

Habitat for small birds and the Hunter's Hill bird corridor

Introduction

The Habitat Network project started when International Environmental Weed Foundation (IEWF) received a grant back in 2008. The grant was used to run workshops to talk to people about their local natural capital (native flora, fauna, soils, water quality, air quality and general landscape function), about what natural capital has been lost in the area and what we can do to restore some of our natural capital. At these workshops and through many discussions since that time it has been identified that many of us have noticed the disappearance of small native birds from our gardens – and in some cases from our local bushland areas. The Habitat Network project aims to reconnect people and habitats for the benefit of our native flora and fauna – and of course for people's enjoyment.

We, the Habitat Network, encourage all land managers, bushland workers and home gardeners to consider how to help small native birds and to undertake activities to create habitat and to reconnect habitat areas.

By adopting methods, such as planting Habitat Havens and Habitat Buffers, we can re-introduce habitat between bushland areas with the aim of eventually providing functioning native plant habitat corridors and connections. In the meantime we need to preserve some overgrown weedy areas, which are currently providing the protective habitat used by the small native birds.

We cannot guarantee that you will be able to attract small birds to your garden but if a small bird does come your way it is nice to know that it may find a safe haven. Of course birds are not the only animals that use habitats provided by native vegetation. Lizards, insects (such as native pollinators) and other animals may also come to visit your habitat areas.

The observations

We, the Habitat Network, talk to many people every week about habitat and the loss of small birds in our urban and rural areas. Inevitably the conversation will go along the lines of: "We used to get small birds in our garden but now all we see are..." noisy miners, Indian or common myna, currawongs, ravens and/or magpies.

Sometimes they say "We had small birds visiting us until our neighbour took out the overgrown vegetation at the back of their garden" or "until the land manager cleaned up the bushland behind our property."

And then they all ask "What happened to our small birds?" or "Where have the small birds gone?"

By small birds we are talking about superb fairy-wrens, variegated fairy-wrens, red-browed finches also known as firetails, eastern spinebills, eastern yellow robins, spotted pardalotes, white-browed scrubwrens, silvereyes and other "lbb's" (little brown birds).

What happened?

Habitat (with the right structure and complexity) for small birds is disappearing through “death by a thousand cuts”. Put simply, habitats for small birds are areas of vegetation (preferably native) of a sufficient size and density, which provide a safe living environment. These areas in turn need to be close enough to other areas with similar qualities to allow movement and interactions between different family groups of the same species of birds.

Every time we subdivide our land, and build bigger houses with neater gardens, we lose habitat and connections between habitat areas. When we remove that dense area of vegetation from our garden we lose habitat. When sufficient time for regeneration in our bushland is not allowed during weed removal, we put small birds under stress through loss of their habitat. When we widen another road or build another business park surrounded by concrete we lose more habitat and connections.

Small birds that are forced out into the open through loss of sufficiently dense habitat or by social necessity can be attacked and killed by larger birds and animals (such as dogs, cats, rats, fox, owls, etc). Young females or males (depending on the species) are forced out of a family to find a mate in another family. They will die if they have no protective cover to move safely to other habitat areas used by other populations or are too distant from another population. Also when the last breeding area is removed, within bushland or an urban area, small birds may survive a season or two but soon the population is lost due to no new recruitment, predation and/or competition from aggressive species such as noisy miner, common myna or the carnivorous grey butcherbird.

Many wrens and other small birds are fairly weak flyers and do not travel far. Some like the silvereye do travel long distances, however they still need suitable habitat on arrival at their destination. Some small bird species will stay within a reasonably small territory, which is restricted in size by the availability of suitable protective vegetation. Increasingly the suitable areas for small birds are becoming isolated with no suitable, protective connections with other bushland or habitat areas.

Bushland hazard reduction burns and habitat

Our urban bushland has hazard reduction burns (in a planned mosaic pattern) from time to time and the regrowth provides dense cover for our small birds. Within several months of a burn, a dense midstorey consisting of fast growing ferns, shrubs and vines has grown. This midstorey vegetation, which may be up to four metres in height by the end of the first year following the burn, allows small birds to move around safely and also to nest. Small birds have been observed flying just above the top of the ferns and vines (no more than one metre in height) and when threatened by a larger bird the small birds dart in under the protective cover.

Remnant native bushland, which has not been burnt for many years, may have a high canopy and an open understorey of scattered shrubs and grasses and not much protective habitat for the small bird populations. In this situation it may be beneficial to encourage authorities to undertake a strategic burn of part of this bushland area to stimulate regrowth of the midstorey.

Think of your local habitat

Think back to our parents' or grandparents' gardens. "Down the back" of the garden may have been the garden shed, the veggie patch, the climbing roses, some native plants, a bit of a wild area with perhaps some fruit trees and even some weeds. Here might have lived small birds, lizards, frogs and a wide variety of insects and perhaps even a snake. This interesting area with its microhabitats may also have provided a safe passage for small birds to safely move from property to property. The possums may have been happy there too as they would not have been reliant on finding a gap in the roof of the house to find shelter. What does your garden look like? What does your garden offer for habitat?

Next time you are out walking listen for the sounds of small birds. You may not be able to see them initially but you can usually hear their sweet little calls. When you do hear them, stop and look to see where the sound is coming from. Consider the structure and type of the habitat from which the calls are coming, and also think about the size of the area that these birds might **actually** be using. You may be surprised. Watch where they are feeding (often out in the open or in the canopy of tall shrubs or trees) and where they flit back to for safety (the dense midstorey).

What do small birds need? The method

The complex vegetation structure, which you will observe when watching small bird activity, with its many microhabitats in the upper, mid and lower layers, is what we need to protect and rehabilitate. The midstorey with its associated understorey of small shrubs, grasses and herbs; vines; rocks; fallen, hollow and decaying logs and branches is what we aim to recreate for linking small bird habitat areas.

When creating any habitat area we also need to consider the predators and other threats to small birds within an area and try to take these into account.

We can plant or regenerate small bird habitat, using one model, which has recently been developed, with assistance of bird experts, from observing the types of habitat that small birds use. This includes the use of planted **Habitat Buffers** and **Habitat Havens, and the protection of weedy habitat**. The aim is to create **Habitat Corridors** and expand existing habitat areas. The following explains these concepts in more detail.

Habitat Buffer

Steve Anyon-Smith (a bird expert through long-term observation) in Jannali, NSW, came up with the brilliant idea of providing a planted habitat buffer next to the bushland area in which he works as a volunteer. He planted a dense wall of spiky *Hakea* species along one edge of the reserve. *Hakeas* grow to about three metres in height, and due to their close spiky foliage allow only small birds to pass through. This habitat buffer, which is about two metres deep, not only provides food and shelter for small birds but also a nesting site for the red-browed finch (observed to house as many as 23 nests in one breeding season).

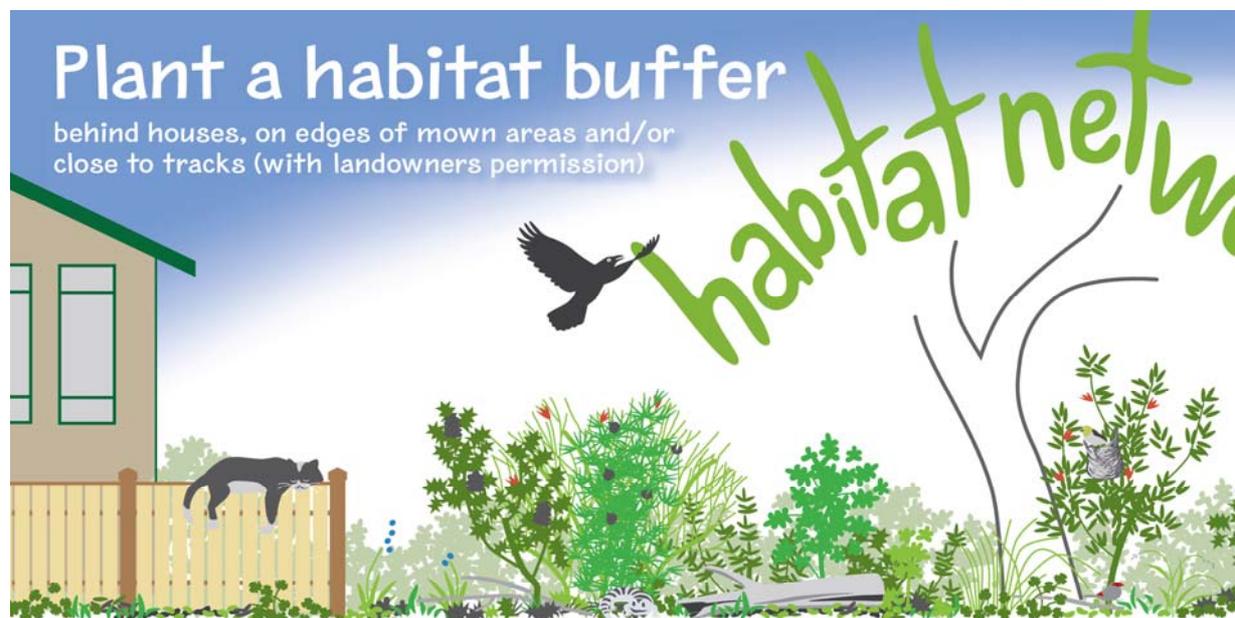
The Habitat Buffer also prevents bigger birds from flying directly into the lower areas of the bushland. Where the foliage reaches the ground it reduces access by dogs and cats (which may attack birds, lizards, etc) from neighbouring houses. The result is a bushland area behind the Habitat Buffer being a haven for small birds and other native animals.

A Habitat Buffer can be used by bushland managers to not only increase habitat for small birds but also to restrict access by people into sensitive areas. Habitat Buffers can also be used to expand bushland areas near mown areas and to protect embankments along water courses and roads.

In a garden this idea is easily reproduced by planting habitat plants along fence lines or even simply inter-planting within existing garden beds. Using spiky and/or dense local native species of plants, you can create a protective buffer for your garden. This buffer may discourage some of the larger, more territorial birds such as noisy miners from entering your garden.

Plants that we recommend for a Habitat Buffer include species of *Hakea*, *Bursaria*, *Banksia*, *Lambertia*, *Woolisia*, *Styphelia*, *Epacris*, *Daviesia* and *Dillwynia*, and also the prickly *Acacia ulicifolia*. If you are not in the Sydney region, follow the general principles and ask local experts, which could be your local Council or Landcare group, for a list of local native plants with similar qualities.

Asset protection zones behind dwellings need to be considered when planning a habitat buffer. It may not be appropriate to plant a habitat buffer because of the fire risk. If it is not appropriate then consider the benefit of encouraging native grasses as a food source in the area instead. Areas comprised of native grasslands, with scattered shrubs, can provide excellent food and foraging opportunities for small birds.



Plant a habitat buffer

behind houses, on edges of mown areas and/or close to tracks (with landowners permission)

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Planting a buffer of spiky habitat plants, such as *Hakea* and *Bursaria*, in selected areas around a bushland remnant may offer benefits, such as:

- protecting wildlife by reducing dog and cat access into bushland
- providing a protected nesting site (a habitat haven) for small birds
- directing larger more territorial birds, such as noisy miners and ravens to the tree canopy, away from the lower levels of vegetation used by small native birds and animals
- discouraging people from entering sensitive areas of bushland.

Other benefits:

- spiky plants reaching the ground provide a protective cover for lizards and other small native animals, and stop wind blown rubbish
- when planted close to a fence may add to security of residents by hampering access.

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Habitat Haven

In the absence of continuous bushland we need to connect bushland areas by creating either linear connections or islands of habitat, which can be used as 'stepping stones' from one area of remnant or planted native vegetation to the next. Small birds need protective cover to be able to move from one protective habitat area to the next. Young female fairy-wrens, for example, must move from the area where they were born to another in order to find a mate (and food supplies). These islands or Habitat Havens that we create may be in private gardens or in public space (with the permission of the land owner of course.)

A Habitat Haven (refer to diagram below) can be defined as a simplified re-creation of the structure and species composition of native vegetation required by small birds using local native plants. Small birds need a dense, closely planted, central area of tall shrubs in which to roost, possibly nest and to use as a refuge. Within and outside of this area they need a diverse mix of smaller shrubs, grasses and ground covers in which to forage for food. A small island of vegetation can also benefit from a vine scrambling over the top to create a protective cover. The central area does need a few spiky plants for added protective value. Consideration should also be given to minimising human disturbance and the threat from cats, dogs, rodents and bigger birds.

The size of this Habitat Haven can vary from a single paperbark tree, which in itself offers a dense canopy in which small birds can hide, to an area as large as you can manage. Paperbarks (*Melaleuca*) are excellent habitat plants for street tree plantings where there is sufficient space for their roots not to damage paving. The Habitat Haven diagram (below) describes a circle seven metres in diameter. The seven metre size is based on a typical planting in a school setting, which requires around 100 plants, but really, a Habitat Haven can be of any size or shape. Intermixing the layers is good too.

We encourage bushland managers to focus on areas which have been planted previously and to **'infill plant' with habitat specific plants**. By using infill planting in the centre of your planted area you can create pockets of suitable habitat for small birds in a short time. You can either infill plant throughout the entire area or just pick one or a few areas to thicken up. We encourage this infill planting method, because generally where an area is planted, no matter what you try to do, the plants end up planted about one metre apart. Infill planting ensures that there will be suitable dense areas of vegetation for small birds to use.

This principle can also be applied to home gardens. In a home garden you can infill plant with spiky shrubs within or around existing plants to create a dense protective area. By also planting a variety of native shrubs and ground covers in amongst your garden plants, you offer a wider selection of food opportunities for native bird and animal visitors to your garden.

Home gardens, verandas and courtyards can all contribute to creating corridors of habitat between bushland areas. Importantly they also provide corridors for the movement of our native pollinators such as native bees and bats, as well as many other organisms.

Planting a small bird habitat haven



Your habitat haven may be as big or small as your garden will allow. It may be a pie-shaped wedge in a corner or long and narrow or just the protective spiky circle.

An example A circle 7 metres across could have 3-17-36-44 plants (inner circle to outer).
100 plants in total.
Add extra plants to outer circles as available.

inner sanctum

Taller, softer shrubs 1-2 metres in height. Provides a safe haven away from bigger birds. A vine can provide protective cover. *Pomaderris, Grevillea, Ozothamnus, Leptospermum.*

protective circle

Spiky, protective shrubs 1-2 metres high, planted just over a stretched hand distance apart. *Hakea, Acacia ulicifolia, Bursaria, Banksia, Lambertia.*

biodiverse shrub circle

Small, attractive shrubs add interest to a garden for people, birds and animals. This layer provides food and shelter. *Dianella, native Geranium, Indigofera, Prostanthera.*

eating out

Mixed native grasses and ground covers offer a variety of foods from seeds to insects. *Pratia, native violet, native Geranium, Microlaena, Entolasia.*



Add value to your habitat

Logs, rocks—even suitable 'rubbish' such as ceramic pipes or pieces of concrete—provide important shelter for backyard wildlife.



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Protection of weedy habitat

When you go walking, even in relatively good bushland, take note of where the small birds can be heard and seen. Stop, look, listen and consider. Most small native birds by necessity are using the overgrown weedy areas not only for protection but also as a food source. Often the small birds are living in an area, which includes a cover of Lantana and maybe some weedy vines, and when they come out to feed may often be observed eating the seed or nectar of weeds, such as *Bidens pilosa* (farmers friend) or (for small native honey eaters) *Cestrum parqui* (green cestrum) as seen in the below photos. Privet stands can provide shelter for small birds, some of whom love the shady environment these stands provide.

It is important to ensure that these habitat areas, **which are in use by small native birds** are managed appropriately. Of course, we need to be reducing the number of weeds and stopping the further spread of the weeds, but not at the expense of losing our native biodiversity, ie our small native birds. Try to protect the habitat which is in use until such time as native habitat with similar attributes is available and being used for shelter and nesting. If small birds are known to be in a bushland area quiet and considered observations should be made BEFORE starting to remove the weedy vegetation. We cannot assume that if we remove the weedy habitat that the small birds will be able to find somewhere else nearby that provides refuge and a suitable nesting site.



Red-browed finch eating seed of Bidens pilosa (farmers friend)



Eastern spinebill eating nectar from Cestrum parqui (green cestrum)

Land owner's permission

Before undertaking any works outside of your own property you need to find out who is the owner or manager of the land and get their permission. It is best to always consult your local Council to ascertain what permissions need to be gained and if there are plans already in place for a given area.

Habitat Corridor – an example in northern Sydney

With urban consolidation in our urban bushland landscapes, it is important to reconnect our bushland areas to allow the free movement and dispersal of our native flora and fauna. This is important for facilitating genetic exchange and promoting

diversity through reproduction and recruitment, adaptation to climate change and variability, and the long-term survival of species.

The Habitat Network has been working since late 2008, in partnership with Hunter's Hill Council, to create a continuous small bird habitat corridor within the Municipality of Hunter's Hill. This corridor (see below) is planned to extend from the upper reaches of Tarban Creek, through reserves and along foreshore areas to Gladesville Hospital, and utilises the method detailed.



The green enclosed area shows the area within which is the Hunter's Hill small bird habitat corridor – it is also the southern section of the Hunter's Hill River to River Corridor (aerial photo provided by Hunter's Hill Council)

The Habitat Network has been networking with Hunter's Hill Council (HHC), the University of NSW (UNSW), the NSW Roads and Traffic Authority (RTA), NSW National Parks and Wildlife Service (NPWS), local residents, bushcare groups, Gladesville Hospital and Riverside Girls High School to implement this project.

As part of this small bird habitat project, the RTA is providing mulch and access to proposed planting areas within its land. UNSW has been funding bush regeneration activities and has undertaken habitat planting. Riverside Girls High School manages its areas of remnant bushland. NPWS has started a bushcare group at Bedlam Bay and will be managing this area specifically for small bird habitat, and Gladesville Hospital will support a planting group within the hospital grounds.

Hunter's Hill Council is managing all of their land in this corridor, with a focus on small bird habitat, and is working closely with all other interested parties. Hunter's Hill Council manages several bushcare groups within the corridor and has co-ordinated planting days associated with National Tree Day and the Growers for Greenspace project.

Another partner is the City of Ryde, which is managing the River to River Corridors Project, again in partnership with Hunter's Hill Council. This project, which is grant funded by the Environmental Trust and the Sydney Metropolitan Catchment

Management Authority, encompasses our small bird habitat corridor. The River to River Corridors Project is aiming to create two bushland and wildlife-enhancing corridors, which will connect the Parramatta River and Lane Cove River foreshore parks, with the Field of Mars Reserve and the Lane Cove National Park. This project does not use the habitat haven approach to urban bird habitat protection and creation.

The River to River Project also aims to engage the community, schools and private landholders to contribute to the creation and maintenance of these corridors over time.

Measuring our success

Dr Andrew Huggett, an ecologist and ornithologist has been commissioned as part of the River to River Corridors Project to undertake targeted bird surveys of different types of greenspace – bushland remnant, revegetated parkland, open parkland, and urban neighbourhood – across 40 sites in the Ryde-Hunters Hill corridor study area. This work aims to build a picture of the abundance, species richness and structure of bird populations and their use of habitat in and near the proposed corridors before and after plantings. This will allow monitoring of the effectiveness of these plantings in re-connecting key habitat for especially bush birds in these areas. This information will then be used to help improve the design of these interventions and their maintenance over time.

Kurtis Lindsay, who is a volunteer with the Habitat Network and with other organisations such as Birds Australia, a keen observer and currently completing his Honours Degree in conservation biology, has led a number of **bird surveys** for the Hunter's Hill small bird corridor, with guidance from Macquarie University lecturer Andrew Allen. All data collected by Kurtis has been stored in 'Eremaea Birds' (www.eremaea.com), a free online central database for bird records to which anyone can contribute. The data in this database is fed directly into the 'Atlas of Australian Birds' and into the 'Atlas of Living Australia'. Kurtis has also assisted with data collection for the River to River Corridors Project.

These habitat corridor projects are long-term projects. New plantings and connective habitat are being added to the corridors as and when funds are available, and care is being taken to not lose the area's habitat and biodiversity values when bushland management activities are undertaken.

Summary

Small native birds, such as the superb fairy-wren, variegated fairy-wren, red-browed finch, eastern spinebill, eastern yellow robin, spotted pardalote, white-browed scrubwren, silvereve and other “lbbs” (little brown birds), are the birds that people ‘used to see around’. Local extinctions are happening in many places in the suburbs. This loss is due to the expansion of the built environment and the consequent increased pressure on the natural environment. We can all do our bit to improve the habitat connections needed by small birds by putting some habitat back in our gardens and by working with local authorities to improve the habitat values of our bushland and linkages.

Article is written by Bev Debrincat, Co-ordinator of the Habitat Network and Executive Director of International Environmental Weed Foundation, refer to www.habitatnetwork.org for more information.

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