Cooldross Breeding Lapwing Project 2025

Project Report Draft 1

Executive Summary

The project is now, perhaps, the most important breeding wader and waterbird site on the east coast of Ireland with nationally significant breeding populations of Lapwing, Redshank, Shoveler and other species. The results of this nature restoration project have been described as 'spectacular' (Nairn, 2026). From a low of five Lapwing nests in 2017, the population increased to at least 41 nests in 2025.

In 2025, Myles Conway took over from Jason Monaghan as Conservation Ranger for the site. Lapwing surveying in 2025 was carried out by at least four trained NPWS fieldworkers who conducted co-ordinated vantage point counts in April, May and June. Estimated productivity for 2025 was calculated as 0.43. This is below the average rate needed to sustain a viable population (Productivity > 0.6 - 0.8). While this is a rough estimate based on vantage point surveying on three dates only, the findings are supported by feedback from ringing activity which found that numbers of fledglings were very low this year.

There is reason to suggest that this successful breeding project may now be acting as a 'honeypot', where the hatching of large numbers of wader chicks, in particular Lapwing chicks, is attracting an array of avian and mammalian predators. This effect may have been made worse by the dry spell in May which could have concentrated higher numbers of Lapwing and other wader chicks into a reduced number of pools – making more of them vulnerable to predation events. This negative effect is despite extensive predator control and adaptive water level management taking place in 2025.

Of note in 2025, there were the 11 Little Tern nests on the artificial beach. Key learnings from this process have been gained which may be relevant for mitigation considerations and planning for future climatic threat scenarios for the Irish population.

Lapwing ringing, led by Jason Monaghan, NPWS Ecologist, continued this year with 23 chicks ringed and five chicks fitted with coloured flags on five days in May and June

Site-wide, co-ordinated NPWS fieldworker vantage point surveys were conducted on the site in 2025. It is hoped in 2026 to build on and refine surveying based on learnings from 2025. To capture more data on predation and other breeding wader and waterbird species, dawn and dusk transect counts are planned for 2026.

The project will continue to collaborate closely with adjacent landowners with a view to expanding breeding wader populations into the wider Murrough wetlands. The project aligns its objectives with those of the Breeding Wader European Innovation Partnership (EIP), and collaboration will continue with the EIP through 2026.

Introduction

Cooldross lagoon and salt meadow is a c. 100 acre coastal conservation site located at Kilcoole Co. Wicklow. The NPWS owns and manages this site, which is part of the Murrough Special Protection Area (SPA; Site code 004186). From a functional perspective, this area serves as a lowland wet grassland habitat for breeding waders. Jason Monaghan took over the site as part of his Conservation Ranger work area in October 2016. From 2017 onwards, improvements in site conservation management have taken place. In 2017, NPWS commissioned a strategic plan outlining particular management prescriptions (Lauder, 2017). The purpose of the plan was to see how the site could be maximised for bird conservation with special consideration of the bird Special Conservation Interests (SCIs) of the SPA. The strategic plan underwent an Appropriate Assessment screening to confirm that it would not be likely to have a significant negative effect on the SPA. In winter, the site is important for Greylag Geese (*Anser anser*), Brent geese (*Branta bernicla hrota*), Teal (*Anas crecca*) and Wigeon (*Anas penelope*) (all SCIs for the SPA).

One of the major aims of the strategic plan was to try to increase the importance of the site for breeding waders, specifically Northern Lapwing (*Vanellus vanellus*) and Common Redshank (*Tringa totanus*) but also to encourage other breeding waders and waterbirds of conservation concern. Lapwing and Redshank populations in Ireland have sharply fallen in recent years. Lapwing numbers declined by 95% in 40 years between 1980 and 2018 and Redshank by a 93% decline over the same period (EEA, 2019). The most recent national estimate in 2023 put the number of breeding Lapwing at 800 breeding pairs and Redshank at 220 pairs (DAFM, 2023). Both Lapwing and Redshank are on the Red List of Birds of Conservation Concern in Ireland (Gilbert et al., 2021). Common Snipe (*Gallinago gallinago*) and Eurasian Oystercatcher (*Haematopus ostralegus*) are also on the Red List, whilst Ringed Plover (*Charadrius hiaticula*) is on the Amber List.

At the end of 2020, a fence measuring 2.4 kilometers was constructed to prevent predators from entering the site, resulting in a significant rise in breeding waders and waterbirds over the subsequent years. Habitat enhancement projects are ongoing, particularly adding to and improving wet features on the site. The availability of wet features and wetland edge for foraging Lapwing and other wader chicks throughout the breeding season is a key factor driving productivity (Ausden et al. 2003, Eglington et al., 2008; Eglington et al. 2010; Game and Wildlife Conservation Trust 2016; Mason 2019). Redshank nesting densities and productivity, for instance, are strongly tied to the amount of available wetland edge (Smart et al. 2006). This resource is crucial given forecasts of drier summers from climate change, especially in eastern Ireland.

The availability of shallow water and associated muddy edge habitat further into the summer is especially important for later breeding wader species such as Redshank and Snipe (Jellesmark et al., 2022; Smart et al. 2006) as well as late Lapwing broods (arising mostly from clutch re-lays).

At Cooldross, the site is broken down into four units: Fields A, B, C and D for management purposes and vantage point survey counts. These fields have traditionally been subjected to different farming methods and, as a result, exhibit some differences in vegetation sward structure and composition. This can have a bearing on bird usage throughout the year.

The importance of Cooldross has been underlined by the Breeding Wader European EIP in which seven Grassland Wader Action Zones or 'WAZ' for Lapwing, Redshank and coastal Dunlin have been chosen. One of these WAZ is the 'Wicklow Coast' based solely on the breeding output of Cooldross in 2023 and its potential to act as a source or core population

area. This is the only grassland breeding wader WAZ on the east coast of Ireland.

Methods

Predator Exclusion Fence Maintenance

Predator Exclusion Fence

A predator exclusion fence of approx. 2.4 km length with 3 electrified strands of 5,000 volts was installed at the end of 2020. The fence is mainly aimed at excluding foxes and badgers from the area, since predation is a major driver of breeding wader and ground-nesting bird decline, and the provision of predator exclusion fences has been shown to increase breeding wader success (Berg et al., 1992; Kennerley, R., 2008; Malpas et al., 2013a; Mason, 2019; Mason & Smart, 2015; McDonald M. A. & Bolton M., 2008; Rickenbach et al., 2011). Increased breeding wader success has already been noted since the installation of the fence at Cooldross. In 2021, after the fence was installed, 19 Lapwing nests were recorded, up from four nests the previous year, with an increase in total fledged birds also noted (Monaghan, 2021). In 2022, a total of 40 Lapwing nests were recorded (Monaghan, 2022). In winter, the site also has 100-120 Greylag geese roosting at night in the lagoon and larger pools, again benefiting from the safety of the predator fence.

In 2025, frequent inspections and maintenance addressed electrical issues and managed vegetation beneath the lower offset strand through spraying and cutting to prevent earthing and power loss. The power source wire also needed regular attention.

Predator Management

Predator management is a key factor affecting breeding wader outcomes (Berg et al., 1992; Buckley et al., 2016; O'Donnell et al., 2021; Malpas et al., 2013b; Mason, 2019; Mason & Smart, 2015; Rickenbach et al., 2011; McDonald M. A. & Bolton M., 2008).

Red fox (*Vulpes vulpes*) control was carried out from April to mid-July inclusive. Research indicates that Lapwing and Redshank breeding increases with both fox control and predator exclusion fences (Jellesmart et al., 2022). Daily corvid control was carried out from March to June inclusive. Mink and rat trapping was also carried out during the season. Licensed control of certain non-target species was also carried out.

Farming

Grazing is a crucial tool for breeding wader management (Hart, 2008; Mason, 2019; Young, 2005) and is important for Lapwing management, providing a short sward for nesting and foraging. Cattle grazing is used at Cooldross (and is preferable to sheep grazing) because it

leaves a sward with variable heights with tussocks. This is beneficial to achieving a broad suite of breeding waders, including Redshank (Smart et al., 2006). Unrestricted grazing operations can cause trampling of wader nests and chicks, disrupt breeding schedules and increase the risk of predation (Ausden et al., 2003; Hart et al., 2002). At Cooldross, grazing cattle are only let into fields sequentially once it is safe to do so, and only when chicks have fledged or moved elsewhere or are in certain parts of the individual fields. Fields A and B have been traditionally mowed for silage and hay. This management supports a suitable sward for wintering Greylag Geese, Brent Geese, and Whooper Swans, and also helps maintain short grass for breeding Lapwing in spring.

Rapid grass growth from late May onwards can negatively affect the foraging ability of Lapwing chicks and other waders and can potentially lead to starvation. Short grass foraging areas are crucial for older wader chicks, especially after water-based predator events such as mink attacks.

Grazing was carried out when safe to do so (i.e. a. when chicks had hatched out and b. either fledged the field completely or were consistently using one part of a field – usually the eastern parts where pools were put in and away from farming interventions) in order to provide short sward foraging habitat.

This meant that in some fields (e.g. field B) strip mowing or strip grazing was carried out. Typically, cattle were brought in for a brief time (1-2 weeks) and then brought out again to quickly allow usually older chicks or fledglings to access the grazed land for feeding again. In 2025, selective grazing of wetland and drain edges was done when safe, opening the ground for Lapwing, Snipe, Redshank, Oystercatcher, and other species to feed. Two areas of fields, lower B and upper C, which are not traditionally used by breeding Lapwing or other wader species, are left for grazing in late May/June (depending on various factors, including the presence of other breeding species) to provide foraging habitat for older chicks and fledglings.

Water Levels

Water levels and the availability of wet features for chicks are an important factor for breeding Lapwing (Ausden et al., 2003; Eglington et al. 2010; Eglington et al. 2008). Water levels were raised and maintained early in the breeding season. This was crucial in increasing the amount of available lagoon wetland edge by flooding shallow peripheral pools, bays and drains, thereby providing important shallow water and muddy edge chick rearing habitat. Raised water levels in the lagoon and associated drains also increased the water table in the adjacent fields, increasing the accessibility of worms and other invertebrates to Lapwing and other waders by pushing worm activity closer to the soil surface (Onrust et al. 2019) and reducing soil probing resistance for feeding Redshank, Snipe and other waders in general (Smart et al. 2006).

Water levels were controlled by adjusting the height of a right-angled collar on an outflow pipe. Using a staff gauge at the southern end of the lagoon for guidance, levels were raised and, where possible, maintained (gauge positioned near the south-eastern shore). As the lagoon is primarily rain-fed, the level reduces in summer due to evaporation.

This spring, water levels were set higher (peak 65cm) to promote Redshank breeding but needed frequent adjustment after rainfall to avoid harming Lapwing nests, especially in field A.

Water levels in the lagoon were allowed to drop slightly to create wet 'draw-down' areas for feeding chicks and were replenished, where necessary, when levels decreased too much from evaporation as summer progressed. This was achieved by regulated tidal exchange of seawater. The availability of shallow water and muddy edge habitat further into the summer is especially important for later breeding wader species such as Redshank and Snipe (Smart

et al., 2006; Mason 2019) as well as late Lapwing broods (arising mostly from clutch relays) (Bellenbaum & Bock, 2009). Water levels may even positively affect Redshank nest site selection as well as breeding outcomes (Eglington et al. 2008; Hale, 1980; Jellesmark, 2022; Smart et al. 2006).

Sward Heights

Sward height measurements were taken on 27th March 2025 (Table 1). Measurements of vegetation heights at the edges of fields were also taken (important areas for grazing wildfowl e.g. Wigeon in winter and waders in summer). Averages and ranges were calculated. Ranges are important in showing diversity of sward heights (and thus variable wader nesting potential) within a particular field. Sward heights and their management are critical in managing Lapwing, Redshank, Snipe and the diverse variety of species now occurring at the site.

Field A looking North, 27th March 2025

	Section Average 2025	Average 2021	Average 2022	Average 2023	Median 27/03/25	Range 27/03/25
A - field	2.525	2.04	1.775	2.125	2	0-6
A – Lagoon edge	4	8.5	1.5	2.8	0	0-4
B - field	4.425	4.02	6.04	4.3	4	2-12
B – Lagoon edge	3	2.5	1.5	4.5	0	0-3
C - field	5.275	4.825	5.325	6.05	5	0-13
C – Lagoon edge	3	2.3	0.8	2.8	0	0-10
D - field	5.525	7.75	6.25	6.18	4	0.5-19
D - Lagoon edge	1.7	3.33	1.76	3.8	1	0-5.5

Table 1: Sward Heights March 2026

Lapwing monitoring

Vantage point observations are needed to give accurate measures of Lapwing breeding productivity (Bolton et al., 2011a, b) and wader productivity in general (Jarrett et al., 2019). Vantage point surveys were carried out in accordance with the methodology described in Bolton et al. (2011a, b).

Vantage point surveys took place on 11/04/2025, 06/05/2025 and 05/06/2025, at approximately three-week intervals. Repeated surveys were spaced as evenly as possible. Trained NPWS fieldworkers conducted surveys using a field recording sheet and an aerial photograph of the location. A minimum of five fieldworkers were positioned to count each zone (A-D) simultaneously, typically three fieldworkers the coastal path covering A and D and two or three fieldworkers covering Zone B and C from the periphery of the fenceline.

Surveys took place in the mornings between 10:00 and 13:00 as the most reliable counts are obtained between 10:00 and 16:00 (Bolton et al., 2011a).

During each visit, fieldworkers were directed to thoroughly observe each field from an elevated position, employing binoculars and a telescope for detailed examination. Fieldworkers counted Lapwings, noted adults with young, and recorded the number and growth stage of all observed chicks. They were provided with the illustration in Figure 1 in order to determine growth stages.

Fieldworkers also recorded the location of Lapwing nests on the aerial photograph of the site provided. The nests of other species, where observed, were also recorded on this.

The size of the breeding population was estimated, following the standard protocol, as half the maximum adult count obtained from the April and May surveys.

An estimate of breeding success (fledglings per female) was obtained from the total number of well-feathered and fledged chicks seen across all survey visits (typically the first well-grown chicks will be recorded on the May visit), expressed relative to the number of breeding pairs assessed from surveys in April and May.

Unlike Bolton's approach, only three vantage point surveys were carried out instead of five. The last survey was cancelled because, after walking through the entire enclosure on June 21st, few birds were observed. No count was undertaken between 7 May and 31 May, as suggested by Bolton (2019), but visit 2 (6th May) was very close to this date.

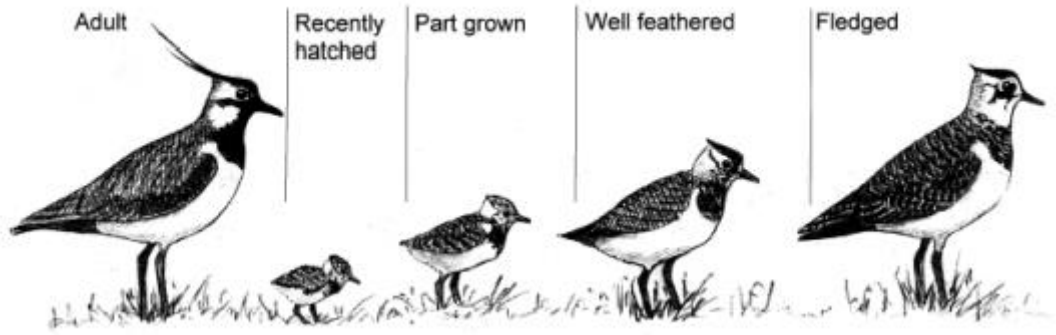

Figure 1: Illustration provided to fieldworkers to standardise assessment of chick growth stages.

Lapwing chick ringing and biometrics

Ringing of Lapwing chicks was carried out again in 2025 on 11/05/2025, 18/05/2025, 25/05/2025, 02/06/2025 and 21/06/2025. Ringing was executed by Jason Monaghan, NPWS Ecologist, with support from additional fieldworkers at various times. A telescope was used to assess the suitability and locations of chicks for ringing and for guiding workers to locate chicks on the ground to catch for ringing. Pulsar thermal imaging binoculars were frequently used to find chicks nearby. This method is most effective in the earlier part of the morning when ground temperatures are lower. Thermal imaging has also been successfully used to monitor and ring Lapwing chicks in the UK (Hughes et al., 2021). Biometric data were collected from each chick. Data collected included wing length, tarsus and toe length, maximum tarsus, head and bill length and weight. BTO metal rings were fitted on all ringed chicks. Orange Darvic flags plus green AC Hughes spirals were fitted on five suitably aged chicks. Ringing visits were conducted only in suitable weather conditions, with the safety considerations for the birds being foremost – i.e., ringing was not conducted in areas where extensive Lapwing clutch relaying was occurring.

Engagement and Education

A site visit was carried out on 13th January with Owen Murphy, Senior Project Manager, Breeding Wader EIP, NPWS Agri-Ecology Unit and NPWS Scientific & Advisory/Research Directorate.

A Coastal Wetland Management Knowledge Exchange Event was hosted at Cooldross on 4th

December, where NPWS Regional Management staff from Donegal visited the site to learn from actions undertaken.

Transition Year Students visited the site and observed the birds from a safe vantage point which avoided disturbance on 10th April 2025.

Disturbance Management

There was an intentional reduction of activity at the site during the pre-breeding and breeding season phases. All site improvement work was completed in advance of spring, with some works being postponed until the following autumn to avoid disturbance. During the breeding season, in-field visits were strictly limited to essential access only. The cessation of BWI staff staying overnight in caravans (as had been traditionally the case) in the south-eastern corner of the site as part of the Kilcoole Little Tern Colony Protection Project has also reduced wader and general site disturbance – this is potentially important in not preventing wader species from nesting further south within the project area.

Lapwing fledgling feeding at a wader pool.

Results

Direct weather effects and influences on wet feature chick feeding resource

In 2025, the Murrough area of County Wicklow experienced notable dry spells during March (39% of 1991-2020 long-term average rainfall nationally, with nearby weather stations like Casement Aerodrome recording low totals) and May (71% of long-term average), amid a national pattern of 64 climatological dry periods from January to August, including numerous dry spells of 15+ consecutive days with < 1mm daily rainfall. These dry spells were exacerbated by drier-than-normal winter/spring carryover**.**

Weather can be a factor in Lapwing nest success and productivity (Eglington et al., 2010; Game and Wildlife Conservancy Trust, 2016; Mason, 2019). Good weather in April, May and early June is conducive for broods hatching out (Monaghan, 2023). The availability of wet pools and wet features that do not entirely dry out during the breeding season can be a determiner of chick success (Ausden et al., 2003; Eglington et al., 2008; Smart et al., 2006). The availability of shallow wetland pools and scrapes is important as wet features provide more than double the biomass of surface and aerial invertebrates than grazed terrestrial habitat (Ausden et al., 2003; Eglington et al., 2010). In addition, chick foraging rates are two to three times higher in wet features as is estimated in biomass intake (Eglington et al. 2010). The spatial availability of wetland feeding areas is important in other regards: the smaller the foraging range of a chick is (i.e., the less distance it has to travel to a feeding ditch or pool), the less chance there is of predation (Game and Wildlife Conservancy Trust 2016). Essentially, the more pools and shallowly graded wetland edge available, the lesser the chance there is of chick predation and so greater survival (Monaghan, 2023).

Fledged Lapwing feeding at a wader scrape edge

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This resource need led to the creation of new in-field pool features in 2021 and 2022, with deeper puddled centres designed to retain water for chicks throughout summer. The drying up of these pools has a negative effect on chick outcomes in two ways: firstly, by reducing chick feeding habitat; and secondly, by concentrating higher numbers of Lapwing and other wader chicks into a reduced number of pools – making more of them more vulnerable to predation events. The importance of wet features has been confirmed by regular observations

of chicks targeting and feeding in these areas. In Cooldross in 2023, broods, including colour-ringed chicks, were seen repeatedly feeding in the re-profiled drain areas, wader pools and shallow flooded margins, validating these management works (Monaghan, 2023).

Lapwing Breeding Results

Breeding Pairs

The number of breeding pairs of Lapwing is calculated as the maximum count between mid-April and the end of May as per Bolton et al. (2011a), divided by two. As shown in Table 2, Visit 1 and Visit 2 were completed before the end of May, so the maximum count of adults was 88 on 11/04/2025. Therefore, the number of breeding pairs was 44.

Table 2: Results of Lapwing Vantage Point Survey

Date	**11/04/2025** **Visit 1**	**06/05/2025** **Visit 2**	**05/06/2025** **Visit 3**
Total no. of adult Lapwing	88	42	10
No. of adults with young	0	15	4
Families	0	1	4
No. of newly hatched chicks	0	15	0
No. of part-grown chicks	0	26	35
No. of well-feathered chicks	0	5	6
No. of fledged chicks	0	2	6

Productivity

Estimation of productivity (fledged chicks per pair) is the sum of the number of well-feathered and fledged chicks across all visits divided by the number of pairs. Productivity for 2025 was calculated as 0.43 (19/44). This is below the average rate needed to sustain a viable population (productivity > 0.6–0.8) (MacDonald & Bolton, 2008; Barrett et al., 2014; Mason, 2019). This may be the result of predation events in 2025. There are signs of density-dependent predation occurring where the hatching of large numbers of Lapwing chicks is attracting the attention of predators, particularly non-target predators such as stoats, grey herons, and otters, despite increased predator control efforts and increased colonial mobbing from increased numbers of breeding waders using the site.

Productivity rate: No. well-feathered and fledglings / total no. of pairs 19/44 = **0.43 chicks per pair**

Calculated productivity may be lower than actual productivity due to the difficulty of accurately estimating Lapwing fledglings (Bolton et al., 2011; Jarrett et al., 2023). It involves dealing with successive waves of hatched, mobile, precocial young over large areas with often difficult and hidden terrain. Estimating fledgling success is particularly difficult when the vegetation height rapidly increases from the middle of May onwards.

Additionally, data may have been missing as no vantage point survey took place between 20 June and 8 July. However, this is unlikely to have made a difference as the entire enclosure was walked on 21st June for the purposes of ringing, and no fledged chicks were seen, and only one chick was ringed. Furthermore, the relatively low number of large chicks suitable to be fitted with colour flags in 2025 (five chicks between 18th May and 2nd June) indicated that chicks were not reaching the fledging stage, corroborating results from Vantage Point counts. In contrast, 15 chicks were suitable to be fitted with colour flags in 2024 (Monaghan, J., 2024).

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Lapwing nests

A maximum count of 41 Lapwing nests was recorded in 2025 from vantage point monitoring on 11th April. Figure 2. shows the locations of all recorded Lapwing nests from this count.

Table 3. Number of nests per field

Zone	A	B	C	D
No. of Lapwing Nests 11/04/25	10	5	7	19

Figure 2: Location of Lapwing nests in 2025

Ringing and Biometric Data Collection



Ringing visits were conducted in good weather and with the necessary licenses and permits in place. In total, 23 chicks were fitted with BTO rings. Five chicks, each weighing approximately 100 grams and aged around three weeks, were deemed appropriate for the application of orange Darvic flags and green AC Hughes spirals. The colour combinations correspond with a current registered Lapwing ringing scheme in Ireland. It is hoped re-sighting of colour-ringed birds will help generate data on survival rates, dispersal, and natal site faithfulness. Such data is especially lacking in an Irish context (Monaghan, 2023). The use of colour flags and the relative ease of re-sighting means that smaller sample sizes can be taken for survival estimates than would otherwise be the case by fitting metal rings alone, which involves catch/re-trapping (Sandercock, 2003). The continuation of the colour ringing scheme will help prove if Cooldross birds breed elsewhere, thus providing evidence that the project area is acting as a source population.

Table 4: Colour flags fitted in 2025 (N=5)

	EK	EL	EN	EP	ET
Date	18/05	18/05	18/05	25/05	02/06

Biometric data collected included: wing length, tarsus and toe length, max tarsus, head and bill length, and weight. Chick weight data can be useful and can be used to determine if food is a limiting factor at the site (Eglington et al., 2008, 2010).

Lapwing chicks can be difficult to locate due to their cryptic colouring. A pair of Pulsar thermal imaging binoculars was used to good success again in locating hiding chicks for ringing in 2025, and this technique has been used in other studies (Hughes et al., 2021). Best results were seen earlier in the morning: as temperature rose as the day progressed, greater amounts of white heat were given off by the surrounding habitat, making it more difficult (to impossible) to distinguish the contrasting shape and pattern of hidden chicks.

Other Wader and Waterbird Species of Conservation Concern

Using vantage point monitoring, the nesting locations/breeding loci of other wader species and waterbirds of conservation concern were noted, where possible. Figure 3. shows the locations of confirmed nests and breeding loci of 5 Red or Amber-listed wader and waterbird species at Cooldross in 2025. It should be noted that there were probably more nests as different survey methodologies, such as walked transects or more extensive vantage point surveys, would likely have revealed more species.

A second survey date in May would be useful for giving accurate numbers on breeding pairs for most species. Transect survey data from two May dates is thought to probably give a more accurate/reliable estimate for most species (less so Lapwing) as adults will be on eggs (or with recently hatched chicks) and numbers somewhat settled (Monaghan, 2023).June dates are also important for later breeding species like Snipe. On 5 June 2025 in Zone D, one adult Ringed Plover with a chick and two adult Shovelers with six chicks were observed.

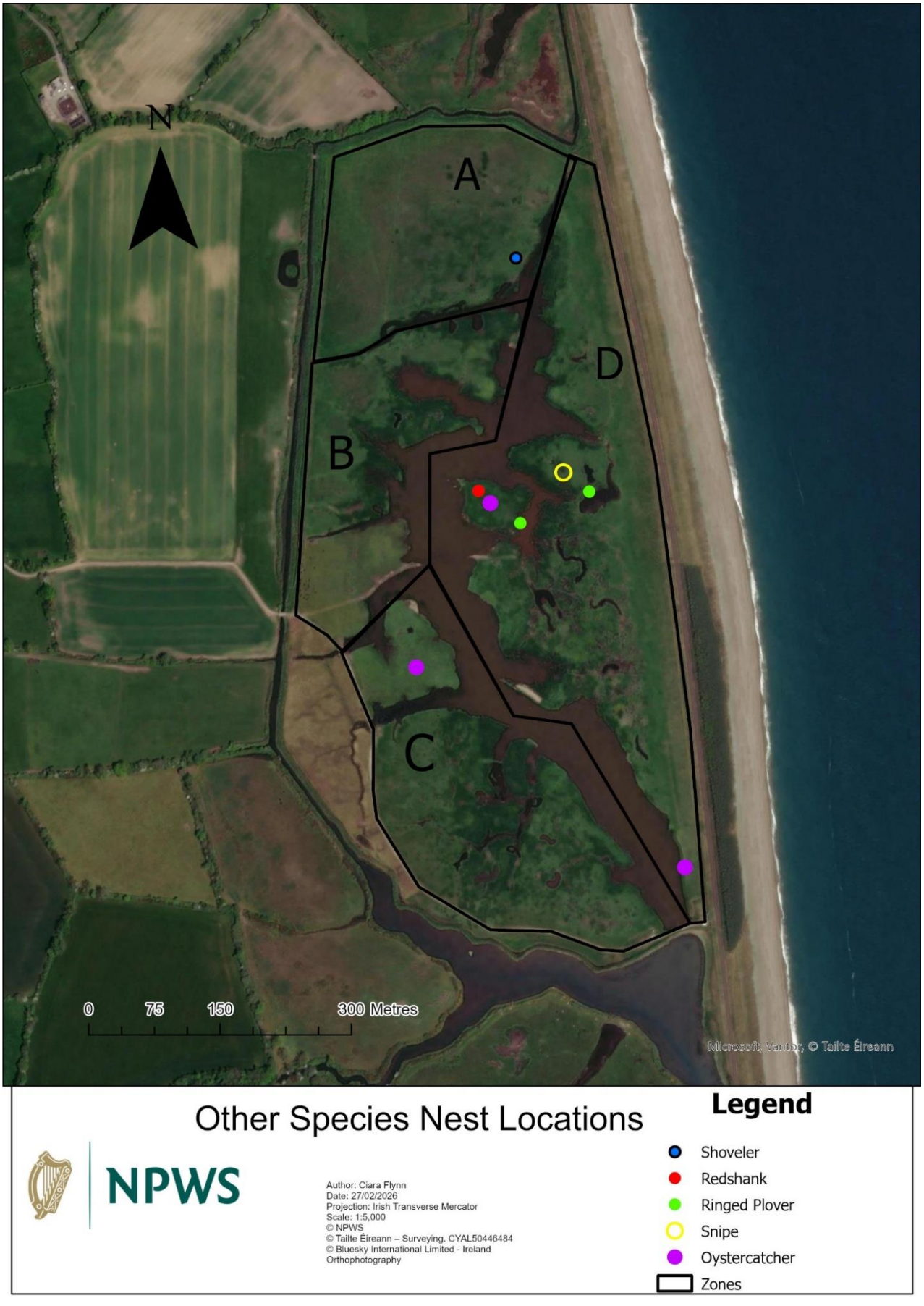

Figure 3: Confirmed breeding data from vantage point monitoring

Little Tern

The provision of the artificial experimental beach, established in 2020, is a climate proofing measure—firstly, providing an alternative nesting habitat for Little Tern in the event of a tidal wipeout of the main colony on Kilcoole beach (which occurs roughly every 10 years). Secondly, to test the viability of attracting Little Terns to a safer, inland nesting habitat with the critical foresight that future sea level rises may potentially reduce or eliminate the current nesting habitat for the main colony on Kilcoole beach (which now holds half of the entire Irish population).

Each year the beach is replenished with shingle (as levels sink during the winter) from a licensed source and arranged, as far as possible, to mimic a natural shingle beach habitat. Since it was established, there have been several observed Little Tern nesting attempts (and courtship behaviour) with breeding behaviour progressing further each year (Monaghan, 2022, 2021). Insights were gained from previous Little Tern breeding failures to pinpoint further management improvements (predator control, use of decoys, habitat modifications etc.).

Eleven Little Tern nests were counted on the experimental beach in 2025 during ringing by Jason Monaghan, which is the highest number recorded so far. Work was done to increase the size of the Little Tern beach after the breeding season ended in 2025…..

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Key Recommendations

- Collarborative conservation will continue with the Breeding Waders EIP with a view to tapping into staff knowledge and expertise of this significantly resourced project. For example, the EIP project has indicated a willingness to share data recording apps. The project could learn from the EIPs Curlew and Dunlins Headstarting programme with a view to implementation at Cooldross (Breeding Waders EIP Newsletter, 2026; Monaghan, J, 2023) .The EIP would benefit from having the Cooldross data added to their database.

- The project will continue to collarborate with nearby landowners with a view to expanding breeding wader populations into the wider Murrough wetlands, through focused farm plans and other schemes and support measures. There have already been a number of breeding events outside of the project area.

- NPWS Fieldworkers will continue to carry out organized vantage point surveys, thereby gaining further skills in wader and waterbird surveying. A second VP count in May should be carried out. Zone D will be split into D1 and D2 for surveying purposes. Survey recording sheets and maps will be amended based on learnings in 2025 to further standardise and increase accuracy and efficiency of recording.

- Walked monitoring transects for breeding waders should be carried out either after dawn or pre-dusk, as per O'Brien and Smith (1992), in addition to VP counts. In 2023, five transect visits were carried out on: April 18th, May 12th, May 26th, June 11th and June 26th (Monaghan, 2023) and similar dates should be considered in 2026 for these transects. Extreme care must be taken to avoid trampling any nests or any concealed/hidden wader chicks during the survey. Transects must only be carried out in suitable weather conditions. Pre-dusk or evening transect walks (timing as per O'Brien and Smith) should be carried out on two dates, primarily to get good counts of drumming Snipe, which are better surveyed pre-dusk. Monaghan, 2023, carried these out on May 26th and June 26th, and similar dates should be used.

- Site management lessons from Cooldross could be used at other NPWS locations. As mentioned earlier, most of our breeding wader species in Ireland are in a perilous state. The establishment of a network of new, model core breeding wader areas or nodes on suitable NPWS properties (as demonstrated at Cooldross and other sites) to implement best-practice, proactive approaches for wader management would be, perhaps, an innovative and helpful development. These potential model NPWS breeding wader areas would, through targeted intensive effort, strive to achieve positive results on the ground: aiming to be source populations to the surrounding countryside, likely in tandem with the Breeding Wader EIP or any other successive projects. This would involve building up in-house NPWS skill-bases and developing a suitable, specialised NPWS structure, supporting each NPWS Division as appropriate, to oversee, assist and achieve practical, substantive results on the ground. This would also add greater functional coherence and prevent project drift. The structures, practical skills capacities and organised resources to meet the challenges ahead currently do not exist within the organisation. But, with foresight and attention, they can be developed. There are no shortcuts to this; it requires organised, resource-targeted, long-term hard work. The potential benefits to developing in-house NPWS expertise and support structures rather than outsourcing are multiple: it empowers staff, ensures project and skillset continuity (with lifespans beyond EU-supported projects but in tandem with them) and, in the long run, is more cost-effective.
- There is great potential for sharing information from the Cooldross Breeding Wader Project—such as proactive management techniques, ringing data, survival rates, innovations in Little Tern management, and other related topics—through scientific articles and publications. This would help spread the project's findings both within Ireland and beyond. Data of this kind are notably scarce in the Irish context.

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