

The destruction or modification of local habitat

Canberra and the Australian Capital Territory have undergone significant habitat changes in recent years. The main cause is the disastrous bush fires of January 2003 that removed vast areas of high quality bird habitat. Another cause has been the water restrictions during drought periods that has reduced the food productive capacity of home gardens and many sports reserves that are no longer irrigated. On the other hand, a number of additional nature reserves around the suburbs have been established. The most recent additions have been Goorooyaroo, Kama, and Kinleyside nature reserves, which provide some excellent and extensive woodland environment for birds and other animals.

The city and suburbs are thus situated adjacent to many sizable areas of native woodland, in various reserves and nature parks. New suburbs have generally been built on open grazing land. In the past, as suburbs have matured, the extensive plantings of trees and shrubs have built up bird habitats much richer than the original open paddocks. The overall result is that in Canberra and the surrounding region, there has been, until recent years, little demonstrable loss of viable woodland bird habitat since the beginning of the survey. However, recent housing developments have not produced the same opportunities to produce bird-friendly gardens, simply because the allotments are much smaller than previously, and the houses tend to be bigger. A recent study by Davey and Nicholls of a small sample of garden bird sites has demonstrated that increased numbers of species



The severe decline of the Rose Robin in Canberra gardens coincides with the large-scale destruction of forest habitat south-west of the city

is associated with such variables as decreased housing density and shorter distances from natural vegetation.

The bush fires have had some short and long-term effect on the Canberra suburban environment. With some species, such as the Yellow-tailed Black Cockatoo, there was a sharp increase in their numbers in Canberra suburbs immediately after the bush fires. With other species, such as the Rose Robin, it appears that they have all but disappeared from Canberra gardens since the fires. As well as the removal of habitat directly by the fires, there has been further habitat removal on the fringes of suburbs, and within suburbs, by local fire authorities to reduce fire hazard. Whatever the benefits of this strategy, it has resulted in significant reduction of habitat that has reduced the living space for a number of species, and consequently their abundance within the suburbs.

There is degradation of some local woodland due to the removal of dead timber, an important structural woodland element for a number of species. There is also a greater intrusion of human activity in and around nature parks, which could also be detrimental to some bird species.

Birds are more likely to occur in a garden that is part of a continuous habitat rather than in a small isolated island of vegetation. A study by Dr David Freudenberger of the ACT region's woodlands has shown that the presence of any particular species in a patch of woodland depends on the complexity of the vegetation structure, the size of the patch, and its distance from other patches of woodland. For example, the White-browed Scrubwren is seldom found where the patch of woodland is less than ten hectares, while on the other hand, the Grey Fantail is much more prevalent in patches smaller than ten hectares. Some birds, such as the Hooded Robin and Speckled Warbler, appear to be very sensitive to all three factors, and were found, during the study, only in large, continuous areas of vegetation of suitable complexity.

The table below represents the findings of Dr Freudenberger's survey, grouping birds according to sensitivity to patch size, isolation and structural complexity. It confirms changes in the relative abundance of different bird species shown by twenty-seven years of observations of the Garden Bird Survey. It is difficult however to give any definitive reason for the decrease in records of the Laughing Kookaburra, Varied Sittella and the Nankeen Kestrel, all in serious decrease according to survey records.

Tolerant	Moderately Sensitive	Moderately Sensitive	Sensitive (demanding)
Australian Magpie	Brown-headed Honeyeater	Restless Flycatcher	Hooded Robin
Crested Pigeon	Brown Thornbill	Rufous Whistler	Speckled Warbler
Crimson Rosella	Brown Treecreeper	Scarlet Robin	
Eastern Rosella	Buff-rumped Thornbill	Southern Whiteface	
Grey Fantail	Diamond Firetail	Spotted Pardalote	
Silvereye	Double-barred Finch	Striated Thornbill	
Striated Pardalote	Eastern Yellow Robin	Varied Sittella	
Superb Fairy-wren	Grey Shrike-thrush	White-browed Scrubwren	
Weebill	Jacky Winter	White-throated Treecreeper	
Willie Wagtail	Noisy Miner	White-winged Chough	
Yellow-rumped Thornbill	Red-browed Finch	Yellow Thornbill	