

BirdLife Melbourne Newsletter

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Black Noddies and Pisonia trees: a fascinating symbiosis

BirdLife Melbourne Committee Member, Emily Scicluna writes this quarter about an interesting phenomenon she discovered while on a university field trip to Heron Island.

In the Summer of 2015, I was fortunate enough to spend time at the Heron Island Research Station studying animal physiology for a university zoological field trip. Heron Island is a coral cay within the Great Barrier Reef and is located 80km north-east of Gladstone. It is home to significant biodiversity, supporting around 900 fish species, and 72% of coral species that can be found on the reef. The island is only 800 metres long and 300 metres at its widest, giving an overall area of around 16 hectares (Heron Island, 2011). While Black Noddies (*Anous minutus*) dominate the canopies (in populations between 70,000 and 120,000), the ground of Heron Island is littered with the deep holes created by nesting Wedge-tailed Shearwaters (*Puffinus pacificus*), which occur in populations between 30,000 and 35,000 (Heron Island, 2011).

In addition to the incredibly abundant Black Noddies and Wedge-tailed Shearwaters, other resident species I observed while on Heron Island included: Silver Gull; White-bellied Sea Eagle; Silvereye; Bar-shouldered Dove; Eastern Reef Egret; Buff-banded Rail; Sacred Kingfisher and Bridled Tern. Migratory species observed included Grey-tailed and Wandering Tattlers; Red-necked Stint; Lesser Sand Plover; Pacific Golden Plover; Ruddy Turnstone; Australian Pied Oystercatcher; Brown Booby; Crested, Lesser Crested and Black-naped Terns.

Depending on the time you visit, you may come across other migratory waders such as Bar-tailed Godwit, Black-tailed Godwit and Whimbrel, which migrate from countries inclusive of Siberia, Alaska, Canada and China. Other visitors (that do not nest on the island) include Leaden Flycatcher, Great and Lesser Frigatebirds, Varied Triller, Spangled Drongo, Shining Bronze-Cuckoo (world's second smallest cuckoo), Channel-billed Cuckoo (world's largest cuckoo), as well as Little and Roseate Terns (Heron Island, 2011).

Due to the high density of nests in Black Noddy colonies, there is potentially a high parasite load with hundreds of birds living in close proximity, and the concentration of faecal deposits that bind nests together. The Noddies presumably combat this behaviourally by 'sunbathing' during the hottest hours of the day when UV radiation is extreme. Noddies can be seen sprawled out on reflective surfaces such as the sand or even on the hot tin roofing



with wings outstretched, baking in the sun. Their dark feathers assist to absorb and hence increase their surface temperature, and this behaviour is presumably intended to either kill parasites living in their plumage or to force the parasite to migrate to cooler parts of the birds body which may then be in reach of the beak so they can be removed by preening (Moyer & Wagenbach, 1995). Birds can be observed panting and appear to be extremely uncomfortable; however they remain in the sun for as long as is tolerable and can readily cool themselves by taking flight. This sunbathing activity could very readily lead to a catastrophic heat gain (death results if brain temperatures exceed $\geq 45^{\circ}\text{C}$) but they have seemingly overcome this issue by possessing a 'white cap' (white reflective plumage) on their heads. During the sunbathing activity the surface temperature of their body rises rapidly (to as high as 85°C !) whilst at the same time the surface temperature of the head remains relatively cooler ($<45^{\circ}\text{C}$). Researchers at La Trobe University (Dr John Lesku & Dr. Travis Dutka) are currently preparing this work for publication.

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Activities Calendar

Activities for BirdLife Melbourne March 2016 to June 2016

This calendar includes field activities for BirdLife Melbourne including the meetings held at Balwyn and Carlton. Should you have any ideas for an activity, or would like to volunteer as a leader, please contact the BirdLife Melbourne Activities Co-ordinator, Philip Peel at kbutlerppeeel@bigpond.com or on 0499 169 500.

Wednesday 2 March 2016	Weekdays Outing	Reef Island, Coronet Bay. 10am to 3pm. Leader: Bill Ramsay. Melway page 18 P23. From Bass Highway turn right into Soldiers Road (approximately 9km past Grantville, Caltex service station on corner). Drive straight on into Bluff Road to car park at end. Toilets at Tooradin near bridge and Grantville near jetty. Scopes useful. Some rock hopping probable. CARRY LUNCH. Contact Diane, 9836 8692 or melbourne@birdlife.org.au .
Saturday 5 March 2016	Boneseeding & Birding	You Yangs Regional Park. Meet at 10am in the car park just past the Park Office, approximately 300m from the Branch Road entrance to the park. Melway Key Map Page 11 C12. Until late afternoon, the day is spent birding and removing the invasive weed Boneseed. Bring all you need for a normal days birding plus gardening gloves and a trowel for Boneseed removal. Contact Merrilyn, 9889 4924 or merrilyn@wirejunkie.com
Sunday 6 March 2016	Yellingbo Birdwalk Note early start time, October to March.	Yellingbo Reserve. Melway 305 G11. Take Warburton Hwy to Woori Yallock, turn right to Yellingbo. At Yellingbo, turn right towards Seville, then left into Macclesfield Rd. After 2.5km turn right at large pine trees. Gate opens 9am, walk starts 9.30am. Due to Parks Victoria operational requirements the gate will be closed at 9.30am and not opened until after Bird Call at approximately 2pm. Toilets available. Bring lunch and gumboots. Contact Maryanne, 0402 283 080 or onlyme53@bigpond.com
Saturday 19 March 2016	Photography Group Outing	Bunyip State Park. For details, contact Peter, 9435 4249 or teacherpeterb@gmail.com
Tuesday 22 March 2016	Balwyn Monthly Meeting and BirdLife Melbourne AGM	8pm at Balwyn Community Centre, 412 Whitehorse Rd, Balwyn. Melway 46 F8. Good on-site parking at rear of venue. The BirdLife Melbourne AGM will commence at 8pm and will be followed by the Guest Speaker: Sonja Ross. Subject: It's a wonderful world. Stay for supper and a chat after the meeting. Contact Bill, 9803 1493 or melbourne@birdlife.org.au
Saturday 26 March 2016	Beginners' Outing	Pound Bend, Warrandyte. Meet at 10am in the car park near toilets. Melway 23 A11. Contact Hazel, 9876 3712 or melbourne@birdlife.org.au
Sunday 27 March 2016	ETP Survey	Eastern Treatment Plant, Bangholme. Meet at 9am for a survey that will continue until the evening. The survey is carried out by 4WD. Numbers are restricted and booking is essential. Survey date may change at short notice due to operational constraints. Leader is Mike Carter. Contact Mike, 5977 1262 (NB: new number).
Wednesday 30 March 2016	Weekdays Outing	Coburg Lake/Merri Creek, North Coburg. 10am to 3pm. Leader: Elsmaree Baxter. Melway 17 J10. Turn into Newlands Road from Murray Road. Immediately take first driveway (unmarked) on left directly opposite Golf Road into car park. Toilets available during walk. Contact Diane, 9836 8692 or melbourne@birdlife.org.au .
Sunday 3 April 2016	Yellingbo Birdwalk Note later start time, April to September.	Yellingbo Reserve. Melway 305 G11. Take Warburton Hwy to Woori Yallock, turn right to Yellingbo. At Yellingbo, turn right towards Seville, then left into Macclesfield Rd. After 2.5km turn right at large pine trees. Gate opens 10am, walk starts 10.30am. Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm. Toilets available. Bring lunch and gumboots. Contact Maryanne, 0402 283 080 or onlyme53@bigpond.com
Tuesday 12 April 2016	Weekdays Outing	Murrindindi. 10am to 3pm. Leader: Graeme Hosken. Melway X910 R10/Vic Roads 61 J8. From Melba Highway turn right at Devlins Bridge into Murrindindi Road. Park inside corner just beyond intersection. Convoy driving starting at 10:10am SHARP. Toilets at camping area. Contact Diane, 9836 8692 or melbourne@birdlife.org.au .
Thursday 14 April 2016	Carlton Monthly Meeting	8pm at BirdLife Australia National Office, 60 Leicester Street, Carlton. Plenty of free street parking nearby. Guest speaker & Subject: TBA. Tea and coffee served after the meeting with time to chat with other attendees. Contact Claire, melbourne@birdlife.org.au
Saturday 16 April 2016	Photography Group Outing	Bellarine Peninsula. Leader: Ian Smissen. For details contact Peter, 9435 4249 or teacherpeterb@gmail.com
Saturday 23 April 2016	Beginners' Outing	Lillydale Lake, Lilydale. Meet at 10am in the first or second car park on left off Swansea Road. Melway 38 G7. Contact Hazel, 9876 3712 or melbourne@birdlife.org.au
Sunday 24 April 2016	ETP Survey	Eastern Treatment Plant, Bangholme. Meet at 9am for a survey that will continue until the evening. The survey is carried out by 4WD. Numbers are restricted and booking is essential. Survey date may change at short notice due to operational constraints. Leader is Mike Carter. Contact Mike, 5977 1262 (NB: new number).
Tuesday 26 April 2016	Balwyn Monthly Meeting	8pm at Balwyn Community Centre, 412 Whitehorse Rd, Balwyn. Melway 46 F8. Good on-site parking at rear of venue. Guest Speaker: Dean Ingwersen Subject: Woodland birds for biodiversity. Member's Topic Speaker & Subject: TBA. Stay for supper and a chat after the meeting. Contact Bill, 9803 1493 or melbourne@birdlife.org.au
Sunday 1 May 2016	Yellingbo Birdwalk Note later start time, April to September.	Yellingbo Reserve. Melway 305 G11. Take Warburton Hwy to Woori Yallock, turn right to Yellingbo. At Yellingbo, turn right towards Seville, then left into Macclesfield Rd. After 2.5km turn right at large pine trees. Gate opens 10am, walk starts 10.30am. Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm. Toilets available. Bring lunch and gumboots. Contact Maryanne, 0402 283 080 or onlyme53@bigpond.com

Wednesday 18 May 2016	Weekdays Outing	Braeside Park. 10am to 3pm. Leader: Geoff Russell. Melway 88 D8. From Lower Dandenong Road meet near Visitor Centre at Cockatoo Car Park. Toilets available. Contact Diane, 9836 8692 or melbourne@birdlife.org.au .
Saturday 21 May 2016	Photography Group Outing	Kamarooka State Park (Greater Bendigo National Park). For details contact Peter, 9435 4249 or teacherpeterb@gmail.com
Sunday 22 May 2016	ETP Survey	Eastern Treatment Plant, Bangholme. Meet at 9am for a survey that will continue until the evening. The survey is carried out by 4WD. Numbers are restricted and booking is essential. Survey date may change at short notice due to operational constraints. Leader is Mike Carter. Contact Mike, 5977 1262 (NB: new number) .
Tuesday 24 May 2016	Balwyn Monthly Meeting	8pm at Balwyn Community Centre, 412 Whitehorse Rd, Balwyn. Melway 46 F8. Good on-site parking at rear of venue. Guest Speaker: Giles Daubney. Subject: A birding trip to SE Arizona. Member's Topic: Speaker: Alison Street. Subject: Birds in my other backyard - Lamington NP. Stay for supper and a chat after the meeting. Contact Bill, 9803 1493 or melbourne@birdlife.org.au
Saturday 28 May 2016	Beginners' Outing	'The Briars' Park, Mount Martha. Meet at 10am in the car park at the Visitor Centre. Melway 145 F12. Contact Hazel, 9876 3712 or melbourne@birdlife.org.au
Saturday 4 June 2016	Boneseeding & Birding	You Yangs Regional Park. Meet at 10am in the car park just past the Park Office, approximately 300m from the Branch Road entrance to the park. Melway Key Map Page 11 C12. Until late afternoon, the day is spent birding and removing the invasive weed Boneseed. Bring all you need for a normal days birding plus gardening gloves and a trowel for Boneseed removal. Contact Merrilyn, 9889 4924 or merrilyn@wirejunkie.com
Sunday 5 June 2016	Yellingbo Birdwalk Note later start time, April to September.	Yellingbo Reserve. Melway 305 G11. Take Warburton Hwy to Woori Yallock, turn right to Yellingbo. At Yellingbo, turn right towards Seville, then left into Macclesfield Rd. After 2.5km turn right at large pine trees. Gate opens 10am, walk starts 10.30am. Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm. Toilets available. Bring lunch and gumboots. Contact Maryanne, 0402 283 080 or onlyme53@bigpond.com
Thursday 9 June 2016	Carlton Monthly Meeting	8pm at BirdLife Australia National Office, 60 Leicester Street, Carlton. Plenty of free street parking nearby. Guest speaker & Subject: TBA. Tea and coffee served after the meeting with time to chat with other attendees. Contact Claire, melbourne@birdlife.org.au
Wednesday 15 June 2016	Weekdays Outing	Jells Park, Wheelers Hill. 10am to 3pm. Leader: John Bosworth. Melway 72 A6. Enter the eastern car park at the far end of Waverley Road. DO NOT use the main entrance to Jells Park. Toilets available. Contact Diane, 9836 8692 or melbourne@birdlife.org.au .
Saturday 18 June 2016	Photography Group Outing	Laverton Creek/Old Saltworks/Truganina Swamp. Leader: Peter Bennet. For details contact Peter, 9435 4249 or teacherpeterb@gmail.com
Saturday 25 June 2016	Beginners' Outing	Woodland Historic Park, Greenvale. Meet at 10am in the car park off Somerton Road. Melway 178 B6. Contact Hazel, 9876 3712 or melbourne@birdlife.org.au
Sunday 26 June 2016	ETP Survey	Eastern Treatment Plant, Bangholme. Meet at 9am for a survey that will continue until the evening. The survey is carried out by 4WD. Numbers are restricted and booking is essential. Survey date may change at short notice due to operational constraints. Leader is Mike Carter. Contact Mike, 5977 1262 (NB: new number) .
Tuesday 28 June 2016	Balwyn Monthly Meeting	8pm at Balwyn Community Centre, 412 Whitehorse Rd, Balwyn. Melway 46 F8. Good on-site parking at rear of venue. Guest Speaker: Rohan Clarke. Subject: Pelagic Birding. Member's Topic: Speaker: John Young. Subject: Winter birding in the UK - Ducks, Swans and Geese. Stay for supper and a chat after the meeting. Contact Bill, 9803 1493 or melbourne@birdlife.org.au

Call For Education Helpers

There is a large range of activities that require volunteers.

- **Speakers:** We regularly get requests for people to speak to community groups. Last year we have supplied speakers to over 30 functions. These are usually PowerPoint presentations with prepared scripts. At the moment we have four main speakers who all live in the eastern suburbs. A larger pool of people is required, preferably geographically spread, who are prepared to address community groups such as Probus clubs/UTA/Lions etc. All assistance will be given in preparation of the PowerPoints and other necessary skills.
- **Leaders of bird walks:** people with an interest in birds and enjoy sharing it with others are needed to identify most birds and communicate with the walkers. We do approximately 15 bird walks each year with 20 or so leaders involved.

- **School helpers:** Usually require a Working with Children Certificate. The only cost would be a passport photograph. In 2015 we took part in a large school program in Hallam organised by National Office and spread over three schools on six days.
- **Survey leaders:** to work with school groups or as part of the Melbourne Water surveys.
- **Casual helpers:** to assist with small tasks (e.g. working with an Aged Care craft activity or display bird skins, etc at a talk).
- **Public Relations helpers:** to assist at Information tables at public functions (e.g. Eltham Plant Expo in September).

Be an apprentice to the Education Co-Coordinator and 'learn on the job'. Please contact Janet Hand by email: janetfhand@gmail.com or phone Gay Gallagher on 98745968.

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One of the most remarkable avian observations I made on Heron Island was the symbiotic relationship that exists between the Black Noddies and *Pisonia* trees (*Pisonia grandis*). The *Pisonia* trees are the dominant tree of the island flora and form lush canopies around 10 metres in height (Heron Island, 2011). These trees offer Black Noddies a dense, leafy canopy for protection and ideal nesting sites. The birds make nests out of *Pisonia* leaves and their own faeces, and utilize every available branch for nesting. Hundreds of nests occupying single trees and neighbouring Noddies squabble for personal space, while other birds occupy other tree species.

Meanwhile, the *Pisonia* trees have evolved a fascinating adaptation (however, decidedly morbid) to advantageously utilise these immense colonies of birds. *Pisonia* trees have extremely sticky fruit and these get stuck to unfortunate Noddies, entangling their wings and legs and therefore restricting the birds' ability to fly (Odgen, 1993). In particular, following the storms that frequently hit this tropical oasis, hundreds of birds litter the forest floors and footpaths tangled in sticky *Pisonia*, making for a rather morose stroll as you walk past them. These birds sit on the forest floor (beneath the *Pisonia* trees), and eventually die of dehydration or exhaustion.

The death of Black Noddies, and other birds species that may fall victim to the sticky seeds benefits the *Pisonia* trees because the decomposing birds become valuable nutrients that are absorbed into soil and then utilized by the trees in an environment otherwise devoid of nutrients. Additionally, the seeds that are stuck within the birds' feathers can be dispersed and germinated off the bodies of deceased birds, which provides the ideal environment for a new seedling.

Heron Island provides a fascinating spectacle of floral and faunal adaptations and interactions to produce a unique and dynamic Australian ecosystem. The island has captured the hearts of many (including Sir David Attenborough!), and with the only infrastructure on the island being that of the Heron Island Research Station (owned by University of Queensland) and the Heron Island Resort, it truly is an island paradise for anyone interested in the natural world.

Heron Island, (2011). *Great Barrier Reef Ecotourism | Heron Island*. [online] Available at: <http://www.heeronisland.com/Nature.aspx> [Accessed 27 Jan. 2016].

Moyer, B. and Wagenbach, G. (1995). Sunning by Black Noddies (*Anous minutus*) May Kill Chewing Lice (*Quadraceps hopkinsi*). *The Auk*, 112(4), pp.1073-1077.

Odgen, J. (1993). On Cyclones, *Pisonia grandis* and the Mortality of Black Noddy *Anous minutus* on Heron Island. *EMU*, 93(4), p.281.

BirdLife Melbourne Committee

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All the above can be contacted by email at melbourne@birdlife.org.au

This newsletter is published quarterly, in March, June, September and December by BirdLife Melbourne – the Melbourne branch of BirdLife Australia. Contributions for the next issue are due 20 May 2016 and can be emailed to bianchiadriana8@gmail.com. Any ideas for future newsletter stories or contributions are welcome.

BirdLife Melbourne is now on Twitter and Facebook. We also have a blog reporting on all BirdLife Melbourne activities and more at www.birdlifemelbourne.wordpress.com.

About Emily Scicluna

Emily has just completed a Bachelor of Biological Science (Advanced Science) double majoring in zoology and ecological botany at Latrobe University.

She is currently completing an internship at the Conservation Ecology Centre, Cape Otway, assisting conservation research for Koala and Tiger Quoll populations.

In July she will commence her Honours in Zoology and Animal Science at Deakin University doing reproductive hormone analysis on Mountain Pygmy Possums (*Burramys parvus*), to assist the Healesville Sanctuary breeding program.

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