



EUROBODALLA NATURAL HISTORY SOCIETY

Inc.

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SUMMER 2016

The 'Eastern' Black-tailed Godwit (*Limosa melanuroides*) – Linnaeus 1758

Taxonomy, distribution and habitat

The Black-tailed Godwit is a polytypic species with three recognised forms which are sometimes split as three distinct species. *L.islandica*, the largest race, breeds in Iceland, wintering in western Europe; *L.limosa* breeds across northern Europe and central Russia wintering from India to southern Africa and Europe; and the smallest race *L.melanuroides* breeds across eastern Siberia, wintering across south east Asia and Australia.

When compared to the largely sympatric Bar-tailed Godwit (*Limosa lapponica*), Black-tailed Godwits breed in more southern latitudes and also occur more readily in inland shallow freshwater habitats. On tidal estuaries, mudflats and salt works where both can occur in mixed species flocks, the longer legs of the Black-tailed Godwit allow it to feed in deeper water than Bar-tailed Godwits. Another interesting fact is the size of the species. In Europe, Black-tailed Godwits on average are larger than Bar-tailed Godwits while the inverse is true in eastern Australasia where Bar-tailed Godwits, particularly females, are bigger than Black-tailed.

Identification and behaviour

At 17 to 21cms Eastern Black-tailed Godwits are medium-small shorebirds. In breeding plumage males have a largely ruddy red head and breast, the lower breast and belly are white with blackish scales, while the upperparts are spangled red and black. Females are duller than males, but they are larger, taller and longer-beaked. In all plumages the straight beak has a pink base which turns black towards the tip on both mandibles while the legs are black. In flight the species shows a diagnostic black tipped tail and a boldly black and white wing bar, the underwing being completely white. In non-breeding plumage all trace of red is lost, the head and upperparts become a largely plain and uniform warm grey-brown, while the underparts become whitish, with grey smudges on the flanks. Juveniles are readily distinguished from non-breeding



Black-tailed Godwit

Photo: D. Bertzeletos

adults in their wintering grounds till about December as their flight feathers are fringed rufous and are black-centred, giving them a scaled appearance. The underparts are also a rich buff in this plumage.



The most similar species in our region is the Bar-tailed Godwit. In flight the two are readily distinguished from one another as the Bar-tailed lacks the bold wing and tail patterns of the Black-tailed Godwit. At rest and when feeding, the Black-tailed is a more upright, slimmer and longer-legged bird with a straight beak which is up-turned in the Bar-tailed. When the beak is not visible, the two

Black-tailed Godwit in flight

Photo: D. Bertzeletos

can still be distinguished due to the Black-tailed Godwit's having uniform grey-brown upperparts, while the Bar-tailed's back is silvery grey and scaled.

As is common place in shorebirds, Black-tailed Godwits are highly gregarious, often forming mixed feeding and resting flocks with other similarly sized shorebirds such as Bar-tailed Godwits, curlews and knots, stilts and avocets. When these aren't available they will loosely associate with ducks, gulls, terns and small herons. The species generally occurs in Australia in the non-breeding season (October-March), but non-breeding individuals and juveniles frequently overwinter.



Black-tailed Godwit front left, Bar-tailed Godwit front right
Photo: D. Bertzeletos

Diet and breeding

The long beak of the species allows it to probe for aquatic worms and invertebrates that are generally beyond the reach of most other shorebirds. It also frequents rice paddies where it feeds on spilled grain. In wet fields, earthworms are a favourite. Fish eggs, frogspawn and tadpoles are also sometimes taken.

Loose colonies often form and the species is loosely monogamous, mated pairs usually arriving within three days of each other despite often wintering at different locations. Males advertise their availability via spectacular swooping display flights and song over their territories of tall grass and low bushes which are close to wetlands. Three to six eggs are laid in a small scrape in the ground. These are incubated by both parents and take 22-24 days to hatch. Chicks rely on their parents only for warmth and protection from predators. Parents lead their brood to nearby wetlands where the chicks feed unaided. Juveniles take their first flight between 25-30 days and depart the breeding grounds later than their parents, completing their first migration without assistance.

Conservation status and distribution in the Eurobodalla

The Black-tailed Godwit, like the vast majority of shorebirds, is threatened by habitat loss across its range particularly in the Yellow Sea, a vital stop-over site during both southern and northern migrations. In Australia there is still a lot of habitat left, particularly in the north. However, human disturbance is a big issue across many wetlands, particularly those frequented by beach goers. Hunting and trapping also occurs across much of the flyway and winter routes. Consequently, the species is listed as 'Near Threatened' by the IUCN.

In Australia the species has always been more abundant in the north where flocks of thousands can be seen. However, even there it is seldom more numerous than the Bar-tailed Godwit. In the south the species is scarce, usually occurring as singles or small flocks. In the Eurobodalla the species is surprisingly rare and rarely reported. Scrutinising Bar-tailed Godwit flocks may reveal it to be more common in our area. Dimitris Bertzeletos

What's coming up...

Sunday April 24, 9am. Clyde River National Park. Meet at the lookout 1.3kms along Rotary Drive. Rotary Drive is 2.5 kms from the intersection of the Princes and Kings Highways. A walk along a track that leads to the Clyde River. Superb Lyrebird, Yellow-faced, White-cheeked and Crescent Honeyeater, White-throated Treecreeper, Eastern Whipbird, Mistletoebird. Conditions are promising for Swift Parrots.

Saturday May 14, 1.30pm- 4.30pm. Boat ride on Wagonga Inlet. Please contact Mandy Anderson (4473 7651 or email mandy-anderson@bigpond.com) to book your place. Limit of 12 participants. Cost approx. \$20 per head. Explore the back waters of the inlet. White-bellied Sea-Eagle, cormorants, herons, egrets, terns and perhaps kingfishers.

Sunday May 29, 11am Annual General Meeting. Venue: Eurobodalla Botanic Gardens, Princes Highway Batemans Bay. Please note that the meeting will be held in the Seed Bank. Please ask at reception for directions. We will enjoy a lunch together after the meeting (there are BBQ facilities) and then a walk through the gardens. Brown Cuckoo-Dove, Australasian Grebe, Rose Robin, Crested Shrike-tit.

A nomination form is attached or enclosed.

Saturday June 11, 2pm. Burrewarra Point. Meet at the carpark at the end of Burri Point Road, Guerilla Bay. Coastal and headland walk. Whales should be moving north at this time. Australasian Gannet, albatross, White-fronted Tern, giant-petrel species.

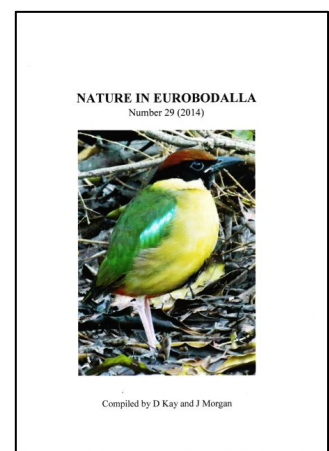
Sunday June 26, 9am. Moruya State Forest. Meet at the Tuross turnoff, at the intersection of the Princes Hwy and Hector McWilliam Drive. Don McGregor will lead a walk along a number of tracks through the forest in search of Superb Lyrebird. Other species: Green Catbird, Scarlet Robin, Spotted Quail-thrush.

A warm welcome to new members...

Barrie and Catriona Pennefather, ACT
Mike and Myf Thompson, Batemans Bay

A reminder that 2016 memberships are now due

If your membership is still outstanding, a reminder has been included with this newsletter. Single membership \$20, family \$30 and for under 18s \$5. The 29th edition of *Nature in Eurobodalla*, which is an excellent summary of the wildlife of the Eurobodalla based on members' observations in 2014, is also available for purchase. It is priced at \$13 if picked up at a field meeting or \$15 if posted.



Looking back over Summer



Broad-billed Sandpiper

Photo: P. Parker

The good news is that the Eurobodalla is no longer a Hooded Plover-free zone as this season a pair of Hooded Plover successfully raising two chicks at Mystery Bay. For more details see Lucy and Mandy's article which follows, with wonderful photos from Ann. A few Little Terns and a pair of Fairy Tern attempted to breed at Tuross and only the Little Tern were successful. Pattie Parker has been out and about and spotted a Broad-billed Sandpiper on the estuary. This is the third record of the species in the Eurobodalla, the first being at Mystery Bay in 1995 and second at Tuross in 2009. Other interesting waders at Tuross and Brou Lake included Greater and Lesser Sand Plover, Great and Red Knot, Ruddy Turnstone and Grey-tailed Tattler. Reports of Latham's Snipe were received from Comerang and Coolagolite.

There were more reports of Eastern Osprey this summer, with sightings at Cullendulla, Tuross and Narooma. A couple of Fork-tailed Swift were seen in Moruya and Pedro Swamp, interestingly on their own and not with White-throated Needletail. A neighbour reported an Australasian Bittern at Pedro Swamp in December. I have heard this species call at the swamp many years ago but despite enthusiastic searching, did not find the bird. It is an elusive species. There has been a single Plumed Whistling-Duck at Comerang for a year now and in January it was joined by three others. This is the third year in a row that we've had the species visit at

this time. What we haven't had many reports of this summer include Topknot Pigeon, Pallid Cuckoo, White-winged Triller, White-throated Gerygone, Rufous and Brown Songlark.

We are due to have a big flowering of Spotted Gum this year. This flowering event usually occurs every 3 to 4 years and the last time it occurred was in 2012. It is looking promising for this year; in late February, the Spotted Gum at Moruya Heads burst into flower. The Grey-headed Flying fox camp at Moruya Heads started to build up again, with tens of thousands heading out each night in early March. If the Spotted Gum continues to flower, it will be a good year for Swift Parrots and BirdLife Australia's Mick Roderick has reported that they have already hit the mainland. This year surveys will start in April so if you would like to participate, please let me know. Julie Morgan

Hooded Plover Y0 and his Family

Shorebird populations have been rapidly declining for several years due mainly to competition with people for space on beaches and estuaries to feed and breed, to predation by introduced species, and to climatic changes producing severe weather events such as king tides and storm surges. In some locations, some species of shorebirds have been deemed 'locally extinct' because their numbers and breeding success have been so severely affected by these factors. There is help for them though. The Shorebird Recovery Program that is run by the National Parks and Wildlife Service has been established to help give these special birds a chance to keep them off the extinction list.

The program's successes have been many, but one of its recent success stories deserves a special mention. Enter Y0. Y0 is a male Hooded Plover (*Thinornis rubricollis rubricollis*) - banded as an adult (Y0 is his unique ID tag) in the Merimbula area a year ago. He was seen by shorebird volunteers this past season (2015-16) and then spotted with a female on a local beach. The pair was observed mating at Pooles Beach on 18 December. Nesting followed and three eggs were laid the following day.



Hooded Plovers mating

Photo: A. Christiansen



Cage protects the nest

Photo: A. Christiansen

Their chosen nest site became Pooles Beach in Eurobodalla NP. As it turns out this was the first Hooded Plover nest to appear in the Eurobodalla Shire for almost a decade. Given the critically endangered status of this species and its exclusive nest site location, management of this site was more intense than normal. A protective cage was put around the nest to deter foxes, dogs and cats as well as other predators such as seagulls, ravens and raptors. Fencing and signage was also placed around the nest to alert visitors that the nest site was there and it was very special.

The birds endured a busy summer on the beach alongside many beachside goers, and had to cope with several severe weather events including flash flooding and severe thunderstorms. On 17th January two of the three eggs hatched and 2 chicks were seen on the beach with their parents close by at all times. The third egg was checked and unfortunately, deemed unviable (the yolk was still intact).

Y0 and his partner went on to raise and care for their two chicks at Pooles and 1080 Beaches until they were of fledgling age (approx. 5 weeks). Before they took their first flight though, both chicks were banded by the Shorebird Recovery Coordinator, Amy Harris, and her team of volunteers. During the banding process blood

and feather samples were taken for DNA purposes and to determine each chick's sex. Their unique identifying numbers are T6 and P7.

Following the banding, the plover family was tracked daily and it appeared that one of the chicks fledged earlier than the other. It hadn't been seen for many days but it has been reported just recently that all four have been observed by the shorebird volunteers, feeding on 1080 Beach in Eurobodalla NP. It seems that the family has been reunited. Lucy Gibson and Mandy Anderson



P7 is banded Photo: A. Christiansen

Post-script: on 28th March, the two adult birds were sighted once again on Pooles Beach, having spent most of the previous month at 1080. Finally the two immature birds had left home. Mystery Bay's keen Hooded Plover observers are hopeful that Y0 and his partner have now adopted Pooles Beach as their permanent home and that they will breed here once again next summer.

A New Article from Michael and Sarah Guppy

As many of you would be aware, Sarah and Michael Guppy continue to research the breeding activity of birds on their property in Maulbrooks Road, Moruya. One of the most interesting aspects of their research is what impacts on the level of breeding activity in any given year. They have recently published an article that examines the Southern Oscillation Index and breeding on their property. An abstract is included below and the full article is posted on the Publications page of our website, www.enhs.org.au

Abstract

Climate and rainfall in southern Australia are strongly influenced by the El Nino – Southern Oscillation (ENSO) phenomenon. If breeding of forest birds is related to rainfall, then ENSO may influence fluctuations in breeding activity. We recorded the numbers of breeding pairs of 17 species over 17 years on a 10ha forest plot near Moruya, NSW, in order to evaluate the influence of ENSO (as measured by the Southern Oscillation Index, SOI) and rainfall on yearly changes in breeding activity. The study covers two periods of observation on a 10 ha forested site near Moruya, NSW. Stephen Marchant began his work in 1975 and monitored the number of breeding pairs of 17 species, over 10 years (1975-1984). The study site remained undisturbed after 1984, and a second period of observations (Michael and Sarah Guppy) began in the 2007 breeding season. We have data for 7 breeding seasons (2007-13) for the same 17 species. There are no other studies in southern Australia that have recorded the breeding of woodland bird species over similarly long periods.

The mean SOI for the months April to July immediately before the breeding season (August to January) was strongly correlated with the change in number of breeding pairs (D) from year to year: $r = 0.82$, $p < 0.001$. D was also strongly correlated with rainfall (August to December) during breeding: $r = 0.84$, $p < 0.001$. A positive SOI resulted in >300 mm rainfall during breeding and a positive D value; a negative SOI resulted in <300 mm of rain and a negative D. SOI was a better predictor because it was less subject to the extreme variation shown by rainfall. This is the first time an association between breeding and SOI has been shown for forest birds in temperate Australia.

Beautiful, Clever, Tiny and Dangerous

These descriptions refer to a very interesting animal a friend of mine found washed up in large numbers on Congo Beach in early February. Its name is *Glaucus atlanticus* and it is a type of shell-less mollusc known as a sea slug or nudibranch. Common names include Sea Lizard, Blue Glaucus and Sea Swallow. There are



Sea-slug or Nudibranch Photo: V. Owens

over 300 types of nudibranchs in Australian waters and they are known for their extravagant shapes and colours. Maximum size is 5cm, although most are around 3cm. They have a small head, long tail and 3 outgrowths on each side of the body. These end in finger or claw-like clusters called cerata. Each animal can have up to 84 cerata. Colours are a brilliant light blue, dark blue and white or silver. They float upside down on the surface of the ocean, maintaining their buoyancy by swallowing air and storing it in their stomachs. The underside is blue or blue and white. As this is the side on the surface of the ocean, it helps camouflage from predators (sea birds) above. The dorsal surface, which actually faces down, is silvery blue making them difficult to be seen by fish below. When out of water they tend to roll into a ball, which would help prevent dessication. There is another

species; *G marginatus* that is smaller and has a shorter tail, otherwise is similar to *G atlanticus*. Like all nudibranchs, *G atlanticus* are hermaphrodite. They do mate and each animal produces 10 to 30 eggs enclosed in a mucous capsule, often attached to floating pieces of wood.

Probably the most amazing thing about these animals is the way they feed and use their prey to protect themselves from predators. They feed almost exclusively on Bluebottles which are 50 times bigger and as we know have stinging cells (nematocysts) in their tentacles. Sea lizards are able to nip away at these tentacles because they are immune to the venom they contain. This immunity is due to a thick layer of mucous around the mouth. They do not digest the stinging cells, instead, storing them in special sacs (cnidosacs) at the tips of the cerata. The venom is concentrated in the cnidosacs and used as a defence against predators.

G. atlanticus is found in temperate and tropical waters worldwide. They are carried by currents and the wind. They are generally only seen when washed up onto the sand, usually with Bluebottles. If you look more closely on the sand when walking along the beach, especially when there are Bluebottles present, you might be lucky enough to find some. However, be aware - DO NOT TOUCH. The concentration of venom in the cerata results in an even more painful and dangerous sting than that of the Bluebottle. Despite this, perhaps we should really thank them for keeping the number of Bluebottles in control. Fran Anderson

Field Meeting Report – Tebbs Road, February 2016

After the long break since our last meeting of 2015, the Tuross Shorebird survey, it was good to catch up with familiar faces once again. February 13th saw us meeting at the southern end of Narooma for the drive further south to Tebbs Road. Here, we had seen some very interesting species in the past, including Green Catbird and several species of cuckoo, as well as Brown Cuckoo-Dove and numerous honeyeaters. Conditions this time were less than ideal with quite a hot day and blustery winds. Unfortunately, the birds were not keen to venture out in this weather.

ENHS members John and Meg Gordon live on Tebbs Road not far along from our starting point at the old quarry. Despite not being at home, John had contacted us and offered us the opportunity to observe his bird-watering stations, so we optimistically headed there. The view across the forest and out to Montagu Island is a wonderful sight, and this more than made up for a paucity of bird sightings. John's very impressive list of bird visitors, which was on display on the wall of the house, only made us more disappointed at what we were not seeing.

There was the constant tinkling of Bell Miners, and a few birds were observed, including an immature Eastern Spinebill and a Wonga Pigeon.

The sighting of an interesting ground orchid along Tebbs Road attracted our attention for some time. There were a few spikes of this flower springing up amongst a small fine-leaved Lomandra. Most blooms were

beyond their best but one still had sufficient colour and form to encourage photographing. Our new member, Eleanor, identified it as a Small Tongue Orchid (*Cryptostylis leptochila*).

With a lack of birds to observe and after some conferring, the decision was made to head back towards Narooma to the northern end of the Ringlands walk. This took us past a section of the Wagonga Inlet, where we saw one Little Pied Cormorant, a Crested Tern and a Silver Gull. We continued on towards the forest where we were able to add a few further species to the list. There was a large group of Brown Gerygone, a couple of Eastern Yellow Robin, some thornbills and fairy-wrens.

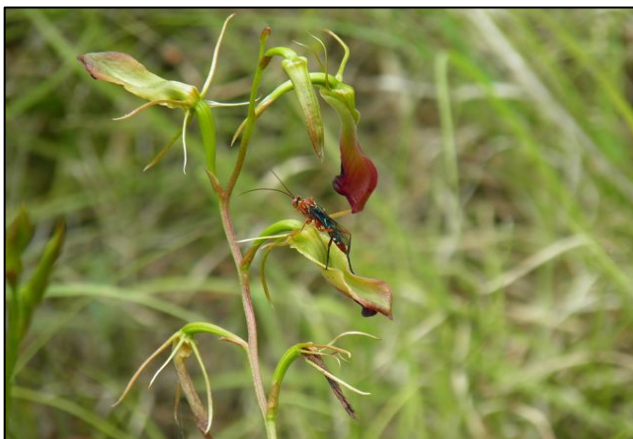


Small Tongue Orchid Photo: E. Robin

As we gathered at the end of the afternoon to compile the bird list, two White-bellied Sea-Eagles passed majestically over us – one an adult and the other an immature. We were surprised that our bird count reached 27. Considering the lack of avian activity, I wondered whether it is a good plan to meet at this time of the day in February, which is often the hottest month of summer. Perhaps an earlier or later starting time would be more rewarding at this time of the year? Mandy Anderson

Tongue Orchids, Wasps and Moths

There are four species of *Cryptostylis* orchid that occur in the Eurobodalla: the Bonnet Orchid (*C. erecta*), Large Tongue Orchid (*C. subulata*), Small Tongue Orchid (*C. leptochila*), and Leafless Tongue Orchid (*C. hunteriana*). The Bonnet Orchid and Large Tongue Orchid commonly grow on sandy soils in eucalypt forest in coastal areas. The Small Tongue Orchid grows in coastal areas and west to the Great Dividing Range. These three species of tongue orchid have a single large leaf at the base and grow on a single stem. The Leafless Tongue Orchid does not have a leaf (as the name suggests) and is found in similar areas to the Bonnet and Large Tongue Orchid. The Leafless Tongue Orchid is classified as vulnerable in NSW and throughout Australia.



Orchid Dupe Wasp on a Large Tongue Orchid
Photo: J. Morgan

Tongue orchids are pollinated by an ichneumon wasp, the Orchid Dupe Wasp (*Lissopimpla excelsa*). The male wasp is deceived by colour and shape of the orchid and mates with it believing it is a female wasp. Research indicates that the deception is created both by the ultraviolet spots that resemble the UV reflected from the wings of a female wasp, and the shape of the flower which mimics the body of a female wasp. Pollination occurs through a process known as *pseudocopulation*.

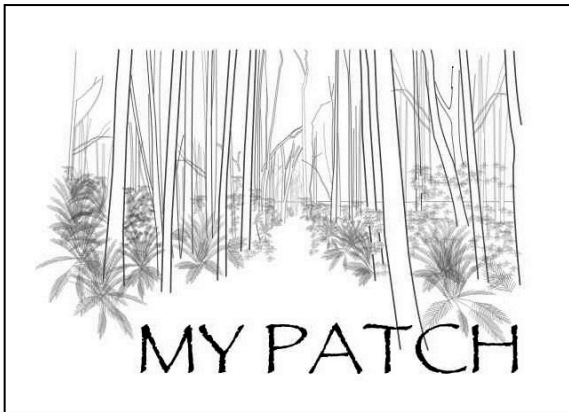
Ichneumon means ‘tracker’ in Ancient Greek and refers to the behaviour of the female wasp which looks for hosts in leaf litter. The Orchid Dupe Wasp is a parasitoid and the female lays her eggs in the body of a live host. When the wasp larvae hatch, they

feed on the body of the host, killing it. One of its hosts is the caterpillar of the Corn Earworm Moth (*Helicoverpa armigera*). This moth is considered a pest species because of the damage it does to corn - you may have seen the grub at the tip of a corn cob. The Corn Earworm Moth can be distinguished from its close relative, the Native Budworm Moth (*Helicoverpa punctigera*), by the light patch in the black border of the lower wing.



Corn Earworm Photo: J. Morgan

This interaction between a plant, a wasp and a moth shows how important biodiversity is in maintaining balance in the environment.



ENHS members have many stories to tell about their observations of nature. 'My Patch' is a forum where these stories can be shared with others and will be published both in the newsletter and on the website. Photos are welcome. Please send your contributions to mypatch@enhs.org.au

Logo design by Trevor King

Botany Bay Diamond Weevil

As newcomers to Eurobodalla, the natural environment is of great interest and importance in our lives. After sixty years on the Tablelands there is much to discover and learn in this hugely diverse and very beautiful coastal region. Pottering in the developing garden around our new house I recently came upon a delightful insect. From its shape it appeared to be a weevil of some kind. So, off to Google, the Zborowski and Storey field guide and finally The Insects of Australia (CSIRO 1970). As I discovered, the CSIRO textbook describes the beastie as "the common *Chrysolopus spectabilis*, the 'diamond beetle', first taken by Banks at Botany Bay, an insect of striking appearance, coloured by metallic blue or green scales. Its larvae feed in the wood of wattles."

Common names for this species include Botany Bay Diamond Weevil and Sapphire Weevil. It is up to 25mm in length. When disturbed it resorts to that delightful subterfuge of dropping onto its back and lying there motionless as if dead. The species feeds solely on acacias including *A. baileyana*, *A. melanoxylon*, *A. dealbata* and *A. longifolia*. It is a pest of acacia plantations where it destroys young shoots. The female bores holes into the wood and lays a single egg in each hole. The developing grubs bore into the roots of the plant.



Botany Bay Diamond Weevil Photo: J. Morgan

As already mentioned, the earliest specimen of *Chrysolopus spectabilis* was collected by Joseph Banks and Daniel Solander at some time between April and August 1770, during James Cook's first voyage to the south seas. It is conjectured that, in view of the cold and wet weather conditions to be found around Botany Bay at that time of year, conditions not suitable for the insect, it is more likely that the specimen was collected near Cooktown. During this visit only four other insect specimens were collected, including a butterfly and a couple of species of flies. *Chrysolopus spectabilis* occurs in coastal regions from Queensland, New South Wales, and Victoria round to South Australia. Malcolm Fyfe

Greater Glider Took a Dive



Greater Glider

Photo: J. Thomson

On Saturday 9 January, my son was walking along the rocks towards the southern headland of Circuit Beach, Lilli Pilli. About 500 metres from the beach, he found a Greater Glider floating in a rock pool. It was in perfect condition so we brought it home to dry it out and take pictures. Its grey fur was immaculate and its long tail amazingly light. Its eyes still glistened and I can see why they apparently shine by night when caught in torchlight.

Having displayed the glider to my Landcare friends and neighbours, the question was what to do with it. The NPWS Ranger told me they no longer had a taxidermist. However, a

neighbour knew of Jim, a licensed taxidermist at Tathra and the glider (which I had frozen until we found a home for it) is now with him to be used perhaps for display purposes.

How did the Greater Glider end up in the sea? My guess is that gliding between the tall Spotted Gums on the headland above, a gust of wind blew it right off course. The Ranger thought a Powerful Owl might have attacked it, but there were no obvious markings. It's a mystery. Judy Thomson

Highlights from ENHS records - Summer 2016

Avian species	Number	Place	Observer	Comments
Plumed Whistling-Duck	1 to 4	Com	JC	1 throughout Dec and Jan but on 27 th Jan there were 4.
Pink-eared Duck	Up to 80	Com	JC	
Aust Shoveler	12	Com	JC	
Hardhead	15	Com	JC	
Brown Cuckoo-Dove	5, 1	MKS/ Coolagolite	SMG/DO	
Brush Bronzewing	1	Bodalla	MA	
Bar-shouldered Dove	1	BP	JW	Jan
Topknot Pigeon	1 or 2	TS	PJP	
Tawny Frogmouth	1	MKS/MHS/ Pedro/TS	SMG/JM/JS/ JH	Immature at TS in Dec and Jan.
White-throated Nightjar	1 or 2	BP/PS/Pedro/ Deua R	JW/JM/JS/ MS	Possibly nesting at BP. Seen daily at water dish.
Aust Owlet-Nightjar	1	Deau R/Com	RS/AR/JC	
White-throated Needletail	50, 120	Bergalia/Com	DHK/JC	
Fork-tailed Swift	1, 2	MKS/PS	SMG/JM	In December
Pied Cormorant	3	MO	NM	
Australasian Bittern	1	PS	M Griffiths	In December.
Eastern Great Egret	32	Com	JC	On Jan 14 th . In breeding plumage in Feb.
Intermediate Egret	1	Com/MB	JC/MA	
White-faced Heron	Up to 30	Com	JC	
Little Egret	More than 5	Nangudga	MA	
Eastern Reef Egret	1 or 2	MO/Bingie Pt/ Mullimburra Pt /MB	DHK/MA	White morph at MB in Feb.
Royal Spoonbill	51	Com	JC	
Eastern Osprey	1	Cullendulla/TS/ NA	DB/PJP/WN /MA	All reports in Feb.
Square-tailed Kite	1 or 2	MKS/PS/MB	SMG/JM/ MA	
White-bellied Sea-Eagle	3	CO	JS	All juveniles
Collared Sparrowhawk	1	MKS/PS/MO	SMG/JM/ NM	
Grey Goshawk	2 to 4	PS/Bingie	JM	2 dy pursue an adult at PS in Jan.
Wedge-tailed Eagle	1	Monga NP	FM	A juvenile
Australian Hobby	2	Deua R	RS/AR	dy
Peregrine Falcon	2	Cullendulla/ Com	DB/JC	Breeding at Com with 1 young in Feb.
Buff-banded Rail	Up to 7	TS	JH	4 very young chicks in Dec.
Aust Spotted Crane	1	Com	JC	Feb.
Aust Pied Oystercatcher	Up to 20	TS	PJP/WN	Breeding
Black-winged Stilt	6 to 28	Com	JC	Dec to Jan.
Pacific Golden Plover	2	TS	PJP	
Red-capped Plover	82, 5	TS/MO	PJP/NM	
Lesser Sand Plover	2	TS	PJP	

Greater Sand Plover	1	TS	PJP	
Black-fronted Dotterel	Up to 6	Com	JC	2dy in Dec; also nesting in MYA.
Red-kneed Dotterel	5	Com	JC	In Dec and Jan.
Hooded Plover	Up to 6	MB	MA/AC	Pair copulating, later with a nest with 3 eggs - two chicks survive. Two other immatures early Jan.
Latham's Snipe	4, 1	Com/ Coolagolite	JC/DO	
Bar-tailed Godwit	150, 31	NA/TS	MA/PJP	
Whimbrel	1	TS	PJP	
Eastern Curlew	Up to 23, 15	MHS/TS	JM/PJP	
Grey-tailed Tattler	3, 1	Brou L/TS/MB	PJP/MA	
Ruddy Turnstone	2	TS	PJP	
Great Knot	2	TS/Brou L	PJP	
Red Knot	3	Brou L	PJP	
Sanderling	3	TS	PJP	
Red-necked Stint	3, 1	Brou L/MO	PJP/NM	
Sharp-tailed Sandpiper	20 to 30	Com	JC	In Dec and early Jan.
Broad-billed Sandpiper	1	TS	PJP	On Feb 7 on south point.
Little Tern	Up to 22	TS	WN/PJP	4 nests, 3 fledglings
Fairy Tern	2	TS	WN/PJP	Attempted to nest.
Caspian Tern	4	TS	PJP	
Glossy Black Cockatoo	Up to 8	Bodalla	MA	In family groups of up to 3. One dependent young at PS and Pedro.
Gang-Gang Cockatoo	5, 3	Monga NP/ Coolagolite	FM/DO	
Little Corella	More than 200	MYA	JL	
Musk Lorikeet	Up to 50	PS	JM	At flowering gums
Little Lorikeet	Up to 30	PS	JM	At flowering gums
Aust King Parrot	Up to 80	Com	JC	Numbers rising in Feb.
Indian Ringneck Parrot	1	MHS	MC	Female, escapee.
Eastern Koel	young	BP/Malua Bay	JW/MW	With adult koel at BP and with Noisy Friarbird at Malua Bay
Channel-billed Cuckoo	8, 6	Tilba/Malua Bay	MA/MW	Also a juvenile begging its host, a Pied Currawong, for food at PS
Brush Cuckoo	1 to 4 or calls	Malua Bay/ MKS/PS/Pedro/ Com/Bodalla	MW/SMG/ JM/JS/JC/ MA	Immature at MO in Jan. (NM)
Powerful Owl	Call, 1 or 2	PS/Pedro	JM/JS	
Azure Kingfisher	7	Bumbo Ck	MA	
Dollarbird	8	Com	JC	Breeding at Com, dependent young at Malua Bay
Superb Lyrebird	2	Monga NP	FM	
Red-browed Treecreeper	7, 6	Monga NP/ Gulaga	FM AM/JM/ M Griffiths	
Pilotbird	5, 10	Monga NP	FM AM/JM/ M Griffiths	Pair observed feeding on the track with young calling nearby
Large-billed Scrubwren	12, 9	Monga NP/ Gulaga	FM/AM/JM/ M Griffiths	
White-throated Gerygone	Call and 2	MKS/Bergalia/ Com	SMG/DHK/ JC	
Striated Pardalote	Calling	TS	JH	In Jan.
Fuscous Honeyeater	Call	MKS	SMG	In Jan.
Crescent Honeyeater	4	Monga NP	FM	
White-cheeked Honeyeater	4	Monga NP	FM	
White-bellied Cuckoo-shrike	1 or 2	PS/Com	JM/JC	

Cicadabird	Up to 6	Malua Bay/ MKS/PS/ Coolagolite	MW/SMG/ JM/DO	
Crested Shrike-tit	2, 1	Deua R/Monga NP	MS/FM	
Australasian Figbird	Up to 10, 2, 1	MYA/TS/BP	JM/JH/PJP/ JW	
White-breasted Woodswallow	Up to 10	MHN/PS	D Rosalky/ JM	4 dy at Malabar Weir, MHN.
Spangled Drongo	1	Malua Bay/ Monga NP	MF/FM	In Feb.
Rufous Fantail	6, 2, 1	Monga NP/Deua R/MKS/WL	FM/RS/AR/ SMG/AC	
Leaden Flycatcher	5	PS/MO	JM/NM	Breeding at both places
Black-faced Monarch	2	Deua R/Bumbo Ck	RS/AR/MA	
White-winged Chough	Up to 11	PS	JM	Immatures in the group.
Rose Robin	1, call	Monga NP/Com	FM/JC	Female at Monga
Golden-headed Cisticola	Call	Com	JC	
Aust Reed Warbler	Call or 1	MKS/PS/MO/ Com	SMG/JM/ NM/JC	
Little Grassbird	Calls	PS/Com	JM/JC	December
Tree Martin	60	BP	JW	With 10 White-throated Needletail feeding before thunderheads.
Common Blackbird	1	Bingie	DHK	At Grey Rocks.
European Goldfinch	2	Com/MB	JC/MA	In Dec and Jan.

Note: dy dependent young

Non-avian species	Number	Place	Observer	Comments
Common Wombat	1	Deua R/ Coolagolite	MS/DO	
Short-beaked Echidna	1 or 2	BP/PS/Pedro/ MB/ Coolagolite	JW/JM/JS/ MA/DO	
Antechinus sp	1	Bergalia	DHK	Enjoying Christmas Beetles
Sugar Glider	Calls	BP	JW	
Common Ringtail Possum	1	Pedro	JS	Dead
Common Brushtail Possum	5	Com	JC	
Eastern Grey Kangaroo	Up to 46	Coolagolite	DO	
Grey-headed Flying Fox	Thousands	MHS/PS	D Num/JM	Camp returned to MHS in mid Feb.
Lesser Long-eared Bat	2	Congo Rd	JS	Dead
Bush Rat	1	Lilli Pilli	IAG	
Red Fox	4	Deua R	MS	
Snake-necked Turtle	10	Com	JC	
Yellow-bellied Water- skink	3	Com	JC	
Eastern Water-skink	1	Lilli Pilli	IAG	
Weasel Skink	1	BP	JW	
Gippsland Water Dragon	20	Com	JC	
Jacky Lizard	1	BP	JW	
Lace Monitor	1 to 3	BP/PS/Com/ Coolagolite	JW/JM/JC/ DO	
Diamond Python	1	Com	JC	
Death Adder	2	Deua R	MS	
Bottlenose Dolphin	Up to 6	BP	JW	

Frogs JC/JL/JM/	Common Eastern Froglet, Eastern Banjo Frog, Brown Striped Frog, Haswell's Froglet, Brown and Toadlet; tree frogs: Brown, Keferstein's, Peron's, Tyler's, Verreaux's
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DO/JW	
Moths JC/JM/GLM	Plume, Meal, Cream Wave, Plantain, Banded and Spotted Lichen, Lichen-eating Caterpillar, Black Geometrid, Convolvulus and Coprosma Hawk, Magpie, Tiger, Dark-spotted and Crimson Tiger, Mistletoe, Northern and Southern Old Lady Moth, Native Budworm, Heliotrope, Omnivorous Tussock,
Butterflies MA/JC/JL/JM/ GLM/DO/JS/JW/ FM	Splendid Ochre, Lilac and White-brand Grass-skipper, White-brand and Narrow-brand Grass-dart, Greenish Grass-dart, Orchard and Macleay's Swallowtail, Blue Triangle, Spotted, Imperial and Black Jezebel, Yellow Albatross, Cabbage White, Dusky Knight, Brown Ringlet, Varied Sword-grass Brown, Wonder, Common, Bank's and Spotted Brown, Meadow Argus, Aust Painted Lady, Yellow Admiral, Monarch, Common Grass Blue
Dragon & Damselflies	Common Bluetail, Red and Blue Damsel, Black-faced, Wandering and Scarlet Percher, Blue Skimmer, Common Glider, Tau and Australian Emerald, Orange Thread-tail
Beetles JC/MF/JM	Botany Bay Diamond Weevil, Net-winged, Plague Soldier, Reptimus, Christmas, Click, Dung, Copper Kettle, Argentinian Scarab, Banded Pumpkin, Small Blue Leaf, Metallic Green Acacia, Three-lined Potato; Ladybirds: Transverse, Twenty-six Spotted, Twenty-eight Spotted, Spotted Amber, Striped, Fungus-eating, Mealybug, White-collared.
Bugs JC/JM	Water Strider, Bronze Orange, Brown and Magnetic Shield, Harlequin, Green Vegetable. Cicadas: Double-spotted, Black Prince
Other insects JC/JL/JM/JW	Blue Banded Bee. Wasps: White-faced Common Brown, Common Paper, Blue Flower, Spider, Orange Caterpillar Parasite. Yellow-winged Locust.
Spiders MA/JC/JL/JM/ JW	Spiny, Flower, Wheel-weaving Garden, Black House, Red Back, St Andrew's Cross, Leaf-curling, Jumping, Little Striped and Garden Wolf, Huntsman, White-tailed, Net Casting, Water, Golden Orb, Daddy Long Legs, Comb-footed.

RAINFALL (mm). December: 21.5 at BP, 25.5 at MKS, 30 at MYA, 33.2 at TS, 33.5 at Com, 33 at MB, 38 at Coolagolite. **January:** 241.5 at BP, 330.5 at MKS, 356 at MYA, 276 at Bergalia, 259.4 at TS, 344 at Com, 252 at MB, 357.75 at Coolagolite. **February:** 10 at MKS, 10.5 at MYA, 10.5 at Com, 19.5 at MB, 11.5 at Coolagolite.

Contributors

MA	M Anderson, MB	JL	J&J Liney, MYA	BS	B Scales, Kianga
DB	D Bertzeletos, Surfside	GLM	G&L McVeigh, Broulee	RS/AR	R Stacey and A Rees, MYA
AC	A Christiansen, MB	NM	N Montgomery, MO	MS	M Summerhayes, MYA
JC	J&P Collett, Com	JM	J Morgan, PS	JW	J Whiter, BP
MC	M Crowley, MHS	WN	W Nelson, TS	MW	M Wilkinson, Malua Bay
MF	M Fyfe, Broulee	DO	D Ondinea, Coolagolite	FM	Field Meeting
IAG	I&A Grant, Lilli Pilli	PJP	P Parker, TS		M Griffiths, Vic
SMG	S&M Guppy, MKS	HR	H Ransom, Mossy Pt		D Num, MHS
JH	J&J Houghton, TS	JS	J Sagar, Pedro		D Rosalky, ACT
DHK	D&H Kay, Bergalia				
Places					
BB	Batemans Bay	ERBG	Eurobodalla Botanic Gardens	NP	National Park
BBWG	Batemans Bay Water Gardens	MKS	Maulbrooks Rd S, MYA	PS	Pedro Swamp
BI	Bermagui	MO	Meringo	PP	Potato Point
BP	Burrewarra Point	MYA	Moruya	SB	Surf Beach
Com	Comerang	MH	Moruya Heads, N&S	SF	State Forest
CO	Congo	MB	Mystery Bay	TS	Tuross
DS	Durras	NA	Narooma	WL	Wallaga Lake

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