

Night Parrot in a nutshell

Wing 135–153 mm **Bill** 11.5–13 mm **Tail** 100–106 mm **Wt** ~90–105 g

An incredibly cryptic, low density, nocturnal denizen of the arid interior; has achieved almost mythical status among birders ... Stocky, legs rather long and sturdy, tail short with central tail feathers shorter than laterals. **Ad** mostly bright green above with blackish and yellow feather centres; faint blue cast to cheeks; primaries grey-brown, fringed pale yellow; uppertail dark grey, notched and partially barred dull yellow. Throat and breast green with blackish and yellow arrowheads; belly and vent clear, bright yellow; flanks finely barred grey. Broad yellow wing-stripe in all plumages. **Juv** considerably duller: upperparts dull brown, heavily streaked blackish over crown and cheeks; wing feathers, including primaries, fringed pale grey-green with broad dark centres; rump and uppertail-coverts dull yellow with thick grey bars, uppertail grey-brown with partial yellow bars. Underparts yellow, heavily streaked blackish on throat with broad grey barring on breast and flanks, but clear yellow belly. Undertail with broad and regular yellow and grey bars. Legs, feet and cere flesh coloured to slightly greyish. **Flight** poorly known; wings rather long, broad and pointed, suggesting strong flight capabilities. When flushed, may fly low and usually only a short distance before pitching or gliding to cover. Bright white eye-shine. **Voice:** Usual contact call a double whistle *ding ding* recalling Bell Miner, sometimes 3 or 4 syllables. Mostly calls in first hour after sunset and hour before dawn but can be heard throughout the night after rainfall. Also a slightly buzzy *creck*, somewhat frog-like. **Notes:** Terrestrial, nocturnal, may visit surface water to drink after dark, but not reliant on this. Current distribution centred on the e Lake Eyre Basin (sw Qld, ne SA) and east Murchison, WA; possibly also e Pilbara (WA), just south of Alice Springs (NT) and Mount Isa Uplands (nw Qld). Roosts by day in a short tunnel in side of long-unburnt *Triodia* hummock, on stony or sandy substrate. Possibly also roosts in dense, low chenopods. Readily flies long distance to food source, including chenopods growing in runoff areas and floodplain grasses.²⁵

The Night Parrot is listed as threatened or extinct in all appropriate jurisdictions. The main reasons are its rarity and its reduced population size and distribution since the 1870s. The parrot feeds, roosts and nests on the ground and, with a suite of desert-dwelling mammals (many of which are already extinct), it is suspected to be threatened by habitat loss due to overgrazing and changed fire regimes, and predation by cats and foxes.²⁶



Night Parrots (from the left): juvenile and adult standing, adults in flight showing the wing stripe that is present in all ages and sexes. Illustration by Jeff Davies from *The Australian Bird Guide* (2017).

Not the final chapter

Regardless of the outcome of future efforts, the Night Parrot will never lose its mystique. Even its reappearance on a large scale would only add another chapter to its intriguing story.

Walter Boles *et al.* (1991)¹⁵⁶

Come the fourth week of January 2016, Murphy was at Brighton Downs to download and shift sound monitors and cameras, conduct call playback and install trial grooming traps with their inventor, John Read. There the channels from Mayne Range were beginning to flow strongly.

In February, Bush Heritage Australia (BHA) took possession of the corner of Brighton Downs that they had named Pullen Pullen Reserve. On 11 April, Murphy and Rachel Barr, his partner in life and in the field, were back at the reserve for their most extended visit. The previous year, Murphy had erred on the side of caution, fitting a tiny transmitter that emitted only a radio signal that could be tracked manually, which proved difficult in the rugged terrain. This trip he was armed with a GPS transmitter: a device weighing only 2 g, the smallest available, which had a mere 700 seconds of battery life that could be programmed to record a bird's location at set time intervals over five nights.¹⁵⁷



A view of Pullen Pullen Reserve, which was subdivided from Brighton Downs; Bush Heritage Australia took possession in February 2016. Photo by Annette Ruzicka.

An atypical field trip: April–May 2016

On return in April, Murphy and Barr find that flooding in March has damaged some of the sound-monitoring gear. A check of the cameras on the grooming traps showed that Dingoes had inspected several and that only one was visited by a cat: a large tabby. The evening of 12 April, with Read and Lynn Pedler and his son Reece, they spread themselves across various vantage points and listened. The flies are horrendous, even after dark. They all hear Night Parrot calls, some more distant than others. Perched on the northern slope, Barr reports that she had heard lots of croaking and loud *ding dings*, possibly from the same bird. As they had hoped, it seemed that good summer and autumn rains had triggered increased activity among the birds.

A few nights later, on 14 April, after spending the day demonstrating grooming traps to a small media contingent, the group again hear multiple calls and lots of moving around by three to five birds. Read and the Pedlers have a thrilling close encounter with a Night Parrot, but cannot see it; they depart the next day. Then, that evening, 15 April, after hearing calls in all directions, Murphy and Barr inadvertently flush a Night Parrot, which croaks as it darts off. They have a good view before the bird vanishes into the darkness. They search for tunnels in the nearby large tussocks and Barr finds a Night Parrot feather lightly clinging to a spinifex spine. They determine to return the following night to install a camera trap.

Just after the next sunset the next day, as they walk in, they hear calls from the same spot. Concerned that there might be a nesting bird, they retreat. Elsewhere that night, surrounded by calling birds, they set mist nets and attempt to attract parrots by using call playback, without success. The spinifex is seeding heavily and they find Night Parrot tracks around a patch where it seems a bird had been feeding. The seed has accumulated in the shelter of the plants and dips and they gather some to pile in front of a camera, hoping that they might be able to photograph a bird feeding. Their hopes rise as a parrot flies in directly in towards the seed ... but it passes by.

On 22 April, reviewing the camera trap images, Murphy excitedly discovers that, at 1.05 a.m., a camera they had set up in a small drainage line near the new roost (or nest) has captured a glimpse of a Night Parrot, which begins to enter the screen from the right before turning and departing. Later in the morning they set up more cameras in the hope that the bird was coming to the drainage line to feed and will return.

Searching elsewhere, they discover a roost (or nest) with three grey down feathers and a yellow and brown barred one clinging to the tunnel; unusually, the entrance is vertical, from the top of the bush. That night, perched on the lee-side of a rolling hill, they hear more distant calls before a loud croak behind them alerts them to a Night Parrot ~60 m away, which flies a short distance, then disappears into the night. Five minutes later they hear croaks coming from 40 to 50 m downslope and, through her night vision gear, Barr watches as two Night Parrots fly towards them at a height of less than 2 m before veering off; Murphy hears their croaks and wing beats. 'Flabbergasted!!!' Murphy records in his field notes. He was unused to so much parrot activity.

The next night, they again hear lots of calls, including a frequent chirrup coming from near the new roost, which they believe might be made by a fledgling. To confirm, Murphy quickly plays the recording of a juvenile ground parrot, which he expected to be similar and proved to be so. However, they are unable to locate the bird.

24 April, it is cooler: the jumpers come out and the flies are slow. They return to measure the roost with the vertical entry, which shows no sign of activity at the base of the tunnel.



(a) The only Night Parrot image – far right – captured by the camera traps at Pullen Pullen between August 2013 and December 2016. (b) Later that day, Murphy and Barr set up four camera traps with seed in front hoping that the parrot might return to feed in the small drainage line. Photos supplied by Steve Murphy.



The potential roost, which had Night Parrot feathers clinging to the (unusual) vertical tunnel but no further signs of use or development; photographed 24 April 2016. Photo by Steve Murphy.

That evening they return to the Mayne Range. At ~6.45 p.m., Murphy flushes a parrot that lands only a few metres away before flying off silently. They search for its roost and are stunned to discover a clutch of two porcelain eggs deep in a hummock. The eggs lie on the ground on a bed of snapped off spinifex needles. The researchers beat a hasty retreat, worrying that the eggs might chill. However, encouraged by Barr, Murphy goes back to take a quick photograph. These are the first definite Night Parrot eggs known to science. Back at camp, Murphy records the air temperature as 25.7°C and the wind as gusting at 4–8 km/h.



The active Night Parrot nest containing two eggs photographed shortly after discovery on 24 April 2016. These are first definite egg and nest ever captured on camera. Photo by Steve Murphy.



The prowling tabby captured on a camera trap set up not far from the Night Parrot's nest with eggs, 26 May 2016. Photo by Steve Murphy.

The next night, the pair return with a telescope, hoping to see from a distance whether a bird is incubating and to install a sound monitor. However, try as they might, their view to the nest is blocked. They eventually hear a peel and chirrup call and watch a bird fly off. Walking back to the car at 9.25 p.m., they hear more calls, croaks and double chirrups. What did they mean?, they wondered. A frustrated Murphy notes that these night vigils are 'like playing chess blindfolded with hands tied behind your back, expecting to outwit your opponent using only the sounds of him placing his pieces'.

A few days later, 26 April, Murphy and Barr catch on camera trap a small tabby far from the tree-line, where cats were not expected, and within 30 m of the spot that the only Night Parrot was filmed by a camera trap. This prompts Murphy to arrange a visit by a pair of shooters.

Daytime is spent checking grooming traps and sound monitors, changing batteries and downloading data. On 27 April, the researchers are back to check the nest. At 6.44 p.m. they hear the first calls of the night – peels – with a faint reply coming from the nest, and watch a parrot fly in and delicately land. They depart happy.

The next couple of days are spent frantically trying to organise some miniature surveillance video cameras to use at the nest and they make a trip into Winton to collect it. Conventional gear, they fear, would only attract curious Dingoes or cats.

On 30 April, Murphy and Barr walk in expectantly but, when they arrive at the nest, their hopes are immediately dashed. The hummock is empty and ants are feeding on scraps of yolk stuck to a fragment of shell. They return unhappily to the homestead. The next



Steve Murphy holding the male Night Parrot freshly removed from the mist net on 6 May 2016. Photos by Rachel Barr.

morning, inspecting the plundered site, they record what they can, noting that the nest is like a sandy oval bowl lined with snipped off spinifex leaves. They measure the size of the nest bowl: 190 × 150 mm, and 30 mm deep. They inspect the area for footprints or other signs, finding none. Using sterile forceps, they collect the shell fragments. They observe that the entry tunnel to the nest has not been widened, indicating that a small predator is the culprit. Upslope of the plundered nest, they find another tunnel, with a single feather clinging to it; a nest bowl had been constructed but it is unlined and seemingly inactive.

6 May, Murphy and Barr install sound monitors at Mount Windsor and, late in the day, set mist nets at Pullen Pullen, which they open at 6 p.m. Only half an hour later, Murphy hears a bird flapping in the net and hurries over to find a bird – 'Night Parrot!', he later records – caught in the second shelf.

They weigh the bird (102 g and, later, molecularly sexed as male), glue on the new GPS transmitter and take photographs, including some thermal infrared images for research on water balance. On release, the bird wobbles off across the ground, causing Murphy some concern. Then, a burst of wing beats carry it up 3 or 4 m, and it flies off strongly. Relief! Murphy checks the time and is 'stoked' that it took only 13 minutes from the bird hitting the net to release.



Two views of the trapped parrot showing the species' characteristic upperwing and underwing patterns, unlike those of any other arid zone parrot. Photos by Rachel Barr.



The male with transmitter fitted crouching after release: the antenna of the transmitter can be seen protruding, aligned with his tail. Photo by Steve Murphy.

Later, Murphy notes that the bird was easily extracted from the 60 mm net, which he feels is the ideal gauge – it had caught the bird well and the thick filaments made the net more easily seen. He also comments that, compared with other parrots, the Night Parrot loses a lot of feathers when it is handled and it has a feeble bite, which he feels must have some relevance to its diet.

The next evening they hear several birds calling. They pick up a signal from the tagged parrot, but it doesn't move around, so Murphy becomes convinced that the tag has fallen off. Eventually, moving closer, to his great relief they flush the tagged bird.

The following night, 8 May, they find the tagged bird is still in the same area. They return to the location where they found the two nests and discover a third that, from a very quick inspection, they could see is lined with feathers. They decide to take a camera to set up near the roost of the tagged bird and, not long after arriving, Barr flushes a Night Parrot, which Murphy follows in the light of his head-torch. It flies 40 m or so at a height of 5–6 m before landing. Hoping it might stay put, Murphy races the 200 m back to the car to get a camera. Returning at speed, he realises that his headlamp is on and switches it off so as not to startle the bird. Not long after, he trips on a hummock and falls face first into a spinifex clump, but the camera is unscathed and the bird is still there, watching them and 'frozen' to the spot, crouched with wings hanging, like 'a bright green flattened torpedo'. Murphy inches to within a few metres and, while Barr holds the bird in the light, clicks away. After confirming that it is not their tagged bird and hearing another bird calling nearby, they depart. That night, there are flooding rains and they worry about the nest.

On 11 May, Murphy and Barr drive to Winton for supplies and, back at Brighton Downs, just after sunset, they find that the tagged bird is still at the same roost. On 12 May, they try to recapture him to remove the transmitter. The new BHA barracks are ready, so they move into their office.

On 13 May, the ground had dried out enough for them to check the third nest, found 5 days before. Within the feather lining they uncover the remains of at least one well-grown nestling – just a few bones and feathers – that had evidently died before they discovered the nest. They collect what they can for analysis, including seeds from the chick's crop, and take measurements of the nest.



The Night Parrot that Murphy and Barr flushed on 8 May 2016, which landed nearby (they usually disappear into the night) and remained 'frozen', crouching on the ground while Murphy ran to get his camera. The characteristic posture hides its bright yellow belly. Note the grey eye, which may indicate that it is a female. Photo by Steve Murphy.

That night and for four frustrating nights, from 14 to 18 May, Murphy and Barr man the mist nets, attempting to catch the tagged male early in the night as he leaves his roost.

On 19 May, Mark Holdsworth arrives from Tasmania with his specially trained dog 'Clay', and spends several days in search of cats along the treed braided river channels near core Night Parrot habitat.



The spinifex clump that contained the nest with the remains of a nestling at Pullen Pullen, first found on the night of 8 May 2016. Note the extensive bare ground between hummocks, typical of nesting areas found at Pullen Pullen. Photo by Steve Murphy.



Mark Holdsworth teases Clay, his specially trained Border Terrier, revving her up before she trots off to search for cats in the trees along the river channels at Pullen Pullen. Photos by Steve Murphy.

On the evening of 19 April, the three researchers discover that the tagged bird is not at his roost. Concerned that the battery will soon die, on 20 May, Murphy tries to call in the helicopter, but it does not come until the following day when they pick up the signal after 2 hours searching from the air. The bird had flown to Mount Windsor, 8 km from his roost. Barr travels to the spot and locates him on the ground with another parrot.

Finally, on 23 May, the tagged bird is lured into the net and the transmitter immediately falls off! They free him to fly off into the night. Murphy quickly checks that the transmitter has worked: it has recorded 127 points over the 5 nights. 'Relief mixed with excitement', Murphy later writes in his field diary.

They arrive back at camp to find that a small contingent of ornithologists – Steve Garnett, Allan Burbidge, Richard Fuller and James Watson – are waiting. The new arrivals are soon regretting that they detoured to see a Grey Falcon's nest and missed seeing the parrot!

Keen to download the data from the tag, Murphy wakes early the next morning and is excited to see that the male had been visiting a particular dam, presumably to drink. Further analysis of the 127 GPS locations recorded showed that he left the shelter of the spinifex to (presumably) drink at a dam and to forage on floodplains where native grasses and shrubs grow, revisiting certain locations and travelling at least 40 km overnight, an unexpectedly long distance.