

Birds Whanganui
e-Newsletter June–August 2022



A young Kākā (age deduced from its yellow eye-ring)
photographed at Rotokawau Virginia Lake by Ormond Torr, July 2022,
showing the bird's intricate underwing pattern

Birds New Zealand (Ornithological Society of New Zealand Inc.)

Kāhui Mātai Manu o Aotearoa

Wanganui Region *"fostering the study and enjoyment of birds"*

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Introduction

The weather in coastal Whanganui in winter can be somewhat unpredictable, and this year has been no exception with higher than normal temperatures, rainfall and wind. The winter rains bring high river flows, all heavily sediment-laden, resulting in slugs of silt being deposited in the estuary or being washed out to sea, discolouring the inshore waters. This presumably makes foraging by seabirds difficult, except perhaps at the interface between the discoloured inshore waters and the open ocean. A study is needed of just how species such as shags, terns and gulls forage in such situations. Casual observations suggests that many forage at or close to this interface, perhaps because fish are equally confused by the sudden change in water clarity, either way. (I've seen Hector's Dolphins in the South Island feeding along the edge of discoloured water stirred up by rips, suggesting that this idea may have broader applicability). So, something to keep an eye on.

On the estuary itself, these depositions of sediment bury—at least temporarily—the estuarine invertebrates (worms, crustaceans and molluscs etc.) on which waders feed. Each year, an estimated 4.69 million tonnes of sediment are washed out of the mouth of the Whanganui R (if you are interested you can see the modelling results at <https://shiny.niwa.co.nz/nzrivermaps/>). Although there is some organic material in these sediments, much of an estuary's productivity comes from inputs from estuarine and marginal vegetation (*e.g.*, eel grass; salt marshes; rush beds), none of which are prominent, if at all, in the Whanganui estuary, where settlement and industry extend right to the river's edge. Because of this the estuary does not appear to be particularly productive. As a result, the diversity and numbers of birds are generally low, especially during winter. By then, summer migrants from the northern hemisphere have long returned to their arctic breeding grounds and the late-summer flurry of South Island waders (*e.g.*, wrybill|ngutu pare, South Island pied oystercatcher|tōrea) and other waterbirds (*e.g.*, royal spoonbill|kotuku ngutupapa), migrating through to their northern New Zealand wintering grounds, has largely ended. This winter, the maximum number of royal spoonbill recorded on the Whanganui estuary was just 11, counted by Jim Norris on 22 June: eight on the estuary and three upstream near the mouth of the Mateongaonga Stream. For other species usually found on the Whanganui estuary, maximum numbers reported this winter (date and observer in brackets), have been 16 pied stilt|poaka (7 July, Jim Norris), 12 South Island pied oystercatcher (22 June, Jim Norris), seven Caspian tern|taranui (7 July, Jim Norris) and nine sacred kingfisher|kōtare (Jim Norris, 7 July). Elsewhere, Geoff & Raewynn Foreman recorded 23 pied stilt on Koitiata Lagoon on 16 August, along with nine banded dotterel|pohowera, six black-fronted dotterel and just a single sacred kingfisher | kōtare.

Of course, estuaries are much-favoured places for our bird photographers, as can be seen by the coverage given to their activities in earlier newsletters. So, with the seeming paucity of birds on the estuary, what has been capturing their attention instead? In this newsletter you'll find items on the Great Kākā Hunt; a near-death experience for a Nankeen night-heron|Umu kōtuku; the varying fortunes of the Putiki pied shags|kāruhiruhi, and several other snippets of information. Feedback is always welcome.

The Great Kākā Hunt

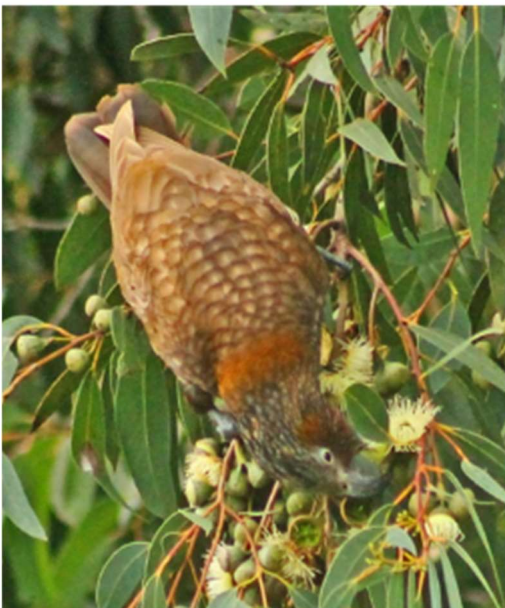
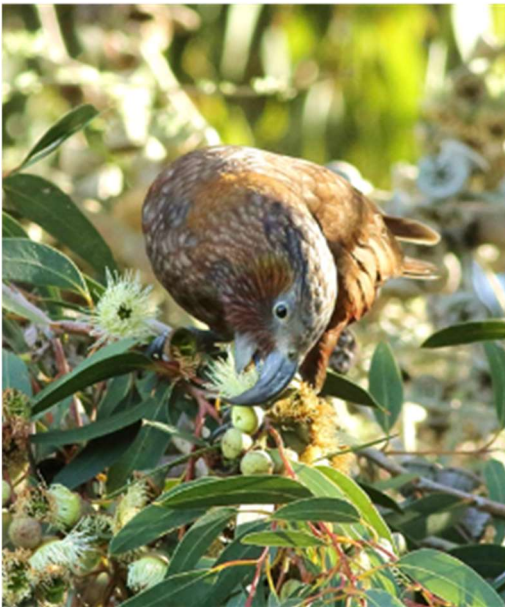
In mid-June, Melanie McRae saw a kākā|kaka feeding on the buds of a tree at Bason Botanic Garden. She duly took some photographs and informed Phil Thomson who immediately sent around an email to various members of Birds Whanganui, in case anyone wanted to go out and photograph the kākā for themselves.



Kākā at Bason Botanic Garden (photo credit: Melanie McRae)

Melanie's report set in motion a prolonged hunt by several people eager to see and photograph this bird for themselves. Despite several visits to Bason over the next couple of weeks by Paul Gibson, Jim Norris, Ormond Torr and Peter Frost the bird was not found, even though staff at Bason had seen it and another bird on several occasions in between the enthusiasts' visits. One person working there even managing to take a video on her mobile phone of the birds feeding in the banksias in the garden. Frustration! As Paul wrote, "I think they must move around several feeding spots, so is difficult to catch them at the right time."

The hunt continued, widened to include Rotokawau Virginia Lake, a favoured haunt for visiting kākā in previous years. Eventually, in mid-July, Paul found two birds together at the lake, where they were being attracted by flowering gums alongside the Winter Gardens. These trees were identified by Colin Ogle as *Eucalyptus megacarpa* ('bullich'), and were the centre of attraction not only for kākā but also for numerous tūī. A lady working at the Winter Gardens said that kākā had been there every morning for the past three weeks or so. Of course, there was no certainty that these were the same birds that were visiting Bason Botanic Garden, around 7.5 km as the crow (kākā) flies—no more than 11–12 minutes flying time at, say, 40 kph—but it was likely. Over the following two weeks, Paul, Jim and Ormond managed to get a fine series of images of the kākā feeding on *E. megacarpa* nectar, as you can see on the next page and cover photograph.



Left: Three images of kākā feeding from the blossoms of *Eucalyptus megacarpa* taken, respectively from top to bottom, by Paul Gibson, Ormond Torr and Jim Norris.

In the top two photographs you can clearly see that the kākā's tongue is inserted into the flower, and the bird's upper mandible is being used to steady the flower while the kākā extracts the nectar. How do they do this? A kākā's tongue, the last centimetre of which is free, is muscular but slender, broadening out towards the tip, which is fringed with short (1–2 mm) hair-like papillae and has a marked 3-mm diameter x 2.5-cm deep spoon-like depression in it. Edwin Kirk, Ralph Powlesland and Susan Cork, in a paper published in *Birds New Zealand's* scientific journal *Notornis* in 1993, suggested that the kākā's distinctive spoon-shaped tongue might serve to scoop up nectar from suitably open flowers, aided no doubt by the hair-like projections at the sides of the tongue. Then, when the bird closes its bill or pushes its tongue up towards the roof of its palate, the collected nectar is squeezed out of the depression by a bulge of tissue situated in the roof of the palate (Kirk, E.J.; Powlesland, R.G.; Cork, S.C. 1993. Anatomy of the mandibles, tongue and alimentary tract of kakapo, with some comparative information from kea and kaka. *Notornis* 40, 55-63; see https://www.birdsnz.org.nz/wp-content/uploads/2021/12/Notornis_40_1_55.pdf).

The other questions that Jim, Paul and Ormond posed, both after viewing the birds in the field and when looking at their photographs later, were, "What sex are these birds?" and "How old are they?" After consulting various sources of information, Jim concluded that they were a male and a female, and that they were both young birds, with the male perhaps being a season older than the female, thought to be less than a year old.

A male kākā's head is noticeably bigger than that of a female, and the upper mandible is visibly longer and deeper, although this difference only really becomes apparent when a male and female are seen side by side, as the two at Rotokawau Virginia Lake were. They also seemed to behave at least as an incipient pair, coming and going together and, on one occasion, being seen to strop their bills, as in playful fencing (Peter Frost). The image below, one of the few where both birds can be seen relatively clearly in the same frame, shows the features of and differences between the two birds concerned.



Male and female kākā photographed at Rotokawau Virginia Lake, 25 July 2022. The male, at the front, has a bigger head and a longer, more curved bill compared with the darker female behind. The difference in head and bill size are only partly apparent in this image but were noticeable in the field. (Photo credit: Jim Norris).

So, how old are these birds? Again, Jim dug into the literature and concluded that both were young birds, based on the work of Ron Moorhouse and Terry Greene (Identification of fledgling and juvenile kaka (*Nestor meridionalis*). Notornis 42, 187-196, published in 1995; https://www.birdsnz.org.nz/wp-content/uploads/2021/12/Notornis_42_3_187.pdf). He and Paul looked at three features of these birds. First, the colour of the patch of bare skin, the periophthalmic or periorbital ring, around the eye, a prominent feature in many parrots. This is pale yellow in kākā less than 6-months old, becoming greyer as the bird ages, ending up grey-black in adult birds. Inside this, immediately around the eye, is a narrow ring that is also yellow in young birds, gradually fading to grey sometime in the bird's second year or soon after. This inner ring is clearly visible in both birds above. Second, both birds had grey ceres, the bulge of tissue around the birds' nostrils. This is yellow in recently fledged birds less than 4-months old but becomes greyer and darker with age. These features—cere, the periophthalmic ring and the narrow eye ring—are illustrated in the following figure.



Approximate age classes of kākā showing the principal distinguishing features:

A. Recent fledgling < 4-months old (yellow cere, periophthalmic ring and eye ring). Photo credit: Ormond Torr, taken on 4 October 2010 at Rotokawau Virginia Lake, Whanganui

B. Juvenile, 4 < 12-months old (pale grey cere and periophthalmic ring; yellow eye ring). Photo credit: Paul Gibson, taken on 27 July 2022 at Rotokawau Virginia Lake, Whanganui

C. Adult (dark grey cere, periophthalmic ring and eye ring). Photo credit: Paul Gibson, taken on Great Barrier Island on 16 December 2007.

Finally, in 3- to 6-month-old kākā, the tail quills or rachides protrude beyond the end of the tail, as shown below. Moorhouse & Green noted that in birds younger than three months the tail tips are frayed, presumably because they become abraded in the nest cavity and do not grow out fully until after the birds have fledged. Beyond about 6-months old, these tips become worn with age, until they are replaced in the bird's second year.



A. Protruding rachides at the tips of the tail feathers characterise 3- to 6-month-old kākā (as shown by the female recorded at Bason Botanic Gardens and Rotokawau Virginia Lake, June–August 2022 (photo credit: Paul Gibson). B. Ragged tail-feather tips of the male kākā that was accompanying the female at that time, which suggests that he was an older bird, perhaps in his second year, having not yet moulted its worn tail feathers (photo credit: Ormond Torr).

All this led to us look back through past records and photographs of kākā recorded in the vicinity of Whanganui 2006, including Turakina, Fordell, Marangai, Whanganui itself, Westmere, Bason Botanic Gardens, Bushy Park, Maxwell and Waverley (strictly speaking in South Taranaki, but the record was reported to DOC in Whanganui). Since 2006, at least one bird has been recorded in two-thirds of the years (apparently no records for 2007, 2014–2016, 2019–2020, but this does not necessarily mean that birds didn't occur in those year, just that no one noted and reported them). Nearly 50% of 41 sightings were in early spring (September–October), just under 40% in winter (June–August), with single records (~2.5% of the total in each case) being reported in all other months except March and December. The largest number of different individuals reported in any one year was four birds photographed together by Ormond Torr in September 2010. In 2008 and 2018, no less than three separate birds were present, whereas at least two birds were present in 2011, 2017 and 2022. In the other years—2006, 2009, 2012, 2013, and 2021—only single birds were reported.

Of all these birds, we have reasonable photographs of 12 birds, thought to be separate individuals. Using the ageing criteria described earlier, one bird was assessed as less than 4-months old (yellow cere, periophthalmic ring and narrow eye ring), one was estimated to be 4- to 6-months old (cere and periophthalmic ring fading to grey, narrow eye ring still distinctly yellow), six were classed as around 6–12 months old (noticeable but fading narrow yellow eye ring only), three considered be 1- to 2-years old (narrow eye ring barely visible), and only one was considered to be an adult or near adult. This fits with the notion that these late-winter visitors are predominantly young birds that are either dispersing from their natal territories elsewhere in search of ones of their own or have been displaced by their parents in the lead-up to the next breeding season.

Where do these birds come from? We don't know for sure. Only one banded bird has been seen, colour-ringed Yellow over Blue on left leg, White on the right (YB-W), photographed by Prue Hooper in Waverley in August 2008 (see next page). According to the Banding Office at DOC, YB-W was banded in 2007 at Zealandia but it is unclear if it got to Waverley directly from Zealandia or via the National Wildlife Centre at Mt Bruce in the Wairarapa, as apparently some young birds from Zealandia were moved there around that time. At least one young bird from Zealandia is known to have visited Mt Bruce independently. This bird, a 4-month-old bird named Kupe, stayed there for about 8 months before returning to Zealandia in January 2005 (<https://www.nzherald.co.nz/nz/kaka-chicks-260km-flight/J3422KLBPPJ45WK5A6EFH7SMCM/>).

Of course, Zealandia is not the only likely source of the birds visiting Whanganui. Kākā occur on Kapiti Island, in the forests of the Tararua and Ruahine ranges, in Whanganui National Park, and around the base of Mts Ruapehu and Taranaki. Neil Fitzgerald at Manaaki Whenua Landcare Research is carrying out a GPS satellite tracking study of kākā in the Waikato, which shows that some birds can wander considerable distances. One completed a 1000-km trip around the Waikato, Coromandel and islands in the Hauraki Gulf before returning to Hamilton, where it started (a map of these birds' movements can be seen at <https://www.landcareresearch.co.nz/publications/kararehe-kino/kararehe-kino-articles/wandering-waikato-kaka/>). For more information about kākā, look at the species' account at New Zealand Birds Online (see <https://nzbirdsonline.org.nz/species/kaka>).



Colour-banded kākā (yellow/blue – white, YB-W) photographed in Waverley on 8 August 2008. This bird was banded at Zealandia in 2007 and, after wandering, returned there, passing away in 2019. Photo credit: Prue Hooper, Waverley. Information from Sandy Taylor, DOC Banding Office

Pulling together all these bits of information via emails, photographs and previously published work is what I'd call 'jigsaw ornithology', building a bigger picture from various small, seemingly unconnected observations. You can help fill this picture by recording and reporting what you observe and photograph, especially any kākā seen in future years. Ideally, you should submit your observations and photographs to eBird, the repository for sightings of any bird species, no matter how incidental they may be. You need to be a registered user, although this is a simple process. You can find out more by going to the New Zealand Bird Atlas Project page on eBird (<https://ebird.org/atlasnz/home>), where guidance is provided.

Nankeen night-heron|Umu kōtuku

With much of the attention this winter being focused on kākā, the fortunes of the Nankeen night-herons|Umu kōtuku at Upokongaro, another species of local interest, risked being overlooked. Fortunately, people eager to add Nankeen night-heron to their life lists continued periodically to visit the Behind-the-Door-on-4 café and report what they had been finding, usually on eBird as inputs to the New Zealand Bird Atlas Project. David Riddell recorded six different individuals on 4 June: "One emerged from holm oak above cafe carport 5.10pm, joined by another soon after, at least four others seen flying between 5.15 and 5.25." Whereas most visitors subsequently saw 1–4 birds, Jim Norris and three visitors also saw six birds, on 27 August. It is quite likely that not all the birds present are seen on each occasion, as the birds roost in dense tree canopies, both behind the café and below the neighbouring Goose's Roost home. These latter birds are best seen from the far side of the Upokongaro Stream, accessed from Makirikiri Valley Road.

The holm oak *Quercus ilex*, above the old converted carport at the bottom of the café's garden, seems to be the current favourite roost site for a pair of adults and a 2-year-old bird, identifiable by its adult-like plumage except for its spotted wing coverts and streaks on its breast. Sightings of one or more of these roosting birds in the holm oak account for 10 out of 14 occasions on which night-herons were reported from Upokongaro this winter. The holm oak, being evergreen with small, un-oak-like leaves and dense branches, provides the birds with ample cover, making them difficult to see. This is frustrating for people who want to photograph the birds, as you can see from these two images of the 2-year-old bird, taken by Oscar Thomas, author of the recently published *A Naturalist's Guide to the Birds of New Zealand* (John Beaufoy Publishing Ltd).



Two-year-old Nankeen night-heron roosting in the holm oak above the covered seating area in the garden of the Behind-the-Door-on-4 café at Upokongaro. This tree is a favoured roost site for this 2-year-old bird and two adults, but the denseness of the canopy makes them difficult to see and even more difficult to photograph. Photo credit: Oscar Thomas.

Despite the difficulty of seeing the night-herons at Upokongaro, let alone get good photographs of them, this remains the easiest place to see the birds without straying on to private land. This is especially so during winter when many of the riverside trees are leafless. Although the birds are generally nocturnal, they can often be seen during daytime, not just glimpses of them at roost, as above, but also sometimes as they move around between various roost sites or as they edge out to get a better view of you watching them before sidling back silently into cover. Very occasionally, a bird will fly down to the streamside, apparently to forage briefly.

They can also be seen just after sunset when they leave their roosts and fly off to forage up and down the Whanganui River and, quite likely, along entering streams. Jim and one other group of observers recorded seven such departures this winter. The average departure time was 28 minutes after sunset, with the birds all leaving within 5–10 minutes of each other. When viewed this late in the evening, all you are likely to see are the birds in silhouette. Nevertheless, such records are still valuable because they confirm the birds' presence and often provide an opportunity to get a more complete count of how many are present.

There are occasions when persistence in looking for the birds during the daytime pays off, not only with good views but also with opportunities to observe something unusual. On the afternoon of 27 August, Jim Norris, his son and some friends had a unique encounter with the night-herons when a somewhat unexpected threat emerged in the shape of hungry juvenile New Zealand falcon | kārearea. What transpired may partly explain why night-herons choose dense cover in which to roost during the day. Jim wrote:

This afternoon, our son Matthew and I met Kath and Peter McIndoe from Lower Hutt, at the cafe in Upokongaro looking for Nankeens, which the McIndoes had not seen before.

We found three, high in the Holm Oak. There were two nice adults and a 2yr bird, with spotted wings, all high in the canopy and offering only semi-obstructed sightings. After we left at 3.30pm when the cafe was closing, Mat and I went up Makirikiri Road and down to the Upokongaro Stream in order to see if we could sight some of the Nankeens in the Gum tree behind 'The Goose's Roost'.

There was an adult Nankeen near the water, underneath the bamboo that grows below the Gum tree. It saw us and clambered up into the bamboo from where it eventually flew high into the gum and disappeared from our sight. Two more Nankeen were showing in the foliage on the right of the Gum. As we were moving along the stream to get a better view of the birds in the Gum, a Nankeen flew past us, with another darker bird close behind. They both went into the canopy of the Gum tree. The two of them came out again almost immediately, with the Nankeen squawking in loud alarm, while the darker bird chased behind, no more than a couple of feet from the Nankeen. When the dark bird flew up to a Poplar branch, we could see it was a NZ Falcon and it sat there for maybe three or four minutes, shifting its gaze from the Gum to us, as I moved around it trying to get a better photo.

Then suddenly, the Falcon flew back into the gum and flushed out another (maybe the same) Nankeen, which was again screaming its alarm calls as it flew down the stream with the Falcon twisting and turning in pursuit, never more than a metre behind. After disappearing from our view, the Nankeen came back low to the water and flopped into the water like a duck, mid-stream. The Falcon gave up at that point and turned towards the river and flew away from us. The Nankeen then flew out of the stream and up into the bamboo, then on up to the Gum, where it disappeared.

We could still see the two Nankeen in the Gum on the cafe side of the canopy, opposite where the fleeing bird entered its refuge. Mat says it is the most exciting thing he has seen from birding and he could not believe the agility the Falcon showed, as it twisted and turned in its efforts to catch the Nankeen.

Although I know it isn't, the Falcon appeared to be almost as big as the Nankeen, but its ambition seemed to far outweigh any likelihood of a successful catch. The agility of both the predator and its prey was impressive. Their speed matched each other, and although the Falcon was never far behind it was unable, despite its best efforts, to make a catch. The Nankeen seemed to baffle the Falcon when it landed on the water, even though that appeared to have been done in panic.

We first noticed what turned out to be a Falcon, when it chased the Nankeen into the middle of the Gum canopy. We had already seen three Nankeens in the gum and I wonder if the bird being chased had come from the Holm Oak. It is possible it could have come from the Macrocarpa, although I think we would have seen it being flushed out of the Macrocarpa, which was opposite where we were standing at the time.

It was an exciting and very rewarding few minutes, down beside the flooded and swollen Upokongaro Stream.



The juvenile New Zealand falcon | kārearea photographed alongside the Upokongaro Stream where it had been trying to catch a Nankeen night-heron | Umu kōtuku. From its appearance and the description of its size relative to the Nankeen night-heron, it is probably a female.
Photo credit: Jim Norris

The species' account on New Zealand falcon on New Zealand Birds Online reports that, although their main prey is small to medium-sized birds, they will occasionally take prey larger than themselves. Black shag|kawau, poultry, common pheasant|peihana and even rabbits and young hares were mentioned specifically (<https://nzbirdsonline.org.nz/species/new-zealand-falcon>). The larger prey are probably taken by females, which are roughly double the size of males. According to NZ Birds Online, females weigh 420–720 g; in contrast, males weigh 206–340 g. Nankeen night-heron weight about 800 g, and so are slightly heavier than a large female falcon, but lighter than some of the other sizeable prey known to be taken.

With their long tails, used as a rudder, allowing them to rapidly change direction, and their relatively short wings, enabling them to manoeuvre more easily in a forest understorey, New Zealand falcons may be especially adapted to hunt in such environments. There are several anecdotal accounts of them doing so but few prolonged observations. This makes Jim's observation particularly valuable. He is planning to write this up as a short note for *Notornis*.

Pied shag | kāruhiruhi

The pied shags | kāruhiruhi continue to nest at Pūtiki, despite losing two nests during the storms that lashed Whanganui in mid-June. On 15 June, Jim Norris reported that only three of the original five nests were still in place but were unoccupied. These were the lower nests built on bigger branches. No shags were seen at the time, although two were perched 200m upriver, so the birds were still around. In the preceding week, between 9th and 14th June, Whanganui experienced maximum daily wind gusts of 68–98 kph, the highest being recorded by the automatic weather station at Whanganui Airport on 13 July. Wind direction on these days was west to north-westerly, and so blowing directly across the Whanganui R at that point. The Pūtiki colony would have experienced these winds head-on. Whether any of the nests contained eggs or chicks is not clear. When Jim Norris last checked the colony, on 10 May, around 4-5 weeks before the storm hit, he recorded one nest with three young, one with two, and three nests with adults sitting, either on eggs or brooding very small young. According to NZ Birds Online, pied shags incubate their eggs for 25–33 days, nestlings are in their nests for about 28 days, and can fly when 53 to 60-days-old (<https://nzbirdsonline.org.nz/?q=node/249>). Given these periods, it is likely that if there were eggs or small chicks present on 10 May, these may have been lost in the storm, if they had not failed earlier.

The birds had begun nesting again by 7 August, when Peter Frost recorded three active nests, two with birds incubating and the other with a bird either still nest-building or, possibly, just beginning incubation (it was sitting on and off during the period of observation but did not leave the nest). On 31 August, Paul Gibson found five occupied nests—birds either sitting or in attendance—so the two destroyed nests had been rebuilt by then.



One of the occupied pied shag nests at Pūtiki, photographed on 7 August 2022 with two birds in attendance, one apparently incubating with its partner alongside. Photo credit: Peter Frost

It would be good to follow fate of this pied shag colony more closely, to see how many nesting attempts there are in a season and how many chicks fledge. Since its establishment in August 2020, the colony seems to have had breeding birds present for much of the time, except perhaps briefly in winter 2021. Young birds are regularly recorded and photographed on Whanganui Estuary, and the species is being seen repeatedly on adjacent estuaries, such as the Waitōtara. Not only do pied shags now seem to be well established as a breeding species in Whanganui but they may be becoming a source of further colonists moving west.

Sacred kingfisher | kōtare

To close the circle, let's return briefly to the Whanganui estuary in winter. One of the species that is commonly seen there is the sacred kingfisher | kōtare. There, individuals and even small groups can be seen sitting out on bits of driftwood or lumps of shell rock on the estuary at low tide. If you watch these birds for any length of time, you'll see them periodically fly down to seize a small crab or other small prey, before returning to a perch to eat it.

This raises some interesting questions: how long does it take a kingfisher to catch a prey item once it arrives at a perch? How does this vary with the tide and with substrate? If nothing is caught, how long will the bird remain at that site before giving up and trying somewhere else? If it is successful, does it return to the same perch to consume its prey, or does it fly off elsewhere to do so? If it return to the same perch, what does it do once it has eaten its prey: does it resume hunting from the same perch, or does it then move to another site? And what interactions occur between neighbouring kingfishers: do they compete for perches, with one bird displacing another or, as in Jim Norris's photograph below, do they appear to sit amicably, even if they are potentially competing for the same prey? Are some sites more favoured than others?



A group of sacred kingfishers | kōtare at low tide on the Whanganui estuary. One bird in the background can be seen flying off with prey, probably a crab. Note the brown back of the bird at the top of the rock. This is probably an immature; adults have iridescent bluish-green backs suffused with variable amounts of brown. Is this a family group? (photo credit: Jim Norris).

On the estuary, sacred kingfishers mostly seem to feed on crabs. (You can check this by looking through the pellets of indigestible prey parts—mostly crab exoskeletons—that they regularly regurgitate.) The distribution of crabs is not necessarily uniform across the mud but is likely to vary both with the nature of the substrate (varying proportions of sand and silt) and with time in the tidal cycle. It is also not in the crabs' interests to be caught, so the birds have to expend time and energy searching for, catching, subduing and consuming their prey. Moreover, once one or two prey items have been caught at a site, the density of prey in the immediate vicinity should be lower, thus presumably reducing the probability of catching another item in the vicinity, at least in the short term. At what point does it become better to move to another perch than to remain hunting over a diminishing resource base? These are the kinds of questions that someone with a pair of binoculars, a stopwatch (most smartphones have these), and a notebook and pencil could answer. One of Birds New Zealand's principal aims is to foster the study, knowledge and enjoyment of birds. Doing something like a simple time-and-motion study of foraging kingfishers should provide some interesting insights into their lives, heightening your knowledge and enjoyment of them.

What to look forward to

Spring has arrived. Marge Keys reported the first shining cuckoo | pīpīwharau, calling at Papaiti on 1 September. Others should follow soon. Please let me know when and where you hear or see them, at least through to early October. We are also expecting the first bar-tailed godwit | kākā soon, as the birds have already started to leave Alaska and should take 11-12 days to reach here, flying non-stop across the Pacific Ocean until they reach New Zealand. We are keeping fingers crossed that 'our' marked male godwit, AJD, returns for what will be his 15th consecutive season here since being banded in October 2008, when he was at least 3-years old. He is the subject of Paul Gibson's book *Feats Beyond Amazing. The Life Story of a Bar-tailed Godwit* (for information on how to obtain a copy of the book, should you do not have one already but would like to, visit <https://www.upics.co.nz/>). Birds are beginning to breed (the first mallard | rakiraki broods have already been recorded). Again, please let me know of any instances of breeding that you may record. The climate is changing, and we can expect birds to respond, both by adjusting their breeding phenology and in their movements and distribution. As we now see from studies overseas, collating such snippets of information helps us to understand these changes. You can report your sightings on eBird, as contributions to the New Zealand Bird Atlas project (<https://ebird.org/atlasnz/home>). There is the option there to record breeding data as well.

Finally, if you are not already a member of Birds New Zealand, how about becoming one? Membership is \$80 per year, for which you get four copies of the society's general interest magazine, *Birds New Zealand*, and its scientific journal, *Notornis*. For more details of membership plans and fees, see <https://www.birdsnz.org.nz/membership/join-now/>. The website also provides information on all the society's activities.

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