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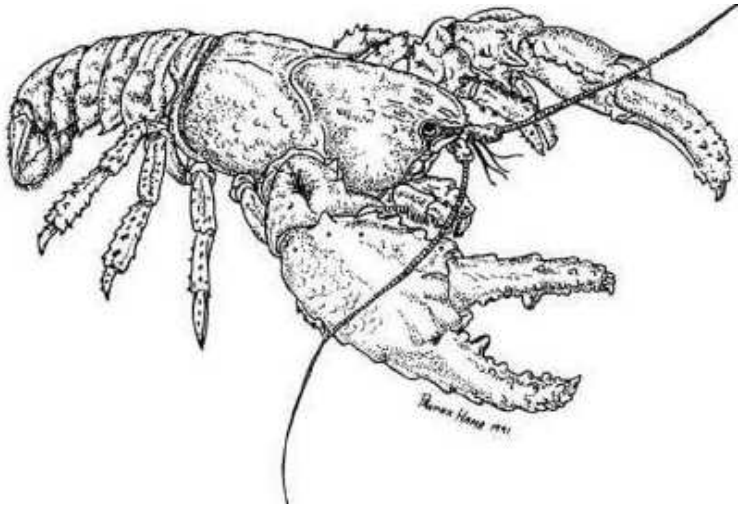


Chirp3: Newsletter of 'A sound Idea': acoustic bird monitoring

by **Sarah Lloyd**

The Sound Idea project began in August 2008. There are now 14 Zoom H2 recorders in the field that belong to Birds Tasmania (some purchased with assistance from the Tasmanian Community Fund) and at least ten (that I know of) privately owned recorders. Over sixty participants have made recordings at more than 120 locations, with repeat (seasonal) surveys at several of the sites.

Thanks to these acoustic surveys - as well as my own observations and information from people undertaking conventional field surveys - we can get a picture of what birds are able to persist in the substantially altered landscape, and what birds seem to be suffering serious declines. We have known for years that forest birds such as Swift Parrots and Forty-Spotted Pardalotes have declined alarmingly and are now listed as endangered, but what about the birds hitherto regarded as common such as the robins, endemic honeyeaters, Dusky Woodswallows, Grey Shrike-thrushes or Golden Whistlers?

In the *State of Australian Birds* (2008) Dusky Woodswallows were reported to

have declined in the north of their range (between latitudes 19°- 28° S) and increased in the south (29° - 43°S) *'which could be interpreted as shifts in the population consistent with climate change.'* (Olsen & Silcocks 2008)

Now, particularly this year, there have been noticeable declines in the south of its range. They have disappeared altogether from some sites I have been monitoring for the last 4 years and other people have reported seeing fewer birds at their regular breeding sites.

Dusky Woodswallows have a very distinctive, high call that is easy to miss unless you know what to listen for. The birds usually occur in flocks and, being aerial insectivores, they behave very much like swallows. Rather than flying low over water like swallows, however, they often fly too high be seen with the naked eye.

When I started A Sound Idea it was important for me to ensure that the mics in the Zoom H2 were sensitive enough to detect both the high call of the Dusky Woodswallow as well as the low calls of Brush and Common Bronzewings. After a few experimental recordings at Black Sugarloaf, where Dusky Woodswallows circle high above when flocking in autumn and the bronzewings 'oom' repeatedly through spring and summer, I was satisfied the mics were up to the task.

Every year Dusky Woodswallows return to Tasmania to breed after spending winter on the mainland. They return to the same area in consecutive years and seem to prefer to nest in trees that many people regard as 'degraded', often building their flimsy nest between the shedding bark and trunk. Unfortunately, many of these trees are considered dangerous (because they are!) and are removed in the interests of public safety.

Why these birds have declined in areas where their habitat remains intact is difficult to ascertain.

Another bird of concern is the Dusky Robin. In contrast to the conspicuous and vocal Dusky Woodswallows, Dusky Robins have a quiet, mournful call and a tendency to keep hidden. While acoustic surveys may be a good way of detecting Dusky Woodswallows, they may not be the best tool for monitoring Dusky Robins.

Yellow-throated Honeyeaters, Golden Whistlers and Grey Shrike-thrushes have hitherto been found in just about every vegetation community in Tasmania. They are very vocal birds and therefore good candidates for acoustic monitoring. They too have disappeared from some areas this season.

WHY?

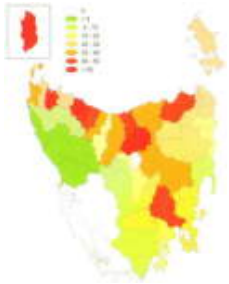
We usually think of habitat destruction, fragmentation and degradation as being the most obvious causes of bird declines. And they undoubtedly are. But are there less visible and more sinister things happening in the environment?

The amount of pesticides and other agricultural chemicals used throughout Tasmania must be having a significant impact on invertebrate populations and therefore on terrestrial birds, most of which are insectivorous at some stages of their lives.

In the August 2009 edition of APRAP (the publication of the Australian Performing Right Association) I read that *'over two-thirds of insect sounds have been lost due to pesticides and changing habitat.'* I never found the reference for this but presume it is based on recordings undertaken by the CSIRO.

Invertebrate numbers seem to be particularly low this year. Even European

wasps, which feed voraciously on native insects, seem to have declined. Other people have also remarked on a noticeable lack in insect activity.



pesticide usage

The map is taken from a pamphlet released by the newly formed Tas Eco-toxicology Research Fund. It indicates the percentage of each catchment in Tasmania that is subject to pesticides used in agriculture and plantation forestry. Many of the chemicals used here are banned in northern hemisphere countries. Now we learn that plantation eucalypts themselves may be toxic. (Australian Story, ABC 1, 22nd February 2010)

People who have done several (seasonal) recordings at a location may be surprised to see that the birds on the species list they receive do not change much from day to day or even from season to season. Migratory species such as Striated Pardalotes and cuckoos and the nomadic robins will only appear during certain months but most other birds are resident throughout the year. Despite a very common misconception, birds are not nearly as randomly occurring as their ability to fly might suggest. They have particular habitat preferences and nesting and foraging requirements.

The value of having repeat surveys can not be overstated. Long term data sets enable us to get a picture of where birds are living. More importantly, they will reveal if some 'common' birds are consistently not recorded, in which case steps should be taken to protect them.

By late spring and early summer many birds will have bred successfully and recently fledged young will be emitting begging calls as they wait for their parents to bring food. These calls don't resemble the songs or calls of parent birds so these chicks are almost impossible to identify from the recordings. It does, however, give an indication that birds are breeding in the area.

After several weeks or months (depending on the species) of parental care young birds will start to forage for themselves. They will also start to learn their songs, something that requires many hours of practice. It can be very entertaining to listen to!

For instance, in autumn recently fledged Silvereyes sing a whisper song, also known as subsong. This quiet warbling, sung from the cover of dense shrubbery, is a practice song akin to a baby's babbling. It is a continuous stream of imitation interspersed with Silvereye notes.

Listening to the recordings: not as easy as it sounds!

I listen to the recordings via a computer using windows media player. (I sometimes listen in 'Sound Forge' as this programme gives a visual representation of the recordings.) The computer is connected to a stereo sound system (i.e. amplifier and speakers). The graphic equaliser in the amp is usually adjusted to cut out any bass rumbling and the volume is set to maximum.

Tasmanian Scrubwren

The inability to localise the source of a sound - as well as the lack of context (I'm in my house rather than the bush) can make the identification of some species difficult. For instance the warning and contact calls of some of the 'small brown birds' such as thornbills, fairy-wrens and scrubwrens are quite similar. During a field survey the location of a bird (i.e. if it is on the ground or in the canopy) can help to identify a species. For example, Tasmanian Scrubwrens almost always forage on logs or amongst the leaf litter on or near the ground and rarely ascend into the mid or upper canopy. In contrast Tasmanian and Brown Thornbills forage on the trunks,

branches and foliage of shrubs and trees and are rarely seen on the ground.

Differentiating the songs of some birds, most notably Tasmanian and Brown Thornbills, is almost impossible. It is one reason I ask for a brief description of habitat as this gives me some context while listening.

Tasmanian Thornbill

Tasmanian Thornbills are endemic in Tasmania and are most often associated with wet forest habitats. Brown Thornbills, which also occur on the Australian mainland, are found in drier regions. In many parts of Tasmania, however, wet and dry habitats adjoin and the species occur together. To add to the confusion, in autumn Brown Thornbills often join Tasmanian Thornbills, Tasmanian Scrubwrens, Silvereyes and fairy-wrens in mixed species feeding flocks once they have finished breeding.

Brown and Tasmanian Thornbills are not only hard to differentiate by their songs and calls they can also be difficult to tell apart in the field. These small birds move quickly through the vegetation giving observers little opportunity to watch for the identifying features.

Brown Thornbill

Tasmanian Thornbills are slightly smaller than Brown Thornbills with a slightly longer tail that they sometimes hold upright in a similar fashion to fairy-wrens. They have a chestnut-coloured crown and chestnut-edged primary feathers, faint markings on their breast and fluffy white underparts (undertail coverts) that curl around the base of their tail.

Brown Thornbills have a paler crown than Tasmanian Thornbills with more distinct scalloping, darker steaks on their breast, and with no white feathers under their tail.

Some locations are rich sites for birds because they encompass a variety of habitats in close proximity. The Arboretum at Eugenana is a good example. Here native and introduced trees and shrubs have been planted to create different vegetation communities from around the world. There are areas of retained native vegetation including dry sclerophyll forest at the northern end of the Arboretum and riparian vegetation along the Don River. These different vegetation communities as well as extensive areas of open grassland and water bodies of various sizes provide habitat for a range of native and introduced birds.

Early morning recordings at the Arboretum are a cacophony! Introduced House Sparrows chirp repeatedly and mask the sounds of other species; imitating blackbirds add to the confusion. Nevertheless, thanks to Paul Hydes, who has done field surveys at the same time as making recordings, 99% of the passerines (and some of the vocal non-passerines) listed during conventional field surveys were recorded by the Zoom, once again confirming that acoustic monitoring is an effective tool in ascertaining bird species distributions.

BRINGING THE CLASS TO ORDER - PLEASE FOLLOW THE INSTRUCTIONS!

People volunteer for monitoring projects for all sorts of reasons. Most people see the value in monitoring the birds at particular locations in an attempt to get a picture of bird distribution in Tasmania. Some people are interested to know what birds occur on their property; others see it as a way to learn or brush up on their bird call identification skills. Some people want to record their favourite birds. All these are valid reasons as long as the instructions are followed and the recorder is returned promptly so that others can use it.

I know it takes a lot longer than 20 minutes to make a 20 minute recording. For people doing field work putting the Zoom in situ can become a part of their daily routine. Other people have many commitments and may find that doing a recording interrupts their daily schedule and for all sorts of reasons they don't get around to it. I UNDERSTAND! If this applies to you PLEASE return the recorder to me as there are other people keen to be involved.

PLEASE FOLLOW THE INSTRUCTIONS

1. record **only in the morning** - as early as possible
2. give **all** the requested information at the **start** of the recordings
    - your name
    - location
    - date
    - time
    - habitat (please be **very brief** e.g. grassy woodland, coastal heath, dry forest, wet forest with creek nearby ...)
    - be brief about the weather (e.g. overcast & warm; clear sky, cold) – recordings should be made only when there is no or little wind.
3. do not record in **noisy** locations such as near the sea or where it's windy

Intermittent traffic and wind noise are tolerable but constant extraneous noise is really unpleasant to listen to and masks the sounds of the birds. By contrast, a recording made on a calm morning is a pleasure to listen to. PLEASE consider this when making recordings.

If you are contributing to A Sound Idea using your own recorder please ensure that:
The recorder is set to record .WAV not mp3; the record level is set to max (127) and the mic gain switch is on 'H'.

The mics in the Zoom are sensitive - depending on conditions they will record birds from several hundred metres away. With that in mind, please put the recorder in place before turning it on and leave it there until you have turned it off. Speak in a normal voice and don't handle the Zoom while it is running. Remember, I have the volume set to maximum while I'm listening.

For those people doing repeat (seasonal) surveys PLEASE record at the same location as in previous years and be consistent when naming the location.

There is usually some variation in the bird species that occur in a location from hour to hour or from day to day. However, if you would like to make several recordings on the same or consecutive days please make sure the survey sites are at least 100 metres apart. If you would like to do regular surveys at a site please leave a minimum of a month between recordings – seasonal surveys are ideal.

Please also consider that although this project received some funding from the Tasmanian Community Fund for printing and postage, all other tasks including coordinating the Zooms, downloading and renaming files, writing, printing and posting newsletters, listening to the recordings and making species lists are done entirely by volunteers.

Recordings that do not follow instructions take hours of valuable time.

My intention is to listen to all the recordings but I will give priority to those that follow instructions!

A big thank you to all the people who have made recordings and expressed interest in the project. Recordings from anywhere in Tasmania are useful and informative. We have a particular interest in finding out what species are able

to survive in:
Patches of remnant vegetation
Urban parks and reserves
Riparian areas

References:
Olsen, P. (2008) *The State of Australian Birds 2008*. Supplement to Wingspan, vol.18 no. 4. Birds Australia.
Pizzey, G. & Knight, F. (1997) *The Field Guide to the Birds of Australia*. Angus & Robertson, Sydney
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This project is supported by the Central North Field Naturalists, Birds Tasmania, the Tasmanian Community Fund, Northeast Bioregional Network, Launceston Field Naturalists Club and Bird Lovers of Black Sugarloaf.

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