



## Guidelines for the Development of Bird Habitat

User: Open Space Managers  
(Parks and Gardens)

### Why design landscapes for birds?

All local governments in Australia are legally obliged to operate according to the principles of ecologically sustainable development. Three essential goals of ESD are:

- to maintain essential ecological processes and life-support systems;
- to preserve genetic diversity;
- to ensure the sustainable utilisation of species and ecosystems.

Birds are the most conspicuous animal species in urban environments, making them outstanding indicators of our performance in meeting obligations to sustainability. Unfortunately, in most urban areas, bird diversity continues to decline, indicating our continuing failure to maintain adequate suitable habitat. Small native birds such as the Red-browed Finch and Superb Fairy-wren are becoming less common, replaced by dominant and aggressive species. In NSW these include the Noisy Miner, Pied Currawong and the Rainbow Lorikeet, but other states may have a different mix.

Parks and open spaces have considerable potential to prevent further biodiversity loss at a local government scale, by enhancing the connectivity between bushland remnants and by providing habitat in their own right. The following guidelines summarise current knowledge on best practice methods of designing and managing a variety of urban habitats to prevent the further loss of biodiversity.



For more detailed guidelines for creating habitat for birds in the urban environment, please refer to the *Scientific Report* available at: [www.birdsinbackyards.net/spaces/guidelines.cfm](http://www.birdsinbackyards.net/spaces/guidelines.cfm)

## How to improve the habitat for native birds in parks and gardens

Within most parks and public open space areas there are opportunities to identify and manage sites for wildlife habitat, especially native birds. The following steps are a guide to those who have a role in planning and managing open space.

### 1. Assess the Site and the Current Bird Life and Consider These Questions:

- *What birds are using the site and are in the area?* Know which species you are trying to target, for example small birds or parrots. While in the short term, only species located in the immediate area may use the site, over the long term as the plantings develop and mature, the site will provide important habitat for an even wider range of species. Therefore the future value of the habitat should also be considered. Simple 20-min bird surveys conducted in and around the site for at least a month, preferably in spring to ascertain breeding use, should be completed prior to the commencement of remediation and will give an idea of what birds are using the site. The *Birds in Backyards* surveys are ideal for this <http://www.birdsinbackyards.net/surveys/>. Talk to households in the immediate area and see what birds they see or ask them to fill in weekly or monthly surveys. Not only can you collect valuable information but also spark public interest and enthusiasm and develop a sense of community.
- *What vegetation is currently available?* Is it very simple, such as open lawn and a few scattered trees, or is the site structurally complex with lots of layers of different vegetation, eg. shrubs of different heights? A more structurally diverse site will support more bird species. In understanding the habitat currently available you can then select the vegetation that needs to be planted.
- *Is the site invaded by weeds?* Are these being used by birds? Some weeds, such as Lantana in NSW, are popular with birds and provide important habitat. Their use must be considered.
- *Is the site connected to other patches of vegetation like remnants or parks?* Increasing connectivity through corridor systems (whether that is linear such as along streets or as stepping-stones) will allow birds to move between larger patches of vegetation.
- *What is the current land use?* Sites used for public recreation may need to have a managed interface between areas for recreational access and wildlife habitat.



## 2. Prepare a Habitat Restoration Plan

If, after answering the five questions in Section 1 above, you determine there are species of native birds present on your site which could benefit from habitat protection and enhancement, then consider preparing a Habitat Restoration Plan. The Plan should address the issues below. Seek out and receive input from people experienced in restoration ecology and bird identification.

### Be prepared for long-term commitments

Three major goals when creating or enhancing habitat on a site should be to:

- maximise biodiversity
- minimise disturbance and
- encourage ownership and involvement of the community.

Projects that act as 'quick-fix' solutions, with little thought and planning and no ongoing maintenance, will have little chance of success. The public are more likely to support projects that have been carefully considered and planned, to learn from them and understand their relationship to sustainability.

The Plan should address the issues below.

### 2.a. What do the birds require?

While the amount and type might vary greatly, all birds need food and water, shelter and a place to nest, whether that is a dense thicket, tall tree or hollow. Most of these requirements can be met by the availability of suitable vegetation. How much space there is in the park to expand or create suitable habitat of various types and how this links to other suitable habitat in the local area will define the constraints and opportunities of the Plan.

Because urban habitats are so fragmented, one site will generally not be large enough to provide all of the requirements that a bird will need. However, each patch is vital in forming the web of habitat that birds use.



## 2.b. What and how to plant

- *Assess the current vegetation:* Most vegetation can provide habitat for birds. Before removing any vegetation, whether exotic plantings, weeds or otherwise, be sure to observe usage by birds. Protect and enhance any native remnant, by planting local native species adjacent to any remnant vegetation and encourage natural regeneration.
- *What to plant - species:* We recommend locally native vegetation grown from locally collected seed. Such plants are available from Council, community and specialist nurseries. This vegetation was traditionally used by birds in the area and is best suited to the conditions of the site. Use a variety of different species throughout the planting rather than a single, or select few plants. Gardens that contain a broad range of plant species, are more likely to support a broad range of bird species. Plant lists can be obtained from most local councils.
- *What to plant – structure:* The key is to create structural diversity – so lots of plants and lots of different layers. Having a mix of trees, shrubs of varying heights, grasses and ground covers will maximise the numbers of birds using a site. Retaining patches of open grass is also important for some birds such as the parrots and finches to forage on.
- *Native plants do not need to look messy:* Small birds like dense shrubs. Pruning can encourage a much denser growth habit, which provides good protection for small birds. Pruning can also help create a more formal and neater garden, which some park-users may prefer.
- *How to plant:* In areas where public recreation must be balanced with potential bird habitat, garden beds can be used. These should be as large with as little fragmentation as possible. By utilising perhaps a quarter of the park in one block a limited area is taken away from the public. Alternatively, beds should be placed close to each other so birds can move easily between them. If there is public concern about shrubs concealing anti-social activity, shrubs in a dense block can easily be avoided and do not have to be tall.
- *Maintenance:* Maintaining these types of garden beds is much less time consuming than mowing vast areas of lawn. Pruning is very quick and rarely has to be done, heavily mulching the beds reduces the need to weed and also provides a source of insects for insectivores and mowing can simply occur around the beds. Creating beds with edges (rectangular or square), makes mowing around them more efficient.



## 2.c. Requirements of specific bird groups

Bird Type	Food Source	Habitat Preference
<b>Large Nectarivores</b> (nectar feeders) Honeyeaters and some parrots e.g. Noisy Miners, Red and Little Wattlebirds, Rainbow and Scaly-breasted Lorikeets	<i>Banksia</i> , <i>Callistemon</i> (Bottlebrush), <i>Eucalyptus</i> , <i>Grevillea</i> , <i>Hakea</i> , <i>Melaleuca</i> (Paperbark)	Shrubs and trees for foraging, perching and nesting Some require hollows for nesting
<b>Small Nectarivores</b> Honeyeaters e.g. Eastern Spinebill, New Holland Honeyeater, Brown Honeyeater	<i>Banksia</i> , <i>Callistemon</i> (Bottlebrush), <i>Eucalyptus</i> , <i>Grevillea</i> , <i>Hakea</i> , <i>Melaleuca</i> (Paperbark), <i>Epacris</i> , <i>Correa</i>	Spend most time foraging and perching in shrubs but also use trees. Generally nest in dense shrubs
<b>Granivores (Seed Eaters)</b> Parrots, finches and pigeons e.g. Eastern Rosella, Pale-headed Rosella, Galah, Sulphur-Crested Cockatoo, Common Bronzewing, Red-Browed Finch, Double-Barred Finch, Chestnut-breasted Manikin	Trees and shrubs: <i>Acacia</i> (wattle), <i>Casuarina</i> (she-oak), <i>Leptospermum</i> (tea-tree) Grasses: <i>Lomandra</i> , <i>Themeda</i> , <i>Poa</i>	Utilise shrubs and trees for perching, nesting and foraging but also forage on mature grasses
<b>Frugivores (fruit eaters)</b> Pigeons and cuckoos e.g. Wonga Pigeon, Common Koel, Silvereye, Satin Bowerbird	<i>Ficus</i> (figs), <i>Syzygium</i> (Lillipillies), <i>Eleocharpus</i> (Quandong)	Shrubs and trees important habitat
<b>Insectivores</b> e.g. Superb Fairy-wren, Eastern Yellow Robin, Spotted and Striated Pardalotes, Willie Wagtail	Insects and other invertebrates either on the bark and foliage of shrubs and trees or on the ground	Dense shrubs important for protection and nest sites as well as some open areas for foraging
<b>Carnivores (Meat Eaters)</b> e.g. All species of Currawongs, Laughing Kookaburra, Grey and Pied Butcherbirds, Powerful Owl, Black-shouldered Kite, Peregrine Falcon	Other birds, reptiles, frogs, mammals, invertebrates	Tall trees for perching, roosting and nesting. Some require hollows for nesting

## 2.d. How to manage weeds

Some weeds provide important food, shelter and nest sites for birds. If their removal would threaten a local population of native birds, they should be removed gradually and after alternative habitat is established. Lantana, for example, is used by many smaller birds due largely to its dense habit but birds also feed on its nectar and the insects it attracts. In other instances, weeds are thought to be responsible for the dominance of some birds. Privet, once a popular garden tree, is partially responsible for an increase in Pied Currawong abundance in urban areas of the east Australian coast by providing an important winter food source, its fruit. This is thought to impact on other birds as currawongs also prey on small birds and their young.



Identify and research any of the weeds at the site you are working on. If they provide habitat for birds, especially small birds, then slowly remove the weeds. Take out areas of no larger than 20 m x 20 m at a time, or no more than 20% of the weeds in smaller sites. Only once the replacement plantings are mature should the next patch of weeds be removed and a patchwork or mosaic pattern followed. This allows birds to use the remaining weeds till new vegetation becomes established. The new vegetation should provide a similar structure or food source to the weeds.

## 2.e. What else affects the bird community?

Habitat is the most important factor that influences whether a bird will visit a site, however it is not the only one. A range of other factors also play a role and must be considered when creating bird habitat.

- *Other birds:* Urban habitats are dominated by medium to large birds that are often very aggressive. There are a number of these who have been shown to influence what other birds occur at a site. Red Wattlebirds and Rainbow Lorikeets have demonstrated aggression and Pied Currawongs are predatory on smaller birds. However there are two species in particular that are thought to be especially important in shaping urban bird communities

**Noisy Miners** are a particularly aggressive species that chase out other birds from their territory. These birds prefer sites with a Eucalypt canopy and no understorey. Therefore we strongly recommend that planting simple eucalypt and grass plantings are avoided. Planting a dense shrub layer and including other plants as well as Eucalypts should assist in reducing their impact over time.

**Common (or Indian) Mynas** are a much hated pest however little research has been undertaken to examine how they effect the rest of the bird community. While aggression in general has not been documented, they have been shown to compete with and exclude other hollow-nesting birds such as parrots, from hollows. At sites where there are natural hollows or nest boxes set up, regular monitoring and removal of Common Myna nests should be conducted to ensure they are not using them.



- *Domestic pets:* Cats in particular have been shown to have an impact on birds in some urban areas and dogs may cause problems by chasing and disturbing birds. There is also some evidence that cat and dog urine can damage vegetation. The only way to limit the impact that pets have on birds in open space sites is to stop or limit access. Cats should be kept indoors or in cat runs and dogs should be kept in secure yards and only allowed in public areas when on-leash. This must be coupled with education to inform pet owners of the dangers of roaming pets, both to local wildlife and also to the pets themselves.
- *Other threats:* Living in urban areas exposes birds to a wide range of disturbances. Care must be taken to limit the extent to which these different disturbances, such as pesticides and herbicides, trampling of vegetation, and the dumping of rubbish, can impact on the bird community using the site. Trapping should be used to control impacts of foxes, cats and dogs.

### 3. Community Involvement

#### 3.a. Utilise community groups and educate

Encouraging community participation in developing habitat for wildlife serves three invaluable purposes.

1. Assistance in undertaking a myriad of tasks such as planting, weeding and long term monitoring of the site.
2. Getting the right conservation messages out into the community. There are many misconceptions in the community such as “weeds must all be removed, the sooner the better” and “feeding birds is helpful.” Involving the community in urban habitat projects provides the opportunity to educate them on a wide range of issues.



3. Increasing public awareness and involvement throughout the initial planning stages provides the community with a sense of ownership, increasing the likelihood that the project will be accepted and has long-term support. Various methods of outreach can be used to obtain community support and involvement including media coverage, organised project campaigns, public meetings and technical workshops. Making contact with environmental volunteer organisations such as 'Bushcare' or 'Landcare' can also make available a wealth of knowledge and experience.

### **3.b. Focusing on iconic species:**

Focusing on a particular iconic species can be an effective way of encouraging community participation in the creation or enhancement of urban habitats. Iconic species that have been used in this way are typically well-known attractive or interesting birds that are sometimes in decline in urban areas. Examples are small birds like Superb Fairy-wrens or Red-browed Finches or large carnivores like Powerful Owls.

### **3.c. Monitor the site regularly:**

Baseline bird surveys should be obtained before any work begins and continue in the long term. This allows comparisons to be made over a long time period and forms part of assessing the success of the project and developing future projects.

Bird surveys are quick and easy to complete, requiring simply a 20 minute observation period. How often these surveys are conducted can be up to the site manager but even surveys conducted once a month can be valuable. Community participation can be encouraged to complete these surveys. Contractors may also be able to undertake monitoring as part of their works.

