



**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*



# Prevention, Control and Eradication of Invasive Alien Species

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



Figure 5.6. Winter heliotrope invading woodland habitat.



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



**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>

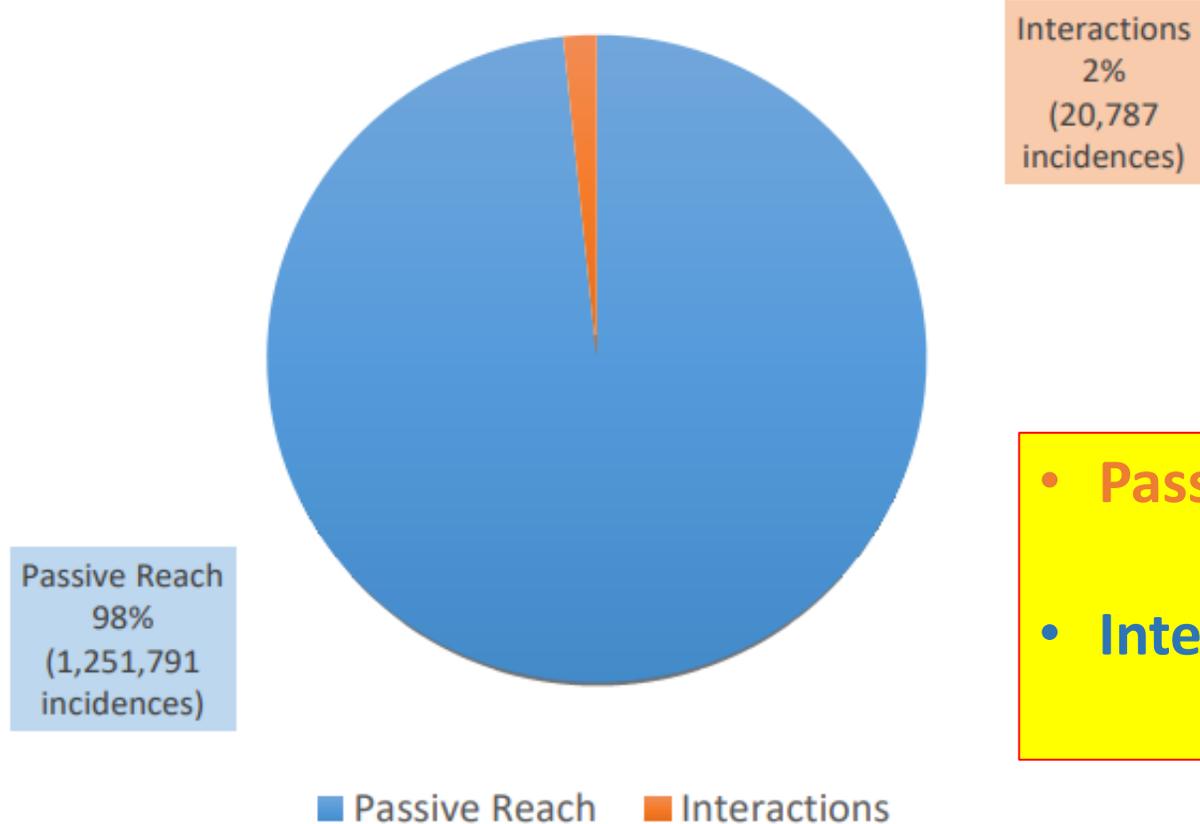
- Preventing the spread of IAS requires good biosecurity.
- For good biosecurity, the public must understand the issue.
- For the public to understand the issue, scientists must engage and communicate **EFFECTIVELY!!!**



## 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



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



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

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

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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>

**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**


 Management of Biological Invasions (2018) Volume 9, Issue 4: 515–525  
 DOI: <https://doi.org/10.3391/mbi.2018.9.4.14>  
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**Education and Outreach**

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**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

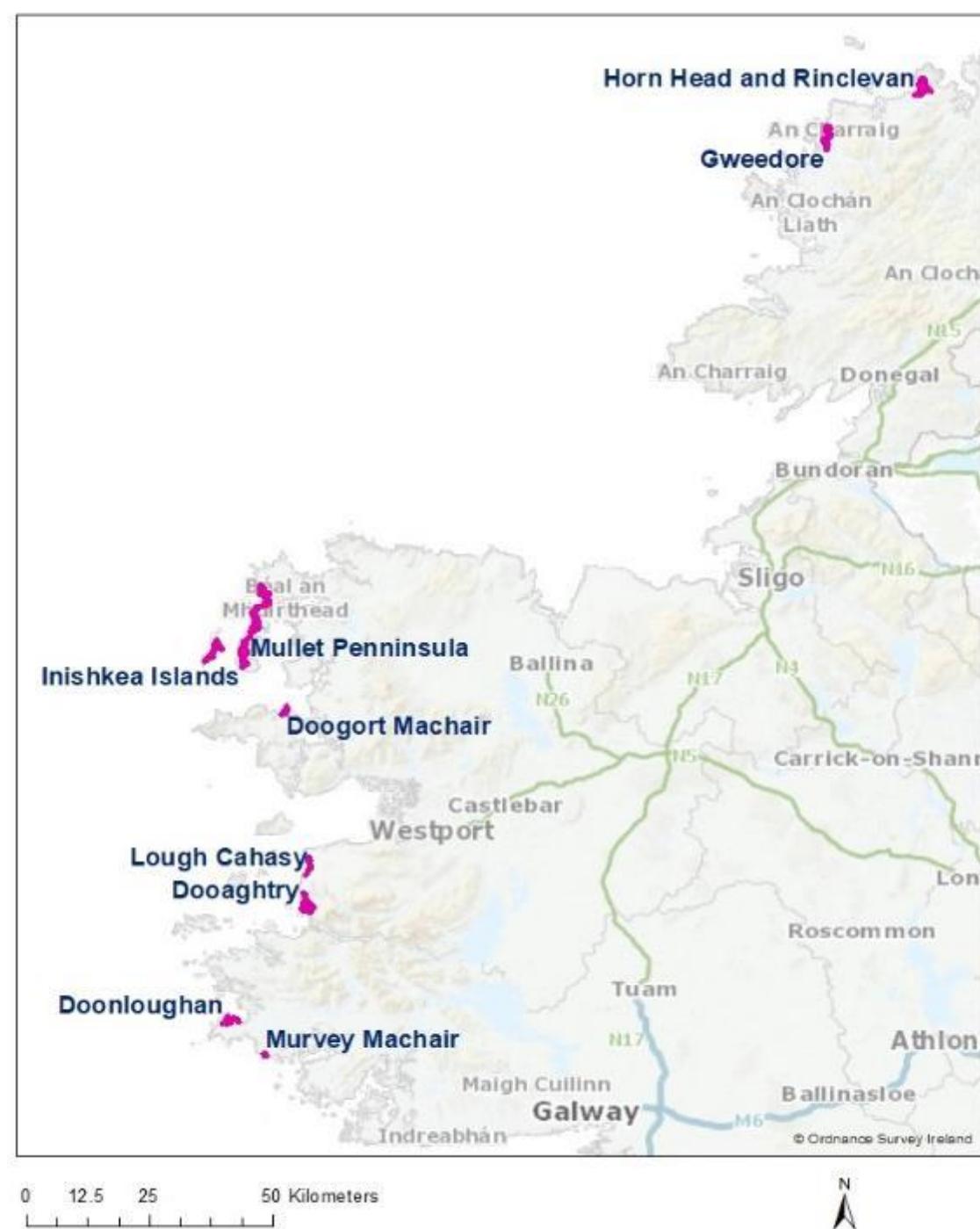
- Horn Head + Rinclevan Co. Donegal
- Gweedore Co. Donegal
- Mullet Peninsula Co. Mayo
- Inishkea Islands Co. Mayo
- Doogort Machair Co. Mayo
- Roonagh Cahasy Baun Loughs Co. Mayo
- Dooaghtry Co. Mayo
- Doonloughan Co. Galway
- Murvey Machair Co. Galway



# 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



Ecologists



Project Manager



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.

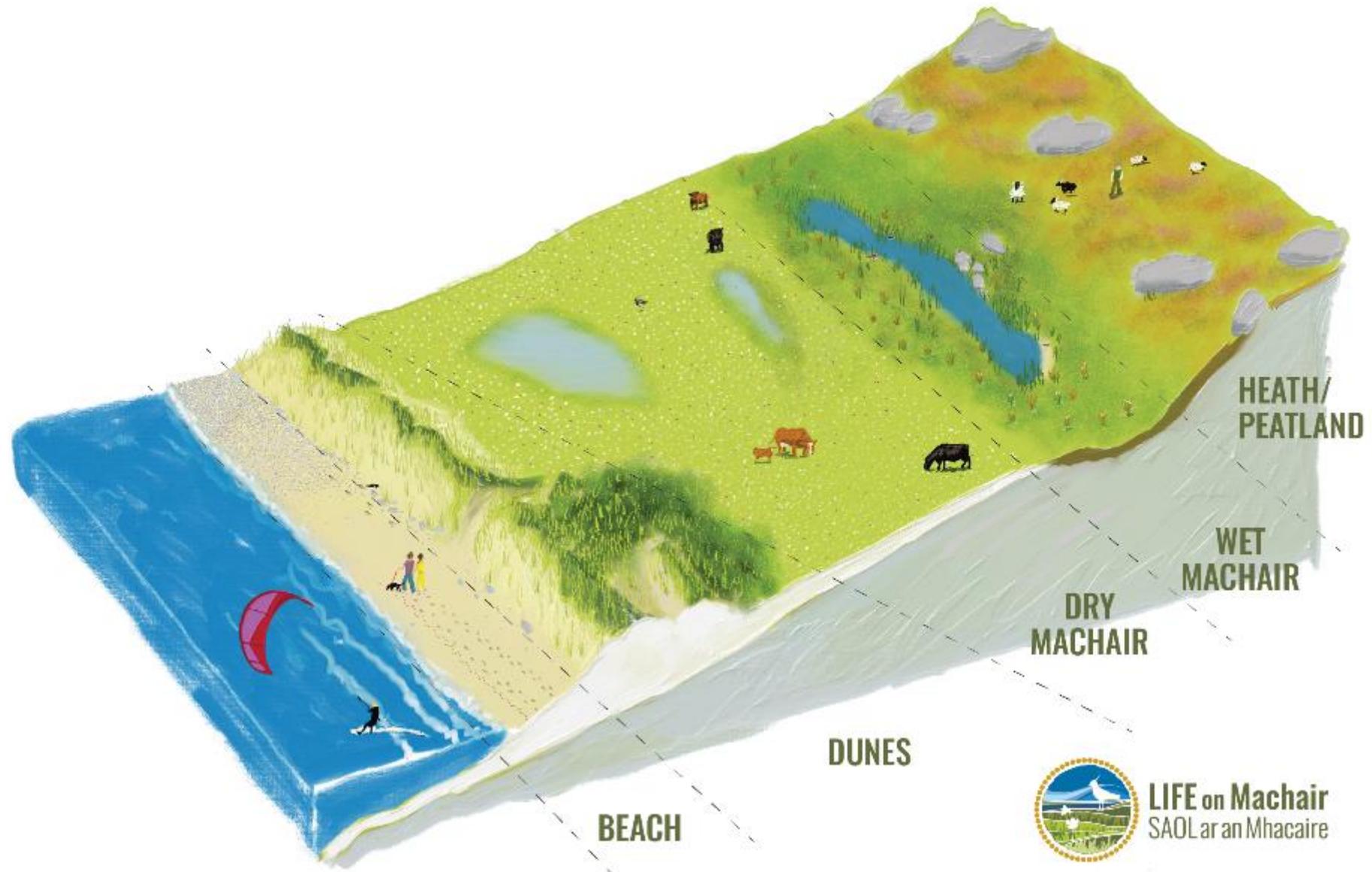
**Designated for habitat and species of EU conservation interest**



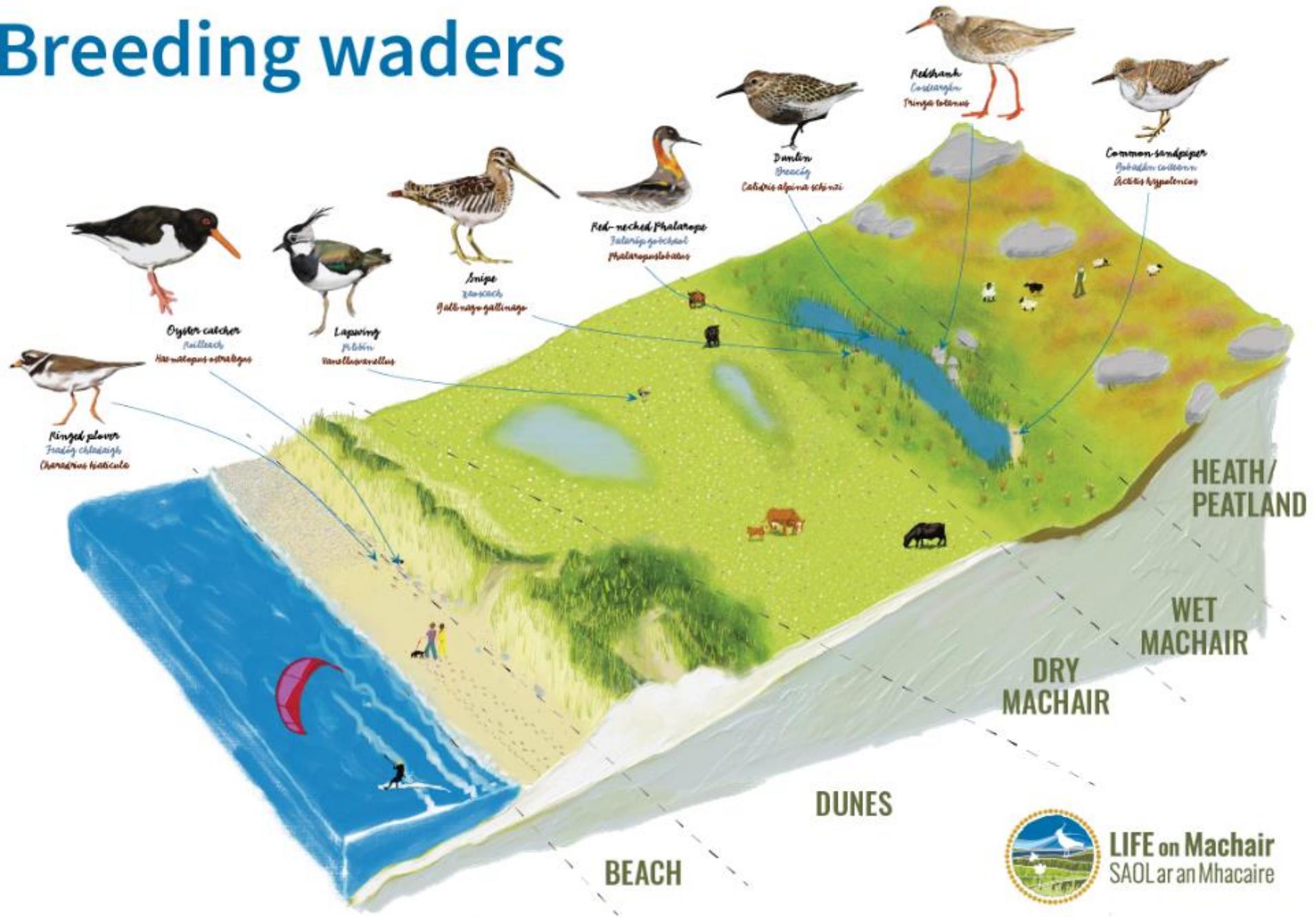




# Machair system



# Breeding waders



# Pailneoirí



**Northern Colletes**  
Beach phléimneola léim-scantach  
*Colletes floralis*



**Belted beauty**  
Scathóg dhruisach  
*Lycia sarothra*



**Six-spot Burnet moth**  
Buirneal síbhallach  
*Zygaena trifolialis*



**Great yellow bumblebee**  
Buirneóg bhíde mhór  
*Bombus lucorum*



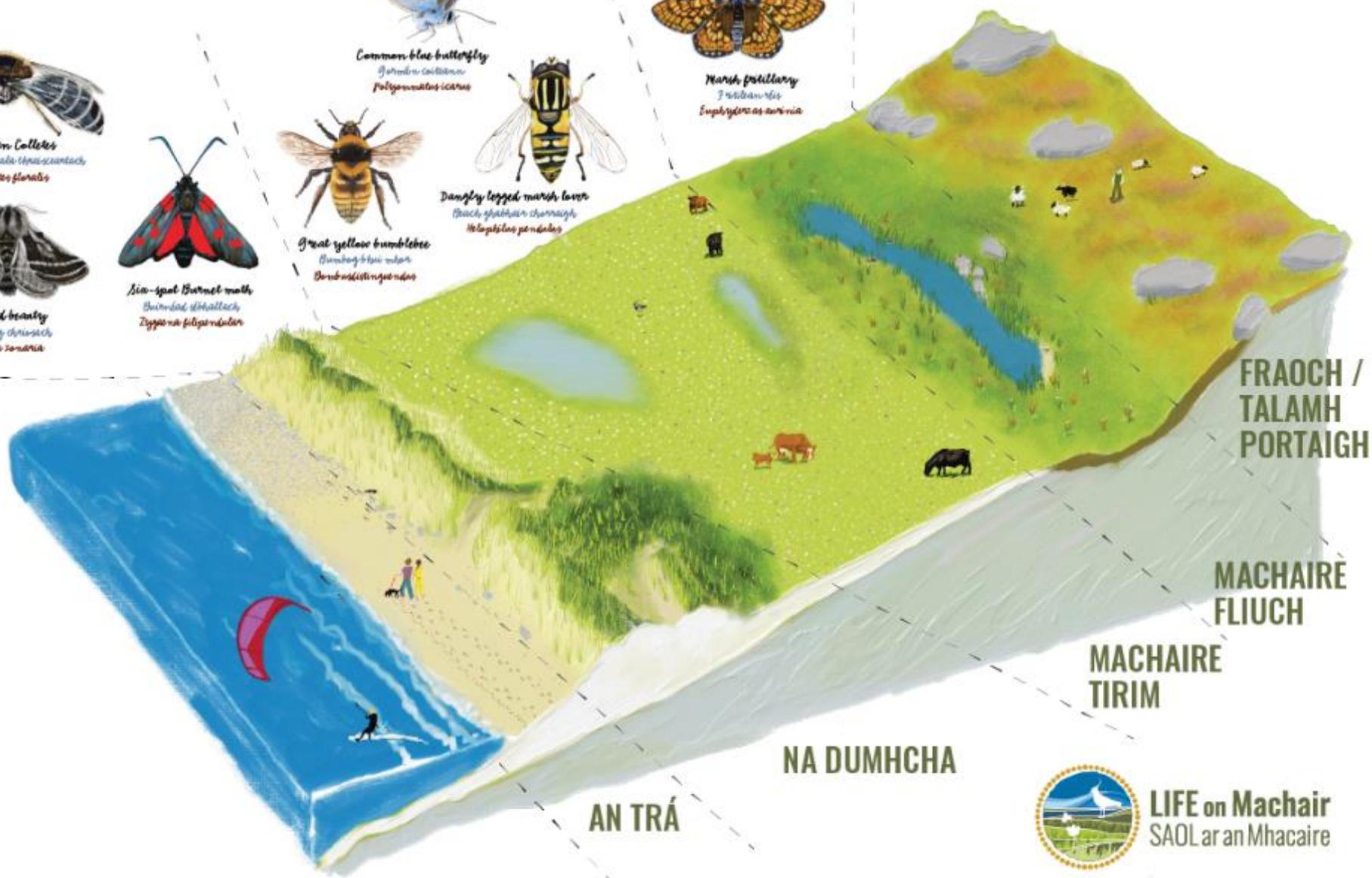
**Common blue butterfly**  
Fíoróidín cáitínín  
*Polyommatus icarus*



**Damselfly-legged marsh looper**  
Beach ghábháir charragh  
*Meligethes pendulata*



**Marsh fritillary**  
Fíoróidín rís  
*Euphydryas aurinia*



FRAOCH /  
TALAMH  
PORTAIGH

MACHAIRE  
FLIUCH

MACHAIRE  
TIRIM

NA DUMHCHA

AN TRÁ

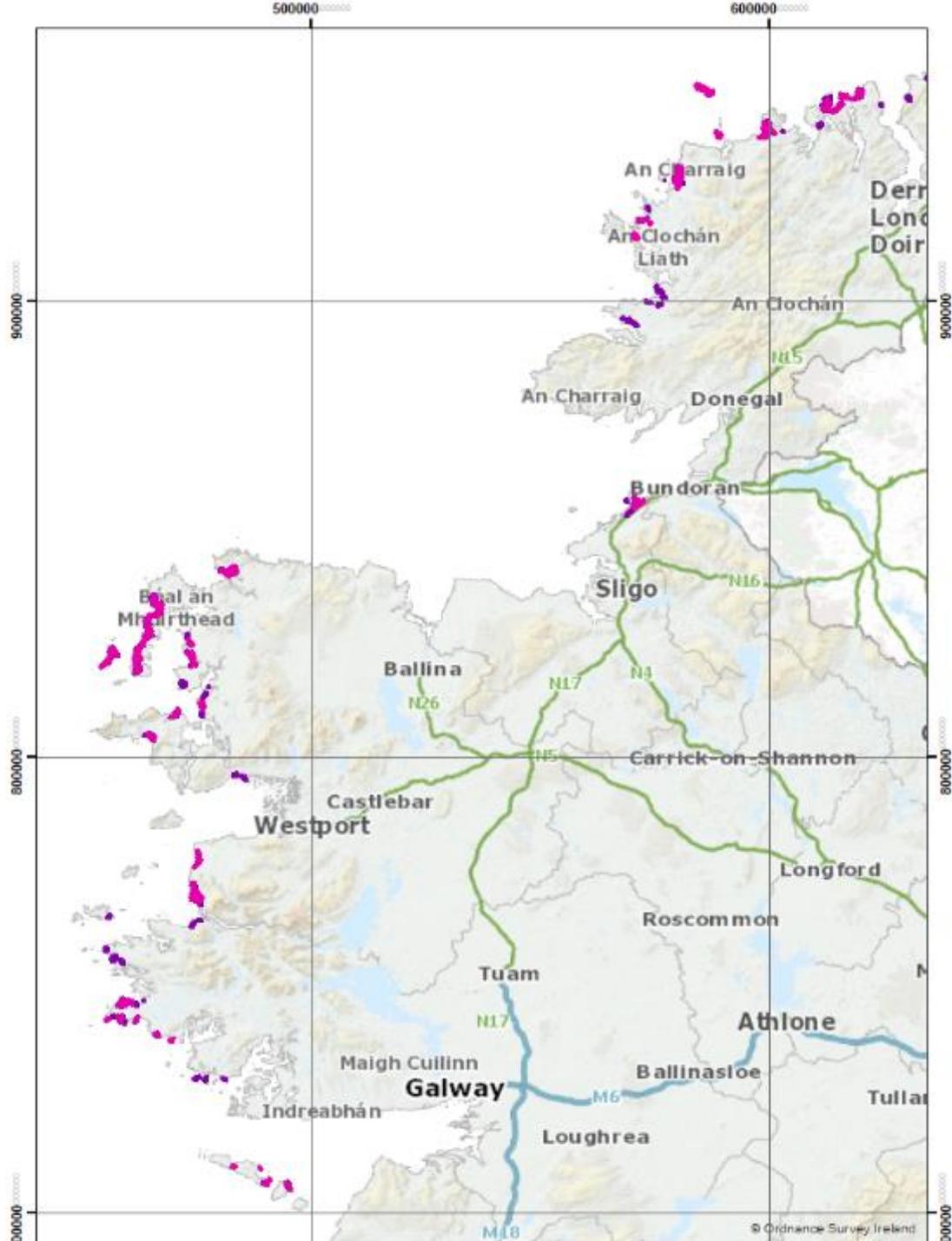


**LIFE on Machair**  
SAOL ar an Mhacaire



**LIFE on  
Machair**

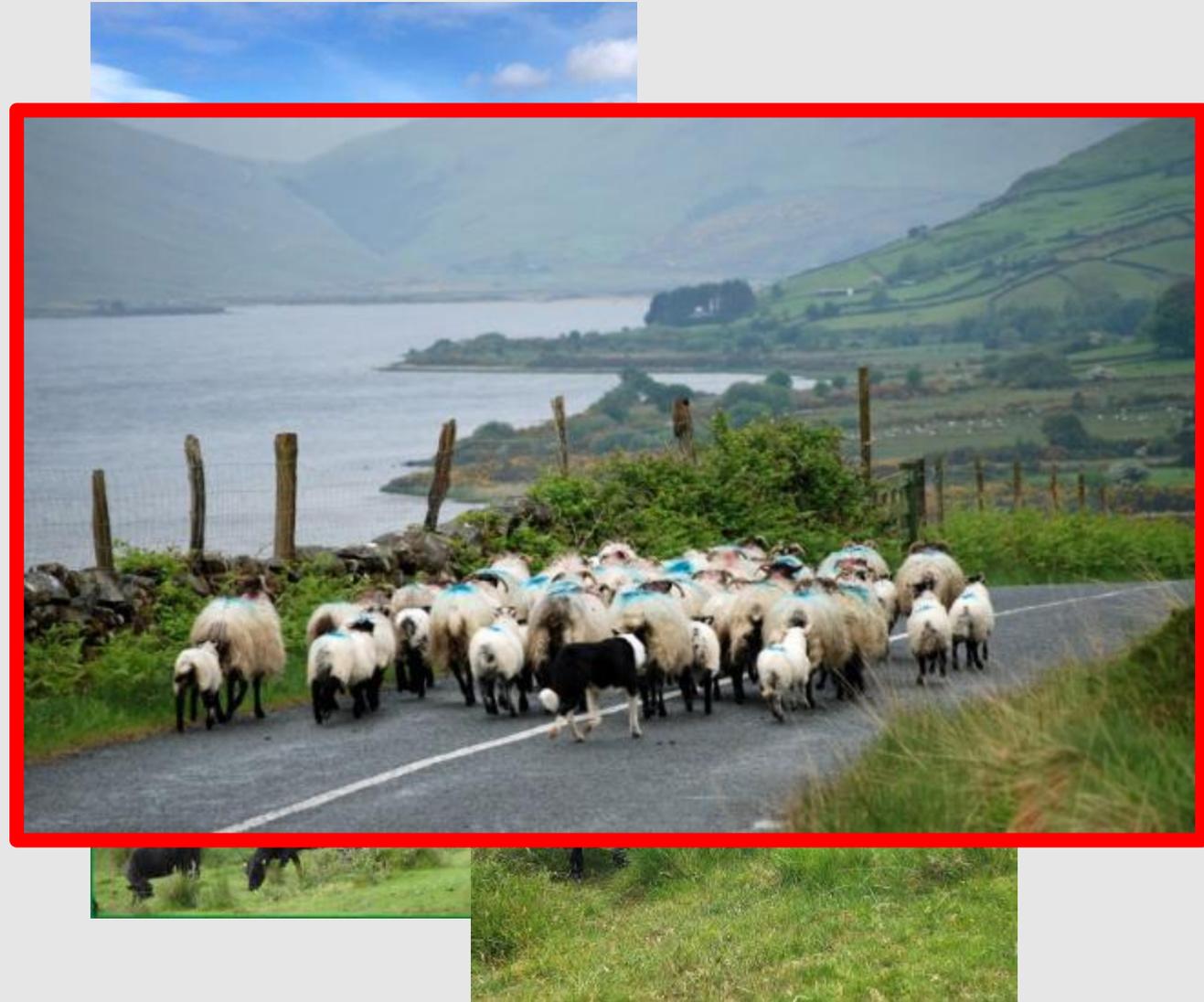




# Agriculture .....

## 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









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## **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



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## General actions of the project

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



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## Agri-environmental actions underway

1. Farmer workshops

2. Erosion mitigation

3. Grazing agreements & understanding





LIFE on  
Machair

## Agri-environmental actions underway

1. Farmer workshops

2. Erosion mitigation

3. Grazing agreements





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## Chestnut Fencing





Marram seed gathering



Green hay strewing





**LIFE on Machair**  
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## 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



# 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* 



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## 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 Dooaghty.  
Given a chance, the floral resource is rich.

# Annagh Marsh Fence





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## 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

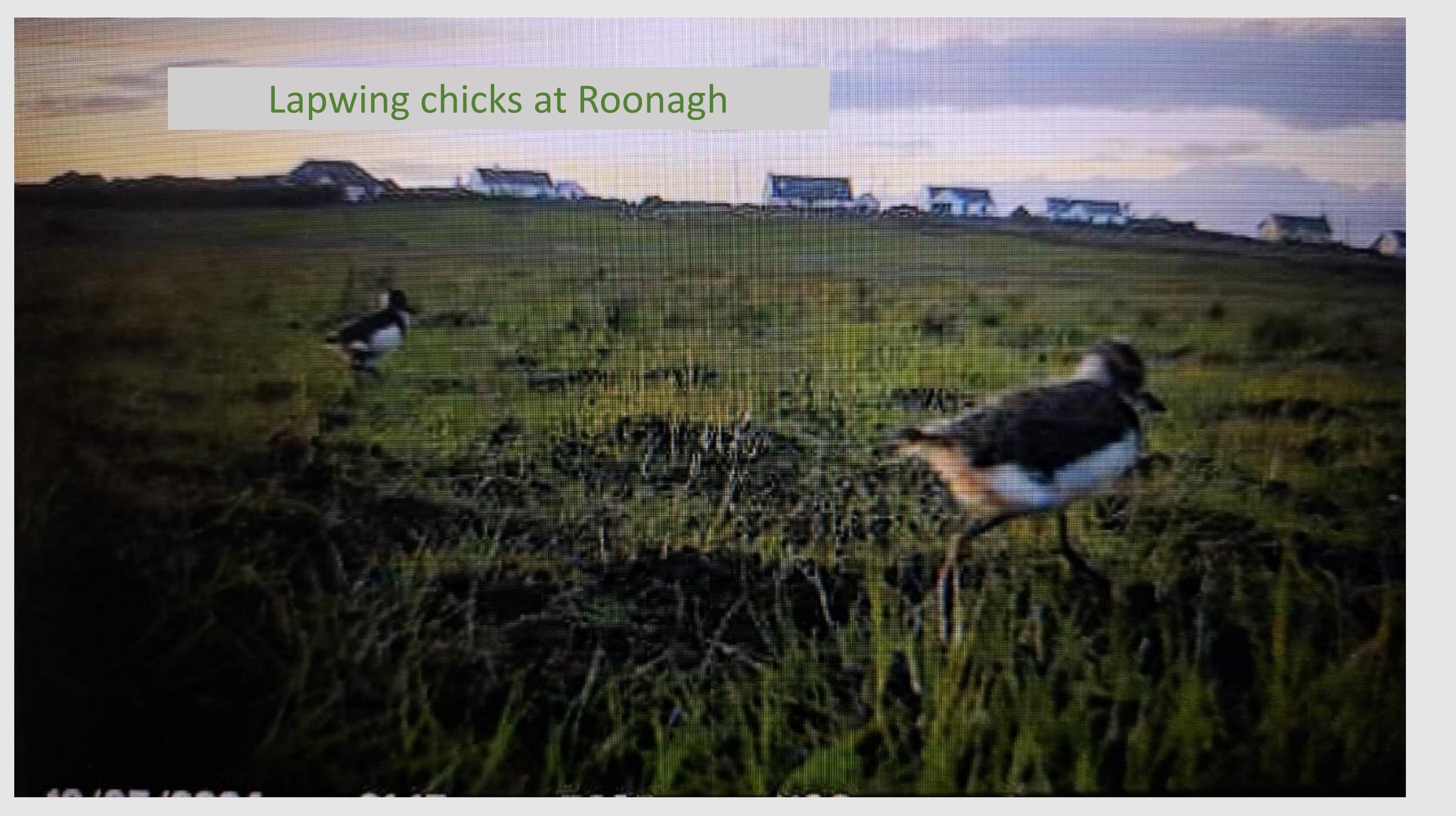


SPYPOINT LM2

Badger inside Truska Fence



## Lapwing chicks at Roonagh







# Lapwing at Truska



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



SPYPOINT LM2

Community  
monitoring at The  
Valley



Tourism and amenity actions



LIFE on  
Machair







## 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



# All sites - Signage



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

**MADRAÍ AR TÉADAÍ GHAIRM**



**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 92/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.ie/en/protected-areas/52829/>



**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.**

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

**STAY OFF BARE SAND**

**This area is under restoration.**

This site is protected under EU and national legislation (EU Habitats Regulations 2006 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.gov.ie/en/protected-areas/52829/>



**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.**

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

**COSC AR TIOMÁINT**



**NO CAMPING**

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

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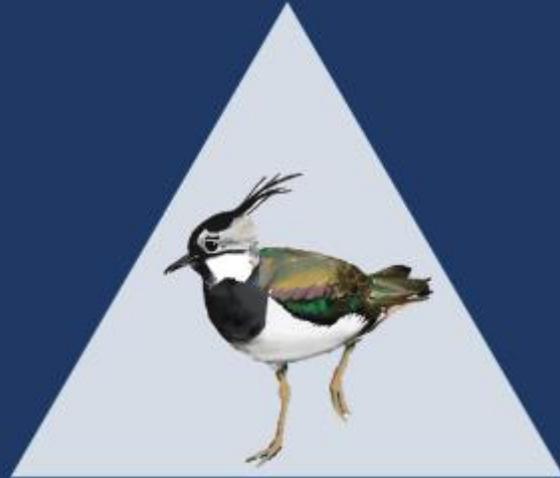
**Looped walk rerouted to protect ground-nesting birds**

This site is protected under EU and national legislation (EU Habitats Regulations 2006 and EU Habitats Directive 92/43/EEC). It supports sensitive sand dune and machair habitat, breeding waders and other rare and threatened species. <https://www.gov.ie/en/protected-areas/52829/>

# 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://www.machair.ie>



Scan for more info








### Slyne Head Peninsula SAC

Is éard a chloíodh i bhfad a dhéanann, nach bfuil le fáil ar fáil arís. Ní féidir a bheith ag fáil arís.

Ní féidir a bheith ag fáil arís. Ní féidir a bheith ag fáil arís.

**Map of the Peninsula**

To find the peninsula, look for the map of the peninsula in the top right corner of the sign.

To find the peninsula, look for the map of the peninsula in the top right corner of the sign.

To find the peninsula, look for the map of the peninsula in the top right corner of the sign.











Doonloughan vehicle barrier

# Flyer explaining the pressures

Fáilte go dtí




**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.

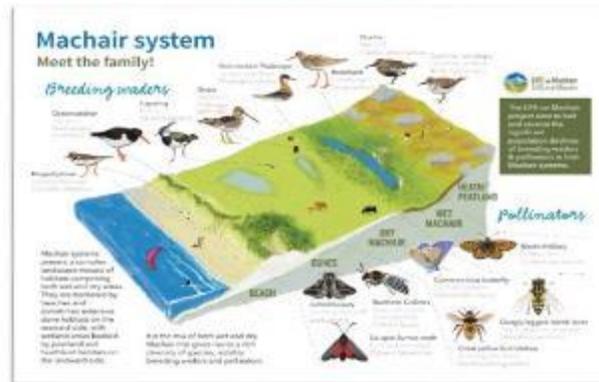
Fáilte go dtí




**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 cóimíneacht seo. Baineann an síl 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 dúra an cheantar, ná héin a neadaíonn ar an talamh agus na pallineoirí 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 2010 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/001029>



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

Education and awareness

# Solas, Eachléim - mural



flora and fauna, notably **BREEDING WADERS & POLLINATORS** whose populations are under significant decline. It is therefore very important that we protect these habitats.

**UK & Machair**  
The UK has a long history of supporting the Machair system, but this support was significantly reduced in the 1980s. The UK has a long history of supporting the Machair system, but this support was significantly reduced in the 1980s. The UK has a long history of supporting the Machair system, but this support was significantly reduced in the 1980s.

**We have**  
We have  
We have

**Collaborate**  
Collaborate  
Collaborate

# Dunfanaghy Quilting



# From Dunfanaghy to Blacksod

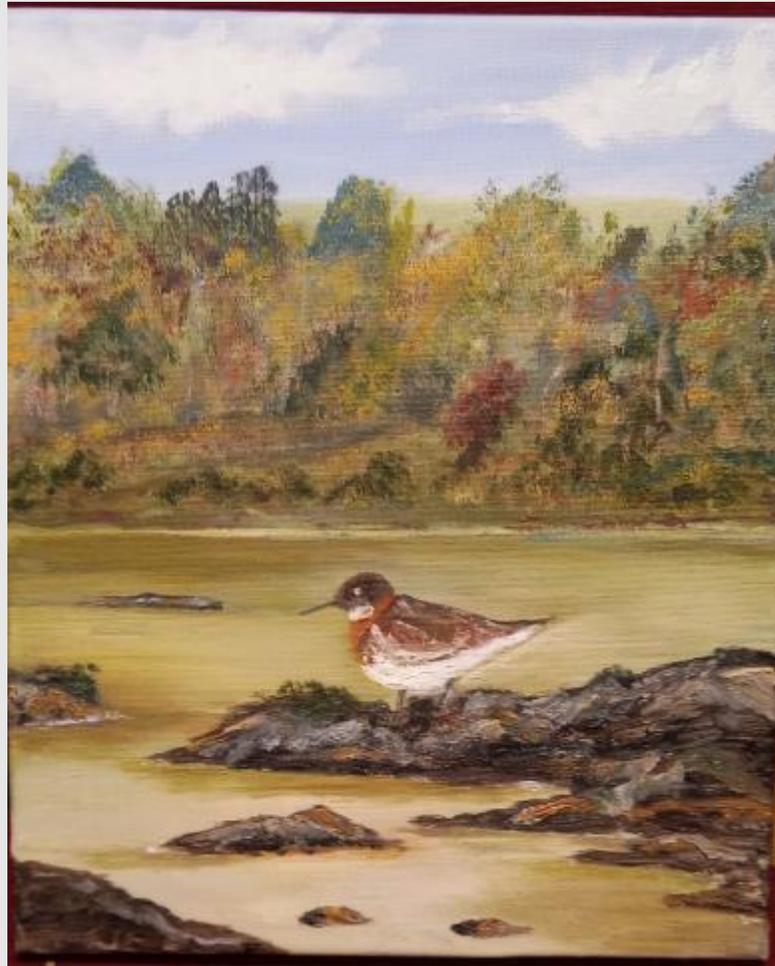






Community walks and events

# 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

