Kilcoole Little Tern Conservation Project Report 2025

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BirdWatchIreland
protecting birds and biodiversity

An tSeirbhís Páirceanna Náisiúnta agus Fiadhúlra
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Front Cover Image: Little Tern on Kilcoole Beach © BirdWatch Ireland

Tern colony management and protection at Kilcoole, Co. Wicklow was conducted under a Services Contract awarded to BirdWatch Ireland by the National Parks and Wildlife Service, Department of Housing, Local Government and Heritage.

The 2025 project team was Chris Johnson, Jonathan Stanley, Arcadie Fihey, Angus Lee, Paul Cullen, Zeljko Blazevic and Brian Burke from BirdWatch Ireland, and Myles Conway, John Griffin and Wesley Atkinson from NPWS. Volunteers Daniele Gioppo, Jan Rod, Kevin Brooks, Suzanne Law, Aisling Kinsella, Patrick Morgan, Niamh Fitzgerald, Sofia Webb and volunteers from Kilcoole Mens Shed, as well as Lady's Island wardens Jamie Latimer and Róisín Towe.

Acknowledgements

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Contents

Summary

- It was a poor breeding season at Kilcoole in 2025 and circumstantial evidence suggests a shortage of suitable food is the likely cause of low numbers, poor breeding performance and other metrics such as high egg abandonment, delayed incubation periods and loss of small chicks.
- A peak of 121 breeding pairs of Little Terns was recorded at the Kilcoole colony in 2025. An additional 11 pairs nested in Cooldross.
- Productivity was estimated at between 0.18 and 0.92 chicks fledged per pair, with an arithmetic mean of 0.55 chicks/pair which is likely an overestimate based on observations in the latter half of the season.

- Twenty four-hour colony surveillance and monitoring began May 15 and continued until July 28.
- Nesting began relatively late on May 18. Only 10 nests had been established by May 19. A single egg was laid on May 7 but was not subsequently tended to and was considered an 'egg dump' rather than true initiation of nesting.
- Mean clutch size for the season was approximately 2 eggs.
- Overall, 192 nesting attempts were recorded, of which 79 hatched at least 1 chick, while the fate of 3 nests could not be determined.
- Causes of nest losses included predation by Corvids (42 nests), Oystercatchers (16), unidentified avian predator (11), high tides (15), abandonment or inviability (48), and trampling (1).
- The first Little Tern chicks were found on June 8 and the last ones to hatch were on July 10. The first fledglings were noted on July 5.
- The number of chicks fledged from Kilcoole this year is estimated in the range between 22 and 111 with a mean of 67 though this is still likely optimistic based on observations throughout July.

- A total of 110 chicks were BTO-ringed, of which 21 were also colour-ringed. 38 adults were trapped, 4 of which were unringed and 34 already had rings and so had a known age and origin.
- There were 94 unique ring reads of adult Little Terns this year (not including GoPro observations yet to be collated). All but two were originally ringed at Kilcoole (2 from UK), either as chicks (n=86) or adults (n=8). These resightings will feed into the 'Retrapping Adults for Survival' (RAS) project.
- The oldest bird was a 17-year old individual, ringed as a chick at Kilcoole in 2008. Of the rest, 84% (n=72) were in the range from 2- to 11-years old, and three 1-year-old birds were seen, one of which was definitely breeding.

1. Introduction

1.1 Little Terns in Ireland

The Little Tern is listed on Annex I of the European Union Birds Directive (2009/147/EC), thus requiring member states to take special conservation measures to ensure the survival and breeding success of this species. On a national level in Ireland, due to decline in localised breeding populations, the species is currently 'amber-listed' as being of medium level conservation concern (Gilbert *et al.*, 2021). The latest population estimate derived from the 4th national seabird census (2015-2019) is in the range 350-400 pairs (Cummins *et al.* 2019). To place the Irish breeding population in context, the recent 'Seabirds Count' found that 19% of the Little Tern population of Britain and Ireland breed in Ireland (Burnell *et al.*, 2023), which represents around 0.8% of the European population (Birdlife International 2024).

Threats to breeding Little Terns include human disturbance, loss of suitable habitat and flooding from extreme tides and storms. Human disturbance, however, has been a major and long-standing cause of low breeding success (Fasola *et al.*, 2002, Ratcliffe *et al.*, 2008). Wardening schemes and the use of signs and fences to protect the breeding birds (regularly implemented since the mid-1970s in Britain and 1985 in Ireland) can effectively reduce this disturbance. Depredation by foxes, corvids, rats and raptors is arguably the biggest threat to breeding colonies and predation can often reduce the breeding productivity to zero. Predator control has therefore been of huge importance to Little Tern conservation in Ireland and elsewhere in recent years.

1.2 Kilcoole Colony

Little Terns have been recorded breeding at Kilcoole since at least 1879 (O'Briain & Farrelly, 1990). By the 1980s breeding success at the colony was consistently low due to predation pressures and disturbance. In response to this, the Little Tern protection scheme was set up in 1985. The colony has steadily grown, though there have been some setbacks with years of very low productivity. The most recent year of total failure was 2012 when a total of 110 nesting attempts were made by a minimum of 86 breeding pairs. However, no eggs survived to hatch due to the effects of severe storm events backed by high tides and subsequent depredation by corvids (Keogh *et al.*, 2012). In 2024 the colony reached a peak of 285 breeding pairs (Johnson *et al.*, 2024), and 2023 saw the highest number of chicks fledged in a season (a potential maximum of 439 chicks; Johnson *et al.*, 2023).

At Kilcoole the Little Terns nest on the shingle beach to the north of "the Breaches" (53.091508, -

6.037523). This part of the colony encompasses c.500m of beach, starting from the Breaches and continuing northwards beyond the southern end of the stand of Sea Buckthorn. Although most nesting attempts are concentrated in this area (named K-colony), a smaller sub-colony, known as S-colony, is sometimes established on the south side of the Breaches. The size of this sub-colony has varied throughout the years, with a peak of 29 nesting attempts in 2019 (Johnson *et al.*, 2019) but none at all from 2020 to 2024.

The breeding habitat at Kilcoole is classified as 'shingle and gravel bank', after Fossitt (2000). The shingle is approximately 20-30m wide and has accumulated to form an elevated ridge above the mean high-water mark. The profile of the shingle is subject to intermittent changes during spring tides and adverse weather. On the landward side, the shingle has been colonised by patches of Sea Sandwort, Sea Spurge, along with occasional Sea Mayweed, Yellow Horned Poppy and Sea Rocket. Behind the shingle lies a strip of flattened fixed dunes some 30-40m wide (Fossitt, 2000). Marram Grass dominates the vegetation. The dunes are bisected by a pathway which runs the length of the beach and have been greatly degraded by persistent trampling. However, the vegetation is advantageous in that it provides a small buffer between birds nesting on the shingle and pedestrians walking on the footpath. This buffer zone, however, does not fully shield nesting birds from disturbances, as the presence of pedestrians often causes nesting birds to take flight. This section of beach, described in conjunction with the Murrough to the south, was classified as a site of high conservation interest in the National Shingle Beach Survey of Ireland (Moore and Wilson, 1999).

The adjacent brackish lagoon (i.e. 'The Breaches') is thought to be one of the main reasons Little Terns have been attracted to this site (O'Briain & Farrelly, 1990). This lagoon is tidal in nature, filling and ebbing through the narrow Breaches channel and otherwise separated from the sea by the shingle bank. Several freshwater channels feed this lagoon and provide the terns with water for bathing and brackish water shrimps (*Gammarus spp*.) and gobies (*Pomatoschistus spp.*) for feeding. Common Goby (*Pomatoschistus microps*) can be a large part of the diet of Little Tern chicks up to three or four days old (Phalan, 2000). This feeding area is often essential during poor weather conditions when offshore feeding opportunities are reduced. Newly fledged chicks also practice hunting there when the tide is high. Due to the mobile nature of the shingle, strong tidal currents offshore, and the exposed nature of this stretch of coastline to easterly winds, the shingle often shifts, blocking the Breaches outlet, and the lagoon remains flooded.

1.3 Project Aims

The principal aim of the Little Tern Protection Scheme is "To ensure and promote the survival and breeding success of Little Terns at Kilcoole by minimising disturbance by humans and predation, in order to fulfil Ireland's legal obligations under the EU Birds Directive".

Strategies employed by BirdWatch Ireland to achieve this aim include:

- Promote awareness amongst the visiting public, to seek their co-operation in minimising human disturbance but allowing them to appreciate a seabird colony in action
- Create physical barriers to prevent people and terrestrial predators accessing nest sites
- Maintain colony surveillance for the early detection of predators and take appropriate steps to minimise loss to predation and environmental factors.
- Monitor the breeding performance of the colony, to measure the success of the project and increase our knowledge of Little Tern ecology
- Ring and colour ring Little Terns to improve our understanding of site fidelity, survival rates and longevity, movements and other demographic information

2. Methods

2.1 Project Staffing

The 2024 project team was comprised of day wardens Chris Johnson, Jonathan Stanley and Arcadie Fihey, and night wardens/conservation keepers Angus Lee, Paul Cullen and Zeljko Blazevic. The three day wardens have worked on the project before, and the experience of CJ in particular has been a huge asset to the project in recent years and has allowed for much greater organisation, efficiency and retention of knowledge than in previous years when completely different wardens started each year. Two of the day wardens have worked on this project before and the experience of CJ has been a huge asset to the project in recent years and allowed for much greater organisation, efficiency and retention of knowledge than in the past when completely different wardens started each year. Similarly, two of the conservation keepers have worked on the project before and the long-term involvement of AL has been invaluable in building a valuable knowledge of the site and the threats therein. The other night wardens too brought a high level of experience and skill with regards predator control. Some were able to use thermal equipment which was of huge benefit to the project.

2.2 Project Set-up

The set-up period ran from May 1 to May 14, during which time staff set up the fencing, signage and equipment for the project and began to exclude people from the core nesting area. Predator control also began on May 1. Full 24/7 monitoring began on Thursday May 15, and ran until Sunday July 27, when all chicks had long since left the main colony area and there was no Little Tern activity in the vicinity of the colony.

Colony monitoring utilises an elevated, weatherproof hide positioned approximately at the mid-point of the colony, just into the marram grass adjoining the shingle beach. This provides excellent vantage to the north and south of the colony. The day warden's daily routine typically consists of making counts of birds, locating and recording new nests, monitoring existing nests for brooding birds, and nest visits to check the status of eggs or chicks. The extent to which these activities are conducted changes as the season progresses and as weather dictates. A daily log is maintained where details of personnel, weather, tides, work undertaken, tern activity, nest status, disturbances, visitors, and other wildlife observations are recorded.

2.2.1 Colony Fencing

The colony is enclosed within a series of fences which afford high levels of protection from people and predators. A “predator fence” comprising a flexi-net fence, and a three-strand electric fence positioned approximately 20 cm outside it, encloses the nesting area. Each strand of the electric fence is connected to an individual battery unit, and these are activated overnight. A “buffer” fence (a.k.a. the public fence) is also put in place to minimise disturbance to nesting birds. It comprises another line of flexi-net which deters members of the public, and dogs, from approaching the interior predator fence. It also cordons-off the beach and foreshore areas to the north and south of the colony. At the northern end, the flexi-net barrier extends as far down the beach as practical. Then, a rope barrier is used which can be extended down the beach at low tide. To the south, the fence is attached to the railings of the railway footbridge. These measures reasonably maximise the distance between public approach and the interior predator fence, minimising disturbance, and affording an outer barrier to potential intruders.

The interior of the core nesting area was subdivided into seven sections (A to G) for ease of nesting recording and monitoring. This year, extra fencing was put in place on the beach just south of the Breaches channel following discovery of Little Tern and Ringed Plover nests.

2.2.2 Information Signs

Twelve new double-sided signs were commissioned in 2022 thanks to a donation by ICA Ashford, which forewarn and advise people that they are approaching the colony and provide basic ecological information about Little Terns. These were placed at the northern and southern approaches to the colony to provide sufficient forewarning that walkers are approaching the nesting area. Other signage advising the public on the presence of electric fencing, and requests to refrain from crossing fences and maintain control of their dogs by keeping them leashed, are also put in place.

2.3 Predator Management

Whilst the fencing system provides a basic level of protection from predators, other tactics to deter and control avian and mammalian predators are critical to the success of the colony. The colony at Kilcoole is particularly vulnerable to Corvid predation because of high numbers of these birds in the area, and predation of nests and chicks occurs in most years. Hooded Crows forage extensively around the lagoons, and often on the beach, so are well placed to exploit unguarded nests or chicks. Rooks, Magpies and even Jackdaws pose similar threats when present. Day

wardens maintain a high level of vigilance against all avian predators, and if any approach or enter the colony, they are chased off. This approach can be found wanting on occasions, given the size of the nesting area and the cleverness and determination of the predators involved. Raptors too are nearly impossible to deter once they have learned there is a food source available. The conservation keepers (night wardens) control problematic corvids on a regular basis throughout the season, but particularly in June and early July when they pose the greatest threat. In 2025 there was additional regular effort to control corvids during daylight hours, given the significant problems they caused in 2024 (Johnson *et al.,* 2024).

Mammalian predators (mostly Fox, secondarily Mink) also pose a significant threat and have been the cause of major losses of eggs, chicks and adult birds in the past, and these are also controlled by night wardens in the vicinity of the Little Tern colony. Two deterrent "Fox Lamps" are installed at the northern and southern ends of the colony and are operated throughout the season, though their effectiveness is limited at best. In addition, two baited cage traps for foxes were maintained in discrete locations this year in an attempt to minimise the necessity of lethal control, though these have proven similarly ineffective to date. With regards to Mink, a number of Mink traps are deployed when a Mink or signs of Mink have been seen. Hedgehogs also pose a threat. During setup, after the internal fencing is erected, the core nesting area is thoroughly searched for any hidden hedgehogs. This internal fencing comprises a double layer of flexi-netting and provides an effective barrier against incursions.

2.4 Monitoring

2.6.1 Flush Counts & Roost Counts

Counts of dreading Little Terns are conducted at opportune times during each day and the maximum recorded in daily logs. These provide a ballpark figure for the number of birds present that may be expected to nest. Once chicks start to fledge, separate fledgling counts can be conducted to provide a rough assessment of colony productivity. These counts, however, decrease in usefulness after the first two weeks, as fledglings often begin to leave the colony around two weeks after fledging (Keogh *et al.*, 2011) and cannot, therefore, be used in estimating seasonal totals. Regardless, they can be a useful monitoring technique. For example, very consistently low counts may indicate significant chick losses. Counting is best conducted during evenings when most of the birds roost along the foreshore. Time permitting, ring reading during counts can also provide useful information, for example, in monitoring survival and assessing the

duration of time spent at the colony before dispersal, though this requires calm conditions and a high-powered spotting scope due to the small size of the Little Tern rings.

2.4.2 Nest Location and Recording

Nests are found by observing the behaviour of the birds and noting particular cues including courtship displays and courtship feeding, copulations, and scrape building activities, which indicate that birds are preparing to start, or have started nesting. When a bird is observed sitting, an exploratory visit is made to the spot to determine if a nest has been established. If so, the nest is marked and recorded. Marking uses a system of 3 marker stones placed approximately 0.5 – 1.0 metre around the scrape, each of which is inscribed with a nest number. The marker stones are oriented to be visible from key vantage points including the hide, the "warden's path", and from the northern or southern ends of colony fencing. The nest is then described in terms of the date it was discovered and the number of eggs it contains. Numbers are allocated to each nest in the order in which they are found. "Pinning" in Google Maps is then used to record coordinates for each nest and provides a handy nest location map on mobile devices. Later, this data is imported into a GIS to produce a colony map.

Once marked and processed, nests are then monitored. Incubation checks are conducted from the hide and other vantage points each day to monitor nest status (active/incubated etc.). Arguably the most important reason for daily monitoring of nests is to quickly identify any predation incidents so that a focused effort can be put into addressing these. In addition, nests are visited to record nest progress and the condition of eggs and chicks during the laying and hatching stages. A Nest History data sheet (see Table 1) for all nests is kept which records whether incubation has been observed at the nest. Following nest visits, the number of eggs or chicks observed is added. Shorthand notes can be used to log specific events or occurrences. Monitoring of nests continues until all chicks and adult birds have stopped using it.

Table 1: Example of a nest summary sheet where: i = incubating; ni = not incubating; e = egg; y = chick; b = brooding; ln = chicks have left the nest. Depredation incidents (P) and egg or nest losses are also recorded.

Nest no.	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul	17-Jul
1	2e, i	2e, i	2e, i	1e,1y, b	2y, b	2y, b	ln	-
2	3e, i	3e, ni	3e, ni	3e, ni	3e, ni	ab	-	-
3	3e, i	3e, i	P, 2e,i	2e, i	2e, i	tide	-	-
Etc.	…	…	…	…	…			…

2.4.3 Chick Ringing and Biometrics

Chicks are fitted with a British Trust for Ornithology (BT0) metal ring (size B+) on their right leg. This distinguishes them from chicks ringed at the Baltray, Portrane, Cahore and Lady's Island colonies, which are ringed on the left leg. Most Little Tern chicks are ringed in or near the nest scrape so the nest of origin is known, and their exact ages can be calculated if subsequently re-trapped. The day of hatching is deemed Day 0, the day after that, Day 1, and so forth.

During ringing and any subsequent re-trapping, the wing and weight of each chick are measured. Any chicks caught when they are around two weeks or older are colour-ringed using a green ring with a unique three-character alpha-numeric code beginning with the letter 'I', 'A', 'B' or 'C' (Figure 1). This colour ringing scheme is coordinated by BirdWatch Ireland and used at all Irish Little Tern colonies. All Kilcoole Little Terns have their colour rings applied to the left leg, to distinguish them from those at other Irish colonies where they are colour ringed on the right leg. In periods of poor weather ringing is prioritised and biometrics are not taken, to minimise disturbance and impacts to the chicks and colony.

During particularly busy periods or times when there are poor weather conditions or high levels of disturbance or predator pressure, the priority is to simply ring (and colour ring) as many chicks as possible, and the collection of biometric data is considered secondary and only done when conditions and time allow.

Figure 1: Colour ringed Kilcoole Little Tern chick, GW(CA3). Photo: Arcadie Fihey

2.4.4 Ringing and Resighting of Adults

Ringing of chicks is important to determine survival and productivity, and subsequent resighting of ringed birds as adults is important to also assess breeding site fidelity, site interchange, breeding performance, mate fidelity and differential survival rates, all of which may help explain changing numbers of breeding pairs at the colony, or differing population trends at different locations. While some ring-reading is carried out via scope at Kilcoole, the reality of the small size of the birds' tarsi, the corresponding rings, and the undulating terrain of a shingle beach mean that ring-reading is very difficult here in comparison to other colonies where there is more flat sandy terrain, or other larger tern species that perch on walls, railings, boulders etc.

To improve on the recording of ringed adults at the Kilcoole colony, nest-trapping has been carried out at Kilcoole since 2021. This has the advantage of not only recording colour-ringed individuals that might not otherwise be seen but also catching birds only wearing a metal ring that may have preceded the recent colour-ringing project. These individuals can then be colour-ringed and will be more likely to be recorded in the future, thus reducing the potential bias in the dataset. Lastly, a number of unringed birds are also caught, and while these don't provide information on origins or age on first capture, they will be able to contribute in the future. Nest-trapping is best done in the latter half of the incubation period, and by experienced licensed ringers. It should only be done during suitably calm, dry weather, and for a few hours at a time so as not to cause significant disturbance in one part of the colony for extended periods.

GoPros are also used as a means of ring-reading at Kilcoole (Hogan, 2020). As of 2024 we have four GoPros to maximise the efficiency and returns of this method. The camera is placed on the edge of the nest, angled so that the sun is behind it, and set on a timelapse setting to take a photograph every 0.5 seconds. As the adult birds return to the nest, adjust their sitting position or leave the nest, there are potential opportunities for a colour ring to be photographed. The cameras are retrieved after 10-15 minutes, and successive GoPro deployments are spread out around the colony so as to minimise disturbance. Keeping the deployments short also ensured that several nests could be recorded within the battery life of the cameras. Given the rapid accumulation of nests early in the season, and the large total number of nests to be monitored, as well as limitations on staff time, batter power and suitable weather conditions, each nest was only recorded once via GoPro in 2024. The main drawback of this method is that metal rings can't be read, but as nest-trapping of adults continues over the years we will achieve a higher proportion of colour-ringed individuals nesting in the colony.

The Kilcoole Little Tern project has now been registered with the BTO as a 'Retrapping Adults for Survival' (RAS) project and resightings of ringed birds at the colony, from all sources, will

contribute to these statistics. This is only the second Little Tern project to be registered as a RAS and will help develop adult survival rates for the Kilcoole Little Terns in the future.

2.5 Ringed Plover and Oystercatcher

Given that Ireland's breeding populations of Ringed Plover and Oystercatcher are amber- and red-listed respectively (Gilbert *et al.* 2021), there has been an increased effort in recent years to document and monitor their nesting attempts in and around the Little Tern colony. A new colour-ringing project for Ringed Plover began in 2022, coordinated by BB, and efforts to nest-trap and colour-ring adults have continued this year. Oystercatchers are also colour-ringed, using rings from the Dublin Bay Birds Project (BirdWatch Ireland Ringing Group).

2.6 Public Awareness and Media

Wardens interacted with the public on a regular basis and provided information and updates on the season's progress. Local wildlife photographers were present on a regular basis throughout the season, photographing the Little Terns and Ringed Plovers, and in July arrived in numbers to photograph a juvenile Cuckoo. In May there were visits to the colony by the Wicklow Branch of BirdWatch Ireland and St. Catherine's Special School. NPWS staff from Knocksink Education Centre also organised a public event, taking in both the Little Tern colony and the conservation project at Cooldross.

In addition a Little Tern flag was raised at Kilcoole train station at the start of May to signal the return of the birds and the conservation project on the beach. This flag is a legacy of the 2024 'Tern the Tide' project and the flag and flagpole are maintained by Irish Rail.

3. Results

3.1 Weather

The 2025 breeding season saw broadly favourable weather conditions for the colony, with few extreme events. Several detrimental episodes did occur however, but any breeding season might expect similar. The early season saw perhaps the most trying conditions for the colony however no adverse effects were obvious during colony establishment. A westerly (but warm) regime was active during the last week of May bringing showers and drizzly rain at times. This was followed by a cool and wet start to June however nest establishment continued at a steady pace throughout this time. Conditions broadly improved thereafter, getting warmer and drier generally, although very wet and windy conditions did occur at times. Again, no detrimental effects were noted. Spring tides are expected to impact low lying nests during any season, but much depends on wind conditions at the time. Unfortunately, for two of the spring tides, wave action was exacerbated by strong and gusty winds causing the loss of 15 nests. The main meteorological impact to the colony was on young chicks in early July. The mornings of 1 and 2 July were noted in logs as being “Cold”, while there was a cool and fresh northerly airflow. No rain was recorded for this time, and when numbers of dead young chicks started being found, it was not immediately clear as to the cause. As we continued to find corpses over the following days and weeks, their condition and ages seemed consistent with them having all perished around the same time i.e. 1 or 2 July. Met Éireann’s Dublin Airport weather station recorded ground temperatures for July 1 and 2 as 4.1°C and 2.8°C respectively. It is likely that similar temperatures occurred at the beach, suggesting a likely cause for the deaths. These chicks, however, may have been in poor condition at the time, making them particularly vulnerable.

3.2 The Breaches

On arrival at the colony, we found the Breaches channel was strongly veering north and this northward migration continued while we were erecting the fencing. Unchecked, this situation can eventually knock down fencing and threaten nest sites. It also increases the likelihood of the channel becoming blocked. It was decided, therefore, to redirect the channel straight out to sea and this was undertaken in late May. Interestingly, the Google Earth image used in the colony map (Figure 4) was taken only a few days after this and shows the straightened channel and the hitherto extent of northward

migration. Of course, the prevailing wind conditions and tidal phases can cause the process to repeat, and on 7 July the channel became blocked again. John Nugent at the Newcastle Airfield was alerted and organised for this to be rectified the following day. The quick responses to the need to rectify the channel are very much appreciated, as delays of even a few days can have significant direct consequences in the form of nest losses, and indirect impacts such as Hooded Crows and Rooks altering their foraging strategy away from the intertidal zone and seeking other food sources such as eggs and chicks.

3.3 Colony Size and Breeding Activity

3.3.1 Nesting Activity

On arrival at the colony for site setup in early May, the numbers of Little Terns present initially seemed as normal, with casual counts varying from 40 to 150 birds. It became clear however, that for most of the time, barely 50 birds were present. In addition, there were frequent prolonged absences and little to suggest that a colony might soon establish. Few pairs were exploring the beach, while very little offshore fishing could be observed – it was not "business as usual". On 07 May a single egg was found, perhaps indicating the beginning of nesting, however this transpired to be just an "egg dump" i.e. the discarding of an egg rather than a true nesting attempt. A first "true" nest only appeared on 14 May and it was another four days before a second nest was found. It took almost a week for ten nests to become established. By contrast the first egg in 2024 was on 09 May, though in the years prior mid-May was the norm. The number of Terns present at this time remained remarkably low (at around 30 birds, Figure 2) and it was not until the fourth week of May when we saw any clear momentum in colony development (Figure 3).

Around this time, reports arrived that other East Coast sites were reporting larger than usual numbers of Terns. In addition, 14 May saw reports of an apparent colony of an estimated 50 pairs, 3km north of the Kilcoole colony (53.118078° N,-6.041895° W). This began to make sense of our own observations of low numbers and an apparent hesitancy in colony establishment. Nevertheless, Tern numbers were increasing at Kilcoole, and nest establishment did pick up, albeit at a modest pace. Although some 200 birds had arrived by 22 May, there was no surge in nest establishment. The various breeding behaviours were readily being observed yet pairs seemed hesitant to commit.

By the end of May and early June, our largest dread counts were recording 200 to 250 birds, and these generally stabilised through most of June. This suggested that these birds constituted the breeding population for 2025. Some 100 nests were active by 7 June, and the Active Nest Count

(Figure 2) eventually peaked on 16 June, though there had been some losses in the days prior.

Figure 4 shows the location and fates of nests in the main colony, and those occurring just south of the Breaches channel. Predation was particularly severe south of the Breaches, and secondarily at the northern end of the colony (see Predation and Nest Loss section). The locations of abandoned nests seem random, while losses to high tides occurred on three separate occasions, especially nearer the Breaches – this area can be particularly vulnerable during high and spring tides with onshore winds, depending on erosion effects caused by channel movements.

A peak of eleven Little Tern nests were also established on the artificial beach in the Cooldross Reserve, a significant increase from the two during the 2024 Breeding Season

The location near to the Newcastle Airfield where a small colony is often established was monitored from time to time for Tern activity. In late May, a birdwatcher reported a small flock on the beach there and suggested nesting might have been imminent, however our monitoring showed no activity.

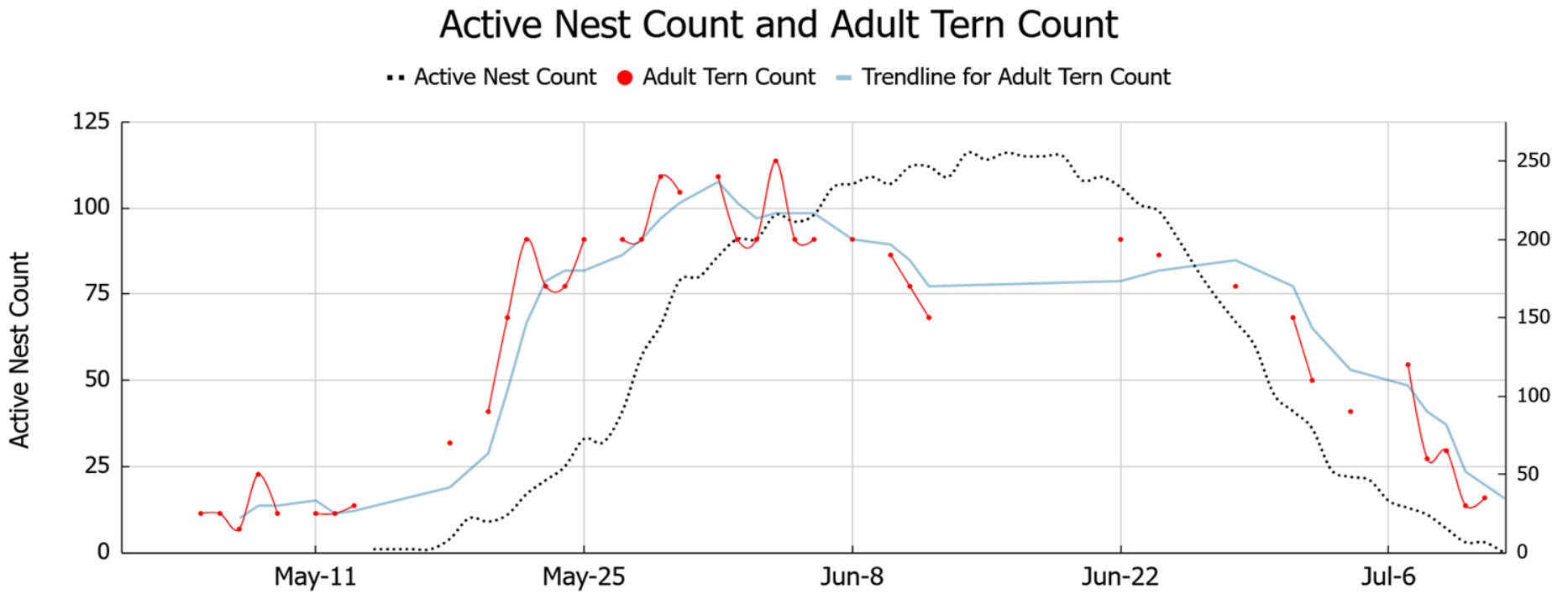

Figure 2: Counts of Adult Little Terns and Active Nests at the Kilcoole Little Tern colony during the 2025 breeding season.

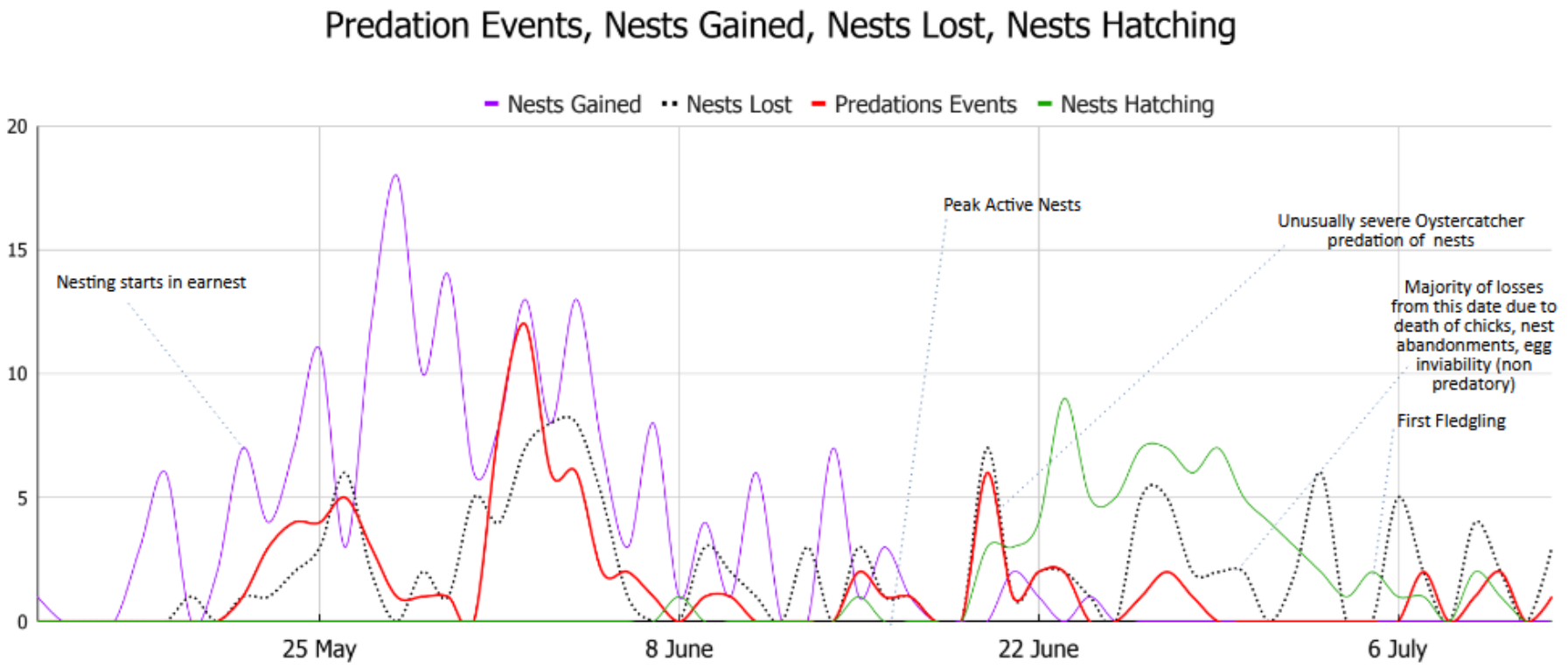

Figure 3: Broad chronology of nest establishment, loss and hatching, and other significant events at the Kilcoole Little Tern colony during the 2025 breeding season.

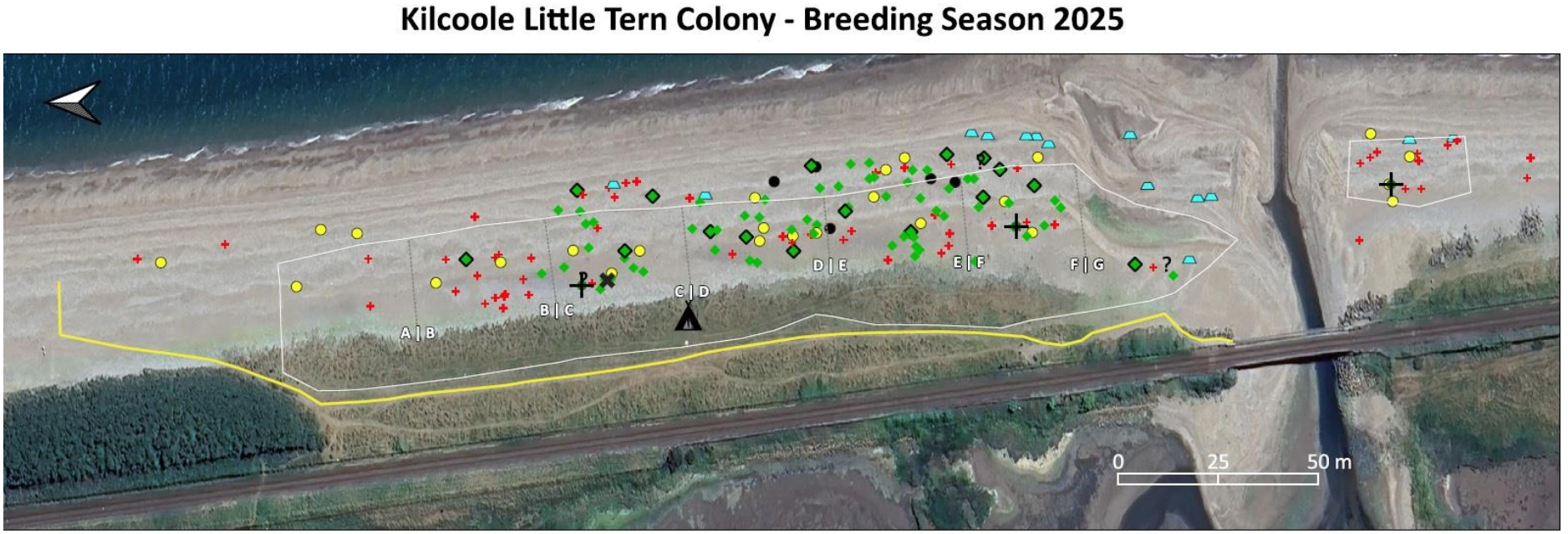

Figure 4: Aerial view of the Little Tern colony at Kilcoole in 2025, including positioning of fences and hide, and location and fate of nests.

3.2.3 Breeding Pairs

The peak number of active nests was recorded on 16 June at 116 pairs. It is possible that this figure does not include some 12 nests lost in the days approaching this date. Clutch replacement following a loss is typical in Little Terns, especially under favourable circumstances. In that case, we assume an average pair re-lays 8 days after a loss (Massey & Fancher, 1989). However, we do NOT consider the circumstances at the colony in 2025 as broadly "favourable" for re-lay clutches to be expected, and it difficult to be very confident that any of the 12 nests lost in the 8 days prior to the peak would have been replaced, especially given the relatively late date – generally, re-laying is less and less likely through June. As it happened, only 5 new nests were recorded after the peak. We assume that these represent pairs not accounted for by the 116 nest peak, being a possible combination of replacement clutches for nests lost, and/or breeders arriving late to the colony. We estimate therefore a breeding population of 121 pairs (pairs at peak, 116, plus new nests established in the week following the peak, 5) for the main beach colony and use this figure in our estimates of season productivity. Furthermore we add the 11 pairs at Cooldross, recorded in mid-June, for an overall 'site' total of 132 pairs. This corresponds well to the maximum dread count at the colony being around 250 birds at this time. This total represents an 11-year low for the Kilcoole colony (120 pairs in 2014), and amounts to less than half the numbers recorded here last summer (287 pairs; Figure 5).

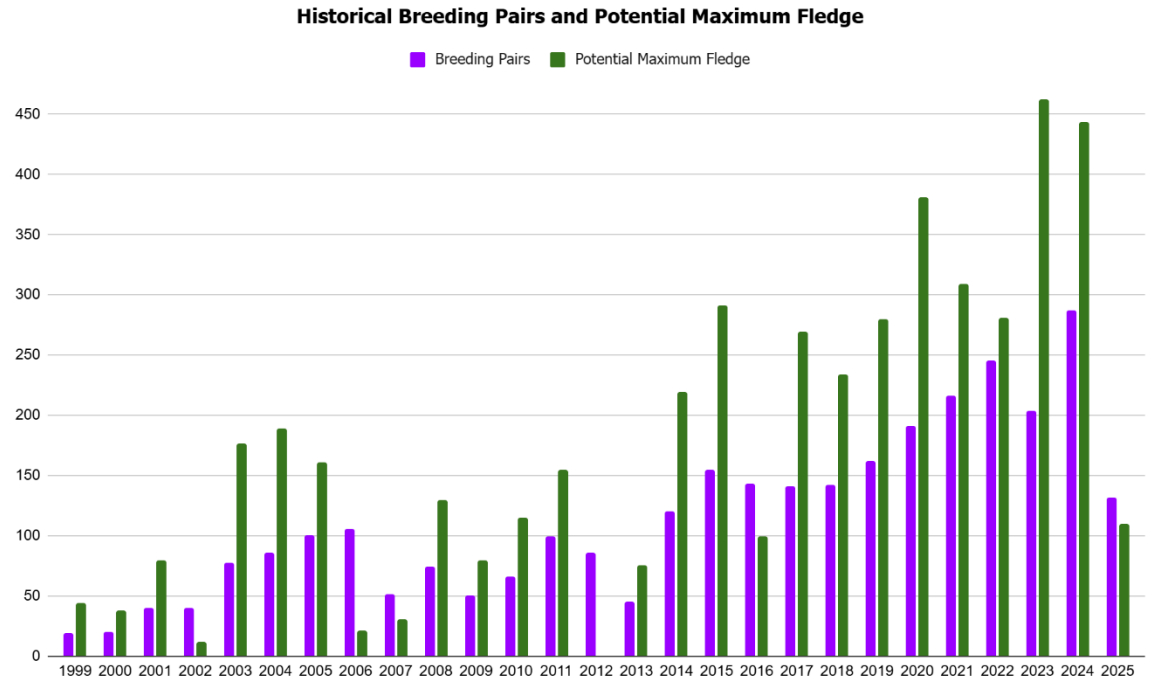

Figure 5: Number of Little Tern breeding pairs, and potential maximum number of chicks fledged at the Kilcoole colony for years 1999 – 2025, including pairs/fledglings from Cooldross.

3.2.4 Clutches and Incubation

Over the course of the summer, 192 nesting attempts were recorded at the colony, consisting of primary/original nesting attempts as well as re-laid nests and late nests by inexperienced breeders later in the season. Twenty-nine of the clutches (~15%) were of 3 eggs, 125 were of 2 eggs (~65%), with the remaining 38 clutches being of 1 egg (~20%). Six "Egg Dumps" (6 eggs) were also recorded. In total, 375 eggs were laid giving a mean clutch size of approximately 2 eggs. Most clutches were completed within 3 days although longer laying intervals were noted for many nests with some taking 4, 5, or 6 days to complete. This may reflect adult condition and their ability, or difficulty in, producing eggs.

Twenty-two nests provided reasonably precise data for calculating a colony incubation period estimate. We define the incubation period from the day the second egg appears in a nest (considering 2 or 3 egg clutches only) through to the day of hatching of the first chick. The mean value for these nests was 26.3 days (S. E. = 0.4 days). The longest period was 30 days and the shortest was 23 days. Chicks that hatch after longer-than-normal incubation periods often have low survival rates, presumably due to developmental issues when in the egg (B. Burke pers. obs.), and this may further explain some of the chick losses this year. This figure is notably higher than average values for Little Terns elsewhere in north-west Europe, typically reported between 18 and 22 days (methods may vary slightly). It is also much higher than the usual average calculated for the Kilcoole colony (mean ~21 days across 9 of the last 11 seasons). Our measurement begins calculation from the day of laying of the second egg, when it is assumed the clutch is being actively incubated. Given the delays between the first and second eggs in some instances, we observe that the parents don't tend to the first egg to the same extent as after the second egg.

Of the 192 nesting attempts monitored, 79 successfully hatched out chicks, while the fates of three nests are unknown. Figure 6 shows the fates of the clutches. Among these, 109 were doomed to failure, underlined by the small proportion of green in the figure. Single egg clutches were the least successful with ~29% hatching compared to >40% for 2- or 3-egg clutches. Single and 3-egg clutches were considerably more likely to have been abandoned. One 2 egg nest was trampled.

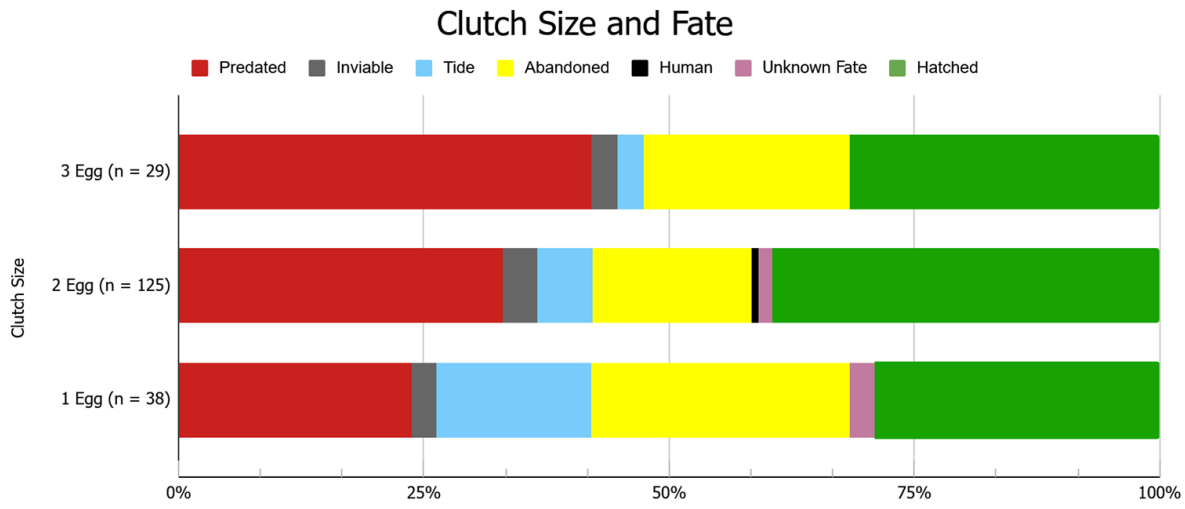

Figure 6: Little Tern clutch statistics showing % hatched, predated, inundated (by tide), abandoned and inviable clutches, from nests at the Kilcoole colony during the 2025 breeding season.

3.2.5 Hatching Success

The fates of all eggs laid (not including egg dumps) are shown in Figure 7. A total of 375 were laid across the 192 breeding attempts. Of these, 140 hatched (~37%), 131 (~35%) were lost to predation (exclusively avian), 13 were inviable, 62 were abandoned and 23 were lost to storm surge or spring tides. The "abandoned" category represents eggs deserted before the end of typical incubation, while "inviable" represents eggs which did not hatch (despite the efforts of parents), and eggs remaining at nests vacated by adults and chicks (it is possible that some of these, although viable, were simply abandoned by impatient adults). There were several instances of birds incubating inviable eggs for well over 30 days.

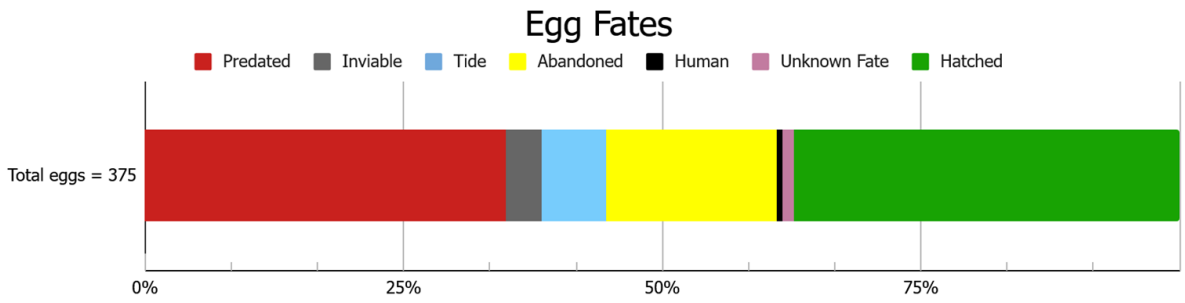

Figure 7: Fates of all eggs laid in nests of Little Terns at the Kilcoole colony during the 2025 breeding season.

Most predation events occurred during two distinct periods (see Figure 3 and Predation and Nest Loss section respectively). Rooks were particularly active during late May and the first week of June. After Night Wardens eventually stemmed these raids, some low-level losses were largely due to the 3 pairs

of Oystercatchers which had established nests in the colony. However, a particular spike in losses around June 20 is believed to be the work of the Oystercatchers that nested among the Tern nests south of The Breaches. A few further end-of-season losses were recorded, when Rooks returned taking advantage of a depleted colony.

The first two chicks hatched on 08 June, although these were promptly predated by Rooks the following day - the only known instance of Tern chick predation in the 2025 season. The majority of nests started hatching from June 20 onwards, the last on July 11. The first fledglings were recorded on 5th July.

3.4 Nest Loss, Abandonment and Predation

Avian Predation accounted for 61 nest losses, with some 38 being lost during the early season. The identity of the culprits in 12 of the 61 could not be determined, although it is unlikely they were anything other than Rook or Oystercatcher. Nest abandonments were also recorded at a high level, at 28. Some of these may have occurred because of the actions of predators, in combination with the relatively low number of active nests and low density of breeding pairs in comparison to recent years at Kilcoole. In other cases, nests were abandoned seemingly "out of the blue", even at advanced stages of incubation. A general edginess and uncertainty prevailed at the colony much of the time and abandonments seemed less and less surprising as the season went on. Issues related to food supply or the relatively low numbers present at times may have caused a lack of vigilance, commitment, or "morale" (see Discussion).

3.4.1 Corvid Depredation

Rooks are believed to have predated at least 42 nests over the course of the season, although 5 of these survived to hatch out chicks out of eggs that remained. Predation was intense in the early season especially from late May into early June. Day wardens and volunteers were active in trying to deter them, but incoming Rooks often knew where people were and would land at the other end of the colony, safe in the knowledge that it would take some time before that person could get close to them. Conservation Keepers worked mornings and occasional afternoon and evening hours to attempt to control Rooks, but despite shooting some, predation continued. It appeared that there were two groups of Rooks in the area, one large flock likely consisting of Rooks from elsewhere that had temporarily moved to the area to avail of food in fields at Webbs and Stringers, and the other a smaller

group that was seemingly more 'local' and present throughout the day. The latter flock often flew to Stringers, out of sight from the other side of the Breaches and reappeared during the day. While the project keepers continued to shoot Rooks for a number of days, it seemingly didn't include the problematic individuals responsible for the majority of predation. Access to Stringers land adjacent to the estuary proved to be key to putting a stop to Rook predation, in combination with continued early morning vigilance at the colony. Several late season raids occurred, but at this stage, mobbing was weak or lacking entirely as most Terns left the colony or lost interest.

Hooded Crows were present in the estuary area throughout the season but were only seen in the colony during site set-up and are not believed to have been involved in any Tern nest predations in 2025.

The combination of trapping, morning shifts for conservation keepers during daylight hours and access to Stringers land will all be important aspects of corvid control at the colony in future and these approaches should be maintained.

3.4.2 Oystercatcher Depredation

The occasional predation of eggs by Oystercatchers, especially clutches in the vicinity of Oystercatcher nests in the colony, is a normal occurrence at the Kilcoole, and this certainly happened this season. This behaviour is seemingly highly individualistic - some do, some don't. It is thought that 16 Tern nests were destroyed this season. Of these 16, 10 were from the area south of the Breaches channel where the first Oystercatcher nest was located. Most losses occurred within a few days of each other, and a Ringed Plover nest in the area was also predated around the same time. The suspect Oystercatcher pair had vacated the area after hatching one chick from a three-egg clutch. Observations of the area at the time, and several physical clues on the ground, lead us to believe that this pair were responsible.

Oystercatchers can play an important role in deterring predators such as corvids from the Little Tern colony. They are quick to raise the alarm and harass predators, and in one instance this season were seen to pin down and attack a Rook that had entered the colony, seemingly putting the Rook off from returning to that part of the colony any time soon. To what extent these benefits outweigh the costs of their predation of Little Tern nests warrants further discussion, however. This is especially so if numbers at Kilcoole remain low in the coming years, when the loss of 5-10 nests (for example) is proportionately high compared to losses in recent years when >200 pairs were breeding.

3.4.3 Raptor Depredation

A plucking site with feathers believed to be those of an adult Little Tern was found on the Wardens Path on 3 July. The following day, a Sparrowhawk was seen in the colony and we believe it to be responsible for the Tern kill. Surprisingly, it was not seen again. Peregrine Falcon(s) made frequent visits to the estuary throughout the season, causing significant disturbance to Little Terns and other waterbirds in the Breaches. Only one Tern hunt was recorded and it is not known if it was successful. A Kestrel was recorded on a couple of occasions but thankfully showed no interest in the colony.

3.4.4 Mammalian Predation

Broken feathers from a fledgling were found in section B of the colony towards the end of the season, as well as the feathers from a juvenile skylark, both of which suggested mammalian predation though a likely predator was never identified. Otters were seen regularly in the estuary and badgers were occasionally sighted in the estuary but neither species were seen interacting with the colony. Foxes were most active on Stringers land, and in the fields around the Cooldross Reserve. They were also regularly sighted on the railway track over the course of the season. Four rat bait boxes were installed on either side of the Breaches bridge, in boulders and dense brambles. Consumption was evident early in the season and continued throughout the summer to a lesser extent.

Numbers controlled are detailed in Table 2.

Table 2: Predators controlled in the vicinity of the Kilcoole Little Tern colony in 2025.

Species	Total
Red Fox	19
Rat	1
Hooded Crow	6
Rook	13

3.4.5 Storms and High Tides

Spring tides and wind driven wave action inundated 15 nests over the course of the season. Most losses occurred in the vicinity of the Breaches outlet (see Figure 4), which can often

have a vulnerable profile due to prior movements of the channel and associated erosion lowering the high tide ridge. Two nests were moved to avoid wave wash – both successfully, only for one to succumb to a later high tide.

3.4.6 Human Disturbance

One 2-egg nest was unintentionally trampled by wardens on 20 June and was not replaced. Human disturbance primarily consisted of walkers, often with dogs, passing the shoreline side of the northern buffer-zone fence at low tide, usually accidentally. The introduction of an extendable rope fence in recent years has done much to reduce such incidents. Occasionally some individuals will refuse to respect colony signs or warden advice and climb over fences at the railway bridge but such incidents have become rare over the last few years. There were some persistent issues with dog walkers at the sub-colony south of the Breaches, particularly during the June Bank Holiday and weekends around that time when weather was particularly nice. The merits of continuing to protect the southern subcolony, given it's very poor track record, warrants further discussion and if nests in this area are to be afforded a similar level of attention and protection as the main colony then increased signage, fencing and media/social media posts will likely be needed to improve behaviour from dog walkers and other individuals in this area.

3.4.7 Productivity

By recent standards, the 2025 season at Kilcoole has been exceptionally poor. This did not come as a surprise however, as various signs of disadvantage and stress (e.g. a relatively low breeding population, high levels of nest failure, significant chick losses) had pointed towards an overall poor breeding output. In total, only 140 chicks hatched. Thirty of these were recovered dead, most of which were aged Day 7 or younger, and were possibly linked to a couple of days in early July when nighttime temperatures were very low. It should be noted that there were no indications of HPAI in the colony at the time, nor did any of these chicks present with symptoms or behaviour consistent with HPAI.

The first fledgling was sighted on 5 July, and this bird is almost certain to have hatched from Nest 6 on June 15, the second nest to hatch out chicks. Given the timing of the main hatching window (20 June – 6 July), we might have expected to see a slow increase in fledgling numbers in our counts from 5 July onwards. However, we did not. The maximum count of fledglings was three birds. This was perplexing, as we were not finding "older" dead chicks. Nor were there any indications of

predation and no significant predator presence at the time. Nevertheless, our counts and observations frequently reported 1 or 2 fledglings, and it is hard to imagine that these were the same birds each time. From June 20, dread counts indicated that birds were leaving the colony and it is possible that the few fledglings were also leaving with parent birds (perhaps immediately after they fledged). These departures were exceptionally early; in previous years it would be expected that tens, if not hundreds, of Little Terns would be present on the foreshore well into July, and some into August.

In determining an estimate of colony productivity, we adopt our usual approach – suggesting reasonable upper and lower bounds within which the true value lies. Given the unusual uncertainty characterising the 2025 season, we've had to engage a degree of guesswork and supposition and provide much wider upper and lower bounds than we would like. Thus, we base a *Hypothetical Maximum* productivity on the undoubtedly unrealistic assumption that all chicks hatched and NOT found dead at the colony progressed to fledging - 111 fledglings. We emphasise that this is unrealistically high (especially so for 2025), though consistent with the approach used in previous years when it has been more realistic. For our lower bound – a *Best Minimum,* an equally unrealistic suggestion would be to assume that only 3 chicks fledged (the maximum count of fledglings during season). Instead, we suppose that all chicks ringed or re-captured having reached an age of Day 10 or older (based on a wing length of 58mm or more), managed to go on to fledge later. Twenty-two chicks satisfied this criterion. Thus with a *Hypothetical Maximum* of 111 fledglings and a *Best Minimum* of 22 fledglings, our upper and lower bound estimates are, respectively 0.92 and 0.18. The arithmetic mean of these two values is 0.55 and we feel this is closer to the actual productivity for the 2025 breeding season, though anecdotally the truth is likely between this mean and the best minimum estimate. Ring-reading and adult re-capture efforts in future years may help better elucidate the true level of survival and fledging of chicks from the colony this year. It is noteworthy however that Kilcoole fledglings were conspicuous by their absence in the post-breeding period at other colonies in Ireland and the UK this July and August.

3.5 Little Tern Ringing & Resighting

The ringing of chicks has been an important part of the monitoring of Little Terns at Kilcoole through the history of the project. Colour-ringing began in 2014, allowing for an infinitely greater amount to be collected. To further enhance data collection from ringing, particularly on survival and breeding site fidelity, and reducing biases in data, we have begun a programme of nest-

trapping and ringing/colour-ringing of adults at Kilcoole. This work is further complemented by traditional ring-reading efforts via spotting scope, and as of 2022 we have begun a programme of GoPro nest monitoring to read rings of nesting adults. Together, these actions will ensure a suitable sample size with which to develop adult survival estimates, which together with productivity data will help with future development of population models. The project has now been registered as a RAS (Retrapping Adults for Survival) project with the BTO to maximise its value and comparability of the data.

3.5.1 Chick Ringing & Biometrics

A total of 110 chicks were fitted with BTO metal rings in 2025 and 21 of those were also colour-ringed. In addition, one chick was metal ringed in the Cooldross reserve but is not thought to have survived. As suggested in earlier sections regarding nesting numbers and productivity amongst other measures, this number of ringed chicks is exceptionally low for Kilcoole and represents a lack of chicks rather than any sort of practical challenges in terms ringing effort.

In total, 14 unringed chicks were found dead, and only 5 unringed chicks estimated to be over a week old were later found healthy and received a metal ring. An additional 16 ringed chicks were subsequently recovered, having died before fledging. Most dead chicks were estimated to be less than a week old when they died.

Biometrics (at least wing length) were taken on 96.4% of the chicks when caught for the first time and fitted with the metal ring. Given the very low number of retrapped chicks, we were unable to calculate a reliable estimated growth rate. In recent years the very high number of chicks and active nests made it very difficult to gather sufficient data to determine growth rates or make comparisons between years, particularly given other priorities such as initial ringing of chicks and overall colony monitoring and protection. By contrast this year it was too difficult to find chicks to gather sufficient biometric data for these analyses. Given the suspicion this year that a lack of food was the main reason for the poor performance of the colony, the approach to gathering biometric data should be reviewed to maximise the usefulness of the data while also balancing other vitally important duties, including minimising disturbance.

3.5.2 Ringing and Ring-resighting of Adult Little Terns

A total of 38 adult Little Terns were caught on the nest at Kilcoole on 16 dates between 04 June and 05 July. Captured birds include unringed individuals, birds with a BTO ring only and birds already

colour-ringed, but some of whom required new rings as their existing colour ring was worn or broken. All birds were given BTO and colour-rings if they did not already have them. Table 3 outlines the relative proportions of ringed/unringed birds caught at Kilcoole in 2025 and full ringing details are outlined in the Appendices.

Table 3: Ringing results of little Tern nest-trapping at Kilcoole in 2025.

Record Type	**Count**
Unringed	4
BTO-ringed only	10
Colour-ring replaced	5
Colour-ring retrap	19
Total Individuals	**38**

The nest-trapping effort allowed to identify 30 breeding individuals, caught on 30 different nests, initially ringed as chicks (out of the 38 individuals). 30 represent 15.6% of the total number of nests found (n=192). However, this number includes re-lays, the maximum number of nests simultaneously active in the main colony was 116 and 20 nests were lost early in the season before the trapping started. It is reasonable to think that the trapped sample represents at least 20% of breeding pairs trapped, with one individual caught per pair. When looking only at this sample of 30 birds of known age caught on the nest:

- 29 birds were initially born and ringed as pulli at Kilcoole. One bird birth site is still to be traced, most likely a colony in the UK.
- 80% were born between 2014 and 2022, meaning most birds are between 3 and 11 years old. The largest cohort (n=5, 16.6%) is 10 year-old birds. Only 10% of birds were older than 11 years old.

Ring-reading of Little Terns at Kilcoole is particularly difficult due to the size of the rings and the undulating terrain and large shingle substrate of the beach. It is generally quite time consuming to do and requires a very high-quality spotting scope. Ring-reading of this nature is much more easily carried out at Portrane, Baltray and Cahore where the beaches are sandy and gently sloping. Nonetheless, a total of 60 unique colour ring-reads were made this year via scope at Kilcoole – a significant total given the maximum count of adults was 250 birds. The majority of these were by Daniele Gioppo, a long-

serving volunteer at the Kilcoole and Portrane Little Tern colonies. Data obtained when looking only at the sample of birds of known age, i.e initially ringed as pulli, identified with the scope (n=56) is consistent with the data obtained from the nest-trapped sample though the age range differs slightly:

- All birds ringed as pulli were born at Kilcoole.
- 82% of the sighted individuals were born between 2014 and 2023, meaning most birds are between 2 and 11 years old. There is a large proportion of 2-year-old birds (n=7, 12.5%).

In addition to nest-trapping and ring-reading via scope, there were continued efforts this year to carry out ring-reading via GoPros placed beside nests for short periods. This has proven to be a very effective source of ring-reads in recent years, but results in tens of thousands of images that have to be searched through for readable colour rings. At the time of writing, only an estimated 30% of these photos have been searched through and as a result the results of GoPro ring-reading are not presented here. The photos will be searched through later in the autumn and any ring-reads logged and reported via the BTO's Demon system to ensure they contribute to the ongoing RAS ('retrapping adults for sur survival') project for Little Terns at Kilcoole.

This 'three-pronged' approach is now a core aspect of the Kilcoole Little Tern conservation project, allowing for the provision of a suitably large and representative sample size to determine rates of survival, emigration and immigration, natal and breeding site fidelity, and other research questions. All ringing, retrap and resightings will be logged as part of the recently established RAS project. The BTO's Ringing Adults for Survival (RAS) scheme currently stipulates that 50 adults should be caught or seen per year to ensure sufficient statistical power to estimate survival over time. We continue to far exceed that target at Kilcoole. It should be noted that colour-ringing of Little Terns in Ireland only began in 2014, and in subsequent years at other colonies, and therefore there is some bias in the age ratios discussed below. This bias is reducing as the population ages, and the bias is also being reduced through the ringing of adult birds in recent years. Though these birds are of an unknown age (beyond time since ringing plus two years), they can still contribute to much of the analyses including adult survival rates, site fidelity and post-breeding movement.

When the totals of rings read via adult nest-trapping and scope ring-reading are summed, 94 adult Little Terns previously ringed were identified at Kilcoole in 2025, including 86 ringed as pulli i.e of known age and origin, and 8 ringed as adult i.e of unknown origin and age. Out of the birds of known origin, all were born at Kilcoole except for two birds, one from Gronant, North Wales, and one from

the UK (colony still to be confirmed). The 8 birds ringed as adults were all caught for the first time at Kilcoole in 2022 (n=4), 2023 (n=3) and 2024 (n=1).

The ages and origins of adult birds recorded through nest-trapping and ring-reading (though not including GoPro results) are provided in Figure 8.

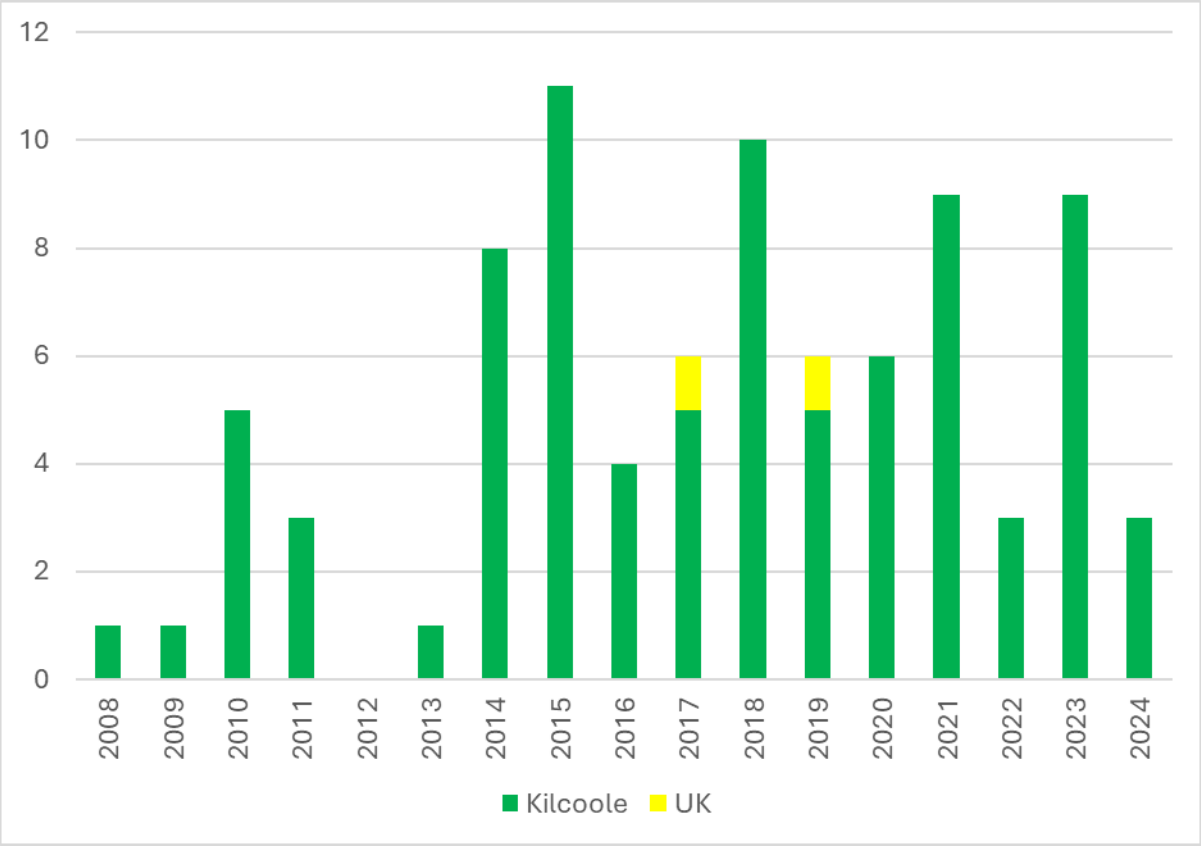

Figure 8: Year of origin/age of ringed adult Little Terns seen at the Kilcoole colony in 2025. This figure only includes birds originally ringed as chicks i.e of known age.

The oldest bird identified in the colony this year was 17 years old, identified thanks to nest-trapping as it was only fitted with a BTO ring. It was ringed as a chick in Kilcoole in 2008. It was fitted with a colour ring to facilitate future re-sightings. The bulk of the population consisted of birds born between 2014 and 2023, aged 2- to 11-years (n=72, 83.72%). A small number of 1-year old chicks (n=3) were present and include one confirmed breeder as it was trapped on the nest. Unfortunately, that nest was not in the main fenced colony, it was south of the breaches where protection was less effective and was predated. It is not too surprising that a young bird would pick a suboptimal nesting spot and it is hoped that it will be more successful in the coming years.

3.5.3 Resightings at Other Little Tern Sites

While it is always interesting to examine inter-colony movement of Little Terns between Kilcoole and other Irish sites, the added context of it being such a poor year at Kilcoole gives this data particular importance. A high level of ring-reading was carried out throughout the season at Portrane (Dublin), a significant but lower rate at Baltray (Louth) and occasional opportunistic ring-reading at Buckroney (Wicklow) and Cahore (Wexford). Comprehensive ring-reading efforts were made at Lady's Island Lake by the tern colony wardens there, using a zoom lens on a DSLR camera. Given the difficulty in ring-reading this species via scope, and the particularly high value of knowing that a ringed individual is nesting, it is strongly recommended that staff at other sites begin to monitor nesting birds via GoPro in the coming years.

Nest-trapping is routinely carried out at Kilcoole, Portrane and Baltray and initial efforts have been made at Cahore in 2024 and 2025, but similarly it is recommended that these efforts be carried out at other colonies where possible as the data that follows is particularly informative.

Efforts to collate ringing and ring-read data from the 2025 season are ongoing, but Table 4 provides an indication of the number of Little Terns that hatched at Kilcoole and were seen at other Irish colonies in 2025.

Table 4: Sightings of birds of Kilcoole origin at other Little Tern sites between 27 April and 18 July 2025.

Colony	Unique Ring Reads
Baltray	14
Portrane	22
Buckroney	48
Cahore	16
Lady's Island	4

3.6 Oystercatchers

In 2025, four oystercatcher nests were confirmed in the vicinity of the Kilcoole Little Tern colony:

- Two were in the main colony
- One was in the subcolony south of the breaches.
- The discovery of one young chick, estimated to be around 3 days old, and the count of unhatched eggs of the known nests, confirmed the existence of an additional nest somewhere in the Breaches that was not located.

From these four nests, we confirmed 4 chicks:

- The nest south of the breaches was the first to hatch, with 1 chick from 3 eggs.
- One of the nests in the main colony failed with 0 eggs hatching out of 3. The other one hatched 2 chicks out of 3 eggs.
- Only one chick was found from an unknown number of eggs for the nest located in the estuary.

The chick from the first nest to hatch was seen a few days after hatching but was too small to be ringed and was not seen again. Two chicks, with at least one of them most likely from one of the nests in the main colony, were colour-ringed.

The pair nesting south of the breaches had one ringed individual : YN(O13), which was ringed as a nesting adult at Kilcoole in 2022 and has bred here each year since. Both nests located in the main colony were trapped, and one individual of each nest was colour-ringed. Unfortunately, one ringed individual (YN(011)) died, hit by the train when it was crossing the railway track attempting to move the chicks from the beach to the estuary. Ringing details are given in Appendix 2.

3.7 Ringed Plover

Over the course of the season 15 Ringed Plovers nests were found, including both the first and second waves of nests usually recorded over the summer. The low number of breeding terns on site did not provide the usual protection against predators and most nests were lost to predation by Rooks (it is possible one was predated by Oystercatcher). Two nests were abandoned while 8 nests were confirmed to have hatched chicks.

Fifteen chicks were metal-ringed out of 27 chicks hatched. Among the unringed chicks, one was found dead near the nest. The rest were not found, as they vacated the nest between the first

check when hatching was confirmed and the return of the warden for ringing: some eggs had not hatched on the first visit, or some chicks were intentionally left unringed because all or part of the brood was still wet. It is possible that a few of the earlier nests, and as a result, a few chicks, went unnoticed. At least one brood completely failed, as the parents relayed shortly after their first nest hatched. A strikingly low number of fledglings were seen at the end of the season, and only one chick was caught at a suitable age to be colour-ringed, but it was found dead a few days later. One metal-ringed fledging was seen until the end of the season and is most likely from one the 14 nests that were monitored.

Five breeding adults were colour-ringed and 4 adults already colour-ringed were re-trapped. In addition, one individual bearing colour ring GW(P5) was spotted by a visiting ringer using his camera. It was prospecting but no nest was confirmed. GoPros were also deployed near ringed plovers' nests but the data has not been analysed yet. Table 5 below sums up the data on ring resightings, and ringing details are found in the Appendices.

Table 5: Ringed plovers resightings at Kilcoole in 2025.

Date	Encounter	Colour ring GW(XX)	BTO ring	Origin age	Origin year	Origin loc
13/5/2025	S	AU	NW12962	4	2022	Kilcoole
9/6/2025	S	A2	NW87234	4	2024	Kilcoole
21/6/2025	S	A4	NP28834	4	2024	Kilcoole
24/6/2025	F	P5	NP28805	4	2024	Kilcoole
4/7/2025	S	AA	NW07546	4	2022	Kilcoole

The total number of breeding pairs of Ringed Plover is not known, though may become clearer when GoPro ring reads can be analysed, but speaking generally it seems that the site supported around 8 pairs this summer.

3.8 Highly Pathogenic Avian Influenza

Appropriate personal protection equipment (masks, gloves, bin bags to double bag carcasses, 4Safe disinfectant, disposable PPE suits) were available on site throughout the season. CJ and BB underwent

mask-fit testing and training in BirdWatch Ireland HQ before the start of the season, to allow for working in HPAI infected areas using suitable PPE. A special updated risk assessment relating to HPAI was in place for the 2025 season. Volunteers or staff visiting other colonies were asked to either use their footwear only a Kilcoole, or to use disinfectant before entering the colony. Staff and visiting ringers were asked to only use Kilcoole bird bags, and to preferably use the Kilcoole ringing kit, or if ringing in group, to disinfect their ringing equipment before use.

One immature Herring Gull exhibiting odd behaviour, indicative of sickness, landed in the colony in the morning on 06 June around 11am. It was scared off by the warden repeatedly to keep it out of the colony. Later in the afternoon it was found again exhibiting typical signs of avian flu. The bird was dispatched and buried by BWI staff with full PPE. A second young Herring Gull was found recently dead just south of the Breaches channel on 24 June 24 and was also deemed very likely to have succumbed to HPAI. It was immediately buried, again by BWI staff with full PPE.

Avian flu was present in some Irish seabird colonies throughout the summer, including in Black-headed Gulls and later in Sterna tern species at Lady's Island Lake. In June, more severe and widespread impacts became obvious at colonies on the west coast including significant mortalities of Common Terns, Kittiwakes and Guillemots amongst other species. On the east coast, Common Terns in Dublin Port and Rockabill, and large gulls at colonies such as Ireland's Eye and Lambay, as well as Kittiwakes at Rockabill, were all impacted. Overall the mortality rate was modest compared to the 2022 and 2023 outbreaks, but still significant and likely with greater impacts on pulli and therefore productivity. While Little Tern colonies again escaped without any cases, this outbreak reaffirms the likelihood that avian flu will be at least a semi-regularly occurring problem for seabird colonies in Ireland and other European countries into the future and appropriate PPE, planning and preparation will be key.

4. Discussion

By it's own high standards, the Kilcoole Little Tern colon had a very poor breeding season in 2025. Whereas historically, poor breeding success here has been directly attributable to significant predation events or colony wash-outs at an advanced stage of the season, no such clear and obvious event can be blamed this year. By contrast, this season has been very poor from start to finish.

Early season (first 10 days of May) numbers of Little Terns seemed normal, as did the considerable variability in numbers regularly present. This is typically a time when flocks can be highly mobile and are presumably happy to spend time wherever food resources are most plentiful, before breeding instincts demand them to choose their breeding site. There can be some variability in the details and timing of this process, so little was thought initially of the highly variable numbers being recorded at the colony during this time. What became increasingly notable, however, was the fact that little offshore fishing was occurring. Numbers were remaining low, and absences from the colony were frequent and prolonged. This contrasts hugely with the record breaking 2024 season. That season saw an unusually early and rapid start to nesting by a record number of pairs (first egg 9 May >100 nests by 15 May) , clearly suggesting very favourable conditions at the beach. Large numbers of Terns could be seen fishing and returning to the colony with sandeels that year. In addition, an impressively large proportion of nests had 3-egg clutches, a strong indicator of favourable conditions. Such conditions were clearly not present for the 2025 season.

As wardens continued their setup work, the normal progression of colony development was not occurring. During the second and third weeks of May, reports were being received of greater than usual numbers of birds at other smaller east coast sites such Cahore and Buckroney Beach. There also came the surprising news of a (seemingly unprecedented) congregation of some 100 birds starting to nest at a location 3km to the north of the Kilcoole colony. This attempt at a colony ultimately failed due to predation and many of the birds involved are believed to have moved to Kilcoole around 29 May. The unusual occurrence and high numbers of birds present at these sites in the early season, and the unusually low numbers at Kilcoole, suggested the Kilcoole colony was being avoided. Early season ring-reading reports confirmed that many Kilcoole-ringed individuals were being seen at Cahore and Buckroney. In the case of Buckroney, it seems that a significant number of birds re-nested there in 2024 having failed earlier in the season at Kilcoole, making this a very new colony. In at least one case, a bird whose ring was read at Kilcoole at the start of May was subsequently seen at Buckroney a short time later and presumably decided to breed at the latter. Although such movements may follow nest loss or some serious disturbance at a location, it is possible that they

indicated a broader reluctance to nest at Kilcoole following an initial investigation by prospecting pairs. At Kilcoole in the first half of May there was no significant predator presence and no disturbance above and beyond what would normally be expected, and so no problems on the beach itself that might have deterred the Little Terns.

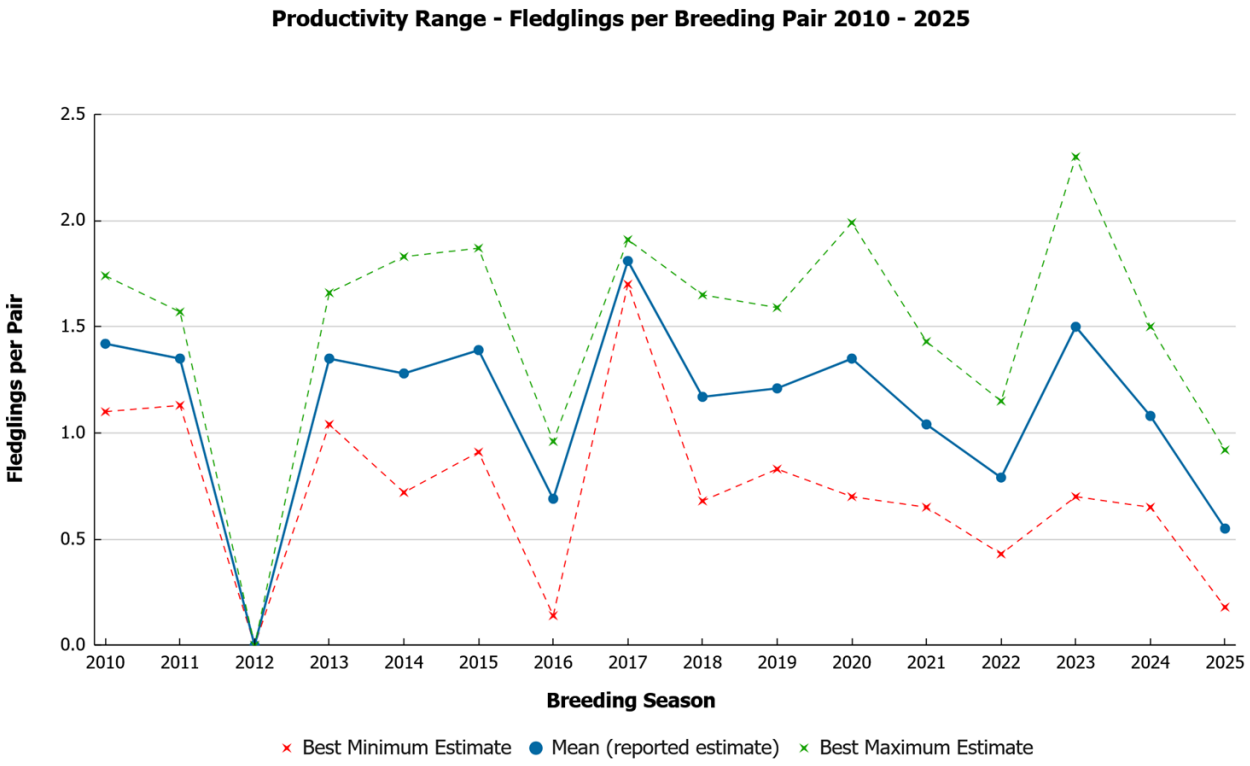

Figure 9: Measures of Little Tern breeding productivity at Kilcoole, 2010 – 2025.

Figure 9 (above) and especially Figure 5 (Nesting Activity 3.2.1) illustrate the abrupt reversal of fortunes experienced by the Kilcoole colony. This year had the lowest estimates of productivity in over a decade and the lowest number of breeding pairs since 2014.

Whatever the cause(s) of the avoidance of the Kilcoole colony this year, it is worth considering the various failures which characterised the season. What impacted the breeding performance? Were there any possible negative "knock-on", or less direct effects, on the colony? For example, how might a smaller breeding population affect the daily logistics of incubation or chick rearing? Was it possible that the particularly intense Rook predation observed was encouraged by the lower numbers of birds present? Indeed, did that in itself have a more complex impact on colony resilience, or "morale"? As has been alluded to above, food resources do appear to have been relatively scarce this year. If so,

how might this have impacted the above?

With only observational notes to go on, the strikingly low level of offshore fishing by the Terns was suggested as one potential explanation for the low numbers and frequent absences of birds being recorded. The observed delay in nesting also seemed a reasonable consequence of this - scarce food resources would surely delay the onset of nesting. The bulk of breeding pairs only started to settle at the colony during the last week of May, and even after that, colony establishment was slow and hesitant. At the same time nesting was in full-swing at all other Irish east coast colonies with no similar problems. Unfortunately, as noted, Rook depredation of nests quickly became intense (they essentially had a "head start" this year having been particularly active predating Ringed Plover nests even before the Terns started nesting). The question arose as to whether the lower number of birds present meant a weakened colony defence. Each season, the northern end of the colony suffers most to predation. However, this was more intense than usual this season and Rook predators (and arguably Oystercatchers) might have been encouraged by the lower numbers present. Additionally, if this fewer number of birds had to spend more time away from nests in search of food, this in itself could make the colony more vulnerable.

A second aspect to consider is the direct effect on individuals any supposed reduction in food supplies might have had. We are not, of course, certain food supplies were scarce in 2025, but if this *was* the case, what kinds of effects might be expected? At the level of breeding pairs, many of our observations do seem consistent with both direct and indirect consequences of a poor food supply. We recorded particularly high levels of nest abandonment, at both the whole nest level and at the (last) egg stage (after other eggs had hatched). From a general nutritional point of view, this would hardly be surprising. Increased time away from the nest by parent birds (having to forage for longer, or further away) might be a factor in the high and disproportionate number of nests with inviable eggs recorded. Indeed, this would also explain the remarkably prolonged incubation period seen at many nests (slower embryo development), and the delayed clutch completion times noted. Poorer development and shortage of food would also explain why so many chicks seemingly perished during the couple of particularly cold nights.

Other observations are consistent with suggestions of a poor food supply. As noted in our calculations of colony productivity estimate (Productivity 3.2.6), the lack of fledglings at the end of the season (maximum count 3) was puzzling. Those fledglings that were seen clearly did not remain at the colony very long at all. If parent birds were leaving the colony very soon after their chicks fledged, this could explain our poor counts. Under more normal circumstances (with a reliable food supply), parent birds and their fledglings will remain along the foreshore for a couple of weeks at least, before

venturing further. The unusually early departure of the Terns in 2025 seems to indicate some less than favourable circumstances at the colony. And to reiterate, there was no predator presence or elevated disturbance levels that could explain this.

Of course, the impacts of a reduction in food resources would be felt across all aspects of the breeding ecology, with many of these effects interacting in complex ways. The above discussion seeks only to suggest some ideas on "what went wrong" at Kilcoole this year, especially in the context of a highly positive run of breeding outcomes seen over the last decade or so. In stark contrast, the 2025 season has provided a fascinating, if unfortunately negative, set of observations. As we receive further reports from other East Coast (and Irish Sea) colonies, the context of the Kilcoole's 2025 "crash" and the processes involved may be better understood and should provide an informative reference for other colonies.

In contrast, other colonies had quite successful seasons. Both Baltray and Portrane had record-breaking years in terms of both breeding numbers and numbers fledged, despite the impacts of predators (including Kestrel) at the latter. Numbers at Cahore were strong and many went on to fledge successfully. The new colony at Buckroney appeared to suffer from predation with few chicks fledged, but the presence of birds at the site throughout the summer indicates the suitability of the area and contrasts with the early departures from Kilcoole. Furthermore, 9 pairs of Little Tern went on to nest at Lady's Island Lake and fledged a minimum of 12 chicks. The success of these other sites in the Irish Sea, particularly Buckroney which is quite close to Kilcoole, further suggest very localised problems at Kilcoole. The Kilcoole conservation project has been very successful over the last two decades in particular. This has been reflected in greatly increased numbers breeding regularly at the site, but also ringing data demonstrates the importance of Kilcoole birds in establishing at other sites and bolstering existing colonies. Each of the other Little Tern colonies on the east coast have significant numbers of Kilcoole birds breeding there, and in all likelihood there are colonies on the west coast with Kilcoole birds too. Given the very short timescale (i.e. a single year) that conditions have changed for the worse at Kilcoole we can only hope that those same conditions can improve just as quickly and that 2026 will see a return to normality. The problems at Kilcoole, which up to last year is thought to have hosted around half of the Irish population of Little Terns, underscore the importance of those other conservation projects at Baltray, Portrane, Cahore and now Buckroney, as well as Lady's Island to maintaining the Irish population. Ultimately, a network of sites where conservation efforts attempt to control as many factors as are 'controllable', is needed to safeguard Little Terns into the future. We do perhaps need to better understand those factors that are less controllable, at least over the course of a season, including Little Tern diet, the fish they rely on, and the status of those fish at key sites.

5. Recommendations

These recommendations are based on the 2025 season and cover a range of issues, some of which will be more relevant to BirdWatch Ireland (e.g. equipment purchases, staff time) in the case of a successful application to run the project next year, and some of which will be pertinent for NPWS to consider.

Materials

- The hide is showing its age and will need to replaced soon. It is recommended that this should be done in advance of the current hide becoming unusable, and potentially two hides could be utilised until that becomes the case.
- Some new fence posts would be beneficial
- A lack of an additional scope has been highlighted as a limiting factor when recruiting volunteers to help with incubation checks and nest finding. Similarly, the current scope is not sufficient for ring-reading. A new, high-powered scope and suitable tripod should be purchased.

Staffing

- An earlier start date for the project, commencing 7-10 days earlier than in recent years, is recommended based on the very early start to nesting in 2024, restrictions on set-up that year due to weather, the May Bank Holiday and the sheer number of tasks that need to be completed in advance of nesting, including admin, training and desk-based preparations. This would also facilitate better monitoring of early Ringed Plover nests.
- Keeping flexibility on staff presence on site in the final 7-10 days of the season, in years where almost all chicks have fledged or are near fledging at that stage, such as it was done this year, would be beneficial.
- Predator control efforts during daylight hours at key stages of the season should be continued, both reactively but also proactively to discourage and remove corvids as necessary. This was both beneficial and necessary in 2025.
- An additional staff member, or potentially an intern during the peak of the season, would greatly help with the above data collection and starting data entry, as well as corvid deterrence. This person could also be tasked with monitoring of nests further away from the colony (e.g. at

Newcastle in previous years, north Kilcoole near Greystones and Buckroney Marsh in 2024). Some key volunteers have made a huge contribution to the project in recent years, but there is a limit to what can be asked of or achieved with volunteers.

- Nesting history and success of Ringed Plover and Oystercatcher should be better monitored, to the same level of detail as the Little Terns. The submission of this data to the BTO Nest Record Scheme should be considered.

Protocols

- The approach taken to protecting the subcolony that sometimes establishes immediately south of the Breaches should be discussed and agreed upon. On the one hand it can hold significant numbers of pairs, but on the other these pairs have rarely ever successfully bred. Allowing for rapid failure may result in pairs relocating to the main colony and having a better chance of success. It may be possible to make the area less suitable for nesting from the start of the season through strategic placement of spoil heaps from channel-digging efforts.
- Colony subdivisions should be made clearer by landmarks visible from a distance, and fieldsheets should be grouped by subsection as much as possible.
- The relative benefits and drawbacks of having nesting Oystercatchers in the Little Tern colony have been outlined elsewhere in this report. This should be discussed further before the 2026 season and an approach agreed upon. This could be specific to certain individuals or pairs, might involve thresholds of the number of pairs that will be accommodated, might involve novel protection of Little Tern nests through cages or similar, or might simply be to continue as before.

Research

- There is now an urgent need for focused research into the diet of Little Terns at Irish colonies, to better understand what might cause food shortages. Chick provisioning watches are currently quite difficult to do due to the movements of chicks across significant stretches of the beach. The possibility of taking faeces samples for future DNA analysis should be considered, and other potential methodologies explored.

- Nest protection cages have been trialled in other countries, to protect Ringed Plover in particular. Results can be mixed, with some sites showing it greatly reduced predation from the likes of corvids, but others having issues with regards Sparrowhawks. A trial of a small number of nest cages for Ringed Plover and/or Little Tern nesting in either the south colony or further away from the colony towards either Greystones or Newcastle, should be considered in the future.

Other Little Tern colonies

- We would welcome greater synchronisation in data collection across all monitored Little Tern sites to better allow for comparisons over time.
- Where this is not already carried out, other colonies should seek to replicate the GoPro nest monitoring and ring-reading efforts at Kilcoole. We recommend 3-4 GoPros to be used at the same time, to minimise disturbance and maximise returns.
- Where this is not already carried out, nest-trapping of adult Little Terns in the latter half of the incubation period should be carried out to collect more ringing data from metal- and colour-ringed birds and to increase the colour-ringed cohort at a colony for future monitoring. BB can demonstrate best practice to any suitably qualified ringers.
- BirdWatch Ireland staff can be in a position to support monitoring and ringing efforts at other sites as necessary.

Ringed Plover & Oystercatchers

- Breeding and wintering ringed plovers are currently amber-listed in Ireland, while breeding and wintering oystercatchers are red-listed. Given their conservation importance, both breeding populations at Kilcoole should be monitored in the same detail as those of the Little Terns. Nest monitoring and ringing of both species were carried out in 2025. Efforts to improve the quantity and quality of data should continue in the following years. The same efforts should be made at other colonies.

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Appendix 1: Outcomes of Little Tern Nesting Attempts

Table A1: Outcome of each nesting attempt at the Kilcoole colony in 2025. AB = abandoned, NM = natural mortality, INV = eggs infertile/addled, HD = human disturbance, prPR = presumed predated, knPR = known predated. Each code is followed by the number of eggs (e) or chicks (y) to which it refers.

Nest	Date Found	Eggs	Hatched	First Hatched	Potential Fledged	Other Outcome	Notes
1	7-May	1				Dump	
2	15-May	3	2	8-June		knPR 2y 1e	Rook
3	19-May	3				knPR 1e	Rook
4	19-May	3				AB 3e	
5	19-May	1				AB 1e	
6	19-May	2	2	?	2		
7	20-May	2				knPR 2e	Rook
8	20-May	3				prPr 3e	
9	20-May	2				knPR 2e	Rook
10	20-May	2				knPR 2e	Rook
11	20-May	3				knPR 2e	Rook
12	21-May	1				kn Pr 1e	Rook
13	21-May	1				kn Pr 1e	Rook
14	22-May	2				AB 2e	
15	22-May	2	1	23-June	1	1y AB 1e	
16	22-May	2				AB 2e	
17	22-May	2				AB 2e	
18	22-May	2				knPR 2e	Rook
19	23-May	2				knPR 2e	Likely Rook
20	23-May	2	2	20-June	2		
21	23-May	3				knPR 2e AB 1e	Rook
22	23-May	1				AB 1e	
23	24-May	3				prPR 1e INV 2e	
24	24-May	2				AB 2e	
25	24-May	3				prPR 3e	
26	24-May	2				prPR 2e	
27	24-May	2				knPR 2e	Oystercatcher
28	24-May	3				knPR 3e	Oystercatcher
29	24-May	3	3	24-June	3		
30	25-May	3	2	21-June	2	knPR 1e	Rook
31	25-May	2				knPR 2e	Rook
32	25-May	2	2	23-June	2		
33	25-May	3				AB 3e	
34	25-May	2				Tide 2e	
35	25-May	3				knPR 1e AB 2e	Rook

Nest	Date Found	Eggs	Hatched	First Hatched	Potential Fledged	Other Outcome	Notes
36	26-May	2				Tide 2e	
37	26-May	2				Tide 2e	
38	26-May	2				knPR 2e	Oystercatcher
39	26-May	2				knPR 1e Tide 1e	Rook
40	26-May	1				knPR 1e	Rook
41	26-May	2				knPR 2e	Rook, Oystercatcher
42	26-May	3	3	24-June	3		
43	27-May	2				knPR 2e	Rook
44	27-May	1				knPR 1e	Rook
45	27-May	1	1	21-June	1		
46	27-May	2				knPR 2e	Rook
47	27-May	3	3	20-June	3		
48	27-May	2	2	25-June	2		
49	27-May	2	2	23-June	2		
50	27-May	2				Unk 2e	
51	28-May	2	2	21-June	2		
52	28-May	2	2	21-June	2		
53	28-May	2				knPR 1e AB 1e	Rook
54	28-May	2				knPR 2e	Rook
55	28-May	3				knPR 3e	Rook
56	28-May	2	2	24-June	2		
57	28-May	2	2	23-June	2		
58	29-May	3				knPR 3e	Oystercatcher
59	29-May	2				knPR 2e	Oystercatcher
60	29-May	1				Dump	
61	29-May	3				knPR 1e AB 2e	Oystercatcher
62	29-May	2				knPR 2e	Oystercatcher
63	29-May	2				AB 2e	
64	29-May	2	1	24-June	1	AB 1e	
65	29-May	2	2	22-June	2		
66	29-May	2	1	23-June	1	knPR 1e	Rook
67	29-May	2				INV 2e	Incubation > 30 days
68	29-May	2				knPR 1e	Rook
69	29-May	2				knPR 2e	Rook
70	29-May	2				AB 2e	
71	29-May	2	2	27-June	2		
72	29-May	3				knPR 3e	Rook
73	29-May	3	3	23-June	3		
74	29-May	2	1	?	1		
75	29-May	2				prPR 1e AB 1e	
76	29-May	2	1	24-June	1	AB 1e	
77	29-May	1				AB 1e	

Nest	Date Found	Eggs	Hatched	First Hatched	Potential Fledged	Other Outcome	Notes
78	29-May	3	3	23-June	3		
79	29-May	2	1	23-June	1	INV 1e	
80	30-May	1				AB 1e	
81	30-May	2				knPR 2e	Rook
82	30-May	3	2	22-June	2	AB 1e	
83	30-May	2				knPR 2e	Rook
84	30-May	3				knPR 2e	Rook
85	30-May	2	2	?	2		
86	30-May	2	2	28-June	2		
87	30-May	1				AB 1e	
88	30-May	2				AB 2e	
89	30-May	2	1	26-June	1	knPR 1e	Rook
90	30-May	2				knPR 2e	Rook
91	31-May	2				knPR 2e	Rook
92	31-May	2				AB 2e	
93	31-May	2	2	22-June	2		
94	31-May	3				knPR 3e	Rook
95A	31-May	1				AB 1e	
95F	31-May	2	2	20-June	2		
96	31-May	2	1	26-June	1	knPR 1e	Rook
97	31-May	2	2	25-June	2		
98	31-May	3	1	25-June		AB 2e	1 Dead, ringed
99	31-May	2				knPR 2e	Rook
100	31-May	2				knPR 2e	Rook
101	31-May	2	1	26-June	1	1e AB	
102	1-June	2	2	26-June	1		1 Dead, ringed
103	1-June	2	2	29-June	2		
104	1-June	2				knPR 2e	Rook
105	1-June	1				INV 1e	
106	1-June	3	3	26-June	1		2 Dead, 2 ringed
107	1-June	2	2	23-June	2		
108	1-June	1				knPR 1e	Rook
109	1-June	3				knPR 3e	Rook
110	2-June	3				knPR 3e	Oystercatcher
111	2-June	2	2	30-June			2 Dead, 2 ringed
112	2-June	2	2	29-June	2		
113	2-June	1	1	29-June	1		
114	2-June	2				INV 2e	Incubation > 30 days
115	2-June	1	1	27-June	1		
116	2-June	2	2	29-June			2 Dead, ringed
117	2-June	2	2	27-June	1		1 Dead, ringed
118	2-June	3				Tide 3e	
119	2-June	2	2	28-June			2 Dead, ringed

Nest	Date Found	Eggs	Hatched	First Hatched	Potential Fledged	Other Outcome	Notes
120	2-June	2	2	27-June	2		
121	2-June	1				AB 1e	
122	3-June	2				AB 2e	
123	3-June	2				prPR 1e Unk 1e	
124	3-June	1				AB 1e	
125	3-June	2				INV 2e	Incubation > 30 days
126	3-June	2	1	25-June	1	knPR 1e	Rook
127	4-June	2	2	25-June	2		
128	4-June	3	3	?	3		
129	4-June	3	1	3-Jul		AB 2e	1 y Dead in nest
130	4-June	2	2	?	2		
131	4-June	1	1	29-June	1		
132	4-June	2				knPR 2e	Oystercatcher
133	4-June	2				knPR 2e	Oystercatcher
134	4-June	2	2	26-June	2		
135	4-June	2				INV 2e	
136	4-June	2	2	?	1		1 Dead, ringed
137	4-June	1				AB 1e	
138	4-June	2				knPR 2e	Oystercatcher
139	4-June	2	2	29-June	2		
140	4-June	2				AB 2e	
141	4-June	2	2	3-Jul	2		
142	5-June	2				HD 2e	
143	5-June	1				Tide 1e	
144	5-June	1				AB 1e	
145	5-June	1	1	2-Jul			1y Dead
146	5-June	2	2	30-June	2		
147	5-June	2	2	1-Jul	2		
148	5-June	2				AB 2e	
149	5-June	2	2	28-June	2		
150	6-June	2	2	28-June	2		
152	7-June	2				prPR 2e	Oystercatcher?
153	7-June	1				Tide 1e	
154	7-June	2	2	1-Jul			2y Dead
155	7-June	1				prPR 2e	
156	7-June	1	1	1-Jul			1 Dead, ringed
157	7-June	2	2	27-June	1		1 Dead, ringed
158	7-June	1					
159	6-June	2	1	26-June	1	AB 1e	
160	7-June	2	2		2		
161	7-June	1	1	4-Jul	1		
162	7-June	2	2	30-June	2		

Nest	Date Found	Eggs	Hatched	First Hatched	Potential Fledged	Other Outcome	Notes
163	7-June	2	2	30-June	2		
164	8-June	1	1	2-Jul	1		
165	10-June	2				prPR 2e	Oystercatcher?
166	10-June	2				prPR 2e	
167	10-June	2	1	2-Jul	1	AB 1e	1 Dead, unringed
168	10-June	1				Tide 1e	
169	11-June	1	1	6-Jul	1		
170	11-June	1	1	?	1		
171	11-June	1				Unk 1e	
172	11-June	1				Tide 1e	
173	15-June	2	2	10-Jul			2 Dead, unringed
174	15-June	2				Tide 2e	
175	15-June	2	2	9-Jul	2		
176	15-June	2				prPR 1e Tide 1e	
177	15-June	2				prPR 2e	Oystercatcher – GoPro
178	15-June	2				knPR 2e	Rook
179	15-June	2				AB 2e	
180	15-June	2				prPR 2e	
181	15-June	2				AB 2e	
182	15-June	2	1	7-Jul	1	AB 1e	
183	15-June	2				prPR 2e	Oystercatcher?
184	16-June	1				Tide 1e	
185	16-June	1				Tide 1e	
186	17-June	1				Tide 2e	
187	17-June	2				AB 2e	
188	22-June	1				prPR 1e	Oystercatcher?
189	22-June	2				prPR 2e	
190	22-June	2				prPR 2e	Oystercatcher?
191	25-June	2				Tide 2e	
192	28-June	2	2	27-June	2		
N1	5-June	1				prPR 1e	Oystercatcher?
N2	7-June	2				prPR 2e	Oystercatcher?

Appendix 2: Ring sequences used in 2025

BTO B+ Rings

LITTLE TERN RINGS

- String NW88551-NW88600.
  NW88553 used on a RP chick.
  NW88598, NW88599 and NW88600 not seen on the string.

- String NW88601-NW88700 : last ring used NW88674.
  NW88665 not seen on the string.
  NW88669 and NW88670 retrieved in the nest, slipped off foot : can be used but care needed for proper shape/closure.
- NW46393 was used to ring one chick found on the artificial beach at Cooldross NPWS reserve.

RINGED PLOVER RINGS

- Series NP28851-NP28900 incomplete string.
  NP28869 not recorded, lost or missing.
  NP28871-NP28900 not on the string.
- NW55650 found in the ring bag, used on adult RP : LITTE ring from a previous year?

BTO F RINGS (OYSTERCATCHER)

- FH75206 and FH75207 were used on adult breeding oystercatchers.
- FJ19771 and FJ19772 were used on chicks.

Ringing details are provided in the next pages:

Table A2a - ringing of adult LITTE

Table A2b - ringing of chick LITTE

Table A2c - ringing of Ringed plovers

Table A2d - ringing of Oystercatchers

Refer to BTO Ringing guide for all codes used.

Table A2a: Ringing data on adult little terns nest-trapped at Kilcoole in 2025

Date	Record Type	BTO	GW(CR)	CR-Leg	New CR?	Ringer	Nest	Age	Wing (mm)	Bill-to-Feathers (mm)	Weight (g)	Comments	Sex	Sex Meth	Origin Loc	Origin age	Origin Year
4/6/2025	S	NW38248	B4S	L	N	AF	30	6	185	29.3	58.7	HB: 62.3 , P			Kilcoole	1	2014
6/6/2025	S	NW38531	B3V	L	N	AF	42	6	181	29.4	60.7	HB: 62.4 , P			Kilcoole	1	2013
7/6/2025	S	NW46952	APZ	L	N	AF	15	6	169	31.5	52.3	HB: 64.5 , P	F	S	Kilcoole	1	2020
7/6/2025	S	NW45700	CHB	L	Y - replacement	AF	49	6	186	-	53.7	HB: 67.4 , P, GW(ITA) replaced	M	S	Kilcoole	1	2015
7/6/2025	S	NW38238	CHC	L	Y - lost CR	AF	75	6	176	-	52.1	HB: 61.4 , P, one egg cracked while trapping, nest abandoned			Kilcoole	1	2014
8/6/2025	S	NW38915	C71	L	Y - replacement	JS	85	6	172	-	50.3	Jan Rod visit, was I3D			Kilcoole	1	2017
8/6/2025	S	NW55153	AJ7	L	N	JS	112	6	178	-	52.3	Jan Rod visit			Kilcoole	1	2021
8/6/2025	S	NW46155	C72	L	Y - replacement	JS	74	6	175	-	50.3	Jan Rod visit, was IL5			Kilcoole	1	2018
9/6/2025	S	NW55302	AZ1	L	N	AF	66	6	181	-	59.8	HB: 64.8 , P			Kilcoole	1	2021
9/6/2025	S	NW70751	AAB	L	N	AF	57	6	176	29.2	56.4	HB: 61.2 , P			Kilcoole	1	2020
9/6/2025	C	NV84774 (L)	YB(XCJ)	R	N	AF	16	6	176	32.6	51.5	P	M	S	TBC	1	2019
11/6/2025	S	NW87199	CHH	L	Y	AF	129	6	183	34.8	52.8	HB: 67.3 , P, M, CHE broken			Kilcoole	1	2023
18/6/2025	S	NW46177	B4V	L	N	AF	32	6	190	32.3	65.3	P	M	S	Kilcoole	1	2018
18/6/2025	S	NW46824	APN	L	N	AF	56	6	181	32	56.6	P			Kilcoole	1	2020
18/6/2025	S	NW29354	CHJ	L	Y	AF	136	6	179	28.4	53.1	P			Kilcoole	1	2008
18/6/2025	S	NW38923	CHK	L	Y	AF	157	6	180	32.5	55.1	P			Kilcoole	1	2017
18/6/2025	S	NW46468	A30	L	N	AF	86	6	174	29.4	49.9	P	F	S	Kilcoole	1	2019
19/6/2025	S	NW38373	CHN	L	Y	AF	105	6	187	35.6	58.4	P	M	S	Kilcoole	1	2011
19/6/2025	C	NW30411 (L)	CHS	R	Y	AF	120	6	182	29.8	58.2	BTO left leg, CR added right leg, P			Gronant	1	2017
19/6/2025	S	NW45573	B5S	L	N	AF	115	6	183	31.9	55.4	P			Kilcoole	1	2015
20/6/2025	S	NW45599	CHT	L	Y - replacement	AF	48	6	176	29.9	54.1	P, GW(IPZ) replaced	(F)	S	Kilcoole	1	2015
21/6/2025	S	NW38265	B8J	L	N	AF	133	6	176	31.5	56.6	P			Kilcoole	1	2024
21/6/2025	S	NW45672	CHX	L	Y - replacement	AF	135	6	183	29.6	60	P, GW(ITX) replaced	(M)	S	Kilcoole	1	2015
22/6/2025	S	NW46176	B91	L	N	AF	180	6	-	29.3	56.8	P, both wings very worn			Kilcoole	1	2018
24/6/2025	S	NW38089	B3T	L	N	RT	145	6	186	32.4	58.5	P, visiting ringer	M	S	Kilcoole	1	2020
24/6/2025	S	NW55380	A4E	L	N	JL	98	6	184	31.4	56.7	P, visiting ringer			Kilcoole	1	2021
28/6/2025	S	NW46242	CJA	L	Y	AF	161	6	172	24.3	54.7	P First resighting	F	S	Kilcoole	1	2018
29/6/2025	S	NW55973	CJB	L	Y	AF	144	6	172	25.5	52.2	P First resighting	F	S	Kilcoole	1	2023
3/7/2025	S	NW55570	CJE	L	Y	AF	173	6	-	29.5	53.2	P, both wings very worn, First resighting			Kilcoole	1	2022
5/7/2025	S	NW45645	AZH	L	N	AF	190	6	180	30.5	N/A	P, scale KO			Kilcoole	1	2015
4/6/2025	S	NW55929	BB6	L	N	AF	78	6	179	-	53.9	HB: 61.3 , P			Kilcoole	6	2023
11/6/2025	N	NW88551	CHD	L	Y	AF	101	6	180	30.3	49.5	HB: 65.5, P			Kilcoole	6	2025
18/6/2025	S	NW55463	CHL	L	Y - lost CR	AF	51	6	186	32.9	60.9	P, was A6J	M	S	Kilcoole	6	2022
19/6/2025	N	NW88555	CHP	L	Y	AF	96	6	173	30.5	54.6	P			Kilcoole	6	2025
20/6/2025	N	NW88559	CHV	L	Y	AF	122	6	183	31.1	52.4	P			Kilcoole	6	2025
20/6/2025	S	NW55426	A5N	L	N	AF	47	6	176	27.8	57.9	P	F	S	Kilcoole	6	2022
26/6/2025	N	NW88611	CHZ	L	Y	AF	182	6	185	28.1	56.5	P			Kilcoole	6	2025
28/6/2025	S	NW87506	B9L	L	N	AF	170	6	176	24.4	62.4	P	F	S	Kilcoole	6	2024

Table A2b: Little Tern chick ringing at Kilcoole in 2022 (page 1/3)

Species	NestNo.Loc	Record Type	BTO Ring	Colour Ring	Date	Found Dead?	Ringer	Wing (mm)	Weight (g)	Bill to Feather (mm)	CR added?	Notes	Age
LITTE			NW88551									ADULT	
LITTE	6	N	NW88552		15/06/2025		CJ	13	6.9		N	A chick 1/2 , NW8851 used on adult tern	1
LITTE			NW88553									RP chick	
LITTE	6	N	NW88554		16/06/2025		CJ	12	6		N	B chick 2/2	1
LITTE			NW88855									ADULT	
LITTE	95	N	NW88556		20/06/2025		JS	13	9.5		N	A chick 1/2	1
LITTE	95	N	NW88557		20/06/2025		JS	13	9.2		N	B chick 2/2	1
LITTE	20	N	NW88558		20/06/2025		AF	13	9.4		N	A chick 1/2	1
LITTE			NW88559									ADULT	
LITTE	45	N	NW88560		21/06/2025		JS	11	7.4		N	A chick 1/1	1
LITTE	47	N	NW88561		21/06/2025		JS	12	9.2		N	A chick 1/3	1
LITTE	47	N	NW88562		21/06/2025		JS	12	7.8		N	C chick, 3/3	1
LITTE	47	N	NW88563		21/06/2025		JS	12	9		N	B chick 2/3	1
LITTE	51	N	NW88564		21/06/2025		AF	11	7.1		N	A chick 1/2	1
LITTE	30	N	NW88565		22/06/2025		CJ	13	7.8		N	A chick 1/2	1
LITTE	30	N	NW88566		22/06/2025		CJ	12	6.9		N	B chick 2/2	1
LITTE	51	N	NW88567		22/06/2025		CJ	14	8.6		N	B chick 2/2	1
LITTE	52	N	NW88568		22/06/2025		AF	7	6.7		N	B chick 2/2	1
LITTE	52	N	NW88569		22/06/2025		AF	8	7.3		N	A chick 1/2	1
LITTE	65	N	NW88570		23/06/2025		CJ	14	7.1		N	A chick 1/2	1
LITTE	82	N	NW88571		23/06/2025		CJ	14	6.6		N	A chick 1/2 + 1e ab	1
LITTE	20	N	NW88572		23/06/2025		CJ	17	12.3		N	B chick 2/2	1
LITTE	93	N	NW88573		23/06/2025		JS	11	8.8		N	A chick 1/2	1
LITTE	93	N	NW88574		23/06/2025		JS	10	7.1		N	B chick 2/2	1
LITTE	73	N	NW88575		23/06/2025		JS	N/A	N/A		N	A Chick 1/2, No data due to bad weather	1
LITTE	73	N	NW88576		23/06/2025		JS	N/A	N/A		N	B chick 2/2, no data due to bad weather	1
LITTE	66	N	NW88577		24/06/2025		CJ	13	6.6		N	A chick 1/1	1
LITTE	57	N	NW88578		24/06/2025		CJ	14	8.9		N	A chick 1/2	1
LITTE	57	N	NW88579		24/06/2025		CJ	13	6.8		N	B chick 2/2	1
LITTE	82	N	NW88580		24/06/2025		CJ	13	5.5		N	B chick 2/2	1
LITTE	107	N	NW88581		24/06/2025		CJ	13	6.3		N	A chick 1/2	1
LITTE	107	N	NW88582		24/06/2025		CJ	13	6.3		N	B chick 2/2	1
LITTE	78	N	NW88583		24/06/2025		CJ	14	8.2		N	A chick 1/3	1
LITTE	78	N	NW88584		24/06/2025		CJ	13	5.7		N	B chick 2/3	1
LITTE	78	N	NW88585		24/06/2025		CJ	13	7.6		N	C chick 3/3	1
LITTE	32	N	NW88586		24/06/2025		CJ	15	8.6		N	A chick 1/2	1
LITTE	32	N	NW88587		24/06/2025		CJ	15	8.3		N	B chick 2/2	1
LITTE	42	N	NW88588		24/06/2025		RT	11	7.9		N	visiting ringer 1/3	1
LITTE	42	N	NW88589		24/06/2025		JL	8	8.1		N	visiting ringer 2/3	1
LITTE	U	N	NW88590		24/06/2025		RT	11	6.9		N	Found in nest 107	1
LITTE	15	N	NW88591		24/06/2025		AF	8	9.1		N	A chick 1/1 1 unhatched egg	1
LITTE	76	N	NW88592		24/06/2025		AF	10	6.6		N	A chick 1/1 1 unhatched egg	1
LITTE	U	N	NW88593		25/06/2025		CJ	15	8		N	A chick 1/2 ? Most likely from 49 or 50	1
LITTE	U	N	NW88594		25/06/2025		CJ	14	6.7		N	B chick B/2 ? Most likely from 49 or 50	1
LITTE	42	N	NW88595		25/06/2025		CJ	14	7.1		N	C chick 3/3	1
LITTE	29	N	NW88596		25/06/2025		CJ	16	10.3		N	A chick 1/3	1
LITTE	29	N	NW88597		25/06/2025		CJ	16	10.1		N	B chick 2/3	1
			NW88598									NOT ON THE STRING	
			NW88599									NOT ON THE STRING	
			NW88600									NOT ON THE STRING	
LITTE	29	N	NW88601		25/06/2025		CJ	15	9.4		N	C chick 3/3	1
LITTE	64	N	NW88602		25/06/2025		CJ	14	6		N	A chick 1/2	1
LITTE	73	N	NW88603		25/06/2025		JS	13	6.2		N	C chick 3/3	1
LITTE	56	N	NW88604		25/06/2025		JS	12	N/A		N	A chick 1/2	1
LITTE	97	N	NW88605		26/06/2025		AF	6	7.4		N	A chick 1/2	1
LITTE	97	N	NW88606		26/06/2025		AF	7	6.8		N	B chick 2/2	1
LITTE	48	N	NW88607		26/06/2025		AF	6	8.5		N	A chick 1/2	1
LITTE	89	N	NW88608		26/06/2025		AF	7	7.8		N	A chick 1/1	1
LITTE	126	N	NW88609		26/06/2025		AF	6	8.6		N	A chick 1/1	1
LITTE	127	N	NW88610		26/06/2025		AF	8	8.1		N	A chick 1/2	1

Table A2b: Little Tern chick ringing at Kilcoole in 2022 (page 2/3)

Species	NestNo.Loc	Record Type	BTO Ring	Colour Ring	Date	Found Dead?	Ringer	Wing (mm)	Weight (g)	Bill to Feather (mm)	CR added?	Notes	Age
			NW88611									ADULT	
	98	LOST	NW88612					11	6.8			RING SLIPPED OFF FOOT A CHICK 98 1/1 ringed 27/6	1
LITTE	106	N	NW88613		27/06/2025		AF	11	8.1		N	A chick 1/3	1
LITTE	106	N	NW88614		27/06/2025	02/07/2025	AF	11	7.5		N	B chick 2/3	1
LITTE	120	N	NW88615		27/06/2025		AF	9	6.8		N	A chick 1/2	1
LITTE	102	N	NW88616		27/06/2025		AF	10	6.7		N	A chick 1/2	1
LITTE	127	N	NW88617		27/06/2025		AF	9	7.1		N	B chick 2/2	1
LITTE	134	N	NW88618		27/06/2025		JS	N/A	N/A		N	A chick 1/2 no biometrics - weather	1
LITTE	159	N	NW88619		27/06/2025		JS	N/A	N/A		N	A chick 1/1 (1 egg unhatched) no biometrics - weather	1
LITTE	157	N	NW88620		28/06/2025		AF	12	8.9		N	A chick 1/2	1
LITTE	157	N	NW88621		28/06/2025	12/07/2025	AF	11	6.8		N	B chick 2/2	1
LITTE	117	N	NW88622		28/06/2025		AF	8	8.5		N	A chick 1/2	1
LITTE	117	N	NW88623		28/06/2025	12/07/2025	AF	7	8.2		N	B chick 2/2	1
LITTE	86	N	NW88624		28/06/2025		AF	6	6.7		N	A chick 1/2	1
LITTE	119	N	NW88625		28/06/2025	12/07/2025	AF	10	8.1		N	A chick 1/2	1
LITTE	119	N	NW88626		28/06/2025	12/07/2025	AF	6	7.3		N	B chick 2/2	1
LITTE	120	N	NW88627		28/06/2025		AF	12	9.2		N	B chick 2/2	1
LITTE	150	N	NW88628		28/06/2025		AF	9	7.4		N	A chick 1/2	1
LITTE	192	N	NW88629		28/06/2025		AF	11	7.5		N	A chick 1/2	1
LITTE	192	N	NW88630		28/06/2025		AF	10	7.6		N	B chick 2/2	1
LITTE	U	N	NW88631		29/06/2025	12/07/2025	CJ	15	8.9		N	found in G	1
LITTE	150	N	NW88632		29/06/2025		DG	15	7.8		N	B chick 2/2	1
LITTE	116	N	NW88633		29/06/2025	02/07/2025	CJ	15	8.1		N	A chick 1/2	1
LITTE	139	N	NW88634		29/06/2025		DG	12	8.4		N	A chick 1/2	1
LITTE	139	N	NW88635		29/06/2025		DG	10	7		N	B chick 2/2	1
LITTE	86	N	NW88636		29/06/2025		CJ	13	6		N	B chick 2/2	1
LITTE	98	N	NW88637		30/06/2025	02/07/2025	CJ	19	17		N	A chick 1/1 2 unhatched eggs	1
LITTE	136	N	NW88638		30/06/2025	03/07/2025	CJ	16	10.8		N	A chick 1/1 1 unhatched egg	1
LITTE	131	N	NW88639		30/06/2025		CJ	14	7.3		N	A chick 1/1	1
LITTE	U	N	NW88640		30/06/2025		CJ	14	7.9		N	Might be from 123	1
LITTE	74	N	NW88641		30/06/2025		CJ	15	9.7		N	A chick 1/2	1
LITTE	74	N	NW88642		30/06/2025		CJ	14	8.1		N	B chick 2/2	1
LITTE	U	N	NW88643		30/06/2025		CJ	17	13		N	A chick 1/2	1
LITTE	U	N	NW88644		30/06/2025		CJ	16	13.1		N	B chick 2/2	1
LITTE	102	N	NW88645		30/06/2025	07/07/2025	CJ	17	13.9		N	B chick 2/2	1
LITTE	U	N	NW88646		30/06/2025	02/07/2025	JS	13	10		N		
LITTE	112	N	NW88647		30/06/2025		JS	13	7.6		N	A chick 1/3	1
LITTE	146	N	NW88648		30/06/2025		JS	14	8.4		N	A chick 1/2	1
LITTE	146	N	NW88649		30/06/2025		JS	12	8.3		N	B chick 2/2	1
LITTE	111	N	NW88650		1/7/2025	10/07/2025	CJ	15	7.6		N	B chick 2/2	1
LITTE	111	N	NW88651		1/7/2025	10/07/2025	CJ	15	7.9		N	A chick 1/2	1
LITTE	163	N	NW88652		1/7/2025		CJ	16	8.4		N	A chick 1/2	1
LITTE	163	N	NW88653		1/7/2025		CJ	14	6.1		N	B chick 2/2	1
LITTE	167	N	NW88654		1/7/2025		CJ	19	10.5		N	B chick 2/2	1
LITTE	167	N	NW88655		1/7/2025		CJ	20	11.9		N	A chick 1/2 scale KO	1
LITTE	U	N	NW88656		1/7/2025	02/07/2025	JS	20	N/A		N	found near 111 scale KO	1
LITTE	162	N	NW88657		1/7/2025		JS	13	N/A		N	A chick 1/2 scale KO	1
LITTE	156	N	NW88658		2/7/2025	04/07/2025	CJ	14	N/A		N	scale KO	1
LITTE	U	N	NW88659		2/7/2025	12/07/2025	CJ	17	N/A		N	found near 154	1
	154	LOST	NW88660		2/7/2025		CJ	14	N/A		N	A chick 1/2 RING SLIPPED OFF FOOT	1
	154	LOST	NW88661		2/7/2025		CJ	14	N/A		N	B chick 2/2 RING SLIPPED OFF FOOT	1
LITTE	162	N	NW88662		2/7/2025		CJ	14	N/A		N	B chick 2/2	1
LITTE	U	N	NW88663		3/7/2025		JS	102	N/A		N	found GBF	1
LITTE	U	N	NW88664		4/7/2025		JS	58	41.8		N	found BBF	1
		MISSING	NW88665									Not seen on string	
LITTE	U	N	NW88666		6/7/2025		CJ	54	31.8		N	A foreshore	1
LITTE	U	N	NW88667		7/7/2025		CJ	59	N/A		N	A foreshore	1
LITTE	U	N	NW88668		7/7/2025		AF	82	51.2		N	B foreshore	1
		BACK ON STRING	NW88669									RING SLIPPED OFF FOOT, FOUND AND PUT BACK ON STRING	
		BACK ON STRING	NW88670									RING SLIPPED OFF FOOT - PUT BACK ON STRING	
LITTE	130	N	NW88671		9/7/2025		JS	13	9.2		N	A chick 1/2	1
LITTE	130	N	NW88672		9/7/2025		JS	12	7.1		N	B chick 2/2	1

Table A2b: Little Tern chick ringing at Kilcoole in 2022 (page 3/3)

Species	NestNo.Loc	Record Type	BTO Ring	Colour Ring	Date	Found Dead?	Ringer	Wing (mm)	Weight (g)	Bill to Feather (mm)	CR added?	Notes	Age
LITTE	175	N	NW88673		9/7/2025		JS	11	7.3		N	small chick ring might slip	1
LITTE	U	N	NW88674		14/7/2025		CJ	21	16		N	found GBF	1
LITTE	29	S	NW88601		5/7/2025		JS	60	N/A		N	scale KO, found EBF	1
LITTE	78	S	NW88584		5/7/2025		JS	52	N/A		N	FBF C chick, D12	1
LITTE	93	S	NW88573		5/7/2025		AF	73	N/A		N	A chick D13	1
LITTE	52	S	NW88569	CJJ	6/7/2025		CJ	70	39	13.6	Y	F foreshore B chick D14 not looking lively	1
LITTE	32	S	NW88586	CJK	6/7/2025		CJ	61	37.2	12.2	Y	F foreshore A chick D13	1
LITTE	73	S	NW88576	CJN	6/7/2025		CJ	74	39.5	14.6	Y	D foreshore B chick D13	1
LITTE	51	S	NW88564	CJS	6/7/2025		DG	73	44.7	15.3	Y	D foreshore A chick D15 broken CJP	1
LITTE	32	S	NW88587	CJT	6/7/2025		CJ	64	33.9	12.4	Y	B foreshore B chick D13 swollen knee	1
LITTE	42	S	NW88589	CJV	6/7/2025		CJ	61	33.9	12.1	Y	B foreshore B chick D12	1
LITTE	106	S	NW88613	CJX	6/7/2025		DG	50	33	12.8	Y	B foreshore A chick D10	1
LITTE	U	S	NW88594	CJZ	6/7/2025		CJ	61	31.9	11.7	Y	A foreshore	1
LITTE	78	S	NW88585	CKA	6/7/2025		DG	65	35.7	13.2	Y	A foreshore B chick D13	1
LITTE	97	S	NW88605	CKB	6/7/2025		DG	49	35.1	13.2	Y	A foreshore A chick D11	1
LITTE	42	S	NW88588	CKD	6/7/2025		CJ	55	31.9	11.2	Y	A foreshore A chick D12 CKC on new bird	1
LITTE	120	S	NW88615	CKE	6/7/2025		DG	46	32.3	12.2	Y	E A chick D12	1
LITTE	29	S	NW88601	CKJ	6/7/2025		CJ	66	42	14.1	Y	E C chick D12 CKH broken	1
LITTE	29	S	NW88596	CKK	6/7/2025		CJ	67	39.9	14	Y	E A chick D12	1
LITTE	157	S	NW88621	CKN	6/7/2025		DG	42	27.9	11.4	Y	B chick D9 CKL broken	1
LITTE	159	S	NW88619	CKP	7/7/2025		CJ	59	N/A	12.6	Y	A foreshore A chick D11 CKS new bird, CKZ missing (?)	1
LITTE	65	S	NW88570	CA0	7/7/2025		CJ	83	N/A	14.4	Y	F foreshore A chick D15	1
LITTE	73	S	NW88575	CA1	7/7/2025		CJ	72	N/A	13.8	Y	F foreshore ? D14	1
LITTE	56	S	NW88604	CA2	7/7/2025		CJ	66	N/A	13.5	Y	F foreshore A chick D13	1
LITTE	157	S	NW88620	CA4	8/7/2025		CJ	65	36.9	13.5	Y	A	1
LITTE	57	S	NW88579	CA5	9/7/2025		JS	76	41.2	11	Y	BBF	1
LITTE	COOL1	N	NW46393		24/6/2025		BB	-	-	-	N	Cooldross artificial beach	1

Table A2c: Ringed plover ringing at Kilcoole in 2025

Species	Site	Date	Ringer	NestNo.Loc	Record type	BTO Ring	Colour Ring	Age	CR added?	Wing (mm)	Weight (g)	Tarsus-Toe (mm)	Molt	Sex	Sex Met	Breeding condition	Partner	Notes
RINPL	West of Bridge	12/5/2025	AF	RP0	N	NP28851	A5	6	Y	139	76.7	-	O	M	P	P	A6	Early nest spotted by a local walker, pair thought to be nesting in the area each year
RINPL	West of Bridge	12/5/2025	AF	RP0	N	NP28870	A6	6	Y	140	75.8	-	O	F	P	P	A5	Early nest spotted by a local walker, pair thought to be nesting in the area each year
RINPL	Kilcoole	13/5/2025	AF	RP3	N	NP28852	A7	6	Y	145	68.5	-	O	F	P	P	?	
RINPL	Kilcoole	13/5/2025	AF	RP1	S	NW12962	AU	6	N	136	62.1	-	O	F	P	P	?	1 metal ringed fledging seen until the end of the season likely from this nest
RINPL	Kilcoole	15/5/2025	JS	RP1	N	NP28853		1	N	11	-							1/3, 4th dead
RINPL	Kilcoole	15/5/2025	JS	RP1	N	NP28854		1	N	11	-							2/3, 4th dead
RINPL	Kilcoole	15/5/2025	JS	RP1	N	NP28855		1	N	10	-							3/3, 4th dead
RINPL	Kilcoole	16/5/2025	JS	RP0	N	NP28856		1	N	11	7.7							bridge, 1/4, 2 unringed
RINPL	Kilcoole	16/5/2025	JS	RP0	N	NP28857		1	N	10	7.7							bridge, 2/4, 2 unringed
RINPL	Kilcoole	3/6/2025	AF	RP8	N	NW55650	A8	6	Y	137	77.8	54	O	F	P	P	?	ring found in bag, LITTE ring?
RINPL	Kilcoole	9/6/2025	AF	RP6	S	NW87234	A2	6	N	138	69.7	50	O	F	P	P	AA	LITTE ring?
RINPL	Kilcoole	13/6/2025	JS	RP6	N	NP28858		1	N	-	-							1/4, 2 unringed, fate presumed: all dead given early relay
RINPL	Kilcoole	15/6/2025	CJ	RP8	N	NW88553		1	N	12	7.8							1/1, LITTE ring
RINPL	Kilcoole	15/6/2025	JS	RP6	N	NP28859		1	N	11	6.7							2/4, 2 unringed
RINPL	Kilcoole	17/6/2025	CJ	RP10	N	NP28860		1	N	12	8.9							1/4, 1 unringed
RINPL	Kilcoole	17/6/2025	CJ	RP10	N	NP28861		1	N	13	9.3							2/4, 1 unringed
RINPL	Kilcoole	17/6/2025	CJ	RP10	N	NP28862		1	N	13	8.5							3/4, 1 unringed
RINPL	Kilcoole	21/6/2025	AF	RP11	S	NP28834	A4	6	N	142	69.7	49	O	F	P	P	?	
RINPL	Kilcoole	24/6/2025	AF	RP1	S	NP28854	A9	3	Y	108	48.3	46						CR'ed at D40, found dead 02/07/2025
RINPL	Kilcoole	26/6/2025	AF	RP12	S	NP28870	A6	6	N	139	72.5	49	O	F	P	P	A5	**Relay RP0, found 20/6 wih 2 eggs, 39 days after RP0 hatched**
RINPL	Kilcoole	04/07/2025	AF	RP14	S	NW07546	AA	6	N	140	60.5	51	O	M	P	P	A2	Relay RP6. Uncoded green replaced (was white and thin). LITTE ring?
RINPL	Kilcoole	06/07/2025	AF	RP11	N	NP28865	A0	6	Y	137	-	50	O	M	P	P	A4	Scale KO
RINPL	Kilcoole	07/07/2025	AF	RP14	S	NW87234	A2	6	N	135	67.6	50	O	F	P	P	AA	LITTE ring? **Relay RP6 found 2/7 with 3 eggs, 19 days after RP6 hatched** Wing measurement 3mm shorter than when first caught 1 month earlier?
RINPL	Kilcoole	09/07/2025	JS	RP11	N	NP28866		1	N	11	8.2							1/4
RINPL	Kilcoole	09/07/2025	JS	RP11	N	NP28867		1	N	10	8.1							2/4
RINPL	Kilcoole	09/07/2025	CJ	RP11	N	NP28868		1	N	12	8.1							3/4
NP28869 NOT RECORDED:MISSING? NP28871 TO END OF SERIE NOT ON STRING:STRING WAS NOT COMPLETE																		
RINPL	Kilcoole	09/07/2025	CJ	RP11	N	NP28901		1	N	12	8							4/4

Table A2d: Oystercatcher ringing at Kilcoole in 2025

Species	Site	Date	Ringer	NestNo.Loc	Record type	BTO Ring	Colour Ring	Age	CR added?	Wing (mm)	Weight (g)	Bill to Feather (mm)	Notes
OYSTE	Kilcoole	08/06/2025	JR	OC2	N	FH75206	O11	6	Y	265	516	77	Found dead 04/07/2025 train collision while moving chicks
OYSTE	Kilcoole	08/06/2025	JR	OC3	N	FH75207	O14	6	Y	279	556	78	
OYSTE	Estuary	15/7/2025	AF	Unknown	N	FJ19771	-	1	N	53	131.7	-	HB = 60.3mm,around 10 days old, could be from the unmarked nest in the estuary, unringed pair.
OYSTE	Estuary	20/7/2025	AF	Unknown	S	FJ19771	O33	1	Y	91	216.2	33.5	HB = 62.5mm, feather small
OYSTE	Estuary	24/7/2025	AF	Unknown	N	FJ19772	O35	1	Y	113	-	39.8	HB = 78.0mm, likely from OC2