

PLASTIC POLLUTION AND SEABIRDS

Dr. Jennifer Lavers, a marine biologist from Monash University, recently presented an eye opening talk to the Latrobe Valley Field Naturalist Club. The topic was on her research into plastic pollution in Australian waters and the drastic effect it is having on seabird populations.

Jennifer began by describing how our reliance on plastics has increased exponentially since they were first mass-produced in the mid 1950s and how the thoughtless use and disposal of plastic is creating serious pollution problems in the marine environment. This leads to the creation of huge floating, marine garbage patches called "gyres". Winds and currents have conspired to create a rotational pattern causing the accumulation of huge concentrations of marine debris. Estimates indicate that 80% of this garbage comes from land-based sources. Pollutants range in size from abandoned fishing nets to the plastic micro-pellets used in abrasive cleaners such as face wash and beauty products. These garbage patches have been found to exist in the North and South Pacific, the North and South Atlantic and Indian Oceans.

Located near the North Pacific Gyre are the French Frigate Shoals and Midway Atoll whose beaches are polluted with plastic waste. Jennifer has worked here studying the Laysan Albatross. This sea bird forages as far as the Aleutian Islands near Alaska for periods of 20 days at a time and covers distances of 2000 to 3000 kilometres. The Albatrosses regurgitate to feed their chicks and post mortems on the chicks have revealed a huge amount of plastic in their stomachs. Her work with seabirds has continued in the Timor and Tasman Seas.

In 2012 the UN Environment Program pronounced plastics as a global toxic threat. They tend to fragment, rather than break down, and can persist in the environment for centuries. Plastics also act as sponges where they can absorb and accumulate contaminants (notably heavy metals such as lead, mercury and cadmium). These can be 1000 times more concentrated in the plastic than in the surrounding seawater. With their

ubiquity and their physical and chemical characteristics, plastics are devastating seabird populations. Seabirds foraging in the Tasman and Timor Seas are mistaking plastic for food, ingesting it and regurgitating it to feed their young. Even in a pristine areas like Lord Howe Island post mortems show that the young of Flesh-footed shearwaters have so much plastic in their gut (in many cases over 200 pieces) that they cannot survive. The sharp edges of the plastic fragments tear the internal organs and the contaminants are toxic. The problem has been getting progressively worse. Bird numbers are plummeting, with recent surveys indicating 95% of birds having some plastic in their stomachs and live chicks being hard to find.



Dr Jennifer Lavers gathers plastic fragments on Lord Howe. *Photo: Ian Hutton*



A Lord Howe shearwater's skeleton reveals its stomach was loaded with shards of blue and white plastic. *Photo: Ian Hutton.*

Regurgitation lavage (stomach pumping) experiments indicate that up to 15% of a bird's body mass can be made up of plastic waste. This is equivalent to a human having 6 to 8 kg of plastic in their stomach.

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As a top predator, the Flesh-footed Shearwater is regarded as a sentinel species for the marine environment. The amount of plastic ingested and consequent damage done to their fledglings is the highest reported for any marine vertebrate and this suggests that the condition of Australia's marine environment is poor. This does not augur well for the future of the world's 1.2 billion seabirds unless something is done to stem the increasing levels of plastic pollution. The Eco Quality threshold is that less than 10% of seabirds should contain 0.1g of plastic. On Lord Howe Island 61% of seabirds fail this test. In fact 18% fail on a single feeding.



Plastic removed from a Flesh-footed Shearwater. *Photo: Ian Hutton.*

Jennifer concluded her talk with a cautionary note for us all. Plastics are sponge vectors and introduce contaminants into our food chains. It is estimated that fish ingest 25,000 tonnes of plastic annually.

This may seem like a small number, but it is probably due to the fact that not many fish species have been studied as of yet. These contaminants bio-accumulate along the food chain this has implications for our health. Her message was quite clear. We can and should contribute to the reduction of and avoid the use of plastic and substances containing plastic components.

1. If each family in Australia used one less plastic bag per week it would reduce our consumption by 253 million bags per year.
2. If 10% of beach goers took home three pieces of plastic that would total 750,000 pieces per year.
3. Don't buy any abrasive cleansers, such as face wash and beauty products, which contain micro plastic scrubbers.

4. Avoid using fabric softeners, they are highly toxic and they go down the drains and ultimately into the oceans.

5. Avoid contaminating recycling by categorizing plastics correctly otherwise they are sent to land fill.

6. Collect and remove litter from waterways and beaches.

7. Look carefully at labels and look for safer less polluting alternatives.

8. Give positive feedback to manufacturers who are ecologically responsible with their products.

9. Above all spread this message.

This presentation made us all realize just how we contribute to this problem through our ill-considered purchase and disposal of household plastic items.

As a footnote, whilst Jennifer currently works for Monash University, they do not support any of her shearwater/plastic research. She raises all funds for her work herself. This project was initiated in 2007 when she was working for the Institute for Marine & Antarctic Studies in Hobart, where she currently holds an Honorary (unpaid) Fellowship position. While IMAS also does not provide any funding, they are otherwise very supportive of her project on plastic pollution and its impact on seabirds.

If you would like to support Jennifer's plastic pollution work

Please go to her donations page

<http://www.jenniferlavers.org/donate/>

Ken Savage

URALLA RESERVE

Introduction by Wendy Savage to Martin O'Brien's article which follows.

On Bird Challenge Day last year (November 30 2013) our group paid our usual visit to Uralla Reserve, and when we arrived noticed 2 push bikes chained to the notice board shelter. We did our walk around the big loop and returned to have our lunch and they were still there. In fact we were cheeky enough to remove the Saturday Age from under the pillion rack for a quick look at the picture of a Helena Gum Moth on the front page, photographed during the alpine bioscan which Ken Harris and David Mules

were part of. We wondered if the hand on which the moth was photographed belonged to either of them, but it turned out it didn't. When the bike owners returned from their long walk, Ken and I realised we knew them. Some of our long term club members would also know them if they remember the talk on Orange-bellied Parrots presented by Martin O'Brien and Kaye Trainor many years ago, describing their stint in Tasmania as volunteers with the OBP monitoring program. Older members will also remember Kaye's parents David and Gwyn Trainor who were active club members for many years before they moved away from the area in the early 90s. Gwyn was secretary for a few years and I took over the role from her. Ken and I had actually met Martin and Kaye a couple of years ago, as they often go out to the country from Richmond where they live, using the train system and their bikes. On this occasion they had stopped off at Trafalgar and ridden up along Earls Rd, and called in when they saw our name on the gate.

Martin and Kaye were able to add some birds to our list for the day, so we added their names as participants in our group. They had spotted a number of birds which we have seen there on other occasions but not recorded that day, such as White-eared Honeyeater, Crescent Honeyeater, Rose Robin, Red-browed Treecreeper, Varied Sitella and Shining Flycatcher.

Martin wrote the following article for the Trust for Nature Newsletter, and sent it to me for comment. I thought our members would be interested in it, so got permission to publish it in our magazine. He also provided the following background about himself.

'Martin O'Brien has been birdwatching for over 35 years and is lucky to work in the conservation field under the *Flora and Fauna Guarantee Act 1988* (which addresses our threatened species in Victoria). His current areas of birding interest are documenting the birds of French Island, Fairy Tern breeding in Victoria, distribution of Brown Gerygones, Victorian woodland bird conservation and egret breeding in Victoria.'

CONSERVING VICTORIA'S RAINFORESTS - URALLA RESERVE TRAFALGAR

Today the once vast Strzelecki Ranges forests are now represented by a patchwork of pine and eucalypt plantations, regrowth and 'scrub' with small remnants of native vegetation. Even smaller by area are these regions Cool Temperate and Warm Temperate Rainforests.

Rainforests only grow where the aspect, light levels, rainfall and soils are suitable. Strzelecki Warm Temperate Rainforest (WTR) is a type of 'closed forest' to 25m tall and is restricted to the Strzelecki Lowlands where it grows on protected slopes adjacent to streams and along minor gullies. This forest is dominated by a range of non-eucalypt canopy species above an understorey of smaller trees and shrubs and is usually visually dominated by ferns and climbers (DSE 2004).

Characteristic plant species of this forest type are:

Austral Mulberry *Hedycarya angustifolia*, Blackwood *Acacia melanoxydon*, Hazel Pomaderris *Pomaderris aspera*, Sweet Pittosporum *Pittosporum undulatum* and Muttonwood *Rapanea howittiana*. Unlike some other rainforest types in Victoria there is no Lilly Pilly *Syzygium smithii* present.

Trust for Nature has conserved a special remnant of Strzelecki WTR at Trafalgar called Uralla Reserve. The 40 hectare bushland reserve is on the edge of the La Trobe Valley town of Trafalgar and is one of the few TfN properties open to the public.

The main walking track (Bullocky Track) heading up the hill in the reserve was the original bullock track from Trafalgar to Thorpdale. In the past there was sand extraction and charcoal burning in the reserve (around WW1), and the last logging occurred in the 1960s. This valuable patch of bush, was recognised as such by residents and purchased using funds from the Ross Foundation. It is now owned by Trust for Nature and administered by the Uralla Nature Reserve Committee (LVFNC 2007).

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Uralla wildlife

Melbourne naturalists Martin O'Brien and Kaye Trainor have been visiting Uralla for almost 10 years and have documented the reserves wildlife, especially its birds. Members of the Latrobe Valley Field Naturalists Club have also been recording the reserve's birds over many years. Between them these observers have recorded almost 70 species of birds for Uralla. The Department of Environment & Primary Industries *Victorian Biodiversity Atlas* (VBA) also records Agile Antechinus, Black Wallaby, White-striped Freetail Bat, Common Wombat, Short-beaked Echidna, three skink species and at least one burrowing crayfish species. Scats observed in the reserve suggest that Koalas (and maybe Sambar Deer) may also be present.

Martin and Kaye particularly enjoy observing the 'wet forest' birds they have recorded at Uralla (eg. Rose Robin and Red-browed Treecreeper). Of special interest is the finding that Brown Gerygones, a very small thornbill-like bird, arrived in the reserve about 1999 (W. Savage pers. comm.). Brown Gerygones are considered rainforest specialists and, until the late 1980s had only been recorded as far west in Victoria (and Australia), as Sale (Emison et al. 1987). Since that time Martin and fellow naturalist George Appleby have reported the species from a suite of rainforest remnants in the western Strzeleckis. Other birdwatchers have even recorded the gerygone from the Dandenong Ranges near Melbourne.

Most of the bird field guides indicate that the Brown Gerygone is sedentary, but these findings suggest that, at least in SE Australia, the species is expanding its range. Martin and George are currently publishing their findings on the gerygone (Appleby and O'Brien in prep.) and it is expected this will lead to changes in the Australian bird field guides.

The western extension in this bird's range isn't well understood, but it has shown that some species have the ability to locate and move into remote habitats across otherwise cleared (or farmland) landscapes.

Brown Gerygones have been observed nesting in rainforest gully vegetation in

Uralla so it is likely that this site is now a 'springboard' for the bird to move into other rainforest remnants in Gippsland and beyond.

Significant rainforest at Uralla

Strzelecki WTR has recently been nominated for listing as a threatened vegetation community under the *Flora and Fauna Guarantee Act 1988* (FFG Act). It is currently being assessed for listing by the FFG Act Scientific Advisory Committee.

The Strzelecki Ranges have lost much of their rainforests since the area was settled and largely cleared many years ago. What remains is important habitat for a suite of wet forest plants and animals. The conservation reserve network for rainforests in the Strzeleckis is currently represented by Mt Worth State Park, Morwell National Park and Tarra-Bulga National Park. Uralla Reserve makes a valuable contribution to the conservation reserve system as it has preserved an especially good quality remnant of Strzelecki WTR in the lowlands.

Significant rainforest invertebrate fauna

The rainforests of Victoria are the home to a number of rare and/or restricted invertebrates. Various native worms, snails, millipedes and crayfish are often restricted to these rainforests. Indeed, a visit to one of these rainforests is a sure way to encounter little mud 'chimneys' on the edges of tracks or within the riparian (streamside) zone. These are the entrances to burrowing crayfish (*Engaeus* species) tunnel systems with the Strzelecki Burrowing Crayfish *Engaeus rostrigaleatus* being one of the more widespread ones you may encounter.

Uralla Reserve is also home to a unique native millipede *Lissodesmus johnsi* or the 'Trafalgar Millipede'. Biologist Robert Mesibov has studied native millipedes and documented his findings in great detail via the Museum Victoria's publications. He has the following to say about this fascinating creature.

'Victorian *Lissodesmus* species are so far known from cool temperate rainforest, wet eucalypt forest and dry eucalypt forest in areas with an annual rainfall greater than c. 800 mm. They are mainly found in well-

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rotted eucalypt logs and in accumulations of moist peaty material in surface depressions on such logs. In my own, limited experience, Victorian *Lissodesmus* are very rarely seen away from logs at lower elevations, but are sometimes found in leaf litter in the high country (>900 m).'

'*L. johnsi* was first collected in 1890 near Trafalgar in the La Trobe Valley, probably in the area's tall, dense (wet) eucalypt forests (Adams, 1978). The area is now almost entirely covered with pasture and forestry plantations. Recent searches for *L. johnsi* have so far yielded specimens from forest remnants at only two localities, both near Trafalgar and about 5 km apart.'

'At the Yarragon South locality, *L. johnsi* co-occurs with *L. dignomontis* and *L. gippslandicus*.'

Uralla Reserve has special interpretative signage identifying the millipede as well as other items associated with the vegetation in this area. It is a special place, with healthy habitat, views and trails - well worth a visit and easily accessible from Trafalgar via a country train service and walk (or bike ride!).

Personal communications

Savage, W. – Latrobe Valley Field Naturalists Club, December 2013.

References

- Appleby, G. and O'Brien, M.B. (in prep.) An expansion of the range of the Brown Gerygone in Victoria, 1977-2009. *Australian Field Ornithologist*.
- DSE (2004) *EVC Bioregion Benchmark for Vegetation Quality Assessment*. Strzelecki Ranges Bioregion, EVC 32 - Warm Temperate Rainforest. Department of Sustainability & Environment, Melbourne. (<http://www.museum.vic.gov.au/memoirs/index.asp>)
- Emison, W.B., Beardsell, C.M., Norman, F.I. and Loyn, R.H. (1987) *Atlas of Victorian Birds*. 'Brown Gerygone', p. 209. Department of Conservation Forests & Lands, Royal Australasian Ornithologists Union, Melbourne.
- LVFNC (2007) *The Nature of Latrobe; A guide to the parks and reserves in the*

Latrobe Region. Latrobe Valley Field Naturalist Club. LV Printers, Traralgon.

Mesibov, R. (2005) The millipede genus *Lissodesmus* Chamberlin, 1920 (Diplopoda: Polydesmida: Dalodesmidae) from Tasmania and Victoria, with descriptions of a new genus and 24 new species. *Memoirs of Museum Victoria* **62**(2): 103–146
(<http://www.museum.vic.gov.au/memoirs/index.asp>)

Martin O'Brien, Melbourne

REPORT ON BUSINESS MEETING HELD 28.3.2014

General Meetings & Excursions

Friday 25 April: Birds of Long Forest – Marilyn Hewish

Saturday 26 April: Spotlight walk and moths in Morwell NP. Meet Kerry Rd carpark **6pm** for BBQ tea prior to activities.

Friday 23 May: Thomson River Fishway at Horseshoe Bend – Martin Fuller (Kylie Debono has left the WGCMA. MF is CEO).

Saturday 24 May: Related excursion to Horseshoe Bend. Meet 10am at Crater Lake Reserve in Rawson. (No toilets at H. Bend)

Botany Group: Saturday 3 May: Eucalypt identification 10am at Jack and Marja's, 129 Briggs Rd, Nilma North. Contact: Wendy Savage ☎ 5634 2246.

Bird Group: Tuesday 6 May: EA Wetlands. Meet 9.30am (EST) at Morwell River Bridge gate. Leader David S or Ken H. Contact Alix Williams ☎ 5127 3393, alixw@spin.net.au.

Finance – Cash Mgt Trading A/c \$2540.89. Term Deposit \$13,909.18. Term deposit renew date 18 April – will roll over deposit for 6 months. D Mules/J Tims. Presented Statement of Receipts & Payments for year ending 28 Feb 2014.

Business Pending

Botany microscope – discussion deferred

Storage at Uniting Church – yet to ask Marja about storing some books from the library.

Business Arising, Correspondence & General Business

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Thompson Reserve proposal – Max has been contacted and plans to prepare the material soon.

LVFNC website – most changes have been made, but office bearers still need some changes and we should add banking details in membership section.

Megan Hughes Gippsland Redgum Grassy Woodland and associated Native Grasslands project – Alix attended meeting. When the whole project has been set up with areas defined, club will be asked to conduct quarterly surveys for plants and birds, perhaps by Aug/Sept. Funding up to March 2016. Next meeting May 20.

Club badges – Alix has prices from Triangle Trophy shop: 50 at \$11.35 or 100 at \$7.45. Will gauge interest at GM and Alix will get a second price.

Naturalist production – Phil has drafted a survey and will email to committee for further input.

Donation to Jennifer Lavers – Notice of Motion for GM: That we donate \$1000 per year for 2 years from our general reserve (conservation fund) to support Dr Jennifer Lavers in her work on the ingestion of plastic by seabirds. Ken Savage/ Ken Harris

Suggested we obtain a dedicated laptop to work with the data projector. Wendy will supply an old PC to see if it works. If not we will consider purchasing one.

Next BM Wed 23 April at 3pm. Change due to normal day being Easter Monday.

Conservation Matters

Application by AGL Loy Yang for mining licence in part of the Traralgon South Flora & Fauna Reserve near Whitelaws Track – Jackie ha sent letter of objection.

Latrobe City have launched Natural Environment Sustainability Strategy for 2014/19 for comment. Phil has sent in feedback.

Cores and Links – Hancocks have completed a one-off harvest of the Jack River block and College Creek and they will be handed over, but handover has been delayed.

Koala audit team will be visiting the Strzeleckis and will conduct audit work for 10 days from March 18. Phil went out with a team to Mays Reserve near Yarram.

EHHBR & Wagners Paddock proposed development Application No 2013 7 Multi Lot Staged Subdivision – email from Bruce King; Friends of EHHBR have a 3 minute slot at Latrobe City Council meeting Monday 28 April to present their objection case. They are preparing a case and would welcome input.

GUEST SPEAKER FOR MAY

Martin Fuller has been the Chief Executive Officer of the West Gippsland Catchment Authority for three years. He has been with the organization for close to twelve years, having served in a number of key roles within the organization. Prior to working with the CMA he spent five years working with the community as a Landcare Coordinator in the Bass Coast region.

Martin was born and bred in South Gippsland and grew up on a dairy farm at Dumbalk. He has a Bachelor of Science at the University of Melbourne and a Graduate Diploma of Natural Resource Management at the University of Canberra.

FOR THE DIARY

BEECH GULLY NATURE WALK

Saturday 31 May. LVFNC & FOBB combined walk along the nature trail with emphasis on fungi. Meet at the DEPI Office at Parkers Corner by 9.30am to carpool. Bring lunch and wet weather gear, and wear suitable clothing for alpine conditions.

RSVP and more info contact: ☎ 5127 3393 or Parks Victoria on ☎ 5172 2186.

SEANA CAMP AT MARYSVILLE

2-5 May, hosted by Upper Goulburn FNC.

Enquiries: grahamvpage@gmail.com

☎ 03 5774 7555

PLEASE NOTE

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2014-15 SUBSCRIPTION NOW DUE

See inside back cover for details.