

Habitat and as an example the Hunter's Hill small bird corridor

Updated January 2018

Local extinctions are happening in our suburbs and in fragmented bushland areas. The Habitat Network is helping people do their bit for small birds and other native fauna by putting habitat back in gardens and by working with local authorities, schools and other habitat projects to improve the habitat values of our bushland and linkages.

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, silvereeye and other "lbbs" (little brown birds), are the birds that people 'used to see around'.

Habitat Network project started when International Environmental Weed Foundation (IEWF), a Sydney based not-for-profit organisation, see www.iewf.org, received a grant in 2008 to run community workshops about understanding and restoring local natural capital (native flora, fauna, soils, water quality, air quality and general landscape function). These workshops and subsequent discussions revealed that many of us have noticed the disappearance of small native birds from our gardens – and in some cases from our local bushland. From these ideas and other observations and advice Habitat Network was created with a focus on small birds as a way of connecting with people and as a way to reconnect people and habitats for the benefit of our native flora and fauna – and of course for people's enjoyment. Habitat Network has grown from an idea in 2008 to a group with now close to 800 members which includes schools, businesses, Councils, community groups as well as families and individuals. IEWF now is known as Habitat Network. Members although mostly in Sydney can also be found in other States of Australia (in urban and rural areas).

Habitat Network encourages all land managers, bushland workers and home gardeners to consider how to help small native birds and to create and reconnect habitat areas. Below is a description of the techniques which can be used and as a practical example details of a small bird habitat corridor that we have been working on with our partners since 2008.

Support materials, brochures and information can be found and printed from our website www.habitatnetwork.org. Our base is The Habitat, a community native plant nursery and food garden, at 251 Quarry Road, Ryde (open 10am to 4pm Wednesdays and Saturdays).

The observations

Conversations about the loss of small birds in our urban and rural areas inevitably 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 people 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?”

What happened?

Habitat with the right structure and complexity for small birds is disappearing through “death by a thousand cuts”. Increasingly the suitable areas for small birds are becoming isolated with no protective connections with other bushland or habitat areas. 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. When we widen another road or build another business park surrounded by concrete we lose more habitat and connections.

Small birds 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 through safely or are too distant from another population. 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.

Also when the last breeding area (i.e. area with suitable structure) 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.

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 would 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).

Bushland hazard reduction burns and habitat

Some 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.

Long-time unburnt bushland, may have a high canopy and an open understorey of scattered shrubs and grasses, but not much protective habitat for the small birds, so a managed burn (by your local authority) in part of the area may help re-establish appropriate habitat for small birds.

What do small birds need? The method

The complex vegetation structure, 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.

The model we promote has been developed, with assistance of bird experts, from observing the types of habitat that small birds use. It includes **Habitat Buffers** and **Habitat Havens, and the protection of weedy habitat**. The aim is to create **Habitat Corridors** and expand existing habitat areas.

Habitat Buffer

Steve Anyon-Smith (a bird expert with long-term observation experience) in Jannali, NSW, planted a dense wall of spiky *Hakea* species along one edge of the reserve where he works as a volunteer. 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 also be used / 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*, *Woolfsia*, *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. If it is not appropriate to plant a habitat buffer because of the fire risk, then there is a benefit to encouraging native grasses as a food source instead. 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)

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. Small birds need protective cover to be able to move from one 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). 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.

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 existing plantings and to **'infill plant' with habitat specific plants**. By using infill planting in the centre of your planted area you can create pockets of suitably dense 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. 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.

www.habitatnetwork.org

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, with a cover of Lantana and maybe some weedy vines, and when they come out to feed may choose 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..

It is important to ensure that these habitat areas, are managed appropriately. Of course, we need to reduce weed numbers and stop their spread, but not at the expense of our biodiversity, ie our small native birds. Quiet and considered observations should be made BEFORE starting to remove the weedy vegetation Try to protect the habitat which is in use until native habitat with similar attributes is available and being used for shelter and nesting. . 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.

We cannot guarantee that you will be able to attract small birds to your garden or habitat haven but if some small birds come your way it is nice to know that they will find a safe place to rest. Of course lizards, insects (such as native pollinators) and other animals will also benefit from your habitat haven.

Hunters Hill small bird habitat corridor

Habitat Network has been working since late 2008, in partnership with Hunter's Hill Council, to create a continuous small bird habitat corridor throughout the Municipality of Hunter's Hill, using the habitat haven approach. The original corridor extends from the upper reaches of Tarban Creek, through Tarban Creek Reserve, Riverglade Reserve and along foreshore areas under Tarban Bridge and Gladesville Bridge around through Betts Park, Gladesville Reserve and along to Bedlam Bay behind Gladesville Hospital (see map of original corridor below).

In 2010 the vision for this corridor was extended as part of the River to River Corridor which runs across to the Lane Cove River through Boronia Park to the Lane Cove River (see River to River project map below).

From 2016 the corridor has been extended to also include the Lower Parramatta River area which includes Kellys Bush, Clarkes Point including the Sydney Harbour Federation Trust lands.



The green enclosed area shows the area within which is the original 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 **original corridor** is 3.8 km in length and encompasses a number of land owners. The NSW Roads and Maritime Services (RMS) provide access to its lands for planting habitat connections. University of NSW (UNSW) has been funding bush regeneration activities and has undertaken habitat planting near its rowing facility. Riverside Girls High School manages its areas of remnant bushland. National Parks and Wildlife Service (NPWS) started a bushcare group at Bedlam Bay which has since been passed to Hunter's Hill Council to coordinate and is managed specifically for small bird habitat.

Hunter's Hill Council is managing all of their land in this corridor, with a focus on small bird habitat, and with Habitat Network is working closely with all other interested parties. Hunter's Hill Council manages 6 bushcare groups within the original corridor and has co-ordinated 12 or more major planting events some associated with National Tree Day and the Growers for Greenspace project. Individual residents have been approached and encouraged to plant small bird habitat in their gardens.

City of Ryde was a partner with Hunter's Hill Council for developing the **River to River Corridor (R2R)**. This project encompasses the original small bird habitat corridor and extends across St Joseph's College grounds, Boronia Park and Buffalo Creek to the Lane Cove River. The entire R2R corridor includes two bushland and wildlife-enhancing corridors (1 of which is in Hunter's Hill), connecting the Parramatta River and Lane Cove River foreshore parks, with the key habitat in Field of Mars Reserve and the Lane Cove National Park. The original R2R project did not use the habitat haven approach however Habitat Network was involved in running habitat planting workshops for this project and we are involved in ongoing activities. The R2R adds another 3.2 km to the Hunter's Hill small bird corridor.

In 2016 we won a grant with our partners Hunter's Hill Council and National Parks and Wildlife for **\$98,000 from the NSW Environment Trust to improve habitat along the Lower Parramatta River** from Bedlam Bay and Gladesville Hospital down to Clarkes Point in Woolwich extending the corridor by around another 2 km. This corridor is an extension of the Parramatta River Catchment Group's **Native Habitat Recovery in the Parramatta River Catchment Project** and is supported by **Greater Sydney Landcare Network**. The funding has facilitated community engagement throughout the corridor, weed removal and habitat extension and improvement. As at January 2018 planting events have been undertaken at Clarkes Point including the Sydney Harbour Federation Trust lands (3), Betts Park (1), Bedlam Bay (1), Bland Street Reserve (1) and Riverside Girls High (1) and planned for 2018 Clarkes Point (2), Kellys Bush (1), Gladesville Reserve (1), Betts Park (1) and Bedlam Bay (1).

As at January 2018 the Hunter's Hill small bird habitat corridor extends for a total of 9 km.

Measuring our success

At the start of the Hunter's Hill small bird habitat corridor project Kurtis Lindsay, then a volunteer with the Habitat Network now an environmental consultant, led a number of **bird surveys**, with guidance from Macquarie University lecturer Andrew Allen. All data collected by Kurtis was stored in 'Eremaea Birds' (www.ereamaea.com), a free online database for bird records. The data is fed directly into the 'Atlas of Australian Birds' and into the 'Atlas of Living Australia'. Kurtis also assisted with data collection for the River to River Corridors Project.

Dr Andrew Huggett, an ecologist and ornithologist was 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 project area. This work created a before and after picture of the abundance, species richness and structure of bird populations and their use of habitat in and near the proposed corridors.

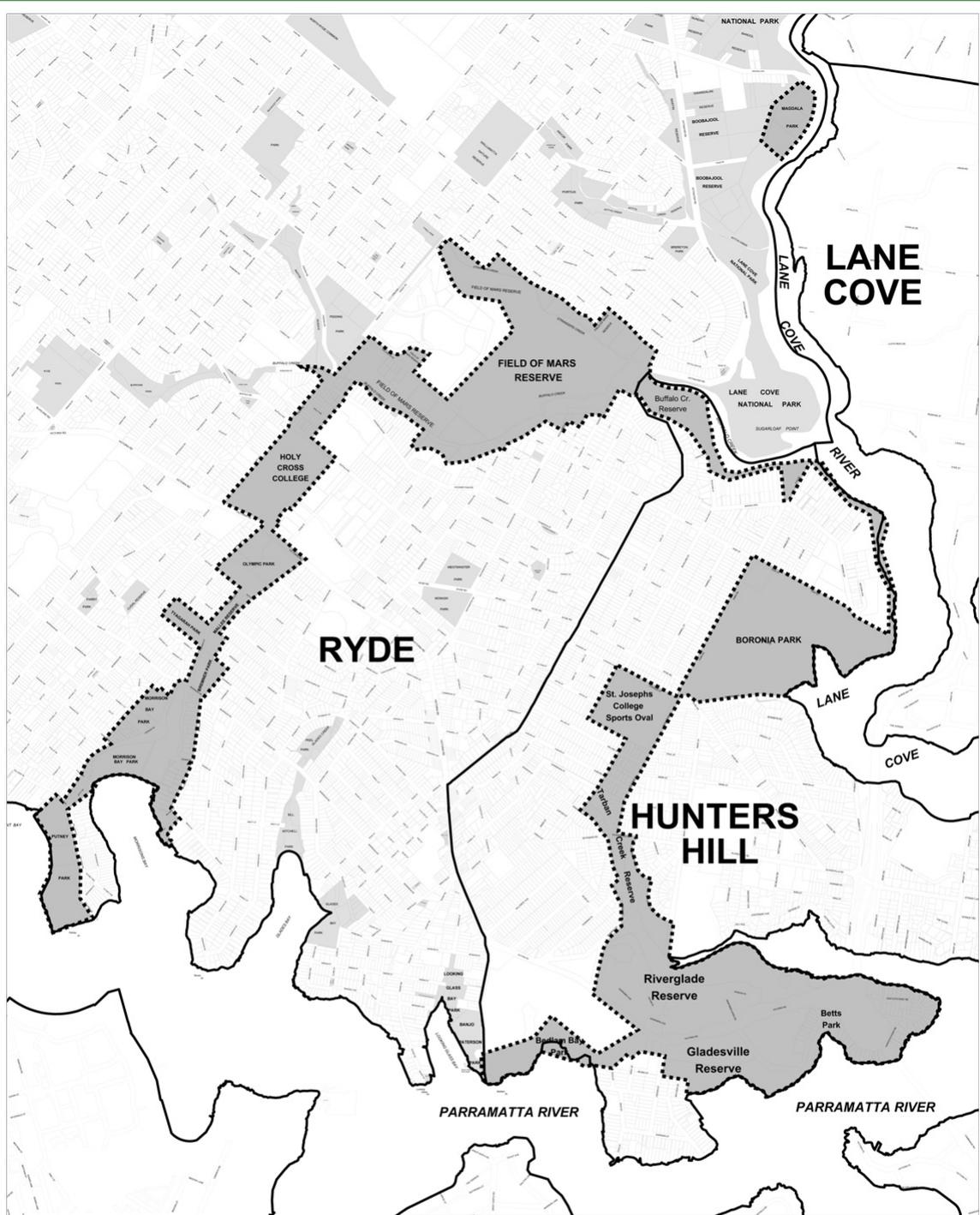
For the Lower Parramatta River extension project Max Breckenridge a local bird expert has been running regular surveys within the project area from Bedlam Bay to Clarkes Point. These records are also being recorded on Eremaea.

These habitat corridors are long-term projects. New plantings and connective habitat are being added as and when funds are available. Care is being taken to not lose the area's habitat and biodiversity values during bushland management activities such as weed removal.

Citizen Science

Observations have also shown that planted habitat havens are being used by the small native birds not only for shelter and travel routes but also as breeding sites. One location near Tarban Creek Bridge has been used as a breeding site by superb fairy-wrens for the past 3 years even though it is near a busy road and cycle/pedestrian path, and for the first 2 years of the 3 had trucks, other vehicles, noise and lights 24x7 while the arches were constructed under the bridge. Many of the other planted habitat havens have often been seen to be accommodating small birds.

It appears that the habitat haven plantings once they have grown sufficiently are allowing new family groups to become established. Where possible we leave the weedy habitat areas especially where there is *Lantana* as this is often the home of the existing family groups. The net result should be more small birds – only time and on-going bird surveys will tell.



City of Ryde



-  Overview of project corridors
-  Local Government Boundary

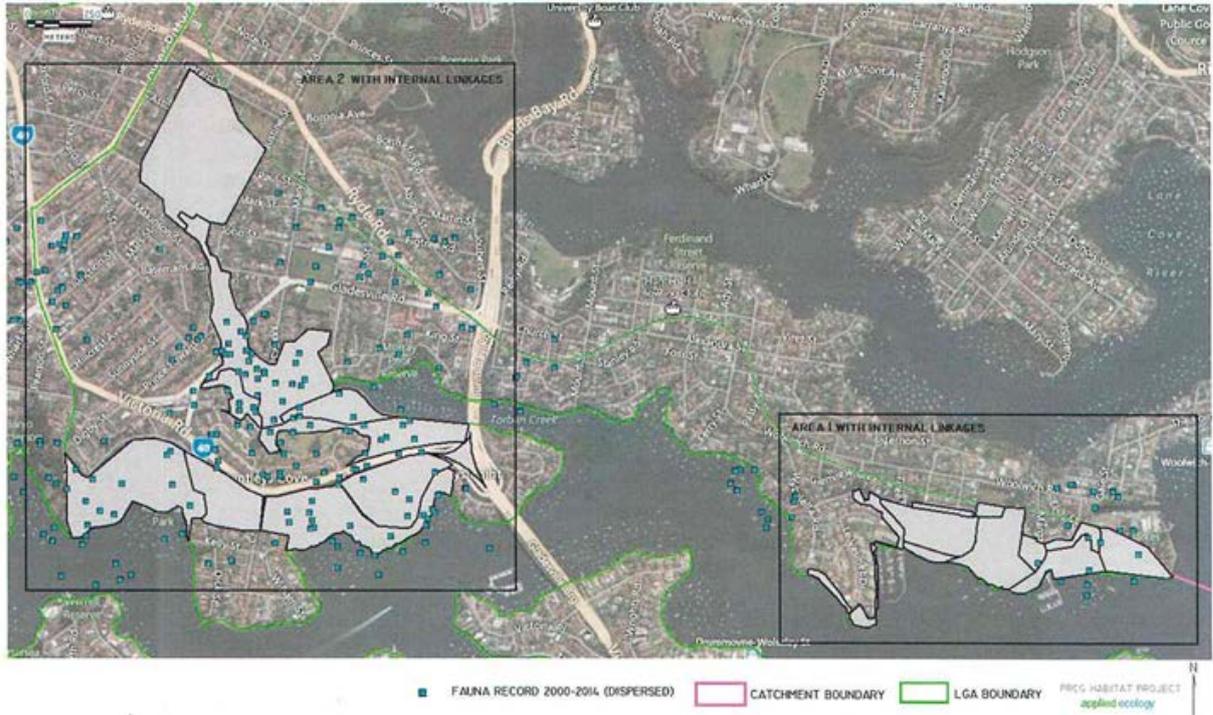
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Scale: 1:22000 approx.



River to River project shaded areas show the two habitat 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

HUNTERS HILL CORRIDORS KEY MAP



Lower Parramatta River extension to Hunters Hill small bird habitat corridor - \$98k Environmental Trust grant July 2016 for 3 years – is part of Parramatta River Catchment Group's Native Habitat Recovery in the Parramatta River Catchment Project

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