Birds on tape

The sounds of Nature are always evocative — the wind in the trees, the evening chorus of cicadas. The producers of films and of radio and television programs know this too, and use recordings of natural sounds to convey feelings of atmosphere.

But wildlife sound recordings are also important educational and scientific tools. How many of us, for example, would have heard the songs of the humpback whales unless underwater sound recordists had given us the opportunity?

Perhaps the most familiar sounds in Nature, and certainly the most likely to be recorded, are bird calls. Indeed the earliest wildlife sound recording, in 1889, was of the song of a cage bird (an Indian Shama, *Copsychus malabaricus*). That recording, made in Frankfurt by the pioneering wildlife recordist Ludwig Koch, was cut onto the wax cylinder of an Edison Phonograph.

With the availability of lightweight cassette recorders and microphones, recordings nowadays can be made in the field quite simply.

Scientists studying animal sounds can produce visual representations of the sounds using a special instrument, the sound spectrograph or sonagraph. This produces sonagrams in which the amplitude and frequency (volume and pitch) of the sound are recorded against time.

Although actually recording a particular wildlife sound still provides the most valuable form of description, the use of sonagrams allows a more precise characterisation than was previously possible using musical notation or words.

The advances in recording technology have been matched by increasing interest in wildlife sound recordings. Commercial issues have been made on tape, cassette, and disc. Many recordings, however, and especially those of rare or remote species, are in the private collections of enthusiastic amateurs.

In 1962 the beginnings of a national collection and catalogue were set up by Mr Norman Robinson of CSIRO's Division of Wildlife Research, as part of that Division's work on the vocal behaviour of birds. It had been hoped that recording bird distress calls and playing these back in places where the same species was a potential pest, such as around airfields, would scare the birds away.

A male; is he listening?

However, this proved not always to be the case — the birds often learnt that squawks of fear from a loudspeaker were not the same as those from one of their mates.

Nevertheless, these recordings made a good start to the CSIRO national collection, which now (with many contributions from amateur recordists) contains more than 5000 recordings, covering at least 500 species — mainly birds, but including frogs, insects, and mammals.

The benefits of good recordings are well known to ornithologists. Bird calls are generally species-specific and may also differ between the sexes. So knowing which sex makes which call can help enormously, especially if the sexes are difficult to distinguish visually.

Ornithologists can also use tapes of bird calls to help them identify species that may not be easily visible, perhaps obscured by dense foliage. For example, the exceedingly rare noisy scrub bird (see *Ecos* 48) can generally only be located by means of its powerful call.

Another well-known but rare bird is the Lord Howe Island woodhen. In the 1970s the total world population of this bird, found only on Lord Howe Island, was in the region of 20, and it was considered likely that the species would become extinct. Dr Peter Fullagar, also of the Division of Wildlife and Rangelands Research, successfully recorded the bird. This could have been an especially invaluable record, and a sad epitaph, had the species become extinct, but thanks to the captive breeding program of the National Parks and Wildlife Service the woodhen remains with us today.

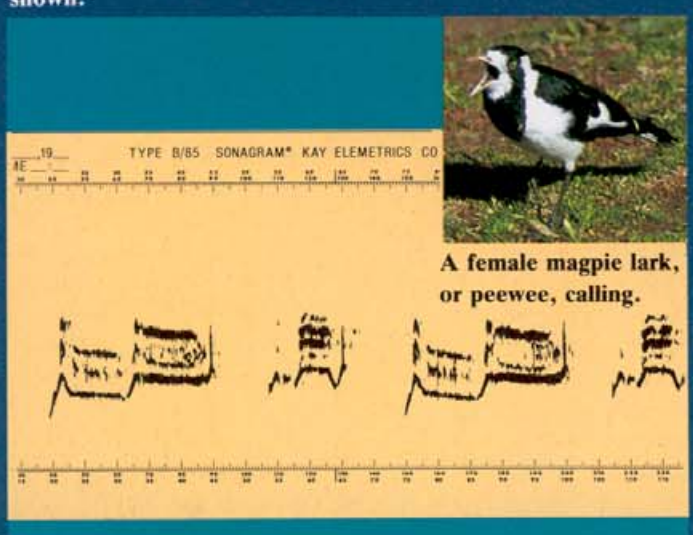
Biologists who are studying behaviour find bird calls invaluable in helping them unravel the social organisation of birds, and the signalling between individuals. And, of course, greater awareness of bird behaviour (such as their migration or attraction to certain feeding grounds) helps in the study of their ecology and conservation.

The National Library of Australia holds copies of a taped field guide to Australian bird songs, largely based on Mr Robinson's efforts.

Although these tapes are not available commercially, the Bird Observers Club, headquartered in Melbourne, is producing a series of cassettes, using all the available material and covering 500 species. The first two of these have been completed and are on sale.

Roger Beckmann

A sonagram of a magpie lark's call made by Dr Peter Fullagar from a recording in the catalogue of bird sounds. Two calls are shown.



A female magpie lark, or peewee, calling.

Wildlife sound recordings and the latest Australian catalogue. P.J. Fullagar. *International Association of Sound Archives (Australian Branch) Newsletter* No. 22, 1985, 3–11.