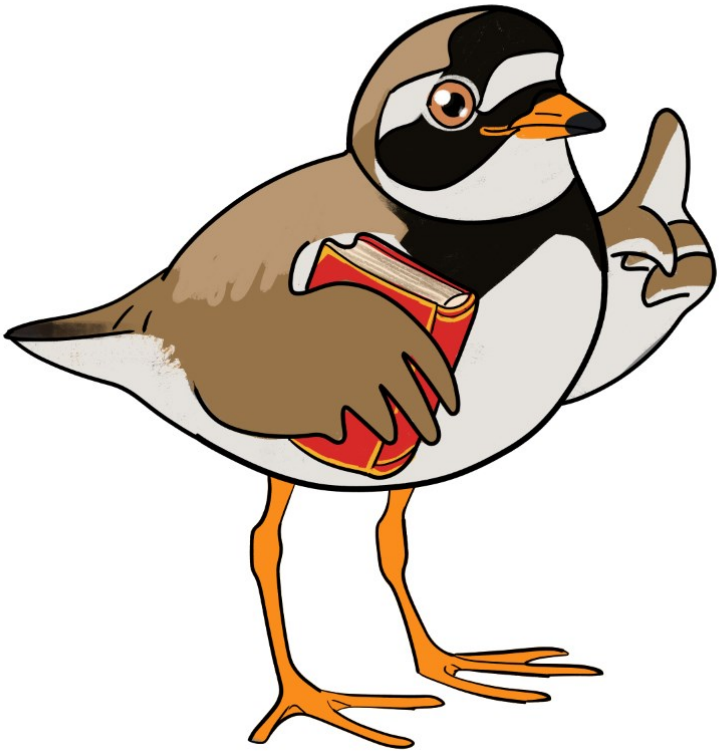

WADER GURU

WADER QUEST

How close to different wader species nest in the tundra?

Karina and Bruno - Peruíbe Brazil

'How close to different wader species nest in the tundra?

Karina and Bruno - Peruíbe Brazil

Question:

We always wondered about the nesting situation of waders. Specifically, do different species nest together in the tundra? For example: Curlews, Sanderling, Knots, how close do they build their nests to each other? **Karina and Bruno - Peruíbe Brazil**

The Guru's answer:

Of the species you mentioned, among the tundra breeding Curlews (*Numenius*), the Little Curlew *N. minutus* forms loose colonies. The Bristle-thighed Curlew *N. tahitiensis* has just a small population that only breeds in two areas. In those areas the Curlews nest close enough to one another that several broods will join together in creches, guarded by a small number of adults, sometimes only one male, but that group will always include the male of at least one of the broods involved. Hudsonian Whimbrels *N. hudsonicus* and Eurasian Whimbrels *N. phaeopus* tend to be solitary nesters. Sanderlings *Calidris alba* too are solitary and do not travel far with the chicks from their breeding site and Red Knots *Calidris canutus*, whilst also solitary, range beyond the breeding site for feeding once the chicks have hatched.

Red Knots © Elis Simpson

With regard to interspecific associations, a small number of wader species have been recorded and studied interacting on the breeding grounds in the Arctic tundra.

Wader species acting in association with one another can manifest in many ways. The most obvious being the wonderful inspirations of waders we see over estuaries and anywhere waders gather in large numbers around the world. Mixed species roosting sites are common and they seem to feed in peace side by side almost everywhere. However socialising on the breeding ground is less obvious, except in the species that are colonial nesters. Clearly colonial nesting species derive some protection from predators as a group when doing so but some loose colonies may equally be the result of specific breeding habitat requirements being in short supply.

But what about different species seeking out the company of other species and for what reason might they do this?

The appearance of birds breeding in close proximity might look like they have done this deliberately and for some specific reason but it needs to be born in mind that in some cases this may be purely the effect of two species choosing the same habitat, due to nesting requirements or dietary overlap, and any proximity is coincidental. However, there are records and studies that show that sometimes this proximity is deliberate and will offer some benefit to one species.

Grey Plover © Elis Simpson

There are perhaps two reasons for such associations, one being the protection afforded by a more aggressive neighbour that would defend the area against predators, the other would be simply that one species is more alert than the other and would act as an early warning system.

Some species of wader are bold and determined in their defence of their eggs and chicks while others can be timid. Examples of these can be seen in the bold attacks that species like large plovers such as Lapwings *Vanellus* or Grey Plovers *Pluvialis squatarola,* and godwits make to defend their brood, especially against aerial predators. An exception to this general rule of thumb is the Ruddy Turnstone *Arenaria interpres*, which is small but is also a bold, aggressive species. Timid species are though generally smaller where any physical attack would be ineffective. Such species include some of the *Calidris* sandpipers like Curlew Sandpiper *Calidris ferruginea* and Dunlin *C. alpina* although the Red Knot *Calidris canutus* does occasionally attack aerial predators, the majority of the smaller, more timid, species, n the face of danger do not, preferring to freeze, their young doing likewise, relying on cryptic plumage to defend them. Against terrestrial predators these smaller species tend to employ distraction displays to draw predators away from the eggs or young.

Pacific Golden Plover © Philip Edwards

Interestingly Pacific Golden Plover is a relatively aggressive species compared to, for example, the European Golden Plover, which tends to be timid. The Pacific Golden Plover is territorial toward its own kind and among other wader species it also singles out the Ruddy Turnstone for particular attention. It doesn't tolerate Turnstones at all near to its nest. But distrust of other waders species is not universal as they showed little hostility towards Dunlins, recognising their respective threat towards their own eggs, the Ruddy Turnstone being a known egg predator.

Being close to bold species though is not always beneficial to the timid species. It should be remembered that although these associations demonstrably exist they are not common and therefore the balance of any possible advantage to the smaller species, which appears to be the only beneficiary, may be offset almost equally by the disadvantages. For example, Grey Plovers may act aggressively toward other wader species within their territory and Ruddy Turnstones are even more so meaning nesting close to them opens up the risk of being harassed by the stronger species. In addition in the case of the Ruddy Turnstone, due to their predation of eggs, being in league with them adds another dimension of risk to the smaller and weaker species.

Another downside to nesting close to an aggressive and demonstrative species is that the behaviour in itself demonstrates the presence of a potential meal and might attract predators, which, in their search may come across the young or nest of the more timid species and not that of the bolder species that has attracted their attention in the first place. Also, whilst aggression toward avian predators is an effective defence in most cases, that display may attract mammalian predators to the area that recognised the aggression as indicating potential prey, against which even the bolder species are ineffective, with the possible exception of large Curlew species.

Perhaps the best known example of association between species is the European Golden Plover *Pluvialis apricaria* and the Dunlin. This is so common that the Dunlin has been called the 'plover's page' or 'plover's provider' and its Icelandic name is *Lóuþræll,* which means 'plover's slave', as it seems to seek out the company of the larger species. It is likely though that the benefit is to the Dunlin, being the smaller species, and it is that species that seeks out the plovers and not the contrary, negating the idea that the Dunlin is page to the Plover. In this case the larger bird seems to act as an early warning system for the Dunlin rather than being an aggressive defender as it is itself a timid species. Plovers are very wary, large-eyed waders that spend much of their time observing their surroundings, even when feeding. Dunlins are small-eyed and feed head-down needing to pause from this activity to look around for danger. If the smaller bird remains close to the wary and observant Plover, then it can spend more time feeding head-down safely, clearly and advantage. The Plover seems to derive no benefit from this relationship and may indeed be compromised in its safety and feeding success.

Buff-breasted Sandpipers *Calidris subruficollis* have been recorded nesting in close proximity to Grey Plovers in Canada. The nests of two pairs of Sandpipers were found to be just 15 and 30m from the Grey Plover nest. Other wader species were at least 50m from it. There were large areas of suitable habitat available around the area, but the sandpipers chose to nest in close proximity. Being a species that breeds slightly later is also an advantage, as in this case, as the bold species needs to be committed to a territory for the timid birds to select and rely on their chosen guardians before they breed themselves.

Buff-breasted Sandpiper © Elis Simpson

Common Ringed Plovers *Charadrius hiaticula* and all three phalarope species *Phalaropus* have been observed nesting close to tern Sterninae colonies. Terns are famous for their defence, *en masse,* against predators and so, providing the chicks of the Plover stay away from the stabbing bills of the nesting terns, derive protection from aggressive terns colonies.

Some species surprisingly choose to nest in the proximity of predators. Predators are generally bold birds and are adept at rebuffing other predators. Red-necked Phalaropes *Phalaropus lobatus* for example sometimes nest near Sabine's Gulls *Xema sabini*. This tactic may be successful in some years but not others. It has been shown that nesting on the tundra close to predators is more successful in years when Lemmings Arvicolinae are abundant than in years when they are not, for the reason that food is plentiful and obvious in those years and searching for eggs and chicks is not time efficient in comparison nor necessary to feed their young.

Sanderling © Elis Simpson

Among the smaller species mentioned the Red Knot is found associating with bolder species less often than other small species, and may attack avian predators as previously mentioned while Sanderlings showed no interest in forming any association with any species. It is thought that the habit of Sanderlings rearing their young in a relatively small area close to the nesting site is the reason for this. Once other species have hatched, the young will range widely from the nest site and are therefore able to follow the larger species wherever they roam in order to benefit from their protection where Sanderlings cannot.

In other studies the following associations were have been recorded.

- Grey Plover with: Dunlin, Red Knot, Semipalmated Sandpiper & Buff-breasted Sandpiper.
- Pacific Golden Plover with: Curlew Sandpiper & Dunlin.
- American Golden Plover with: Short-billed Dowitcher.
- European Golden Plover with: Dunlin.
- Ruddy Turnstone with: Curlew Sandpiper.
- Pectoral Sandpiper with: Long-billed Dowitcher & Dunlin.
- Northern Lapwing with: Common Redshank & Common Snipe.
- Black-tailed Godwit with: Common Redshank, Common Snipe & Ruff.
- Pied Oystercatcher with: Hooded Plover.

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Dunlin © Elis Simpson