



**LIFE on Machair**  
SAOL ar an Mhacaire

2022 - 2028

Involving communities and  
stakeholders  
- *The key to successful conservation  
management*



My research background.....

Invasive Alien Species

Atlantic Technological University, Sligo



*Petasites pyrenaicus*





Report No.368



# Prevention, Control and Eradication of Invasive Alien Species

Authors: Frances E. Lucy, Joe Caffrey, Jaimie T.A. Dick,  
Eithne Davis and Neil E. Coughlan



[www.epa.ie](http://www.epa.ie)



Rialtas na hÉireann  
Government of Ireland



Figure 5.6. Winter heliotrope invading woodland habitat.



Figure 5.7. Winter heliotrope flower (left) and close-up of leaves (right).





Management of Biological Invasions (2020) Volume 11, Issue 2: 155–177

### Research Article

## Horizon scan of invasive alien species for the island of Ireland

Frances E. Lucy<sup>1,\*</sup>, Eithne Davis<sup>1,\*</sup>, Roy Anderson<sup>2</sup>, Olaf Booy<sup>3</sup>, Ken Bradley<sup>4</sup>, J. Robert Britton<sup>5</sup>, Colin Byrne<sup>6</sup>, Joseph M. Caffrey<sup>7</sup>, Neil E. Coughlan<sup>8</sup>, Kate Crane<sup>8</sup>, Ross N. Cuthbert<sup>8</sup>, Jaimie T.A. Dick<sup>8</sup>, James W.E. Dickey<sup>8</sup>, Jeffrey Fisher<sup>9</sup>, Cathal Gallagher<sup>10</sup>, Simon Harrison<sup>11</sup>, Matthew Jebb<sup>12</sup>, Mark Johnson<sup>13</sup>, Colin Lawton<sup>13</sup>, Dave Lyons<sup>14</sup>, Tim Mackie<sup>4</sup>, Christine Maggs<sup>5</sup>, Ferdia Marnell<sup>14</sup>, Tom McLoughlin<sup>15</sup>, Dan Minchin<sup>16</sup>, Oonagh Monaghan<sup>15</sup>, Ian Montgomery<sup>8</sup>, Niall Moore<sup>3</sup>, Liam Morrison<sup>13</sup>, Rose Muir<sup>4</sup>, Brian Nelson<sup>14</sup>, Art Niven<sup>17</sup>, Colette O'Flynn<sup>18</sup>, Bruce Osborne<sup>19</sup>, Ruth M. O'Riordan<sup>11</sup>, Neil Reid<sup>8</sup>, Helen Roy<sup>20</sup>, Rory Sheehan<sup>1</sup>, Dorothy Stewart<sup>15</sup>, Monica Sullivan<sup>21</sup>, Paula Tierney<sup>22</sup>, Paula Treacy<sup>23</sup>, Elena Tricarico<sup>24</sup> and Wayne Trodd<sup>15</sup>

- Preventing the spread of IAS requires good biosecurity.
- For good biosecurity, the public must understand the issue.
- For the public to understand the issue, scientists must engage and communicate **EFFECTIVELY!!!**

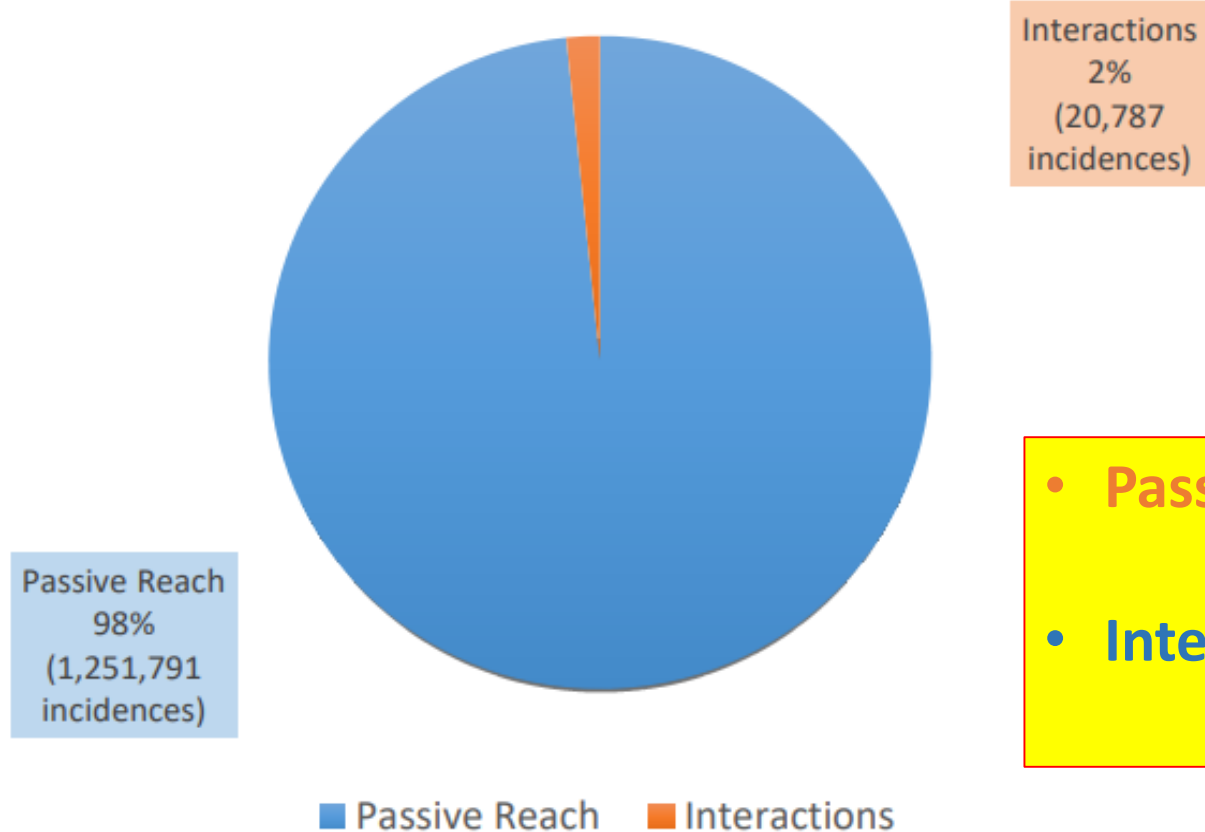


## Biosecurity Training for Practitioners

- Engineers
- Anglers
- Archaeologists
- Farmers
- Landscape gardeners
- Government employees
- Kayak clubs
- .....



## PROPORTION OF OVERALL OUTREACH MOMENTS IDENTIFIED AS INTERACTIONS OR PASSIVE REACH



Management of Biological Invasions (2018) Volume 9, Issue 4: 515–525

DOI: <https://doi.org/10.3391/mbi.2018.9.4.14>

© 2018 The Author(s). Journal compilation © 2018 REABIC

This paper is published under terms of the Creative Commons Attribution License ([Attribution 4.0 International - CC BY 4.0](#))

Open Access

*Proceedings of the 20th International Conference on Aquatic Invasive Species*

### Education and Outreach

## Communications, outreach and citizen science: spreading the word about invasive alien species

Eithne Davis<sup>1,\*</sup>, Joe M. Caffrey<sup>2</sup>, Neil E. Coughlan<sup>1,3,4</sup>, Jaimie T.A. Dick<sup>3</sup> and Frances E. Lucy<sup>1</sup>

- **Passive Reach** raises general awareness
- **Interactions** generate behaviour change

**Figure 1.** The chart shows the very small proportion of media outreach moments which were identified as being interactive (2%). The channels of communication which generated the most extensive reach (broadcast media and social media) gave proportionally the smallest number of interactions, while the smaller events gave a high percentage interaction with the audience.

Channel of Communication	Total no. of incidences of reach	% of incidences which were interactive	Details
Broadcast media	593,000	0	Total of 7 broadcasts, including television and radio
Workshops	118	58	Total of 4 workshops, averaging 30 people
Public events	820	33	Total of 2 public events, averaging 420 people
Citizen science	152	100	Total of 2 events

- Workshops and Citizen Science require interaction from participants
- Interaction generates behavioural change





**LIFE on Machair**  
SAOL ar an Mhacaire

2022 - 2028

Involving communities and  
stakeholders  
- *The key to successful conservation  
management*





## LIFE on Machair

SAOL ar an Mhachaire



*Protecting and restoring Ireland's network of machair systems and associated breeding wader and pollinator communities*



## LIFE on Machair

### PROJECT AREAS

- Horn Head + Rinclevan Co. Donegal
- Gweedore Co. Donegal
- Mullet Peninsula Co. Mayo
- Inishkea Islands Co. Mayo
- Doogort Machair Co. Mayo
- Roonagh Cahasy Baun Loughs Co. Mayo
- Dooaghtry Co. Mayo
- Doonloughan Co. Galway
- Murvey Machair Co. Galway

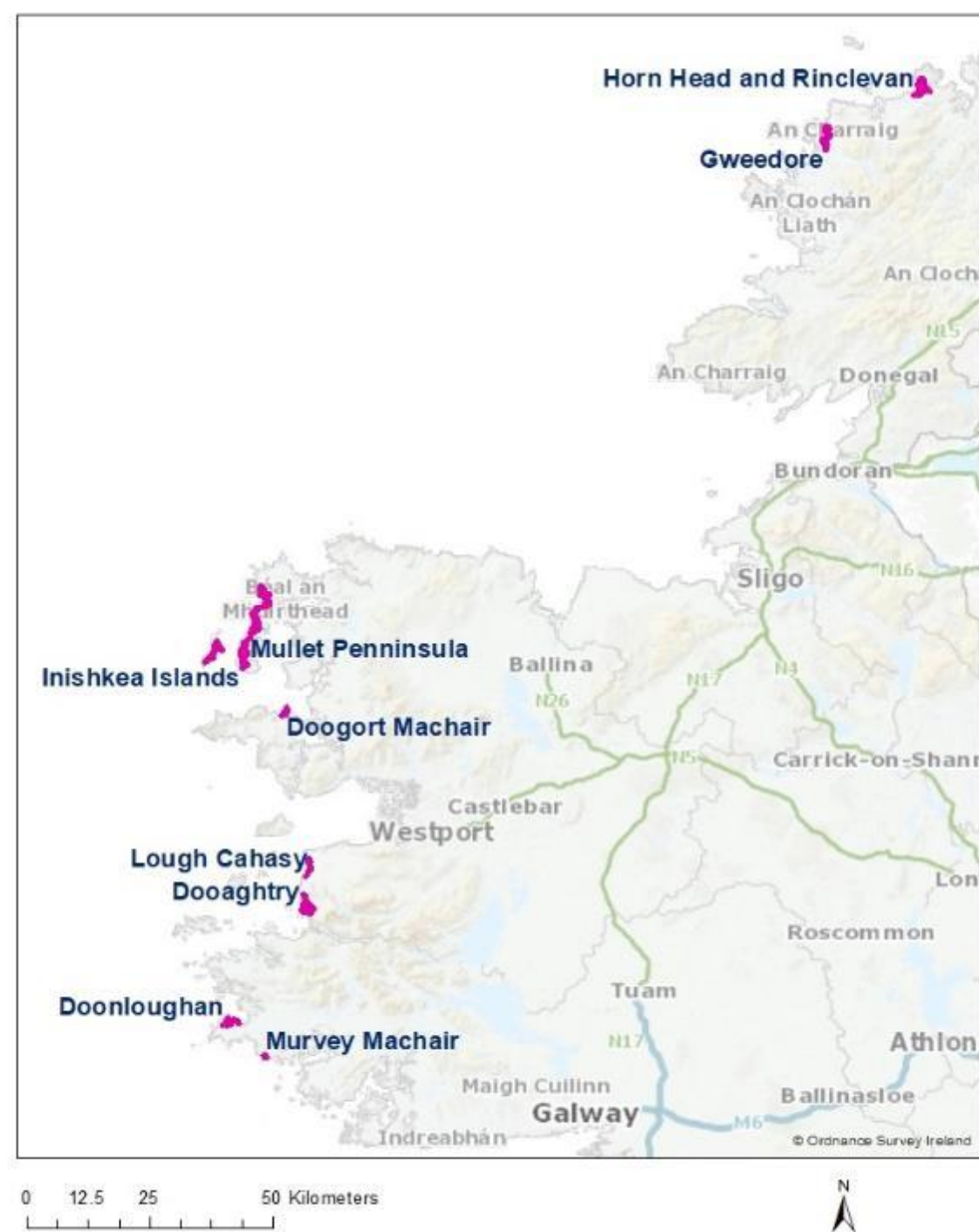




# Target areas



- 9 target sites
- 3,500 ha of designated lands:
  - 1,200 ha machair
  - 1,000 ha fixed dunes
  - 1,300 ha associated habitats
- c. 300 farmers/landowners
- Many local communities and business



# Key stakeholders:

- Farmers, landowners
- Local communities
- Local businesses
- Agricultural advisors
- Local authorities
- NPWS
- OPW







**LIFE on Machair**  
SAOL ar an Mhacaire

# The Team



Project Manager



Ecologists



Community Engagement



Administrator



Project Officers





# What is Machair?







**LIFE on Machair**  
SAOL ar an Mhacaire

## What is Machair?

1. Machair is a type of **grassland** that develops by **sand** blown behind dune systems.
2. Machair is dependent on extensive agriculture.
3. Machair is a Scottish word and means **grassy plain** - **maghera** in Irish townlands.
4. Irish words for this type of area are **muirbheach** - as in Murvey  
.....and **duach** - as in Duach gort - meaning traditional cattle grazing commonage area.

**Designated for habitat and species of EU conservation interest**







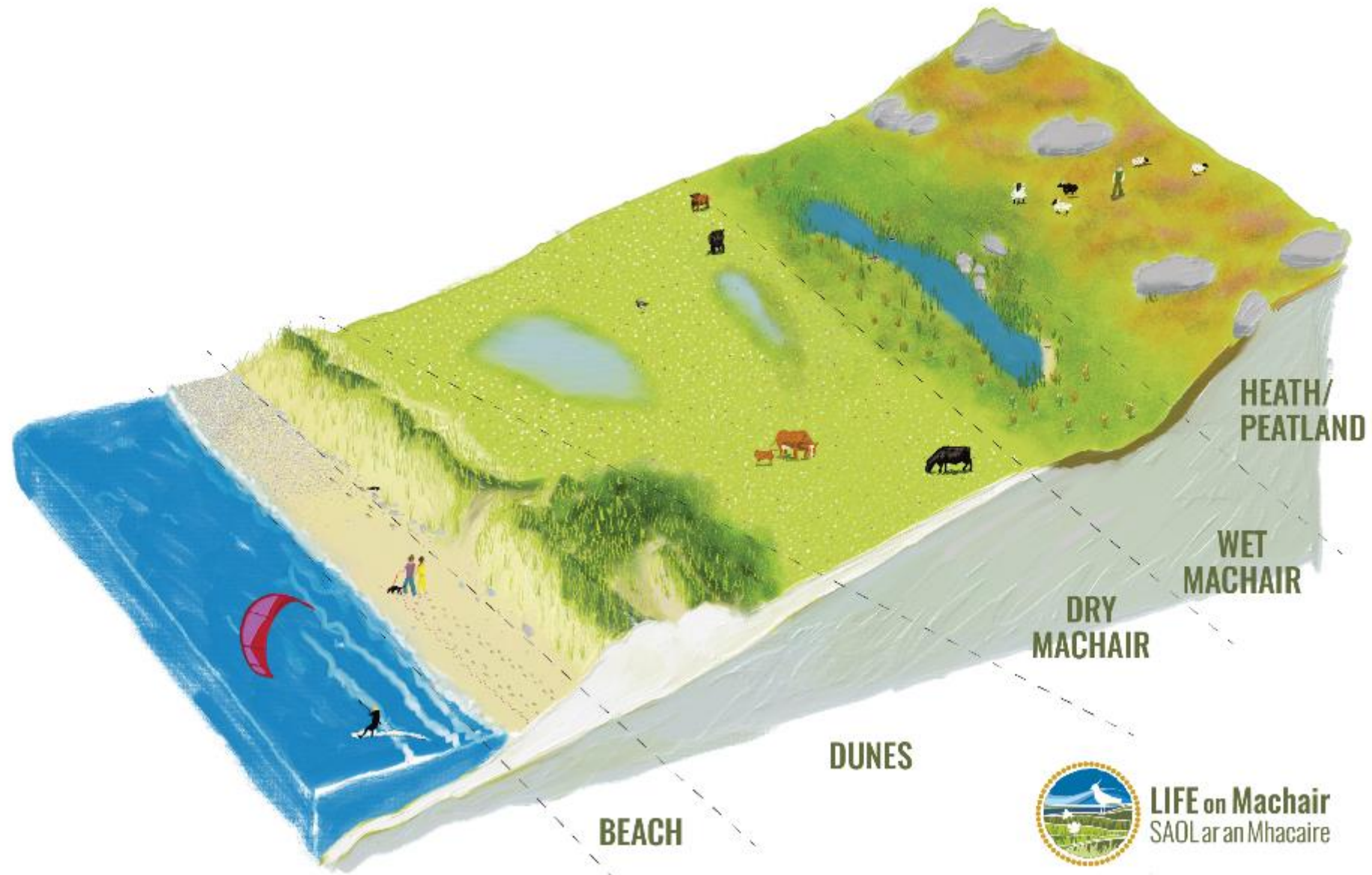






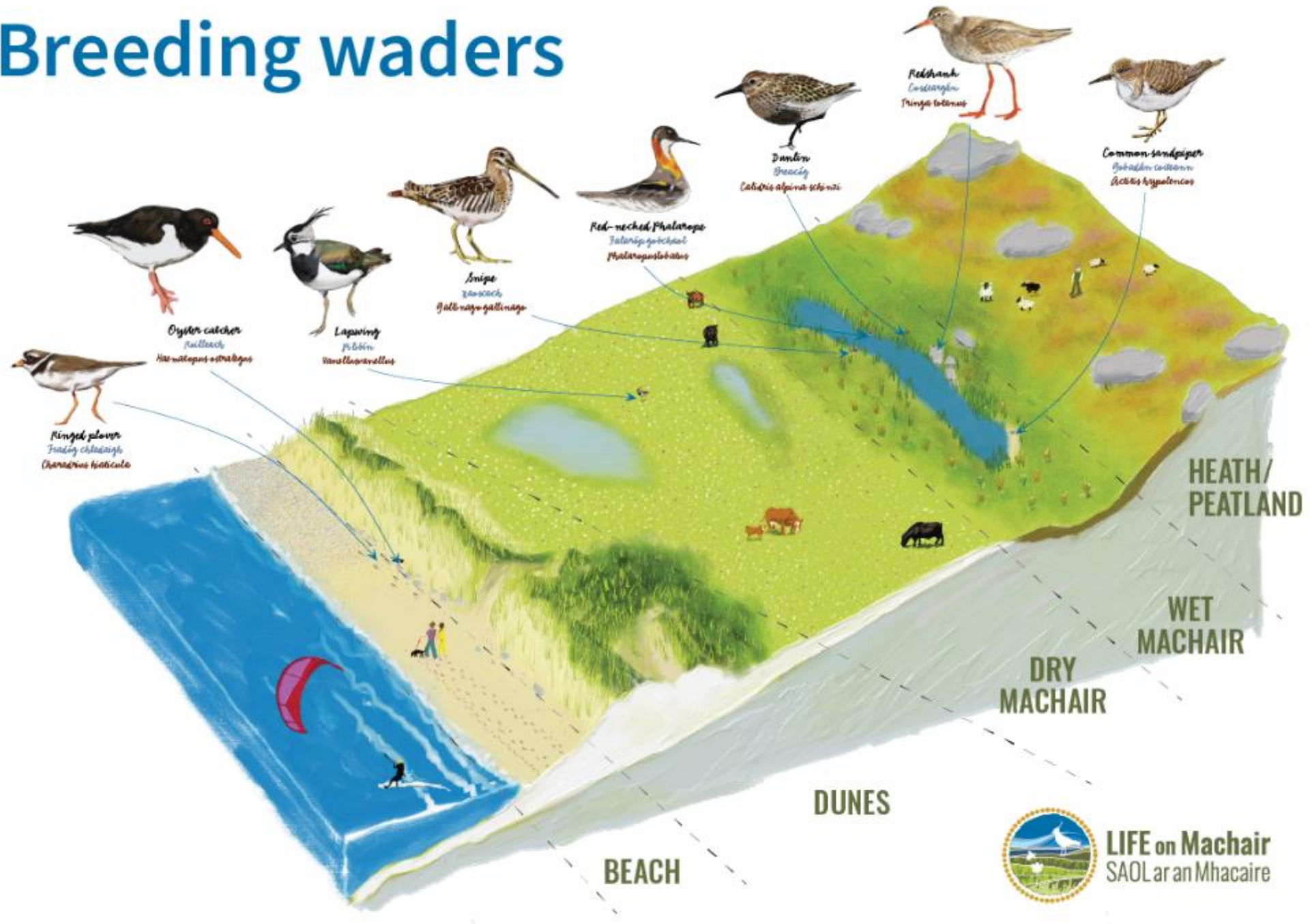


# Machair system



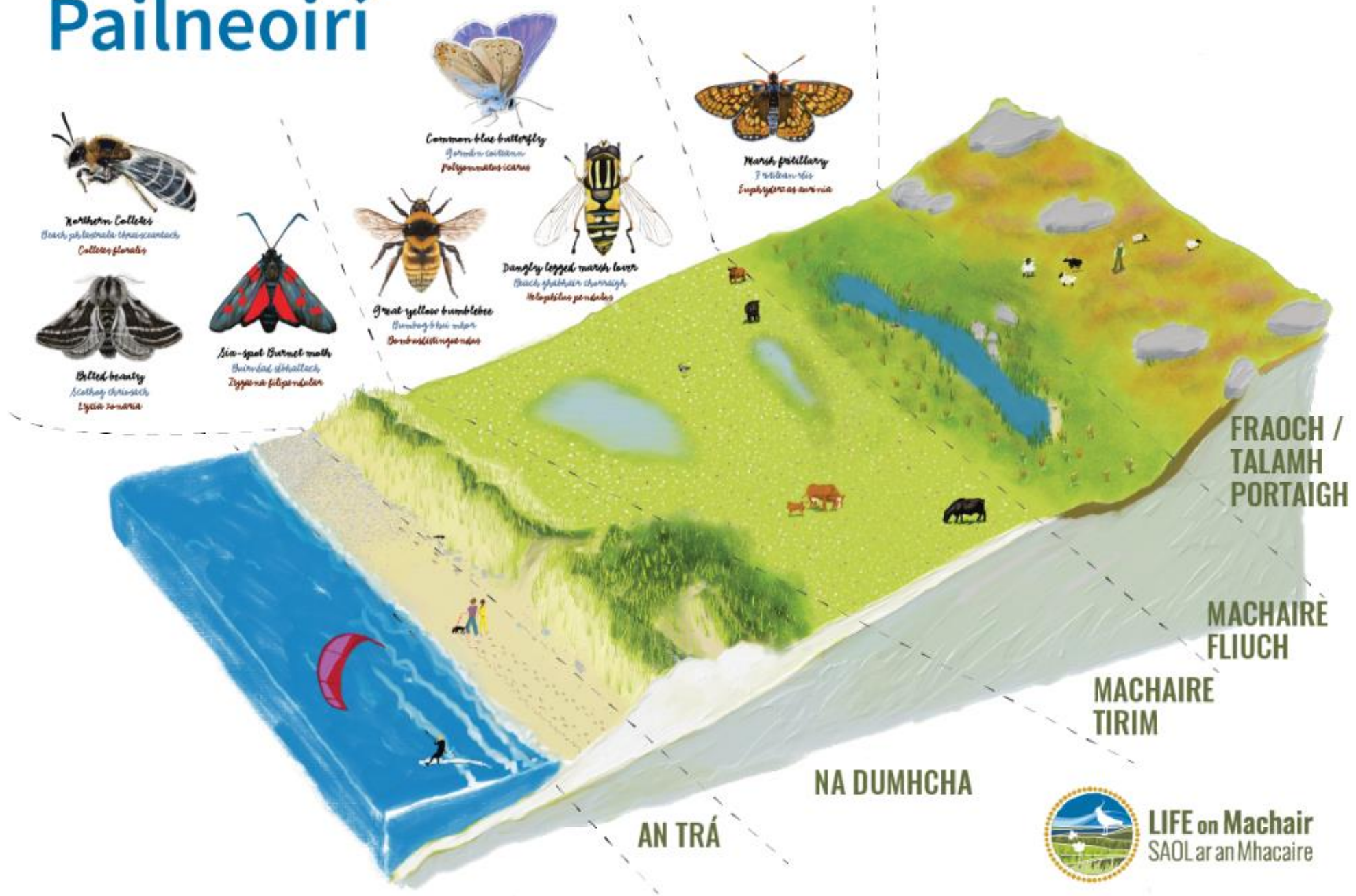


# Breeding waders



**LIFE on Machair**  
SAOL ar an Mhacaire

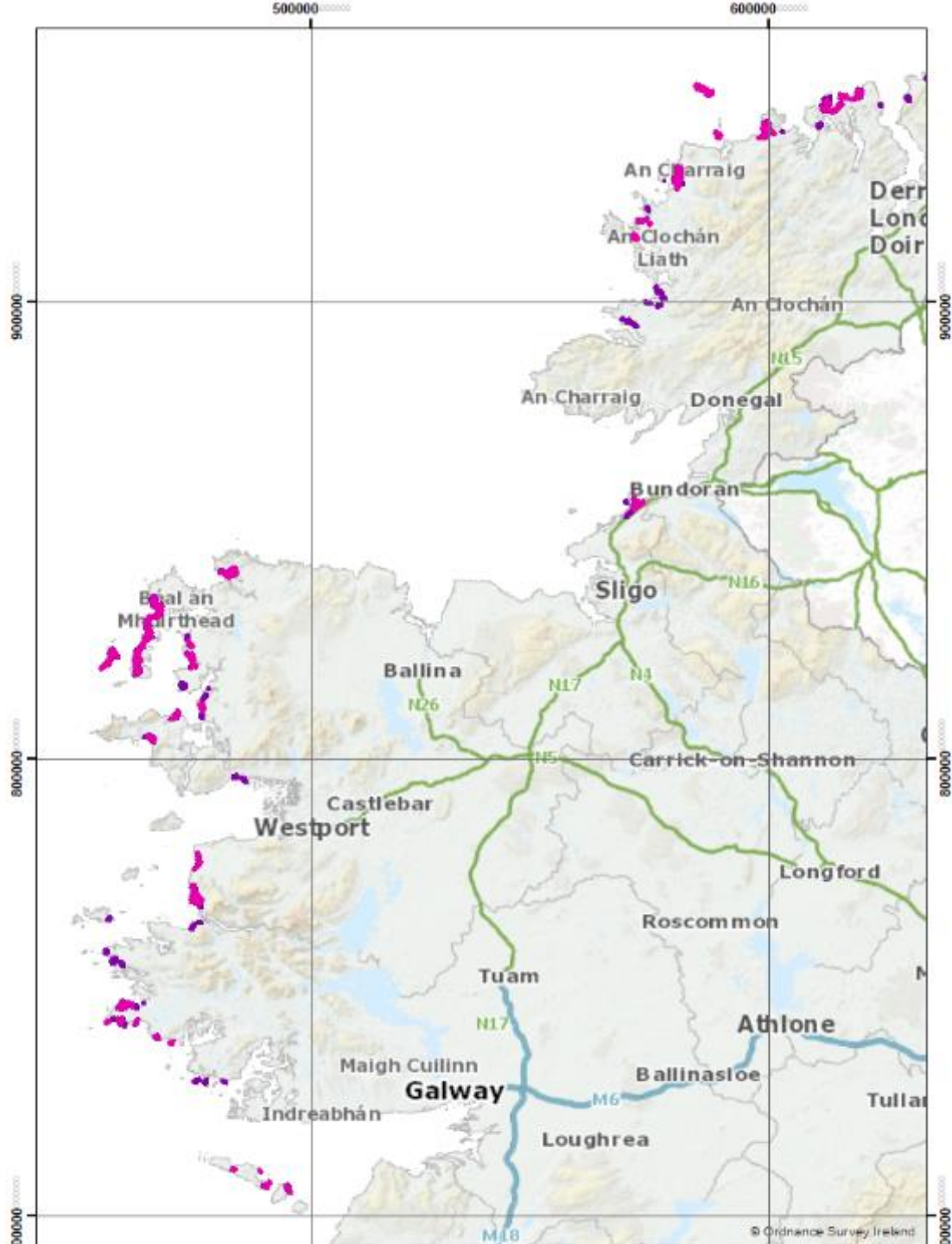
# Pailneoirí









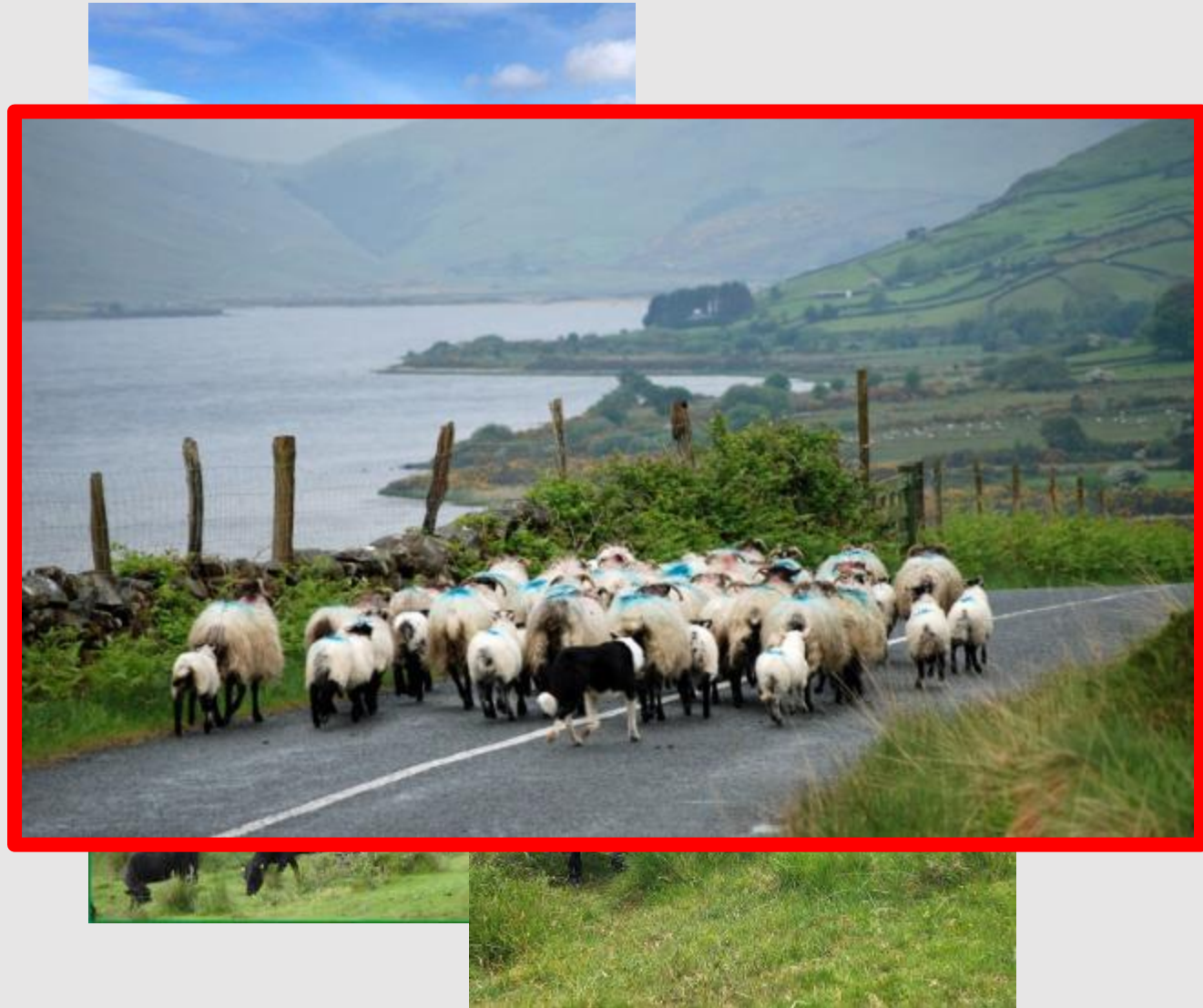




# Agriculture .....

## Land Ownership is complicated.

- Commonage
  - Owned by a large group of people
  - All have rights to the land
  - Trespass is an issue on some sites
- Private
- Some state-owned





Traditional farming.....  
Ireland is covered in Semi-natural Grasslands





Modern farming.....  
Driven by EU Policy



## More sheep than people in Ireland - Census 2016

A quick comparison of some headline figures between the census and the crops and livestock survey from 2016 has revealed some startling facts.







Sheep grazing has replaced traditional cattle grazing



## Semi-intensive farming on extensive systems















**LIFE on Machair**  
SAOL ar an Mhacaire

## **The focus of the project**

1. Protect and conserve Machair habitat
2. Improve conservation of pollinators on machair sites
3. Improve conservation of breeding waders on machair sites
4. Promote sustainable tourism and recreational use through engaging with communities





**LIFE on Machair**  
SAOL ar an Mhacaire

## **General actions of the project**

1. Agri-environmental actions
2. Breeding wader actions
3. Tourism and amenity actions
4. Education and awareness





**LIFE on Machair**  
SAOL ar an Mhacaire

## Agri-environmental actions underway

1. Farmer workshops

2. Erosion mitigation

3. Grazing agreements & understanding









## Agri-environmental actions underway

1. Farmer workshops

2. Erosion mitigation

3. Grazing agreements





**LIFE on Machair**  
SAOL ar an Mhacaire

## Chestnut Fencing







Marram seed gathering



Green hay strewing





**LIFE on Machair**  
SAOL ar an Mhacaire

## Agri-environmental actions underway

1. Farmer workshops

2. Erosion mitigation

3. Grazing agreements &  
understanding

- Project participants have committed to sustainable grazing.
- Reduction of ring-feeders
- Trespassing still an unresolved issue on some sites





Scan for more info



LIFE on Machair  
SAOL ar an Mhacaire

# GRAZING EXPERIMENTS

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

This area is temporarily fenced off to exclude grazing, as part of an experiment into understanding the best seasons to graze the machair, and the best seasons to rest it.

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2016 and EU Habitats Directive 92/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species.  
<https://www.npws.ie/protected-sites/sac/001529>

























# Breeding Waders







## Main Breeding Waders of LIFE on Machair

(Breeding populations are around from March to July)



Medium conservation concern



High conservation concern



Common Sandpiper  
*Gobodán coiteann*



Lapwing  
*Pilibín*



Oystercatcher  
*Roilleach*



Redshank  
*Cosdeargán*



Dunlin  
*Breacóg*



Ringed Plover  
*Feadóg chladaigh*



Red-necked Phalarope  
*Falaróp gobchaol*



Snipe  
*Naoscach*







**LIFE on Machair**  
SAOL ar an Mhacaire

## Breeding Waders - actions underway

1. Temporary fences
2. Predator control
3. Trail Cameras, monitoring
4. Annagh Marsh – permanent fence upgrade





## Temporary predator fencing







Marsh helleborine inside the fence at Dooaghtry.  
Given a chance, the floral resource is rich.



Annagh Marsh Fence







**LIFE on Machair**  
SAOL ar an Mhacaire

## Breeding Waders - actions underway

1. Temporary fences

2. Predator control

3. Trail Cameras, monitoring

4. Annagh Marsh – permanent fence upgrade







**LIFE on Machair**  
SAOL ar an Mhacaire

## Breeding Waders - actions underway

1. Temporary fences
2. Predator control
3. Trail Cameras, monitoring
4. Annagh Marsh – permanent fence upgrade





## Otter inside Annagh Marsh Fence



08/02/2024

06:08 AM

54°F

12°C



SPYPOINT FLEX E-36



## Fox inside The Valley Fence

03/21/2024 00:35 AM

44°F

7°C



SPYPOINT LM2

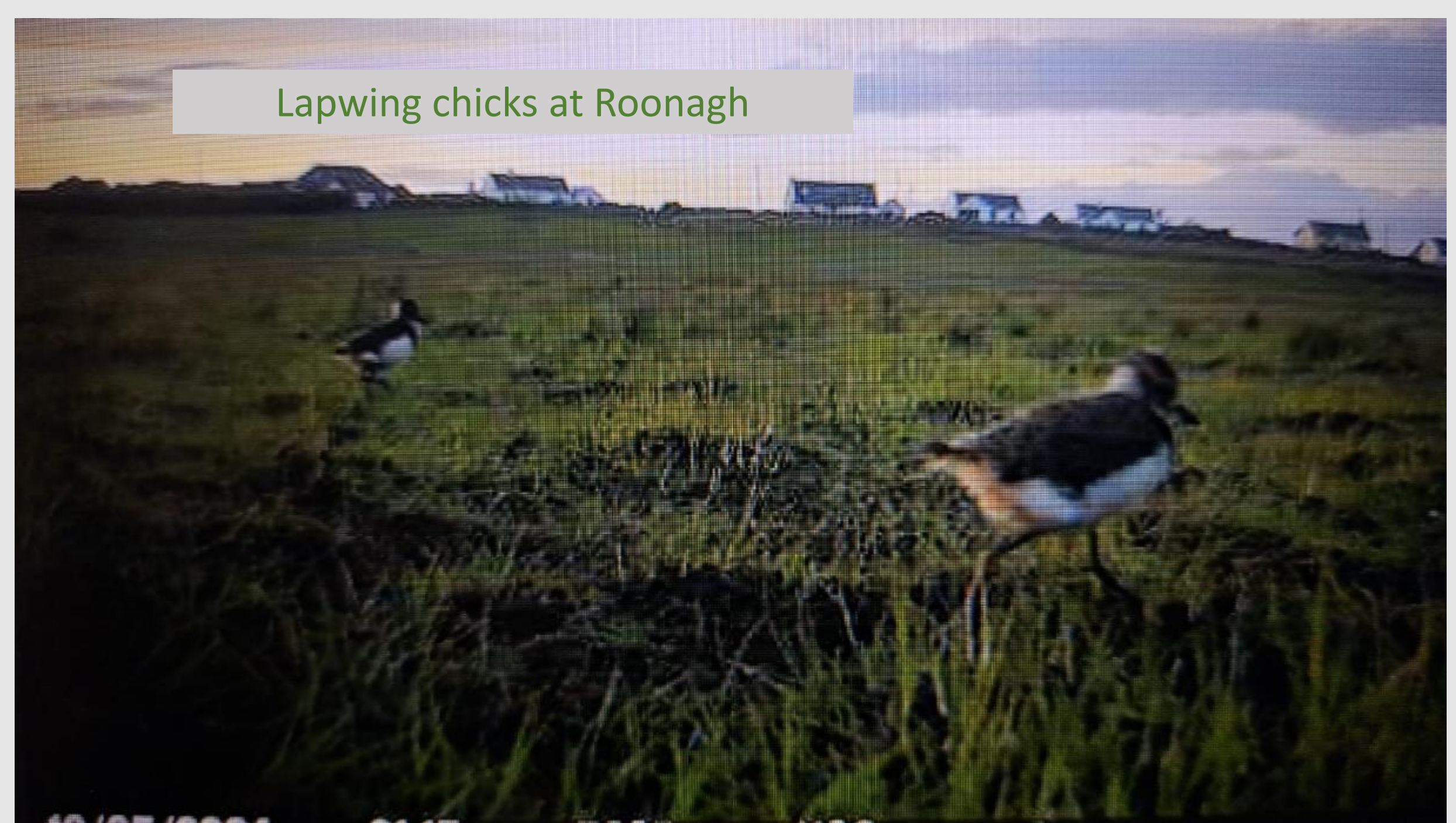


## Badger inside Truska Fence





## Lapwing chicks at Roonagh













## Lapwing at Truska



20 / 03 / 2024 14 : 48 50 F 10 C



SPYPOINT LM2



# Community monitoring at The Valley





Tourism and amenity actions





LIFE on  
Machair









## All sites – Identical Signage

**Fáilte go**



**LIFE on Machair**  
SAOL ar an Mhachaire

  
Scan for more info

## Doogort Machair SPA/Lough Doo SAC

### Machair is a delicate coastal habitat, which only exists in the west of Ireland and Scotland.


## Machair system

**Meet the family!**

### Breeding waders

- Oystercatcher (*Haematopus ostralegus*)
- Lapwing (*Vanellus vanellus*)
- Ringed plover (*Charadrius hiemalis*)
- Red-necked Phalarope (*Plegadis falcinellus*)
- Belted Plover (*Eurosto-*

- Dunlin (*Calidris alpina*)
- Red-throat (*Phoenicurus phoenicurus*)
- Common sandpiper (*Pedicularis*



The LIFE on Machair project aims to halt and reverse the significant population declines of breeding waders & pollinators in Irish Machair systems.

### Pollinators

- Marsh Wallow (*Halictus confusus*)
- Common blue butterfly (*Glaucopsyche alexandria*)
- Large heath fritillary (*Speyeria agestor*)
- Great yellow bustard (*Tetractix viridis*)
- Delicate bee (*Andrena*)
- Northern Cuckoo (*Coccyzus erythrophthalmus*)
- Silver-spurred hawk (*Buteo swainsonii*)

Machair systems present a complex landscape mosaic of habitats comprising both wet and dry areas. They are bordered by beaches and sometimes extensive dune habitats on the seaward side, with wetland areas backed by peatland and lowland hills to the landward side.



It is the mix of both wet and dry Machair that gives rise to a rich diversity of species, notably breeding waders and pollinators.

**This land is privately owned and farmed as commonage. Access is with the owners goodwill, and is not a right.**

**The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.**

This site is protected under EU and national legislation (EU Habitats Regulations 2014 and EU Habitats Directive 92/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species.

<https://www.nps.ie/protected-sites/sac/001529>





## Visitor Management Assessments (Draft)

- Developed for each site, with Fáilte Ireland
- Under discussion within project team, NPWS and FI
- Initial measures have been implemented at some sites

LIFE ON MACHAIR - DOONLOUGHAN VISITOR  
MANAGEMENT ASSESSMENT

LIFE ON MACHAIR LIFE20 NAT/IE/000263

02 | January 2024





Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**MADRAÍ AR TÉADAÍ GHAIAM**



**DOGS MUST BE KEPT ON SHORT LEADS AT ALL TIMES**

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**COSC AR TIOMÁINT**



**AUTHORISED VEHICLES ONLY**

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**GRAZING EXPERIMENTS**

This area is temporarily fenced off to exclude grazing, as part of an experiment into understanding the best seasons to graze the machair, and the best seasons to rest it.

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

# All sites - Signage

**STAY OFF BARE SAND**

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**This area is under restoration.**

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**COSC AR MHADRAÍ**



**NO DOGS ALLOWED**

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

Machair is a rare and delicate coastal habitat, which only exists in the west of Ireland and Scotland.

**NO CAMPING**

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>

**Looped walk rerouted to protect ground-nesting birds**

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 1992/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.uk/government/topics/wildlife>



# All sites - Signage

## BIRDS ONLY BEYOND THIS POINT!

Nationally important breeding site for rare breeding birds, including Lapwing.



## Ní cheadaítear ach do na héin dul níos faide ná seo

Ceantar pórúcháin atá tábhachtach go náisiúnta do héanacha a bhfuil neamhchoitianta, an Pilibín san áire



Scan for more info



## Caution!

Electric fence and ground-nesting birds ahead!



Nationally important breeding site for rare breeding birds, including Lapwing. These birds nest on the ground, and are vulnerable to disturbance and predation.

The electric fence is designed to keep out predators.

To help the chicks survive and return again to breed next year:

## GIVE THEM SPACE –

## PLEASE DO NOT ENTER THIS AREA!

LIFE on Machair is a six year project (2022 to 2028) working with farmers, landowners and local communities to protect and restore Ireland's network of Machair systems.

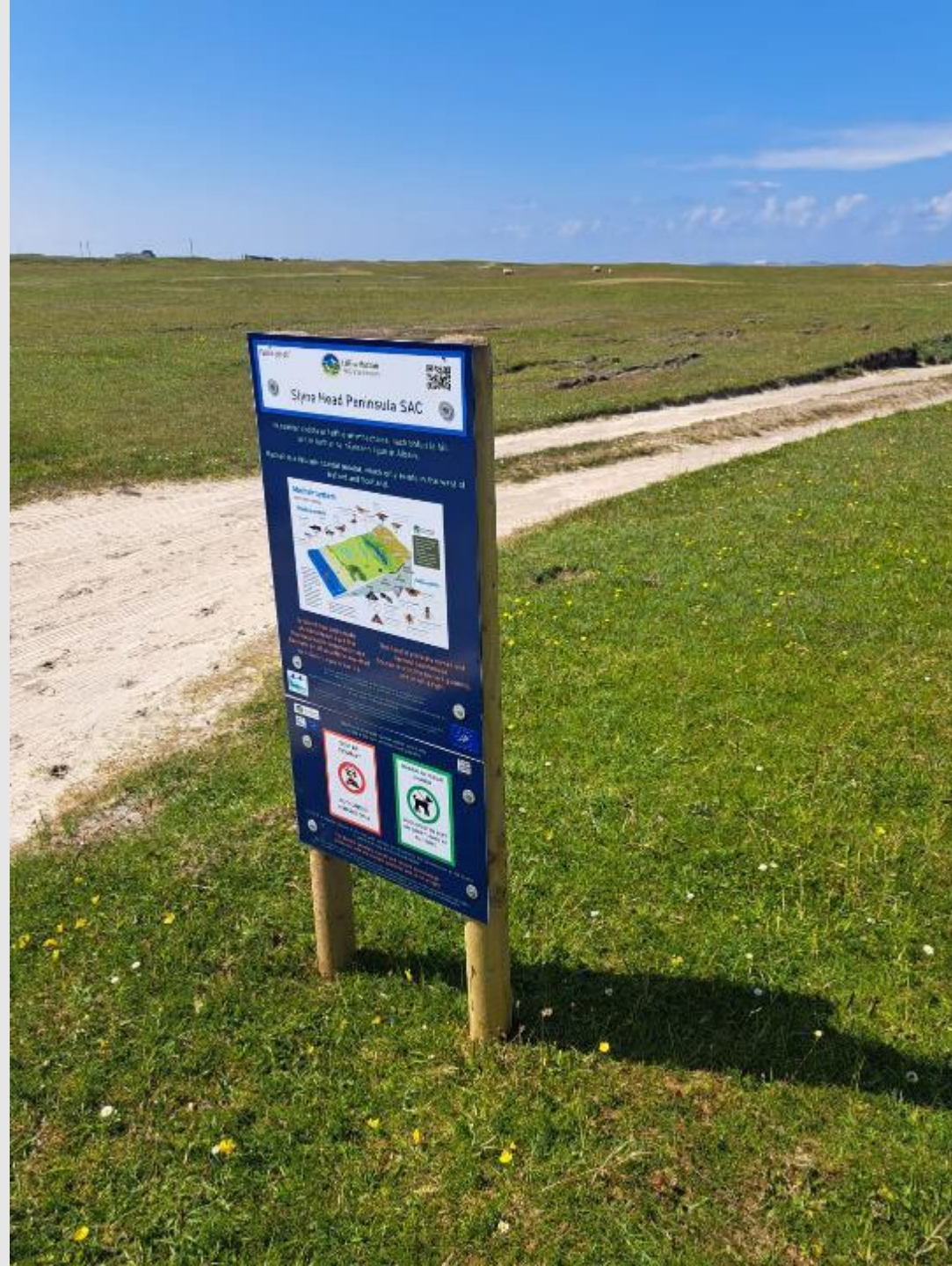
<http://lifenamachair.ie>



Scan for more info











Doonloughan vehicle barrier



# Flyer explaining the pressures

Fáilte go dtí

 **LIFE on Machair**  
SAOL ar an Mhachaire



**Doonloughan, Keerhaun South, Truska**

## Coastal pressures and erosion

Our coastal habitats are in poor condition and are deteriorating and eroding at an increasing rate due to climate change and increased amenity pressure.



This area at Doonloughan, Keerhaun South, Truska has come under immense pressure from holiday/amenity vehicles in recent years with large portions of the site being badly damaged as a result.

This area supports a number of sensitive sand dune and Machair habitats as well as rare and threatened species.

**It is essential that no vehicles drive on the machair or the dunes in order to allow these sensitive habitats to recover.**



Remember: This is farmed land with livestock present – keep dogs on a short lead at all times. Completely avoid areas where ground nesting birds are sensitive to disturbance and broods will fall if adults have to leave the nest for too long.



Fáilte go dtí

 **LIFE on Machair**  
SAOL ar an Mhachaire



**Slyne Head Peninsula SAC**

Is ceantar chósta ar leith é an mhachaire, nach bhfuil le fáil ach in Iarthar na hÉireann agus in Albain.

Machair is a delicate coastal habitat, which only exists in the west of Ireland and Scotland.



Is talamh faoi úinéireacht phríobháideach agus faoi theirmeoireacht coimeacht seo. Baineann an slí oscailte le dea-thoil na n-úinéirí, agus ní ceart é.

This land is privately owned and farmed commonage. Access is with the owners goodwill, and is not a right.

Tá an tionscadal SAOL ar an Mhachaire ag obair le feirmeoirí ar an suíomh seo chun dúlra an cheantar, na héin a neadaíonn ar an talamh agus na pláineoirí a chaomhnú.

The LIFE on Machair project is working with farmers on this site for the conservation of the habitat, it's ground nesting birds and pollinators.



This site is protected under EU and national legislation (EU Habitats Regulations 2016 and EU Habitats Directive 92/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species.  
<https://www.nps.ie/protected-areas/sac/sac001029>



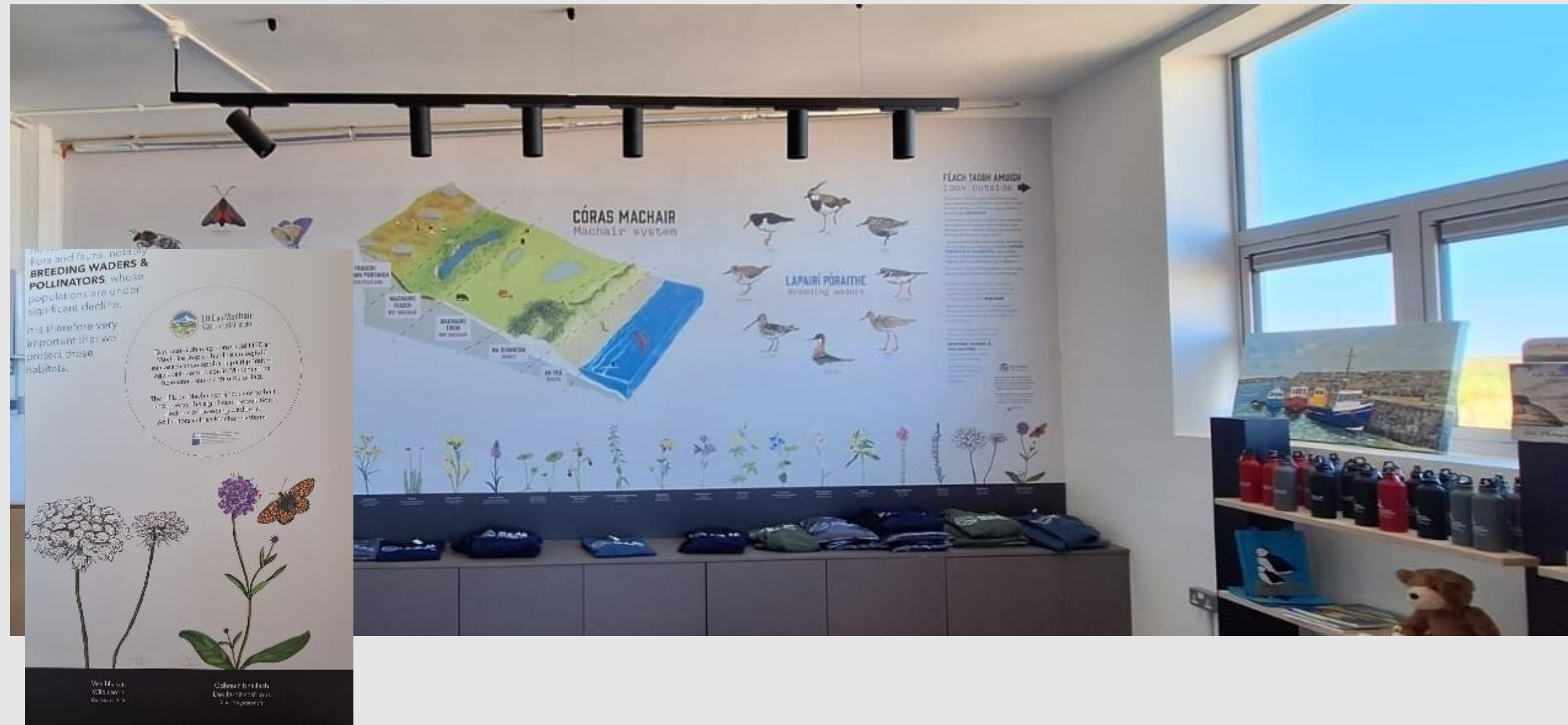
- Door to door
- Members of the public
- WhatsApp groups for sharing



Education and awareness



# Solas, Eachléim - mural





# Dunfanaghy Quilting





# From Dunfanaghy to Blacksod











Community walks and events



## Art Classes



## Medicinal and edible plants





# In summary.....

Land Ownership is complicated.

- Commonage
- Private
- State-owned



## Strategy –

- Importance of direct interaction
- Prioritising workshops and small group meetings
- Engaging with
  - Landowners
  - Schools, community groups, local community centres.....
  - Local Authorities, National Parks and Wildlife Service, Dept. of Agriculture, Teagasc, Fáilte Ireland.....
  - NGOs (Birdwatch, LNT, Clean Coasts)

Reconnecting people  
with their landscape





**LIFE on Machair**  
SAOL ar an Mhacaire

*Thank you!*

*Go raibh mile maith agaibh!*



An tSeirbhís Páirceanna Náisiúnta  
agus Fiadhúlra  
National Parks and Wildlife Service



**Fáilte Ireland**  
National Tourism Development Authority



An Roinn Talmhaíochta,  
Bia agus Mara  
Department of Agriculture,  
Food and the Marine

