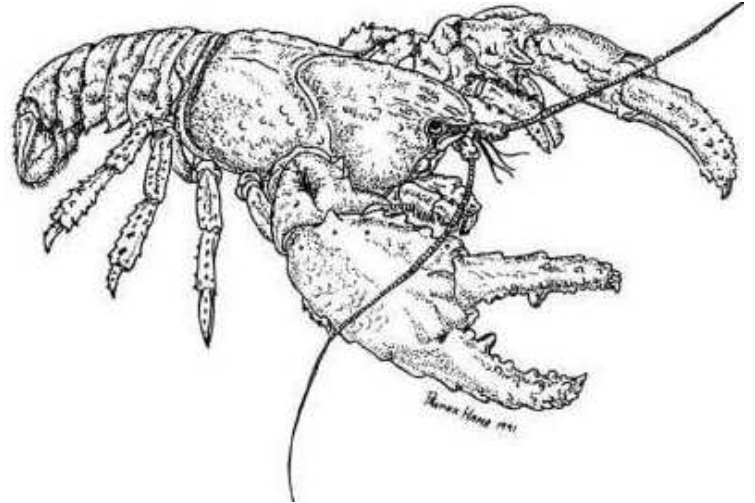


# Disjunct Naturalists

WEBSITE OF THE CENTRAL NORTH FIELD NATURALISTS



## *Chirp2: Newsletter of 'A sound Idea': acoustic bird monitoring December 2009*

by **Sarah Lloyd**

On 7<sup>th</sup> July 2009 a Shining Bronze-Cuckoo sang at the Coningham Reserve and a few weeks later a pair of vociferous Fan-tailed Cuckoos was recorded at Constable Creek near St Helens.

This seems early for these migratory birds to be back in Tasmania; most people report hearing them in early September. Maybe, as is likely, a few stay around all year – especially in the warmer coastal areas around Coningham and St Helens. Or maybe they are arriving earlier in response to climate change – who knows? By mid-September all four cuckoo species (Fan-tailed, Pallid, Shining Bronze-Cuckoo and Horsefield's Bronze-Cuckoo) that breed in Tasmania were recorded.

Not many birds, apart from cuckoos, regard hairy caterpillars as a delicacy. Cuckoos should be highly esteemed for performing the important service of eating them and we should ensure their long term survival by looking after their needs.

Cuckoos are well catered for when it comes to food because hairy caterpillars are reasonably abundant. Their nesting requirements, however, are a little more difficult to provide.

Cuckoos are brood parasites (i.e. they lay their eggs in the nests of other birds and leave the rearing of young to the foster parents) so their breeding success depends on there being healthy populations of the small birds to play the role of surrogate parents to their young. For example, for the Shining Bronze-Cuckoos to breed successfully at Coningham, birds such as fairy-wrens, scrubwrens, thornbills, flycatchers, silvereyes or honeyeaters should be in the area. To breed successfully at Constable Creek, Fan-tailed Cuckoos will need fairy-wrens, thornbills, scrubwrens, honeyeaters or flycatchers to rear their offspring.

Most of the birds that are parasitised by cuckoos build their nests either in dense understorey vegetation such as saggis, shrubs or small trees or in the pendant foliage of eucalypts. Even the humble bracken fern should not be underrated as habitat; fairy-wrens, thornbills, scrubwrens and scrubtits love to hide and nest in patches of dead and live bracken.

Their nesting material is also important to consider. Bark strips are used by many birds as are clematis seeds, grass, tree fern fibre, cobwebs, hair, fur, feathers, mosses, lichens and spiders' cocoons - among many other things.

The four species of cuckoo (Cuculiformes) that breed in Tasmania are among the few species of non-passerines on the species lists I send to participants. Other non-passerines that feature are the noisy ones such as Masked Lapwings, Laughing Kookaburras, parrots and cockatoos.

Most birds on the lists are passerines in the Order Passeriformes. This large order of nearly half the world's birds includes all the familiar bush birds – the wrens, whistlers, shrike-thrushes, robins, fantails, ravens, currawongs, finches etc. There are two major differences between non-passerines and passerines: their feet and their syrinx (the vocal organ equivalent to our larynx).

Passerines are known as **perching birds** because of the shape of their feet: all passerines have three toes pointing forward and one back with ligaments arranged so that the foot locks on when the bird perches or sleeps.

Lots of non-passerines have three toes forward and one back, but they have evolved to suit their particular lifestyle. Swans, ducks and gulls have webbed feet; cormorants and pelicans have totipalmate feet (i.e. with all four toes connected by webbing); wading birds usually have long toes, parrots and cockatoos have zygodactylous feet: they have two toes pointing back and two forward.

Passerines are also known as **song birds** because the complex muscles in their syrinx enable them to sing elaborate songs that, to our ears at least, are more melodious than the utterings of non-passerines. Some non-passerines have varied vocal repertoires and sing melodiously but many simply grunt, honk, whistle or quack.

## **Dusky Robin Alert**

Flame Robins are believed to have declined substantially in the 20 years between 1980 and 2000 so it was great to hear them at Bagdad and Nunamara in July '09; Chauncey Vale, Flat Rock Reserve, Goulds Country, Margate and Boggy Creek (St Helens) in August and at the Great Musselroe and Forester Rivers in September.

In contrast, Dusky Robins have not been recorded at many sites. They are among the first bird species to sing during the dawn chorus and their quiet song could be drowned out by the songs of other birds. Visual identification can be tricky as they resemble the females of the other robins; their mournful call is one of the best ways to tell them apart. If you are 100% sure that you have Dusky Robins at your recording site(s), please let me know either by email or by stating this at the end of a recording.

The Sound Idea project can monitor all vocal animals. Already it is apparent that the exceptionally wet year has been great for frogs with common froglets (*Crinia signifera*) and Tasmanian froglets (*Crinia tasmaniensis*) featuring on many recordings. Banjo frogs or pobblebonks (*Limnodynastes dumerili*) were calling at Bruny Island on August 21<sup>st</sup> but it was an exceptionally warm afternoon; on September 18<sup>th</sup> they were calling at Constable Creek, St Helens. More will vocalise as the weather warms as will the endangered Green and Gold Frog (*Litoria raniformis*), whose other name, the growling grass frog, aptly describes this species.

If you live in lowland, predominantly coastal areas in the north, northeast or southeast Tasmania please keep an ear out for the Green and Golds!

After several years of drought, 2009 has been the wettest year on record in many parts of Tasmania. This means conditions are perfect for frogs, which feature (loudly!) on many recordings. Some birds, most notably the Bassian Thrush which is considered a specialist worm feeder, have also benefited.

The wet conditions and saturated soils cause a migration upwards of soil-dwelling invertebrates making them easy prey for birds. In September at Black Sugarloaf I saw a Bassian Thrush with its bill full of worms and several weeks later I noticed three young birds: two youngsters with one adult and a recently fledged bird with another. They have been recorded at the Great Musselroe River, Hillwood, Patersonia, St Marys and Constable Creek, St Helens.

Bassian Thrush are secretive birds that rarely venture out of their preferred habitat of wet forests and rainforests, although they are often seen in open areas in late summer and autumn. They are cryptically patterned and, when disturbed, will remain almost motionless, a strategy that renders them barely visible against the similarly coloured leaf litter.

Depending on the time of year, Bassian Thrush are among the first birds to sing at dawn and the last to sing in the evening; they usually remain silent in the intervening period unless the day is dull and overcast. In this exceptionally wet year, when their food is particularly abundant, Bassian Thrushes are spending more time singing than in previous years.

The rate of singing in male birds can indicate the quality of their habitat to females. Female birds judge potential mates on the quality and intensity of their singing. A bird that has a territory rich with abundant resources (especially food) means that it can spend less time foraging and more time singing.

Birds' songs are closely correlated with their breeding cycles; they use songs to proclaim their territories to rival males (or potential mates), thus avoiding more physical altercations.

Birds time their breeding so that there will be abundant food when they are feeding nestlings. As different species use different resources, they breed - and are therefore vocal - at different times of the year.

For example, Strong-billed Honeyeaters are very vocal prior to nesting in early spring but once their young have fledged they become less vocal. If conditions are favourable - or if their first attempt at nesting fails - they, like many other birds, will have a second breeding attempt and there will be a corresponding increase in levels of vocalisation.

The distinctive two note 'pee too' song of the Spotted Pardalote is a characteristic sound of eucalypt forests, especially in late winter and early spring. Once birds have found a mate and established their breeding territories, they become relatively quiet and are less likely to be recorded.

In contrast, Striated Pardalotes, which leave Tasmania in late autumn to spend winter on the Australian mainland, sing their three note 'pick-it-up' song incessantly when they return in early spring. Even when breeding has ceased they remain quite vocal.

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The internal structure of a bird is unlike that of other vertebrate animals. Their respiratory system has components also found in mammals but their airflow patterns are completely different.

Their syrinx, the vocal organ equivalent to our larynx (voice box), is as unique to birds as are their feathers. It is not situated at the top of the trachea but is located near its base, just above where the trachea divides to form two

bronchi. The complex muscles in the syrinx combined with the tympaniform membrane allow birds, particularly the passerines, to produce some of the most complex natural sounds.

Air enters the syrinx from two sources, the two bronchial tubes, enabling a bird in effect, to duet with itself. Structures in their vocal tract (trachea, glottis, pharynx, tongue, mouth cavity and beak) all play a part in modifying the sounds produced in the syrinx. Their internal air sacs act like bellows giving birds control over the volume of sounds they produce.

It is incredible to watch a bird such as a Striated Pardalote at close quarters; its body changes shape as it sings. This small bird produces a very loud sound relative to its size, a fact that may be related to its ecology and lifestyle.

Striated Pardalotes spend most of their time in the canopy foliage of eucalypts. They are 10 cm long - about the size of a eucalypt leaf - and are therefore difficult to see as they forage for insects and lerp. They sing and call to keep in contact with other birds.

Once they have finished breeding Striated Pardalotes form flocks and roam the countryside in search of food before migrating north. When they are not singing their familiar three note song, they keep in contact with other members of the flock with a trilling call.

By contrast, Forty-spotted Pardalotes have a completely different mode of living. They are sedentary birds that do not appear to move far from their natal area, i.e. where they were born and raised. There are closely associated with white gums (*Eucalyptus viminalis*) and are rarely seen far from these trees.

A species that lives mostly in gully vegetation near the sea might be expected to sing and call loudly. But the Forty-spotted Pardalote has a very quiet song that is barely audible above the sounds of crashing waves and almost constant winds that are a feature of its preferred habitat.

### **Some definitions:**

Bird vocalisations are generally referred to as either songs or calls. The distinctions are arbitrary but the terms have been used traditionally and are found in most books devoted to the study of birdsong.

**Songs:** *'long complex vocalisations produced by male birds in the breeding season.'*

**Calls:** *'shorter, simpler and used by both sexes throughout the year.'*  
(Catchpole & Slater 2008)

Songs are often sung from an exposed perch and are thought to serve to attract mates and/or to defend territories. (Kroodsma 2001)

Many birds (e.g. Yellow-throated Honeyeaters and Grey Shrike-thrushes) have extensive vocal repertoires that include more than one song type.

Songs are learnt; hence they develop differently in different locations. This can lead to regional variations in song - often referred to in the literature as **dialects**.

Unlike songs, calls usually occur in particular contexts which relate to specific functions such as flight, threat or alarm.

Birds may have several alarm calls which are different depending on the threat. For example, the 'hawk alarm' call is different to the call that warns of

the presence of Kookaburras. Yet another call is used during summer when snakes are on the move.

Small birds such as Superb Fairy-wrens, Tasmanian Scrubwrens and Grey Fantails emit distinctive snake alarm calls giving all in the vicinity - other birds, dogs and people if they're tuned in to such sounds - an indication of the reptilian presence.

Note: most of the studies on bird vocalisations have thus far been carried out on northern hemisphere birds. Relatively little is known about 'singing' in Australian passerines, particularly females.

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