

# BirdLife Melbourne Newsletter

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## Does nest box design mitigate cavity loss?

Masters student, Eliza Larson tells us what she has found.

The continued decline of tree cavities is increasing pressure on many hollow-utilising species. In Australia alone, around 300 species of birds, bats and arboreal marsupials which utilise tree cavities are potentially at risk. Artificial nest boxes are commonly used to mitigate cavity loss, however they are poorly insulated in comparison. The predicted continued increases in average temperature and extreme weather events such as heat waves, makes it critical to understand how species in nest boxes may be affected by these changes, and how these effects may be mitigated.



Crimson Rosella (*P.e. elegans*)



Rosella juvenile about to fledge. Photo by Mathew Berg

To investigate this, I selected the iconic Crimson Rosella (*Platycercus elegans*) as my study species. Like almost all parrot species it is an obligate cavity breeder. In addition, there are several subspecies occupying a range of habitats and climatic zones in eastern and south-eastern Australia. It also willingly breeds in the over 700 nest boxes our research group has established. I deployed temperature loggers in each nest box, and compared temperature to nest box selection, nestling growth and survival.

I began this as my Honours project at field sites at Bellbrae and Steiglitz near Geelong with the Crimson subspecies *P. e. elegans*, which revealed that more extreme low temperatures were most detrimental for nestling growth, and greater temperature variability had a tendency to reduce fledging success. I was lucky enough to continue my project for my Masters, and spent four wonderful (and exhausting) months in the beautiful Adelaide Hills and

Fleurieu Peninsula in South Australia. These areas are home to the orange/yellow Adelaide (*P. e. adalaidae*) and Fleurieu (*P. e. fleurieuensis*) subspecies which experience a warmer and drier climate than the Crimson subspecies in southern Victoria. In addition to nest box temperature, I also recorded characteristics such as the amount of tree canopy cover and depth of nest box substrate.

Due to relatively recent logging in the 1970s, cavity bearing trees are rare at our Adelaide Hills site. Nest box uptake is therefore extremely high, and 54 out of our 60 nest boxes had at least one breeding attempt. With the assistance of Honours student Sarah Micallef, and a few enthusiastic volunteers, we scaled ladders to monitor each four metre high nest box every two days. Our efforts were rewarded with 173 rosella nestlings weighed weekly from a total of 75 breeding attempts (32 successful, 43 failed – mainly due to predation).

I analysed nest box preference by order of uptake using temperature variables from two weeks prior to breeding. Nest boxes with lower average temperatures and greater temperature variability were occupied earlier in the season. No tree characteristics appeared to influence nest box preference, however nest boxes with lower substrate depth also seemed to be preferred. Although no significant relationships were found between my temperature variables and clutch size or hatching success, greater average and more extreme high temperatures had strong relationships with nestling growth rates and fledging success. For every 1°C increase in average temperature, nestlings were on average two grams lighter and around two fewer chicks were expected to fledge, while a 1°C increase in high temperatures increased nestling mass by two grams and the number of fledglings by almost one. Although the finding of higher extremes being beneficial to nestlings was surprising, it is possible that they benefit from short periods of greater temperature in the form of reduced thermoregulatory costs, allowing greater energy allocation to growth and therefore survival. *Continued on page 4*

# Activities Calendar

## ACTIVITIES FOR BIRDLIFE MELBOURNE MARCH TO JUNE 2015

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, Tim Bawden at [tbawden@live.com.au](mailto:tbawden@live.com.au) or on 0488 017 781.

Sunday 1 March 2015	Yellingbo Birdwalk	<b>Note early start time, October to March.</b> 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. <b>Due to Parks Victoria operational requirements the gate will be closed at 9.30am and not opened until after Bird Call at approximately 2pm.</b> Toilets available. Bring lunch and gumboots. <b>Contact Maryanne, 0402 283 080 or <a href="mailto:onlyme53@bigpond.com">onlyme53@bigpond.com</a></b>
Monday 2 March 2015	Weekdays Outing	Moorooduc Quarry, Flora & Fauna Reserve, Mount Eliza. 10am – 3pm. Joint outing with Frankston Field Naturalists. Melway 106 A7. Take Two Bays Rd and park near toilets. <b>Contact Diane, 9836 8692 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>.</b>
Saturday 7 March 2015	Boneseeding & Birding	You Yangs Regional Park. Meet at 10am in the car park just past the Park Office, approximately 300m from the Branch Rd 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. <b>Contact Merrilyn, 9889 4924 or <a href="mailto:merrilyn@wirejunkie.com">merrilyn@wirejunkie.com</a>.</b>
Thursday 12 March 2015	<b>No Carlton Monthly Meeting</b>	There will be no Carlton Monthly Meeting in March. Meetings will only be held every second month for a six month trial period. The BirdLife Melbourne Committee will review the program mid year and Members will be informed of the outcome.
Saturday 21 March 2015	Photography Group Outing	Banyule Flats, Viewbank and Wilson Reserve, Ivanhoe. For details <b>contact Peter, 9435 4249 or <a href="mailto:teacherpeterb@gmail.com">teacherpeterb@gmail.com</a></b>
Sunday 22 March 2015	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. <b>Contact Mike, 9787 7136.</b>
Monday 23 March 2015	Weekdays Outing	Hawkstowe Park, South Morang. 10am – 3pm. Leaders: Hazel and Alan Veevers. Melway 183 H7. From Plenty Road take Gordons Road and turn left immediately into Red Gum Picnic Area. Toilets available. <b>Contact Diane, 9836 8692 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a></b>
Tuesday 24 March 2015	Balwyn Monthly Meeting <b>BirdLife Melbourne AGM</b>	8pm at Balwyn Community Centre, 412 Whitehorse Rd, Balwyn. Melway 46 F8. Good on-site parking at rear of venue. The <b>BirdLife Melbourne AGM</b> will commence at 8pm prior to the Guest Speaker. Guest Speaker: Alisa Bunbury, Curator, Prints & Drawings, National Gallery of Victoria. Subject: John Lewin: Colonial bird man. Stay for supper and a chat after the meeting. <b>Contact Bill, 9803 1493 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a></b>
Saturday 28 March 2015	Beginners' Outing	Mt Macedon Regional Park. Meet at 10am in Centennial Park. From Calder Fwy take Mt Macedon Rd, C322. Centennial Park is on the right after approximately 3km. Melway X909 G10. Contact <b>Hazel, 9876 3712 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a></b>
Sunday 5 April 2015	Yellingbo Birdwalk	<b>Note later start time, April to September.</b> 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. <b>Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm.</b> Toilets available. Bring lunch and gumboots. <b>Contact Maryanne, 0402 283 080 or <a href="mailto:onlyme53@bigpond.com">onlyme53@bigpond.com</a></b>
Thursday 9 April 2015	Carlton Monthly Meeting	8pm at BirdLife Australia National Office, 60 Leicester St, Carlton. Plenty of free street parking nearby. Guest Speaker: Sonja Ross. Subject: Some cool birds of ice and snow. Tea and coffee served after the meeting with time to chat with other attendees. <b>Contact Claire, <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a></b>
Wednesday 15 April 2015	Weekdays Outing	Tirhatuan Park, Rowville. 10am – 3pm. Leader John Bosworth. Melway 81 F8. Enter from Kriegel Way via Outlook Drive. Park near toilets. Combine with Nerre Nerre Warren (Melway 82 A11) end of Brady Rd. <b>Contact Diane, 9836 8692 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>.</b>
Saturday 18 April 2015	Photography Group Outing	Location still to be finalised – possibly Ocean Grove. For details <b>contact Peter, 9435 4249 or <a href="mailto:teacherpeterb@gmail.com">teacherpeterb@gmail.com</a></b>
Saturday 25 April 2015	Beginners' Outing	Birdsland Reserve, Belgrave Heights. Meet at 10am in the car park. Melway 84 B2. Contact <b>Hazel, 9876 3712 or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a></b>
Sunday 26 April 2015	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. <b>Contact Mike, 9787 7136.</b>

Tuesday 28 April 2015	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: Oliver Hornung. Subject: Climate Change. Members Topic: Speaker & Subject TBA. Stay for supper and a chat after the meeting. <b>Contact Bill, 9803 1493</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>
Sunday 3 May 2015	Yellingbo Birdwalk	<b>Note later start time, April to September.</b> 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. <b>Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm.</b> Toilets available. Bring lunch and gumboots. <b>Contact Maryanne, 0402 283 080</b> or <a href="mailto:onlyme53@bigpond.com">onlyme53@bigpond.com</a>
Monday 11 May 2015	Weekdays Outing	Three Chain Rd area, near Kilmore. 10am – 3pm. Leader John Prytherch. Melway X910 L8/VicRoads 60 H6. Meet at start of Three Chain Rd (~4km north of Kilmore) at Kilmore-Broadford Rd, C311. Bear right off Northern Hwy 3km north of Kilmore. Toilets at Kilmore. Convoy driving to different sites. <b>Contact Diane, 9836 8692</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a> .
Thursday 14 May 2015	<b>No Carlton Monthly Meeting</b>	There will be no Carlton Monthly Meeting in May. Meetings will only be held every second month for a six month trial period. The BirdLife Melbourne Committee will review the program mid year and Members will be informed of the outcome.
Saturday 16 May 2015	Photography Group Outing	Location still to be finalized – possibly Woodlands Historic Park, Greenvale. For details <b>contact Peter, 9435 4249</b> or <a href="mailto:teacherpeterb@gmail.com">teacherpeterb@gmail.com</a>
Saturday 23 May 2015	Beginners' Outing	'The Briars Park', Mount Martha. Meet at 10am in the car park at the Visitor Centre. Melway 145 F12. Contact <b>Hazel, 9876 3712</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>
Sunday 24 May 2015	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. <b>Contact Mike, 9787 7136.</b>
Tuesday 26 May 2015	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 & Subject: TBA. Members Topic: Speaker & Subject TBA. Stay for supper and a chat after the meeting. <b>Contact Bill, 9803 1493</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>
Saturday 6 June 2015	Boneseeding & Birding	You Yangs Regional Park. Meet at 10am in the car park just past the Park Office, approx. 300m from the Branch Rd 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. <b>Contact Merrilyn, 9889 4924</b> or <a href="mailto:merrilyn@wirejunkie.com">merrilyn@wirejunkie.com</a> .
Sunday 7 June 2015	Yellingbo Birdwalk	<b>Note later start time, April to September.</b> 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. <b>Due to Parks Victoria operational requirements the gate will be closed at 10.30am and not opened until after Bird Call at approximately 3pm.</b> Toilets available. Bring lunch and gumboots. <b>Contact Maryanne, 0402 283 080</b> or <a href="mailto:onlyme53@bigpond.com">onlyme53@bigpond.com</a>
Tuesday 9 June 2015	Weekdays Outing	Hallam Valley Rd, Hampton Park. 10am – 3pm. Leader Rob Grosvenor. Melway 95 K3. Enter Hallam Valley Rd from South Gippsland Hwy, continue to end of Hallam Valley Rd. Late lunch, no toilets. <b>Contact Diane, 9836 8692</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a> .
Thursday 11 June 2015	Carlton Monthly Meeting	8pm at BirdLife Australia National Office, 60 Leicester St, Carlton. Plenty of free street parking nearby. Guest Speaker: Rohan Clarke. Subject: Challenges of seabird identification on pelagic trips. Tea and coffee served after the meeting with time to chat with other attendees. <b>Contact Claire, melbourne@birdlife.org.au</b>
Saturday 20 June 2015	Photography Group Outing	Location still to be finalised. For details <b>contact Peter, 9435 4249</b> or <a href="mailto:teacherpeterb@gmail.com">teacherpeterb@gmail.com</a>
Tuesday 23 June 2015	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 & Subject: TBA. Members Topic: Speaker: Susan Pepper. Subject Birds and poetry: reflections on living at Gluepot. Stay for supper and a chat after the meeting. <b>Contact Bill, 9803 1493</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>
Saturday 27 June 2015	Beginners' Outing	Braeside Park, Braeside. Meet at 10am in the Cockatoo Car Park by the Visitor Centre. Melway 88 D8. Contact <b>Hazel, 9876 3712</b> or <a href="mailto:melbourne@birdlife.org.au">melbourne@birdlife.org.au</a>
Sunday 28 June 2015	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. <b>Contact Mike, 9787 7136.</b>

'There is nothing in which the birds differ more from man than the way in which they can build and yet leave a landscape as it was before.' *Robert Wilson Lynd (1879-1949), Irish writer and urbane literary essayist'*

### DESIGN OF NEST BOXES AND BREEDING SUCCESS IN ROSELLAS CONT.

I also conducted a small study testing the effects of different kinds of insulation on the internal temperature of empty nest boxes. I applied 3cm thick polystyrene, pleated foil batts, and reflective paint to the top and east sides (where solar exposure is greatest) of nine pairs of nest boxes over six weeks. My analysis thus far indicates that polystyrene and foil batts were most effective, with both reducing temperatures during the hottest part of the day by 0.5°C on average (but by up to 6 degrees), while remaining slightly warmer than untreated boxes during the night. Reflective paint appears to be quite ineffective, actually increasing internal temperature for a short period in the late afternoon.

My findings suggest that breeding rosellas may be sufficiently flexible to cope with changing climates, but only if cavities with various microclimate profiles are available. Increased nest box insulation could be beneficial to rosella nestling growth and survival by reducing average temperatures during the day, and potentially partially mitigating the effects of heat waves and cold spells. Future work should focus on testing this in the field, and I encourage those of you who make nest boxes for your gardens to run your own experiments with various thicknesses of wood!

I am extremely grateful to BirdLife for their continued support in the form of the Stuart Leslie Research and Conference Awards which assisted with fieldwork costs and helped me attend the IOC in Tokyo last year.



Eliza Larson with an adult Adelaide Rosella (Photo by Sarah Micallef)

This article will be re-published, with additional photographs, in the BirdLife Melbourne blog

#### BirdLife Melbourne Committee

**President:** Sonja Ross (Tel: 9846 5380 or email: [sonja.ross@yahoo.com](mailto:sonja.ross@yahoo.com))

**Vice Presidents:** Stuart Dashper/Tim Bawden

**Secretary:** Alan Crawford

**Treasurer:** Greg Hempenstall

**Conservation Officer:** Joab Wilson

**Members:** Adriana Bianchi, Ron Garrett, Bevan Hood, Susan Pepper, Scot Sharman.

All the above can also be contacted by email at [melbourne@birdlife.org.au](mailto:melbourne@birdlife.org.au)

This newsletter is published quarterly, in March, June, September and December by BirdLife Melbourne, the Melbourne branch of BirdLife Australia. Adriana Bianchi is the current editor of this newsletter. Contributions for the next issue are due 20 April 2015 and can be emailed to [bianchiadriana8@gmail.com](mailto:bianchiadriana8@gmail.com). Any ideas for future newsletter stories or contributions are welcome.

#### Volunteers needed and welcome

Graeme Hosken has provided reports on, and coordinated the Dandenong Valley Catchment Surveys, for the past eight years but will no longer be doing so. We are looking for someone to take over this important job. Graeme will explain what is required. Inquire at [melbourne@birdlife.org.au](mailto:melbourne@birdlife.org.au).

Janet Hand, the BirdLife Melbourne Education Coordinator, would like a volunteer to learn what she does and be an emergency back-up. To volunteer, get in touch at [melbourne@birdlife.org.au](mailto:melbourne@birdlife.org.au).

BirdLife Melbourne President, Sonja Ross, and committee members Susan Pepper and Stuart Dashper will be retiring from their roles at our **Annual General Meeting in Balwyn on Tuesday March 24**. The committee needs new members to continue to flourish and grow. Terms are for two years. Please consider standing. Please contact Sonja Ross ([sonja.ross@yahoo.com](mailto:sonja.ross@yahoo.com) or on 9486 5380) if you have any questions about what is involved.

#### Carlton Monthly Meetings – important notice

At our December committee meeting, we decided starting in February to trial bimonthly Carlton meetings for six months due to falling attendance. We have thought about a variety of ways to try to make this meeting more attractive to members, including maybe an earlier time, a different venue or meeting format. We would really like to hear from you about what you think. Let us know your thoughts on our Facebook page or email Sonja at [sonja.ross@yahoo.com](mailto:sonja.ross@yahoo.com). The committee will review the trial in midyear and let you know the outcome.

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With our specialised knowledge and the commitment of an Australia-wide network of volunteers and supporters, we are creating a bright future for Australia's birds.

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### Add your voice



Enjoy the rewards of membership, making a real difference for our native birds



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Help us create positive outcomes for birds and their habitats