



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



EUROPEAN INNOVATION PARTNERSHIPS

Stream B

EIPs aimed at addressing areas related to environmental, biodiversity and climate change challenges.

First Competitive Call for Proposals under the CAP Strategic Plan 2023-2027

12th December 2023

GUIDELINES FOR APPLICANTS

1. Introduction

The Department of Agriculture, Food and the Marine (DAFM) in partnership with the National Parks & Wildlife Service (NPWS) is inviting applications for funding in the first competitive call for proposals under the European Innovation Partnerships (EIP) Initiative as part of the CAP Strategic Plan 2023-2027.

This EIP call is specifically focused on Breeding Waders, one of the groups of bird species of greatest conservation concern in Ireland.

The key objectives of this Breeding Waders EIP are to:

- Secure existing Breeding Wader populations at key sites; and
- Support population recovery via wider landscape management and policy development.

The application of measures will be guided in general, by a framework, including Breeding Wader Action Zone maps recently developed by the National Parks & Wildlife Service. This framework is presented in Appendix D. More refined innovative measures and targeted application of tried innovative measures will be delivered as part of this EIP.

The European Innovation Partnerships Initiative (EIP - AGRI) under the CAP Strategic Plan 2023 – 2027 (CSP) comes under the remit of Council Regulation (EU) 2115/2021 of the European Parliament and of the Council respectively, and related secondary legislation and guidance notes. This co-operation measure is under Article 77(1) of this regulation.

EIPs involve the establishment of Operational Groups (OGs) to develop ideas or take existing ideas/research and put them into practice. The aim of these innovation partnerships is to build on what is known to work, road-test new ideas and practices which can then be used more widely by farmers and others to improve productivity, enhance resource efficiency, and pursue sustainable farming practices. Innovation is a key element of EIPs, and all proposals must clearly demonstrate the innovative element around which the proposal is built.

To succeed, the Operational Group will rely on fostering communication through stakeholder networking, developing partnerships and dissemination of knowledge and ideas across a wide range of stakeholders. It will support innovative concepts and ideas from among farmers, advisors, researchers, NGOs, previous and existing EIP project teams, Government Departments, and others.

2. Overview of Breeding Wader Populations in Ireland

Large-scale declines in range and size of Breeding Wader populations in Ireland have led to all populations being in unfavourable conservation status and with some populations threatened with national extinction as breeding birds. Lapwing (*Vanellus vanellus*), Curlew (*Numenius arquata*), Dunlin (*Calidris alpina*), Golden Plover (*Pluvialis apricaria*), Redshank (*Tringa totanus*) and Snipe (*Gallinago gallinago*) were formerly far more abundant and are now a high conservation priority, being red-listed on The Birds of Conservation Concern in Ireland (BOCCI¹). Woodcock (*Scolopax rusticola*) are also red-listed but their breeding habitat requirements depend on woodland and are outside the scope of this proposed programme. Black-tailed Godwit (*Limosa limosa*) occasionally nest but are so irregular as to make no significant contribution to the population status or range and are thus omitted for consideration.

¹ Gilbert *et al* (2021) Birds of Conservation Concern in Ireland 2020-2026. *Irish Birds* 9: 523-544

There have been localised efforts for Breeding Wader conservation in several areas for wetland and machair species, while Curlew has seen more widespread conservation efforts, for example through the Curlew Conservation Programme (2017-2023). As a result, there has been valuable experience gained in the delivery of applied conservation management for Breeding Waders at a local or specific site level. However, in the face of continued threats and pressures, populations of all Breeding Waders in Ireland continue to decline in terms of both overall numbers and distribution/range. Therefore, dedicated effort is now required, focussing on various strands of conservation, including a wide adoption of conservation methods and innovative integration with existing efforts such as those in ACRES and LIFE projects. Further innovation and expanded efforts are also required, to ensure applied conservation measures for Breeding Waders are successful in improving the conservation status of all the key species populations, in terms of halting (and starting to reverse) population declines nationally, improving breeding success (to drive that change), and ensuring breeding range retention and expansion where practicable.

Further detail on Breeding Waders in Ireland and a review of existing data and mapping with status and trends can be found at Appendix C.

3. Key Objectives and Themes of this Breeding Waders EIP

In delivering on the key objectives of (i) securing existing Breeding Wader populations at key sites; and (ii) supporting population recovery via wider landscape management and policy development, this Breeding Waders EIP initiative must focus on addressing the following themes.

Further elaboration on these themes can be found at Appendix D in the attached.

Breeding Wader habitat conservation & restoration

- Planning and delivery of habitat management and associated actions in action areas/zones, including stand-alone efforts and synergies/enhancement of measures under existing Agri-Environmental Schemes (e.g., ACRES General and ACRES CP areas). The EIP efforts will be primarily action based, rather than scoring/paying according to habitat scorecards, as well as the provision of information and specialist advice to inform the targeting and specifications of actions by others (e.g., ACRES CP, agri-environmental planners, Predation Risk Management, etc.).
- Engagement with the farming community to employ a bottom-up and locally led EIP approach to design of agri-environmental actions and agreements.
- Set up of bespoke Breeding Wader conservation land management agreements at a farm scale within action areas / zones.
- Land management agreements will be made up of a combination of supporting actions/capital works/habitat enhancement measures/Non-Productive Investments/Landscape Actions.
- Appropriate actions will include those of typical agri-environment programmes but will also extend further; including, but not limited to;
 - targeted scrub removal
 - scrape creation
 - rush mulching
 - hydrology works
 - large scale habitat enhancement actions (e.g., forestry removal) in key areas (to increase available suitable habitat and reduce predation risks for improve future population viability).
- Work with existing local initiatives and projects to ensure resourcing and delivery of complementary actions and special projects.
- Training / upskilling of farm advisors.
- To engage with DAFM and NPWS to inform policy.

- Outputs and learnings from this EIP to inform the engagement with key stakeholders, to incorporate and deliver Breeding Wader conservation & recovery actions via their local, regional, and national strategies (e.g., Coillte, Bord na Móna), led by DAFM and NPWS.

Headstarting

- Delivery of headstarting or similar species management programmes to support population recovery conservation and recovery efforts; almost certainly required for Curlew and likely for Dunlin.

Predation Risk Management

- Planning and delivery of Predation Risk Management (such as temporary and permanent predator fences and lethal control of predators such as foxes and mink).
- Ensuring coherence across different projects where nest protection is also to be undertaken.
- Defining and training Predation Risk Management standards.
- Identifying and delivering novel approaches to nest protection.

To inform Agriculture & land-use policy

- Contribution to dialogue relating to land-use policy and strategies, in accordance with a framework agreed with the Strategic Oversight Board.
- Engagement with key departments and agencies to contribute to policy improvements across sectors.
- Provision of guidance to farm advisors, ACRES teams, Departmental officials and others, in accordance with a framework agreed with the Strategic Oversight Board and in line with overall national land use policy.

Communities for Breeding Wader

- Identifying and delivering community engagement with Breeding Wader conservation.
- Creating and forging community partners, supporters and champions for Breeding Wader conservation.
- Peer to peer knowledge exchange.
- Developing education initiatives for schools and groups.
- Funding for small scale or local practical initiatives for Breeding Waders on community sites or public land (i.e., administering a community grants fund).

Conservation evidence & surveys

- Surveys and species monitoring – undertake surveys to determine the spatial and temporal targeting of measures and undertake repeated surveys at appropriate intervals to monitor and assess the impacts/success of measures and thus how they can be further improved/adapted; feed into and align with national and regional surveys of key species as requested by NPWS.
- Reporting and advising stakeholders on results and trends.
- Feed into/align/facilitate research actions to gather conservation evidence to inform management actions (e.g., headstarting, genetics, population modelling).
- Facilitate and support others to survey & monitor in standardised approach in line with EIP.

Strategic actions and support

- Steering group, knowledge exchange forum, thematic groups.
- Feed into/align with creation of species-specific action plans/strategies.
- Coordination of survey teams and nest protection programmes.
- Management of budget and finance to ensure successful project delivery.

- Feed into/direct discussions on land leases and land purchase.
- Developing and delivering strategic actions to ensure the availability of skills and expertise in core functions for other themes – training and skills development, recruitment, procurement.

4. Call Detail and Specifications

An overall budget of €25 million is being allocated to this Breeding Waders EIP, co-financed by the Department of Agriculture, Food and the Marine and the National Parks and Wildlife Service. The Breeding Waders EIP shall have an indicative lifespan of five years.

The successful Operational Group will be required to submit biannual reports, and in December 2026 an interim report, to facilitate evaluation of progress under the EIP. All progress reports will be subject to review by DAFM and the National Parks & Wildlife Service. Arising from the evaluation of the biannual reports/interim report, the Operational Group may be required to amend the project plan to optimise delivery of the project's objectives. This will be in agreement with DAFM and the NPWS as part of the strategic oversight role of this EIP project.

In the course of the project the Operational Group may process personal data on behalf of DAFM and NPWS, and this will be subject to the necessary data protection obligations on behalf of all parties concerned. Data must be collected, stored, and managed in accordance with legislative requirements. This personal data may be made available to other Government Departments/Agencies/Local Authorities/contracted parties/LIFE Projects, but only where there is a valid legal basis to do so. Further details on these requirements will be contained in the contract.

Data collected by the Operational Group shall be in the ownership of both DAFM and NPWS as identified through the Breeding Waders EIP Executive Committee and the OG must submit all data at interim and final reporting stages, as well as to service data requests that may arise outside these periods.

The themes for action by the Breeding Waders EIP are outlined in detail later in this document. It is important to note that innovative and evidence-based approaches should be applied in planning to deliver on those themes. The core interest is to make an immediate and long-lasting impact for Breeding Waders, one of the most threatened species groups in Ireland. The framework approach in this EIP will ensure that there is flexibility to respond to individual challenges on the ground and give scope to test a variety of actions across different conditions and different geographical spaces. The opportunity for innovative measures to be proposed by or developed with farmer input is another key feature of this measure.

This Call is seeking proposals from a group of experienced and knowledgeable practitioners, who will come together to develop new ways of approaching the challenges being faced by Breeding Waders and those managing the lands the Breeding Waders breed on. So too, to offer a new way forward with wider application and to offer a smart integration and synergy with existing agri-environmental schemes and conservation efforts, with landowners participating in such schemes as well as landowners that are not participating in such schemes. The successful group will develop tailored innovative solutions in defined geographical areas to respond to the challenge of the management of key Breeding Wader areas in order to secure and grow remaining Breeding Wader populations in defined areas. Solutions must include the farmers who own or manage these lands. Key action areas have been identified and are outlined below, but will require finer scale surveying to inform precision targeting of actions/measures. This EIP Competitive Call seeks proposals which will apply nationally, however it will be focussed particularly on the areas identified as Wader Action Zones in Appendix D (and provided as shapefiles) and even then, at a more refined and targeted spatial level following extensive survey effort by the EIP team and direction from a dedicated project Steering Group. Wader Action Zone shapefiles, as provided by the NPWS, are available on request.

Interaction with existing efforts (e.g., relevant LIFE projects, local NPWS actions), and taking forward efforts to date (e.g., Curlew Conservation Programme) **must be factored into** any project proposals submitted. Preference will be given to proposals involving strong collaboration and continuity (including geographical footprint of prior efforts), building on existing knowledge and experience and engagement with landowners and communities. At least one of the entities involved in the project must have demonstrable and recent experience in Breeding Wader conservation and management, while demonstrable experience and expertise in landowner engagement is a pre-requisite for the team.

All applications **must be led** from an established group / entity and **must have** appropriate administrative structures in place to receive and manage such funding of scale.

Projects **must** also be guided by sufficient agricultural, biodiversity and ornithological science expertise. A recommended project personnel make-up is provided in Appendix D. The team should additionally include sufficient data expertise necessary to deliver the appropriate data management and governance for this level project.

In line with NPWS Data Standards and Open Data policy, all data captured in the course of the project will conform to NPWS Data standards and guidelines (in revision), and where possible data will be licenced under Creative Commons Attribution (CC-BY) licence and published as Open Data to the government of Ireland's Open Data portal data.gov.ie.

DAFM and NPWS will undertake an initial assessment of the applications, to ensure adequate information has been provided, including the detailed Project Plan (see Project Plan Outline at Appendix A). An evaluation committee will then undertake the detailed assessment of the applications received.

Following evaluation of all applications, a panel will be formed from which DAFM and NPWS may choose one project to set up and administer the EIP programme through an Operational Group. The successful project will design an agri-environmental scheme and suite of measures and conservation actions (including established and innovative landscape actions) to be rolled out to eligible landowners/farmers and administer that scheme for five years. The project throughout its lifetime, should include synergies with existing Agri-Environmental Schemes; for example survey efforts to help inform the application of measures, whether on lands involved in ACRES or not involved in ACRES.

5. Operational Groups

The Operational Group is the collection of people who are in the best position to help realise the project goals. The operations team should be identified with relevant experience and qualifications. The application must also set out what the role and contribution of each Operational Group member will be in relation to achieving the goals of the project including which member will be lead partner.

The applicant is requested to provide a roadmap and multi-annual plan towards delivering on the framework (see Appendix D), including a detailed description of Full Time Equivalents (FTEs) for each role, to ensure comprehensive coverage and resourcing in a well-balanced and structured team that can deliver on the key objectives of the EIP as set out above. The full complement of personnel may not be feasibly deliverable in Year 1 and if this is envisaged to be the case by the applicant, the applicant should demonstrate how the team and resources and geographical footprint will be built from Year 1 onwards. The applicant should clearly detail the resource capacity, fundamental measures that can be delivered each year and where these measures will be delivered (referring to the Breeding Wader Action Zone maps).

Below are the roles and associated full-time equivalents (FTEs) that are anticipated to be required in order to deliver on the aims of the Breeding Waders EIP; however, it is up to each applicant to detail the roles and associated FTEs of the expected Operational Group:

Senior Project Manager: 1.0 FTE
Conservation ecologist: 2.0 FTE
Breeding Wader Project Officer: 10.0 FTE
Nest Protection (lead role): 1.0 FTE
Nest Protection Officers: 12.0 FTE
Data Manager and GIS Specialist: 1.0 FTE
Community Engagement Coordinator: 3.0 FTE
Breeding Wader Champion and Volunteer Coordinators: 2.0 FTE
Operations and Administration Manager: 1.0 FTE
Project administrator: 1.0 FTE

These roles (and the full complement estimated as necessary to deliver a comprehensive programme for Breeding Waders) are outlined in Appendix D.

An Operational Group can also bring together any consultants/advisors/other multipliers who have the scientific expertise and knowledge needed by the project at various times but who do not need to be a permanent part of the Operational Group. The Operational Group shall establish internal procedures that ensure that their operation and decision making is transparent and that situations of conflict of interest are avoided. Please note that only an Operational Group based in Ireland will be eligible for this funding.

6. Process for First EIP Call under the CSP Programme 2023-2027 for Breeding Waders

- Call for the submission of detailed project proposals to be launched on Tuesday the 12th of December 2023.
- Proposals to be returned to DAFM by 5:00 PM on Tuesday the 23rd of January 2024.
- Only completed applications produced to a template laid down as presented in Appendix A, received on or before the closing date, will be assessed for funding. Please see the evaluation criteria for this Breeding Waders EIP call at Appendix B.
- An Evaluation Committee will be established to evaluate all proposals received before the closing date. All proposals will be evaluated based on the plans, projected outcomes, projected costs, and timeframes and with reference to the selection criteria listed at Appendix B.
- The Evaluation Committee will then present the highest ranked project to be considered for funding by the Minister for Agriculture, Food and the Marine.
- It is envisaged that all applicants will be informed of the results of the evaluation process in Q1 2024.
- Subsequent to awarding the contract to a preferred bidder, a Strategic Oversight Committee, co-chaired by DAFM and the NPWS will be established to drive the strategic direction of this project and oversee the development and operation of the project.

As with all Rural Development Schemes, each stage of the process will be subject to a control regime based on inspection and administrative checks to be implemented by DAFM in relation to the agri-environmental payment. DAFM are the consenting body for Appropriate Assessments in relation to EIP projects. In addition, the successful applicant must comply with the administrative element as the payment will be subject to a control review and administrative checks implemented by NPWS.

7. Contract Discussions and Procedure for Award of Funding

All applicants will be notified of the outcome of the evaluation process. The Operational Group selected for funding will be informed of the indicative level of funding and will be invited to address any issues raised by the Evaluation Committee and/or the DAFM /NPWS administrative team within a given timeframe.

As part of the contract discussions, DAFM /NPWS may also:

- Seek additional information it considers necessary on the details of the proposal.
- Negotiate adjustments to proposal details to achieve compliance with the Regulation or to improve the efficiency of the proposal.

Once the project detail has been agreed an award letter will be issued to the successful applicant. This letter will outline the contractual obligations and conditions that will apply to the award. The successful applicant must acknowledge receipt of the award letter and acceptance of the contract conditions.

Deadline for completed applications:
5 pm on Tuesday 30th January 2024
to breedingwaderseip@agriculture.gov.ie

APPENDIX A

Proposed structure for the EIP Proposal on Breeding Waders

Chapter Outline

The relative 'weighting' of the various chapters below should be preserved

1. Executive Summary

A concise summary capturing the main strategy and points set out in your proposal as it meets the key objectives and themes as set out in the call text, which should be capable of being read as a standalone document. Can include images, charts and tables as required.

Word Count 1,000-1,500 words.

2. Project Abstract

This is intended for upload to the DG-AGRI EIP database which can be accessed publicly. It should explain what your project is about, what it hopes to achieve, who is involved etc under the following headings: Summary, Objectives, Description of Project Activities, Expected Results and Practical Recommendations, Operational Group details (including Group Leader and points of contact), Keyword Category (for searches), Territorial Scope, Project Period, Budget.

Word Count: 500-1,000.

3. Our Approach

This chapter should set out a full description of your approach, exactly what will be done including proposed actions at ground level and the associated costs, with a basis for same. This may include a roadmap/multi-annual plan, in building capacity to deliver the full ambition of the project.

The structure of this proposal should follow the outline of the evaluation criteria as set out in Appendix B.

All proposed actions should be costed on a linear basis or a per unit non-productive investment basis. Costings based on a standard rate per unit land area will not be accepted. It is permissible to calculate the associated effort involved in achieving the desired result and propose payment on that basis.

Costings should be defined and where similar measures are currently being applied by DAFM or NPWS e.g., under ACRES, costings should be in line with these measures.

Please note that it is a fundamental requirement of the EIP model that all projects include a significant practical component. You need to set out the scope of the project, clearly identifying what is and what is not included, key performance indicators, milestones and deliverables as appropriate during the project.

KPIs should include site or regional numbers of Breeding Wader pairs to be targeted, or the percentage change that this EIP proposal aims to achieve by end of the proposal. Issues such as environmental, legislative, or geographic constraints should be considered. Consideration should be taken to identify any environmental impact likely to give rise to an Appropriate Assessment. The proposal should also include outlines of Quality Controls & Quality Assurances that are being incorporated as part of this Breeding Waders EIP Project.

Word Count: 8,000-12,000

4. The Team

Your team must be identified here, with their relevant experience and qualifications. Please note reference to what is deemed to be the minimum complement/core team in this application call as outlined in the call text above with further detail being found at Appendix D. CVs for each team member should be appended. You need to provide a clear identification of who's doing what. Who is the overall EIP project manager? Who are the key stakeholders outside the group and how will each be managed? How will you engage with the 'end

user' on the ground? You must provide the expected time commitment of each member to the Project in days per year.

Word Count: 3,000

5. Risks and contingency planning

A simple SWOT analysis should underpin this chapter, identifying the strengths, weaknesses, opportunities and threats of and to the project. This should be followed up by an assessment of key risks and controls. This assessment should include likelihood, impact and adequacy of controls, resulting in a low-medium-high classification. You will need to set out a high-level contingency plan, including replacement procedure if an actor drops out/cannot continue with the project, and procedure in the event that it becomes apparent the project will not succeed. This chapter should also cover how the project will address data protection, and adherence to public procurement regulations.

Word Count: 3,000

6. Timelines and milestones

Here you need to set out the overall timeline for your project and the associated key milestones. This should be expressed both in narrative and by way of a simple Gantt Chart. As well as the key milestones, this needs to show how often the Operational Group will meet together, how often it will meet with key stakeholders, and the procedure for assessing progress and responding where milestones are not achieved. The Key Performance Indicators, milestones and deliverables identified in Chapter 3 should be brought forward here. The process for monitoring and control also needs to be outlined.

Word Count: 2,000

7. Financial Plan

You need to provide a detailed Financial Plan here, setting out your overall projected costs clearly differentiated into Administrative, Research and Practical headings, with the last intended to cover actions undertaken by participants on the ground. This needs to be broken by main sub cost-headings and presented for each year of operation. You will also need to set out the overall structure and procedures for making payments to participants, the basis for such claims, the records to be kept and the reporting structures to be put in place.

Word Count: 3,000

8. Dissemination, Lessons Learned and outreach plan

In this chapter, you need to set out how you propose to disseminate your results over the lifetime of the project, as well as at closure. Clear reference to management and sharing of ecological data and reporting to DAFM and NPWS should be included, as well any outreach requirements as set down by the EIP-Agri programme.

Word count: 3,000

APPENDIX B

Selection Criteria for the European Innovation Partnership (EIP) Operational Groups		
Criterion	Components	Marks
Quality of the Proposal	<ul style="list-style-type: none"> Clarity and pertinence to the Project's themes, and the scale of ambition for Breeding Wader Conservation, also assessing the use of innovative measures as well as adoption of proven measures. Soundness of the proposed methodology, including the underlying concepts, models, assumptions, interdisciplinary approaches, appropriate consideration of the gender and equality dimension in research and innovation content, and the quality of open science practices, including sharing and management of research outputs and engagement of citizens, civil society, and end-users where appropriate. Adherence to the guidelines laid down in terms of chapter outline; assessed on scientific, technical, managerial aspects as well as on practical application on the ground. Quality of the financial plan over the lifetime of this project and how it supports the effective delivery of the proposal. This financial plan should include yearly projections, as well as a complete financial analysis of the proposal. 	350
Relevance and Impact	<ul style="list-style-type: none"> Clear relevance to the objectives and themes for Breeding Wader conservation in Ireland, innovation, benefits, and wider applicability. Credibility of the pathways to achieve the expected outcomes and impacts specified in the work programme, and the likely scale and significance of the contributions from the project. Suitability and quality of the measures to maximise expected outcomes and impacts, including communication and dissemination activities. 	250
Quality of the Operational Group and the Implementation Plan	<ul style="list-style-type: none"> Qualifications and experience which are directly relevant to the project proposed; capacity, role and contribution proposed by each member of the Operational Group; including an identified lead(s); the extent to which the Operational Group brings together the necessary expertise; balance and structure of the Operational Group, including evidence of strong relevant collaboration, identified lead(s), and representative nature (which should include people 'on the ground'.) Quality and effectiveness of the work plan, including with regard to project delivery and timeline for delivery, and appropriateness of the resources assigned to themes, and the resources overall. 	300

	<ul style="list-style-type: none"> Monitoring and evaluation of project implementation through measurement and assessment of Key Performance Indicators and identification of remedial actions if where required. 	
Risk/Contingency Planning	Identification and mitigation of relevant risks to achieving objectives.	100

APPENDIX C

BREEDING WADERS IN IRELAND – REVIEW OF EXISTING DATA AND MAPPING – STATUS & TRENDS

The data below provide a review of the main Breeding Wader species in Ireland based on existing data and mapping using a synthesis of the most relevant data sources for Breeding Wader populations. A summary review for all species is then synthesised in Table 1.

4.1 Lapwing

Table 1 Recent surveys & population estimates – Lapwing (L.)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Pop. Est. (AOT)	Pop. trend (-ve %)	Trend period	Decline rate (%a ⁻¹)	Comments
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	L.	143	91	10	9	
Shannon Callows Colhoun et al 2021	NPWS	2021	Shannon callows (part)	L.	51				8 sub sites
BWI Callows WB 2019	NPWS	2019	Shannon callows (part)	L.	41	85	32	3	
BWI NW Donegal	BWI	2017-2021	Donegal coastal	L.	186				

Table 2 Summary population size and trends (L.)

2023 population estimate	800	Expert estimate
Short term trend (10y)	-91%	Repeat of machair Breeding Wader survey
Long term (32 year)	-85%	Repeat of Shannon callows survey

Lapwing have declined dramatically, nationally, over several decades. Probably in excess of 90% overall based on a pre-1990 estimate of (say) 10,000 pairs². Range contraction is well documented in the Bird Atlas 2007-11³ and reflected in BirdWatch Ireland (BWI) Farmland Bird Hotspot Mapping⁴. Declines at former strongholds have occurred, even in some places where conservation actions are in place. This is reflected in this review by the most recent data derived from surveys on the Shannon Callows and in Machair areas from 2019 and in discussion with an expert group of practitioners (June 2023).

There is no national monitoring programme for breeding Lapwing, and the population is now so locally distributed that it falls below the threshold whereby Countryside Bird Survey (CBS)⁵, and similar large scale monitoring schemes, provide adequate assessments.

² Lauder, C. & Donaghy, A. (2008) Breeding Waders in Ireland 2008: A Review and Recommendations for Future Action. Unpublished report to the National Parks and Wildlife Service, Ireland.

³ Balmer, D.E., Gillings, S., Caffrey, B.J., Swann, R.L., Downie, I.S. & Fuller, R.J. (eds) (2013) *Bird Atlas 2007–11: the breeding and wintering birds of Britain and Ireland*. BTO Books, Thetford.

⁴ Kennedy, J et al. (2022) Farmland Bird Hotspot Mapping- Phase 2 Project Report. BirdWatch Ireland, Wicklow.

The Farmland Bird Hotspot Mapping Project aimed to produce indicative maps of areas of importance for farmland birds of conservation concern in Ireland, by collating and mapping records from a wide range of data sources.

⁵ Lewis, L. J., Coombes, R. H., Burke, B., Tierney, T. D., Cummins, S., Walsh, A. J., Ryan, N. & O'Halloran, J. 2020. Countryside Bird Survey Report 1998-2019. BirdWatch Ireland. Wicklow. <https://birdwatchireland.ie/our-work/surveys-research/research-surveys/countryside-bird-survey/>

Causes of change: reasons for decline are acknowledged to be complex. Our land-use and land-management practices over the past number of decades have seen wholesale habitat loss and habitat change as farming and forestry practices have intensified⁶. It is widely acknowledged that effects of meso-predators (e.g., Red Fox and corvids) on now fragmented and declining Breeding Wader populations is likely much greater than in the past as a direct result of these changes. Predation of the aforementioned species is the primary driver in both continuing losses, and in preventing full recovery at sites where conservation efforts continue⁷.

Increases have occurred at a site level where intensive Predation Risk Management (e.g., Lough Ree), Predator fences (e.g., Shannon Callows sites, Annagh Marsh (Mayo), Cooldross (Wicklow)) and associated habitat management has taken place. Increases at a site level in these circumstances can be rapid and effective for conservation at site and regional level with the value of concentrated populations in further protecting nests and chicks from predation is significant⁸⁹¹⁰¹¹.

While the species may well still be scarce but widespread in terms of distribution, it is likely that most of the remaining populations occur in areas where specific circumstances or conservation actions allow for higher productivity.

4.2 Redshank

Table 3 Recent surveys & population estimates – Redshank (RK)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Population estimate (AOT)	Trend (-ve %)	Trend period	Decline rate (%a-1)	Comments
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	RK	7	77	10	8	
Shannon Callows Colhoun et al 2022	NPWS	2021	Shannon callows (part)	RK	128				8 sub sites
BWI Callows WB 2021	NPWS	2019	Shannon callows (part)	RK	112	65	32	2	
BWI NW Donegal	BWI	2017-2021	Donegal coastal	RK	34				

Table 4 Summary population size and trends (RK)

2023 population estimate	220	Expert estimate
Short term trend (10y)	-77%	Repeat of machair Breeding Wader survey
Long term (32 year)	-65%	Repeat of Shannon callows survey

⁶Stroud, D.A., Baker, A., Blanco, D.E., Davidson, N.C., Delany, S., Ganter, B., Gill, R., González, P., Haanstra, L., Morrison, R.I.G., Piersma, T., Scott, D.A., Thorup, O., West, R., Wilson, J. & Zöckler, C. (on behalf of the International Wader Study Group). 2006. The conservation and population status of the world's waders at the turn of the millennium. In Boere, G.C., Galbraith, C.A. & Stroud, D.A. (eds) *Waterbirds Around the World*: 643–648. The Stationery Office, Edinburgh.

⁷Baines, D. 1990. The roles of predation, food and agricultural practice in determining the breeding success of the Lapwing (*Vanellus vanellus*) on upland grasslands. *J. Anim. Ecol.* **59**: 915–929. doi: 10.2307/5022

⁸Mason, Lucy & Kennerley, Rosalind & Hiron, Graham & Sheldon, Rob & Ausden, Malcolm & Gilbert, Joanne & Smart, Jennifer. (2013). The use of predator-exclusion fencing as a management tool improves the breeding success of waders on lowland wet grassland. *Journal for Nature Conservation*. 21. 37–47. 10.1016/j.jnc.2012.09.002.

⁹Schifferli, L., Rickenbach, O., Koller, K. & Gruebler, M. (2009) Massnahmen zur Förderung des Kiebitzes *Vanellus vanellus* im Wauwilermoos (Kanton Luzern): Schutz der Nester vor Landwirtschaft und Prädation [In German with an English summary: Nest protection from agriculture and predation to improve nest and chick survival of the Northern Lapwing *Vanellus vanellus* in Swiss farmland]. *Ornithologische Beobachter*, 106: 311-326.

¹⁰Rickenbach, O., Gruebler, M.U., Schaub, M., Koller, A., Naef-Daenzer, B. & Schifferli, L. (2011) Exclusion of ground predators improves Northern Lapwing *Vanellus vanellus* chick survival. *Ibis*, 153: 531-542.

¹¹Bolton, M., Glen Tyler, Smith, K., & Roy Bamford. (2007). The Impact of Predator Control on Lapwing *Vanellus vanellus* Breeding Success on Wet Grassland Nature Reserves. *Journal of Applied Ecology*, 44(3), 534–544. <http://www.jstor.org/stable/4539271>

Redshank have declined dramatically, nationally, over several decades. Lauder & Donaghy (2009) estimated pre 1990 populations at >2000 pairs, Article 12 reporting in 2018 placed it at 500 (probably an overestimate even then) and an examination of recent surveys of strongholds, on the Shannon Callows and on Machair, indicates large, short- and long-term declines. Range contraction is well documented in the Bird Atlas and reflected in BWI Farmland Bird Hotspot Mapping.

Declines at former strongholds have occurred in places even where conservation measures are active and this is seen on the Shannon Callows and in Machair areas, where a combination of agri-environment measures and some site-specific actions exist. Expert group opinion is that the population is unlikely to exceed 200 pairs (June 2023).

There is no national monitoring programme for breeding Redshank, the population has always been restricted enough that it is poorly represented in national wider countryside bird monitoring (such as CBS).

Causes of change: reasons for decline are similar to those for Lapwing and other species. Our land-use and land-management practices over the past number of decades have seen wholesale habitat loss and habitat change as farming and forestry practices have intensified. It is widely acknowledged that effects of meso-predators (e.g., Red Fox and corvids) on now fragmented and declining populations is likely much greater than in the past as a direct result of these changes and predation a primary driver in continuing declines and prevention of recovery.

Like several other Breeding Wader species, “genetic bottlenecks”¹²¹³ may be a significant limiting factor in long-term conservation success. Maintaining areas with several populations in relatively close proximity could be important. Where populations are becoming more fragmented, with smaller remnant populations remaining, it is likely that genetic fitness is compromised and in decline also, ultimately testing the resilience and survival of these scattered populations.

Increases have occurred at a site level where intensive Predation Risk Management, and particularly predator fences, have played an important role (e.g., Shannon Callows sites, Lough Ree, Annagh Marsh). At Cooldross (Wicklow) Redshank re-colonised at the site after a c. 25-year absence in 2022 with confirmed successful breeding of three pairs in 2023. Associated habitat management with the fence has probably been a significant factor in this case. But indicates the potential for sites to recover after long absences and with no, local donor population for recruitment.

While the species may well still occur at several widespread sites, it is likely that most of the remaining populations occur in areas where specific circumstances or conservation actions allow for high productivity. The stronghold remains the Shannon Callows and Lough Ree

4.3 Curlew

Curlew have declined dramatically, nationally, by over 95% since pre-1990 levels. The most recent national survey indicates 105 pairs with potentially an additional 14 pairs which were recorded as “possible” (Figure 1). In many cases identifying and confirming breeding curlew in isolated populations can be challenging. The recommendations of the Curlew Task Force¹⁴ (CTF) in 2019, identified the wide range of conservation interventions likely to be needed to save the species from national extinction and this included ensuring regular national survey and underpinning research to understand population parameters.

¹² Wennerberg, L., Marthinsen, G., & Lifjeld, J. T. (2008). Conservation Genetics and Phylogeography of Southern Dunlins *Calidris alpina schinzii*. *Journal of Avian Biology*, 39(4), 423–437. <http://www.jstor.org/stable/30244463>

¹³ Li, S.-H., Liu, Y., Yeh, C.-F., Fu, Y., Yeung, C. K. L., Lee, C.-C., Chiu, C.-C., Kuo, T. H., Chan, F.-T., Chen, Y.-C., Ko, W.-Y., & Yao, C.-T. (2022). Not out of the woods yet: Signatures of the prolonged negative genetic consequences of a population bottleneck in a rapidly re-expanding wader, the black-faced spoonbill *Platalea minor*. *Molecular Ecology*, 31, 529–545. <https://doi.org/10.1111/mec.16260>

¹⁴ Lauder A. & O'Donohue, B. (Eds) (2019) Action for Curlew in Ireland. Recommendations of the Curlew Task Force. Department of Culture Heritage and the Gaeltacht. Ireland. <https://www.chg.gov.ie/app/uploads/2019/09/curlewtask-force-recommendations.pdf>

Table 5 Recent surveys & population estimates – Curlew (CU)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Population estimate (AOT)	Trend (-ve %)	Trend period	Decline rate (%a-1)	Comments
Shannon Callows Colhoun et al 2022	NPWS	2021	Shannon callows (part)	CU	2				8 sub sites
BWI Callows WB 2020	NPWS	2019	Shannon callows (part)	CU	5	85	32	3	
Curlew data - various .shp	NPWS/BWI	2019-2022	National (part)	CU	136				Estimate of unique sites extant within 2019-22
IWM 138 - Colhoun et al	NPWS	2021	National	CU	105	24	5	5	minimum (119 possible)

Table 6 Summary population size and trends (CU)

2023 population estimate	100	Expert estimate
Short term trend (5y)	-24%	National Curlew surveys
Long term (32y)	-85%	Repeat of Shannon Callows survey

Recent reports from the Curlew Conservation Programme (CCP)¹⁵ and from National survey indicate approximate locations of nests/territories¹⁶ in key areas over the period 2019 – 2022. Where the CCP has been active pairs have seen target productivity reached in many areas. Declines nationally continue however, and a rough population model indicates that the efforts of the CCP have significantly slowed decline potentially offsetting losses by c. 30% (110 pairs in national survey vs c. 75 pairs - model prediction by 2021). Losses continue however and decline at current rate would see a halving of the population in c.10 year. While “functional extinction”¹⁷ level has not been defined for Curlew, it could be argued that reaching the 5% occupancy of former range and population size may be reasonable and this may already have been reached. Recovery from this point then will clearly be challenging without significant interventions across all sites and areas and is likely to involve supplementary measures to assist productivity and genetic fitness.

There is a national monitoring programme for breeding Curlew, with national surveys now occurring on a 5-yearly basis. This frequency may not provide a high enough resolution of data to adequately inform the conservation actions of a species under such threat, and as such annual monitoring will be required to enable conservation action, particularly in terms of safeguarding nests or head starting. The Curlew Conservation Programme (CCP) has carried out annual monitoring in the areas it has operated in and this has largely been effective in identifying sites and tracking numbers within these areas (c. 40-50% of national population).

¹⁵ Servignat, H. and O'Donoghue, B.G. (2022). Curlew Conservation Programme Annual Report 2022. National Parks & Wildlife Service. <https://www.npws.ie/sites/default/files/files/curlew-conservation-programme-annual-report-2022.pdf>

¹⁶ Points indicating a nest/pair location for an extant pair during the period 2019-2022 (the data provided). This is an average nest location, weighted toward the most recent record for each presumed territory.

¹⁷ Decline to the point where the species plays a negligible role in the ecosystems it inhabits

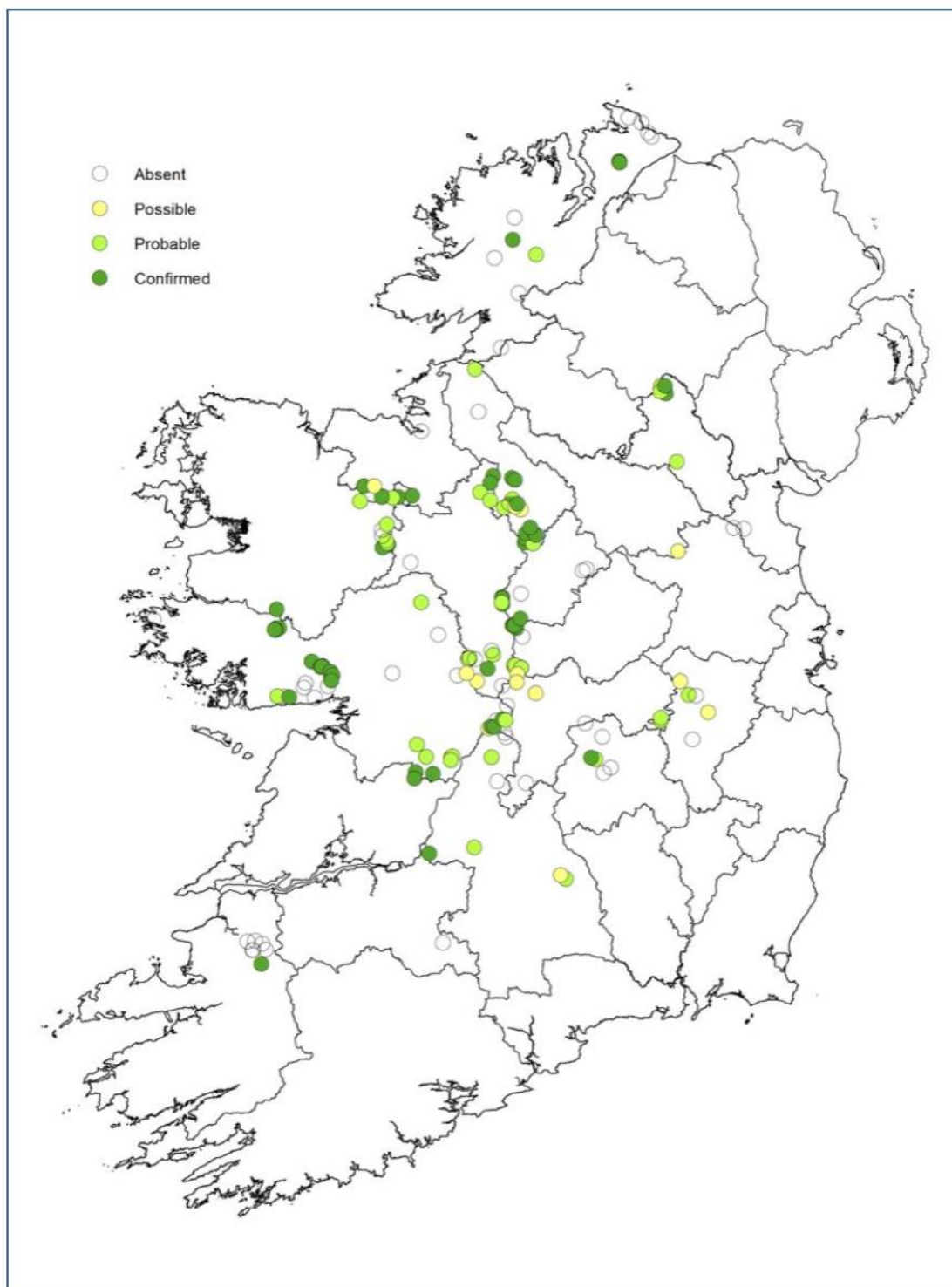


Figure 1. Curlew locations in 2021 – extract from IWM 138 (Colhoun et al, 2023) - Distribution of breeding Curlew in 2021 in Ireland, classifying territories as no longer occupied (absent n=52) or breeding (n=115), with breeding status being categorised as possible (n=14), probable (n=48) or confirmed (n=58).

Causes of change: reasons for decline are similar to those for other Breeding Wader where habitat preferences overlap, notably in wet grassland habitats. Curlew are now, however, very much dependent on remnant upland and raised bog habitats, using grasslands for foraging. These bog habitats remain threatened by a range of factors: domestic turf cutting (which can cause habitat loss and degradation, disturbance and potentially direct loss of nests and chicks), forestry developments, renewable energy developments and housing in close proximity to bogs. The birds also require a range of foraging areas, such as fields and nearby wetlands and these, as noted elsewhere, are also under pressure.

The increasing fragmentation of the habitats and landscapes within which they nest has led to increased predation across much of their European range, and this is notably so in Ireland. The effects of meso-predators on all Breeding Waders is significant and noted for other species also. Several studies have shown foxes to account for, on average, >80% of predation incidents on nests, young and adults. The role of habitat fragmentation is likely to be the primary change driving this effect¹⁸.

Like other Breeding Wader species, genetic bottlenecks may be a risk in their conservation, as may senescence of breeding adults. Where populations are becoming smaller and more fragmented it is likely that genetic fitness is declining. While adult survival is generally high and thought to be c. 80% per annum, the species can be long-lived, but with an ageing population comes the effects of senescence on productivity. There remains no evidence of the species spontaneously re-occurring at sites where it has been completely lost in the past. To achieve significant range re-occupation into suitable areas, artificial means, such as translocation may be required.

Figure 1 illustrates the remaining likely main concentrations. It is imperative that the existing measures for Curlew are strengthened and expanded to include all, or near all, remaining pairs.

4.4 Dunlin

Table 7 Recent surveys & population estimates – Dunlin (DN)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Population estimate (AOT)	Trend (-ve %)	Trend period	Decline rate (%a-1)	Comments
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	DN	8	28	10	3	Consistent with pers comm info from LIFE on Machair
Slieve Fyagh - Birch	NPWS	2018	Slieve Fyagh SAC	DN	4	73	10	7	
IWM (draft) - Colhoun et al	NPWS	2022	Connemara uplands	DN	43				DN prob overestimate - max 15 (KC pers comm)
BWI NW Donegal	BWI	2017-2021	Donegal coastal	DN	5				0 (zero) in 2023

Table 8 Summary population size and trends (DN)

2023 population estimate	30	Expert estimate
Short term trend (10y)	-28%	Machair Breeding Waders survey
Long term (23y)	-91%	Machair Breeding Waders survey (-73% uplands – Slieve Fyagh)

Dunlin has experienced severe declines over several decades at all key sites. Based on data collated here, it is clear that Dunlin are now the most threatened Breeding Wader species in Ireland. It is estimated that the total population is unlikely to exceed 40 bps. nationally, which is based on best expert opinion and review of available data. Given the nature and rate of the declines, it is possible that in the intervening period, since several surveys quoted here, the population size may be well below 30 pairs in 2023. Applying rates of decline to such a small population, becomes irrelevant, and losses at site and area level may well drive further declines, without rapid and comprehensive interventions. It is concerning that surveys, to date, have been inadequate to properly assess the numbers of this species at a national, or even site, level.

¹⁸ Ainsworth, G. *et al.* (2016) Understanding Predation Report - a review bringing together natural science and local knowledge of recent wild bird population changes and their drivers in Scotland. Scotland's Moorland Forum. www.bit.ly/3rgFYrt

Causes of change: Declines at former strongholds have occurred even where conservation measures have been attempted. Notably on machair grasslands, where a combination of agri-environment measures and some site-specific actions exist. Reasons for decline are similar to those for other species. In this case, the combination of being both an upland blanket bog and lowland coastal grassland breeding species, means the species is exposed to multiple pressures in both habitat types. The broad scale habitat preferences are not as relevant as the more micro-scale association with complexes of pools¹⁹ and a mix of natural vegetation sward heights and structure, to accommodate both chick foraging on pool edges and nesting in short tussocks in wet sites/areas relatively inaccessible to ground predators. Well vegetated, natural, bog and low fen pool communities are often preferred and these are increasingly scarce and in poor condition generally, often driven by intensive grazing (or under-grazing). In recent times, increased effects of a wide range of meso-predators, such as Gulls and Corvids, Mink and Fox are apparent. These are likely now a significant limiting factor in their survival on the wetlands that still occur and conservation efforts continue.

There are indications from several studies that mixed, denser groups, of associated breeding bird species may perform a protective function for nesting Dunlin, this includes other Breeding Waders (notably Redshank), and possibly tern species^{20,21,22}.

Like several other Breeding Wader species, genetic bottlenecks may be a high risk in their conservation. Where populations are becoming smaller, more fragmented and further apart, it is likely that genetic fitness is declining¹². Maintaining areas with several populations in relatively close proximity could be important. Modest increases have occurred at a site level where intensive Predation Risk Management and habitat management has occurred (e.g., Annagh Marsh) but these have been relatively short-lived.

4.5 Snipe

Table 9 Recent surveys & population estimates – Snipe (SN)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Population estimate (AOT)	Trend (-ve %)	Trend period	Decline rate (%a-1)	Comments
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	SN	35	77	10	8	IWM 119 - Suddaby et al.
Shannon Callows Colhoun et al 2023	NPWS	2021	Shannon callows (part)	SN	42				Shannon Callows Colhoun et al 2023
BWI Callows WB 2021	NPWS	2019	Shannon callows (part)	SN	42	87	32	3	BWI Callows WB 2021

Table 10 Summary population size and trends (SN)

2023 population estimate	3222	Expert estimate (author) Art. 12 x 5% p.a.
Short term trend (5y)	-24%	Callows & Machair
Long term (32y)	-87%	Callows

¹⁹ Lavers, C. P., Haines-Young, R. H., & Avery, M. I. (1996). The Habitat Associations of Dunlin (*Calidris alpina*) in the Flow Country of Northern Scotland and an Improved Model for Predicting Habitat Quality. *Journal of Applied Ecology*, 33(2), 279–290. <https://doi.org/10.2307/2404750>

²⁰ Franks SE, Roodbergen M, Teunissen W, Carrington Cotton A, Pearce-Higgins JW. (2018) Evaluating the effectiveness of conservation measures for European grassland-breeding waders. *Ecol. Evol.* 8(21):10555-10568. doi: 10.1002/ece3.4532.

²¹ Interacting effects of agriculture and landscape on breeding wader populations. Lilja Jóhannesdóttir, Jennifer A. Gill, José A. Alves, Sigmundur H. Brink, Ólafur Arnalds, Verónica Méndez and Tómas Grétar Gunnarsson <https://doi.org/10.1016/j.agee.2018.11.024>

²² Douglas, D.J.T et al. (2023) Varying response of breeding waders to experimental manipulation of their habitat and predators. *Journal for Nature Conservation*, 72 <https://doi.org/10.1016/j.jnc.2023.126353>

Snipe are Ireland's most widespread, and probably most numerous, Breeding Wader. They are present in a wide range of habitats in both upland and lowland situations and can typically be found when other Breeding Waders have vacated sites in previous years.

There is no national monitoring programme for breeding Snipe, the CBS is not comprehensive enough to produce population trend data. In addition, the best methods for survey of the species vary somewhat between habitat types. In general, they are amalgamated with other species when surveying and are not normally the focus of dedicated/specific survey. As such they are generally poorly monitored.

Article 12 reporting in 2018, gave an estimate of 4275 pairs – this based on a broad-brush estimate from occupied 10km squares. More recent surveys on the Shannon Callows and on machair, were able to broadly compare numbers to previous surveys of the same areas. These indicate very significant short and long-term declines.

Range contraction is also recognised in the Bird Atlas 2007-11 and reflected in BWI Farmland Bird Hotspot Mapping. Taking a mid-point of the estimated population declines derived from these surveys indicates approximately 5.5% per annum in recent years and applying that to the baseline Article 12 figure gives a 2023 population of only 3222 pairs.

In discussion with an expert group in June 2023, no attempt was made to estimate the national population size. It is recognised as a challenging species fraught with survey difficulties. The figure of 3222 pairs derives a density of 6.3 pairs per 10km square when applied across the 505 occupied squares noted in the Article 12 report. While this population size compared to other Breeding Waders, appears healthy, the reality is that declines at this rate are clearly unsustainable and all agreed that the scale of apparent declines was probably a significant underestimate and is likely to be significantly more severe. The general, informed, perception that numbers are declining on a very widespread basis suggests that a higher level of urgency should be applied to this species in conservation terms to prevent it going the same way as other species.

Causes of change: reasons for decline are similar to those for Lapwing and other species and, historically, were driven by changing land use: forestry, drainage, loss of wetlands and increased agricultural intensification. The species preference for peatland habitats, and generally tall, rushy, wetlands, and with lower avoidance for trees and scrub close to wetlands, allows them to exploit a much wider range of wetlands than many other species, this being reflected in their wider distribution. Aspects such as the level of need for multiple breeding pairs to maintain social cohesion, and the longer apparent breeding season of the species, need special attention. Drainage is probably a lower risk than in the past, but loss, or drying, of bog habitats may still be a risk. The increased effects of meso-predators, seen for other species may be perceived as less problematic for this species, due to their more cryptic nature, but must still be having a significant effect in conjunction with the increase in forestry in upland peatlands and similar marginal land, much of which would otherwise be available for Snipe.

Increases have occurred at a site level where intensive Predation Risk Management, and particularly predator fences, have played an important role (e.g., Shannon Callows sites, Lough Ree, Annagh Marsh, Cooldross) Associated habitat management within the fenced areas may be significant as the propensity for the species to be able to move young to suitable habitats is somewhat unknown.

While the species may still be widespread in broad distribution terms, the population declines are somewhat unknown but are of significant concern. Much greater effort is needed to identify population size, trends, and suitable conservation measures for this enigmatic species, with particular areas known to host breeding Snipe in need of dedicated efforts. Figure 2 illustrates the distribution as reported in 2018. Synergies could be realised by way of geographical effort (e.g., areas where specific efforts for other species such as Curlew are necessary).

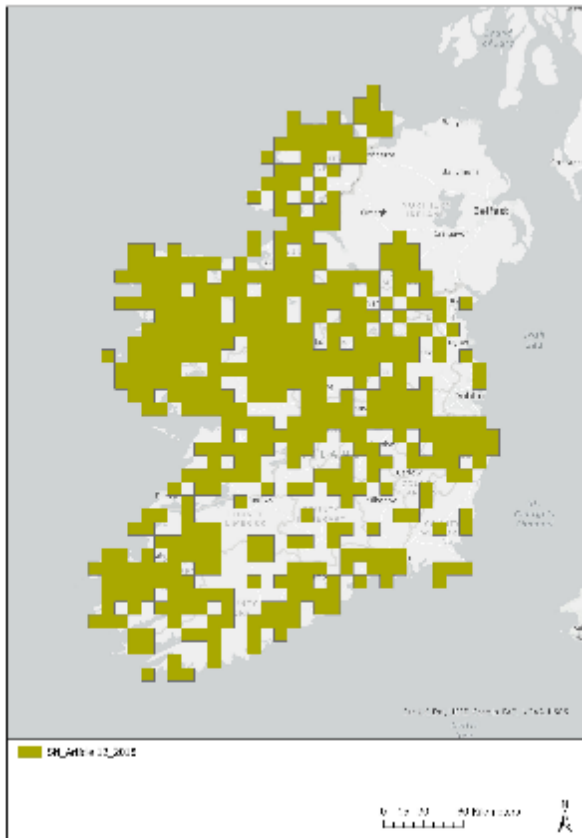


Figure 2. Snipe distribution (derived from Article 12 report 2018)

4.6 Golden Plover

Golden Plover have held a consistently low population in Ireland for several decades. Probably never exceeding 400 pairs (600 pairs estimated by the first Breeding Bird Atlas, for all-Ireland) but having declined substantially since then. Expert opinion, based on some recent published survey results, derives a population unlikely to exceed 150 pairs. Significant information gaps remain however regarding some parts of their range, though these are unlikely to alter estimates significantly.

Continued declines at remaining areas are now resulting in apparent rapid loss, perhaps at 5% per annum or more.

Causes of change: Few direct conservation measures have been deployed specifically for this species, other than some basic site protection and, largely inadequate, changes to upland grazing. More recent re-wetting of upland blanket bog sites is likely to make some improvement, but there is little immediate evidence of this to date, though examples elsewhere (such as the English Peak District²³) shows the potential.

Natural, bog pool and montane heath and grassland communities are preferred habitats. There is evidence to show that some cutting of area can assist this species where sward structure is too long.

²³ Border, J.A., Massimino, D., Newson, S.E., Boersch-Supan, P., Hunt, M., Pearce-Higgins, J.W1 (2021) Trends in breeding bird populations of the Peak District Moorlands from 1990 and 2004/5 to 2018. Moors for the Future Report, Edale

Table 11 Recent surveys & population estimates – Golden Plover (GP)

Data source	Origin	Relevant year (s)	Geographical coverage	Species	Population estimate (AOT)	Trend (-ve %)	Trend period	Decline rate (%a-1)	Comments
Slieve Fyagh - Birch	NPWS	2018	Slieve Fyagh SAC	GP	14	26	5	5	
IWM 120 - Suddaby & O'Brien	NPWS	2019	Owenduff-Nephin Beg SAC	GP	45	43	13	2	
IWM (draft) - Colhoun et al	NPWS	2022	Connemara uplands	GP	64	13	5	3	GP prob overestimate
Expert review - workshop estimate	-	2023	National	GP	150				

Table 12 Summary population size and trends (GP)

2023 population estimate	150	Expert group estimate
Short term trend (5y)	-19.5%	average
Long term (32y)	- 43%	Connemara

The effects of meso-predators, such as gulls and corvids, mink and fox, may be apparent at some sites, in particular where forestry fragments habitats or provides better opportunities for predators. Like several other Breeding Wader species, genetic bottlenecks may be a risk. Populations becoming smaller, more fragmented and isolated, will inevitably hinder long-term survival of the national population. Maintaining wider areas with several populations in relatively close proximity could be as important as conserving or restoring single, large, sites.

4.7 Other species

Oystercatcher

Table 13 Summary population size and trend (OC)

2023 population estimate	750-1500	Expert estimate
Short term trend (5y)	35-75%	Article 12 2316-3087prs

There are no comprehensive national or large-scale regional surveys targeted at Oystercatcher. Surveys for other Breeding Waders occasionally cover a proportion of a breeding population in a given area, but their habitat preferences are somewhat different to other lowland Breeding Waders and as such may be missed in most surveys. Breeding Wader surveys on machair grasslands are probably the best area-based population estimates available for the species, but these cover only a small proportion of the species potential range.

Estimates based on occupancy from the Bird Atlas 2007-2011 and modulated by expert opinion (June 2023) lack confidence. The latter suggests 1500 pairs, a substantial population decline since the Atlas. It is unlikely that the species is present in any more than 150 10km squares (145 in Article 12 reporting) and densities are unlikely to exceed an average of (say) 5 pairs per occupied 10km square. Machair grassland areas on the mainland held near zero pairs in 2019, while densities on the islands were high and may have reached more than 20 pairs per 10km-square. A population range of 750-1500 pairs is probably reasonable.

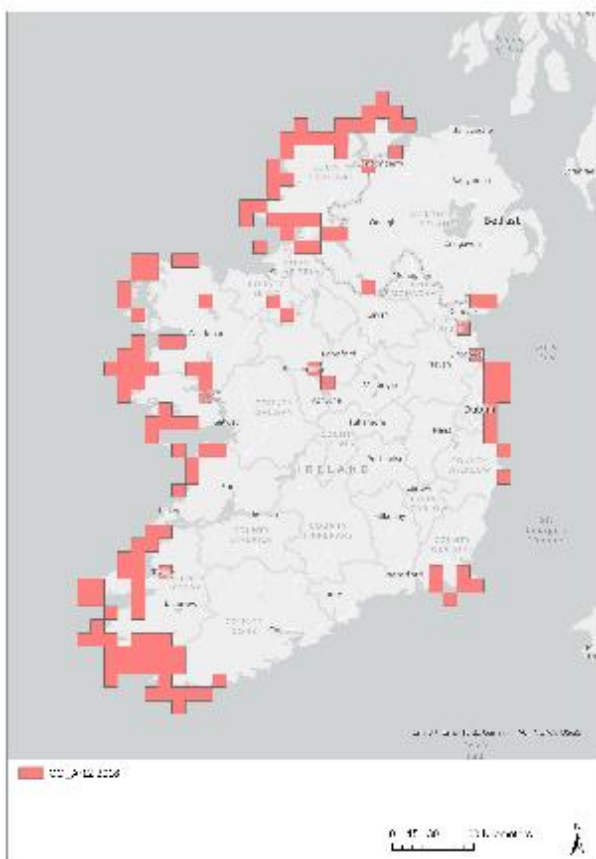


Figure 3. Oystercatcher distribution (Article 12 report 2018)

Ringed Plover

Table 14 Summary population size and trends (RP)

2023 population estimate	1000	Expert estimate
Short term trend (5y)	-5%	Article 12 1045prs

There are no comprehensive national or large-scale regional surveys targeted at Ringed Plover. Surveys for other Breeding Waders cover a proportion of the population in a given area, but their habitat preferences vary substantially to other lowland Breeding Waders. They are predominantly bare ground nesters with sites in Ireland including pebble, shingle and upper sandy beaches of coast and lakes, short grazed machair and cutaway bogs. As such they may be missed in most surveys for lowland and upland Breeding Waders. Breeding Wader surveys on machair grasslands are probably the best area-based population estimates available for the species, but these cover only a small proportion of the species potential range. Surveys on Cutaway bogs have detected low densities. They are present in highest numbers where associated with Predation Risk Management, and notably also control of human and dog access (e.g., Kilcoole, Co. Wicklow). They are particularly susceptible to trampling and dog predation on beaches.

The machair Breeding Wader survey of 2019 recorded 43 pairs and suggested this represented 4% of the national population based on the 2018 Article 12 reported population of 1045 pairs. It would not be unreasonable to apply similar densities to those for Oystercatcher. Given a reported 182 occupied 10km squares (Article 12 report) with an average of 5 pairs per 10km square derives a population of 910 pairs. This was close to the estimate provided by expert opinion (June 2023). Machair Breeding Wader surveys estimate a long term (27yr) decline of -65% and a ten-year decline of -76%. Increasing pressure from recreation on beaches is notable in recent years and this may be further driving declines in those remaining breeding areas/sites.

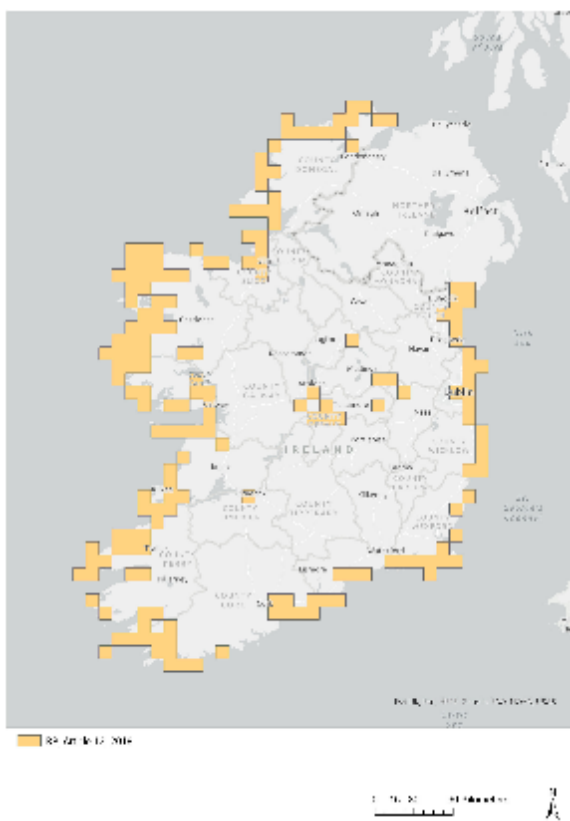


Figure 4. Ringed Plover distribution (Article 12 report 2018)

Red-necked Phalarope

Red-necked Phalarope remains a rare breeding bird in Ireland with a fluctuating population of around 1-20 breeding pairs (expert opinion, June 2023) at typically 1-5 sites. Conservation of the species remains focussed on specialist habitat requirements of pool complexes in invertebrate rich low fens. Monitoring of the species requires site specific surveys and the collation of information on new sites as they occur. The Irish population is important as the Southernmost in its global range.

The same factors influencing species such as Dunlin and Redshank, which can often share the same sites, applies to Red-necked Phalaropes in this case.

Common Sandpiper

The conservation status and ecology of Common Sandpipers is poorly understood in Ireland. They appear to be predominantly associated with the shores of lakes (usually upland sites), some rivers and in places, coastal shorelines. There is no comprehensive national survey for Common Sandpipers and as such detailed knowledge of numbers and densities is poor. Figure 5 shows the Article 12 reported distribution. Surveys of comparable areas in western coastal machair grassland areas, including relevant offshore islands, indicate a modest population in the past (c. 33 pairs in c. 2500 ha) and declines since to only 3 pairs in a comparable area. A population estimate of 2342 pairs was provided by Yalden²⁴ (1993) and revised upwards by Dougall²⁵ (2004) to over 6000. The population now is restricted to 163 10km squares. It would be difficult to imagine a density above 10 pairs per occupied 10km square (as broadly found by the last machair Breeding Wader survey) and as such a population of 1630 pairs nationally may be plausible. It is unknown whether the declines on Machair are consistent in other areas, but range has also contracted between the new and last Atlas periods.

While this species may not be as pressing a conservation priority and may be less susceptible to land use change in some key habitats, it is nonetheless suffering an apparent, significant, decline which is likely driven by a similar range of factors as for other species.

²⁴ Yalden, D. in Gibbons, D.W., Reid, J.B. & Chapman, R.A. (1993) The new atlas of breeding birds in Britain and Ireland: 1988-1991. T. & A.D. Poyser.

²⁵ Dougall, T.W., Holland, P.K. & Yalden, D.W. (2004). A revised estimate of the breeding population of Common Sandpipers *Actitis hypoleucos* in Great Britain and Ireland. Wader Study Group Bull. **105**: 42-49.

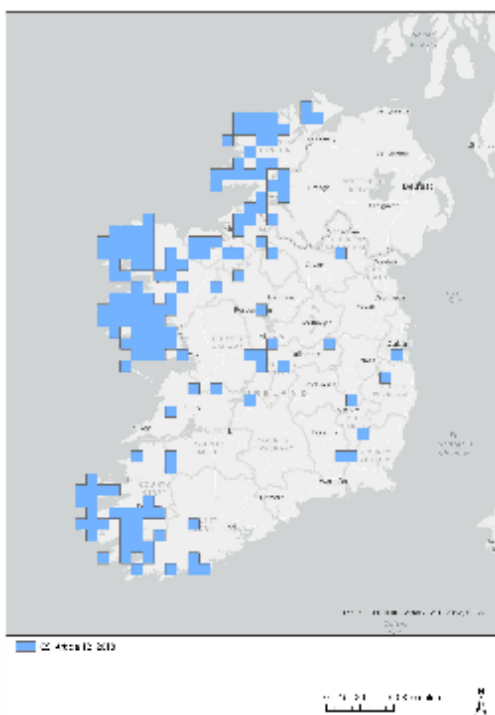


Figure 5. Common Sandpiper distribution (Article 12 report 2018)

4.8 Breeding Wader populations - synthesis

Table 15 - Synthesis of recent Breeding Wader population estimates

Data source	Origin	Relevant year (s)	Geographical coverage	Sp	Pop est. (AOT)	Trend (-ve %)	Trend period	Decline rate (%a ⁻¹)	Comments
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	CS	9	62	10	6	
Article 12 reporting	NPWS	2018	National	CU	98				
Breeding waterbird hotspot mapping – IWM # 129	NPWS	2020	National synthesis and overview						Includes non- Waders
BWI Callows WB 2020	NPWS	2019	Shannon callows (part)	CU	5	85	32	3	
Shannon Callows Colhoun et al 2022	NPWS	2021	Shannon callows (part)	CU	2				8 sub sites
IWM 138 - Colhoun et al	NPWS	2021	National	CU	105	24	5	5	minimum
Expert review - workshop estimate	This project	2023	National	CU	105				
Curlew data - various .shp	NPWS/BWI	2019-2022	National (part)	CU	136				
Slieve Fyagh - Birch	NPWS	2018	Slieve Fyagh SAC	DN	4	73	10	7	
Article 12 reporting	NPWS	2018	National	DN	150				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	DN	8	28	10	3	
Porcedda et al. 2022	BWI	2021	Donegal (part)	DN	5				
IWM (draft) - Colhoun et al	NPWS	2022	Connemara uplands	DN	43				DN prob overestimate

Data source	Origin	Relevant year (s)	Geographical coverage	Sp	Pop est. (AOT)	Trend (-ve %)	Trend period	Decline rate (%a ⁻¹)	Comments
									- max 15 (KC pers comm)
Expert review - workshop estimate	This project	2023	National	DN	30				
Slieve Fyagh - Birch	NPWS	2018	Slieve Fyagh SAC	GP	14	26	5	5	
IWM 120 - Suddaby & O'Brien	NPWS	2019	Owenduff-Nephin Beg SAC	GP	45	43	13	2	
IWM (draft) - Colhoun et al	NPWS	2022	Connemara uplands	GP	64	13	5	3	GP prob overestimate
Expert review - workshop estimate	This project	2023	National	GP	150				
Article 12 reporting	NPWS	2018	National	L.	2000				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	L.	143	91	10	9	
BWI Callows WB 2019	NPWS	2019	Shannon callows (part)	L.	41	85	32	3	
Shannon Callows Colhoun et al 2021	NPWS	2021	Shannon callows (part)	L.	51				8 sub sites
Porcedda et al. 2022	BWI	2021	Donegal (part)	L.	186				
Expert review - workshop estimate	This project	2023	National	L.	800				
Article 12 reporting	NPWS	2018	National	OC	2702				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	OC	35	88	10	9	
Expert review - workshop estimate	This project	2023	National	OC	1500				
Article 12 reporting	NPWS	2018	National	RK	500				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	RK	7	77	10	8	
BWI Callows WB 2022	NPWS	2019	Shannon callows (part)	RK	112	65	32	2	
Shannon Callows Colhoun et al 2024	NPWS	2021	Shannon callows (part)	RK	128				8 sub sites
Porcedda et al. 2022	BWI	2021	Donegal (part)	RK	34				
Expert review - workshop estimate	This project	2023	National	RK	180				
Article 12 reporting	NPWS	2018	National	RP	1045				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	RP	43	30	10	3	
Expert review - workshop estimate	This project	2024	National	RP	1000				
IWM 119 - Suddaby et al.	NPWS	2019	Coastal Mayo & Galway	SN	35	77	10	8	
BWI Callows WB 2021	NPWS	2019	Shannon callows (part)	SN	42	87	32	3	
Shannon Callows Colhoun et al 2023	NPWS	2021	Shannon callows (part)	SN	42				8 sub sites

APPENDIX D

Indicative FRAMEWORK FOR THE DELIVERY OF THE BREEDING WADERS EIP Project

This is an indicative framework for the delivery of the Breeding Waders EIP project, based on experience by NPWS and DAFM to date. While it provides an advised approach and structure, applicants are encouraged to provide innovative approaches and to foster an environment that allows for solutions to come from the ground up.

However, please note that the themes identified, and their associated bullet points **must be** addressed and delivered through the EIP.

1. Context: Immediate Challenges and Solutions

The principal causes of the decline in Ireland's Breeding Wader populations are the long-term and on-going pressures stemming from land-use and land-use change and forestry (LULUCF). Ultimately, landscape-scale restoration is required in order to deliver long-term viability for Breeding Wader populations in Ireland. Notwithstanding, low breeding productivity is likely the greatest determinant of ongoing Breeding Wader population declines and thus must be addressed immediately in order to secure and restore remaining populations. Key actions to this immediate challenge are Predation Risk Management and the production and maintenance of suitable breeding habitat, in order to maximise breeding productivity. More specific detail is outlined in Appendix C. Farmers and landowners are primary actors and stakeholders in terms of solutions to the emerging challenges over recent decades. An integrated, coordinated response is now urgently required across all stakeholders to address the issue, to be driven at local, regional and national levels. Ireland's new Common Agricultural Policy (CAP) Strategic Plan has a critical role to play in this regard as will other programmes across State, semi-State, and private missions. The key objectives of this Breeding Waders EIP are to:

- Secure existing Breeding Wader populations at key sites; and,
- Support population recovery at key sites and in the wider landscape via landscape-level management actions and contribution to policy development.

The key points derived from the species accounts (see Appendix C), should form the main focus of conservation measures over the timescales indicated. These are further refined into themes for action in Section 2 below.

Table 16 Identified challenges with Breeding Wader conservation & potential of EIP as part of the solution

Challenge	Potential of EIP as part of the solution
All populations of Breeding Waders have been declining dramatically over the long term, and all show continuing declines both in range and populations size.	Integration with/of conservation and habitat enhancement programmes, urgent measures
Dunlin, Curlew and Redshank are in a highly vulnerable state.	Urgent measures to secure the strongholds (and later expand) including but not limited to headstarting/translocations/captive breeding on evidence basis; intensive Predation Risk Management; roll out measures at all existing and immediately recoverable priority sites
Lapwing are likely to be lost as a breeding species in the wider countryside at the current rate of decline and with the mechanisms driving the decline still apparent.	Informing policy measures to address landscape and predation issues in wider countryside; Site based measures to secure and expand core strongholds
Snipe has large information gaps associated and no targeted full national survey. Declines are rapid and causes likely to be similar to other species (albeit unknown)	Site based measures to secure and expand populations. Establish landscape scale habitat enhancement; Tackle predation issues in short term
Golden Plover have suffered declines in upland landscapes due to landscape changes and related predator effects	Establish landscape scale habitat enhancement; Tackle predation issues in short term; likely co-benefits at upland Dunlin priority sites
No comprehensive and up to date, single data repository for Breeding Waders despite their widespread declines	Feed into/align with a national monitoring database and monitoring plan

Challenge	Potential of EIP as part of the solution
There are large information gaps for all species. No recent full national surveys for all species except Curlew. More numerous species have extremely limited regional information; Oystercatcher; Ringed Plover; Common Sandpiper.	Feed into/align with comprehensive national surveys; investigation of declines in OC/CS/RP; monitoring programme for all species
Agri-environment measures need additionality to prevent decline and restore Breeding Wader in wider countryside – no mechanism for restoration where lost	Deploy complementary measures for Predation Risk Management and habitat enhancement to support agri-environment schemes (within and outwith areas where landowners are in schemes).
Agri-Environmental Schemes have a maximum duration of 5-7 years	Identify potential opportunities for strategic land purchase/long-term leases by the National Parks & Wildlife Service. Engage with farmers, landowners, relevant groups and local communities with a view to fostering knowledge transfer, awareness and support for long-term sustainable measures for Breeding Waders.

By way of an overarching strategy, Step 1 has to be focussed on securing remaining populations in strategically important areas. Step 1 should run concurrently with Step 2, which would entail a programme of actions to achieve sufficient landscape scale restoration for future viability of populations. The EIP team along with the project steering group and Breeding Waders EIP Executive Committee will work also to identify and progress policy issues and solutions.

2. Themes

In all cases Breeding Waders have similar basic requirements through their breeding cycle; these are described in Table 17. The parameters which apply to each requirement drive the themes for conservation measures. To achieve successful conservation measures, there is also the need for actions which underpin or support measures. These include monitoring, research and administrative functions which also form the basis of themes.

There are several Breeding Wader conservation strategies which have proposed frameworks or plans for action for species or sites. Potentially the most relevant, and relatively recent, are the *Recommendations of The Curlew Task Force (CTF)* and *Prioritised Action Framework (PAF) for Natura 2000 in Ireland (2021-2027)*, and in the international context the *International Multi-Species Action Plan for the Conservation of Breeding Waders in Wet Grassland Habitats in Europe (2018 – 2028)*²⁶

Table 17

Breeding requirement	Parameters
Pre-breeding food resource	habitat condition, prey biomass and availability
Suitable habitat for nest sites	habitat condition
Mates that are reproductively fit	diverse and healthy population and plenty mate choices
Incubation that remains undisturbed	low predation risk & low human disturbance
Suitable habitat for chick rearing & adult feeding	habitat condition, prey biomass and availability
Low risk of predation of chicks and adults	low predation risk, low human disturbance, habitat condition, high population/community density
Post breeding/pre-migratory feeding areas	habitat condition

It is proposed that the Breeding Waders EIP initiative focuses on addressing the following themes:

Breeding Wader habitat conservation & restoration

- Planning and delivery of habitat management and associated actions in action areas/zones, including stand-alone efforts and synergies/enhancement of measures under existing Agri-Environmental Schemes (e.g., ACRES General and ACRES CP areas). The EIP efforts will be primarily action based,

²⁶ See: https://www.unep-aewa.org/sites/default/files/document/aewa_ec_iwg1_inf_4_eu_imsap_bwwgh_2018-2028.pdf

rather than scoring/paying according to habitat scorecards, as well as the provision of information and specialist advice to inform the targeting and specifications of actions by others (e.g., ACRES CP, agri-environmental planners, Predation Risk Management, etc.).

- Set up of bespoke Breeding Wader conservation land management agreements at a farm scale within action areas / zones.
- Land management agreements will be made up of a combination of supporting actions/capital works/habitat enhancement measures/Non-Productive Investments/Landscape Actions.
- Appropriate actions will include those of typical agri-environment programmes but will also extend further; including, but not limited to;
 - targeted scrub removal
 - scrape creation
 - rush mulching
 - hydrology works
 - large scale habitat enhancement actions (e.g., forestry removal) in key areas (to increase available suitable habitat and reduce predation risks for improve future population viability).
- Work with existing local initiatives and projects to ensure resourcing and delivery of complementary actions and special projects .
- Training / upskilling of farm advisors.
- Outputs and learnings from this EIP to inform the engagement with key stakeholders, to incorporate and deliver Breeding Wader conservation & recovery actions via their local, regional and national strategies (e.g., Coillte, Bord na Mona), led by DAFM and NPWS.

Headstarting

- Delivery of headstarting or similar species management programmes to support population recovery conservation and recovery efforts; almost certainly required for Curlew and likely for Dunlin.

Predation Risk Management

- Planning and delivery of Predation Risk Management (such as temporary and permanent predator fences and lethal control of predators such as foxes and mink).
- Ensuring coherence across different projects where nest protection is also to be undertaken.
- Defining and training Predation Risk Management standards.
- Identifying and delivering novel approaches to nest protection.

To inform Agriculture & land-use policy

- Contribution to dialogue relating to land-use policy and strategies, in accordance with a framework agreed with the Strategic Oversight Board.
- Engagement with key departments and agencies to contribute to policy improvements across sectors.
- Provision of guidance to farm advisors, ACRES teams, Departmental officials, and others, in accordance with a framework agreed with the Strategic Oversight Board and in line with overall national land use policy.

Communities for Breeding Waders

- Identifying and delivering community engagement with Breeding Wader conservation.
- Creating and forging community partners, supporters, and champions for Breeding Wader conservation.
- Peer to peer knowledge exchange.
- Developing education initiatives for schools and groups.

- Funding for small scale or local practical initiatives for Breeding Waders on community sites or public land (i.e., administering a community grants fund).

Conservation evidence & surveys

- Surveys and species monitoring – undertake surveys to determine the spatial and temporal targeting of measures and undertake repeated surveys at appropriate intervals to monitor and assess the impacts/success of measures and thus how they can be further improved/adapted; feed into and align with national and regional surveys of key species as requested by NPWS.
- Reporting and advising stakeholders on results and trends.
- Feed into/align/facilitate research actions to gather conservation evidence to inform management actions (e.g., headstarting, genetics, population modelling).
- Facilitate and support others to survey & monitor in standardised approach in line with EIP.

Strategic actions and support

- Steering group, knowledge exchange forum, thematic groups.
- Feed into/align with creation of species-specific action plans/strategies.
- Coordination of survey teams and nest protection programmes.
- Management of budget and finance to ensure successful project delivery.
- Feed into/direct discussions on land leases and land purchase.
- Developing and delivering strategic actions to ensure the availability of skills and expertise in core functions for other themes – training and skills development, recruitment, procurement.

Action zones

It is likely that to achieve successful long term Breeding Wader conservation, that work across two main spatial scales will be required as follows:

- (i) Targeted action zones which are at a scale appropriate to the species and habitats, in order to secure remaining Breeding Wader populations in key sites/areas; and
- (ii) A wider countryside or national level approach which works to enhance conditions around and between core zones which act to prevent further declines and maintain promote Breeding Wader population recovery and expansion.

In this latter case it is likely that this will be created by the development of policy level interventions and agri-environment measures (notably a range of ACRES options in the wider countryside and targeted ACRES CP in closer association with existing Breeding Wader areas). In some cases, there may be overlaps. The first priority of the Operational Group will be point (i) – securing remaining populations in key sites/areas.

Breeding Wader Action Zones are defined for Curlew, Dunlin, Redshank, Golden Plover and Lapwing. Zones for other species are undefined as there are information gaps to fill in this regard, but actions for the species noted are likely to benefit other Breeding Wader species.

Key caveats on Breeding Wader Action Zones

- Each action zone includes an indicative boundary only, for illustration of the approximate area – the boundary has not been checked at fine spatial scale or linked to features on the ground, does not imply or infer any rights of any kind, over any lands within the zone.
- The zones may be flexible and require significant revision before and/or during implementation.
- May include areas of non- wader habitat, this does not imply managing those areas for Breeding Waders unless identified subsequently for restoration.

Grassland WAZ (for Redshank, Lapwing, Snipe, and coastal Dunlin)

Defining these zones includes consideration of:

- The critical condition of Dunlin and Redshank populations and their need for high intervention – c. 100% of remaining coastal breeding Dunlin, and 90% of Redshank populations.
- The rapid response of Lapwing and Snipe to comprehensive Predation Risk Management measures (thus a lower overall proportion of population is acceptable).
- The zones include areas of formerly high-quality sites, where restoration may be achievable.
- A spread of connected sites or habitat patches to enable population growth and dispersal to nearby upland areas (Dunlin).

Donegal NW Coast

A long stretch of coastal with extensive areas of degraded Machair and associated lakes and inlets. Several initiatives have occurred in the area already for Breeding Waders, with mixed success. New work under the Machair LIFE project has started in 2023 provides for core management options which may benefit from further support from Breeding Wader framework resources.

This is an ACRES CP area and the potential to create a combination of core sites with intensive management alongside widespread ACRES participants has high synergy.

The coast is long and somewhat disjointed. There is a predator fence at the western end and opportunities for two other predator fences to encompass areas of 10-50ha could see a rapid increase in Lapwing populations, in turn this combined with suitable capital interventions for Dunlin, such as pool creation, could provide an opportunity for Dunlin to increase/re-establish.

Most of the area is Gaeltacht, and appointed personnel will need local knowledge and a good command of the Irish language. A high degree of local knowledge and ideally connection with the local communities is highly valuable in all areas.

Inch

Inch levels and lake have had mixed fortunes with Breeding Waders but have in the past held higher numbers. The challenges for Breeding Wader management in the area are high, with intensive agriculture but there are good opportunities, particularly for Redshank in state managed nature reserve land which may benefit from more targeted predator management and potentially a predator fence, and for Lapwing in a mix of shoreline and wet fields. The potential for working alongside and adding significant value to ACRES CP is present in this case, as well as links to well established NPWS regional staff.

Erris and Achill

Centred on the complex of sites stretching down the Mullet Peninsula, the Inishkea Islands, and parts of Achill, this is formerly one of the best Breeding Wader areas in the country, but it has declined significantly in recent years. Much work is promoted and planned through the existing LIFE on Machair project, but this has limitation in habitat terms and for working in designated sites. The potential to extend and add significant value is high, as is the potential to examine options for strategic land purchase that could underpin and delivery for Breeding Waders in perpetuity in this important area.

A predator fence at Annagh Marsh provides a stronghold for several species, one additional fenced area (either permanent or semipermanent) would be of benefit in spreading the benefit of Predation Risk Management further south, potentially to a mainland area. A second site could see a near doubling of some Breeding Wader populations if it was large enough.

Connemara coast and Aran Islands

This site has held good numbers in the past but has seen significant declines in more recent times. Much work is planned through the LIFE on Machair project (noted limitations in habitat terms and for working in designated sites). The potential to extend and add significant value is high to this area. There is potential for predator fencing and land purchase to boost and underpin delivery for Breeding Waders in this important area.

The Aran Islands suffer fewer issues with predators and may need other actions to look at disturbance from tourism and grazing management to enhance conditions there. This area falls outside the area for LIFE on Machair, but many areas have relevant ACRES options which could be complementary and could be supported with additional actions for Breeding Waders.

Lough Ree

The islands, fens, and bogs on and around Lough Ree hold high populations of Breeding Waders, which generally appear to have good productivity. Largely on account of a combination of mostly island nesting away from ground predators and the successful and targeted Predation Risk Management efforts of NPWS contractors in the area. The site is one of the most diverse and best waterbird sites in Ireland and is managed effectively. The resources are stretched here however as the site is large and the mainland holds further opportunities which are currently under exploited. The potential to significantly bolster efforts there is apparent and this may have value in helping to drive trends on the Shannon Callows and wider cutaway and restoring bog sites.

Shannon Callows & environs

The callows are a well-known Breeding Wader site and the best area for Redshank nationally. They have undergone several changes in management approach. There is the potential for a high degree of synergy with other conservation projects in the area over the coming years. It is a challenging site to work with but the potential for it to act as a stronghold site for Redshank and also support Curlew and Lapwing is favourable. An effective predator proof fence was installed on Inchinalee Island by NPWS in October 2014 and it continues to perform well, with the added bonus of habitat enhancement works and two NPWS farm plans. The fence is on an island that floods, and given it was built in 2014, it may require remedial works during the lifetime of the EIP. A predator proof fence that was erected by BirdWatch Ireland with funding from the Heritage Council in 2009 is no longer functional and its reinstatement and upgrading would prove valuable, going on experience with the original fence.

Nearby bogs and former bogs (e.g., Boora) can support breeding Lapwing in grassland, breeding Curlew and Snipe on remnant and rehabilitated bogs, and as such should be included as part of this large zone, as they form important complementary populations with potential for contributions to range conservation. Boora, for example has held large populations of Lapwing at least up to 2019.

Wicklow coast

There are few sites for Breeding Waders in the east of the country. The Wicklow coast has formerly held good Breeding Wader numbers but has declined drastically over 20-30 years. The lagoons and marshes of the Murrough continue to small numbers of Lapwing and in 2019 a predator fence was installed by NPWS at Cooldross. It has been well maintained and much habitat management work also carried out, resulting in very large increases and the re-colonisation of Redshank. Continued support and expansion of the efforts on the coast here can provide an important range maintenance role, for Lapwing and Redshank and possibly other species.



Figure 6. Proposed Grassland Breeding Wader Action Zones for combined targeting of Lapwing, Redshank and Dunlin – the zones hold approximately 50% of national Lapwing population, c.90% of Redshank and 100% of coastal Dunlin. Numbers are indicative from recent surveys or estimates.

Upland WAZ

Defining these zones includes consideration of:

- The critical condition of Dunlin populations and the need for high intervention – c. 100% of remaining upland breeding Dunlin may be included.
- The zones include areas of extensive uplands which is in variable condition for Breeding Waders. It is unlikely that all Breeding Waders in this area will be able to be covered effectively and thus landscape scale approaches would be more practicable – in particular to work on restoration of small bog pool complexes and vegetation management for Golden Plover in the vicinity of occupied breeding areas, and a general uplift of Snipe populations across these areas.
- A spread of connected sites or habitat patches to enable population growth and dispersal to nearby coastal areas (Dunlin).

Connemara Bogs

A recent survey (2022) estimated higher numbers of Golden Plover and Dunlin than may have been considered. On further review, this may be an overestimate and the real figure is likely to be somewhat fewer. The area is probably still the best area for the species in the country.

Given the nature of the habitats opportunities for restoration of bog pool complexes could be explored along with removal of forestry or isolated tree stands. Potentially some sward height management may be required.

The importance of the site for Dunlin may warrant annual follow up at least initially.

Nephin/Owenduff/Slieve Fyagh

This area, like Connemara Bogs is a blanket bog SAC. It potentially holds the most significant remaining numbers of upland nesting Dunlin and is close to Dunlin coastal breeding sites and thus may be linked. Supports large proportion of Golden Plover also. At Slieve Fyagh, there is high density of nesting pairs for both species (and where most Dunlin occur in this region), within c. 4.5km² of high-quality habitat, thus offering a high quality, discrete site at which to impact a large proportion of the national population at one site. Similar management interventions are likely to Connemara Bogs but a greater focus on the need to tackle forestry issues may be significant.

Glenveagh

Centred on Glenveagh National Park and the SAC, this upland massif has not had recent survey effort and as such, numbers of both species are unknown, albeit Golden Plover are present in small numbers at least. Similar management to the other two sites is likely to be required.



Figure 7. Proposed Upland Wader Action Zones for Golden Plover and Dunlin in the uplands– the zones hold approximately 80-90% of national Golden Plover population and c.60% of Dunlin. Numbers are indicative from recent surveys or estimates.

Curlew WAZ

The Curlew Conservation Programme, funded by NPWS and DAFM, was set up in 2017 and covered approximately half of the curlew pairs in Ireland. Curlew appear to be doing better within CCP areas compared to areas outside where the CCP was active. This is testament to the efforts of the CCP teams that slowing the decline was possible at all, given the wide range of confounding factors likely playing a role in driving the decline, not least the delayed start to Curlew conservation efforts nationally²⁷. The latest national survey in 2021, does show some localised increases, where new pairs have been located, but in general decline has continued.

Given the perilous state of the population, WAZ for Curlew need to encompass all of the remaining pairs in order to maximise the chances of success. As such Figure 8 indicates approximate zones for the EIP to cover. This supersedes coverage and current spend, of the CCP and Irish Breeding Curlew EIP. It is taken that the Breeding Waders EIP will take forward the efforts of the CCP and Irish Breeding Curlew EIP, expand these efforts further and provide innovation by way of new approaches and in particular, realising synergies with ACRES.

²⁷ Young JC, McCluskey A, Kelly SBA, *et al.* A transdisciplinary approach to a conservation crisis: A case study of the Eurasian curlew (*Numenius arquata*) in Ireland. *Conservation Science and Practice*. 2020;2: e206. <https://doi.org/10.1111/csp2.206>



Figure 8. Proposed Curlew Wader Action Zone (WAZ). Approximate zones encompass c. 98% of recent Curlew breeding records.

RESOURCE NEEDS

The overall package available to the Breeding Waders EIP is €25 million. Approximately €10 million is the expected requirement for a sufficiently resourced team and infrastructure to drive the conservation efforts over the next 5 years. This will be a nationwide effort and is expected to provide full time employment for approximately 40 people to work in rural Ireland. This team will bring added value to the existing agri-environmental efforts, and lead on the delivery of €15 million of funding for agri-environmental measures and associated farmer payments. The primary focus and expenditure of the EIP will be to deliver on the ground action that will make an immediate difference in terms of helping Breeding Waders fledge young chicks and make a difference in the medium to long-term by strategic actions focussed on direct habitat improvements/re-structuring such as scrub removal, predator proof fences, scrape creation, landscape scale restoration (via direct actions and policy improvements) and so on. The themes identified earlier in this document shall focus the core work of the Breeding Waders EIP.

As part of the governance structure, as part of this EIP, a Strategic Oversight board co-chaired by DAFM and NPWS will be established and supported by advisory group(s) as appropriate.

One of the core principles of the Breeding Wader conservation effort is that it will operate across the country and landscape, where required. Layering of actions to complement interventions by other projects should aim to enable a full suite of effective actions for Breeding Waders across a given area, on a prioritised basis.

There are several existing programmes, which support actions, either directly or through co-benefits, for Breeding Wader conservation:

- Wild Atlantic Nature Life IP – western blanket bog and hydrology management – RBPS, communities
- Life on Machair – machair grasslands – management agreements, capital interventions, communities
- Lough Carra LIFE, Corncrake/Traonach LIFE - RBPS, communities
- NPWS Farm Plan Scheme – bespoke plans for biodiversity (including some Breeding Wader plans)
- ACRES CP – RBPS scorecards in Breeding Wader hotspots
- ACRES General – efforts to secure high nature value grasslands, with actions such as tree planting/hedgerow creation in Breeding Wader hotspots not supported.
- Curlew Conservation Programme – nest protection, headstarting, community engagement (the Breeding Waders EIP will take forward the efforts for Curlew nationally).
- Curlew European Innovation Partnership – nest protection, community engagement (the Breeding Waders EIP will take forward the efforts for Curlew nationally).

There will be synergies and complementarity with existing efforts, allowing for bolt-on payments to farmers where necessary and appropriately planned and delivered.

The Breeding Waders EIP will bring significant potential for strategic investments including long-lasting habitat enhancement/capital works (e.g., permanent predator exclusion fences; forestry removal) as well as supporting functions including national survey effort, headstarting and other species management interventions, strategic conservation planning and oversight, development of national policy and planning approaches, community engagement in all project areas.

The Breeding Waders EIP provides the opportunity to complement the programmes above by:

- Creating an overarching structure and oversight for Breeding Wader conservation.
- Providing a national platform to support and advise other projects related to Breeding Wader conservation.

- Ensuring Breeding Wader conservation measures are delivered to their best effect by providing complementary or supportive actions.
- Covering geographical areas which are not covered in full by other programmes.
- Identifying strategic options such as land purchase, deliver large scale capital projects, expert advisory input and community engagement where some projects are not able to.
- Ensuring coherence and complementarity across programmes for example in terms of Predation Risk Management/Nest Protection efforts.
- Providing a grant funding mechanism to support local communities, landowners, NGOs and other stakeholders to deliver conservation action.

Effectively, this Breeding Wader Programme would operate as a ‘supra’ project, not alone bringing additionality to existing programmes and efforts, but so too bringing coherence across various programmes and efforts. In doing so, it is expected that not alone Breeding Waders should benefit, but so too the landowners and farmers upon whom Breeding Waders depend. Breeding Wader conservation actions under various themes will have many benefits to farmers and their land other than monetary value, for example an increase in CP scoring for ACRES, eligibility for schemes, habitat restoration, Predation Risk Management, etc.

In addition, it is expected that local communities and rural areas will benefit by way of engagement, grants and employment locally, while opportunities yet to be considered will also likely be realised. Thinking more long-term, sights and sounds of nature that has always been a part of particular areas, should be preserved for generations to come.

The nature of Breeding Wader conservation is resource-hungry, particularly by way of finding colonies and nests and protecting these areas, so that conservation action can be most effectively targeted. It is considered from experience and expert opinion, that the roles and personnel resources outlined below are essential to enable effective delivery of action for Breeding Waders and the landowners that host these birds, as well as complementing and synergising with existing ACRES efforts.

The EIP call is delivered in a manner that allows for practical consideration of how to sustainably build and grow a team; the applicant/Operational Group is asked to carefully consider and determine what can feasibly be delivered in terms of human resources and by when.



Figure 9. Hypothetical schematic example of how the Breeding Wader initiative could operate in a landscape.

A schematic hypothetical example of how the Breeding Wader initiative could operate in a given landscape is shown in Figure 9, which includes work specifically to:

- Survey and find Breeding Waders (within the yellow outline);

- Effect nest protection efforts around nests (red outline) including erection of temporary nest protection fences (orange outline);
- Engage in habitat enhancement works like rush mulching, scrub clearance or liming, etc. (blue outlines); and
- Land purchase for long-term work and habitat restoration (purple outline), engaging with both ACRES participants (green outlines) and farmers in the wider countryside in a landscape approach. The initiative can bring focus and coherence to agri-environmental efforts (e.g., ACRES CP) and additivity by way of funding to landowners, as well as information to planners.

Personnel resources form a key part of the proposed project delivery. Breeding Wader project officers and Predation Risk Management personnel are likely to deliver the most substantial elements of the project and thus form the bulk of the spend of the programme overall. The range of likely proposed roles required to deliver the EIP element of the framework, and approximations of likely staffing levels (in FTE²⁸) are outlined below. An indicative structure for EIP project delivery is provided in Figure 10. Costs for personnel are not provided here and there are likely to be several models of personnel structures that may work and some modulation of tasks across roles and of a range of alternative delivery mechanism (such as use of contractors) may see reduced personnel numbers overall.

Senior Project Manager: 1.0 FTE

Responsible for framework coordination, planning, management, and overall delivery of the EIP. Ensures the project stays on track, manages resources, and communicates with stakeholders.

Conservation ecologist: 2.0 FTE

Provides scientific expertise on Breeding Waders and their conservation. Conducts and co-ordinates research and monitoring and develops conservation strategies based on collated evidence.

Breeding Wader project officer: 20.0 FTE (including 2-5 at senior level to direct e.g., regional teams)

Produces local plans and strategies for sites and areas. Works on restoring and managing habitats for Breeding Waders. Implements habitat improvement projects, such as creating suitable nesting areas and managing water levels. Works with landowners, contractors, and communities to deliver enhanced Breeding Wader populations.

Predator management specialist: 2.5 FTE

Oversees field operations, predator management including nest protection, predator fence projects in conjunction with Breeding Wader project officer, maintenance, and population surveys. Coordinates field teams and ensures SOPs are followed.

Predator management field operatives: 20.0 FTE

Predator management operations on an assigned site and areas basis, including nest protection and data collection on predator populations and impacts.

Data manager and GIS Specialist: 1.5 FTE

Manages all geospatial and other data, leads on geospatial modelling and field data collection. Conducts spatial and statistical analysis to inform conservation planning.

Community engagement Coordinator: 3.0 FTE

Assigned to broad geographical areas and works to develop skills throughout teams in engaging with communities. Runs programs to raise awareness about Breeding Wader conservation. Organises educational workshops, community engagement activities, and public events.

²⁸ Full time equivalents – note that this may require more individuals and posts to achieve the FTE equivalent.

Breeding Wader champion and volunteer coordinators: 5 FTE (15+ individuals)

Engages at local level, working with Community engagement coordinator. Recruits volunteer effort where needed. Establishes and maintains relationships with local communities, landowners, and stakeholders. Collaborates to address conflicts, gain support, and facilitate conservation efforts. Given the variable sizes of Breeding Wader Action Zones and local areas, there will be a variable need for volunteers and community engagement at local level, but on average, it is estimated that approximately 15 individuals should be involved on the team, with an average of 0.33 FTE for this role. It should be recognised also, that the roles of virtually all team members, should include community/landowner/stakeholder engagement.

Operations and administration manager: 2.0 FTE

Funding and grants coordination, manages relationships with funding agencies, ensures the project has sufficient resources to operate effectively.

Project administrator: 3.0 FTE

Provides administrative support, including budget management, procurement, scheduling meetings, and maintaining project documentation. Assists with project reporting and coordination of logistical arrangements.

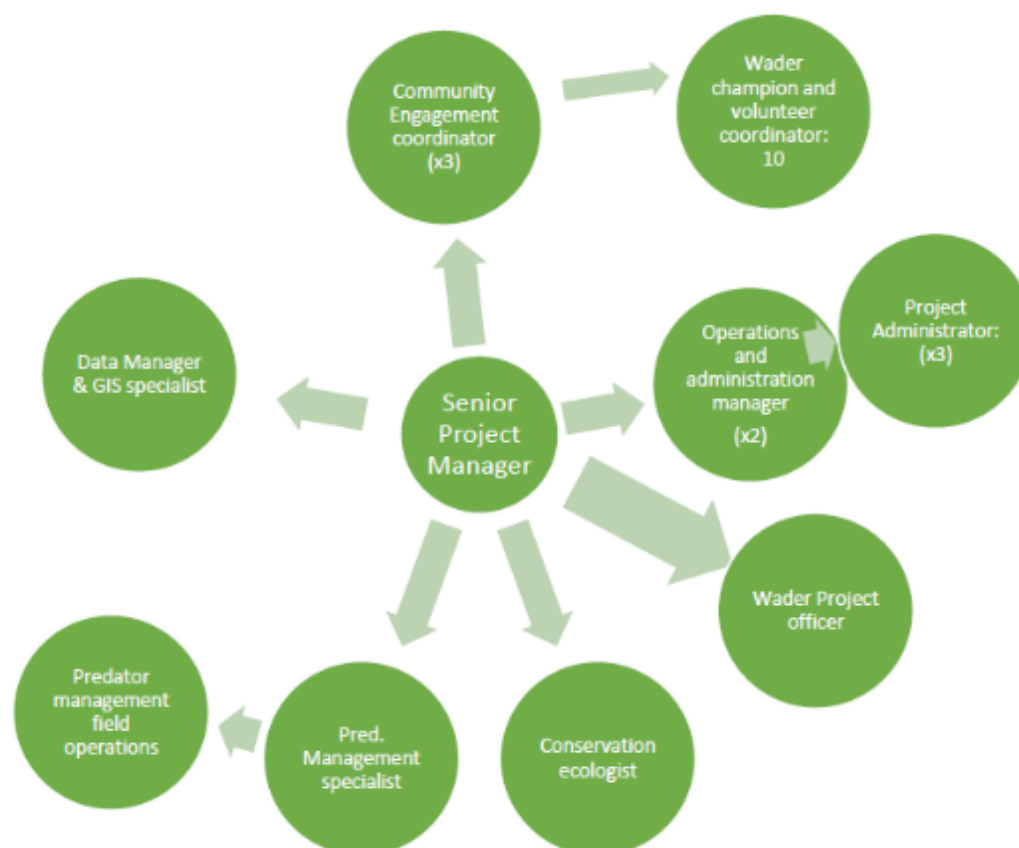


Figure 10. Possible Management Team Structure to effect best results for Breeding Waders, farmers, and agri-environmental efforts in the immediate to long-term and communities in which conservation efforts will be implemented.

An important element in setting up an EIP is the consideration of existing knowledge, expertise, and experience, for example from a landscape/landowner perspective for surveyors and nest protection officers and community engagement personnel. Some significant work to establish good landscape/bird usage knowledge and relationships amongst the communities in key areas has been made by some existing projects (e.g., Curlew Conservation Programme, Irish Breeding Curlew EIP), and this existing resource is highly valuable and continuity would be sensible where this is possible. It is an important point to note that much of the area

of identified WAZs is Gaeltacht, and relevant appointed personnel will need good local knowledge and a good command of the Irish language. In addition, it is not just Gaeltacht areas that the need for local knowledge is clear; this applies in all WAZs.

Supporting projects at local level (e.g., community-based projects, upkeep of existing infrastructure, supplementing efforts under other Agri-Environmental Schemes and initiatives, etc.) is a core part of the potential delivery of this EIP. It is essential to build on existing work and to direct funding to projects within WAZs but also in areas of value outside of defined WAZs.

Established programme teams within WAZs and through central contact points could seek out all possible proposals/opportunities over a given period, for example via an annual call for funding applications. These could then be reviewed and assessed by a steering group (or appointed expert group - including EIP, NPWS and DAFM staff and potentially others) and ranked in terms of their strategic value and impact for Breeding Waders.

These opportunities could be facilitated through local and national level knowledge and awareness and proposals canvassed for from in that given period. The proposals should be able to come from as wide a range of potential sources as possible including from: local communities, NPWS regional teams, NGOs, and the EIPs themselves. A clear set of priorities and assessment criteria would be essential (e.g., locational prioritisation) and a mechanism of ensuring due diligence.

Ecological Data

As previously outlined, the proposed framework that can be developed, would support strategic conservation actions. These include:

- Survey and monitoring
- Research and conservation evidence gathering
- Steering group oversight
- Prioritisation and coordination of actions at national and local levels

These strategic actions will collate and generate data, which will be captured geospatially. This can include data from multiple schemes and sources which can be centrally collated to provide a single source of retrievable information on Breeding Waders, and which can then provide information to inform:

- Reporting to EU on areas under specific management types – with the project collating information on actions across all schemes and projects action.
- Providing accurate and contemporaneous data on Breeding Waders (population, productivity, trends, etc).
- Information on recorded threats and pressures.
- Providing data on the distribution of Breeding Waders to inform planning/licencing decisions.

All ecological data should adhere to NPWS data standards – see this link [NPWS Project Data Standards | National Parks & Wildlife Service](#)

All data collected by the group is in the ownership of both DAFM and NPWS and the OG must submit all data at interim and final reporting stages, as well as to service data requests that may arise outside these periods.

The efficacy of evidence based (i.e., known effective) actions in project areas shall be the subject of evaluation and project design and data collation should bear this in mind at all stages.

Steering group oversight (including the prioritisation and coordination of Breeding Wader conservation actions across multiple schemes) has the potential to provide expert advice on Breeding Wader conservation which

can contribute to the formulation of plans and strategies appropriate to fulfilling obligations under key legislation, as well as being important for the planning and effective delivery of Breeding Wader conservation actions themselves.