Vertebrate Fauna and its management on an urban block in northern New South Wales

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ABSTRACT

Town planners have traditionally drawn lines on maps to demarcate areas zoned for residential, industrial, recreational and conservation purposes. In principle, people's homes should be confined to one zone, parkland to another and native plants and animals to yet another. In practice this system breaks down, particularly when addressing the problems of conserving biodiversity. Experience has shown that a small representative sample of a plant community in a reserved area is not sufficient to maintain viable populations of plants and animals into the future. Vegetation and wildlife communities have a reduced species diversity when they are isolated from other remnants by extensive water, urban or agricultural land barriers (Diamond 1975). To reduce the isolation of natural plant and animal communities in reserves the preservation of biodiversity in the garden can assist. Already many landcare and related schemes are attempting to restore some of the loss of the natural values in agricultural areas. This can be extended to your own garden with surprising success, but there are costs. The costs and benefits are the subject of this paper.

Costs range from being considered rather odd for not wanting to mow your native grasses or for creating such a fire hazard with all that `fuel' or mulch. Other costs include living without dogs and cats, herbicides and insecticides (except the natural ones such as insects, geckoes and bandicoots), and the withdrawal symptoms following your sale of the lawnmower. (Can you really exist without the hours and hours spent mowing, breathing in the fumes and consuming scarce fossil fuels?).

On the positive side the sense of achievement that you feel as you watch native animals move back into your yard now that it is wildlife friendly compensates for all the costs. You don't need to keep pets, whether introduced or native. Much of the enjoyment gained from owning pets can be obtained from sharing 'your space' with myriad native creatures surviving in your yard because you created the right conditions for them. You don't have to feed them, restrain them or clean up after them. You can go on holidays and they will look after themselves. It might just make the difference between local extinction and survival for some species.

The development of our garden within the village of Coutts Crossing is a living example of how the above concept can be realised.

Introduction

I moved, with my wife, Val, and three daughters, into a residence at 56 Armidale Road Coutts Crossing in August 1985. The size of the property is 1054m^2, a reasonably sized urban block. The yard was typical of Coutts Crossing with extensive lawns of introduced grasses (mainly Carpet Grass *Axonopus affinis*), one small Bottlebrush *Callistemon viminalis* 'Captain Cook', and a variety of introduced herbs such as Mother-in–law's Tongue *Sansevieria trifasciata*. Three eucalypts (two Large-leaved Spotted Gums *Corymbia henryi* and one Forest Red Gum *Eucalyptus tereticornis*) were the only obvious natural vegetation. To provide a more aesthetic garden, to provide shade and to provide wildlife

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habitat we purchased some trees and shrubs from a nursery and from the Clarence Valley Afforestation Association. These were native plants known to occur locally but their provenance was unknown. After some months I noticed that some wattles were shooting from rootstock that had been regularly mown on the 'nature strip' out the front of our house. I encouraged these plants and then found that a number of native grasses, rushes and sedges were also present. I ceased mowing these, however I still mowed around them to control the introduced grasses. In the backyard a few Paperbarks *Melaleuca nodosa*, which had been similarly mown began to appear. I placed stakes near each of them and the neighbours thought that I had gone completely mad. As the planted trees and shrubs grew we developed areas of leaf litter around them and the large eucalypts and it wasn't long before native rainforest plants were germinating in the bed under the large Forest Red Gum. Small-leaved Tuckeroo *Cupaniopsis parvifolia*, Murrogun *Cryptocarya microneura*, Simple Water Vine *Cissus antarctica* and Large-leaved Mock-olive *Notelaea longifolia*, were the main species. As these grew and others germinated we learnt about the importance of local provenance plants in maintaining biodiversity. A number of the trees that I had planted were then seen as 'the enemy' with their non-local genes. After many hours of back-breaking work most of the plants of non-local provenance were removed. A new policy was implemented – all new plantings would be of local provenance plants. The definition of a local plant was considered to be a plant from the Clarence Valley, preferably from the Coutts Crossing area.

Areas of remnant bushland, a pine plantation, school grounds and sporting fields occur within 500 m of the property and local parks and bushland areas have been largely protected and rehabilitated since at least 1991. In the middle of 1992 a couple of aviculturists moved into the property directly behind the site and their aviaries and associated seed waste has provided additional, artificial habitat. Frog habitat has been provided by an intermittent pond created by rainfall events in the roadside drain immediately adjacent to the site. No formal frog pond has been constructed.

Methods

To document the diversity and seasonal presence of local fauna a daily species list was initiated from the first day of residence. This daily listing continues to the present day. The year that a species was first recorded in the backyard was determined from the daily data. These dates indicate the first year in which a species was actually recorded within the yard, or within 50 metres of the boundary. Species known from a distance of up to 300 m from the property, and likely to use the yard, were also listed. Many species may have been present in the local area for some months or years before actually being observed within the yard.

Results

A total of 132 vertebrate species has been recorded at the property, comprising 7 mammal, 94 bird, 17 reptile and 14 amphibian species (Table 1). An additional 10 species (6 mammals, 3 birds and 1 reptile) are known from within 300 m of the site. Twenty-three species were noted in the first year of residence (from August to December) including a number of common species (Crested Pigeon, Rainbow Lorikeet, Blue-faced Honeyeater, Noisy Miner, Magpie-lark, Black-faced Cuckoo-shrike, Grey Butcherbird, Pied Butcherbird, Australian Magpie, and Common Grass Skink). Twenty additional species were recorded in the second year, also including a number of common species. Between 2 and 14 species per year have been added to the list in subsequent years (Figure 1).

Two threatened species, the Square-tailed Kite and Grey-headed Flying Fox and one provisionally listed species, the Grey-crowned Babbler have been recorded at the yard. Four additional threatened species, the Koala, Squirrel Glider, Swift Parrot and Masked Owl are known from within 300 m of the site. The Swift Parrot was observed from the yard and the Masked Owl has been heard from the site a few times.

Six introduced species (3 mammals and 3 birds) and two non-local native species(Long-billed Corella and Little Corella) were recorded. The introduced species were Rabbit, Black Rat, House Mouse, House Sparrow, Spotted Turtle-Dove and Common Myna.

Discussion

The results of the daily survey indicate that a great variety of vertebrate fauna species inhabits, or visits, the property. This is considered to be due, mostly, to the provision of habitat by the

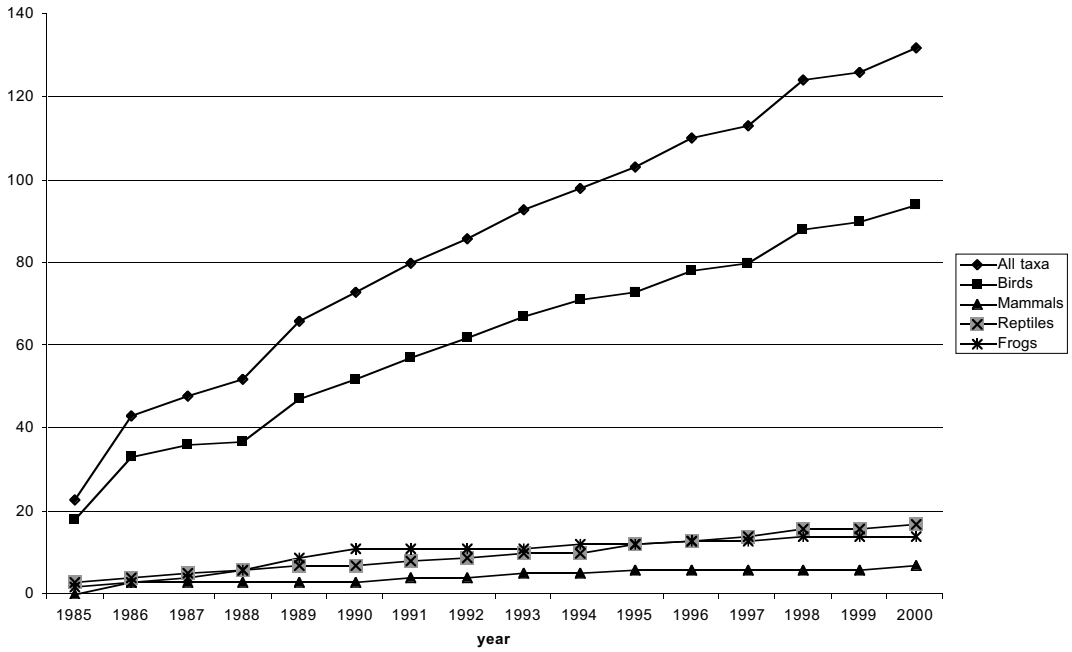

Figure 1. Cumulative species list of vertebrate fauna for 56 Armidale Road Coutts Crossing from 1985 to 2000.

Table 1. Cumulative species list of vertebrate fauna for 56 Armidale Road Coutts Crossing from 1985 to 2000.

1985
Crested Pigeon *Ocyphaps lophotes*
Bar-shouldered Dove *Geopelia humeralis*
Rainbow Lorikeet *Trichoglossus haematodus*
Scaly-breasted Lorikeet *Trichoglossus chlorolepidotus*
Common Koel *Eudynamys scolopacea*
Sacred Kingfisher *Todiramphus sanctus*
Striated Pardalote *Pardalotus striatus*
Little Wattlebird *Anthochaera chrysoptera*
Little Friarbird *Philemon citreogularis*
Blue-faced Honeyeater *Entomyzon cyanotis*
Noisy Miner *Manorina melanocephala*
Magpie-lark *Grallina cyanoleuca*
Black-faced Cuckoo-shrike *Coracina novaehollandiae*
White-bellied Cuckoo-shrike *Coracina papuensis*
Grey Butcherbird *Cracticus torquatus*
Pied Butcherbird *Cracticus nigrogularis*
Australian Magpie *Gymnorhina tibicen*
Torresian Crow *Corvus orru*
Verreaux's Skink *Anomalopus verreauxii*
Striped Skink *Ctenotus robustus*
Common Grass Skink *Lampropholis delicata*
Green Tree Frog *Litoria caerulea*
Eastern Dwarf Tree Frog *Litoria fallax*
1986
Grey-headed Flying-fox *Pteropus poliocephalus* **T**
*Black Rat *Rattus rattus*
*Rabbit *Oryctolagus cuniculus*
Australian White Ibis *Threskiornis molucca*
Peaceful Dove *Geopelia striata*
Tawny Frogmouth *Podargus strigoides*
Dollarbird *Eurystomus orientalis*
Noisy Friarbird *Philemon corniculatus*
Yellow-faced Honeyeater *Lichenostomus chrysops*
White-throated Honeyeater *Melithreptus albogularis*
Brown Honeyeater *Lichmera indistincta*
Grey-crowned Babbler *Pomatostomus temporalis* **T**(provisional)
Golden Whistler *Pachycephala pectoralis*
Rufous Whistler *Pachycephala rufiventris*
Grey Fantail *Rhipidura fuliginosa*
Spangled Drongo *Dicrurus bracteatus*
Satin Bowerbird *Ptilonorhynchus violaceus*
Welcome Swallow *Hirundo neoxena*
Eastern Small-eyed Snake *Rhinoplocephalus nigrescens*
Dusky Toadlet *Uperoleia fusca*
1987
Pacific Baza *Aviceda subcristata*
Australian King-Parrot *Alisterus scapularis*
*House Sparrow *Passer domesticus*
Robust Velvet Gecko *Oedura robusta*
Bleating Tree Frog *Litoria dentata*
1988
Spotted Pardalote *Pardalotus punctatus*
Eastern Bearded Dragon *Pogona barbata*
Common Eastern Froglet *Crinia signifera*
Rocket Frog *Litoria nasuta*
1989
White-faced Heron *Egretta novaehollandiae*
Galah *Cacatua roseicapilla*
Eastern Rosella *Platycercus eximius*
Pallid Cuckoo *Cuculus pallidus*
Little Bronze-Cuckoo *Chrysococcyx minutillus*
Willie Wagtail *Rhipidura leucophrys*
Scarlet Honeyeater *Myzomela sanguinolenta*
Mistletoebird *Dicaeum hirundinaceum*
Olive-backed Oriole *Oriolus sagittatus*

Pied Currawong *Strepera graculina*
Fence Lizard *Cryptoblepharus virgatus*
Brown-striped Frog *Limnodynastes peronii*
Spotted Grass Frog *Limnodynastes tasmaniensis*
Ornate Burrowing Frog *Limnodynastes ornatus*

1990

Buff-banded Rail *Gallirallus philippensis*
Musk Lorikeet *Glossopsitta concinna*
Fan-tailed Cuckoo *Cacomantis flabelliformis*
Shining Bronze-Cuckoo *Chrysococcyx lucidus*
Restless Flycatcher *Myiagra inquieta*
Dainty Green Tree Frog *Litoria gracilenta*
Peron's Tree Frog *Litoria peronii*

1991

*House Mouse *Mus musculus*
Rose Robin *Petroica rosea*
Red-backed Fairy-wren *Malurus melanocephalus*
Eastern Spinebill *Acanthorhynchus tenuirostris*
Double-barred Finch *Taeniopygia bichenovii*
Square-tailed Kite *Lophoictinia isura* T
Tussock Rainbow Skink *Carlia vivax*

1992

Brown Goshawk *Accipiter fasciatus*
Australian Hobby *Falco longipennis*
Laughing Kookaburra *Dacelo novaeguineae*
Superb Fairy-wren *Malurus cyaneus*
Figbird *Sphecotheres viridis*
Common Tree Snake *Dendrelaphis punctulata*

1993

Swamp Rat *Rattus lutreolus*
Little Lorikeet *Glossopsitta pusilla*
Red-browed Finch *Neochmia temporalis*
White-winged Chough *Corcorax melanorhamphos*
Brown Falcon *Falco berigora*
*Common Myna *Acridotheres tristis*
Yellow-faced Whipsnake *Demansia psammophis*

1994

Collared Sparrowhawk *Accipiter cirrhocephalus*
*Little Corella *Cacatua sanguinea*
Sulphur-crested Cockatoo *Cacatua galerita*
Channel-billed Cuckoo *Scythrops novaehollandiae*
Broad-palmed Frog *Litoria latopalmata*

1995

Common Brushtail Possum *Trichosurus vulpecula*
White-headed Pigeon *Columba leucomela*
Budgerigar *Melopsittacus undulatus*
Eastern Blue-tongued Lizard *Tiliqua scincoides*
Martin's Skink *Eulamprus martini*

1996

Common Bronzewing *Phaps chalcoptera*
*Long-billed Corella *Cacatua tenuirostris*
Southern Boobook *Ninox novaeseelandiae*
Rufous Fantail *Rhipidura rufifrons*
Striped Honeyeater *Plectorhyncha lanceolata*
Common Garden Skink *Lampropholis guichenoti*
Northern Banjo Frog *Limnodynastes terraereginae*

1997

Jacky Winter *Microeca fascinans*
White-throated Gerygone *Gerygone olivacea*
Red-bellied Black Snake *Pseudechis porphyriacus*

1998

Yellow-tailed Black-Cockatoo *Calyptorhynchus funereus*
Brush Cuckoo *Cacomantis variolosus*
Black-faced Monarch *Monarcha melanopsis*
Leaden Flycatcher *Myiagra rubecula*
Brown Thornbill *Acanthiza pusilla*
Lewin's Honeyeater *Meliphaga lewinii*
Silvereye *Zosterops lateralis*
White-breasted Woodswallow *Artamus leucorynchus*
Sand Monitor *Varanus gouldii*
Carpet/Diamond Python *Morelia spilota (spilota x variegata)*
Laughing Tree Frog *Litoria tyleri*

1999

Wonga Pigeon *Leucosarcia melanoleuca*
Eastern Yellow Robin *Eopsaltria australis*

2000

Common Ringtail Possum *Pseudocheirus peregrinus*
Grey Goshawk *Accipiter novaehollandiae*
*Spotted Turtle-Dove *Streptopelia chinensis*
Grey Shrike-thrush *Colluricincla harmonica*
Cicadabird *Coracina tenuirostris*
Three-toed Skink *Saiphos equalis*

Total 132

Species recorded within 300 m and possibly using yard

Swift Parrot *Lathamus discolor* T
Masked Owl *Tyto novaehollandiae* T
Yellow-rumped Thornbill *Acanthiza chrysorrhoa*
Koala *Phascolarctos cinereus* T
Sugar Glider *Petaurus breviceps*
Squirrel Glider *Petaurus norfolcensis* T
Feathertail Glider *Acrobates pygmaeus*
Little Red Flying-fox *Pteropus scapulatus*
White-striped Mastiff-bat *Nyctinomus australis*
Worm snake *Ramphotyphlops wiedii*

Total 10

KEY
* = introduced species
T = Threatened Species listed on schedule to *Threatened Species Conservation Act, 1995.*

planting or revegetation of local native plant species, including grasses, sedges and rushes, the presence of rocks and logs for ground fauna and the absence of domestic animals, such as cats and dogs. Some species are likely to be present (or recorded more regularly) due to the proximity of other features which occur outside of the yard. These include a pine forest, which would attract the Yellow-tailed Black-Cockatoo, and bird aviaries, which would attract lorikeets, rosellas, King-Parrot, pigeons, doves and raptors. It is likely that these birds would be present in the

absence of the aviaries but their regular occurrence is almost certainly due to this factor.

Small bird species have become more frequent within the yard in the past few years. Species such as the Shining Bronze-Cuckoo, Eastern Spinebill, Red-backed Fairy-wren and Red-browed Finch were not recorded until the early 1990's, with the Rufous Fantail, Striped Honeyeater, White-throated Gerygone, Leaden Flycatcher, Silvereye, Eastern Yellow Robin and Grey Shrike-thrush being absent until the late 1990's-early 2000. Despite being recorded as early as 1986, both the Rufous Whistler and Golden Whistler have only been regular oc-cupants of the yard in the past few years. This is due to the large amount of cover being provided by the small trees and shrubs that have now reached a size where small birds can escape the attacks of pugnacious birds such as the Noisy Miner or predators, such as the Collared Sparrowhawk.

The provision of natural habitat has the added advantage of making the site less suitable for introduced species, especially birds. The Rabbit has not been recorded for many years, the Black Rat and House Mouse occur annually during the cooler months, while introduced birds are virtually absent. A large (>100 individuals) population of the House Sparrow inhabits the older section of the village where native trees are scarce and food scraps are present as a result of the presence of the general store. The House Sparrow has been observed visiting the yard on 16 occasions between September 1987 and December 1999. Visits have involved mostly single individuals, with occasional pairs. At every observation the birds were observed behaving in a nervous manner. Visits were of short duration, usually less than one hour. The presence of Pied and Grey Butcherbirds, and the very aggressive Noisy Miner, probably explains the sparrows' behaviour. The Spotted Turtle-Dove has been observed in the local area on 33 occasions, (during 9 separate periods with breaks of greater than one month) but has visited the yard only once, and then not until 2000. In comparison the Bar-shouldered Dove and Peaceful Dove are regularly observed in the yard. One Common Myna visited the yard for a few days in November 1993 and hasn't been observed since. An increase in records of this species on the North Coast in recent months may mean that visits could become more regular, although the natural vegetation within the yard is likely to be less attractive to it.

People who like birds are tempted to feed them in an attempt to have them stay in their yards longer, to be more visible and to 'help' the birds survive. While this is an admirable attitude it is often counter productive for the local bio-diversity and the individual birds themselves. Feeding birds can upset subtle ecological balances where larger birds, such as the Rainbow Lorikeet, Australian King-Parrot, Australian Magpie and Pied Currawong, dominate the yards to the detriment of smaller birds (pers. obs.). Natural checks on population, such as harsh winters, are removed, allowing a greater number of young birds to survive. This is apparently the reason that the Pied Currawong has become a serious threat to other smaller bird species as a predator of nestlings and eggs. Larger birds become more common and smaller birds dis-appear. The planting of non-local native plants, in particular *Grevillea* species, can also have the same effect by encouraging the Noisy Miner, Rainbow Lorikeet, Blue-faced Honeyeater and friarbird species in 'unnatural' concentrations.

Another problem with feeding birds is the resultant spread of disease. Concentrating a number of birds at feed trays causes birds to eat where others have defecated. Beak and feather disease in parrots is easily spread in this manner. It is a real problem in the Coutts Crossing area, where a number of residents feed the parrots. The third problem is that often people feed birds with food that can do them harm. Honey can carry fungal diseases, and processed foods such as sugar and bread are not suitable for wild animals. The safest way to provide for the local birds is to plant or regenerate the local plant species, which provide all the requirements for the local wildlife. With birds feeding and defecating throughout the yard rather than in one or two locations the threat of disease is reduced. The provision of a bird bath, located in a suitable site with protection from predators is preferable to providing a feed tray. The water should be changed daily, or at least every couple of days, as disease can also be spread in water.

The structure of the vegetation determines the type of species that will inhabit the yard. It is common for a yard in northern New South Wales to consist of extensive lawns with scattered eucalypts and an understorey of hybrid native and introduced garden plants. *Grevillea* species often predominate as they are popular as 'bird trees'. The result is a structure that is vastly different to that occurring naturally, where either the shrub layer or

grasses were common. The new structure is ideal for adaptable and moderately large species, such as the Noisy Miner, Blue-faced Honeyeater, Rainbow and Scaly-breasted Lorikeets and friarbirds. The large, aggressive, birds compete with smaller species for food resources and frequently repel them from an area. The reputation that the Noisy Miner (and its relative the Bell Miner) has as an aggressive defender of its territory against most other species has been well documented. Dow and Whitmore (1990) stated "(Noisy) Miners display remarkably unrestrained aggression toward members of their own and other species." Many species of bird prefer a shrub layer that provides, not only a sufficient food resource, but also a visual screening from predators and larger aggressive birds. The increase in new species during 1998 can best be explained by the fact that the structure of the understorey vegetation had reached a stage where cool shady habitat was being provided for wet forest species such as the Brush Cuckoo *Cacomantis variolosus*, Black-faced Monarch *Monarcha melanopsis,* Brown Thornbill *Acanthiza pusilla,* Lewin's Honeyeater *Meliphaga lewinii* and Silvereye *Zosterops lateralis*. It is interesting to note that the Lewin's Honeyeater has been a regular winter visitor to the yard since first being recorded in 1998. Most Grevilleas do not provide this type of shady, screening habitat and therefore when small honeyeaters, such as the Eastern Spinebill and Scarlet Honeyeater seek nectar at their flowers they are often observed by larger honeyeaters and attacked. The Brown Honeyeater appears to be less affected in this manner (pers. obs.). The flowers of the Grevillea species commonly grown in gardens are large and are produced above the foliage and the foliage itself is usually narrow or divided. In comparison bottlebrush, such as *Callistemon viminalis*, have thicker foliage and flowers that are less exposed. This species is very popular with the Scarlet Honeyeater.

The importance of shrubs for woodland birds has previously been identified (Barrett 2000). As habitats become more complex and the number of layers of vegetation increases, the kinds of foraging substrates also increases and a larger number of bird species will occupy the habitat (Recher 1985).

The development of the yard as an ecosystem has not been without its ordeals. It was a real culture shock for local residents, who believed that the only good grass was a mown lawn or that being consumed by the local beef cattle. The council received complaints about the fire hazard and vermin protecting aspects of our native grasses. It would appear that there was no place in a 'nature strip' for nature. To protect society council regularly sent out its workers to control these dangerous grasses and herbs with a whipper-snipper. We lobbied council for many years until, at last, in 1999 Council gave me permission to manage the nature strip but imposed unrealistic conditions on this. This was only after a rare herb *Sauropus hirtellus* (now nominated for listing on Schedule 2 of the Threatened Species Conservation Act, 1995) was found growing where the council had been controlling the natural vegetation. Since then I have managed the site and its ecological values have been protected.

Despite the opposition, we now have a very ecologically friendly yard that, rather than detracting from our lifestyle, enhances it greatly. The trees and shrubs not only provide fauna and flora habitat, but shade, protection from the wind and privacy for the human inhabitants. The sight of an Eastern Spinebill bathing in a water dish near the back door, a Robust Velvet Gecko hunting cockroaches on the lounge room wall, or an adult male Australian King-Parrot munching on the fruits of a Large-leaved Hopbush *Dodonaea triquetra* near the front door or a Peron's Tree Frog foraging on the outside of the kitchen window are adequate compensation for any minor disadvantage experienced.

There are a number of steps involved in creating a natural bush garden which optimises biodiversity values.

These are:

1. Promote natural regeneration by selective mowing of lawns, creating leaf litter areas and removing weeds. Weeds are any plants that are not native plants of local provenance. The removal of non-local trees and shrubs may need to be staged to allow them to remain long enough to protect native plants in their early stages of growth;
2. Obtain local provenance plants for any plantings. These should be plants that are grown from seeds collected from as close to the site as possible, usually less than 5 km radius, or at least from the same catchment /river valley. Species chosen should be predominantly those occurring naturally at or near the site.
3. Remove any potential impacts of domestic pets, preferably by not owning a pet;
4. Resist the temptation to artificially feed wildlife. The provision of water is a reasonable compromise;

5. Avoid the use of pesticides;
6. Encourage neighbours and the local council to adopt the above principles and to promote the protection of any remnant natural vegetation in the local area. This will have flow-on benefits to your own yard.
7. Most importantly, enjoy living within a healthy, vibrant, ecosystem.

The development of the yard as an area of high biodiversity has cultural, as well as conservation implications. To live in a house surrounded by trees, shrubs, long grasses, sedges, areas of leaf litter, logs and rocks is culturally different to most Australians. If the biodiversity values of backyards are to be encouraged a cultural evolution will be needed. Areas of habitat are often seen with suspicion as harbouring "vermin" and the definition of vermin, itself, will also need to be reviewed. Snakes and native rats provide important ecological services and should not be considered vermin. I have experienced both types of cultural landscape provided by backyards and believe that a yard with extensive lawns and non-local trees and shrubs is an opportunity, in both a conservation and cultural sense, lost.

Conclusions

The results of this study provide clear evidence that the provision of habitat of importance to a large variety of fauna species, can be achieved within urban areas. The diversity of species would be influenced by the geographic position of the property, including its latitude and longitude, its proximity to areas of natural bushland, and the attitude of neighbours and local councils. Urban yards cannot ever replace the large areas of protected habitat contained within national parks and nature reserves but they certainly can provide links to larger natural areas and can provide habitat for a number of species that require only small areas, such as small reptiles, amphibians and some birds.

Acknowledgements

I wish to thank my wife Val who has worked hard to help convert a barren sterile yard into a bountiful ecosystem and Dan Lunney who offered advice and encouragement. My children should not be forgotten as they had to live in 'that feral place' with its geckoes scurrying across the walls, skinks in the hall and birds given priority in the yard. They survived, and hopefully learnt from the experience. And of course thanks to the many birds, mammals, reptiles, amphibians and invertebrates that share, and grace our home and yard.

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QUESTIONS & ANSWERS

PAUL HOPWOOD: I'm all in favour of your argument to plant native shrubs and food plants. But why should your argument be just do that? Why can't you do that and also feed? Because if you feed then you can interact in a much more positive way with the birds. So doing one is good; but why is doing the other necessarily bad?

GREG CLANCY: There are a number of reasons. One is that when you artificially feed you tend to change the population dynamics of a species. The ones you feed are the ones that you encourage, things like magpies. Everyone feeds their magpies around the place and the magpies are a pain in the neck sometimes, you know, if you got too many in the one place.

The other problem is disease. Everyone feeds the king parrots and the rainbow lorikeets; and particularly in our area - I'm not sure how widespread it is down here - beak and feather disease is rife, and you see the yellow feathers coming through on the king parrots. When people feeds the birds, an infected bird comes in, it defecates in the food, other birds come in, they pick it up.

MIKE ARCHER: Why wouldn't that happen on the Dodonaea?

GREG CLANCY: It possibly could except that the birds are not staying in that Dodonaea forever, they're moving around the garden feeding. You concentrate them into a feed and that's where they tend to feed and defecate and other birds come in. Most people that feed birds tend to feed them in one place. If you're going to feed birds - and I don't recommend it, but if people want to - then you've got to consider that and may be have a number of stations, move your stations around, and clean it out very regularly. You can avoid that but it's still a problem.

But most people haven't got the time or the inclination to do anything other than have a feed tray for their lorikeets and king parrots in one place; and beak and feather disease is a real problem. Also, feeding birds unnatural foods can be very unhealthy for them; not only birds, mammals and reptiles as well.

DAN LUNNEY: That's it for the day.