, such a vital part of this type of habitat management, has evolved over time. More information on the project can always be found at our website; don’t forget to follow us on [instagram](#) and [facebook](#) for regular updates about our unique machair systems!





Joe Tighe - Project Officer, North Mayo



Joe Tighe is our Project Officer for North Mayo and has experience working across agri-environmental schemes since 2015.

He has trained and worked as an agricultural advisor and is acutely aware of the challenges that farmers' meet in present day farming.

Joe farms cattle and sheep on his home farm in North Mayo and has a genuine interest in how farming systems can become more sustainable in the face of the growing challenges presented by [climate change](#) and climate change policy.

Winter shelter

Long-billed shoveler's, fast-flying teal, wigeon, often called the whistler ([click to hear them whistle](#)) along with the better known mallard, are all species of duck that over-winter in machair. A recent visit to the Roonagh machair site in west Mayo revealed hundreds of duck, geese and whooper swans (1st picture) seeking refuge and sustenance in the rain-swollen lakes within the machair grasslands. These birds, coming from Iceland, some from Greenland, others from inside the artic circle in Scandinavia, have been making this journey each autumn for millennia. They will feed in relative shelter and safety until the seasons change. Well fed and rested, they will head north in spring, just as the waders that breed on machair start to arrive from their wintering grounds, south of here.

To look over these grand areas of flooded grasslands, swollen lakes and inter-tidal lagoons, brings a sense that this scene has seen little change for a very long time. But this is no accident. Careful management by landowners and farmers has led to clean waters and space for excess rain. Thanks to minimal fertiliser use, resulting in a lack of nitrates or phosphates entering the water system, these birds can rely on water of a quality that supports their needs. Along with a lack of pesticides and vitally, a managed specific grazing system, this scheme allows machair to show how farming, clean water and rich biodiversity can, if we wish, be very happy bed-fellows. Thanks to sympathetic land use, these snoozing teal below will have a safe and sheltered winter.





Mark Reed - Project Officer, South Mayo



Originally from Australia Mark trained as a teacher and then went on to teach outdoor and environmental education for a few years before leaving in search of adventure. After a couple of years wandering the globe, Mark settled on the West coast of Mayo where he has been happily living for the past 25 years.

To develop his interest in nature, Mark studied Field Ecology in UCC from 2013 to 2015. Mark has been bird, bat and marine mammal surveying voluntarily ever since whilst working with farmers and local community groups with the Rural Social Scheme.

Mark joined the LIFE on Machair project team in July 2023 based in South Mayo and Connemara where he is responsible for implementing and monitoring practical actions on the ground.

Evolution of predator proof temporary fencing

Thanks to the traditional management methods used by farmers and landowners, machair systems host a mix of tall grasses and a huge variety of native wildflowers in the summer. These in turn, provide shelter and sustenance for a myriad of invertebrate life. Many species of bee, including some of our rarest, along with huge numbers of hoverflies, butterflies and many other species all thrive in well managed machair, pollinating, breeding and of course, forming the animal base of a vast food web.

This food web allows some very special birds to find shelter, safety and nurture their young to ensure the success of the next generation. Birds such as Ireland's national bird, the lapwing, at one time bred in large numbers across machair sites. Their haunting yet beautiful calls were a familiar sound across these systems in decades past. Joined by other wetland specialists with thought-evoking names such as redshank, ringed plover, dunlin, snipe, red-necked phalarope and oystercatchers, these birds along with many others provided the sights and soundscape that indicated a rich, nature friendly and very beautiful system of habitats.

As management systems changed and visitor pressures increased, the numbers of breeding birds unfortunately crashed. Disturbance from us and a lack of suitable cover leave these ground nesting birds and their chicks very vulnerable. They are vulnerable to trampling from too many unaware visitors and their vehicles, they are vulnerable to airborne predators and of course, to wandering mammals such as foxes, badgers and otters, all seeking a meal. In times past, the numbers of these birds were such that they could afford some losses, the system was healthy. Now unfortunately, the few pairs that are still present each summer need our help to breed safely and successfully fledge their chicks, that's where the fencing come in.





Debi Ricklin - Project Officer, Co. Donegal



Originally from Switzerland, Debi settled in the hills of Co. Donegal where she is working a smallholding, which allows her to trial different ways to use the land with nature in mind. Debi has worked in Ireland for many years in different roles and developed over the years from a Horticulturist to a Master Medical Herbalist to a Conservationist.

Debi has trained in Nature Conservation and Interpretation with the NPWS in 2022. As part of the training, she worked at Glenveagh National Park in Co. Donegal. Before LOM, Debi worked with the Curlew Conservation Programme, monitoring and protecting the breeding Curlew population in Co. Donegal and volunteered with Bat

Fence evolution

Perceived wisdom at the start of the project stated that one of the most effective ways to stop animals such as foxes predating nests was electric fencing. Multi-strand temporary fencing had been devised by the AVON Valley Waders for Real project, trialled initially on David Cabot's land in Dooagtry in 2023. Birdwatch Ireland have been using this fencing system, both Lizzie Grayson and Daniel Maloney were of great assistance to the program. Installing is quite a task, help from National Parks and Wildlife Service (NPWS) workers allowed the LIFE on Machair team experiment with fencing on a larger scale.



Many kilometres of multi-strand electric fences were placed at strategic areas of project sites where the birds are most likely to nest. Where fences were installed, grazing would be carefully managed the previous winter so that there was enough shelter for the birds to build ground nests and enough food sources for the chicks to be able to forage and fledge successfully. An added challenge for these birds is that their chicks are nearly fully independent from the moment they hatch, meaning that they start to explore very quickly.

Camouflage amongst the long vegetation and robust population numbers are the key survival techniques of breeding waders, the type of birds that should be thriving on machair. This means that the chicks need to be able to slip through the electric fence unharmed if they desire. The fence has to allow birds through but act as a barrier for mammals. Thanks to the use of motion-triggered camera traps, a problem was discovered.



Grazing for pollinators

Not only does winter grazing benefit summer birds, it is hugely beneficial to so many of our invertebrates, such as our bumblebees. The great yellow bumblebee, one of 21 species in Ireland, is sadly only to be found at a small number of coastal grassland sites. LIFE on Machair worked with the Great Yellow Bumblebee project on machair sites in Belmullet. Our project will include monitoring and helping these precious insects along with so many others. [You can find out more about the bumblebee project here.](#)



Lapwing - our national bird

Lapwings are one of the earlier successes resulting from grazing management and fencing efforts. Their numbers have increased so far across many of the sites.



Fence evolution

Due to the nature of the electric fencing, designed to allow birds through, mammals such as foxes would sometimes risk the shock and push through the fence rather than try to wriggle backwards if they got a shock.

The result is a hungry animal effectively trapped within the enclosure, leaving any ground nesting birds extremely vulnerable to predation. A separate issue was shorting due to the long vegetation. The shorting issue led to batteries draining very quickly. Solar panels were installed which bolstered the batteries, helping with the amount of labour and management time needed. Yet the birds were still not breeding successfully, predators were still getting through.

The welfare of the predator was another concern for the team. The fencing was supposed to be a deterrent, keeping the fox or whatever species that became curious away but not causing any harm or undue suffering. A more elaborate wire mesh could potentially harm the animals and could act as a barrier, preventing the chicks from accessing food outside the fence. So what to do?

Fine-tuning

One of the LIFE on Machair team, Mark Reed, was particularly determined to improve the effectiveness of the fences. Mark, a project officer based in County Mayo, leads many of the meitheal's that bring people together to work on conservation and restoration actions for LIFE on Machair. Fitting fences of this kind of scale was tough work that required many hands. These fences also needed to be dismantled reasonably quickly to allow winter grazing at the sites and needed to be mobile enough to move to a different area when required. All while withstanding the challenging west of Ireland weather conditions.



Winter meetings in all project areas

The last few weeks of winter saw multiple meetings delivered in the various project areas. Inputs came from the team on progress made and future site plans. Individual farmer plans were discussed along with the types of actions that would be suggested. Grazing pressures were discussed for each site, so often the key element to managing machair systems. Additional information was delivered by ACRES, NPWS and other speakers. To see so many landowners and farmers engaging in the project is heartening, without them, the management of machair cannot work.



New education pack for 2026...

A collaboration between Foras na Gaeilge and LIFE on machair to develop an education pack is near completion. Exploring machair as a system, the nature it supports and its cultural and heritage links are all being developed.

A teacher and facilitator pack along with presentations, junior scorecards and a plant identification swatch will all be going to the printer soon. Pilot education sessions in primary school have already been trialled with more to come. Watch this space in 2026...



Fine-tuning (contd.)

After initial erection in 2023, the methods described above were trialed and the monitoring increased in 2024. Yet still, many chicks were not surviving, these additional measures were not enough to deter a hungry fox.

Over the winter of 2024/2025, Mark started trialling a new bespoke fence design, working with the existing system. He was not alone, the LIFE on Machair team collaborating with the Breeding wader EIP. They have been and continue to be great support in both the installation and the devising of this system. Mark's theory was that a physical barrier needed to be added to the electrified fence. This barrier had to be easily erected, held in place without the addition of too many extra fence posts, allow the chicks to roam freely, all while deterring yet minimising stress to the predator. Quite a task.

Persistence, patience and ingenuity prevailed. After many trials of different mesh types and different hanging methods, a prototype was devised. A net mesh with squares 80 x 80mm allows the chicks to move freely. This net was hung from the top of the fence posts and draped inside the existing electric wire. Fence posts were increased in size and corner posts strengthened, allowing resilience against the elements. The inside net itself was pegged every metre to prevent animals from easily burrowing underneath. The predators were pushing through the original electric wires but now this mesh deterred the animal, causing it to retreat unharmed. A new predator-proof fencing system was born.



Healthy machair, healthy water



Water quality is a huge topic across Ireland at the moment, recent reports have unfortunately demonstrated some of the pressures our waters are under. Healthy habitats are known to filter, clean and store our waters, machair systems are no different. Dune slacks fill in the winter, small lakes merge, coastal lagoons swell. All of these mini-habitats hold large quantities of water, providing shelter for nature and filtering the water which has journeyed across many miles.

In another example of collaboration, farmers in County Mayo are working with the LIFE on Machair team and with NPWS to monitor the water level at Roonagh lough. The channel, inlet bed and surrounding gare has been mapped and a plan put in place to clear choke pints while maintaining the inlets levels. This allows the water quality to remain high, wildlife to be protected and still maintains access for farmers to continue with their business. An on-going project, watch this space for more updates!



Return of the birds

The breeding season of 2025 saw these prototype fences being rolled out on a large scale. Multiple sites across three counties saw many hectares of machair land fenced in this way. All plots were selected after specific grazing programs and careful surveying of the species richness and plant heights by farmers and the LIFE on Machair team. Again, the Breeding Wader EIP stepped up to help with installation. Each plot had multiple motion-triggered camera traps installed and each was surveyed regularly for breeding birds. Far be it from the ability of humans to exactly predict where a ground nesting bird might choose to make its nest, multiple plots of sufficient size certainly increased the chances of numbers being offered protection. From the nests monitored within the new fencing system, virtually all were undisturbed by mammal predators. The extremely rare dunlin managed to hatch chicks, along with other iconic machair species such as redshank and of course, lapwing. Birds were seen exploring through the cover the managed plants were offering, flitting in and out of the fenced areas and developing rapidly as they do on these sites, when enough food and safety are on offer. The fences were a success!

This improved fencing system, while onerous in its inception, is proving well worth the effort. Chicks are successfully reaching the point where they can take flight and escape predators, where they weren't managing it before. This gives these bird populations a chance to stabilise, and in time, to recover and thrive again. The predator pressure is a huge factor in these bird populations, especially when the population base number is so low. Given time and ongoing management/resources, there is no reason to believe that the numbers of these birds will not increase on these special sites. None of this is possible without farmers and landowners buying into the program and providing their services, be that through grazing regimes, fence erection and maintenance or other works.



Mammals on machair

Hares are a species that have been in Ireland for millennia. Our fastest terrestrial mammal, they also rely on long grass and flowers for both food and shelter. Unlike rabbits they don't burrow, instead creating little circles in the long vegetation called forms, where they rest in safety. Yet again, how the habitats are grazed, dictates whether the hare just survives or gets too thrive.



Return of the birds (contd.)

The fencing program, much like the LIFE on Machair program, is ongoing and will roll out more protection and management in future seasons. Ultimately of course, the aim is to have large enough healthy habitat on a regional scale with robust bird breeding numbers, numbers that will withstand predator pressures. Their success and collaboration puts an onus on us all to support these programs and act responsibly when we are visiting these sensational parts of our country. None of us want to be adding to the disturbance of these beautiful creatures that have travelled so, so far, just to take a chance at breeding in our unique machair habitats. We all have a role to play, by being aware of ground nesting birds from March to August and crucially, keeping our dogs on leads! More of that in the next edition.

Project action areas

Have a look and see if any of the project areas are near you. We are looking forward to 2026, the first flowers emerging, the return of sights and sounds of our insects and birds and most importantly, the collaboration with farmers, demonstrating how farming and nature can go hand in hand.

