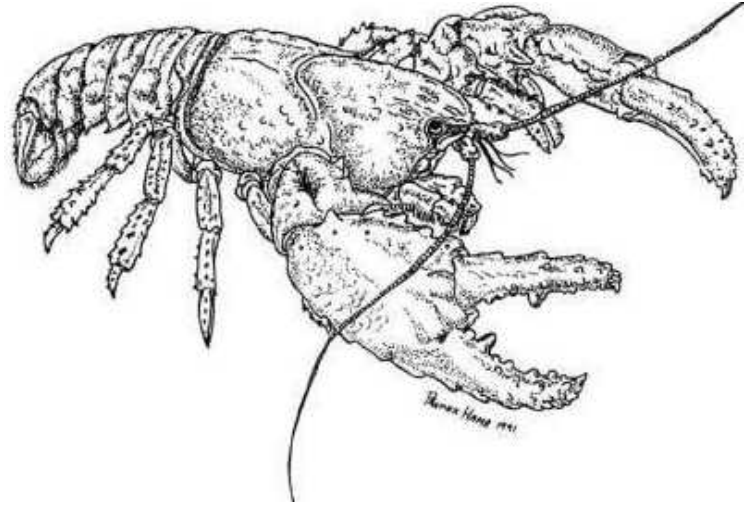


# Disjunct Naturalists

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## *Dawn at Birralelee*

by Sarah Lloyd



Bassian Thrush (*Zoothera lunulata*)

'Night owls' may shudder at the thought of a project that involves getting up with the birds, but there's a particular beauty in the pre-dawn day. As I listen to the last nocturnal hootings of the resident owls and watch as the Southern Cross and the waning moon fade with the increasing glow on the eastern horizon, and the rising sun colours wispy clouds pink then brilliant red, I think about how fortunate I am to live in a place where I can step outside my front door and listen to the dawn chorus; surely one of nature's wonders and one that has been very little studied, not just in Australia, but anywhere.

I based my project to document the dawn chorus at Black Sugarloaf (Birralelee, Tasmania) on a study undertaken by Allen Keast in 1985 called 'Springtime

song, Periodicity and Sequencing, a comparison of a southern forest and Northern Woodland Bird Community'. (Keast 1985) Keast documented a week of dawn singing at the beginning of the breeding season at a eucalypt forest on the Hawkesbury River in New South Wales and a eucalypt woodland on the south Alligator River, Northern Territory. He restricted his research to sunny, windless days in spring. In the northern hemisphere, however, studies have shown that weather conditions, especially wind, rain and light intensity, influence the starting times and intensity of singing so I was determined to ascertain the impact of these conditions and started monitoring the dawn singing regardless of the weather.

I soon found that prevailing weather conditions did affect the starting times of each species' songs; it also affected how far away I could hear. On still misty mornings I could hear roosters crowing, magpies carolling and kookaburras laughing from the cleared farmland about a kilometre away, while the audible range on windy days was reduced to approximately 80 meters. This encompasses the dense habitats where most of the resident passerines, the main focus of my study, roost for the night and sing during the early morning.

The project involved listening to and documenting the simultaneous singing of the resident birds (often referred to as the dawn chorus) once, twice and sometimes three times a week. The singing starts from between 30 to 60 minutes before sunrise, depending on the time of year, and continues until there is a noticeable lull, usually when the sun comes up. I made a minute by minute note of what bird species were singing, its location, and the time of its first and subsequent songs. I later transfer this information onto a daily excel data sheet. For the many forest birds with extensive vocal repertoires I also note the song type used at dawn. For example, prior to and during the breeding season the Yellow-throated Honeyeater would start the day with its distinctive three note song, occasionally followed by its slow trill and/or 'tonk' calls. By the time breeding had ceased in mid-January, I heard only its warble at dawn.

Here, as in the rest of the world, birds usually sing in a set daily sequence. When I started the project in late August the beautiful fluty song of the Bassian Thrush heralded the dawn at 6:05, 30 minutes before sunrise, and five minutes passed before I heard the ravens' baritone 'kaarr'. By 6:15 Tasmanian Scrubwrens had joined the refrain followed by the Yellow-throated Honeyeater, the strident song of the Strong-billed Honeyeater (a sound it only makes at dawn) then the Eastern Spinebill and Pink Robin. Not only did this sequence remain almost constant for the first few weeks, but if I documented the dawn chorus on consecutive days, species would start singing at exactly the same minute each morning.

More surprises were in store: although I have lived at Black Sugarloaf for 16 years and was confident that I could identify every species by their calls, by the third morning I'd heard not one but two mystery sounds. One, a haunting owl-like howl, I ascribed to the Southern Boobook which would be hooting softly as I started each day's listening. That the eerie howl was interspersed with soft boobook-like phrases seemed good reason for this attribution but until I'd actually seen the bird emit the song I wouldn't be convinced.

Fortunately (or unfortunately depending on how tired I was feeling), even on those mornings when I decided to stay in bed I could hear the birds from the bedroom. Early one morning I woke to the sound of the mystery call so I leapt out of bed, put on my boots and ventured to the gully; the early morning gloom just enough to light my way. High in a tree the aforementioned sound emanated from the distinctive silhouette of a Grey Currawong and immediately confirmed the misidentification. The singer of the second mystery sound, best described as a mournful warble, remained unidentified for several months. I have now confirmed that it is another crepuscular call of the diurnally 'clinking'

currawong, adding yet another song type to the remarkably diverse repertoire of this bird.

During the third week of September I witnessed the passage over several mornings of numerous small flocks of migrating Silvereyes. While most continued on their southerly path, close to forty returned to their breeding territories in the dense vegetation in nearby gullies and I must admit to feeling a little ambivalent about their return. Silvereyes are accomplished mimics and for several mornings after first arriving one would sing loudly from a nearby wattle tree. Perfect renditions of the songs of Golden Whistlers, Grey Shrike-thrushes and Green Rosellas emanated from this little bird. When heard during the day, the imitative songs of a solitary singing silvereye alternate with its distinctive warbling and are obviously coming from one source. But at dawn, when many different species are singing continuously and simultaneously, the imitations are more difficult to differentiate. The loud song of the resident Blackbird, another skilled mimic, only added to the cacophony of confusion.

The propensity of birds to sing more intensively at dawn than during the rest of the day has been the subject of much theorizing. There are probably many factors contributing to this phenomenon including environmental conditions such as reduced air turbulence that may facilitate the transmission of sound and social functions including mate attraction and territorial advertising. In addition, intensive dawn singing may serve a function intrinsic to the singer's internal state.

Light levels affect the beginning and ending of a bird's day and thus influence the time they start singing. As the summer solstice approaches birds began singing correspondingly earlier. In late August when I began the project Grey Fantails, though present in the area, were silent at dawn, by September they were making a minor contribution and by October 17<sup>th</sup> they had taken over the lead, starting at 4:29, (Eastern Standard Time) 52 minutes before sunrise and well before most other birds. By December 9<sup>th</sup> one bird in the eastern gully introduced the singing at 3:30 and four other birds immediately responded. Despite the presence of fledglings, which indicated that breeding had ceased, this pattern persisted until January 19<sup>th</sup>, but by the 22<sup>nd</sup> they were all but silent again.

Why the Grey Fantails' contribution to the dawn singing has changed both in intensity and timing, and other species have at times dominated and later dropped out of the dawn chorus may be related to their internal states. Not only do increasing levels of the sex hormone testosterone (triggered by increasing day length and light intensity) stimulate singing, but in many species the production of testosterone and the growth of their reproductive organs are stimulated by the songs of both conspecific birds and a bird's own vocalisation. In many species singing peaks at the time when females are fertile and laying eggs.

With the approach of autumn and the cessation of the mating season, birds spend more time foraging than singing; they are building up fat reserves in preparation for their migration flights or in readiness for winter. Birds are much less vocal during the day during autumn and winter. Many are silent at dawn; those that sing do so softly and less frequently.

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(This article first appeared in 'The Natural News' in Autumn 2006)

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Sunrise times at Black Sugarloaf (Lat 41° 23' Long 146° 48') were obtained from the website: [www.ga.gov.au/geodesy/astro/sunrise](http://www.ga.gov.au/geodesy/astro/sunrise).

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