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**Submission to the Inquiry into a Sustainability Charter,
House Standing Committee on Environment and Heritage.
House of Representatives, Canberra.**

Summary:

This submission addresses issues of urban biodiversity which relates specifically to the Committee's Terms of Reference points:

1. The Built Environment
5. Ecological Footprint.

In the recommendations it suggests that the Enquiry consider and include within the Sustainability Charter, the expansion of small bird populations in urban and rural areas across Australia, as methods of:

- 1) maintaining biodiversity in urban areas (Built Environment)
- 2) monitoring sustainability outcomes (Ecological Footprint)
- 3) establishing an aspirational community target in the implementation of sustainability practices
- 4) achieving a relevant and ongoing vehicle for environmental education.

It argues that:

- 1) birds, as indicators of sustainability, are excellent monitors for the success of sustainability practices and that this monitoring can be carried out by the community. (One in five [1:5] of Australia's bird species are threatened with extinction).
- 2) the development of appropriately structured native habitat, throughout built environments, could achieve this.

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- 3) undertaking this work in cities is an essential component to: maintain biodiversity within cities, provide relevant environmental education for the majority of Australia's population and in the process, increase their sense of identity, (85% of Australians live in urban areas).
- 4) replacing current urban vegetation types with native vegetation would reduce the Ecological Footprint, by for example, reducing the amount of water and fertilizers required to maintain them and increasing ecological services.
- 5) birds are an integral part of our, and most world cultures. Many birds are joyous; humorous; attractive and their presence enriches our daily lives. Therefore, increasing their presence, by working to expand the range of small birds which are currently in decline, would be an aspirational target for communities.

Discussion

Introduction:

The International convention on Biological Diversity 1992, identified the maintenance of biodiversity is one of the key requirements for sustainability. Despite this, one in eight bird species are threatened with extinction internationally (IUCN, 2006), with one in five bird species threatened with extinction in Australia, (Garnett and Crowley, 2000). Clearly, the race

to halt the loss of biodiversity is not being won at present. However, cities may be the catalyst that can change this.

It has been predicted that by 2025, 60% of the world's population will be living in urban areas (McDonald, 2003). In Australia eighty five percent of our population are urban dwellers and this is likely to increase. Many of these urban dwellers have had minimal or no contact with the natural world and they neither understand or value it. Yet cities are where popular opinion is formed, where our culture develops and with it our identity and values. Therefore, if we are to stem the tide of biodiversity loss, we must change the attitudes and understanding of the population. Maintaining biodiversity and focusing on environmental education within cities, are essential components for this change.

Cities can also be a repository of biodiversity. They are often situated in important biological areas where there is convergence of major biomes (marine, river, rainforest etc). Australia has excellent examples of this, Brisbane and Sydney being just two. Wild indigenous remnant populations of flora and fauna surviving in cities can therefore contain a surprising range of biodiversity, despite the tenuous nature of their existence. These repositories can not only provide a starting point to revitalize populations within urban areas, but they can also provide important, living, environmental education opportunities.

The importance of Birds:

Birds are essential components of healthy ecosystems. They contribute to various ecological processes with representatives found as primary, secondary and tertiary consumers, undertaking services such as flower pollination, seed dispersal and carrion disposal. They are also major controllers of insect infestations and are 'cleaners and gleaners' of many plants - an ecological service they also provide to home gardeners and farmers alike. For a full complement of species to be present, ranging from small insectivorous and seed eating birds through to raptors, the habitat must be diverse in nature. Thus the presence or absence of bird species and populations, reflect the state of the environment and can monitor environmental change.

Birds as Indicators of Sustainability:

This ability to show us the health of and changes to environments, has scientifically established birds as excellent 'Indicators of Sustainability.' In the United Kingdom they form one of fourteen base-line sustainability indicators, along with the GDP, known as '*The Population of Wild Birds Quality of life Indicator.*'

Birds as Educators:

Birds are familiar to us all - even the most urban of urban dwellers are likely to at least know the common domestic pigeon. Unlike many species, birds project personalities; some are joyous such as the Superb Fairy Wren, others humorous such as the Sulphur-crested Cockatoo while others are simply beautiful. Their importance to humanity can be seen throughout our own culture and probably all cultures of the world; in our music, fabrics, paintings, poetry, stories etc. Most people have some awareness of them, and generally enjoy

their presence. In this sense, they play an important role in environmental education for many urban dwellers, helping to bridge the gap between the known and relevant and the unknown and seemingly irrelevant concepts such as biodiversity



Eastern Yellow Robin.

Photo: Bob Ravich

The State of Birds in Australian Cities:

The Birds Australia *Atlas of Australian Birds* has been gathering data on bird abundance since 1998 and is able to compare these with data from the 1977-81 Atlas. Since 2000 the *Birds in Backyards* program, a partnership between Birds Australia and the Australian Museum, has been researching bird populations in the greater Sydney area. Both of these programs are clearly showing a loss in the numbers of small birds living in urban areas. This is consistent with national trends and confirms the anecdotal evidence. Examples of seriously declining birds in urban areas are the Superb Fairy Wren, Eastern Yellow Robin and Red-browed Finch (see photographs).



Superb Fairy-wren.

Photo: Wojciech Dabrowka and Kevin Vang

The reasons for this decline are not yet fully understood, but research indicates they are likely to be the combined effects of issues such as the composition and structure of urban gardens, parks and open spaces; the overabundance of aggressive bird “opportunists” such as the Noisy Miner, that successfully utilize the current urban vegetation structure; the presence of introduced species such as Starlings and the Common Myna and human intervention in the direct feeding of larger, omnivorous and predatory birds, such as the Pied Currawong and Magpie.

Birds and the Sustainability Charter:

Point 1. The Built Environment:

The current situation:

Currently, the majority of urban gardens are populated with introduced plants, (many of which become bushland weeds), with an emphasis on sparse open plantings and lawn. Parks are generally open, grassed spaces with intermittent single trees, providing no suitable habitat to wildlife.

New housing estates, often clear native vegetation for the development to proceed, replanting with lawn and introduced plant species. The few native plants used, are very often from other parts of Australia rather than local, indigenous plants, so have limited or a negative impact on the maintenance of biodiversity. Very few of these areas provide food or shelter for wildlife, especially small birds.



Red-browed Finch

Photo: Bob Ravich

Developing Habitat for Birds:

Urban bird research indicates that native birds are generally more abundant where there are native plants and that small birds probably require denser vegetation to act as protection against more dominant species and to provide nesting sites. The presence or absence of trees also affects the presence, absence or abundance of some species. Currently the Birds in Backyards program is developing *Guidelines for enhancing Urban Bird Habitat*, which should be ready for publication in early 2007. These Guidelines will include broad generic principles as well as specific local information for the greater Sydney area. They will also highlight areas that require further research.

The fragmentation of remnant bushland, is another possible cause of bird species loss from urban areas. Developing urban “Neighbourhood Bushways,” (Brakey, 2003), is one means of compensating for this. This concept, which is being put into practice in some areas of New Zealand, promotes the use of an ecologically based bio-landscape approach, on private

backyards. The Green-web in Sydney has a similar approach working mainly with Local Government Authorities.

The development of bird habitat also provides a vehicle to educate the community about biodiversity and its relevance to them. This in turn, provides them with a greater sense of place and identity with Australia - as they understand how it works biologically, so they also acquire a greater sense of ownership and responsibility for it.

Point 5: Ecological Footprint:

Growing native plants reduces the Footprint.

While there is more research required to fully illuminate the causes of small bird decline, as previously outlined, there is a clear correlation between the presence of native birds and the presence of native plants. This correlation encourages the growing of a complex structure of indigenous plants in urban open spaces, whether they are private or public, large or small.

As well as contributing to the maintenance of biodiversity, growing indigenous native plants that can be propagated from local seed, generally requires

- far lower usage of fertilizers and other products that contribute to issues such as eutrophication in waterways that receive urban runoff
- less water once established, which can be maximized by mulching with prunings and garden leaf litter.

The reduction of lawn cover in parks, gardens and open areas and the maximizing of these spaces to include significant patches of densely planted indigenous plants will

- contribute to ecosystem productivity and carbon sequestration
- provide permeable drainage areas to assist with storm water management.
- provide indigenous habitat more suited to support indigenous bird species and other wildlife.

Birds as Biodiversity Monitors

As explained in the introduction, birds are extremely good indicators of biodiversity. Therefore their presence, absence or abundance can be used as a means of monitoring the implementation and success of sustainability in regards to biodiversity maintenance. This aspect is further enhanced by:

- 1) The presence of existing records documenting their status in past years (*Atlas of Australian Birds*, 1977-81, 1994-97 ongoing; *Birds in Backyards* research in Sydney, 2000-06 ongoing). These records provide benchmarks in which to base future monitoring data on.
- 2) Community surveys can and are being used successfully to gather this data, in both of these projects. An example of how successful this method is, are the community surveys undertaken through the *Birds in Backyards* website. In the first six months, September 2005 – February 2006, 2249 backyard surveys with species records of 22,354 were received from 2,500 website members. <http://www.birdsinbackyards.net/surveys/results-current.cfm>

Birds as aspirational Community Targets

We are rapidly losing small birds from urban areas. These small birds are often the most charming, joyous and attractive of our native birds such as the Superb Fairy Wren. Their presence enhances the quality of urban human life. And yet currently many urban Australians have not seen them at all or even know of their existence. The expansion of their ranges in urban areas, through the planned development of suitable habitat and control of other limiting factors, would both increase the awareness and involvement of many urban dwellers in conservation issues, as well as enriching their daily lives.

Conclusion

In this paper we have discussed the documented decline of small bird species across Australia with one in five of our bird species threatened with extinction. This also applies to Australian cities. The explanations of the importance of birds as Indicators of Sustainability, show that this decline is already indicating that Australia has very considerable degradation of its biodiversity. We have discussed the importance of environmental education in cities, as a part of helping Australians understand their intrinsic reliance on the natural world and, in the process, develop a stronger identity and sense of place. This could be achieved through the creation of wildlife habitat by the planting of indigenous plants extensively throughout urban areas. We have suggested that changes in the presence, absence or abundance of birds could be used to monitor the implementation of sustainability practices. Finally, we suggest that the expansion of their ranges within urban areas would be a relevant, achievable and aspirational community target.

Are these suggestions feasible? Changing planting “habits” would not be difficult with extensive education at all levels of the community: developers, landscape designers, nurseryman, home gardeners, local government etc. Essentially, the process has already begun in a limited fashion, by Local Government Authorities and programs such as *Birds in Backyards*. Generally, it is being met positively by the community.

Recommendations:

We recommend that the Enquiry consider and include the expansion of small bird populations in urban and rural areas across Australia, within the Sustainability Charter as a method of:

- 1) maintaining biodiversity in urban areas
- 2) monitoring sustainability outcomes that can be undertaken (owned by) the community
- 3) establishing an aspirational community target in the implementation of sustainability practices
- 4) achieving a relevant and ongoing vehicle for environmental education

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Superb Fairy Wren:
Photo: Bob Ravich

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