Cooldross Breeding Wader Project 2024 Summary

In all, there was **104 pairs of breeding waders present in 2024** (L, RK, OC, RP, SN). When adding 4 other notable waterbird species (SV, SD, T, AF) gives a **total 117 breeding pairs for 9 wader and waterbird species of conservation concern**. Table 1 shows break down of breeding pairs and Apparently Occupied Territory (AOTs). Some brief breeding behaviour was also noted for both BW and DN.

Table 1: Wader and Waterbirds of conservation concern: Breeding pairs /Apparently Occupied Territories and Nests/Breeding loci.

Species & BTO code	Pairs/AOTs	Nests/ Breeding loci
Lapwing (L.)	72 (Plus c. 2 additional pairs on Stringers land not included in total)	71 (peak)
Redshank (RK)	5	4 (possible 5th in field B)
Oystercatcher (OC)	8	8
Ringed Plover (RP)	6	8
Snipe (SN)	11	11
Shoveler (SV)	8	8
Teal (T.)	1	1
Shelduck (SD)	4	4
Little tern (AF)	2	2
Black-tailed godwit (BW)	1* (v. early in season not included in total)	0
Dunlin (DN)	-	-

Species accounts:

Lapwing

The number of breeding pairs is calculated as the maximum count between mid-April and the end of May as per Bolton et al. (2011) divided by two. Although 162 adults were calculated in late February, a peak count of 143 birds was recorded on a walked wader transect count on 05/05/24 equating to 71.5 pairs, rounded up to 72 pairs. A peak count of 71 nests (excluding relays from the same pairs) was recorded via successive vantage point monitoring during the season (showing good correlation between the two counting methods). Low in-field vegetation height at the start to the middle of the breeding season and the use of telescope from multiple peripheral vantage points, allowed for the accurate recording and locating of lapwing nests.

The difficulty of accurately estimating lapwing and other wader fledglings is well noted (Bolton et al. 2011)(Jarret et al. 2023) as this 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 (roughly coinciding when the first wave of hatchings fledged in 2024).

An estimate total of 78 fledglings was recorded. This was based on counts of fledged and near fledged (well feathered) birds in late May and early June plus recordings of ultimate breeding outcomes for additional broods later in June and early July- taking into account recorded dead fledglings and chicks. Trail camera footage was also used (especially in relation to the more difficult to monitor areas as well as re-sighting colour ringed birds etc.) in estimating fledgling success.

A higher estimate of 91 was also calculated, but the figure of 78 represents a conservative and more realistic figure.

From this a **fledgling rate of 1.08 fledglings per breeding pair** was calculated: which is well above the fledging rate range estimated as needed for a viable population (0.6- 0.8 fledgling per pair- MacDonald and Bolton, 2008). Table 2 shows nest and fledgling estimates per field.

Table 2. Field breakdown: lapwing nest and fledgling estimate.

Field	A	B	C	D	Total
Nests	6	18	9	38	71
Fledgling estimate	12	9	11	46	78

With reference to Table 2: most fields did quite well in terms of breeding output with the exception of field B which, again this year, had poor results (possibly due to grey heron and other predation or perhaps other factors). Better fledging rates in the other fields, which involved multi-fledged broods plus good fledgling results from later broods, compensated for the losses in field B but the latter lowered the overall fledging rate significantly.

Post fledging counts.

Counts of post fledgling birds were conducted in July and August. Post fledgling counts of waders can be used as measure of breeding productivity (Jarret et al., 2019) The presence of large numbers of 2024 ringed fledglings amongst the flocks indicated both good survival rates and the origin of the birds (i.e. that these were Cooldross birds). The counts are shown below. The counts in Table 3 indicate some rough equivalence of the fledgling estimate. Additionally, due to screening from field vegetation, some hidden fledglings may have eluded counting.

Table 3: Post fledgling counts

Date	Fledgling Count
July 15th	75
August 7th	76

Predation of lapwing (and other waterbird species) from grey heron, otter and, to a much lesser extent corvids, was noted. Buzzards were recording successfully taking large lapwing chicks on at least 3 occasions. Buzzards elicited, by far, the greatest mobbing response by lapwing adults (where adults from elsewhere in field and even adults and fledged birds which had moved to adjacent farmland would fly back to help with the mobbing effort) perhaps pointing to them now being seen or perceived as the biggest threat by adult lapwing. Buzzards and grey herons have been noted as significant predators of wader sites from studies in the Netherlands (Ausden et al, 2009). Overall though, increased predator control efforts in 2024 resulted in good productivity for lapwing and other waders.

In addition to the breeding total at Cooldross, 2 lapwing pairs were recorded on agricultural land to the south of the project area (and across the intertidal area)-one pair noted here in 2023). Observation of this land was difficult, but observed adult lapwing activity was consistent with chicks having been hatched- though the effects of grazing cattle and corvids may have affected ultimate breeding outcomes here.

A sample of lapwing chicks were colour ringed again in 2024. Re-sighting records of these plus previous ringed birds which returned as adult birds to breed in 2024 were recorded.

Other species

As with the lapwing data: estimates were gained from Vantage Point and Walked Wader Transect monitoring plus the added reference of tens of thousands of trail camera images.

Redshank

5 breeding pairs/ AOTs were recorded with 4 confirmed pairs in field D. Breeding activity (courtship and mobbing) was also recorded in Fields B and C: the former was counted as a possible additional pair and the latter as territorial activity from a pair in field D. Of note was 2 territories in roughly the same area of field D with c. 3 weeks difference (i.e. one pair was on eggs whilst the other pair chicks were c. 20 days old) in hatching dates- this meant an overlap of fledged and more recently hatched RK chicks feeding in the same pools in this area which was a good indication of breeding progress for this species at the site.

From monitoring, adult RK activity was consistent with 4 and, possibly, five broods having hatched out. Due to the inherent difficulties in monitoring RK chicks (due to their favouring of wet areas in more longer vegetation and the fact that they, in the main, hatch later than lapwing when vegetation height is higher) monitoring gaps and problems with specifically positioned trail cameras, accurate estimation of fledgling can only be reliable for 2 of these broods: with 2 and 1 fledglings respectively estimated from the broods situated north of the causeway in field D. This gives a minimum estimate of 3 fledglings which, for the reasons above, is certainly an underestimate.

Oystercatcher

A minimum of 8 pairs nested in 2024. Good numbers of fledglings were recorded. The extended parental care of fledglings by adults for this species plus their preference to feed often in more open conditions allows for easier monitoring than some other wader species. At least 6 broods were have known to hatch out possibly, again, an underestimate. A minimum total of c. 13 fledglings was estimated, again, this is likely an underestimate. Colour marked adults: CTA and TVU were noted on trail camera images.

Snipe

11 breeding territories were recorded in 2024. There are large difficulties in trying to reliably monitor SN chicks and fledglings: but at least 6 separate broods (likely a large underestimate) were recorded (mainly on trail cameras though some chicks were also observed from VP monitoring). From this, a fledgling estimate of 12 (this again likely a v. large underestimate) was noted. 5-10 day old chicks were recorded in different areas on both 01/06 and 01/08 showing the protracted breeding schedule of this species and also underlying the likely underestimate of the final total.

Ringed plover

6 pairs recorded with 8 known nesting attempts. Away from the experimental artificial beach, nesting attempts in short grass, bare areas of fields, on bare spoil and adjacent to shallow pools were recorded. At least 3 broods were recorded by a combination of VP, WWT monitoring and trail camera images. From this minimum likely estimates of at least 6 fledglings recorded. A nesting pair in field A near the lagoon edge failed and relocated to field B (this failed also): accounting for one of the additional nesting attempts. The pair on the artificial

beach were ultimately successful in fledgling young though their first nesting attempt was in a different part of the beach and, initially, failed likely to jackdaw predation.

Other waders

Black-tailed Godwit

One possible pair was recorded at start of the season in field C (possibly the same pair that was present in 2023) though the female died in mid-April (this bird appeared sick and lethargic leading up to this). The male remained mostly separate from the small summering non-breeding BW flock at the site and was mostly seen in field C. A brief breeding display noted on 29th May, again in Field C, but nothing after to suggest any successful pairing and breeding output. However, this activity suggests possible potential for the future and the suitability of the habitat.

Dunlin

A summering flock of c. 20 birds was present throughout the breeding season. Some individual, brief territorial behaviour in field D was noted during transect monitoring on the following dates: 15/05, 03/06 and 25/06. Extended display flights etc. were, however, not observed.

Other ground nesting waterbird species of conservation concern.

Shoveler

8 pairs with at least 5 broods recorded to have hatched out. Broods were noted from mid-May onwards: with broods recorded in Fields B, C, D and A. One female was seen on 17th May moving a young brood from field A through the predator exclusion fence to the BWI marsh to the north of the site. It is likely that as water levels dropped in Cooldross other broods were moved also. Fledged Shoveler were recorded though numbers were quite low- this may be due to birds being moved as above, the skulking nature of this species to areas of vegetation cover making observation difficult and predation- especially by otter. c. 5 fledglings were recorded by direct observation and trail cameras. This is possibly an under recording for the reasons already given.

Teal

1 pair was recorded in field D. 4 teal fledglings were captured on a trail camera crossing the artificial beach on 19/06 (near where most breeding pair activity was earlier observed through-out the season). This the first time Teal has successfully bred during the project (a pair was present in April and May 2023 though no breeding success was evident). Teal is a scarce breeder in Ireland and, as such, is a species of conservation concern.

Shelduck

5 breeding pairs estimated. Rabbit burrows in field D and on the outside of field D providing nesting habitat. At least 3 broods hatched out. Poor breeding success likely due to otter predation. Aggregates of shell ducklings with their obvious pied colourings seem to be targeted especially by otter incursions. Ducklings may have been moved elsewhere and also monitoring gaps in mid-June may account for a possible under recording but evident from eaten, dead remains of ducklings encountered on the site. Estimation would be poor c. 3 fledglings.

Little tern

2 pairs each hatched out 2 chicks (from clutches of 2 and 3 eggs respectively). One chick from each brood was colour ringed on 28/06 and 22/07. There was c. 3 weeks between hatching dates form these broods. Scarecrows were placed on the beach until early May to displace roosting gulls but jackdaws (never an issue before) may have delayed successful early nesting and were responsible for taking eggs from an early ringed plover nest there. An estimate of 4 fledglings was made based on direct observation and trail camera footage. The later breeding pair nested on part of the artificial beach which was extended in late 2023, (and away from the first pair which nest on the 'old' part of the beach) this was, perhaps, a factor in the increase in breeding pairs here.

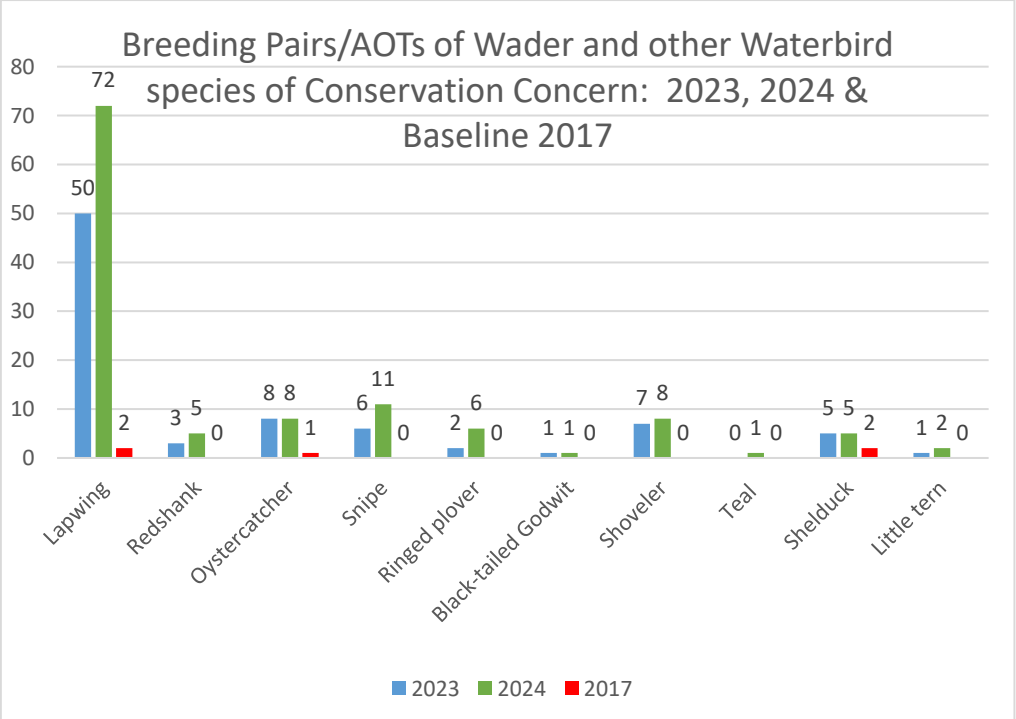
Summary

Graph 1 shows numbers of breeding pairs for 2017, 2023 and 2024. 2024 showed increases on 2023 for most species except shoveler, oystercatcher remained the same and with the addition of teal as a confirmed new breeding species. The red bars indicate the starting baseline of 2017.

From the 2024 results, 104 breeding pairs of waders on a 100 acre site (c. one fifth of which is lagoon) would now make Cooldross one of the highest breeding wader densities anywhere in Ireland or Britain. The successful breeding of 3 duck species of conservation concern plus little tern further adds to the sites significance. Fledgling rates in 2024, particularly for lapwing, were quite good. The upward trend in breeding pairs for redshank is especially notable given its perilously low national population (c. 220bp) and that it had become essentially, functionally extinct as a breeding species on the east coast of Ireland. The recording of at least 2 lapwing pairs outside the site points to the potential of project to expand.

Whilst there are many continued challenges ahead in terms of predator control, moisture and water level controls, providing extended chick feeding resource into the summer, and other issues, the project has achieved its main aims.

Graph 1: Comparison of Breeding Pairs/ AOTS 2023, 2024 and 2017 (project start and baseline).



References

Ausden, M., Bolton, M., Butcher, N., Hoccom, D. G., Smart, J., & Williams, G. (2009). Predation of breeding waders on lowland wet grassland - is it a problem? British Wildlife, October 2009, 29-38

Bolton, M., Bamford, R. Blackburn, C., Cromarty, J., Eglington, S., Ratcliffe, N., Sharpe, F., Stanbury, A., and Smart, J. (2011a). Assessment of simple survey methods to determine breeding population size and productivity of a plover, the Northern Lapwing *Vanellus vanellus*. Wader Study Group Bulletin **118** (3):141-149.

Bolton, M., Bamford, R. Blackburn, C., Cromarty, J., Eglington, S., Ratcliffe, N., Sharpe, F., Stanbury A., and Smart, J. (2011b). Methods for estimating population size, hatching success and productivity for simple field surveys for Northern Lapwing populations. Wader Study Group Bulletin **118** (3):149-152

Jarrett, D., Calladine, J., Milner, J., Wernham, L. and Wilson, M. (2019). Investigating wader productivity in the East Cairngorms Moorland Partnership Area using collaborative methods. BTO Research report 715.

Jarret, D., Lehikoine, N., and Willi, S. (2023) Monitoring wader breeding productivity. Ibis.

MacDonald M.A. and Bolton, M. (2008). Predation on wader nests in Europe. Ibis **150:** 54-73