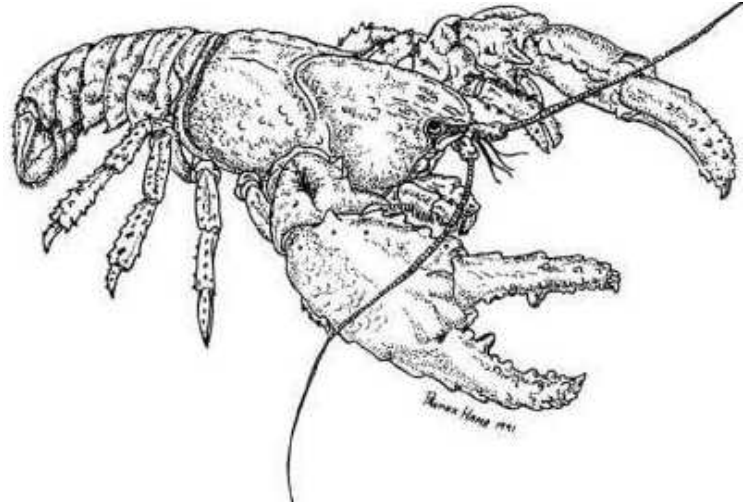


Disjunct Naturalists

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Chirp4: Newsletter of 'A sound Idea': acoustic bird monitoring *August 2010*

by **Sarah Lloyd**



Forest Raven (*Corvus tasmanicus*)

Raven rave

The Forest Raven (*Corvus tasmanicus*) is the largest, loudest, and therefore the most noticeable of all the songbirds in Tasmania. It is found throughout the island except the far southwest and has featured on almost every recording. In some instances its song is distant and unobtrusive; on other occasions it all but drowns out the sounds of other birds.

Like many other members of the Corvidae family to which it belongs, the forest raven has a complex social system and a range of very expressive songs and calls.

The most common vocalisation is its territorial call; a low, slow *karr...karr...karr*, with the final note drawn out and descending. Other forest raven calls have not been well studied but are likely to be similar to those of the closely related Australian Raven (*C. coronoides*). In that species cacophonous calling can occur when young birds stray from their natal

territories and spark neighbourhood disputes. Male Australian Ravens who have lost a partner will call incessantly to attract a new mate from a flock of non-breeding birds. They also emit a returning home call, a mobbing call, and various alarm calls. Other vocalisations include harsh notes, short deep barks (one resembling a duck's *quack*) and soft guttural croaks. Antiphonal singing, where birds sing different notes alternatively, sometimes occurs between members of mated pairs.

Forest Ravens form monogamous pairs and defend a breeding territory of around 30 hectares. They lay 3-5 eggs in a large nest of sticks lined with bark, hair or wool built high in the fork of a living or dead tree.

Many people report that large flocks of ravens move into their area at certain times of the year. These flocks are believed to be made up of young unpaired males that are yet to reach sexual maturity (i.e. they are less than three years old), or non-breeding adults that have either lost their territory because they are uncompetitive or have not been able to establish territories successfully because of high raven density.

Flocks are particularly noticeable when huge numbers of birds converge on paddocks or grasslands to forage on ground-dwelling invertebrates. They also congregate to feed on road-killed animals or at rubbish tips. Rather than being from one flock, however, these large flocks are more likely to be a combination of smaller flocks that are attracted to a rich source of food and will disperse once the food has been depleted.

The Corvidae family is believed to have originated in Australia when it was isolated from Asia. When the Australian continent drifted northwards about 20-30 million years ago the corvids spread to Asia where they evolved into different forms that have spread to other continents. They occur throughout the world except for the southern part of South America, the Arctic and Antarctica. The Australian members of the Corvidae family are all in the genus *Corvus* and are large, glossy black birds with long stout bills.



European Magpie

Other members of the family include the colourful magpies (unrelated to the Australian Magpie) and jays of Asia, Europe and America.

The Corvidae are believed to be the most highly evolved and intelligent of all the birds. They are extremely adaptable, are able to exploit a wide range of resources and are capable of solving complex problems.

Experiments have shown that, like elephants, dolphins and apes, the common European magpie (*Pica pica*) can recognise its own reflection. This has been tested by placing a mark on the body of the bird that could only be seen when it looked in a mirror. Observers were convinced that the bird understood that the image was a reflection of itself when it started scratching at the mark on its body in an attempt to remove it.

New Caledonian Crows (*Corvus moneduloides*) manufacture tools in their daily search for food. They have long been observed dropping snails and candle nuts on hard surfaces to break them. They also use twigs to probe under bark and into hollows to retrieve invertebrates. Tools include 'knives' that they cut from stiff leaves, or twigs and stiff stalks of grass that they have smoothed and bent to access various items of food.

Crows in Japan have been observed dropping nuts onto busy intersections with traffic lights. They wait with pedestrians and then retrieve crushed nuts when the traffic stops.

Crows in Queensland have learned how to eat cane toads by avoiding the

toxins. They flip the cane toad on its back and vigorously stab the throat where the skin is thinner than on the rest of its body. They then consume the non-toxic innards.

Ravens, rooks and jackdaws are... crows in all but name' (Goodwin 1976)

Crows and ravens are in the genus *Corvus*, and only slight differences separate the species. Throughout the world the name 'raven' applies to larger members of the genus. In Australia the ravens have pale grey bases to the feathers of head, neck and body whereas in crows these feathers are white at the base. Ravens have better developed hackles on their chin and throat than crows and these hackle feathers are variously shaped, being pointed in the Australian Raven (see pix at right) and bifurcating in the other species.



Australian Raven

Three species of raven and two species of crow breed in Australia. In many parts of the country where two or three corvids occur together identification can be extremely difficult. In Tasmania corvid confusion is avoided because only the forest raven, which is the largest corvid in Australia and the one with the deepest bass call, occurs on the Tasmanian mainland. It also occurs on the offshore islands, in southern Victoria and south east New South Wales. The Forest Raven, which used to be absent from King Island where the resident corvid was the little raven, was first recorded there in February 1979. By 1981 it was common on the east coast and by 1997 flocks of several hundred were observed.

Once they have finished breeding in early January Forest Ravens, like other members of the Corvidae family, undergo a complete moult. Ravens are particularly obvious while moulting – not only because large black feathers litter the ground but also because they stay within a small area and call loudly.

Feather maintenance



All birds spend a lot of time keeping their feathers in peak condition. Feathers are not only vital for flight and insulation but their colour can indicate the age and sex of a bird and it can also be a sign of the health of an individual – and thus the quality of its habitat.

In some species feather colour can indicate the age and sex of a bird. For example, adult female Superb Fairy-wrens are grey/brown on their head and back with lighter underparts. Their eye-ring and lores (between the eye and the base of the upper beak) are reddish/brown as is their bill. When not in their bright blue breeding plumage adult males resemble adult females but for their black bill and lores. Immature non-breeding males are almost inseparable from the adult females except for their blackish bill and dark blue tail. They attain their bright plumage during their first breeding season.



Superb Fairy Wren (F)

Most birds take regular baths to help keep their feathers clean. In the bush or garden a procession of resident species will cautiously approach a shallow puddle (or bird bath) to start this routine activity. (Birds are particularly vulnerable to predation by cats or raptors while bathing, so baths should be placed where birds can bathe in safety.) Bathing in water often precedes preening and oiling and increases the efficiency of these activities.

Oil produced in a gland (the uropygial or preen gland) located near the base of

the tail is used to condition the skin and feathers. While waterproofing is achieved by the microstructure of the feathers, i.e. the fine barbs, ridges and intervening gaps that shed water effectively, oiling seems to enhance this ability and makes the feathers last longer.

Birds use their bill to access the oil and spread it to their feathers. In those inaccessible places such as around the head oiling is done with the feet after oil has been transferred to them from the bill. Oily secretions may control the growth of undesirable fungi while promoting favourable parasite-inhibiting fungi. There is some debate over whether the oil secretions, once exposed to sunlight, are a source of Vitamin D when ingested during preening.

During preening birds take the base of the feather in their bill and nibble along the feather shaft, cleaning off dirt and stale oil. They also draw the feather through the bill to smooth the tiny barbs that lock together much like the teeth of a zipper.



Silvereyes allopreening

Like other animals, birds become infested with parasites that can adversely affect their health. Many species preen each other in an activity known as allopreening. This not only rids parasites from those hard to access places such as around the head and neck, it probably also serves to strengthen social bonds.

Birds also take dust baths or sun themselves. While these activities are not fully understood, they probably help to clean the feathers and kill small parasites such as mites. Sunning may be analogous to our household cleaning activities such as placing soft furnishings and bedding outside on sunny days and exposing them to ultraviolet light. This is known to be the most effective way to control house mites that can cause allergies including asthma.

'Anting' is another behaviour thought to control parasites. Passive anting involves birds sitting among a swarm of ants and allowing them to move over their bodies and in between their feathers. Active anting involves holding an ant in the bill and using it to rub the feathers. They usually choose members of the Formicinae that eject formic acid, but they will also use Dolichoderina which produce repugnant anal fluids. Other invertebrates including millipedes as well as plant material and even cigarette butts are used to rub feathers.

Feathers gradually wear as a bird goes about its daily life so all birds moult regularly. Some birds have a complete moult once a year; other birds undergo partial moults twice a year. Birds that live in particularly harsh habitats such as wind-blown sandy deserts or in areas such as marshlands where they are moving among abrasive vegetation have complete moults twice a year. If a bird loses a feather between moults it grows back immediately.

Producing new feathers takes energy so moulting does not coincide with other energetically taxing activities such as breeding or migration. Furthermore, because birds are unable to fly efficiently while moulting they are more vulnerable to predation at this time and usually remain within a small area until their moult is complete. Moulting in birds usually goes unnoticed, unless it is by that most conspicuous of passerines, the Forest Raven.

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