

SPECIAL INTEREST GROUP and RESEARCH UPDATES

1. Bird banding in Queensland in 2018 and 2019

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Since 2006 three bird banding projects have been conducted in Queensland by the authors, with a number of other volunteers and contributors. These projects are supported by Birds Queensland who provide insurance cover for field activities and the Queensland Wader Study Group who support shorebird banding activities. The projects concern (1) the biology of the Black Swan, (2) the movements and site fidelity of migratory and resident shorebird species, and (3) the survival and productivity of a wide range of land bird species in a range of habitats across the state. A brief summary of the status of each project in 2018 and 2019 is presented here.

Breeding biology of Black Swan

The aims and methods of this project are described by Coleman (2019). Banding and survey visits were made in every month with 153 birds banded in 2018 and 110 birds in 2019, bringing the total banded to 838 birds. The Queensland study area (SEQ) extends from the Port of Brisbane down to the New South Wales Border. A second study area has been created in the ACT to compare subtropical and temperate breeding biology. Seventy-three birds were banded in that study area during 2019. Many local movements in SEQ were recorded during the two years with 1,001 encounters of banded individuals added to the database which now has 4,967 individual encounter records. Movements from all years of the study are represented in Figure 1. As in previous years non-breeding birds moved longitudinally along the coast between Toorbul in the north and Lennox Heads, NSW, in the south. However, most movements occurred within 1-10 km of the original banding site. The movement of a single cygnet from the Gold Coast to Victoria in 2013 remains unprecedented as no other records of this nature and distance have been made.

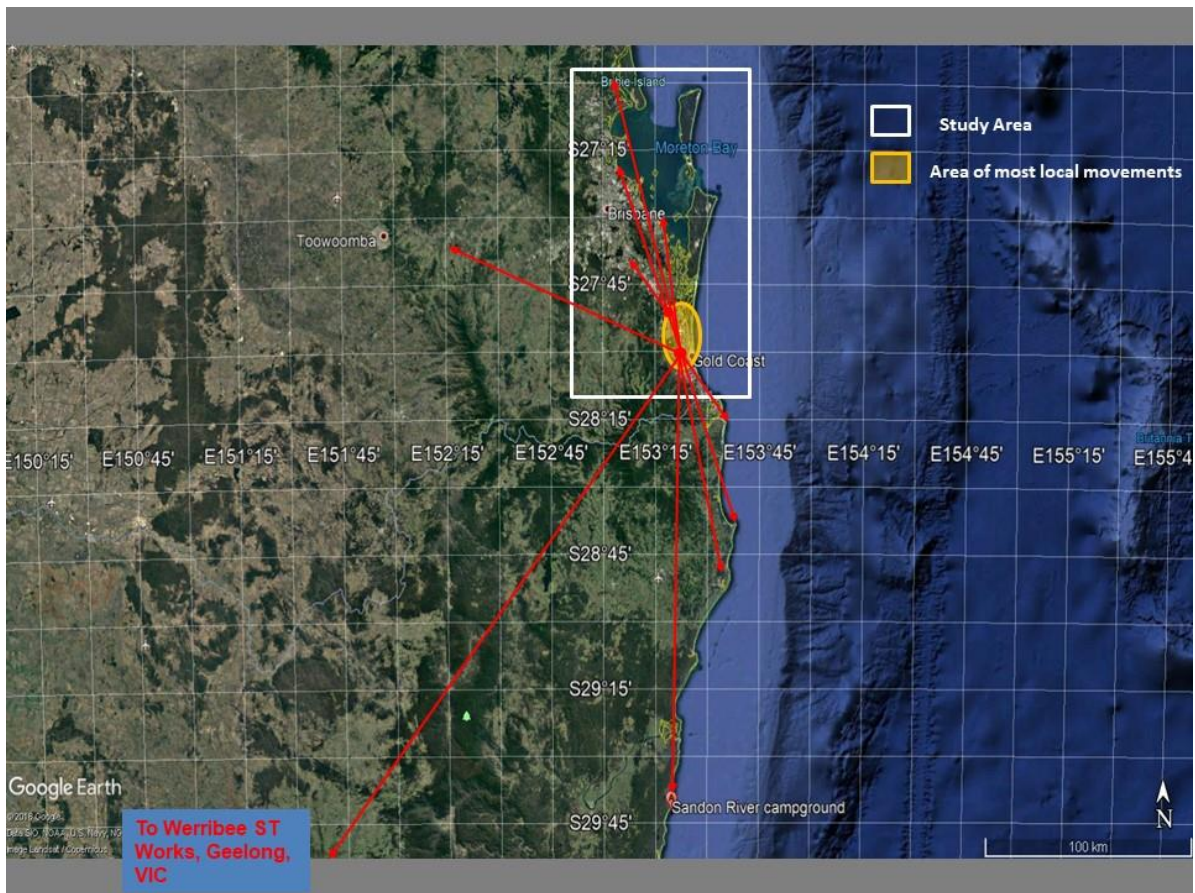


Figure 1. Recorded movements of Black Swans from 2006 to 2019

Figure 2 shows monthly counts in the area since the study began. Unlike 2014 when a large flock was regularly seen near Wynnum, no large flocks were recorded, although small flocks did occur along the coast throughout the study area which was unusual. The highest counts were recorded during the summer period and this corresponded with increasing numbers of birds (100+) using the Port of Brisbane Lake at those times.

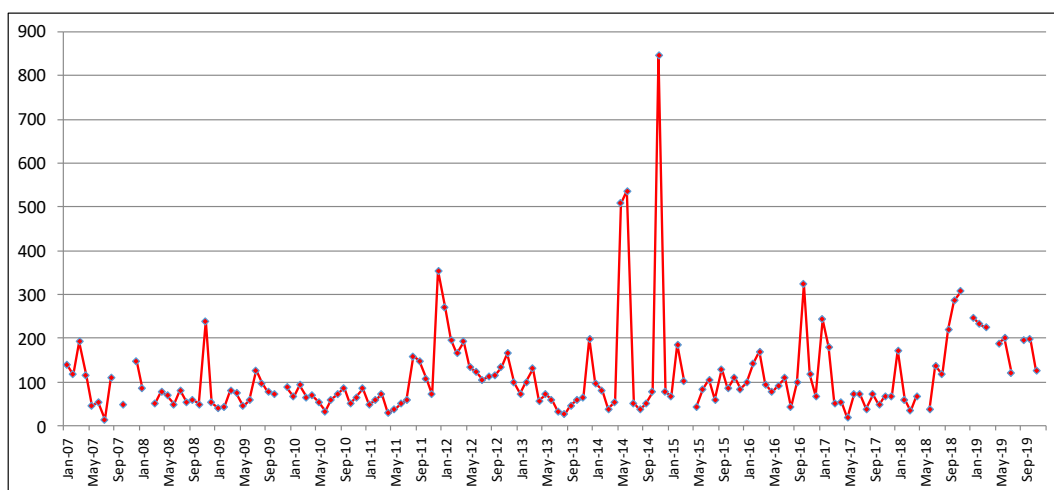


Figure 2. Monthly maximum counts of Black Swans recorded on survey visits

Sixty separate swan pairings were identified in 2019, and 62 in 2018, compared to 40 in 2017, 44 in 2016 and only 27 in 2015. Of these, 31 and 28 pairs were recorded breeding in 2018 and 2019 respectively, and 35 and 32 breeding attempts recorded (Figures 3 and 4). Of the 32 breeding attempts in 2019 only three (9%) failed to produce cygnets, compared to 31% in 2018, 19% in 2017, 32% in 2016, 28% in 2015 and 39% in 2014. In terms of number of breeding pairs and breeding attempts, the poorest year recorded to date was 2013. The two subsequent years, 2014 and 2015, showed a gradual improvement and 2016 and 2017 showed a return to the moderately high levels of breeding success recorded prior to 2012.

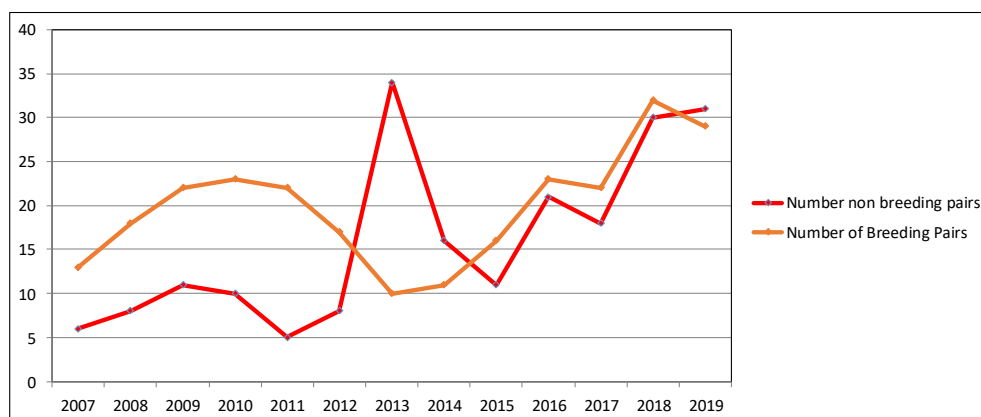


Figure 3. Number of breeding and non-breeding pairs in each year of the study

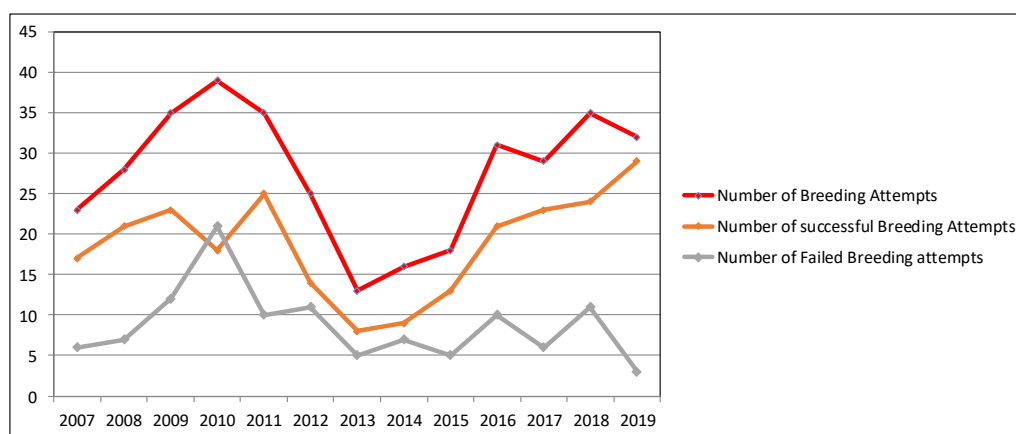


Figure 4. Number of breeding attempts recorded in each year of the study

Hatching success in 2019 was 3.11 cygnets per breeding attempt, which was the highest number recorded for this study. Rearing success was 2.59 cygnets reared per breeding attempt, again the highest rearing rate recorded to date. Figures 5 and 6 show the mean average hatching and rearing success per breeding attempt, respectively, for each year of the study. These graphs are updated annually so trends in hatching and rearing can be monitored. Future monthly monitoring efforts will continue by visiting the established sites to consistently maintain our data collection.

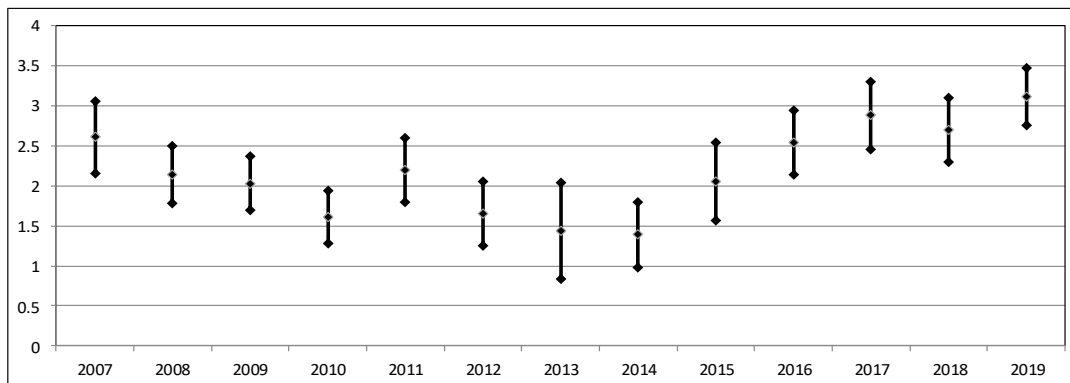


Figure 5. Mean average hatching success for Black Swan Pairs within the study area

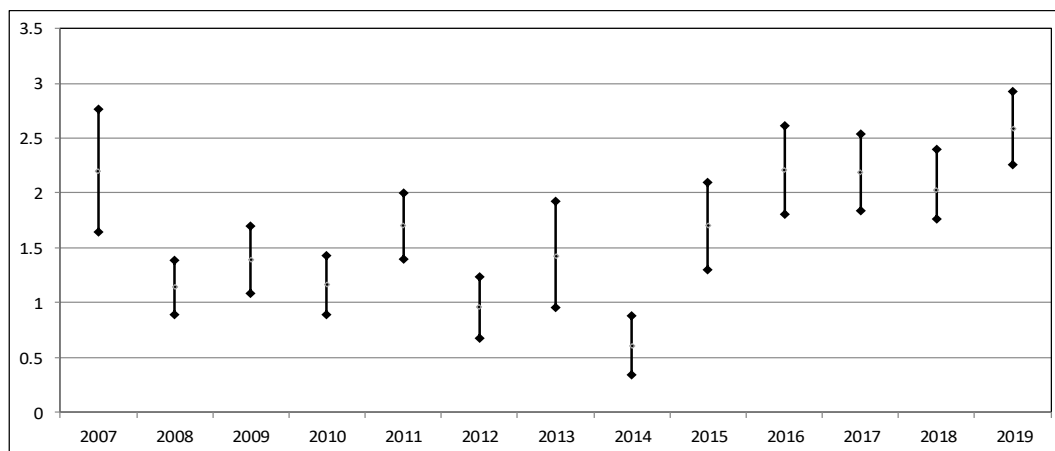


Figure 6. Mean average rearing success for Black Swan Pairs within the study area

Recent publications arising from this study are:

Coleman, J.T. 2019. Bird banding in Queensland in 2017. *Sunbird* 48 (1): 127-143.

Rees, E. C. Cao, L., Clausen, P., Coleman, J.T., Cornely, J., Einarsson, O., Ely, C.R., Kingsford, R.T., Ma, M., Mitchell, C.D., Nagy, s., Shimada, T., Snyder, J., Solovyeva, D.V., Tijssen, W., Vilina, Y.A., Radosław Włodarczyk, R. and Brides, K. 2019. Conservation status of the world's swan populations, *Cygnus* sp. and *Coscoroba* sp: a review of current trends and gaps in knowledge. *Wildfowl* (2019) Special Issue 5: 35–72

Acknowledgements

Gold Coast City Council provided access to their water bodies wherever public access was permitted, while Logan City Council provided access to Tygum Lagoon, parks in Beenleigh and Eagleby Wetlands. The Port of Brisbane have also provided regular access to their Visitor Centre Lake.

The Australian Bird and Bat Banding Scheme provided the metal bands used in this project and the authors are indebted to the various banders, and volunteers who assist with fieldwork every month. All activities were undertaken under Australian Bird and Bat Banding Society Permit 2337, Queensland DERM Scientific Permits WISP17052616, WISP16746415, WISP16744415. All activities were conducted and monitored under DPI Community Access Animal Ethics Approval CA2018-02-1159. The senior author is the registered scientific user, Number 254.

Body Condition, survival rates and movements in shorebirds

The aims and methods used in this study are described by Coleman (2019). The locations where shorebirds were caught in Moreton Bay are shown in Coleman (2019: Figure 3). In addition to the Moreton Bay study sites, additional focus in 2015 was on the Gladstone area (Fig. 7) as a joint project between the University of Queensland, Deakin University, and Queensland Wader Study Group. The aim was to determine habitat utilisation by migratory shorebirds. While no bird banding was undertaken in those locations during 2019, resightings of leg flags continue to be added to the leg flag database.



Figure 7. Shorebird banding locations in the Gladstone area

The banding and flagging of waders in 2018 and 2019 continued to focus on core sites in the southern part of Moreton Bay, allowing a range of the regular species to be captured for flagging and weighing. Despite a dedicated focus on catching Whimbrel and Far-Eastern Curlew to deploy Platform Terminal Transmitters (PTTs), a large number of birds across a wide range of species were caught and banded in the two-year period. Due to continuing public interference at the roost site it was decided in the best interest of the roosting shorebirds to maintain the suspension of cannon-net catching at Toorbul. Once this issue is resolved, cannon-net catching may be resumed at this site. The birds caught during 2018 and 2019, and all previous years of the study are shown in table 1 below.

Eight hundred and twenty-eight birds of 25 species were caught and leg flagged in 2018 and 2019 with a number of previously flagged birds also recaptured. Since 2006, 4,815 individually identifiable leg flags have been placed on shorebirds captured in Moreton Bay. Resightings of previously flagged birds through capture and direct observations continued to describe detailed movement patterns for Moreton Bay.

Table 1. Numbers of shorebirds captured and (recaptured) from 2006 to 2019 inclusive

Species	Banded 2006-2017	Banded 2018 & 2019	Total banded 2006-2019	Total retraps 2006-2019
Stone-curlew, Bush	137	45	182	16
Oystercatcher, Pied	80	4	84	13
Stilt, Pied	51	4	55	1
Avocet, Red-necked	1	0	1	0
Lapwing, Masked	19	2	21	0
Dotterel, Red-kneed	24	2	26	0
Golden-Plover, Pacific	71	25	96	6
Plover, Grey	6	1	7	0
Plover, Red-capped	23	11	34	3
Plover, Double-banded	7	0	7	0
Sandplover, Lesser	234	93	327	21
Sandplover, Greater	31	2	33	1
Dotterel, Black-fronted	18	5	23	1
Snipe, Latham's	0	3	3	0
Godwit, Black-tailed	3	2	5	0
Godwit, Bar-tailed	919	73	992	35
Whimbrel	140	4	144	1
Curlew, Far Eastern	31	6	37	1
Greenshank, Common	1	0	1	0
Tattler, Grey-tailed	593	279	872	88
Tattler, Wandering	1	0	1	0
Sandpiper, Terek	49	19	68	5
Turnstone, Ruddy	92	43	135	19
Knot, Great	314	19	333	42
Knot, Red	9	13	22	1
Stint, Red-necked	745	42	787	51
Sandpiper, Sharp-tailed	174	86	260	4
Sandpiper, Curlew	201	40	241	19
Sandpiper, Broad-billed	3	4	7	1
Tern, Caspian	0	1	1	0
Tern, Gull-billed	2	0	2	0
Tern, Crested	2	0	2	0
Tern, Little	2	0	2	1
Tern, Sooty	4	0	4	0
Totals	3,987	828	4,815	330

Foreign resightings of Moreton Bay banded birds were reported during the two years providing additional data on staging areas, and fidelity to these sites in different seasons. In 2019, four resightings of Grey-tailed Tattler and single observations of Bar-tailed Godwit, Ruddy Turnstone and Far-eastern Curlew were reported from staging sites in Japan. A single northward migrating Far-eastern Curlew was also resighted

in Hong Kong in 2019. Bar-tailed Godwit records (5) were also received from staging areas in South Korea. Nine birds returned to New Zealand rather than Australia for the non-breeding season and one Bar-tailed Godwit was resighted in the Pribilof Islands, Alaska, as it approached its breeding grounds.

A Great Knot and a Red Knot banded at Manly were sighted on the coast of South Korea and China, respectively. Two Red-necked Stint, two Curlew Sandpiper and a single Great Knot banded in Moreton Bay were resighted in Taiwan. Resightings of green flagged waders reported overseas in 2019 are shown in Figure 8 and these are consistent with resightings of flagged birds in the previous year. In addition to leg flag resightings, PTTs attached to Far Eastern Curlew, Whimbrel, Pacific Golden Plover, Bar-tailed Godwit, and Black-tailed Godwit using Moreton Bay in the non-breeding season provided numerous daily positions throughout the tidal cycle.

Data collected from the combination of resightings and the PTTs revealed the spatial requirements for local and migratory movements as well as identifying the diversity of habitat needed to maintain shorebird species under threat.

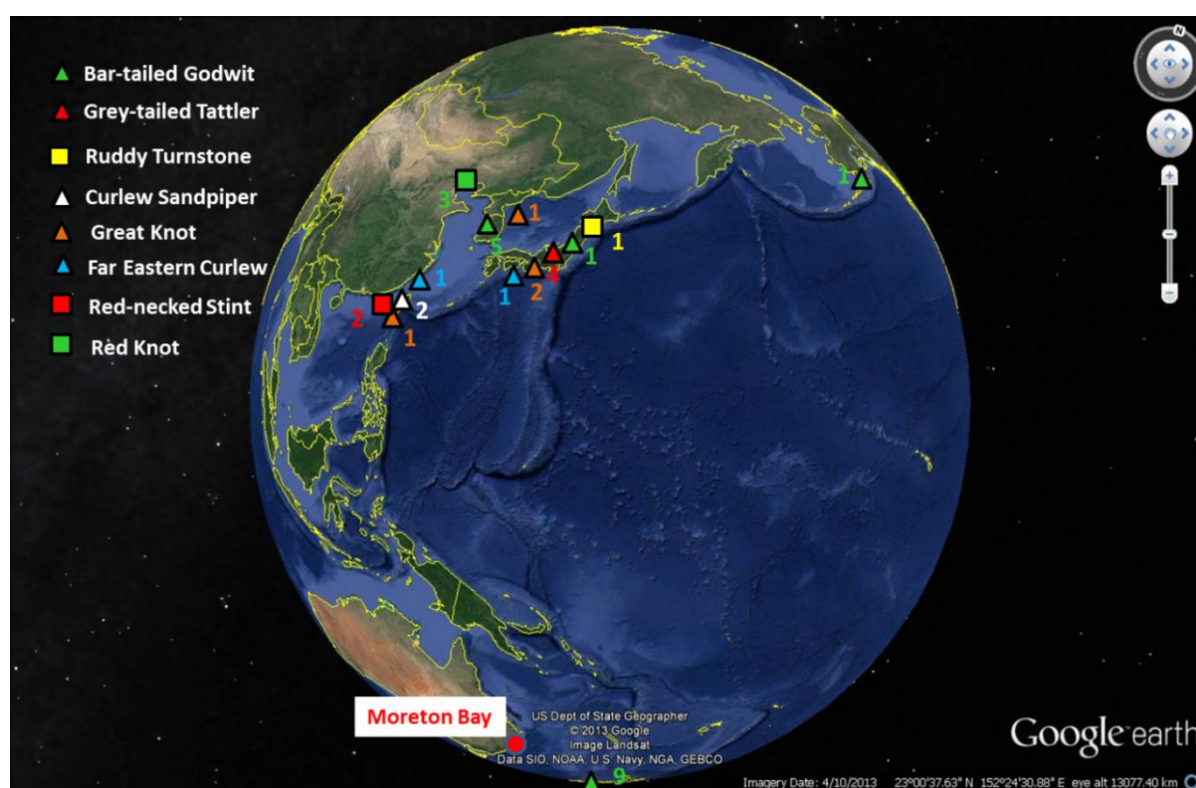


Figure 8. Overseas resightings of leg flagged shorebirds in 2019

In 2018 and 2019 there were 9,154 resightings of individually identifiable birds and to date, leg flags have generated a total of 26,734 individual resightings. Many birds with engraved leg flags were reported multiple times throughout the year. While a number of these resightings have been abroad and interstate, the majority involve repeated resightings of individuals within Moreton Bay. Satellite tracking results are also providing similar local movement data for less approachable species, increasing our knowledge of foraging patterns and utilisation of roosting sites. Some initial estimates of survival rates for annual cohort groups can now be calculated using these resightings.

The local data from leg flag resightings and PTTs continued to show that large numbers of returning birds exhibit a high degree of faithfulness to Moreton Bay. The data also showed that most species are extremely faithful to their roosting and feeding locations within Moreton Bay, both within and between

seasons. As sample sizes increase and more roost sites are sampled more comprehensive fidelity data can be presented for more species using Moreton Bay. As examples, the following maps (Figures 9-11) show the foraging ranges collected to date for two species fitted with PTTs. These examples demonstrate the value of complementing regular banding and flagging data with targeted use of emerging technologies for tracking (geolocation, satellite telemetry, GPS tracking).

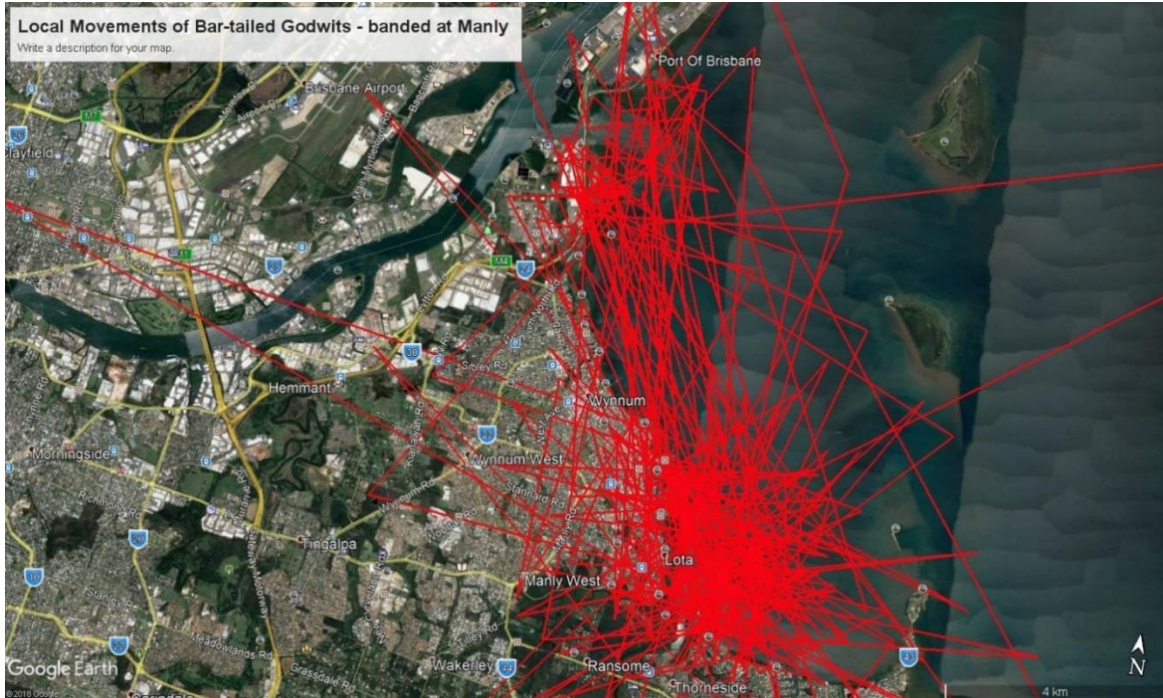


Figure 9. Local movements of Bar-tailed Godwit #64588, banded at Manly

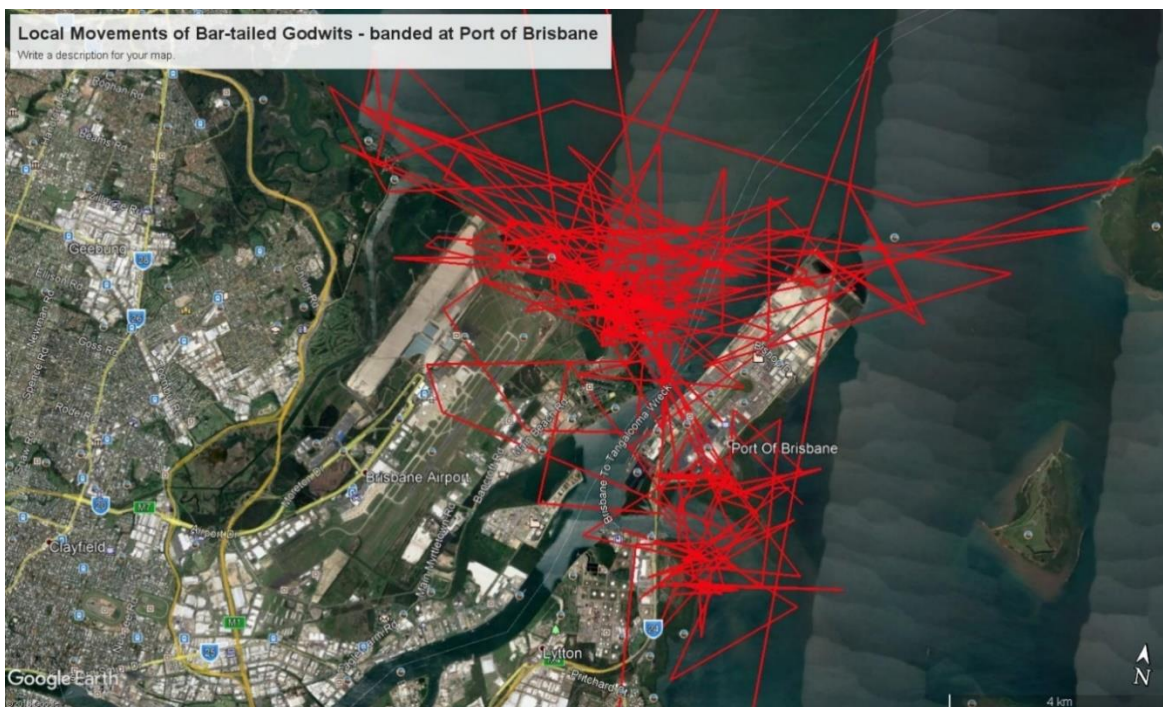


Figure 10. Local movements of Bar-tailed Godwit #64597, banded at the Port of Brisbane

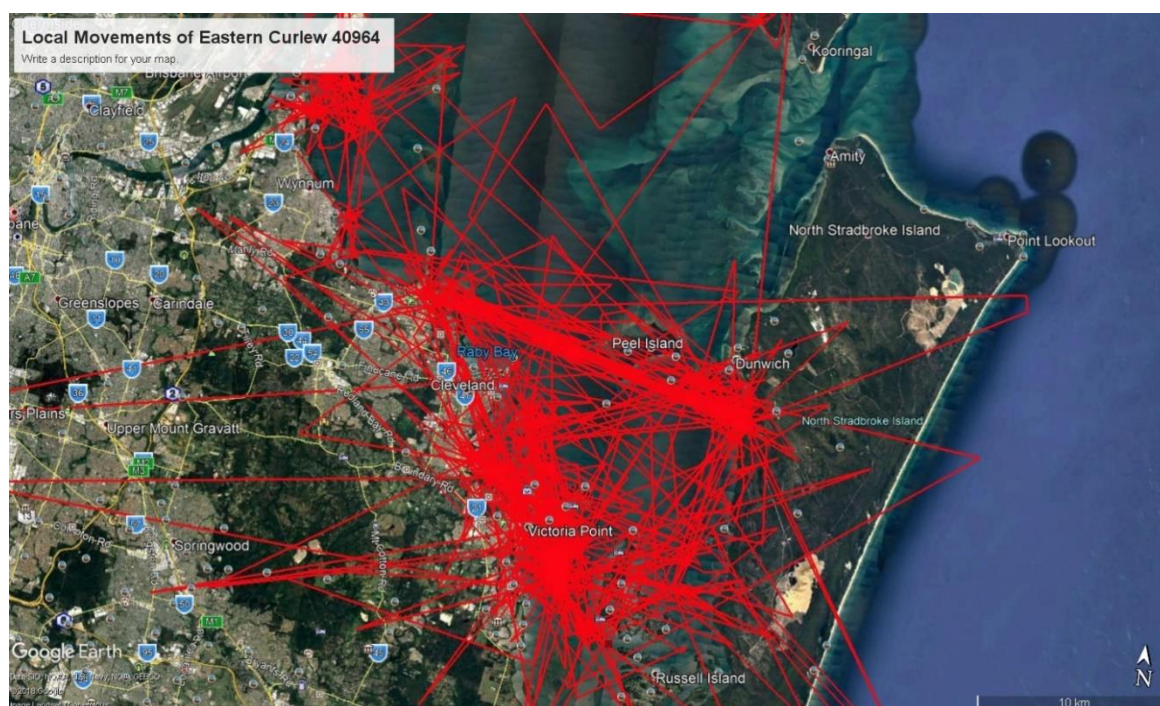


Figure 11. Local movements of Far Eastern Curlew #40964, banded at Wellington Point

During 2017 and 2018 five PTTs were deployed on Whimbrel, one on a bird at Wellington Point and four on birds at Toorbul. Five PTTs were deployed on Far Eastern Curlew, one on an individual at Toorbul, one on a bird at King Street, Thornlands and three on birds caught at Geoff Skinner Wetlands, Wellington Point. In 2019 a further four PTTs were fitted to Bar-tailed Godwit, two onto Black-tailed Godwit, with a further Whimbrel PTT fitted. A further three PTTs were deployed onto Far Eastern Curlew in 2019.

Two of the curlews and three of the returning Whimbrel provided full northward and southward migration traces, providing data on their migration routes, and ranging behaviour and stopover durations on staging, breeding and non-breeding grounds. In addition, two Bar-tailed godwits provided northward migration traces with one also providing a return migration path. These traces are summarised in Figures 12-14.

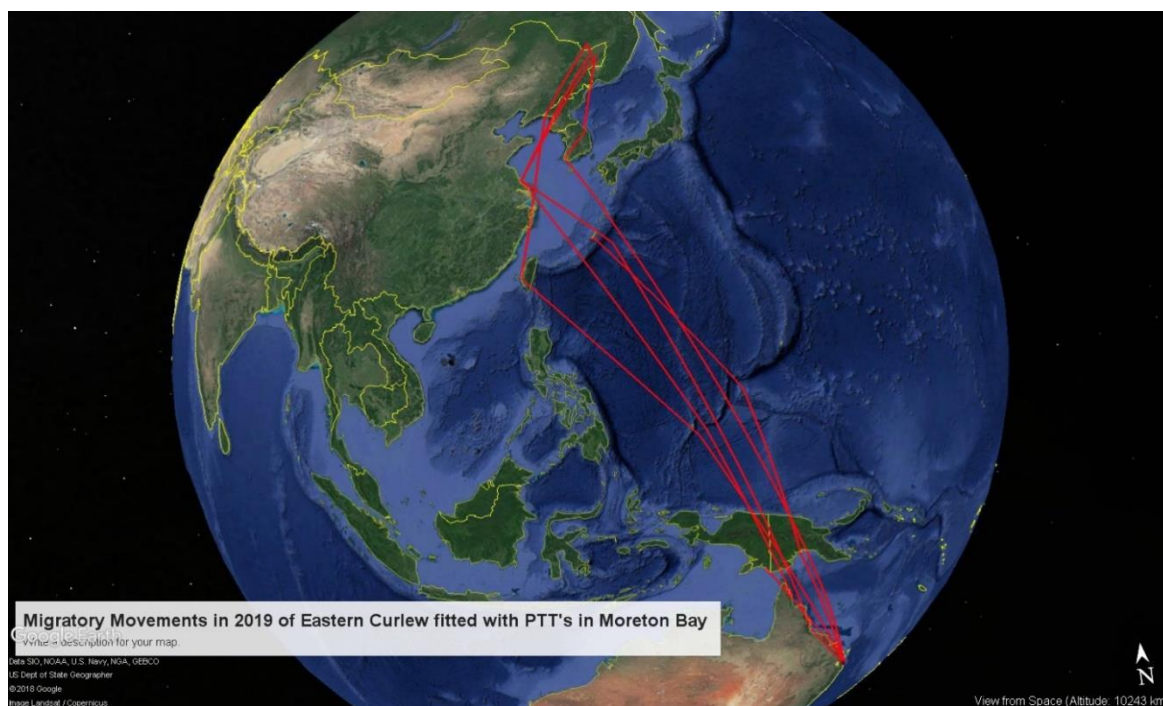


Figure 12. Northward and southward migration tracks for Far Eastern Curlew fitted with PTT's in Moreton Bay

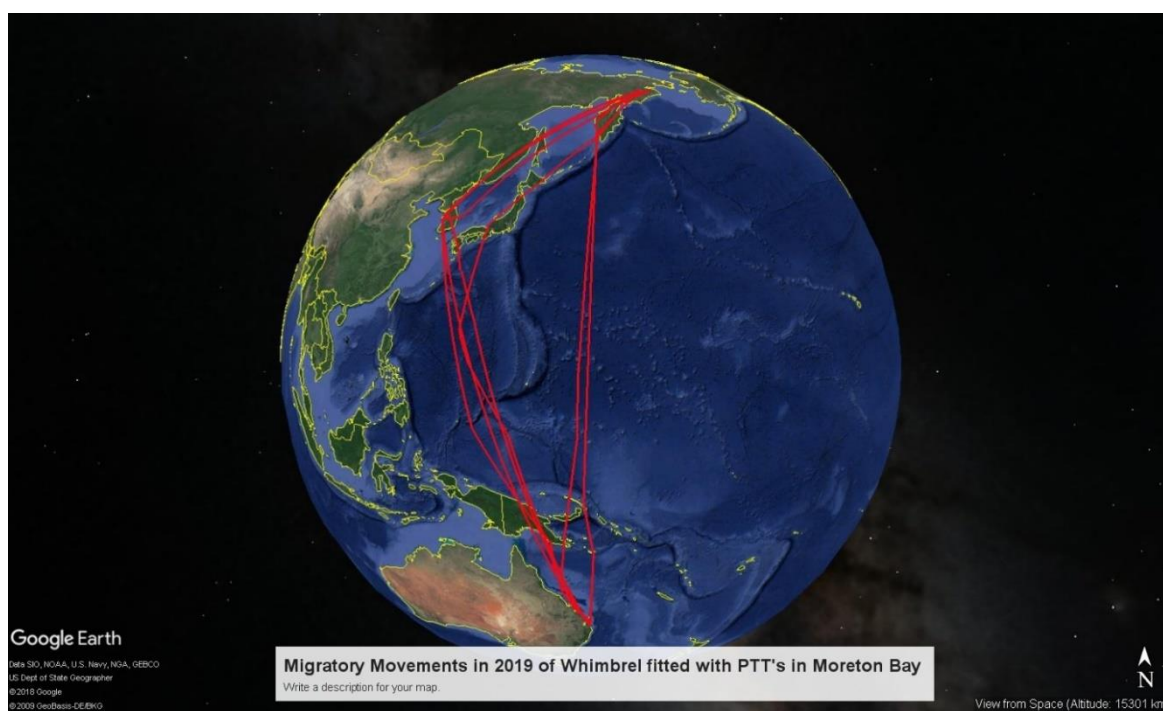


Figure 13. Northward and southward migration tracks for Whimbrel fitted with PTT's in Moreton Bay

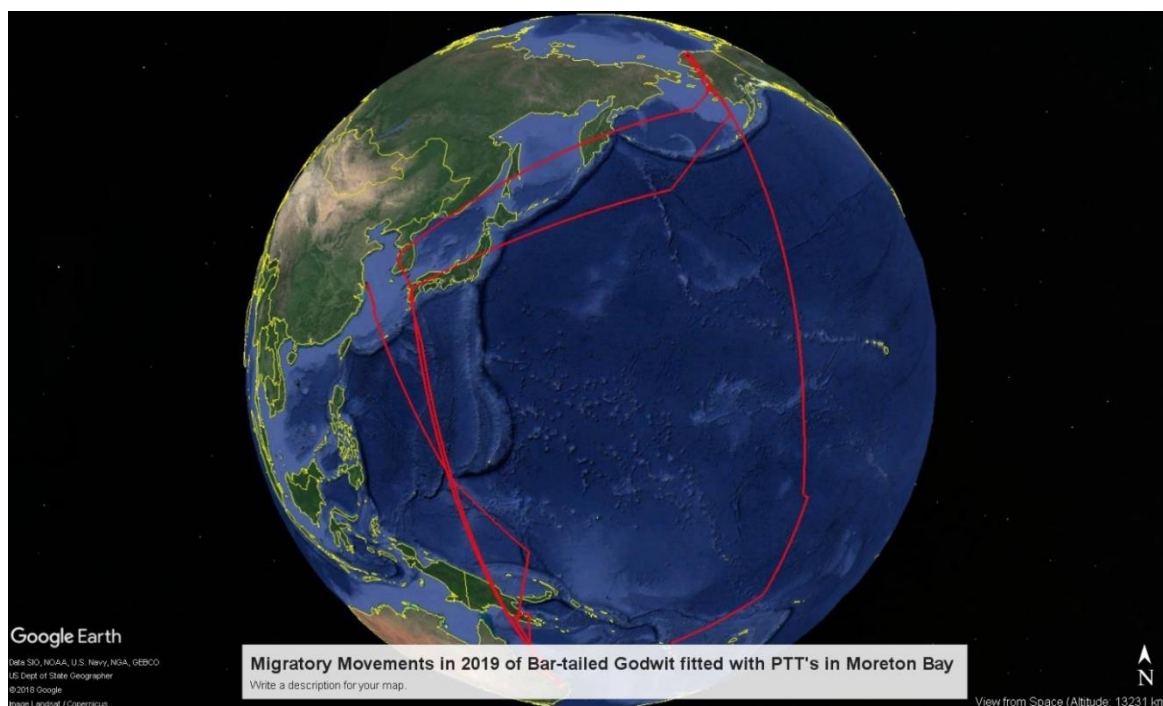


Figure 14. Northward and southward migration tracks for Bar-tailed Godwit fitted with PTT's in Moreton Bay

Recent publications arising from this study are:

Coleman, J.T. 2019a. Bird banding in Queensland in 2017. *Sunbird* 48 (1): 127-143.

Coleman, J. 2019b. Body condition, survival rates and movements in shorebirds. *Sunbird* 48: 130-135.

Coleman J., Milton, D., & Akutsuhit, H. 2018. The migration of Grey-tailed Tattler *Tringa brevipes* from Moreton Bay, south-east Queensland. *Stilt* 72: 2-8.

Acknowledgements

Queensland Wader Study Group support and fund all shorebird related activities. Redland Council, Gold Coast City Council, and Moreton Bay Regional Council, along with the Moreton Bay Marine Park EPA provided access to a number of shorebird banding locations in the Bay. The Port of Brisbane allowed access to certain areas in Fisherman Islands and helped with funding. Queensland Wader Study Group funded all wader banding activities. Redland Council also provide permission for banding of Bush Stone-curlews on Coochiemudlo and adjacent islands.

The Australian Bird and Bat Banding Scheme provided the metal bands used in this project and the authors are indebted to the many banders, and volunteers who assist with fieldwork throughout the year. All activities were undertaken under Australian Bird and Bat Banding Society Permit 2337, Queensland DERM Scientific Permits WISP17052616, WISP16746415, WISP16744415. All activities were conducted and monitored under DPI Community Access Animal Ethics Approval CA2018-02-1159. The senior author is the registered scientific user, Number 254.

Monitoring long term biological trends in common Australian birds

The aims and methods of this project are outlined in Coleman (2019), which includes a map showing all banding locations used in 2018 and 2019, apart from Mount Lewis in North Queensland. Ageing and/or sexing criteria have now been established for 201 species, an additional two species being added since 2017. All existing species accounts were also reviewed and refreshed with new data where possible. This information remains available in pdf format should researchers require access to this information for their own studies.

During 2018 and 2019, 9,626 new bird captures were made including many additional recaptures (Table 2). A total of 45,611 birds have been captured since 2006, comprising 34,722 birds banded and 10,889 recaptures. Habitats regularly surveyed include open eucalypt forest, tropical and sub-tropical rainforests, temperate rainforest, mangrove and freshwater wetlands.

Table 2. Numbers of birds banded and recaptured for this project since 2006. Total retraps represent the number of times individuals were recaptured during the period 2006-2019

Species	Banded 2006–2017	Banded 2018–2019	Total banded	Total retraps
Goose, Magpie	0	22	22	0
Duck, Plumed-whistling	1	16	17	0
Duck, Freckled	0	1	1	0
Duck, Pink-eared	1	2	3	0
Duck, Maned	67	0	67	63
Duck, Pacific-black	52	4	56	29
Teal, Chestnut	12	1	13	0
Hardhead	2	1	3	0
Brush-turkey, Australasian	14	10	24	58
Scrubfowl, Orange-footed	2	0	2	0
Quail, Brown	36	8	44	1
Quail, King	1	2	3	0
Ibis, Australian-white	2	2	4	1
Ibis, Straw-necked	6	0	6	0
Spoonbill, Royal	0	1	1	0
Heron, Striated	3	0	3	0
Egret, Cattle	1	0	1	0
Heron, White-faced	1	0	1	0
Egret, Little	1	0	1	0
Goshawk, Grey	0	1	1	0
Goshawk, Brown	5	1	6	0
Sparrowhawk, Collared	0	1	1	0
Rail, Buff-banded	5	0	5	0
Crake, Spotless	0	2	2	1
Swampfen, Purple	21	2	23	9
Moorhen, Dusky	12	1	13	0
Native-hen, Black-tailed	9	1	10	1

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Coot, Eurasian	0	1	1	0
Button-quail, Black-breasted	0	4	4	0
Button-quail, Painted	4	0	4	0
Gull, Silver	50	10	60	1
Dove, Spotted	190	28	218	45
Cuckoo-dove, Brown	13	5	18	1
Dove, Emerald	73	44	117	90
Bronzewing, Common	11	6	17	2
Pigeon, Crested	77	33	110	31
Pigeon, Wonga	2	1	3	1
Dove, Diamond	61	1	62	0
Dove, Peaceful	278	120	398	138
Dove, Bar-shouldered	118	56	174	87
Fruit-dove, Wompoo	1	0	1	1
Fruit-dove, Superb	2	3	5	0
Fruit-dove, Rose-crowned	3	0	3	0
Coucal, Pheasant	0	1	1	0
Bronze-cuckoo, Horsefield's	11	4	15	0
Bronze-cuckoo, Shining	46	32	78	4
Bronze-cuckoo, Gould's	4	1	5	0
Bronze-cuckoo, Little	4	1	5	0
Cuckoo, Pallid	1	0	1	0
Cuckoo, Chestnut-breasted	3	0	3	0
Cuckoo, Fan-tailed	55	29	84	10
Cuckoo, Brush	12	5	17	1
Frogmouth, Tawny	2	0	2	0
Nightjar, Spotted	1	0	1	0
Nightjar, White-throated	1	0	1	0
Nightjar, Large-tailed	1	0	1	0
Owlet-nightjar, Australian	3	0	3	1
Needletail, White-throated	0	1	1	0
Dollarbird	1	0	1	0
Paradise-kingfisher, Buff-breasted	51	5	56	6
Kookaburra, Laughing	80	28	108	35
Kookaburra, Blue-winged	1	0	1	0
Kingfisher, Forest	17	8	25	5
Kingfisher, Collared	40	5	45	7
Kingfisher, Sacred	135	48	183	30
Kingfisher, Red-backed	1	0	1	0
Kingfisher, Yellow-billed	0	3	3	0
Kingfisher, Azure	69	34	103	42
Kingfisher, Little	8	9	17	2

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Bee-eater, Rainbow	4	3	7	0
Falcon, Brown	1	0	1	0
Cockatoo, Yellow-tailed Black	1	0	1	0
Galah	32	3	35	12
Cockatoo, Major-Mitchell's	0	4	4	0
Corella, Long-billed	11	3	14	0
Corella, Little	69	25	94	0
Cockatoo, Sulphur-crested	65	23	88	6
King-parrot, Australian	28	4	32	3
Parrot, Red-winged	7	0	7	0
Parrot, Red-rumped	0	4	4	0
Bonnet, Blue	1	4	5	0
Parrot, Mulga	10	29	39	1
Rosella, Crimson	1	5	6	0
Rosella, Pale-headed	59	9	68	28
Ringneck, Australian	45	17	62	1
Parrot, Bourke's	24	11	35	3
Parrot, Blue-winged	1	0	1	0
Lorikeet, Rainbow	896	221	1117	117
Lorikeet, Scaly-breasted	53	12	65	1
Budgerigar	2	0	2	0
Pitta, Noisy	54	13	67	4
Catbird, Green	32	12	44	1
Catbird, Black-eared	4	0	4	0
Catbird, Spotted	0	13	13	1
Bowerbird, Tooth-billed	0	5	5	0
Bowerbird, Golden	0	3	3	0
Bowerbird, Regent	17	9	26	1
Bowerbird, Satin	21	7	28	10
Bowerbird, Spotted	66	12	78	2
Treecreeper, White-throated	31	20	51	25
Treecreeper, White-browed	14	2	16	1
Treecreeper, Brown	100	27	127	28
Fairy-wren, Lovely	11	5	16	2
Fairy-wren, Variegated	212	148	360	265
Fairy-wren, Superb	175	133	308	154
Fairy-wren, Splendid	133	11	144	7
Fairy-wren, Red-backed	209	124	333	150
Fairy-wren, White-winged	25	1	26	1
Honeyeater, Dusky	192	179	371	59
Honeyeater, Scarlet	339	140	479	2
Honeyeater, Green-backed	7	0	7	0

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Spinebill, Eastern	106	97	203	31
Honeyeater, Pied	3	0	3	0
Honeyeater, Brown	1155	473	1628	358
Honeyeater, New-Holland	53	70	123	31
Honeyeater, White-cheeked	2	3	5	0
Honeyeater, White-streaked	0	2	2	0
Honeyeater, Striped	30	4	34	1
Honeyeater, Tawny-breasted	26	24	50	5
Friarbird, Little	24	6	30	0
Friarbird, Helmeted	0	1	1	0
Friarbird, Noisy	38	13	51	3
Honeyeater, Blue-faced	71	30	101	112
Honeyeater, Brown-headed	26	2	28	0
Honeyeater, White-throated	128	38	166	64
Honeyeater, White-naped	33	8	41	4
Chat, Crimson	5	0	5	0
Honeyeater, Spiny-cheeked	327	3	330	5
Honeyeater, Bridled	0	16	16	0
Honeyeater, Eungella	0	19	19	5
Honeyeater, Yellow-faced	459	198	657	145
Miner, Bell	6	1	7	0
Miner, Noisy	527	64	591	346
Miner, Yellow-throated	64	55	119	1
Honeyeater, White-fronted	2	0	2	0
Honeyeater, Yellow	0	10	10	5
Honeyeater, Mangrove	159	15	174	69
Honeyeater, Singing	241	41	282	15
Honeyeater, Grey-headed	22	2	24	1
Honeyeater, White-plumed	1150	306	1456	258
Honeyeater, Graceful	56	35	91	0
Honeyeater, Yellow-spotted	128	113	241	28
Honeyeater, Lewin's	761	377	1138	692
Pardalote, Spotted	44	17	61	1
Pardalote, Striated	56	6	62	13
Fernwren	0	3	3	1
Redthroat	1	0	1	0
Warbler, Speckled	11	2	13	7
Scrubwren, Atherton	0	20	20	5
Scrub-wren, White-browed	503	174	677	924
Scrub-wren, Yellow-throated	289	116	405	248
Scrub-wren, Large-billed	362	107	469	322
Scrub-wren, Tropical	96	54	150	15

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Weebill	19	0	19	0
Gerygone, Brown	53	31	84	10
Gerygone, Mangrove	505	77	582	186
Gerygone, White-throated	13	7	20	3
Gerygone, Fairy	51	15	66	14
Thornbill, Mountain	0	10	10	0
Thornbill, Brown	144	41	185	61
Thornbill, Inland	58	9	67	11
Thornbill, Chestnut-rumped	109	32	141	5
Thornbill, Yellow-rumped	22	18	40	5
Thornbill, Yellow	10	9	19	2
Whiteface, Southern	11	3	14	3
Babbler, Grey-crowned	7	14	21	1
Babbler, Hall's	34	4	38	4
Babbler, Chestnut-crowned	55	10	65	14
Logrunner	30	10	40	8
Chowchilla	0	5	5	0
Whipbird, Eastern	115	46	161	100
Quail-thrush, Chestnut-breasted	3	0	3	0
Boatbill, Yellow-breasted	12	6	18	0
Woodswallow, White-breasted	13	2	15	0
Woodswallow, White-browed	3	0	3	0
Woodswallow, Black-faced	4	3	7	0
Woodswallow, Little	1	0	1	0
Butcherbird, Black	7	9	16	2
Butcherbird, Grey	63	9	72	25
Butcherbird, Pied	55	8	63	9
Magpie, Australian	65	24	89	112
Currawong, Pied	24	17	41	6
Cuckoo-shrike, Black-faced	9	3	12	0
Cuckoo-shrike, Barred	4	2	6	1
Cuckoo-shrike, White-bellied	0	1	1	0
Cicadabird, Common	5	0	5	0
Triller, White-winged	8	1	9	1
Triller, Varied	48	21	69	16
Sittella, Varied	18	6	24	0
Bellbird, Crested	7	4	11	0
Shrike-tit, Crested	0	1	1	0
Whistler, Grey	13	4	17	0
Whistler, Golden	472	197	669	326
Whistler, Rufous	313	72	385	127
Shrike-thrush, Bower's	0	10	10	0

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Shrike-thrush, Little	489	190	679	408
Shrike-thrush, Grey	181	41	222	72
Figbird, Australasian	161	52	213	9
Oriole, Olive-backed	50	41	91	3
Oriole, Green	7	1	8	0
Drongo, Spangled	40	18	58	5
Wagtail, Willie	142	68	210	30
Fantail, Grey	467	192	659	98
Fantail, Rufous	446	210	656	131
Monarch, Spectacled	240	79	319	198
Monarch, Black-faced	21	12	33	3
Monarch, Black-winged	4	0	4	1
Monarch, White-eared	22	6	28	7
Monarch, Frill-necked	15	5	20	2
Lark, Magpie	36	7	43	26
Flycatcher, Leaden	37	26	63	3
Flycatcher, Shining	19	18	37	10
Flycatcher, Restless	4	3	7	0
Crow, Torresian	15	11	26	1
Crow, Little	1	0	1	0
Chough, White-winged	1	0	1	0
Apostlebird	5	3	8	0
Manucode, Trumpet	1	0	1	0
Riflebird, Paradise	4	3	7	0
Riflebird, Victoria's	0	3	3	0
Riflebird, Magnificent	22	9	31	5
Robin, Grey-headed	0	59	59	15
Robin, White-browed	3	2	5	1
Robin, White-faced	231	178	409	93
Robin, Pale-yellow	30	6	36	9
Robin, Eastern-yellow	786	249	1035	1025
Robin, Hooded	22	7	29	1
Flycatcher, Yellow-legged	0	1	1	0
Winter, Jacky	21	12	33	3
Robin, Rose	39	26	65	9
Robin, Red-capped	103	33	136	5
Scrub-robin, Northern	6	4	10	0
Swallow, Welcome	28	21	49	0
Martin, Fairy	0	18	18	0
Martin, Tree	6	11	17	0
Reed-warbler, Australian	85	107	192	58
Songlark, Rufous	9	0	9	1

Species	Banded 2006– 2017	Banded 2018– 2019	Total banded	Total retraps
Grassbird, Little	1	1	2	0
Grassbird, Tawny	292	94	386	150
Cisticola, Golden-headed	72	13	85	17
Silvereye	3470	1565	5035	1098
Starling, Metallic	3	1	4	0
Myna, Common	5	0	5	0
Thrush, Russet-tailed	56	21	77	19
Thrush, Bassian	37	7	44	5
Mistletoebird	105	51	156	11
Sunbird, Olive-backed	2	7	9	3
Sparrow, House	15	61	76	8
Finch, Red-browed	1847	691	2538	893
Finch, Plum-headed	77	1	78	1
Finch, Zebra	455	2	457	21
Finch, Double-barred	686	74	760	69
Mannikin, Chestnut-breasted	188	193	381	6
Pipit, Australian	3	0	3	1
Total	25096	9626	34722	10889

The many recaptures from a range of species assures that future survival analysis will be possible for many commonly caught species. To date annual survival estimates have been published for the White-faced Robin (Coleman *et al.* 2012) and Mangrove Gerygone (Coleman & Noske 2017), and other aspects of the biology of the Brown Honeyeater (Coleman *et al.* 2009), Eastern Yellow Robin (Coleman & Lloyd 20017) and Mangrove Gerygone (Coleman *et al.* 2019).

Comparisons between different habitats show significant differences with data from Kutini Payamu National Park on Cape York showing consistent catch rates, and survival rates for birds caught in this tropical rainforest habitat over a 28-year period. Similar stable trends have also been shown for higher altitude rainforest habitats in the Border Ranges National Park over the last 11 years. However, catch rates and juvenile proportions in the mulga habitat at Bowra shows significant variation with catch rates and productivity declining significantly over a number of drought years at this site with 2019 showing the lowest catch rates recorded.

Recent publications arising from this study are:

Coleman J.T., Macdonald S.H. & Smith H.J. 2009. Analysis of biometric variation in Brown Honeyeater *Lichmera indistincta* in South East Queensland. *Sunbird* 39: 39-48.

Coleman J.T, van Gessel, F.W. & Clayton M. 2012. Longevity and movements in the White-faced Robin (*Tregellesia leucops albobularis*) in Iron Range National Park, Cape York. *Sunbird* 42: 11-23.

Coleman J.T. & Noske R.A. 2017. Mangrove Gerygones *Gerygone levigaster* are short-lived compared to other small Australian passerines. *Corella* 41:1-7.

Coleman J.T. & Lloyd P. 2017. Using sexual dimorphism in morphometric traits to sex Eastern Yellow Robins *Eopsaltria australis* *Corella* 41: 15-19.

Coleman, J.T., Noske, R.A., Smith, B. & Mulyani, Y.A. 2019. Moulting timing and morphometrics of Mangrove Gerygones: a comparison of monsoon-tropical and subtropical populations. *Corella* 43: 106-113.

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