

WADER HUB

Wader Nest Monitoring Guidance



Curlew nest, by David Scott/ BTO

FIRST PRINCIPLES AND WADER NEST MONITORING CODE OF CONDUCT

Fieldworkers often fear causing undue disturbance (at worst, nest desertion) when wader nest-finding and monitoring, but if basic guidelines are adhered to, there is good evidence that nest monitoring has little or no significant effect on birds' chances of nesting success (see Gotmark 1992, Mayer-Gross *et al.* 1997, Yalden & Higgins 2002). Nevertheless, undue disturbance can happen, and caution must be employed at all stages to prevent and mitigate any negative impacts by following the **Wader Nest Monitoring Code of Conduct** below (based on the general Nest Record Scheme Code of Conduct).

Fundamentally, your safety and conduct when undertaking nest monitoring is your own responsibility. Please see our guidance for volunteer fieldworkers (www.bto.org/how-you-can-help/take-part-project/guidance-for-volunteer-fieldworkers) for further guidance on land access, health & safety, and safeguarding before undertaking any nest monitoring. For your safety and others, it is crucial to maintain a good relationship with the landowners and managers where you are undertaking nest monitoring; contact and consult with them on what conditions they have for accessing their land and stick to these carefully.

Note: you should not approach nests of Schedule 1 waders (Avocet, Black-winged Stilt, Dotterel, Kentish Plover, Green Sandpiper, Greenshank, Little Ringed Plover, Purple Sandpiper, Red-necked Phalarope, Ruff, Stone-curlew, Temminck's Stint, Whimbrel, Wood Sandpiper) without a relevant licence. It is illegal to disturb any Schedule 1 bird at their nest site without a relevant licence. Please see www.bto.org/our-science/projects/ringing/schedule-1-first-application for details on how to apply for a licence to visit nests of Schedule 1 birds.

1. Plan your visits: Keep the amount of time you spend at nest sites to a minimum. On finding a nest:

- Note the location accurately using a map or GPS device so you or your team can find it quickly on subsequent visits (most smartphones have GPS capabilities, and **GridPoint GB** or **what3words** are useful apps for accurately noting your exact location).
- Have all the equipment you need ready and organised before you approach. This is particularly important where you intend to monitor a nest using a camera or temperature logger, or to erect predator-proof fencing (but seek further guidance on these methods before doing so).
- Only re-visit when it is necessary to collect data (or for conservation interventions). For example, once the parent birds have completed the clutch, you do not need to count the eggs again before hatching and on future monitoring visits it should be possible to confirm the nest is active by observing the nest site from a safe distance.

2. Approach a nest carefully, but casually: Incubating waders will usually leave their nest well in advance of your approach. They do so either on foot, then taking flight away from the location (commonly early in incubation) or stay to alarm-call and mob (more commonly late in incubation). It is best to approach in a way that means the bird has a clear view of you (though try to avoid approaching the nest by the same route on each visit, which may beat an obvious path in vegetation leading directly to the nest). It helps to take as slow and measured an approach as possible, to allow the incubating bird sufficient time to assess the situation and increase the chances of them leaving the nest without damaging eggs.

3. Take care whilst searching: Wader nests can occur at high density, check carefully where you put your feet on route to (and around) a potential nest location. Any recently hatched chicks can be incredibly well-camouflaged and will usually remain motionless crouched low to the ground, near to, but not necessarily in, a nest cup.

4. Check for sitting birds: Exceptionally, waders will remain sitting once you have approached the nest. If this happens, please make some noise by gently tapping nearby ground and leave the area carefully if this still does not flush the sitting bird.

5. Take care at the nest: Remain at the nest for as short a period as is necessary to make observations. Avoid disturbing vegetation containing or surrounding nests, as this may make the nest more exposed (to both weather conditions and predators).

6. Nest contents can be moved within the nest cup but not picked up: An appropriate licence is required to pick up and handle eggs and chicks for the purposes of taking measurements and ringing. Non-licensed observers are permitted to touch eggs to count them and check whether they are warm, but this must be done very gently to avoid damage.

7. Don't leave any evidence: While predators are unlikely to deliberately follow tracks made in vegetation in the hope of finding prey (in many wader breeding habitats, widely controlled mammals such as Foxes are likely to avoid, rather than follow human scent), they may later use them as passageways, potentially bringing them into closer contact with nests than would otherwise be the case. Damaging vegetation can also expose the nest to rain and wind, so:

- Avoid making tracks as far as possible, but if you do, be sure to push the vegetation back into place afterwards (a walking stick is helpful for this).
- On approaching a known nest, pick a route that disturbs as little vegetation as possible, taking big (but careful) strides and stepping over or gently parting clumps of undergrowth.
- Use a different return route so that any remains of a trail do not end at the nest. Begin the approach to trackside/roadside nests several metres away along the verge to avoid taking a direct track.
- Always replace any vegetation moved to see into the nest exactly as you found it.
- Please **do not visit a nest while any predator is in the vicinity** (scan the area surrounding carefully for corvids, gulls, pheasants, raptors, or any mammalian predators that are visible).

FINDING WADER NESTS

Like most fun things in life, finding wader nests is a good mix of luck and skill. The 'thrill of the hunt' makes it one of the most engaging wader monitoring methods; it can be addictive, especially when you begin to 'get your eye in.'

Practice: Equally like most things in life, your first attempts are unlikely to be a roaring success. This can be disheartening but it just makes it more rewarding when you do make progress, and everyone can get there with enough practice if you stick with it. There is no substitute for spending time simply watching waders for extended periods of time at their breeding grounds, and safely searching areas you have noted as potential nest sites.

Find a mentor: It is beneficial to spend time finding nests ('nesting') with an experienced wader nest-finder. If you don't know any local individuals or groups, please check the Wader Map (<https://app.bto.org/wader-map/index.jsp>) for local projects or email waders@bto.org to enquire about local wader nest-finders in your area.

Find breeding sites: The first step to finding where waders will likely nest is to identify breeding pairs and sites early in the breeding season. Waders tend to remain in flocks when first arriving back on breeding grounds (weeks, or even months before laying eggs), then gradually spread out into their respective 'territories'. For species with larger territories, like Curlew, this spread is clearer; for those with smaller territories, like Lapwing, it is less clear-cut.

The time at which pre-breeding flocks disperse into territories depends upon species and location, but one to two weeks before mean first clutch (full set of eggs) laid (Table 1), locations of displaying waders should be broadly reflective of nesting sites.

All wader species defend an area around the intended nest location from birds of the same species and sex to some extent. To varying degrees, they may also choose to nest near other wader pairs (termed semi-colonial), relying on the protection of many eyes and voices (alarm calls), and communal mobbing that other waders nesting nearby (not just of their own species) provides. Less often, most waders can also nest singly (not near other pairs), especially in sub-optimal habitat.

During this period, keep note of where you see or hear birds in pairs, making display calls or 'song' (either in flight or from the ground), or engaging in territorial disputes (see www.bto.org/wader-behaviour).

Table 1. Mean first clutch completed (with earliest and latest recorded range, excluding extremes. **Note:** latest date ranges may include relays and second clutches) for eight common UK breeding waders, with estimated mean hatch and fledge dates (and ranges, which include replacement clutches), based on incubation and fledging periods. Mean first clutch completed, and incubation and fledging periods are taken from Nest Record Scheme records. **Note:** these are mean dates that provide a general guide but mean dates will vary by a few days by latitude (earlier in the south, later in the north), habitat, weather, levels of disturbance etc., and individual nests will vary much more greatly (up to weeks).

Species	Mean first clutch laid (range)	Estimated mean hatching date (range)	Estimated mean fledging date (range)
Common Sandpiper	19 May (5 May–6 Jun)	9 June (26 May–28 Jun)	28 June (14 Jun–17 Jul)
Curlew	2 May (17 Apr–31 May)	30 May (15 May–29 Jun)	4 July (16 Jun–6 Aug)
Dunlin	Insufficient data – more Dunlin nest records needed!		
Golden Plover	24 April (3 Apr–6 Jun)	23 May (2 May–7 Jul)	21 June (27 May–9 Aug)
Lapwing	12 April (25 Mar–25 May)	11 May (23 Apr–28 Jun)	17 June (28 May–7 Aug)
Oystercatcher	19 May (15 Apr–9 Jun)	13 June (10 May–6 Jun)	18 July (13 Jun–12 Aug)
Redshank	1 May (14 Apr–7 Jun)	25 May (8 May–1 Jul)	24 June (2 Jun–5 Aug)
Snipe	30 April (31 Mar–24 Jun)	19 May (19 Apr–14 Jul)	7 June (8 May–3 Aug)

Watch out for non-breeders: Be mindful that a small proportion of displaying waders remain unpaired throughout the breeding season and, more rarely, some paired waders do not attempt nesting.

During the nesting period: Once the nesting period (generally April to July, see Table 1) gets underway, for many species you can locate nesting pairs at the areas you have identified by simply watching from a suitably distant (greater than 100 m), and a concealed vantage point (e.g., where possible, having a vehicle to watch from is a great advantage). However, for more cryptic nesting species like Dunlin, Snipe, and Golden Plover, this is much more difficult. When waders ‘mob’ (harass) predators or are disturbed at a suspected nesting site (this can include disturbance from you, the observer), it can be fruitful watching their movements for a long while after the predator/disturbance has gone; with patience, they can be eventually ‘watched back’ to the nest.

It is possible to pinpoint exact nest sites by watching back, but this can be difficult where substrate, vegetation, or topography preclude good views of the nest; waders have evolved specifically to hide their return to nests. The point at which you lose sight of a bird in vegetation or over a slope, combined with knowledge of their nesting habitat (described below in the species accounts), can give you a good area to carefully search on foot to watch for flushed birds. This method is most effective for waders nesting in unvegetated or short vegetated substrates.

If you are on your own, try to find a landmark near the nest site that is unique to the immediate area (a shrub, rock, or debris) and estimate its distance and orientation from the suspected nest site. A landmark on the horizon line directly behind your route to the nest site can also help ensure your approach is in line.

If possible, get help from friends: working in pairs or teams, using two-way radios (walkie-talkies) or mobile phones if you have reception, is preferable wherever possible. It is amazing how different a patch of ground can look when you arrive at it, compared to from where you were watching. Having a helper with you, watching from the same spot as where you observed the potential nest site, who can direct you when you get there, is extremely useful.

Below is a species-by-species account of relevant behaviours and nest-finding.

Common Sandpiper

Clutch: 4 (2–5) eggs

Hatch: 21–22 days

Fledge: 26–28 days

Broods: 1 per year

Mean first clutch laid (range)

19 May (5 May–6 Jun)

Estimated mean hatch date (range)

9 June (26 May–28 Jun)

Estimated mean fledge date (range)

28 June (14 Jun–17 Jul)



Common Sandpiper, by Edmund Fellowes / BTO

The Common Sandpiper is a long-distance migrant and the latest returning breeding wader species outlined here. Throughout April their presence is not necessarily reflective of nesting locations, but usually is by early May. First clutches are completed from early May, peaking mid May, and gradually becoming less common by early June. Average incubation time is 22 days, so most nests will be on the ground from early May to early June.

Display (best time to look: late April to May)

Common Sandpipers display frequently and loudly. Individuals or pairs perform display flights in long arcs over waterbodies (reservoirs, lakes, and rivers), close to the surface, calling their rhythmic high-pitched piping song. They can perform display flights away from nesting sites earlier in the season (April), but they are more confined to nesting sites later in the season (May and June).

Finding nest sites (best time to look: mid May to June)

Revisit areas where you recorded display earlier in the season. Nests are strongly associated with land immediately bordering upland water bodies (occasionally including woodland), and are rarely located beyond 10–30 m from water. Nests are often well-concealed, in taller vegetation, even sparse/young scrub (e.g., gorse), and can be on banks or flat ground. Nesting densities vary but can be high around favoured bodies of water.

Searching on foot: their concealment/use of banks means birds can be surprised by approaching fieldworkers and flush at short distance (but flush ~100 m away if incubating bird is not surprised). This usually provides a small area to direct intensive nest searches. Walking the ~30 m from water's edge along reservoirs, lakes, and rivers where you have observed displaying birds can be fruitful, but note, nest sites can occasionally be located much further away from water.

Watching back: Common Sandpipers are difficult to watch back to nests, but it is possible. Birds usually linger near nest sites, often false-feeding, slowly moving closer, and eventually returning to the nest. Birds flying over land away from waterbodies are a good indication they are nesting nearby (commuting to and from their nest site to nearest waterbody) and you should watch them as far as possible. Line of flight can be useful for indicating areas to search (towards the end of the flight away from the nearby waterbody).

Nest



Jim Hodson / BTO

Eggs



Jim Hodson / BTO

Chicks



Jim Hodson / BTO

Curlew

Clutch: 4 (2–5) eggs

Hatch: 28–30 days

Fledge: 32–38 days

Broods: 1 per year

Mean first clutch laid (range)

2 May (17 Apr–31 May)

Estimated mean hatch date (range)

30 May (15 May–29 Jun)

Estimated mean fledge date (range)

4 July (16 Jun–6 Aug)



Curlew, by David Scott / BTO

When first arriving back at breeding grounds from late winter onwards, Curlews are very detectable, but their behaviour can be difficult to discern. Curlews return to breeding grounds in dribs and drabs, then form pre-breeding flocks and frequent preferred feeding grounds and communal roosts nearby. Though they will show signs of courtship (such as pair display and copulation), their location during this period may not be representative of later nest sites. Throughout the month of April, observations of pairs and displaying birds become gradually more reflective of ultimate nesting locations. Curlews complete first clutches from mid-April onwards, peaking early May, becoming less common by late May. Average incubation time is 29 days, so most nests are on the ground from late April through to June.

Display and other breeding cues (best time to look: April)

By mid to late April (depending on site), distinctive individual or paired display flights, and ground displays demarcate wide areas to search for nests. Their distinctive 'bubbling' song, delivered from long glides interspersed with hovering on shivering wings, makes them easily detectable. Territorial disputes (between males) can be obvious and are also a good indication of nearby nesting locations. Birds from neighbouring territories can travel hundreds of metres, even a kilometre or more, to join communal mobbing of a potential predator, including human observers. This can sometimes give a false impression of remarkably high local nesting densities.

Finding nest sites (best time to look: April to late May)

During the period when most Curlews are on eggs, they are more secretive and difficult to detect. Search areas based on your observations of display earlier in the season. Nesting density varies significantly by habitat type and quality. Single pairs per km² are common, but greater densities of more than five nests per km² are possible (with nests only ~100 m apart). Curlew often select tussocks of grass, rush, or heather for nest sites (though also very sparsely vegetated meadows, arable fields, or pasture), creating a large nest cup ~20 cm in diameter. In moorland, Curlews prefer nesting in boggy areas with a ground cover of rushes.

Searching on foot: Curlews are difficult to spot leaving nests, as they do so 100–500 m from a person's approach, often running from nest sites in cover and finally 'flushing' into flight a good distance from the nest (often then alarm-calling). Pairs are very wary, with one parent standing watch from a prominent perch (e.g., drystone wall or fencepost). Sometimes, however, you may startle a bird off a nest during fieldwork (though you should not intentionally startle birds off nests, as sitting birds can damage eggs when flushing off nests), if an obstacle near the nest site, low-light or windy conditions conceals your approach; this can help to direct intensive nest searches.

Watching back: Curlews are difficult to watch back to nests after disturbance; they are slow and careful returning to nests, often false feeding, then using whatever cover is possible for the final dash back. However, long vantage point watches (an hour or more) in the initial stages of incubation can also be fruitful, especially if out of sight behind a wall, a bank, or from a vehicle. Providing you are well-concealed and at least 100 m away, Curlews will conspicuously fly back to the general nest area after disturbance within 15–30 minutes. Seeing a bird return to a nest or disappear in a suitable patch of vegetation will give you a good search-area to try.

See also the Curlew Recovery Partnership Toolkits: <https://www.curlewrecovery.org/resources>

Nest



David Jarrett / BTO

Eggs



Jim Hodson / BTO

Chicks



Jim Hodson / BTO

Dunlin

Clutch: 4 (3–4) eggs

Hatch: 21–22 days

Fledge: c.28 days

Broods: 1 per year

Mean first clutch laid (range)

Insufficient data

Estimated mean hatch date (range)

Insufficient data

Estimated mean fledged date (range)

Insufficient data



Dunlin, Colin Richards / BTO

Dunlins make first appearances on breeding territories at the end of April, a little later than Golden Plovers, which often share the same breeding grounds. Early breeding evidence include: i) birds flying around over the habitat chasing each other, ii) ascending singing display flights, and iii) occasional birds on a tussock on the ground calling or singing. By early May, most pairs have formed, and the have laid their first eggs. Most pairs will be on eggs by the middle of the month. During the incubation period, the breeding habitat becomes quiet, with off-duty birds spending extended periods away from the nesting site. By early to mid-June, as most eggs have hatched, birds are much more detectable, as pairs alarm-call or males silently stand on guard duty on a tussock watching intruders, alarm-calling when predators or fieldworkers get too close to their chicks. A few days after the eggs hatch the females leave the breeding habitat and the upbringing of the resulting chicks is the responsibility of the male, so only one adult will be present with broods.

Display and other breeding cues (best time to look: late April or early May)

Display and flight chasing can take place over a wide area and are not confined to the later nest site. When eggs are being laid, or early in incubation, one or both of the pair will remain close to the nest site and stand watch, usually silently, from a tussock and let potential predators and fieldworkers pass by. Sometimes an alarming Golden Plover will bring a Dunlin into view as it stands beside the Golden Plover looking around to see the potential threat.

Finding nest sites (best time to look: mid to late May)

One of the more difficult species' nests to find. Dunlin are small and well camouflaged birds. Most nests are well hidden in a grass tussock and can be found close to small pools in wetter areas, or in quite dry grass, and incubating birds sit tight until flushed at close distance.

Searching on foot: Difficult! Even when a Dunlin is flushed, the nest is well-hidden and great care is needed to find it. Sometimes while searching in blanket bog, standing still to look around unnerves the sitting bird and it leaves the nest (mostly unnoticed) and stands on a tussock nearby either silently or alarm-calling. Incubating birds usually sit remarkably close, so you only need to check the few metres in front of you whilst walking slowly and carefully. If you flush a Dunlin, try to mark the departure area carefully. Never walk while looking around for a nest as you may tread on the nest, it is much better to take a careful step then look close around, before taking another step.

Watching back: You can rarely watch birds back to the nest, as these small birds creep back through cover, keeping close to the ground. They may remain still for a while, giving the impression that they are back at the nest, only to continue creeping to another location.

See also the paper "Dunlins in the Peak District. *British Birds*, **110**: 69–128.

Special thanks to Geoffrey Carr for providing the content for this Dunlin section.

Nest



Jim Hodson / BTO

Eggs



Jim Hodson / BTO

Chicks



DAVID SCOTT / BTO

Golden Plover

Clutch: 4 (3–4) eggs

Hatch: 27–28 days

Fledge: c30 days

Broods: 1 (2) per year

Mean first clutch laid (range)

24 April (3 Apr–6 Jun)

Estimated mean hatch date (range)

23 May (2 May–7 Jul)

Estimated mean fledge date (range)

21 June (27 May–9 Aug)



Golden Plover, by David Scott / BTO

Depending on weather conditions, Golden Plovers can arrive back on breeding grounds as early as February but occupancy of breeding sites and display peak in March. They complete first clutches from early April onwards, peaking late April, and gradually becoming less common by late May. Their average incubation time is 29 days, so most nests are present late April to early June. Most pairs are single-brooded, although a few females double-brood. Once a brood has hatched and moved away from the nest, the adults stop defending their nesting territory and a second peak of laying later in the breeding season can occur from subordinate or failed pairs moving into good territories, where pairs have previously hatched young.

Display and other breeding cues (best time to look: March to April)

Golden Plovers perform display flights high above their 'territories,' making their mournful two-note song, tending to end in a steep dive. Display flights are indicative of potential nesting sites to search later, but observations in this period tend to underestimate the number of nests on the ground later in the season. Persistent alarming (often subtle repeated calls rather than an obvious alarm) by a male can indicate its incubating partner is nearby, though he will tend to distract you away from a nest.

Finding nest sites (best time to look: April to late May)

Golden Plover nests are notoriously difficult to find. During the nesting period birds are noticeably quiet and hard to detect; detectable birds only represent a low percentage of the true number of nests in an area. Off-duty adults can feed far away from nest sites. Golden Plovers nest on the ground, avoiding vegetation (grass or heather) above 15 cm in height, preferring particularly short vegetation. Like other plovers, they favour visibility over nest concealment, tending to select a raised area with clear views around. Many nests are on broken ground with small, raised tussocks surrounded by patches of bare peat and searching these areas should be more productive on blanket bog. On moorland where burning takes place, Golden Plovers favour burnt areas for nest sites. However, a smaller number of nests are in longer vegetation or in tufts of heather or other vegetation.

Searching on foot: Golden Plover nests are exceedingly difficult to find by searching on foot. Walk steadily, carefully, and systematically across potentially suitable areas, watching far ahead. Sitting birds will fly directly from nests (or nearby after running) ~100 m ahead of your approach (but often at shorter distances, especially well through incubation), usually at a right-angle to the observer (left or right of their approach), showing a flash of white underwing. Birds flushed off nests remain silent in low flight, sometimes tumbling and flapping to distract the observer, often using any available cover, until 300–400 m from the nest site, where they may then begin alarm calling.

Watching back: The long grass, heather and peat hags of their most common nesting habitat can make watching back extremely difficult. Birds are extremely hesitant to return to nests if a person is anywhere within 400 m of the nest; watching back at these distances using a telescope is possible. If either of the pair is alarming they will not return to the nest, so you must move further away or return later. Watching more closely from the cover of a vehicle is best, but usually difficult at the altitudes and habitats in which Golden Plovers nest. See "Observations on the Breeding of the Golden Plover in Great Britain" ([Ratcliffe 1976](#)).

Nest



David Scott / BTO

Eggs



Jacob Davies / BTO

Chicks



David Scott / BTO

Lapwing

Clutch: 4 (2–5) eggs

Hatch: 26–27 (22–30) days

Fledge: 31–42 days

Broods: 1 per year

Mean first clutch laid (range)

12 April (25 Mar–25 May)

Estimated mean hatch date (range)

11 May (23 April–28 Jun)

Estimated mean fledge date (range)

17 June (28 May–7 Aug)



Lapwing, by David Scott / BTO

Lapwings arrive back on breeding grounds from January onwards (often intermittently arriving, then leaving, then coming back again). Within their pre-breeding flocks, males (which have longer crests and a complete black chest bib) will show increasing territoriality until they eventually split fields into more defined territories throughout March, where a male may pair with multiple females. Lapwings complete first clutches from late March, peaking mid April, and gradually becoming less common by early May. Average incubation time is 27 days and individuals can re-lay after failed first clutches, so most nests are on the ground from late March to early June.

Display and other breeding cues (best time to look: March to April)

The wheeling 'peewit' display flights of males (March to April) are the best indicator of nesting fields to search later in the season. Lapwings mostly restrict display flights to nesting or neighbouring fields, though not necessarily restricted to individual 'territories.' Counts of birds simultaneously in the air displaying or mobbing predators can give you a rough indication of the number of nests you may expect to find in each field (though birds from neighbouring fields may join to group mob potential predators, including people on foot).

Finding nest sites (best time to look: April to May)

After the peak display period, and once Lapwings are on eggs, they are among the most detectable breeding waders. Given their preference for open, short vegetation (often improved grassland) or bare ground (often tilled farmland), you can observe males forming nest scrapes, then later females directly incubating eggs. It helps to have a raised vantage point; often you can pick out the heads (and smaller crests) of females above the vegetation-line. Nest scrapes are usually completely exposed on bare ground or short vegetation, or slightly raised; allowing incubating birds to have an unobstructed view of approaching threats. Although Lapwings are detectable on nests, where they are nesting colonially, this can present its own problems – when approaching a Lapwing nest you think you have found, the entire colony will likely take flight and noisily alarm call.

Searching on foot: Lapwing nests are comparatively easy waders to find during searches on foot. Especially where topography is beneficial, careful scanning of nearby fields (that you have not yet disturbed by your presence) can reveal birds sitting on nests. Likewise, carefully watching ahead, birds flushing from suitable nesting habitat at ~200 m (but often shorter distances) can alert you to areas to search.

Watching back: Lapwings are comparatively easy waders to watch back to nests; they are anxious to return to the nest after disturbance, and their preference for flat or rolling short grass or bare ground means their return is harder to conceal using vegetation or topography. When watching a bird back to its nest, wait until it appears to have settled, sitting in one area for a few minutes (often only the top of its head is visible at this point); this is usually a sign you have found its nest. When disturbed in the initial stages of incubation, all birds will leave the area, returning within approximately 20 minutes.

Nest



Jim Hodson / BTO

Eggs



Hugh Insley / BTO

Chicks



Hugh Insley / BTO

Oystercatcher

Clutch: 2–3 (2–4) eggs

Hatch: 24–27 days

Fledge: 34–37 days

Broods: 1 per year

Mean first clutch laid (range)

19 May (15 Apr–9 Jun)

Estimated mean hatch date (range)

13 June (10 May–6 Jul)

Estimated mean fledge date (range)

18 July (12 Jun–12 Aug)



Oystercatcher, by David Scott / BTO

Oystercatchers are variable in when they return to breeding grounds; some return as early as December but more typically individuals return much closer to the breeding season, forming pre-breeding flocks known as 'piping parties' for their noisiness! By mid April, pairs will have mostly separated out into their 'territories'. They complete first clutches from mid April, peaking in mid May, gradually becoming less common by early June. Average incubation time is 26 days (range = 24–27 days), so most nests are on the ground from mid-April to June.

Display and other breeding cues (best time to look: March to mid April)

Oystercatcher display flights are loud and detectable, but less distinctive from other types of calls than other waders. They complete low, steady flights, in sweeping ellipses around the nesting area, making their characteristic piping calls during display flights, which can cover a wide area.

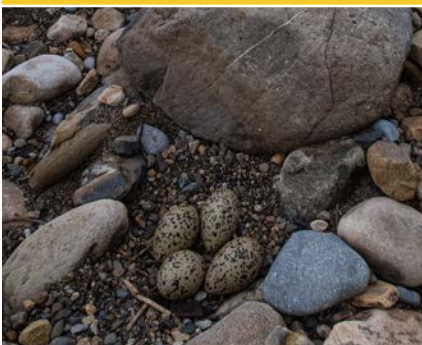
Finding nest sites (best time to look: April to June)

Oystercatchers use one of the most diverse range of nest sites of any wader; they can nest on bare ground, shingle, grass, above ground on walls, tree stumps, cliffs, buildings, and other human-made structures (due in part to their tendency to provision chicks with food, unlike most waders). Oystercatchers often favour fenced-off areas in moorland/farmland (e.g., sub-stations) and other human-made structures (e.g., road roundabouts), and are extremely faithful to nest sites between years.

Searching on foot: Oystercatchers are often difficult to observe at nests during searches on foot due to their propensity to leave nests (usually on foot) large distances from approaching people. Pairs are very wary, with one parent standing watch from a prominent perch (e.g., drystone wall or fencepost). Seeing an Oystercatcher running low, with a hunched back in suitable habitat is indicative of a bird leaving a nest. Where topography is beneficial, careful scanning of nearby fields and human-made structures may reveal birds sitting on nests (the Oystercatcher's distinctive colouration helps).

Watching back: Possible to watch back to nests but not easy. They are careful to return to nests after disturbance and can false brood.

Nest



David Scott / BTO

Eggs



Jim Hodson / BTO

Chicks



David Scott / BTO

Redshank

Clutch: 4 (3–5) eggs

Hatch: 24 days

Fledge: c.30 days

Broods: 1 per year

Mean first clutch laid (range)

1 May (14 Apr–7 June)

Estimated mean hatch date (range)

25 May (8 May–1 Jul)

Estimated mean fledge date (range)

24 June (2 Jun–5 Aug)



Redshank, by Liz Cutting / BTO

Redshanks arrive back on breeding grounds March onwards, and can be very detectable in early April during peak display. They complete first clutches from mid April onwards, peaking early May, and gradually becoming less common by early June. Average incubation time is 24 days, so most nests are on the ground from late April to June.

Display and other breeding cues (best time to look: late March to April)

Birds can be very noisy around breeding sites in early April. As with all species, display flights of males are the best indicator of potential breeding in the immediate vicinity. They perform loud, musical display calls from relatively high display flights.

Finding nest sites (best time to look: late April to May)

Nests are notoriously difficult to find – in part due to their habit of weaving a canopy above the eggs – in the longer vegetation that they favour for nest sites. They often nest among Lapwings. Though Redshanks breed in wetter grassland, the nest sites themselves can be on quite dry, as well as moist ground. Searching earlier in their breeding season can be more fruitful, as birds will select prominent tufts of grass (which become less obvious as season progresses). Even when you have identified a tussock or tuft of grass that is likely to include a nest, the nest itself can sometimes be astonishingly difficult to see. Very carefully parting vegetation can be the only way to find a nest. It is crucial this is done in a way that does not permanently disturb the vegetation or part the nest canopy (whether you find the nest or not).

Searching on foot: You can identify areas to search when you flush birds from suitable nesting habitat. Redshanks will usually fly directly from the nest 50–200 m (occasionally closer) from a fieldworker's approach, either silently (indicating incubation) or with 'tew tew tew' alarm calls, flying around the area (indicating chick-rearing, or late incubation). Pairs are very wary, with one parent standing watch from a prominent perch (e.g., drystone wall or fencepost)

Watching back: The open, flatter habitat that Redshanks prefer makes watching back possible, but not easy. Redshanks returning from disturbance will land on or near nest site, but again, the long vegetation they favour for nest sites makes this difficult to locate.

Nest



David Scott / BTO

Eggs



Jim Hodson / BTO

Snipe

Clutch: 4 (2–5) eggs

Hatch: 18–20 days

Fledge: c.19–20 days

Broods: 1 per year

Mean first clutch laid (range)

30 April (31 Mar–24 Jun)

Estimated mean hatch date (range)

19 May (19 Apr–14 Jul)

Estimated mean fledge date (range)

7 June (8 May–3 Aug)



Snipe, by Liz Cutting / BTO

Snipe return to breeding grounds from March onwards, but are difficult to detect throughout the breeding season, unless displaying or flushed. By April, Snipe seen displaying or flushed from suitable nesting habitat are indicative of nearby nests. They complete first clutches from early April, peaking in late April, gradually becoming less common by June, so nests can be on the ground from early April to late June.

Display and other breeding cues (best time to look: March to May)

Snipe display flights, usually performed 40–100 m from the ground and involving 'drumming' and 'chipping' calls, are most common in the dawn and dusk, especially on still and damp days. Snipe also make their 'chipping' calls from the ground or fence posts. These indicate nesting areas (especially later in the season, when display flights are increasingly centred above nests).

Finding nest sites (best time to look: late April to June)

Snipe favour wetter areas to nest, but the nest site itself is drier, often amongst rushes, but also grass, sedge, or heather. They rely on their cryptic plumage and vegetation to hide nests, so generally sit tight on nests, flushing at short distance (~ 15 m).

Searching on foot: most nests are found by walking in suitable habitat and flushing birds. Snipe on nests flush approximately 15 m from your approach. However, lone feeding birds flush at similar distances to incubating birds, so a proportion of searches for flushed birds will not reveal nests. Therefore, it is usually only worth spending lengthy periods looking if you saw the exact spot where the bird flushed from. It can help to record the location of a flushed bird where you have failed to find a nest, using a GPS device, and return a few days later, to see if you flush a bird again (keeping a closer eye out for the flush location the next time). Where you flush a pair of Snipe together there is likely an incomplete clutch (this also applies to Woodcock).

Watching back: Extremely difficult with Snipe due to their preference for nesting in longer vegetation, small size, and cryptic plumage. Pairs are very wary, with one parent standing watch from a prominent perch (e.g., drystone wall or fencepost). Once a person or predator has disturbed a bird from its nest, watching the same area for a bird to fly back to an area of suitable nesting habitat can reveal locations to search.

Nest



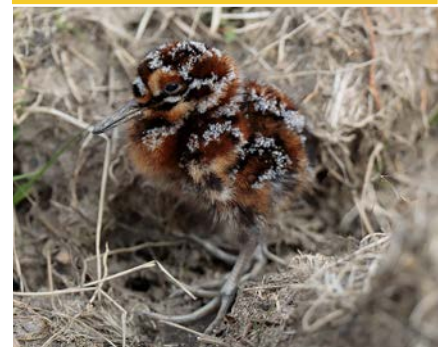
David Scott / BTO

Eggs



David Scott / BTO

Chicks



David Scott / BTO

WHAT TO RECORD

Monitoring wader nests is a great way to hone your detective skills! Whenever you find and visit a nest, you are looking for clues that allow you to deduce valuable information about the nesting attempt's present status, its possible future, and its past (to help deduce key information on how long it was active and its outcome).

Please ensure you have the following core equipment organised and ready when visiting nests to monitor them, to record required information and minimise time at the nest:

- Notepad and pen/pencil (or smartphone/electronic device capable of taking notes).
- GPS device (or smartphone capable of recording precise location – photos also usually have precise locational information associated with them).
- Camera (or smartphone capable of taking photos).
- Dull-coloured tape (e.g., masking tape) and/or small cane/stick for marking nest locations.

Extra equipment: callipers and small scale with which to measure eggs, if licensed to handle them, to estimate nest hatch date.

Finding a nest: record the **species** and precise **location** of the nest with a 10-digit grid reference or use what3words. You may wish to mark the nest location with a small cane and/or dull-coloured tape on nearby vegetation (being careful not to attract predators to the nest). Count the **number of live eggs** in the nest (gently touching them to see if they are warm). Record the **time/date** of the **nest visit** and take **photos** of the nest cup/eggs when found, the vegetation immediately around the nest, and the wider landscape/habitat (~100 m) around the nest.

If the number of live eggs in the nest indicate the clutch is apparently incomplete (see species' accounts for clutch sizes), this means the nest is only a few days old at most, and allows you to estimate an approximate hatching date (using the mean incubation period in the species accounts above), allowing a few days either side (incubation times vary a few days between individual birds and how regularly they can incubate undisturbed). Revisit the nest cup on your next nest visit to record the final clutch size.

If you have an **appropriate licence to handle eggs**, taking **egg measurements** (length, width, and weight) can help estimate hatching date (especially where clutch is complete), though **it is illegal to handle eggs or chicks without an appropriate licence**.

Monitoring a nest: revisit the nest **approximately every seven days** to record continued activity to monitor its survival and outcome.

Once the clutch is complete there is no need to approach the nest cup to examine its contents; please try to establish continued nest activity by observing from a distance, using a suitable vantage point that will not disturb the nesting bird, recording **date/time** and **evidence observed** on each visit. If you do not observe any evidence of continued activity at the nest from a distance, carefully approach the nest site to see if you can observe the bird incubating or elicit any behaviour from the parents. If this doesn't work, approach nest cup and examine contents, gently touching any undamaged eggs in the nest to see if they are warm (live), though note that eggs in incomplete clutches will often be cold as birds will not yet be regularly sitting. Record any **evidence observed at the nest site, date/time** of visit, and take **photos** of the nest cup (even if completely empty) or any other evidence found.

If eggs are intact but the parents appear to have deserted the nest, re-visit the nest one more time, and if still no evidence of activity (at minimum, warm eggs), record nest as failed (from **date/time** of first visit indicating nest inactivity).

When confirming a nest is inactive: if on any visit you observe the nest as no longer active, ensure you record date/time, and look for evidence that will help you determine whether the nest was successful or not. If your first nest visits provided an estimated hatching date, whether the nest became inactive during its possible hatching date range is your first major clue (i.e., if not – it very likely failed). If you find all eggs in the clutch are cold (dead) and/or obviously damaged/crushed, you can conclude that the nest failed.

If you find the nest completely empty of eggs or eggshell fragments, it is likely the nest was predated (please search the area ~30 m around the nest for large eggshell fragments or punctured eggs, further indicating predation), particularly if the nest is found empty before an estimated hatching date.

If you find many, small (~less than 5 mm) eggshell fragments mixed in with the nest lining (there may be a small number of larger fragments too), this indicates the nest may have successfully hatched (though use caution deducing hatching success from eggshell fragments alone). The presence of a few, large eggshell fragments (with no small fragments mixed in with nest lining) can indicate predation.

Please take photos of nest cup after outcome (whether eggs or eggshell fragments are in it, or it is empty), as well as any eggshell fragments found outside the nest cup. This is important to build a library of wader nest evidence to help others interpret the evidence they find.

After reviewing the evidence you have (including nest camera footage or temperature logger data, if used), record whether the nest outcome was:

- Success (at least one chick hatched from nest).
- Failure (no chicks hatched from nest).
- Unknown (not possible to determine whether at least one chick hatched from nest).

Eggshell fragment evidence usually cannot provide a definitive answer, so err on the side of caution ('Unknown') when determining outcome using this evidence; the key thing is to **record and report the evidence you observed**, not the 'subjective' decision of the outcome.

Technological assistance: It is increasingly common to deploy cameras or temperature loggers at wader nests (**note:** temperature loggers may require an appropriate licence if your deployment method requires the handling of eggs). These can provide extra information for your investigation that visiting the nest in person alone cannot. Nevertheless, in terms of what to submit, you can treat notable events recorded on cameras or temperature loggers as any nest visit (**date/time, evidence of nest being active or inactive, and nest outcome**). Evidence that is particularly useful from these technologies includes:

- Precise **date/time** of nest outcomes.
- Cause of nest failure (nest camera footage may reveal the outcome event, and temperature logger data showing the time of day/night of any predation event can indicate whether predation was likely mammalian).

Please seek further guidance on using these technologies (available from the Working for Waders www.workingforwaders.com and Curlew Recovery Partnership www.curlewrecovery.org websites).

DATA ENTRY

There are two options for submitting wader nest records, depending on the time you have available:

1. **Basic option:** core information, aimed at more time-constrained fieldworkers, e.g., monitoring nests alongside other work duties.
2. **Advanced option:** aimed at less time-constrained, more experienced fieldworkers, e.g., undertaking nest monitoring as part of an organised wader project or group.

4.1. Basic option

We have established a minimum data entry of 11–15 pieces of information to submit for each nesting attempt you monitor:

1. **Nest Location** (Ten-figure grid ref or equivalent).
2. **Species** of wader.
3. **Date/time** you first confirmed the nest as active – take photos of nest cup and surrounding habitat!
4. **Number of live eggs** in the nest during first visit.
***Take photos of the nest and surrounding vegetation/habitat when found**
5. **Date of outcome** if known; if not known, record:
 - a. Latest date/time you know the nest was active from field, camera, or temperature logger observations.
 - b. Earliest date/time you know the nest was inactive from field, camera, or temperature logger observations.
6. **Nest outcome:**
 - a. Success (at least one chick hatched).
 - b. Failure (no chicks hatched).
 - c. Unknown.
***Take photos of the nest outcome and any eggshells found**
7. **Evidence for outcome** from field, camera, or temperature logger observations (**see 12–15 below**)
8. **Reason for failure** if outcome Failure, and reason known:
 - a. Agricultural operations.
 - b. Desertion (include reasons in Notes, if known/suspected).
 - c. Predation.
 - d. Trampling by livestock (choose predation if livestock eat eggs).
 - e. Trampling by wild animal.
 - f. Other (include in Notes).
9. **Predator** if any eggs predated, and evidence of predator species (or higher taxonomic classification) found
10. **Photos:** please provide photos of:
 - a. Nest cup when found, after the outcome, and any eggshell fragment(s) found.
 - b. If using a nest camera: bird incubating and reported outcome event (if captured).
11. **Notes**

If you used a nest camera, please record the following additional information:

12. **Date/time** you deployed your nest camera.
13. **Number of live eggs** in the nest when you deployed your nest camera.
14. **Distance of camera from nest** (to nearest metre).
*Take photos of the nest and camera set up during deployment

If the nest benefitted from predator-proof fencing, please record the following additional information:

15. **Type of fence** (nest-level electric fencing, field (or greater) -level electric fencing, or other).

You can submit basic information for each nesting attempt you monitor using one of four options:

1. **Online Wader Nest Record Form** (<https://forms.gle/K255zBNUQ9evjZP99>): one submission per nesting attempt, quickly entering the 11–15 minimum pieces of information above; or
2. **Wader Nest Record Spreadsheet**: downloadable on the Wader Hub webpage (www.bto.org/wader-hub). We designed the spreadsheet to allow individuals and groups with large numbers of wader nest records to return them more quickly than using the online form, entering the 11–15 minimum pieces of information above. Please email to waders@bto.org with any associated images or videos, with the files labelled with the nest location (ten-digit grid reference or equivalent). If your media have large file sizes, too big for email, then WeTransfer (www.wetransfer.com) is an effective way to send them; or
3. **Paper Wader Nest Record Form**: downloadable from the Wader Hub webpage (www.bto.org/wader-hub) or you can request a copy in the post by emailing waders@bto.org, then post or email back to BTO once completed. Designed for individuals who may not feel comfortable using an app, online form, or data entry spreadsheet.

As mentioned above, we are keen to get as many images as possible that show **nests when found and after the outcome (especially where outcome is known)**, and nest camera **images which evidence the nest being active and the reported outcome**.

There is an option to upload images and videos in the online **Wader Nest Record Form**. If you are emailing a **Wader Nest Recording Spreadsheet** to waders@bto.org, please ensure you have emailed/transferred any associated media to the same email address.

4.2. Advanced option

For more advanced data collection, we ask fieldworkers to familiarise themselves with the **Wader Hub App**, or wider **Nest Record Scheme** (www.bto.org/our-science/projects/nest-record-scheme) materials and its data entry system **Demography Online**.

Nest Record Scheme materials go through the information you should collect and submit when monitoring nests. You can submit this information for each nesting attempt to the Nest Record Scheme using:

1. **Demography Online** (www.bto.org/our-science/projects/nest-record-scheme/taking-part/using-demography-online-demon); or
2. **Paper Nest Record Card**: email waders@bto.org, if you would like some paper nest record cards for wader nest monitoring sent in the post.

REFS

Götmark, F. (1992) The effects of investigator disturbance on nesting birds. *Current Ornithology*, **9**: 63–104. Mayer-Gross, H., Crick, H.Q.P. & Greenwood, J.J.D. (1997) The effect of observers visiting the nests of passerines: an experimental study. *Bird Study*, **44**: 53–65. Yalden, D.W. & Pearce-Higgins, J.W. 2002. The trapping of breeding Golden Plovers using a simple walk-in trap. *Wader Study Group Bulletin*, **98**: 38–40.

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