

**REPORT ON HABITAT RESTORATION PROJECT**

**IN KU-RING-GAI FLYING FOX RESERVE**

**PHASE 2 1992-1993.**

**compiled by**

**Ku-ring-gai Bat Colony Committee Inc.**

**and Indigenous Regeneration Co. Nov. 93.**



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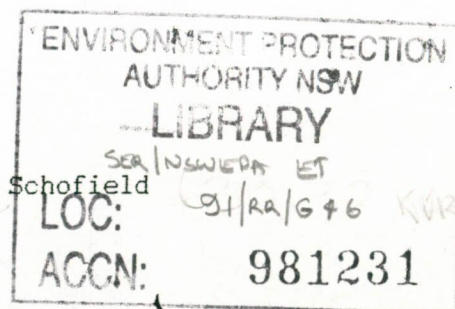
**This project was assisted by grants from the NSW Government on the recommendation of the Environment Trusts and from Ku-ring-gai Council.**

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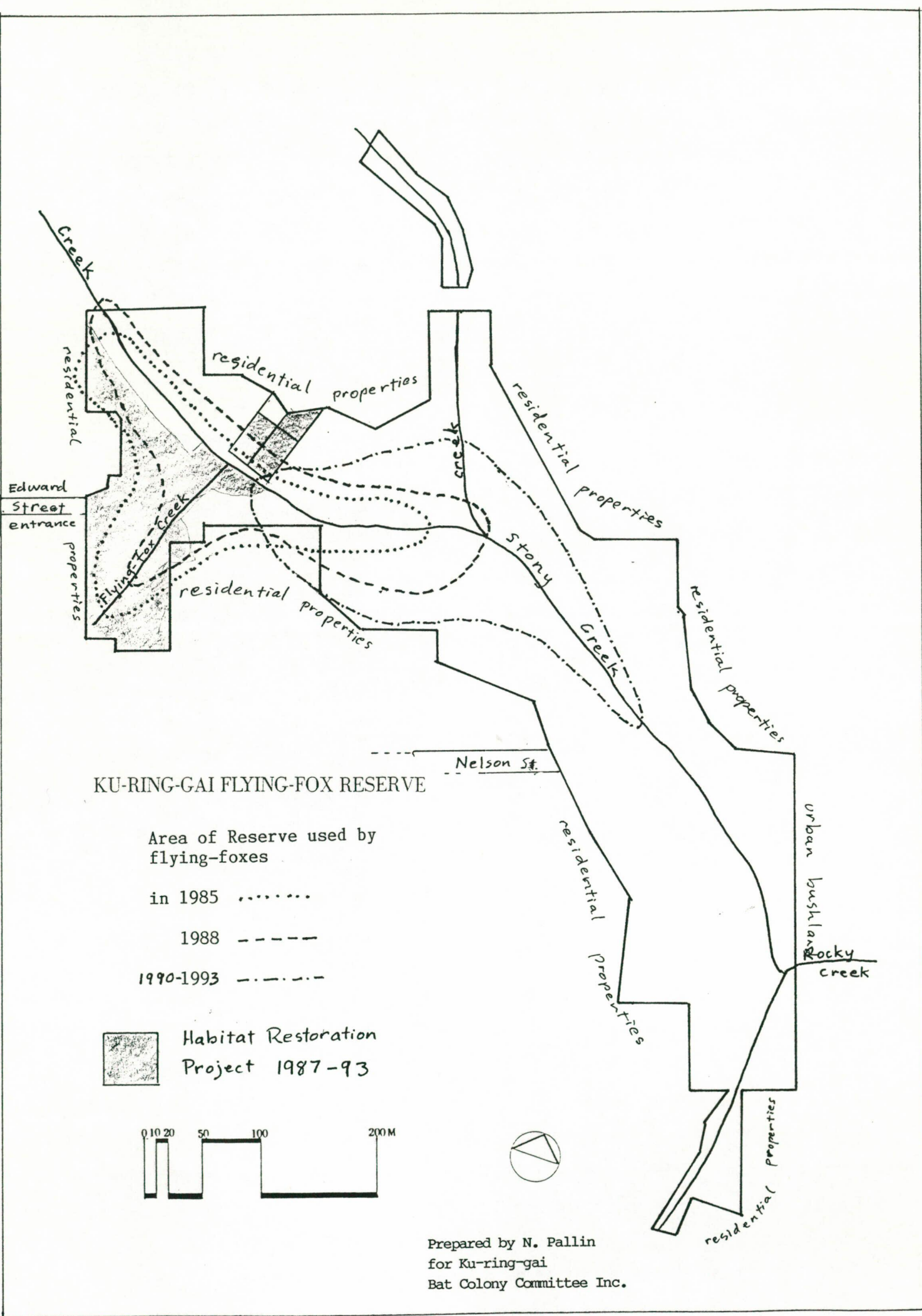
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Cover Photograph:

Madeleine Schofield







Prepared by N. Pallin  
 for Ku-ring-gai  
 Bat Colony Committee Inc.

This report covers the first two years, 1992 - 1993 of Phase 2 of the restoration of the habitat of the Grey-headed Flying-fox *Pteropus poliocephalus* in Ku-ring-gai Flying-fox Reserve, Gordon, New South Wales, Australia.

## HABITAT RESTORATION PROJECT 1987 - 1993 SUMMARY

### Aim

The aim of this long term project is to provide a self-perpetuating indigenous habitat at this important breeding site of Grey-headed Flying-foxes in southern NSW. In particular, the project aims to re-establish a tall tree canopy suitable for flying-fox roosting and to restore the associated understory so that the whole becomes a self-perpetuating ecosystem to provide habitat for all fauna using the Reserve.

The Reserve is owned by Ku-ring-gai Council and is covered by a Conservation Agreement (1991) with the NSW National Parks and Wildlife Service.

The Project was instigated by and has been managed since its commencement in 1987 by the Ku-ring-gai Bat Colony Committee Inc. (KBCC)

KBCC has liaised throughout the project with staff from the Council's Parks and Landscape Division. Ku-ring-gai Council has assisted the project directly with annual grants and with assistance in kind.

Both a Volunteer and a Contract Bush Regeneration Team worked 1 day per week. The Contractor, Indigenous Regeneration Co, has been employed by the KBCC throughout the project.

### Phase 1 1987 - 1991

Comprehensive bush regeneration techniques were used to remove weed and re-establish native vegetation from the Reserve entrance, Edward Street, to Stony Creek and south-east along its small tributary, Flying-fox Creek.

### Phase 2 1992 - 1993

The funding, \$40,000, provided by the NSW Restoration and Rehabilitation Trust, was used to employ the Indigenous Regeneration Co to extend the comprehensive bush regeneration in the severely weed infested, western part of the Ku-ring-gai Flying-fox Reserve. This area is called Area J.

Here much of the tree canopy necessary to the flying-foxes for roosting had died or was deteriorating. The weeds were so dense that there were no seedlings of native tree species surviving to replace the dying forest.

Techniques for dealing with the weeds and stimulating natural regeneration have evolved during the 7 years of the project, increasing efficiency and improving results. In addition some tube stock was planted.

Concurrently with working Area J, the Contract Team each year carried out maintenance throughout Phase 1 areas (A to H). The time spent was funded by annual grants from Ku-ring-gai Council and money raised by the KBCC.

The Volunteer Team has continued to work in the Flying-fox Creek catchment.



## BACKGROUND

The Grey-headed Flying-fox colony in the Ku-ring-gai Flying-fox Reserve is important both as a major maternity camp in southern NSW and as staging camp during the nomadic movements of the animals north and south in eastern Australia in response to variable food resources. Their diet includes nectar and pollen from more than 25 species of Eucalypts and other Myrtaceae and Proteaceae species plus about 30 species of rainforest fruits. The animals are now recognised as important pollinators and dispersers of rainforest seeds.

The Habitat Restoration Project was commenced in 1987 following a site assessment prepared by R Buchanan which predicted the loss of most native canopy trees and replacement by a tall shrub vegetation of predominantly weed species.

The south-western side of Stony Creek was the most degraded part of the Reserve. It was covered by Privets *Ligustrum sinense*, *L. lucidum* and Lantana *Lantana camara* intertwined with the creeper Morning Glory *Ipomea indicawhich* was invading parts of the canopy. A deep layer of Wandering Jew *Tradescantia albiflora* covered the soil and prevented germination of seedling native plants.

In Phase 1 of the Project the weed was removed from the slope between the Edward Street entrance and Stony Creek and to the tributary, Flying-fox Creek. Both natural regeneration and growth of planted canopy trees and shrubs are now developing into a multi-layered forest.

Phase 2 was designed to extend the restoration upstream to the limit of the Reserve. The removal of this weed would eliminate the main source of infestation threatening the areas worked in Phase 1 of the Project.

During the winter 1989 the flying-fox colony, previously in this area, had relocated to a new site downstream of the regenerating area, to the centre of the Reserve. This behaviour has been noted in other colonies. While the western section was not being used by the flying-foxes it was an opportune time to establish a new generation of canopy trees with appropriate understory vegetation.

Experience gained during Phase 1 taught us that a comprehensive weeding program was needed to successfully re-establish a diverse plant community which in turn supports a wider range of fauna species. Unless all weed species are removed systematically, re-infestation from either seed or from vegetative propagules will compete with the re-establishing native vegetation and in the case of vines particularly will rapidly overwhelm it.

The Reserve is surrounded by residential properties with large gardens on the ridges and upper slopes, which provide a continual runoff of enriched water which favours weed species. It is necessary that such impacts from the residential areas are reduced through public education and environmental policies. Unless the impacts are reduced, the diversity of species in the Reserve will be adversely affected in the long term.

As seen in the fauna list prepared by Gordon Limburg, the flying-foxes share the valley with a diverse population. We are aware that a large invertebrate population and other organisms such as saprophytic and mycorrhizal fungi, liverworts, mosses etc. are present in the Reserve but the part they play in maintaining its ecosystem is inadequately understood.



## FUNDING SOURCES

<u>Phase 1 1987 - 1990</u>	\$
NSW Government Heritage Fund Conservation Fund	28,000
Ku-ring-gai Municipal Council	28,000
Public donations and funds raised by Ku-ring-gai Bat Colony Committee Inc	16,095
 <u>1991</u>	
Ku-ring-gai Municipal Council	7,000
Ku-ring-gai Bat Colony Committee Inc. - donations etc.	5,987
 <u>Phase 2 1992 - 1993</u>	
NSW Environmental Restoration and Rehabilitation Trust	40,000
Ku-ring-gai Council	14,000
Ku-ring-gai Bat Colony Committee Inc.	8,000

Total for 7 years \$147,082

In Phase 2 the Environment Trust funding was used to pay the Contractor, Indigenous Regeneration Co for work in Area J.

The report is being written in October. The allocated funds will pay the contract team through to December 21 1993.

In addition to paying wages for a 3 person team the Contractor was responsible for Workers' Compensation and Public Liability Insurance, Superannuation payments, tool and herbicide supply, photographic record, site assessment, consultation with the KBCC, liaison with adjoining residents and preparation of reports.

The grant from Ku-ring-gai Council was used to pay the Contractor to maintain the areas worked in Phase 1.

The additional funding raised through donations and 'bat talks' by the Ku-ring-gai Bat Colony Committee Inc. has supplemented both work in Area J and the maintenance of the Phase 1 work.

Ku-ring-gai Council, in addition to the \$7,000 per annum grant has provided tube-stock from Council's nursery, herbicide for the Volunteer Team, a water tap, weekly collection of weed refuse, the Fire Gang each spring to undertake the pile burning and surveyed boundaries as required.



**REPORT FROM INDIGENOUS REGENERATION CO.  
TO KU-RING-GAI BAT COLONY COMMITTEE INC.**

**PHASE 2 1992-93 Covering Restoration in new Area J and Maintenance of all areas treated  
by the Contract Team in Phase 1. (1987-1991)**

Indigenous Regeneration Co. uses a comprehensive bush regeneration approach because it believes that this will provide the best results in the long term. It involves a three stage process, primary, secondary and maintenance.

Primary weeding is the initial treatment when all visible weed on the site is thoroughly treated.

Secondary work involves the removal of a series of weed flushes, enabling the germinating native plants to grow without competition from these weeds. The secondary stage may be prolonged on badly degraded sites until the seedbank in the soil is exhausted. Simultaneously reducing weed seed sources in surrounding areas, will reduce the length of this phase.

Maintenance of a site is needed following the secondary stage to remove any re-occurring weed from the re-establishing native vegetation. Regular inspection of the site indicates the best time to do this.

**Phase 1. 1987-1991.**

Phase 1 is the initial five year period when bush regeneration was first undertaken in Ku-ring-gai Flying Fox Reserve. Sequentially the areas A,B,C,D,E,F and H Quadrats were commenced and expanded each year resulting in different age vegetation and varying maintenance levels. In 1985 a Site Assessment was prepared by Robin Buchanan prior to work carried out in the following order;

1987-Areas A and B, Primary work commenced by the two teams, Contract and Volunteer.  
1988-Primary in Areas C and D, Secondary work in Areas A and B.  
1989-Primary in Areas E and F, Secondary work in Areas A,B,C & D.  
1990-Primary in Area G, Secondary work in Areas A,B,C,D,E & F.  
1991-Primary in H Quadrats HQ1,2,3,6 & HQ7, Secondary work in Areas F,G,HQ1  
Maintenance in Areas A,B,C,D,E.

In 1991 8 x 20m square quadrats were pegged on the northern side of Stony Creek and the species recorded. Changes in plant diversity will be assessed over time. The H quadrats on the Eastern side of Stony Creek span the whole slope from the creek to housing boundaries to represent the different associations present. Only five of the eight quadrats mapped received primary work in 91 (HQ1,2,3,6,&7).

**Phase 2. Overview of 1992-1993.**

The bush regeneration methods applied in the earlier stages have been developed and significantly improved through interpretation of the site's response to various treatments combined with observation of germination levels in Phase 1 Areas.

This has been a continuing process since the project began, resulting in Area J exceeding predictions with regeneration already showing far more diversity than expected (See species list in Appendix ). The diversity in the native regeneration indicates;

- the site's innate resiliency is promising with more native seed stored in the soil than expected,
- current treatment techniques appear to be more effective and appropriate for the site.



### Objectives for Area J

- \* Restore vegetation that is suitable for the flying-foxes to use for roosting in the future by planting with canopy species which occur in the Stony Creek catchment.
- \* Re-activate optimum regeneration potential of the remaining seed bank in the soil for maximum plant and animal species diversity.
- \* Based on observations of the existing vegetation and regenerating species on the site the following vegetation association are being restored;

A sclerophyll association is being encouraged to dominate the mid to higher slopes with canopy of *Syncarpis glomulifera* - Turpentine, *Eucalyptus resinifera* - Red Mahogany/*Eucalyptus pilularis* - Blackbutt, *Eucalyptus globoidea* - White Stringy bark. Both the remnant canopy and the new regeneration is predominantly sclerophyll in area J. Nutrient levels have increased and may prove to be higher than suits certain sclerophyll vegetation.

Native mesophyllic species and wet sclerophyll species are being established as canopy instead of Privet on the lower slope, adjacent to the creek. These include, *Eucalyptus saligna* - Bluegum *Ceratopetalum* spp. Coachwood & Christmas Bush, *Tristania laurina* - Watergum, *Cyrtosia* spp. Tree Ferns, *Ficus coronata* - Sand paper Fig, and Black Wattle - *Callicoma serratifolia*. *Pittosporum undulatum* was a dominant mesophyllic native which has been reduced on the higher slope to increase light to stimulate sclerophyll germination, whereas on lower slopes it is mostly left to its natural distribution.

### Phase 2 Area J

Area J is the largest single area undertaken in this restoration program to-date. Its rectangular shape spans the whole slope below Edward Street properties down to Stony Creek - (See Map 2.). It extends from the edge of older Phase 1 sites E, A, & D to the North-Western residential boundaries of the reserve and along Stony Creek. The strategy applied when initially treating a site is important to the level of success achieved in the end result, particularly in erosion prone areas like slopes and creeklines.

### 1992

Throughout most of 1992, primary work was undertaken in the mid-slope sections of Area J where the site originally contained a few very sparse and stressed canopy trees with over 90% weed. The stressed trees are dying and replacement seedlings were prevented from germinating by the dense weed cover. The weed infestation was impenetrable, with lantana reaching into the canopy up to 10m. high. Some stems were 150mm in diameter at the base. Privet canopy interlocked preventing light reaching the ground. Ivy at the north-west end smothered whole trees killing the host tree like a strangler fig with some stems up to 50mm in diameter. Wandering Jew was the dominant groundcover, its lush growth reaching approximately 0.5 metre throughout Area J.

Dry stone walls and steps on adjoining properties are evidence of old landscaped gardens which were the source of much of the weed problem. eg. Ivy, Privet, *Ficus pumila* - Climbing Fig, Cape Weed, Morning Glory, Asparagus Fern, Wandering Jew, Fishbone, Pampas Grass. Inappropriate garden practices such as dumping prunings and clippings over the boundary and allowing vigorous garden plants to escape into the bush. Lopped Coral Tree branches had taken root becoming a dense stand where they had been dumped into the Reserve.

Due to the sloping nature of the site, a three metre band of mature weed was left along the up-slope boundary and the lower creek boundary, to slow drainage and silt movement and to function as a wildlife corridor until native vegetation established mid-slope.



### 1992 - Area J

Caution was used to avoid erosion on this sloping site by using a cut and paint method which leaves the dead roots of woody weeds holding the soil. Certain weeds like Ochna and Wild Tobacco did not respond to this method and required a number of treatments. These two species are now scraped at the base and painted with glyphosate which has been found to be more effective, possibly due to the foliage remaining to circulate the herbicide better to the roots.

In early May an overflowing sewer servicing Nos. 14, 16 & 18 Edward Street, was discovered and reported to the Water Board. An assessment downslope indicated this was a long standing problem and the death of a very large Angophora was attributed to this discharge. It was cleared within two weeks of the inspection.

A fox was sighted on the 9th June and after being informed, National Parks and Wildlife Service undertook a limited fox assessment program in the areas G & J.

The primary work took 690 hours, involving injecting glyphosate into woody weeds and spraying large patches of weed like Wandering Jew. The dried weeds, mainly Lantana and Privet were left in 1m piles on-site for a burn scheduled in early spring. The piles were placed away from the sandstone rockfaces to prevent them cracking and away from the base of the trees. The Ku-ring-gai Council Fire Team burnt 37 one metre high piles of weed consisting mainly of stacked woody weeds like Lantana and Privet in mid-slope sections of Area J. This was undertaken over a period of 3 days on the 11th and 12th of August and finished in early September.

A large mid-slope area was exposed to partially bared soil. Horizontal logs were placed in the steepest sections to slow drainage and prevent excessive loss of topsoil. In October, one hundred and fifty native tubestock supplied by the Council were planted.

### 1993 Area J

1993 focused on secondary consolidation in the mid-slope section to prevent herbaceous weeds from seeding and out-competing the native regeneration. This process had to be repeated a number of times throughout the year as flushes of weed germinated in different seasons.

The native regeneration is well established at the south-east end of Area J because it was the area worked first. The north-west end still requires a considerable amount of secondary work to establish to the same degree. Here vigorous Wandering Jew growth has been a persistent problem requiring a number of sprays to treat all layers. The canopy treatment increased light levels which in turn stimulated the Wandering Jew and prevented other species germinating.

A small amount of primary work was undertaken this year was to remove the band of weed along the upper boundary adjoining No. 18 Edward Street and advanced exotic vines along the creekline were targeted ie. (Balloon vine - *Cardiospermum* sp. and Madeira Vine - *Anredera cordifolia*).

Ku-Ring-Gai Council's Fire Management Team burnt approximately 8 one metre high piles of dried weed on the 23rd September. The burns were scheduled early spring when the lowest numbers of bats roost in the valley. This also helped obtain optimum survival rates from germinating seedlings. The burn areas are well above the creek, but sheltered from the wind. All the burn piles have been marked with numbered pegs and plotted on a map so that over time a comparison can be made of regenerating species on burnt and unburnt soil. The burning of weed piles considerably reduced time and effort involved in rubbish removal as the access was long and difficult carrying loads.



## 1993 Area J (Continued.)

To prevent re-infestation from the private property above, successful liaison was undertaken with one property owner and a compromise of planting non invasive European garden species along the boundary was agreed upon. This individual approach to neighbours is needed to encourage effective boundary management. Unfortunately, when contacted the property manager responsible for the largest property adjoining Area J claimed that there was no money available for the weeding required. Residential boundaries are an ongoing problem, requiring repeated liaison to encourage neighbours to manage their own boundary sympathetically with the adjoining bush.

As the complete ecological value of colonizers is not yet fully understood, the pioneering role of the more vigorous colonizing native species is being observed. These species germinate readily and grow rapidly in large numbers:- (*Omalanthus populifolius*, *Commelina cyanea*, *Sigesbeckia orientalis*) These native colonizing species usually gain an advantage quickly on the more degraded sites although they all appear to lose their advantage after a number of years when other vegetation competes effectively. The role of individual native species within the regenerating native association will continue to be observed and interfered with as little as possible unless a substantial imbalance develops.

*Sigesbeckia* and *Pittosporum undulatum* are the only native species which have been partially culled on the higher slopes of J. *Sigesbeckia* has been culled as an experiment where it was engulfing native regeneration. However, it has been left on the lower slopes for habitat value and further observation, Management technique is still being trialled to determine whether they are beneficial or detrimental to the site and project objectives. At the moment the native vine *Parsonsia straminis* currently being observed as to its effect on mature canopy trees as well as to seedling growth.

### Maintenance of Phase 1. areas

Regular monitoring of all the Phase 1. areas has been carried out and maintenance undertaken when necessary during the two years of the program. The native vegetation has covered most areas satisfactorily and flowering of some species has occurred.

The three sites D, G and HQ1 which adjoin Stony Creek are requiring extensive secondary work because the Creek regularly overflows onto its flood plain depositing weed propagules from upstream. The slope above the floodplain is responding better.

### Summary of Project Data

1992 - Total hours worked = 1080 between 14-1-92 and 22-12-92.  
-comprised of 65% Primary in J, 20% Secondary in J and 15% Maintenance in Phase 1.

1993. -Total hours worked = 1252 between 12.1.93 and 2.11.93  
- Gradient of slope in J between 1 in 2.4 and 1 in 3.3.  
-Total area of Phase 2 - (Area J) = 0.4414 hectares  
- Area of vines targeted along stony Creek = 0.2450 hectares



Habitat Restoration Project Ku-ring-gai Flying Fox Reserve.			
Person Hours Worked by Contract Team			
1992	Primary Work	Secondary	Maintenance
<b>Sites Worked</b>			
Area A			1
B			24.75
C			43.5
D			31.5
E			15
F		63.25	
G		112.5	
HQ1		47	
other H quadrats		0	
J-Primary	694.75		
J-Secondary		46.75	
<b>Column Totals =</b>	Primary hours=694.75	Secondary hours=269.5	Maintenance hrs=115.75
<b>Phase 1 total =</b>	338.5 hours		
<b>Phase 2 total =</b>	741.5 hours		
<b>Total hrs 1992 =</b>	1080		
<b>1993</b>			
Area A			37.5
B			37
C			60.75
D			41.5
E			2.5
F			41.25
G		196.5	
HQ1		34.5	
other H quadrats			0
J-Primary	211.75		
J-Secondary		588.25	
<b>Column totals =</b>	Primary =207.5hrs	Secondary = 819.25 hrs	Maintenance =220.5 hrs
<b>Phase 1 total =</b>	451.5		
<b>Phase 2 total =</b>	800		
<b>total till 2/11/93</b>	1251.5		
<b>93/94 Sum 2/11</b>	2331.5 hrs in 92/93		

92/93



Area J (1991) - seen from the viewing rock, prior to weed treatment  
An extremely advanced weed infestation prevented native species and  
canopy trees from germinating.



Photograph(Oct 1993) Foreground - boundary interface cleared Winter 1993  
- weed piles burnt September 1993  
Mid-photo - Regeneration on mid-slope areas is flourishing  
after the primary work and burns in 1992.  
Background - Stony Creek with native Turpentine and Coachwood  
canopy competing with Privet, Balloon Vine, Madiera  
Vine & other weeds



Photography; M Schofield





Above; Area J Winter 1992 prior to treatment very few native species survived weed competition

Below; Same area mid-slope in J after weed removal stimulated germination of regeneration





## REPORT ON WORK OF VOLUNTEER TEAM

The Volunteer Team has contributed very significantly to the Project. It has extended the regenerating Area 4 to the boundaries of properties fronting Nelson Street and commenced Area 5. It has also maintained Areas 1, 2, 3 and the creek-line of 4 which received primary and secondary work in Phase 1 of the Project.

Hours of bush regeneration contributed by volunteers,

1992	711
1993	733 to 26 October.

### Core of Experienced Bush Regenerators

Its success has been due, since the inception of the project, to the regular attendance of a core of dedicated people. Some of these have attended bush regeneration training either with the National Trust or completed the Bush Regeneration Certificate Course at Ryde TAFE. Their knowledge of plants and bush regeneration techniques has been essential for the high quality of the work carried out.

### Training on the Job

The core Volunteers have shown untrained people what to do and worked with them to ensure their lack of experience does not jeopardise the work. In this situation where the primary work involves virtually all weed species, it is relatively easy for untrained people to learn to do primary work but more difficult to train them to carry out secondary weeding because of the greatly increased number of species, both native and weeds, which must be recognised.

### Limitations of untrained Volunteers

With untrained volunteers it is necessary to accept that mistakes will occasionally occur. This must be weighed against the overall contribution made by volunteers in extending the area of regenerating bushland. It does highlight the need for experienced bush regenerators being on site when volunteers are working.

### Maintenance of Phase 1 Volunteer Areas

Areas 1, 2, 3 and 4 (creek only)

The primary work for these areas was carried out in Phase 1 between 1987 and 1991.

### Regular Inspection Essential

Inspection of these previously worked areas three or four times each year and immediate action has prevented weeds from re-establishing.

However, some parts of the site continue to need more checking and maintenance work than the rest. These are the channels where stormwater flows from street drains to Flying-fox Creek. Without any pollution traps or sediment filters these drains bring cans, plastic bottles, plastics, road gravel and weed seeds into the Reserve. If the water flow is impeded and the banks overflow, the weed quickly starts growing in the overflow areas.

Along access tracks weeds are easily carried on clothes. One plant of Bathurst Burr *Xanthium spinosum* was found and removed near the Edward Street entrance. Constant surveillance of the entrance and access routes is necessary to prevent establishment of weeds introduced in this way.



Persistent weeds such as Wandering Jew *Tradescantia albiflora* can grow from a tiny segment of stem only a few millimetres long. If left in the soil it can grow beneath other vegetation and without close inspection may cover many square metres within a few months before detection. Such a re-infestation is time consuming to remove. Since this weed originally covered most of Areas 1, 2, and 3 it is still necessary to check for it regularly throughout the site. In the last 2 years prompt action has eradicated outbreaks while still small.

Clusters of weed seedlings, such as Privet *Ligustrum sinense*, *L. lucidum* Camphor Laurel *Camphora cinnamomum*, *Ochna serrulata*, Lantana *Lantana camara* *Nandina domestica* etc. dispersed by birds, are found throughout the site and are easily removed by hand pulling during the periodic inspections. Once healthy bush has been established, an inspection and maintenance weeding session will only need to be done once in every 1 to 2 years.

The flying-foxes disperse seeds of some of the fruits they eat, including various figs, lilly pillies, other rainforest trees, Wild Tobacco *Solanum mauritianum*, Mulberry *Morus nigra*, and possibly (being identified) Kaffir Plum *Harpephyllum caffrum*. Plant species which do not occur naturally in the Sydney region are removed unless they are native species carried by the flying-foxes.

The canopy trees planted in the first years, Bluegums *Eucalyptus saligna*, Red Mahogany *E. resinifera* and Blackbutts *E. pilularis* are approaching the height of the existing Turpentine tree canopy *Syncarpia glomulifera*. In general the Bluegums and Red Mahoganies have grown better than the Blackbutts which suffered more from insect attack. Most of the Blackbutts have died. The Turpentines which were planted grew slowly but are now reaching 3 or 4 metres in height. It was decided to remove Mountain Cedar Wattles *Acacia elata* in favour of the more permanent *Myrtaceae* species and because it would appear that those occurring in the Reserve had become established from those planted in nearby gardens.

**Understory species planted during Phase 1**  
which have flowered (F) and formed fruits (R)

<i>Acacia floribunda</i>	F		
<i>Acacia terminalis</i>	F R		
<i>Acacia ulicifolia</i>	F R	<i>Hakea sericea</i>	F R
<i>Acacia longifolia</i>	F R	<i>Kunzea ambigua</i>	F R
<i>Acacia linifolia</i>	F R	<i>Ozothamnus diosmifolius</i>	F R
<i>Banksia serrata</i>	F	<i>Persoonia pinifolia</i>	F R
<i>Callicoma serratifolia</i>	F R	<i>Pittosporum revolutum</i>	F R
<i>Grevillea sericea</i>	F R	<i>Platylobium formosum</i>	F R
<i>Grevillea linearifolia</i>	F R	<i>Pultenea daphnoides</i>	F R
<i>Hakea salicifolia</i>	F R	<i>Pultenea flexilis</i>	F R

*Cyathea sp.* (mainly *cooperi*) have reproduced along drainage lines.

The shrubs above were mainly bought as tubestock from Cicada Glen Bush Plants during 1989 and 1990. Some such as the tree ferns were donated.

Earlier in Phase 1 of the project we were given plants which were growing in 6" or 8" pots. Planting these was more difficult and time consuming than planting tubestock. Their survival rate was relatively poor because their roots had already formed a ball whereas tubestock get the opportunity to



develop a root system suited to the spot in which they are planted.

Throughout Areas 1, 2 and 3 there is now complete ground cover of grasses and herbs with areas of dense ferns, *Hypolepis muelleri* and *Calochlaena dubia*. There is no recurrence of the vine Morning Glory *Ipomea indica* which originally threatened all these areas.

#### Area 4 (measures 0.372 hectare)

This was commenced in phase 1 when about 3 metres beyond Flying-fox Creek was cleared so that the creek could be re-established within banks. Privet, Lantana and Morning Glory had invaded the water course and established a swamp area. Ferns and *Callicoma serratifolia* were planted to re-establish creek line vegetation on the banks of the cleared channel.

Flying-fox Creek is now overshadowed by tree ferns *Cyathea cooperi*, *Callicoma serratifolia* and a whole range of ground ferns and groundcover plants along its banks. Yabbie holes and parts of skeletons are regularly seen. Young eastern water dragons have been very active along it this spring.

The main part of this area had a forest of large Turpentine trees *Syncarpia glomulifera* with occasional emergent Blackbutts *Eucalyptus pilularis*. The canopy of the Turpentines was in good condition. Understory native trees include *Pittosporum undulatum* and Lilly Pilly *Acmena smithii*. Understory weed of Privet, Lantana, Ochna and Morning Glory has systematically been removed, working up the slope from the creek.

Uphill of the turpentine forest, towards the residential boundary of houses in Nelson Street, the dense weed infestation of Privet *Ligustrum sinense*, *L. lucidum* Lantana *Lantana camara*, Ochna *Ochna serrulata* and other weeds has been developing for a long time. Old photographs belonging to neighbours show that these areas were once horse paddocks with privet hedges surrounding them. Some of the Privet trees had trunk diameters up to 700mm. These were drilled and injected with glyphosate herbicide. By doing this a year or more before removing the great mass of lantana and other weeds there have been only small numbers of seedlings growing from these trees as the seed is only viable for about a year.

#### Burning of weed piles

Prior to spring 1991 in the area cleared under the mature turpentine trees, the germination of secondary weed species was slow and the germination of native plants was very sparse, mainly *Omolanthus populifolius* and *Pseuderanthemum variabile*. Large areas were covered by a mulch of fallen turpentine leaves.

Ku-ring-gai Council's Fire Gang assisted the project by burning piles of dead woody weeds in Area 4 in September 1991 (27 piles), in September 1992, and in 1993 Area 2 in September and Area 4 in October.

In 1991 the burning of piles was experimental and, from the notes kept by Maree Kerr and photographs by Margaret Beavis, the following observations are made. The piles were lit consecutively so that only one or two adjacent piles burned vigorously at any one time. Flame heights ranged from 2 to 4 metres. The hottest fires burned furiously for 20 minutes then died down and smouldered for several hours. The first pile was lit at 10.10am and all piles were put out completely by hosing by 2.30pm. Smoke from the fires was very



localised and due to the dry nature of the piles was not noticeable beyond the immediate area.

The following native plants germinated on the burn sites.

*Acacia parramattensis*, *Acacia linifolia*, *Pultenea flexilis*, *Kennedia rubicunda*, *Lasiopetalum ferrugineum* var. *ferrugineum*, *Glycine clandestina*, *Dodonaea triquetra*, *Syncarpia glomulifera*. Most of these plants have germinated from long lived seed in the soil (Family *Fabaceae*). The heat generated in the soil by the fires also affects the range of species which germinate (Auld and O'Connell 1991). We were impressed that on such a degraded site any native seed bank remained in the soil.

On the bare ash beds of the burns there was spectacular germination of turpentine seedlings *Syncarpia glomulifera*, the best germination of canopy seedlings found anywhere in the Volunteer sites.

The growth of plants in the burned areas has been affected by the amount of light each area receives. Those under the Turpentine canopy have germinated but not grown as thickly as those in the open where they receive more light.

The regeneration of Acacias and Turpentines was particularly dense in the open sites and has formed thickets which are currently a replacement for the dense weed used by birds and reptiles.

As well as native plants, weeds also germinated, either because of the heat or the bare ground. These weeds were removed at regular intervals as seedlings before their removal would disturb the native plants and compete with them. Weed species recorded were *Phytolacca octandra*, *Sida rhombifolia*, *Solanum nigrum*, *S. americanum*, *S. mauritianum*, *Senecio madagascariensis*, *Crassocephalum crepidioides*, *Vicia tetrasperma*, *Medicago lupulina*, *Fumaria* sp., *Gnaphalium* sp, *Modiola caroliniana*, *Senna pendula* and various others in smaller numbers.

Learning to recognise all these plants as seedlings was quite a challenge to the volunteers and not all of them wished to undertake this detailed work. Fortunately there were enough who really enjoyed the challenge.

#### Area 5

This has received primary weed treatment to reduce the threat of Morning Glory *Ipomea indica* and Ivy *Hedera helix* re-invading Area F across Flying-fox Creek. Before the end of 1993 it will need its first secondary treatment to remove remnants of Wandering Jew *Tradescantia albiflora* and annual weeds so that progress made is not reversed during the summer. Area 5 measures 0.03 hectare.

#### Planting in Phase 2 Volunteer Area

Following the increased germination of native species in 1991 burn sites, the burning of weed piles in spring has been adopted as a management practice in Ku-ring-gai Flying-fox Reserve. As a consequence, fewer tubestock has been required because more natural regeneration has occurred. Planting has mainly been done on the very degraded boundary areas near private property to create a buffer zone.





Above April 1992  
Regeneration  
following pile burns  
in September 1991

Left July 1993  
Close up of growth of  
Acacias, Turpentines and  
ferns on the burn site  
above.

Note the trunk of the same  
mature Turpentine in both  
photographs

Photos: E. Hartnell





Above

This boundary has been planted with unsuitable exotic plants eg. Ivy, Impatiens, Monstera. Appeals to the owner have produced no results. Reserve boundary at foot of wall.

Left

Long term weed infestation on the interface between the Reserve and private property. Morning Glory covering Large-leaved Privet trees, up to 10 metres tall and tangles of Lantana.

Photos: N Pallin



## BOUNDARIES

The residential boundary of the Reserve has been the most time consuming to work. The clay earth banks below the two tennis courts contained persistent weeds such as Onion Weed *Nothocordum gracilis* and Turkey Rhubarb *Acetosa sagittata*. These need to be sprayed with herbicide to kill all bulbs and corms. A wide range of annual weeds and garden plants continue to shed seed into the upper part of Flying-fox Creek. Therefore this area has required constant work to prevent these weeds from spreading downstream.

A barrier of weed 3 to 4 metres wide has been retained parallel to the boundaries in the upper catchment of the creek to trap this annual weed seed. They will be removed once the boundary areas have a native ground cover and shrub screen.

Since there was no seed bank of native species these sites have been planted with tubestock. Surprisingly the various Acacias *A. longifolia*, *A. terminalis*, *A. ulicifolia*, Casuarina *Allocasuarina littoralis*, Christmas Bush *Ceratopetalum gummiferum* and Bloodwood *Eucalyptus gummiferum* are establishing and the Christmas Bush is flowering although the plants are still less than 50 mm tall.

**Noxious Weed** Wall Pellitory or Asthma Weed *Parietaria judaica*  
On the tennis court bank and the area below near the efflux of Flying-fox creek Wall Pellitory occurs. It has been spot sprayed with glyphosphate but new seedlings continue to grow. We are concerned that this very invasive species could threaten the whole catchment. It is already well established upstream of the Reserve near Rosedale Road bridge.

### Neighbours

Part of the KBCC management planning has focused on ways to establish good community relations with adjoining land owners and interest them in the strategies used to re-establish the bush and to prevent re-infestation from private property. In general response has been politely interested but without much result.

Some neighbours have assisted the care of the Reserve by removing the dumped rubbish uncovered by the Volunteer Team. This included hundreds of bottles, broken glass, iron, guttering, paint tins, old furniture etc.

Other neighbours persist in throwing garden weeds into the Reserve and growing inappropriate plants on the boundary.

A letter written to the property owner regarding the presence of the noxious weed *Parietaria judaica* explaining the problem of this plant was ignored.

### Illegal entry and damage by tracked vehicle

One neighbour had Council approval to build a retaining wall on the boundary of the Reserve. This approval contained conditions which clearly stated that there was to be no access into the Reserve. The contractor employed to put in the concrete footing for the wall used a tracked bob-cat for the work. A fence was removed and the vehicle driven past a sign which says "Habitat Restoration Area Please do not enter". The soil from the trench was spread over an area 30 x 4 metres covering native grasses and ground covers which had regenerated during a period of 5 years repeated weeding by the volunteers.



Ku-ring-gai Council commenced legal proceedings against the owners of the property and the bobcat contractor under State Environmental Planning Policy No 19 Urban Bushland, the Environment Planning and Assessment Act and Ordinance 48 for a breach of Building Consent. The matter was settled by the property owner and bobcat contractor pleading guilty to the charge of damaging the environment under SEPP 19, and paying Council's costs and for a restoration program to restore the damage.

#### **MANAGEMENT RESPONSIBILITIES**

It is the responsibility of the KBCC to ensure that the project as a whole moves forwards to achieve our long term objective of a self-sustaining ecosystem.

Indigenous Regeneration Co became our contractor in 1987. We appreciate the meticulous work of this team and have continued to employ them in Phase 2. We attribute the success of the project to date to this continuity of work. The Bush Regenerators get to know the site intimately, during monitoring past trouble-spots are thoroughly checked and can anticipate when further maintenance work will be needed. It is important that a balance is kept between primary work, and the anticipated secondary regrowth and the long term maintenance. Delay in carrying out these steps can increase the overall amount of time that has to be put into the particular site.

There has been continuing consultation on all aspects of the project, both in forward planning and immediate unexpected problems eg. leaking sewer.

In addition to the time spent on site on Tuesdays, the KBCC management team contributed many extra hours to pay the Contract Team, carry out banking, maintain the photographic record, keep the day book, write reports, consult with the Contractor, meet visitors and Council staff on site, answer telephone enquiries, assist in environmental education carried out by film and television units. The members of the KBCC receive no financial remuneration.

#### **Representation on Ku-ring-gai Council Committees**

Elizabeth Hartnell represents the KBCC on the Parks and Reserves Committee which makes recommendations to Ku-ring-gai Council.

Nancy Pallin, as a community representative, serves on the Bushland Management Working Party which advises the Parks and Landscapes Division.

#### **ENVIRONMENTAL EDUCATION AND PUBLIC RELATIONS**

In conjunction with the Habitat Restoration Project, the Ku-ring-gai Bat Colony Committee Inc. has carried on an environmental education program with special emphasis on bats, primarily the Grey-headed Flying-fox. This program aims at dispelling myths about bats and replacing these with understanding and knowledge of their biology and ecological role. It emphasises the inter-dependence of plants and animals in maintaining a healthy and diverse ecosystem.

The program is accredited by the Department of School Education to address students from Kindergarten to Year 12. A 'bat talk' consists of a presentation illustrated with colour transparencies and accompanied by hand-reared Grey-headed Flying-foxes. The KBCC and its trained 'bat speakers' carried out 133 talks in 1992 and 93 to date in 1993, to schools and community groups.



### **Off-site interpretation strategy**

In the first years of the project selected groups of visitors were taken to the edge of the Reserve to see the flying-foxes and the regeneration sites. However, as public interest grew, the impact of increasing numbers of people visiting the site necessitated a change in strategy.

The map shows the position of the colony in 1988 and in 1990 - 93 when it moved eastwards to its present location. To discourage visitors to the Reserve from walking through the regeneration sites and disturbing the flying-foxes by walking beneath them, an off-site strategy to satisfy the public demand for seeing flying-foxes was developed.

The best location for viewing the evening exodus of flying-foxes from the Reserve is on the bridge on Rosedale Road, Gordon. Each summer people wait on the bridge at dusk for this wildlife spectacular. Guided walks which include meeting a hand-reared flying-fox are organised through NPWS Chase Alive Volunteers in conjunction with the Committee.

In 1993 Ku-ring-gai Council erected two interpretive signs on the bridge. The drawings and text were prepared by the Committee in consultation with Council staff. The drawings were donated by artist, Michael Herron.

Friends of Bats evenings, arranged for subscribers to the Friends of Bats newsletter, and the general public remain popular, with 150 people attending in October 93. They touched hand-reared flying-foxes, saw orphaned flying-foxes and micro-bats, walked to the edge of the Reserve at Edward Street to see progress in the Habitat Restoration Project, heard guest speaker Peggy Eby talk about her research and finally watched from the bridge the flying-foxes leave their valley.

Hand-reared flying-foxes which accompany 'bat speakers' to talks are housed at the Kukundi Wildlife Shelter in Lane Cove National Park. Here they can be seen during Shelter opening hours.

### **Special Visitors to the Reserve**

The current strategy encourage the public to use any of the above options to see the flying-foxes, however, some special inspections of the Project have been arranged.

Doug Benson, Senior Plant Ecologist and Barbara Briggs, Senior Assistant Director at the Royal Botanic Garden, Sydney visited Ku-ring-gai Flying-fox Reserve to discuss plant species occurring on the site and the problems the Botanic Gardens was experiencing with flying-foxes at the time. From their letter following the visit they were impressed with the regeneration and the work of the teams.

Bush Regeneration Certificate students from Ryde and Padstow TAFE have been shown the regenerating sites as part of their courses. The managers of the project are convinced that providing this service is essential in training Bush Regenerators to consider fauna when carrying out Bush Regeneration and to recognise some of the complexities of such a project.

A small segment of the pilot program for the ABC "Reading, Writing Roadshow" was filmed near the entrance to the Reserve in 1993. A group from The Weed Society of NSW also inspected the project this year. During the preparation of the draft Plan of Management for Ku-ring-gai Flying Fox Reserve, the



consultants were conducted on an inspection of significant parts of the Reserve by KBCC representatives.

#### PLAN OF MANAGEMENT

In May 1993 the National Parks and Wildlife Service (N.S.W.) made available \$10,000 as its contribution to the Conservation Agreement to enable consultants to prepare a draft Plan of Management for the Reserve. Representatives of the NPWS, Ku-ring-gai Council and the Ku-ring-gai Bat Colony Committee Inc. formed the steering committee which discussed the management issues and provided background information for the consultants, Gutteridge Haskins and Davey Pty Ltd.

The strategy of off-site interpretation and education to minimise disturbance to the flying-fox colony and the regenerating bushland has been accepted as the basic tenet in the Plan of Management.

The draft Management Plan will go on public exhibition before the end of 1993.

#### PHASE 2 (extension) 1994 - 1995

The KBCC is very pleased that the NSW Government is providing a further Environment Trust Grant to consolidate Area J. This will include working along the Stony Creek banks in sections to re-establish the natural creek-line vegetation.



Interpretive sign on Rosedale Road bridge.

Photo: E Hartnell



## RECOMMENDATIONS FOR THE FUTURE

1. Maintenance must continue in all areas previously worked.
2. At the end of 1995 a review is undertaken of the success of the Project, 9 years from commencement. It is anticipated that the canopy species will need to be at least 15 years old before being able to withstand the pressures of the flying-fox colony. We hope that the colony will not decide to move back upstream for at least another 5 years.
3. Future restoration work needs to be undertaken away from the flying-fox colony.
4. Prepare feasible maintenance proposals for the management of vegetation on private property/bushland interface. The implementation of such guidelines throughout the local government area is a responsibility of Ku-ring-gai Council and should be publicised through its environmental education program.
5. There is a need for the installation of simple and easy to clean traps to be fitted in the gutter before the water from roads enters the Reserve so that rubbish and road gravel can be removed.
6. The various sewer ventilators in Stony Creek valley need repair or replacement because a very strong odour escapes through rusted holes.
7. A fauna survey of the Reserve to provide base-line data is needed. Such surveys must be done by specialists. Therefore we recommend that the Environmental Trusts provide funds to appropriate institutions to make available such surveys to community groups undertaking bushland restoration.
8. Soil testing to compare nutrient levels in various parts of the Reserve would contribute to understanding the vegetation communities. Such testing needs to be co-ordinated with similar work in other parts of Ku-ring-gai.
9. At present there are no counts of flying-fox numbers in the Reserve. During a research project in the late 1980s Kerryn Parry Jones (University of New South Wales) regularly counted the bats as they left the valley in the evening from two exits. It would be valuable if counts on at least a monthly basis could be resumed. This is currently beyond the capacity of the KBCC to undertake.

These recommendations were jointly prepared by KBCC and  
Indigenous Regeneration Co



## **Appendices**



PERSONS INVOLVED IN THE PROJECT 1992 - 93

Management Team

Nancy Pallin	Hon. Secretary, Ku-ring-gai Bat Colony Committee Inc.
Elizabeth Hartnell	Chairman, Ku-ring-gai Bat Colony Committee Inc.
Maree Kerr	Hon. Treasurer, Ku-ring-gai Bat Colony Committee Inc.

Contract Team

Madeleine Schofield	Manager, Indigenous Regeneration Co
Gordon Limburg	Site Supervisor
Annabell Hartridge	other team members
Jennifer Napoli	
Lynn Rees	
Damian Huxtable	
Ross Fallon	
Hendrik Hazenveld	

Volunteer Team

People who have worked as volunteers either regularly or occasionally in 1992 and 1993

Nancy Pallin	since March 1987	Lindfield
Elizabeth Hartnell	since March 1987	Gordon
Anne Ringwood	since March 1987	Greenwich
Margaret Beavis	since April 1987	Roseville
Eileen Davies	began 15/8/89	Narrabeen
Penny Black	began 22/8/89	Killara
Barbara Davidson	began 20/2/90	Gordon
Hazel McGlashen	began 1/5/90	Mona Vale
Maree Kerr	began 27/11/90	Pymble
Don Macdonald	intermittently	Castle Hill
Jenny Napoli	10/12/91 to	Killara
David Williams	on 28/4/92, 21/7/92	Bondi Junction
Chris Oliver	on 28/4/92, 21/7/92, on 8/6/93	Riverwood
Mary Snodgrass	began 4/2/92	Mosman
Dennis Alegre	21/4/92 to 21/7/92	Parramatta
Lysia O'Keefe	20/4/93 to 11/5/93	Mosman
Jennifer Porter	began 11/5/93	Balmain
Terry Cheatle	began 23/3/93	Balmain
Vivien Duncan	began 23/3/93	Balmain
Dan Moyer	on 13 & 20 /4/93	Goulburn
Jordan Moyer	on 13 & 20 /4/93	Goulburn
Naida Wills	began 19/10/93	Killara



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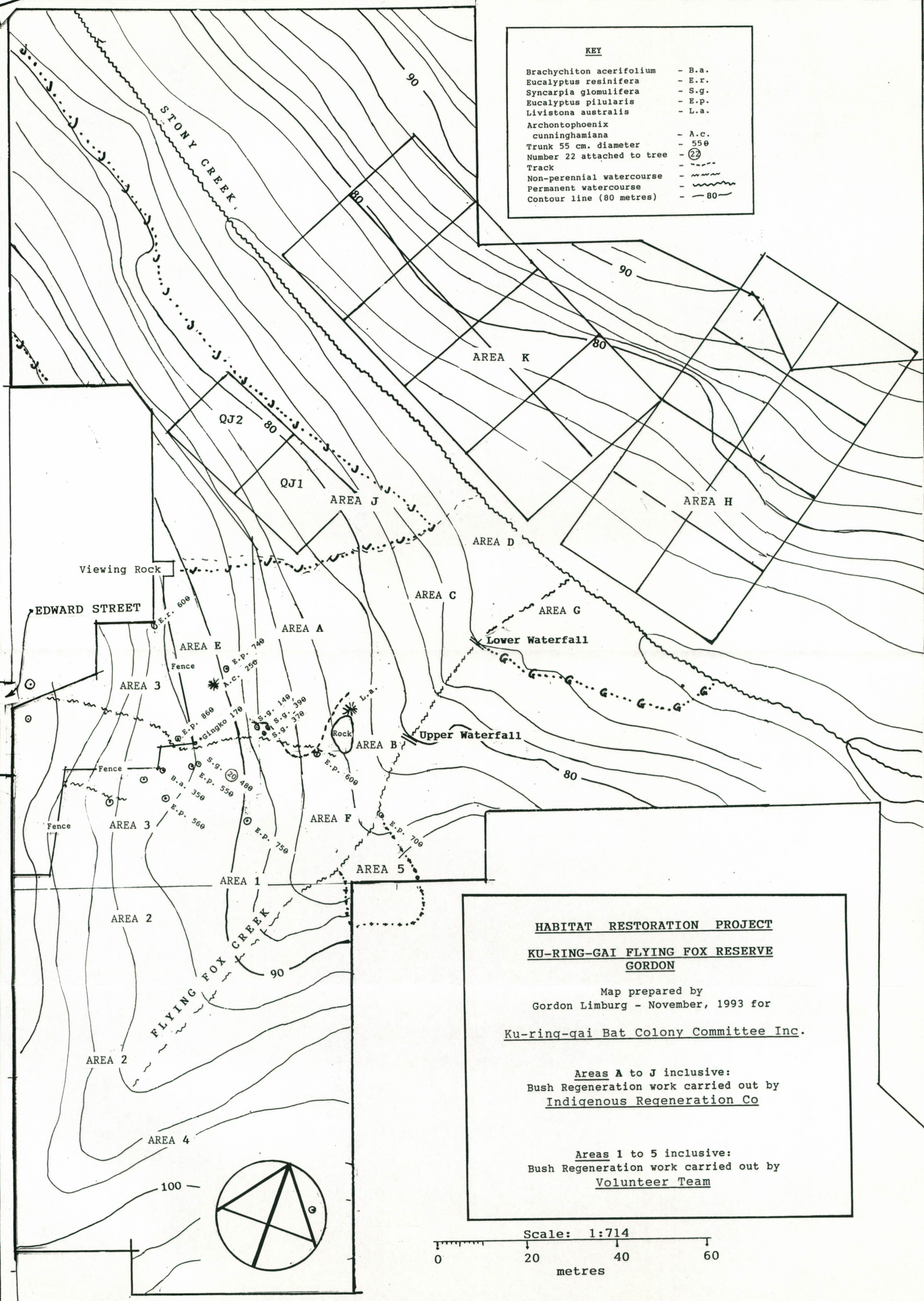
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Australian Natural History Magazine 24, No. 4, Autumn 1993.
- Proceedings of Fruit Crop Protection Seminar  
Edited by Ken Blade, National Parks & Wildlife Service, 1992.  
Copies \$6.00 post paid - available from NPWS, via Turramurra NSW. 2074  
Phone (02) 457 9322
- Conservation of Australia's Forest Fauna  
Edited by D Lunney, published by Royal Zoological Society.  
This book contains the following papers on bats;  
- G Richards -The conservation of forest bats in Australia: Do we really know the problems and solutions.  
- P Eby - "Finger -winged nightworkers": Managing forests to conserve the role of Grey-Headed Flying Foxes as pollinators and seed dispersers



KEY	
Brachychiton acerifolium	- B.a.
Eucalyptus resinifera	- E.r.
Syncarpia glomulifera	- S.g.
Eucalyptus pilularis	- E.p.
Livistona australis	- L.a.
Archontophoenix cunninghamiana	- A.c.
Trunk 55 cm. diameter	- 550
Number 22 attached to tree	- 22
Track	- - - - -
Non-perennial watercourse	- ~ ~ ~ ~ ~
Permanent watercourse	- - - - -
Contour line (80 metres)	- 80 -



**HABITAT RESTORATION PROJECT**  
**KU-RING-GAI FLYING FOX RESERVE**  
**GORDON**

Map prepared by  
 Gordon Limburg - November, 1993 for  
Ku-ring-gai Bat Colony Committee Inc.

Areas A to J inclusive:  
 Bush Regeneration work carried out by  
Indigenous Regeneration Co

Areas 1 to 5 inclusive:  
 Bush Regeneration work carried out by  
Volunteer Team

Scale: 1:714  
 0 20 40 60  
 metres



HABITAT RESTORATION PROJECT  
KU-RING-GAI FLYING FOX RESERVE,  
GORDON

AREA J

MEASUREMENT OF  
NATURAL REGENERATION  
to NOVEMBER, 1993

**MAP:**

The accompanying Site Map shows the area of Primary Work completed to November, 1993.

The work area slopes steeply between 1 in 2.4 and 1 in 3.3.

**REMNANT NATIVE PLANT SPECIES:**

The list of Native Plant species provides an indication of the status of the surviving bushland at the start of the work.

**Native Plant species** recorded in the two Quadrats at the start of work are indicated by 92 for each Quadrat

**Native Plant species** recorded in the same Quadrats to **November, 1993** are indicated by (93) for each Quadrat.



Native Plant Species recorded in Area J

April 1992 and November 1993

**Quadrats:**

Two Quadrats were identified within the work area, for comparison of counts of Native Plant species (Species Richness) with counts in identical sized Quadrats in Area H at similar distances up the sides of the slopes.

<u>Species recorded within</u>	<u>20 X 20m Quadrats:</u>	
	<u>Recorded at start of Primary work:</u>	<u>Recorded November 1993:</u>
	<u>92</u>	<u>92</u>
	<u>(93)</u>	<u>(93)</u>
<u>Calochlaena dubia</u> (R. Br.) M. Turner & R. White	(93)	
<u>Pteridium esculentum</u> (Forst. f.) Cockayne		
<u>Adiantum aethiopicum</u> L.		
<u>Asplenium australasicum</u> (J. Sm.) Hook.		
<u>Blechnum cartilagineum</u> Sw.		
<u>Stephania japonica</u> (Thunb.) Miers	(93)	(93)
<u>Oxalis perennans</u> Haworth	(93)	
<u>Gonocarpus teucroides</u> DC.	(93)	
<u>Hibbertia dentata</u> R. Br. ex DC.	(93)	
<u>Pittosporum undulatum</u> Vent.	92 (93)	92 (93)
<u>Billardiera scandens</u>	(93)	
<u>Elaeocarpus reticulatus</u> Sm.		
<u>Brachychiton acerifolium</u>	92 (93)	92 (93)
(A. Cunn. ex G. Don) F. Muell.		
<u>Lasiopetalum ferrugineum</u> Sm.	(93)	
<u>Breynia oblongifolia</u> J. Muell.		
<u>Omalanthus populifolius</u>	92 (93)	92 (93)
<u>Ceratopetalum apetalum</u> D. Don		
<u>Rubus hillei</u> F. Muell.		(93)
<u>Acacia ulicifolia</u> (Salisb.) Court		(93)
<u>Acacia linifolia</u> (Vent.) Willd.	(93)	
<u>Acacia longifolia</u> (Andrews) Willd.		(93)
<u>Acacia elata</u> A. Cunn. ex Benth	92 (93)	(93)
<u>Acacia schinoides</u> Benth.	(93)	
<u>Pultenaea flexilis</u> Sm.	(93)	
<u>Desmodium varians</u> (Labill.) Endl.	(93)	
<u>Syzygium paniculatum</u> Gaertn.		
<u>Acmena smithii</u> Merrill et Perry		
<u>Syncarpia glomulifera</u> (Sm.) Niedenzu	92 (93)	92 (93)



Native Plant		20 X 20m Quadrats:		
species recorded within		QJ1	QJ2	
	Recorded at start of Primary work:	92	92	
	Recorded November 1993:	(93)	(93)	
<u>Eucalyptus pilularis</u> Sm.		92 (93)	92 (93)	1.
<u>Trema aspera</u> (Brongn.) Blume		(93)	(93)	
<u>Ficus rubiginosa</u> Desf. ex Vent.		(93)	92 (93)	
<u>Dodonaea triquetra</u> Wendl.		(93)		
<u>Polyscias sambucifolia</u> (Sieb. ex DC.) Harms		(93)	(93)	
<u>Polyscias elegans</u> (C. Moore et F. Muell.) Harms			92 (93)	
<u>Centella asiatica</u> (L.) Urb.		(93)		
<u>Hydrocotyle peduncularis</u> R. Br. ex A. Rich.		(93)		
<u>Platysace linearifolia</u> (Cav.) C. Norman		(93)		
<u>Notelaea longifolia</u> Vent.		92 (93)	92 (93)	
<u>Parsonsia straminea</u> (R. Br.) F. Muell. var. <u>straminea</u>			92 (93)	
<u>Morinda jasminoides</u> A. Cunn.		92 (93)	92 (93)	
<u>Opercularia aspera</u> Gaertn.		(93)	(93)	
<u>Wahlenbergia gracilis</u> (Forst. et f.) Schrad.		(93)		
<u>Pratia purpurascens</u> (R. Br.) Wimm.		(93)	(93)	
<u>Sigesbeckia orientalis</u> L.		(93)		
<u>Polymeria calycina</u> R. Br.		(93)		
<u>Dichondra repens</u> Forst. et f.		(93)		
<u>Pandorea pandorana</u> (Andr.) Steen.			92 (93)	
<u>Pseuderanthemum variabile</u> (R. Br.) Radlkf.		92 (93)	92 (93)	
<u>Dianella caerulea</u> Sims		(93)		
<u>Schelhammera undulata</u> R. Br.		92 (93)		
<u>Smilax glycyphylla</u> Sm.		92 (93)	92 (93)	
<u>Eustrephus latifolius</u>		92 (93)	92 (93)	
<u>Geitonoplesium cymosum</u> (R. Br.) A. Cunn. ex Hook.		(93)	92 (93)	
<u>Lomandra longifolia</u> Labill.		92 (93)	(93)	
<u>Dendrobium speciosum</u> (Sm.) var. <u>speciosum</u>			92 (93)	
<u>Lepidosperma laterale</u> R. Br.		(93)		
<u>Gahnia</u> sp. Forst.		(93)		
<u>Poa affinis</u> R. Br.			(93)	
<u>Agrostis avenacea</u> Gmel.		(93)		
<u>Microlaena stipoides</u> (Labill.) R. Br.		(93)	(93)	
<u>Entolasia marginata</u> (R. Br.) Hughes		(93)	(93)	
<u>Entolasia stricta</u> (R. Br.) Hughes			(93)	
<u>Oplismenus imbecilllis</u> (R. Br.) Roem. et Schult.		(93)		
Totals:		13 45	16 30	

This species was inadvertently omitted from the report of April 1992. 1.



Plant species

Ku-ring-gai Bat Colony

November, 1993

List compiled by Gordon Limburg, from information included in surveys by:

Robin Buchanan,  
Madeleine Schofield,  
Sally Fisher,  
Nancy Pallin and  
Elizabeth Hartnell,

and additional information recorded during Bush Regeneration work to November 1993 within the catchment of

Rocky Creek,  
Stony Creek and  
Flying Fox Creek.

with thanks to the

National Herbarium of  
New South Wales

for extensive and continuing help with identification.

This list is arranged in alphabetical order by Genus.  
All synonyms and common names found in the Reference List  
and elsewhere have been included. Abbreviations are  
avoided. Botanical names later recognised as "misapplied"  
have been omitted.

AREAS

A to J inclusive shown on the Site Assessment Map are the sites of work carried out by Indigenous Regeneration Co.

Column X includes species recorded within the catchment, outside the areas involved in the Habitat Restoration Project to date.

Column Z includes species recorded on all numbered sites worked by the Volunteer Bush Regeneration teams.

p attached to the Area initial indicates that some or all specimens in the Area were planted there.

m. following an entry indicates a recognised myrmecochorous species.



Plant species

Ku-ring-gai Bat Colony

November, 1993

List compiled by Gordon Limburg, from information included in surveys by:

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New South Wales

for extensive and continuing help with identification.

This list is arranged in alphabetical order by Genus.  
All synonyms and common names found in the Reference List  
and elsewhere have been included. Abbreviations are  
avoided. Botanical names later recognised as "misapplied"  
have been omitted.

AREAS

**A to J** inclusive shown on the Site Assessment Map are the sites of work  
carried out by Indigenous Regeneration Co.

Column **X** includes species recorded within the catchment, outside the areas  
involved in the Habitat Restoration Project to date.

Column **Z** includes species recorded on all numbered sites worked by the  
Volunteer Bush Regeneration teams.

p attached to the Area initial indicates that some or all specimens in the  
Area were planted there.

m. following an entry indicates a recognised myrmecochorous species.



Indigenous Regeneration Co

Native Plant Species  
recorded at

Ku-ring-gai Flying Fox Reserve, Gordon  
for Ku-ring-gai Bat Colony Committee Inc.

November, 1993

<u>Genus and species</u>	<u>Common Names</u>										
	<u>AREAS: A B C D E F G H J X Z</u>										
<u>FAMILY</u>											
Acacia elata, (Syn. Racosperma elatum) FABACEAE (Subfamily MIMOSOIDEAE)	Mountain Cedar Wattle;	Cedar Wattle;									
	Pepper Tree Wattle										
	Ap Bp			Ep Fp			H Jp		Zp		m.
Acacia floribunda, (Syn. Acacia longifolia var. floribunda) Acacia floribunda var. latifolia) FABACEAE (MIMOSOIDEAE)	White Sallow, Sally or								Zp		m.
	Gossamer Wattle; Marrai-uo										
	A										
Acacia irrorata, ssp. irrorata (Syn. Racosperma irroratum, Acacia pauciglandulosa, Acacia decurrens var. pauciglandulosa) FABACEAE (MIMOSOIDEAE)	Green Wattle;	Black Wattle									
	A	C		E F			J				m.
Acacia linifolia FABACEAE ( MIMOSOIDEAE)	Flax-leaved Wattle;	Flax Wattle									
	A B			E		Gp	J X Z				m.
Acacia longifolia, (Syn. Acacia longifolia, var. longifolia) FABACEAE (MIMOSOIDEAE)	Sydney Golden Wattle;	Sallow Wattle									m.
	Marrai-uo										
						Gp	J		Zp		
Acacia longissima, (Syn. Racosperma longissimum, Acacia linearis) FABACEAE ( MIMOSOIDEAE)	Narrow-leaf Wattle										
	A			E F			J X Zp				m.
Acacia parramattensis FABACEAE (MIMOSOIDEAE)	Parramatta Wattle										
					Ep		J				m.
Acacia schinoides FABACEAE (MIMOSOIDEAE)							J				m.



Acacia terminalis, (Syn. Acacia botrycephala, Acacia discolor) FABACEAE (MIMOSOIDEAE)	Sunshine Wattle A D E F H Zp m.
Acacia ulicifolia, (Syn. Acacia juniperina, FABACEAE (MIMOSOIDEAE)	Prickly Moses E H J Zp m.
Acianthus exsertus ORCHIDACEAE	Mosquito Orchid; Gnat Orchid; Pixie Caps H X
Acianthus fornicatus ORCHIDACEAE	Gnat Orchid; Pixie Caps H X
Acmena smithii, (Syn. Eugenia smithii) MYRTACEAE	Lilli Pilli; Lillipilli Satinash; Coast Satinash; Eungella Gum; Tdgerail A B C F H J Z
Acrotriche divaricata EPACRIDACEAE	Ground-berry X
Adiantum aethiopicum ADIANTACEAE	Maidenhair Fern A G H J Z
Adiantum hispidulum ADIANTACEAE	Rough Maidenhair Fern A E F J X Z
Agrostis avenacea POACEAE	Blown Grass J X
Alectryon tomentosus (Syn. Nephelium tomentosum) SAPINDACEAE	Hairy Bird's Eye; Bed-jacket; Woolly Rambutan J X Z 4
Allocasuarina littoralis, (Syn. Casuarina littoralis, Casuarina suberosa) CASUARINACEAE	Black She-oak; Dahl-wah B F H X Zp
Allocasuarina torulosa, (Syn. Casuarina torulosa) CASUARINACEAE	Forest Oak B E H Zp
Alocasia brisbanensis ARACEAE	Cunjevoi; Spoon Lily G Zp 2
Alternanthera denticulata (Syn. Alternanthera triandra, var. denticulata) AMARANTHACEAE	Lesser Joyweed D



Amperea xiphioclada, (Syn. Amperea spartioides) EUPHORBIACEAE	Broom Spurge							X		m.								
Angophora costata, (Syn. Angophora lanceolata) MYRTACEAE	Sydney Red Gum; Smooth Applegum; Rusty Gum; Smooth-barked Apple Kajimbourra							E	Fp	Gp	H	X	Z					
Archontophoenix cunninghamiana, (Syn. Ptychosperma cunninghamiana, "Seaforthia elegans," - hort. "Ptychosperma elegans," - hort.) ARECACEAE	Bangalow Palm (NSW); Piccabeen Palm (Q)							E				X						
Asplenium australasicum, (Syn. Asplenium nidus) ASPLENIACEAE	Bird's Nest Fern; Crow's Nest Fern							B	C			H	J	X	Z	4	5	
Astrotricha floccosa ARALIACEAE	Native Tobacco																	X
Austromyrtus tenuifolia MYRTACEAE									Ep	Fp			Jp					Zp
Backhousia myrtifolia MYRTACEAE	Grey Myrtle; Ironwood; Neverbreak; Carrol									F	G							X
Banksia ericifolia var. ericifolia, (Syn. Sirmuelleria ericifolia, Isostylis ericifolia, Banksia phyllicaeifolia) PROTEACEAE	Heath-leaved Banksia; Lantern Banksia							A						X	Zp			
Banksia serrata (Syn. Sirmuelleria serrata, Isostylis serrata, Banksia aemula, Banksia conchifera, Banksia mitis, Banksia media, Banksia serraefolia, Banksia serrata var. hirsuta, Banksia undulata) PROTEACEAE	Old Man Banksia; Red Honeysuckle; Saw-toothed Banksia; Red Banksia; Wattung-urree							A	C			Gp	H		X	Zp		
Banksia spinulosa var. spinulosa, (Syn. Sirmuelleria spinulosa, Banksia incognita, Banksia denticulata) PROTEACEAE	Hairpin Banksia; Golden candlesticks							E		Gp	H		X	Zp				



Bauera rubioides BAUERACEAE	Dog Rose; River Rose Fp	X	Zp
Billardiera scandens PITTOSPORACEAE	Common Appleberry; Dumplings A E H J		Zp
Blandfordia nobilis BLANDFORDIACEAE	Christmas Bells	X	
Blechnum cartilagineum BLECHNACEAE	Gristle Fern A B F H J X Z		
Boronia pinnata RUTACEAE	Pinnate Boronia Fp		m.
Brachychiton acerifolium, (Syn. Sterculia acerifolia) STERCULIACEAE	Illawarra Flame Tree; Flame Kurrajong A B C D E F G H J X Z		
Breynia oblongifolia EUPHORBIACEAE	Dwarf's Apples; Coffee Bush C F H J Z		
Burchardia umbellata COLCHICACEAE	Milkmaids	X	
Bursaria spinosa var. spinosa PITTOSPORACEAE	Sweet Bursaria; Blackthorn Ep Fp		Zp
Caladenia catenata, (Syn. Caladenia alba) ORCHIDACEAE	White Fingers X		
Callicoma serratifolia CUNONIACEAE	Black Wattle; Callicoma; Silver-leaf; Butterwood; Wild Quince; Tdgerruing A Bp C Dp E Fp Gp H X Z		
Callitris rhomboidea, (Syn. Callitris cupressiformis, Callitris tasmanica) CUPRESSACEAE	Port Jackson Cypress Pine		Zp
Calochlaena dubia, (Syn. Culcita dubia) DICKSONIACEAE	Common Ground Fern; Soft Bracken; Rainbow Fern; False Bracken A B C D E F G H J X Z		
Cassytha pubescens, (Syn. Cassytha paniculata, Cassytha phaeolasia) CASSYTHACEAE (LAURACEAE)	Devil's Twine C E F G H J X		







Commelina cyanea COMMELINACEAE	Scurvy Weed; Native Wandering Jew A B C D E F G H X Z
Conospermum taxifolium (Syn. Conospermum ellipticum, Conospermum ericifolium) PROTEACEAE	Small-leaf Smoke Bush X
Convolvulus erubescens CONVOLVULACEAE	Blushing Bindweed; Australian Bindweed B E
Cordyline stricta AGAVACEAE	H
Cotula australis ASTERACEAE	Common Cotula; Carrot Weed A B C E F X Z
Crocea saligna (Syn. Eriostemon crowei) RUTACEAE	X m.
Cryptostylis erecta ORCHIDACEAE	Striped Hood; Helmet Orchid; Purple Hood Orchid; Tartan Tongue Orchid G H X Z
Cyathea australis CYATHEACEAE	Rough Tree Fern H J X Zp
Cyathea cooperi CYATHEACEAE	Soft Tree Fern; Straw Treefern B E G H J Z
Cymbidium suave ORCHIDACEAE	Snake Orchid X
Cyperus gracilis CYPERACEAE	Slender Sedge G Z
Cyperus laevis CYPERACEAE	E Z
Cyperus mirus CYPERACEAE	B Z 2
Dampiera stricta GOODENIACEAE	Blue Dampiera A X
Davallia pyxidata DAVALLIACEAE	Hare's Foot Fern G H X



Dendrobium speciosum, var. speciosum ORCHIDACEAE	Rock Orchid; Rock Lily J
Dendrocnide excelsa, (Syn. Dendrocnide gigas, Laportea gigas) URTICACEAE	Giant Stinging Tree; Fibrewood Z
Desmodium rhytidophyllum FABACEAE (FABOIDEAE)	Rusty Tic-trefoil A B C E
Desmodium varians FABACEAE (FABOIDEAE)	Variable Tic-trefoil A B C J
Dianella caerulea PHORMIACEAE	Paroo Lily; Flax Lily A B C E F H J X Z
Dianella revoluta PHORMIACEAE	Spreading Flax Lily; Mauve Flax Lily X
Dichondra repens CONVOLVULACEAE	Kidney Weed A B C E F J X Z 2
Digitaria parviflora, (Syn. Panicum parviflorum) POACEAE	A C F Z
Dillwynia retorta, var. retorta, (Syn. Dillwynia ericifolia, var. peduncularis) FABACEAE (FABOIDEAE)	Eggs and Bacon H Zp m.
Dipodium punctatum ORCHIDACEAE	Hyacinth Orchid Z
Dodonaea triquetra SAPINDACEAE	Hop Bush A B C D E F G H J X Z
Doodia aspera BLECHNACEAE	Prickly Rasp Fern C F J Z 2
Doodia caudata var. caudata BLECHNACEAE	G
Dracophyllum secundum EPACRIDACEAE	X
Echinopogon caespitosus, var. caespitosus POACEAE	Tufted Hedgehog Grass A C E F H J X Z



Echinopogon ovatus POACEAE	Forest Hedgehog Grass A J
Einadia hastata, (Syn. Rhagodia hastata) CHENOPODIACEAE	Berry Saltbush B D E Z 2
Elaeocarpus reticulatus, (Syn. Elaeocarpus cyaneus) ELAEOCARPACEAE	Blueberry Ash; Ash Quandong; Lily-of-the-valley Tree; Scrub Ash Blue Olive-berry; Fairy Petticoats A B E F G H J X Z
Entolasia marginata (Syn. Panicum marginatum) POACEAE	Margined Panic Grass A B E H J Z
Entolasia stricta (Syn. Panicum strictum) POACEAE	Wiry Panic Grass A B E F H J Z
Epacris longiflora EPACRIDACEAE	Native Fuchsia; Fuchsia Heath H
Epilobium billardierianum, (Syn. Epilobium glabellum, var. billardierianum) ONAGRACEAE	Willow Herb E
Eucalyptus globoidea, (Syn. Eucalyptus yangoura, Eucalyptus scabra auct. non Dum.-Cours., Eucalyptus eugenioides auct. non Sieber ex Spreng., Eucalyptus globoidea var. subsphaerica) MYRTACEAE	White Stringybark Z
Eucalyptus gummifera (Syn. Eucalyptus corymbosa) MYRTACEAE	Red Bloodwood; Mannen X Zp
Eucalyptus haemastoma MYRTACEAE	Scribbly Gum; White Gum; Snappy Gum; Brittle Gum; Tarinny; Wongnary X
Eucalyptus pilularis ssp. pilularis MYRTACEAE	Blackbutt; Tarundea A B C E Fp G H J X Z
Eucalyptus resinifera, ssp. resinifera MYRTACEAE	Red Mahogany; Torumba; Booah X Z



Eucalyptus saligna, (Syn. Eucalyptus saligna var. protrusa) MYRTACEAE	Sydney Blue Gum; Calangara Ap Bp Dp Fp Xp Zp
Eupomatia laurina EUPOMATIACEAE	Bolwarra; Copper Laurel; Native Guava Z
Eustrephus latifolius var. latifolius LUZURIAGIACEAE (PHILESIACEAE)	Wombat Berry; Orange Berry A B C D E F G H J X Z
Ficus coronata, (Syn. Ficus stephanocarpa) MORACEAE	Creek Sandpaper Fig; Creek Fig; Sandpaper Fig A B C D E F G J X Z
Ficus fraseri, (Syn. Ficus stenocarpa, Ficus aspera var. subglabra, Ficus subglabra, Ficus stephanocarpa var. subglabra) MORACEAE	Sandpaper Fig; Watery Fig B C
Ficus rubiginosa (Syn. Ficus rubiginosa var. glabrescens) MORACEAE	Port Jackson Fig; Rusty Fig Illawarra Fig; Dthaaman B C H J Z
Gahnia sp. CYPERACEAE	Sword Grass B F J X Z
Geitonoplesium cymosum LUZURIAGIACEAE (PHILESIACEAE)	Scrambling Lily B E F H J X Z
Geranium homeanum GERANIACEAE	Native Geranium; Northern Cranesbill A B C H Z 2
Gleichenia dicarpa GLEICHENIACEAE	Pouched Coral Fern H X
Glochidion ferdinandi, var. ferdinandi, (Syn. Phyllanthus ferdinandi) EUPHORBIACEAE	Cheese Tree; Buttonwood; Water Gum; Pencil Cedar A B C D F G Zp
Glycine clandestina FABACEAE (FABOIDEAE)	Love Creeper; Twining Glycine A B C E F G J X Z
Glycine tabacina FABACEAE (FABOIDEAE)	Love Creeper C E J

Gnaphalium sphaericum (Syn. japonicum auct. non Thunb., Gnaphalium involucreatum, auct. non Forst. f., Euchiton involucreatus) ASTERACEAE	Common Cudweed C	Z
Gompholobium latifolium FABACEAE (FABOIDEAE)	Golden Glory Pea; Broad-leaf Wedge Pea	H X
Gonocarpus tetragynus (Syn. Haloragis tetragyna, var. hispida) HALORAGACEAE	Poverty Raspwort	J
Gonocarpus teucroides (Syn. Haloragis teucroides) HALORAGACEAE	Germander Raspwort A B E	J Z
Grevillea buxifolia, ssp. buxifolia, (Syn. Embothrium buxifolium, Embothrium genianthum, Stylurus buxifolia, Stylurus collina) PROTEACEAE	Grey Spider Flower; Hairy Spider Flower	X
Grevillea linearifolia, Hawkesbury Sandstone form (Syn. Grevillea linearis, Embothrium lineare, Embothrium linearifolium, Lysanthe linearifolia, Grevillea linearis var. alba, Grevillea, var. incarnata) PROTEACEAE	White Spider Flower B C E F Gp	J X Zp
Grevillea sericea, (Syn. Grevillea sericea, var. diffusa, Grevillea riparia, Grevillea stricta, Embothrium sericeum, Embothrium cytisoides, Lysanthe dubia, Lysanthe cytisifolia, Lysanthe riparia) PROTEACEAE	Pink Spider Flower; Silky Spider Flower E	Zp



Grevillea speciosa	Red Spider Flower					
ssp. speciosa,		E		X	Zp	
(Syn. Grevillea punicea,						
Lysanthe speciosa)						
PROTEACEAE						
Hakea salicifolia,	Willow-leaved Hakea					
(Syn. Hakea saligna,		B			Zp	
Hakea saligna var. angustifolia,						
Embothrium salignum,						
Conchium salignum,						
Embothrium salicifolium,						
Hakea amplifolia,						
Hakea mimosoides)						
PROTEACEAE						
Hakea sericea,	Needle Bush; Silky Hakea;					
(Syn. Hakea acicularis,	Bushy Needlewood; Syerige Hakea					
Conchium aciculare,		B	F	G	H	J
Conchium compressum,						X
Banksia tenuifolia,						Zp
Hakea vittata var. glabriflora						
Hakea tenuifolia,						
Hakea longispina)						
PROTEACEAE						
Hakea teretifolia,	Dagger Hakea					
(Syn. Hakea pugioniformis,						X
Banksia teretifolia,						
Lambertia teretifolia,						
Conchium pugioniforme,						
Conchium longifolium,						
Hakea glabra,						
Hakea glauca,						
Hakea parilis)						
PROTEACEAE						
Hardenbergia violacea,	Native, or False Sarsaparilla					
(Syn. Hardenbergia monophylla,	Native Lilac					
Kennedia monophylla, var alba,		E	G		Zp	m.
Hardenbergia alba,						
Hardenbergia ovata,						
Hardenbergia cordata)						
FABACEAE (FABOIDEAE)						
Hibbertia dentata,	Toothed, Trailing or					
(Syn. Hibbertia dentata,	Twining Guinea Flower					
var. calva)		A	B	C	E	F
DILLENIACEAE					H	J
					Z	m.

Hibbertia empetrifolia, (Syn. Hibbertia astrotricha, Hibbertia ovata, var. typica, Hibbertia billardieri, Hibbertia billardieri var. scabra, Hibbertia billardieri var. ovata) DILLENIAEAE	Trailing Guinea Flower A	J	Z	m.
Histiopteris incisa DENNSTAEDTIAEAE	Bat's Wing Fern; Oak Fern B F H		Z	
Hydrocotyle peduncularis, (Syn. Hydrocotyle hirta, var. pusilla) APIACEAE	Pennywort B C E G J		Z	
Hydrocotyle tripartita APIACEAE	Pennywort		H	
Hypolepis muelleri DENNSTAEDTIAEAE	Harsh Ground Fern A C			Zp
Imperata cylindrica var. major (Syn. Imperata arundinacea, Imperata koenigii) POACEAE	Blady Grass		X Z	
Juncus planifolius JUNCACEAE	Broad-leaf Rush		G	Z
Juncus usitatus JUNCACEAE	Common Rush		Ep Fp	Zp
Kennedia rubicunda (Syn. Kennedy rubicunda var. robusta) FABACEAE (FABOIDEAE)	Dusky Coral Pea; Red Bean; Red Kennedy Pea E G		J Zp	m.
Kunzea ambigua (Syn. Kunzea corifolia) MYRTACEAE	Tick Bush; White Kunzea G H		X Zp	
Lambertia formosa (Syn. Protea nectarina, Lambertia barbata, Lambertia proxima) PROTEACEAE	Mountain Devil; Honey Flower; Honeysuckle H		X Zp	
Lasiopetalum ferrugineum, var. cordatum STERCULIACEAE	Rusty Petals A			m.



Lasiopetalum ferrugineum, var. ferrugineum STERCULIACEAE	Rusty Petals B	J			m. Z 3 4
Lepidosperma laterale CYPERACEAE	A B C	H J X			Z m.
Lepidosperma longitudinale CYPERACEAE		H			m.
Leptospermum trinervium, (Syn. Leptospermum attenuatum, Leptospermum stellatum, var. grandiflorum) MYRTACEAE	Weeping Tea Tree	Gp			Zp
Leptospermum flavescens, (Syn. Leptospermum flavescens, var. commune) MYRTACEAE	Tantoon Tea Tree; Yellow Tea Tree Weeping Tea Tree A E				Zp
Lepyrodia scariosa RESTIONACEAE	Scale Rush				Z 3
Leucopogon juniperinus (Syn. Styphelia juniperina) EPACRIDACEAE	Bearded Heath	H	X	Z	2
Lindsaea linearis LINDSAEACEAE	Screw Fern	H	X	Z	
Lindsaea microphylla LINDSAEACEAE	Lacy Wedge Fern	H	X		
Livistona australis (Syn. Corypha australis) ARECACEAE	Cabbage Tree Palm A				Z
Lobelia alata LOBELIACEAE	Angled Lobelia A				Xp
Lomandra longifolia ssp. longifolia, (Syn. Xerotes longifolia) LOMANDRACEAE	Spiny-headed Mat Rush; Cut Grass; Roundabout Plant A B C D E F G H J X Z				
Lomandra multiflora (Syn. Xerotes multiflora, Xerotes brownii) LOMANDRACEAE					Z 2
Lomandra obliqua, (Syn. Xerotes flexifolia) LOMANDRACEAE				X	

Lomatia myricoides (Syn. Lomatia longifolia, Lomatia longifolia, var. arborescens) Tricondylus myricaefolius, Embothrium longifolium, Embothrium myricoides, Lomatia angustifolia, Lomatia arguta, Lomatia densa, Lomatia praelonga, Lomatia stenophylla) PROTEACEAE	Long Leaf Lomatia; River Lomatia Bp C Fp Gp X Zp
Lomatia silaifolia, var silaifolia (Syn. Embothrium silaifolium, Embothrium herbaceum, Embothrium crithmifolium, Grevillea silaifolia, Tricondylus silaifolius) PROTEACEAE	Wild Parsley; Crinkle Bush H Zp
Marsdenia rostrata ASCLEPIADACEAE	Twining Doubah; Common Milk Vine X
Marsdenia suaveolens ASCLEPIADACEAE	Sweet-scented Doubah H X
Melaleuca quinquenervia, (Syn. Melaleuca maidenii, Melaleuca smithii, Melaleuca leucadendron, Melaleuca leucadendron var. albida, Melaleuca leucadendron var. corinacea, MYRTACEAE	Paper-bark; Broad-leaved Tea Tree; Cajuput Oil Tree: Belbowrie C
Melia azedarach, var. australasica, (Syn. Melia dubia) MELIACEAE	White Cedar; Syrian Bead Tree; Pride of India; Persian Lilac; Japanese Bead Tree; Chinaberry; Australian White Cedar; Texas Umbrella Tree; A B C D F G Z
Micrantheum ericoides EUPHORBIACEAE	X m.
Microlaena stipoides, var. stipoides POACEAE	Weeping Grass; Meadow Rice Grass A B C D E F G H J X Z 2
Mirbelia rubiifolia, (Syn. Mirbelia reticulata) FABACEAE (FABOIDEAE)	Red Mirbelia X



Morinda jasminoides RUBIACEAE	A B C E F G H J X Z
Notelaea longifolia, (Syn. Notelaea longifolia, var. candolleana, Notelaea longifolia, var. rigida, Notelaea longifolia, var. typica OLEACEAE	Native Olive A C H J X Z
Notelaea venosa, (Syn. Notelaea longifolia, var. pedicellaris) OLEACEAE	Native Olive C
Olearia microphylla (Syn. Olearia ramulosa, microphylla) ASTERACEAE	Bridal Daisy Bush X
Omalanthus populifolius EUPHORBIACEAE	Native Poplar; Bleeding Heart A B C D E F G H J X Z
Opercularia aspera, var. aspera, (Syn. Opercularia aspera, var. ligustrifolia) RUBIACEAE	Stinkwort A C E F G H J X Z m.
Oplismenus aemulus, var. aemulus POACEAE	Basket Grass A B C E F H
Oplismenus imbecillis POACEAE	Australian Basket Grass; Creeping Beard Grass A B D E F J X Z
Oxalis perennans OXALIDACEAE	Yellow Suckling Clover A B C E F J Z 2
Ozothamnus diosmifolius (Syn. Helichrysum diosmifolium) ASTERACEAE	Cauliflower Bush; Sago Bush; Pill Bush B C E Fp Gp J Zp

*Pandorea pandorana*, ssp. *pandorana*, Wonga Wonga Vine; Chocolate Bells;  
 (Syn. *Tecoma australis*, Snow Bells  
     ssp. *pandorana*, B C E F H J X Z  
*Pandorea australis*,  
*Pandorea australis*, ssp. *pandorana*,  
*Tecoma australis* var. *pandorea*,  
*Pandorea australis* ssp. *meonantha*,  
*Tecoma australis* var. *meonantha*)  
 BIGNONIACEAE

*Parsonsia straminea*, Common Silkpod; Monkey Rope  
     var. *straminea*, E F J X Z  
 (Syn. *Lyonsia straminea*)  
 APOCYNACEAE

*Patersonia sericea* Silky Purple Flag; Bush Iris  
 IRIDACEAE X

*Pellaea falcata*, Sickle Fern  
     var. *falcata* C D  
 SINOPTERIDACEAE

*Persicaria decipiens*, Slender Knotweed  
 (Syn. *Polygonum salicifolium*, D F G J X Z  
     *Polygonum decipiens*,  
     *Polygonum minus* ssp. *decipiens*)  
 POLYGONACEAE

*Persicaria lapathifolia*, Pale Knotweed  
 (Syn. *Polygonum lapathifolium*, D F  
     *Polygonum lapathifolium* var. *lanigerum*)  
 POLYGONACEAE

*Persicaria strigosa*, Spotted Knotweed  
 (Syn. *Polygonum strigosum*) D E  
 POLYGONACEAE

*Persoonia levis*, Broad-leaf Geebung; Smooth Geebung;  
 (Syn. *Linkia levis*, Willow Geebung X  
     *Persoonia salicina*,  
     *Persoonia lanceolata* var. *levis*,  
     *Persoonia lanceolata*,  
     var. *latifolia*)  
 PROTEACEAE



Persoonia linearis, (Syn. Persoonia angustifolia, Persoonia pinifolia, (not of R. Br.), Persoonia filifolia, Persoonia pruinosa, Persoonia pentadactylon, Persoonia linearis var. sericea, Persoonia breviscula, Persoonia phyllostachys, Persoonia walteri) PROTEACEAE	Narrow-leaf Geebung B C	H	X	
Persoonia pinifolia, (Syn. Persoonia patulifolia, Persoonia pervagans) PROTEACEAE	Pine-leaf Geebung	H	X	Zp
Petrophile pulchella, (Syn. Petrophile fucifolia, Protea pulchella, Protea fucifolia, Protea dichotoma) PROTEACEAE	Conesticks E		X	
Phebalium dentatum RUTACEAE			X	Zp m.
Phyllanthus gastroemii EUPHORBIACEAE	A B C G			Z
Phyllanthus hirtellus forma A, (Syn. Phyllanthus thymoides, Phyllanthus mitchellii, Phyllanthus thymoides var. glabrata) EUPHORBIACEAE	Thyme Spurge		X	
Pimelea linifolia, ssp. linifolia, (Syn. Pimelia spathulata, Pimelia linifolia, var. andersonii) THYMELAEACEAE	Slender Rice Flower	H	X	
Pittosporum revolutum PITTOSPORACEAE	Hairy Pittosporum A B C		X	Zp
Pittosporum undulatum PITTOSPORACEAE	Sweet Pittosporum; Mock Orange; Native Laurel; Native Daphne; Wave-leaved Pittosporum; Engraver Wood; Victorian Box; Wallundun-deyren A B C D E F G H J X Z			

Plantago debilis (Syn. Plantago varia, var. debilis) PLANTAGINACEAE	Plantain B F G X Z 2
Platyserium bifurcatum, ssp. bifurcatum POLYPODIACEAE	Elkhorn C H J X Z 4 5
Platylobium formosum FABACEAE (FABOIDEAE)	Handsome Flat Pea C E Gp H Jp X Z m.
Platysace lanceolata, (Syn. Trachymene billardieri, Trachymene billardieri, var. lanceolata, Trachymene billardieri, var. ovata, Trachymene billardieri, var. myrtifolia, Trachymene billardieri, var. conferta, Trachymene billardieri, var. cuneata) APIACEAE	Carrot Tops E X
Platysace linearifolia, (Syn. Trachymene linearis) APIACEAE	Carrot Tops C E F J X Z 3
Plectorrhiza tridentata, (Syn. Thrixspermum tridentatum, Cleisostoma tridentata Sarcochilus tridentatus, Sarcanthus tridentatus, Cleisostoma cornutum, ORCHIDACEAE	Tangle Orchid F G
Poa affinis, (Syn. Poa caespitosa, var. affinis) POACEAE	Tussock Poa B E F G H J Z 2
Podocarpus elatus PODOCARPACEAE	Plum Pine; Brown Pine; She Pine; Yellow Pine D F
Polymeria calycina CONVOLVULACEAE	A B E F J



Polyscias elegans (Syn. Panax elegans, Tieghemonopanax elegans) ARALIACEAE	Silver Basswood; Celerywood; Black Pencil Cedar	J	Z	2
Polyscias sambucifolia, (Syn. Panax sambucifolius, Tieghemonopanax sambucifolius) ARALIACEAE	Elderberry Panax; Ornamental Ash; Elderberry Ash; Small Basswood	C	E	F H J X Z
Pomaderris elliptica, (Syn. Pomaderris multiflora) RHAMNACEAE			X	m.
Pomax umbellata RUBIACEAE	Pomax		X	
Poranthera microphylla EUPHORBIACEAE			G	
Prasophyllum sp. ORCHIDACEAE			H	
Pratia purpurascens, (Syn. Lobelia purpurascens) LOBELIACEAE	White-root	A	C D	F G H J X Z
Pseuderanthemum variabile, (Syn. Eranthemum variable, var. molle) ACANTHACEAE		A B C	F G H J	X Z
Psilotum nudum PSILOACEAE	Skeleton Fork Fern			X Z 5
Pteridium esculentum, (Syn. Pteridium aquilinum) DENNSTAEDTIACEAE	Bracken Fern	A B C D E	F G H J	X Z
Pteris tremula PTERIDACEAE	Tender Brake	A B C D E F	H	Z
Pteris umbrosa PTERIDACEAE	Jungle Brake		H	
Pterostylis nutans ORCHIDACEAE	Nodding Greenhood Orchid	C	H	X Z
Pultenaea daphnoides (Syn. Pultenaea daphnoides, var. obcordata) FABACEAE (FABOIDEAE)	Large-leaf Bush Pea	Cp	Fp H	Zp m.

Pultenaea flexilis FABACEAE (FABOIDEAE)	Bp Cp Fp J X Zp 4 m.
Pyrrosia rupestris POLYPODIACEAE	Rock Felt Fern D H X Z 5
Rapanea howittiana, (Syn. Myrsine howittiana) MYRSINACEAE	Howitt's Muttonwood; Brush Muttonwood X
Rapanea variabilis, (Syn. Myrsine variabilis) MYRSINACEAE	Variable Muttonwood X
Rubus hillii, (Syn. Rubus moluccanus p.p) ROSACEAE	Native Raspberry; Molucca Bramble Broad-leaved Bramble J
Scaevola calendulacea, (Syn. Scaevola suaveolens) GOODENIACEAE	Scented Fan-flower E Z
Schelhammera undulata LILIACEAE	Lilac Lily A B C G H J X Z m.
Schizaea dichotoma SCHIZAEACEAE	Branched Comb Fern X
Schizaea rupestris SCHIZAEACEAE	X
Scirpus inundatus, (Syn. Isolepis inundata, scirpus inundatus f. urillei) CYPERACEAE	A B E Z
Selaginella uliginosa SELAGINELLACEAE	Swamp Selaginella D H
Senecio hispidulus var. hispidulus (Syn. Erechites hispidulus) ASTERACEAE	Rough Groundsel Z 2
Sigesbeckia orientalis ASTERACEAE	Indian-weed A B C D E F G H J X Z
Smilax australis SMILACACEAE	Lawyer Vine; Bush Lawyer; Wait-a-while; Austral Sarsaparilla X
Smilax glycyphylla SMILACACEAE	Thornless Smilax; Sarsaparilla A B C E F H J X Z



Solanum aviculare SOLANACEAE	Kangaroo Apple G J Z
Stenocarpus salignus PROTEACEAE	Scrub Beefwood; Red Silky Oak; Beefwood X
Stephania japonica var. discolor, (Syn. Stephania hernandiifolia) MENISPERMACEAE	Tape Vine; Snake Vine C D F G J X
Sticherus flabellatus GLEICHENIACEAE	Umbrella Fern; Shiny Fan Fern B F H X
Stipa pubescens, (Syn. Stipa commutata) POACEAE	Tall Spear Grass G X
Stylidium graminifolium, (Syn. Stylidium majus, Candollea serrulata) STYLIDIACEAE	Grass Trigger Plant F H X
Syncarpia glomulifera, (Syn. Syncarpia laurifolia) MYRTACEAE	Turpentine A B C D E Fp Gp H J X Z
Syzygium oleosum, (Syn. Syzygium coolminianum, Eugenia coolminiana, Eugenia cyanocarpa) MYRTACEAE	Blue Cherry; Blue Lilly Pilly; Scented Satinash B X
Syzygium paniculatum, (Syn. Eugenia paniculata, Eugenia australis, Eugenia paniculata var. australis) MYRTACEAE	Magenta Lilly Pilly; Brush Cherry; Magenta Cherry F H J X Z
Tetratheca thymifolia, (Syn. Tetratheca ericifolia, var. thymifolia) TREMADRACEAE	Black-eyed Susan X m.
Themeda triandra, (Syn. Themeda australis, Themeda forskallii) POACEAE	Kangaroo Grass Bp Cp Ep Zp
Trema aspera, (Syn. Celtis aspera) ULMACEAE	Native Peach; Poison Peach Peach-leaved Poison Bush A B C H J X Z 4

Tricoryne simplex LILIACEAE	Yellow Autumn Lily; Yellow Rush Lily							X
Tristaniopsis laurina (Syn. Melaleuca laurina, Tristania laurina) MYRTACEAE	Water Gum; Kanuka Box; F H X							
Tylophora barbata ASCLEPIADACEAE	Bearded Tylophora					H		Z 2
Veronica plebeia SCROPHULARIACEAE	Trailing Speedwell A B C E						J	Z
Viola hederacea, forma D VIOLACEAE	Native Violet; Ivy-leaved Violet G H							
Viola hederacea, forma G VIOLACEAE	Native Violet; Ivy-leaved Violet E J Z							
Wahlenbergia gracilis (Syn. Wahlenbergia quadrifida) CAMPANULACEAE	Native Bluebell; Australian Bluebell A B D E J Z							
Wilkiea huegeliana, (Syn. Mollindia huegeliana) MONIMIACEAE	Common Wilkiea; Tetra Beech; Veiny Wilkiea							Zp
Xanthorrhoea sp. XANTHORRHOEACEAE	Grass Tree					Ep	H	X Zp
Xanthosia pilosa, (Syn. Xanthosia pilosa var. glabra, Xanthosia vestita) APIACEAE	Hairy Xanthosia; Woolly Xanthosia H X							m.
Xanthosia tridentata APIACEAE	Rock Xanthosia						H	m.
Zieria pilosa RUTACEAE								X Z 2
Zieria smithii RUTACEAE	Sandfly Zieria; Stinkwort A C E J X Z							



Indigenous Regeneration Co

Introduced Plant Species

recorded at

Ku-ring-gai Flying Fox Reserve, Gordon  
for Ku-ring-gai Bat Colony Committee Inc.

November, 1993

<u>Genus and species</u>	<u>Common Names</u>										
<u>FAMILY</u>	<u>AREAS: A B C D E F G H J X Z</u>										
* <i>Acacia elata</i> , (Syn <i>Racosperma elatum</i> ) FABACEAE/ (Subfamily MIMOSOIDEAE)	Mountain Cedar Wattle; Cedar Wattle; Pepper Tree Wattle Ap Bp Ep Fp J Zp										
* <i>Acacia fimbriata</i> FABACEAE (MIMOSOIDEAE)	Fringed Wattle; Brisbane Golden Wattle E Z										
* <i>Acer palmatum</i> ACERACEAE	Japanese Maple B E F Z										
* <i>Acetosa sagittata</i> , (Syn. <i>Rumex sagittatus</i> ) POLYGONACEAE	Turkey Rhubarb; Rambling Dock D F Z										
* <i>Ageratina adenophora</i> , (Syn. <i>Eupatorium adenophorum</i> , <i>Eupatorium glandulosum</i> ) ASTERACEAE	Crofton Weed E F G J Z										
* <i>Ageratina riparia</i> , (Syn. <i>Eupatorium riparium</i> ) ASTERACEAE	Mist Flower; Creeping Crofton Weed D E F G J Z										
* <i>Ageratum houstonianum</i> ASTERACEAE	Blue Billygoat Weed; Floss Flower B E F G Z										
* <i>Akebia quinata</i> LARDIZABALACEAE	Five-leaf Chocolate Vine A E										
* <i>Alectryon tomentosus</i> , (Syn. <i>Nephelium tomentosum</i> ) SAPINDACEAE	Hairy Bird's Eye; Bed-jacket; Woolly Rambutan B J Z 4										
* <i>Allium triquetrum</i> LILIACEAE	Three-cornered Garlic; Angled Onion D H X										
* <i>Alstroemeria psittacina</i> ALSTROEMERIACEAE	New Zealand Christmas Bells; Peruvian Lily J X Z										

* <i>Anagallis arvensis</i> PRIMULACEAE	Scarlet Pimpernel; Blue Pimpernel E F G X Z
* <i>Anredera cordifolia</i> BASELLACEAE	Madeira Vine; Lambs' Tails; Potato Vine; Jalap B D E F G H J Z
* <i>Apium leptophyllum</i> APIACEAE	Slender Celery B E Z
* <i>Araujia hortorum</i> ASCELPIADACEAE	Moth Vine; Moth Plant; Cruel Vine A B C D E F G X Z
* <i>Arbutus unedo</i> ERICACEAE	Irish Strawberry Tree G
* <i>Archontophoenix cunninghamiana</i> , (Syn. <i>Ptychosperma cunninghamiana</i> , "Seaforthia elegans," - hort. "Ptychosperma elegans," - hort.) ARECACEAE	Bangalow Palm (NSW); Piccabeen Palm (Q) E G X
* <i>Arctotheca calendula</i> , (Syn. <i>Cryptostemma calendula</i> ) ASTERACEAE	Capeweed Z 2
* <i>Ardisia crenulata</i> MYRSINACEAE	Red Coral Berry F G
* <i>Arundo donax</i> POACEAE	Giant Reed; Elephant Grass D G H J X
* <i>Asparagus scandens</i> ASPARAGACEAE	Climbing Asparagus X Z 3
* <i>Bidens pilosa</i> ASTERACEAE	Cobbler's Peg; Farmer's Friend; Devil's Pitchforks; Beggar's Ticks A B D E F G J X Z
* <i>Brachychiton acerifolium</i> (Syn. <i>Sterculia acerifolia</i> ) STERCULIACEAE	Illawarra Flame Tree; Flame Kurrajong A B C D E F G H J X Z
* <i>Brassica juncea</i> BRASSICACEAE	Indian Mustard F Z
* <i>Briza maxima</i> POACEAE	Quaking Grass; Blowfly Grass C X Z
* <i>Briza minor</i> POACEAE	Shivery Grass G X Z



* Bromus catharticus, (Syn. Bromus unioloides, Ceratochloa unioloides, Bromus wildenowii) POACEAE	Prairie Grass B F X Z
* Callitriche stagnalis CALLITRICHACEAE	Water Starwort Z
* Calodendron capense RUTACEAE	Cape Chestnut C F Z
* Canna indica CANNACEAE	Indian Shot F G
* Capsella bursa-pastoris BRASSICACEAE	Shepherd's Purse E F Z
* Cardamine hirsuta BRASSICACEAE	Flick Weed; Common Bittercress; Hairy Woodcress E G H J X Z
* Cardiospermum grandiflorum SAPINDACEAE	Balloon Vine F X Z
* Carum petroselinum (Syn. Petroselinum crispum) BRASSICACEAE	Parsley Z
* Castanospermum australe FABACEAE (FABOIDEAE)	Black Bean; Bean Tree; Moreton Bay Bean; Moreton Bay Chestnut G X Z 1
* Celtis australis ULMACEAE	Nettle Tree B C E F Z
* Celtis occidentalis ULMACEAE	Hackberry; Sugar Berry B F
* Centaurium tenuiflorum GENTIANACEAE	Centaury A G X
* Centaurium erythraea, (Syn. Centaurium minus) GENTIANACEAE	Common Centaury A C E F
* Cerastium glomeratum CARYOPHYLLACEAE	Sticky Mouse-ear Chickweed G Z
* Cestrum parqui SOLANACEAE	Green Cestrum; Green Poison Berry E X Z 4
* Chenopodium album CHENOPODIACEAE	Fat-hen; White Goosefoot E J Z

* <i>Chlorophytum comosum</i> LILIACEAE	Spider Plant D F X Z
* <i>Cinnamomum camphora</i> (Syn. <i>Cinnamomum officinalis</i> ) LAURACEAE	Camphor Laurel A B C D E F G J X Z 1237
* <i>Cirsium vulgare</i> ASTERACEAE	Spear Thistle A C F J Z
* <i>Colocasia esculenta</i> , cv. <i>Fontanesii</i> , (Syn. <i>Colocasia antiquorum</i> ) ARACEAE	Taro: Elephant's Ear G Z
* <i>Conyza albida</i> , (Syn. <i>Erigeron floribundus</i> ) ASTERACEAE	Tall Fleabane A B E F J X Z
* <i>Conyza bilbaoana</i> , (Syn. <i>Conyza canadensis</i> ) ASTERACEAE	Fleabane C X Z
* <i>Conyza bonariensis</i> , (Syn. <i>Erigeron bonariensis</i> ) ASTERACEAE	Flaxleaf Fleabane A B C E F J X Z
* <i>Conyza canadensis</i> , var. <i>canadensis</i> , (Syn. <i>Erigeron canadensis</i> ) ASTERACEAE	Canadian Fleabane; Horsetweed A F J X Z
* <i>Conyza parva</i> , (Syn. <i>Conyza canadensis</i> var.) ASTERACEAE	Small Fleabane X Z
* <i>Coreopsis grandiflora</i> , (Syn. <i>Coreopsis lanceolata</i> ) ASTERACEAE	Tick Seed E F X
* <i>Cornus florida</i> Alba CORNACEAE	White Dogwood Z
* <i>Coronopus didymus</i> BRASSICACEAE	Lesser Swinecress; Bittercress G J
* <i>Cortaderia selloana</i> , (Syn. <i>Cortaderia argentea</i> ) POACEAE	Pampas Grass X
* <i>Cotoneaster glaucophyllus</i> MALACEAE	Cotoneaster E F X Z
* <i>Crassocephalum crepidioides</i> ASTERACEAE	Thickhead B D F G H J X Z



* <i>Crocosmia x crocosmiiflora</i> , (Syn. <i>Tritonia crocata</i> , <i>Tritonia X crocosmiiflora</i> ) IRIDACEAE	Crocosmia; Montbretia; Blazing Star; Flame Freesia; Kakoentjie E X Z
* <i>Cyperus brevifolius</i> , (Syn. <i>Kyllinga brevifolia</i> ) CYPERACEAE	Mullumbimby Couch B C D E F G X Z
* <i>Cyperus congestus</i> CYPERACEAE	E
* <i>Cyperus eragrostis</i> CYPERACEAE	Umbrella Sedge D Z
* <i>Digitaria sanguinalis</i> POACEAE	Summer Grass B D F J Z
* <i>Digitaria didactyla</i> , (Syn. <i>Digitaria didactyla</i> , <i>Panicum didactylum</i> ) POACEAE	Queensland Blue Couch A
* <i>Dipogon lignosus</i> (Syn. <i>Dolichos lignosus</i> , <i>Verdcourtia lignosa</i> ) FABACEAE (FABOIDEAE)	Dolichos Pea E J Z
* <i>Duchesnea indica</i> ROSACEAE	Indian Strawberry; Wild Strawberry; Dalmatian Strawberry F J Z
* <i>Echinochloa colona</i> POACEAE	Awnless Barnyard Grass F
* <i>Ehrharta erecta</i> POACEAE	Panic Veldt Grass E F G J X Z
* <i>Eleusine indica</i> POACEAE	Crowsfoot Grass E Z
* <i>Erechtites valerianifolia</i> ASTERACEAE	Brazilian Fireweed J Z
* <i>Erigeron acris</i> ASTERACEAE	Blue Fleabane A C E
* <i>Erigeron karvinskianus</i> , (Syn. <i>Erigeron mucronatus</i> ) ASTERACEAE	Baby's Tears; Vittadenia; Fleabane; Seaside Daisy; Mexican Daisy D F G X Z
* <i>Eriobotrya japonica</i> ROSACEAE	Loquat; Japanese Medlar A B D G X Z

* <i>Erythrina crista-galli</i> FABACEAE (FABOIDEAE)	Cockscomb Coral Tree E			
* <i>Erythrina x sykesii</i> FABACEAE (FABOIDEAE)	Indian Coral Tree; Flame Tree E		X	
* <i>Euphorbia peplus</i> EUPHORBIACEAE	Petty Spurge; Milkweed; Radium Plant E F			Z
* <i>Facelis retusa</i> ASTERACEAE		E	J	Z
* <i>Fatshedera lizei</i> ARALIACEAE	Tree Ivy E			Z
* <i>Ficus elastica</i> MORACEAE	India Rubber Tree			Z
* <i>Ficus pumila</i> MORACEAE	Climbing Fig			X
* <i>Fuchsia cv.</i> ONAGRACEAE				Z
* <i>Fumaria muralis, ssp. muralis</i> FUMARIACEAE	Wall Fumitory A		F G	Z
* <i>Galinsoga parviflora</i> ASTERACEAE	Potato Weed E		J	Z
* <i>Galium aparine</i> RUBIACEAE	Cleavers			Z 2
* <i>Genista monspessulana,</i> (Syn. <i>Teline monspessulana,</i> <i>Cytisus monspessulana</i> <i>Genista candidans,</i> <i>Cytisus candidans</i> FABACEAE (FABOIDEAE)	Montpellier Broom; Cape Broom J X			
* <i>Gingko biloba</i> GINGKOACEAE	Maidenhair Tree; Duck's Foot Tree			Z
* <i>Gnaphalium americanum</i> ASTERACEAE	Cudweed A B D E			Z
* <i>Gnaphalium calviceps</i> ASTERACEAE	A			Z
* <i>Gnaphalium pennsylvanicum</i> ASTERACEAE	A B E		J	Z



* Grevillea robusta PROTEACEAE	Silky Oak; Southern Silky Oak A C D E F G H J X Z
* Hedera helix ARALIACEAE	English Ivy A C F G J X Z 1
* Hedychium gardnerianum ZINGIBERACEAE	Yellow Ginger F G Z 1 2 3
* Howea forsteriana ARECACEAE	Lord Howe Island Palm; Kentia Palm; Sentry Palm; Thatch Palm F G
* Hydrangea macrophylla, ssp. macrophylla cv. MALVACEAE	Hydrangea; Hortensia D G
* Hymenosporum flavum PITTIOSPORACEAE	Native Frangipanni; Queensland Frangipanni B
* Impatiens sultanii BALSAMINACEAE	Impatiens; Snapweed; Busy Lizzie D E F G H X Z
* Ipomoea indica CONVOLVULACEAE	Blue Morning Glory B E F G X Z
* Jacaranda mimosaeifolia BIGNONIACEAE	Jacaranda; Brazilian Rosewood; Fern Tree; Blue Haze Tree B C E F G X Z
* Justicia peruviana ACANTHACEAE	E H J
* Lagerostroemia indica LYTHRACEAE	Crepe Myrtle D F
* Lantana camara VERBENACEAE	Lantana A B C D E F G J X Z 1
* Lepidium bonariensis BRASSICACEAE	Argentine Peppergrass A E X Z
* Ligustrum lucidum OLEACEAE	Large-leaved Privet A B C D E F G J X Z 1
* Ligustrum sinense OLEACEAE	Small-leaved Privet A B C D E F G H J X Z 1 3
* Liquidambar styraciflua CAESALPINACEAE	Sweetgum; Liquidambar A B C D F X Z
* Lomandra hystrix LOMANDRACEAE	Ep J Zp

* <i>Lonicera japonica</i> CAPRIFOLIACEAE	Japanese Honeysuckle Gold and Silver Flower E G X Z
* <i>Lunaria annua</i> BRASSICACEAE	Honesty Z
* <i>Lycopersicon esculentum</i> SOLANACEAE	Tomato A B C E F G J X Z
* <i>Macadamia tetraphylla</i> PROTEACEAE	Macadamia Nut; Rough-shelled Bush Nut Z 3
* <i>Mackaya bella</i> ACANTHACEAE	Pink Bell Flowers E Z
* <i>Malva parviflora</i> MALVACEAE	Small-flowered Mallow E
* <i>Medicago lupulina</i> FABACEAE (FABOIDEAE)	Black Medic C G Z
* <i>Melia azedarach</i> , var. <i>australasica</i> , (Syn. <i>Melia dubia</i> ) MELIACEAE	White Cedar; Syrian Bead Tree; Pride of India; Persian Lilac; Japanese Bead Tree; Chinaberry; Australian White Cedar; Texas Umbrella Tree; A B C D E F G X Z
* <i>Melilotus indica</i> , (Syn. <i>Melilotus parviflora</i> ) FABACEAE (FABOIDEAE)	Hexham Scent; Sweet Melilot; King Island Melilot E
* <i>Michelia figo</i> MAGNOLIACEAE	Port Wine Magnolia; Banana Shrub; Champak J X Z 7
* <i>Monstera deliciosa</i> ARACEAE	Fruit Salad Plant; Swiss Cheese Plant D J X Z
* <i>Morus nigra</i> MORACEAE	Black Mulberry; Persian Mulberry A B D E F G J X Z
* <i>Murraya paniculata</i> , (Syn. <i>Murraya exotica</i> ) RUTACEAE	Sweet Orange Jessamine C F G X Z
* <i>Myosotis sylvatica</i> BORAGINACEAE	Wood Forget-me-not A G Z



* <i>Myrsiphyllum scandens</i> (Syn. <i>Myrsiphyllum asparagoides</i> , <i>Asparagus asparagoides</i> ) ASPARAGACEAE	Baby Smilax; Bridal Creeper	X Z
* <i>Nandina domestica</i> BERBERIDACEAE	Heavenly Bamboo; Sacred Bamboo	A E J X Z
* <i>Narcissus jonquilla</i> AMARYLLIDACEAE	Jonquil	Z
* <i>Narcissus pseudonarcissus</i> AMARYLLIDACEAE	Daffodil	Z
* <i>Nephrolepis cordifolia</i> DAVALLIACEAE	Fishbone, Herringbone or Sword Fern	A B D E F G X Z
* <i>Nothoscordum gracilis</i> , (Syn. <i>Nothoscordum inodorum</i> ) AMARYLLIDACEAE	Onion Weed	A B D E F G J X Z
* <i>Ochna serrulata</i> , (Syn. <i>Ochna atropurpurea</i> ) OCHNACEAE	Ochna; Mickey Mouse Plant; Birds Eye Bush; Carnival Bush	A B C D E F G H J X Z 1 7
* <i>Olea europaea</i> , ssp. <i>africana</i> , (Syn. <i>Olea chrysophylla</i> ) OLEACEAE	African Olive	A D E F G H J X Z 3
* <i>Olea europaea</i> , ssp. <i>europaea</i> OLEACEAE	European Olive	F Z 3
* <i>Oxalis debilis</i> var. <i>corymbosa</i> OXALIDACEAE	Pink Shamrock; Lilac Oxalis	D
* <i>Oxalis incarnata</i> OXALIDACEAE	Climbing Oxalis	B F X Z
* <i>Oxalis pes-caprae</i> OXALIDACEAE	Soursob	A C D
* <i>Panicum miliaceum</i> POACEAE	Millet Panic Grass	F
* <i>Paraserianthes lophantha</i> , ssp. <i>lophantha</i> (Syn. <i>Albizia lophantha</i> , ssp. <i>lophantha</i> ) FABACEAE (MIMOSOIDEAE)	Crested Wattle	J
* <i>Parietaria judaica</i> , (Syn. <i>Parietaria diffusa</i> ) URTICACEAE	Pellitory of the Wall; Sticky Weed	C F X Z

* <i>Parthenocissus quinquefolia</i> VITACEAE	Virginia Creeper; Japanese Ivy C F Z 4
* <i>Paspalum dilatatum</i> POACEAE	Paspalum; Golden Crown Grass D E F G J X Z
* <i>Passiflora subpeltata</i> , (Syn. <i>Passiflora alba</i> ) PASSIFLORACEAE	White Passionfruit C F J Z
* <i>Passiflora edulis</i> PASSIFLORACEAE	Passionfruit B E F Z 1 2
* <i>Persicaria capitata</i> , (Syn. <i>Polygonum capitatum</i> ) POLYGONACEAE	Japanese Knotweed; Rock Rose B D F G H X Z
* <i>Phoenix canariensis</i> ARECACEAE	Canary Island Palm F Z
* <i>Phyllanthus tenellus</i> , (Syn. <i>Phyllanthus brisbanicus</i> ) EUPHORBIACEAE	Z
* <i>Physalis peruviana</i> , (Syn. <i>Physalis frabchetti</i> ) SOLANACEAE	Cape Gooseberry; Winter Cherry; Cherry-in-a-lantern; Chinese Lantern E G
* <i>Phytolacca octandra</i> PHYTOLACCACEAE	Ink Weed D G J Z
* <i>Plectranthus ecklonii</i> LAMIACEAE	Blue Cockspur Flower X
* <i>Poa annua</i> POACEAE	Winter Grass A B C D F G X Z
* <i>Polycarpon tetraphyllum</i> CARYOPHYLLACEAE	Four Leaf Allseed D F G J X Z
* <i>Polygonum aviculare</i> POLYGONACEAE	Wire Weed; Hog Weed
* <i>Polygonum arenastrum</i> POLYGONACEAE	Sandwireweed
* <i>Portulaca oleracea</i> PORTULACACEAE	Purslane; Pig Weed A E Z
* <i>Primula vulgaris</i> cv. PRIMULACEAE	Primula A B C D E F G X Z



* <i>Protasparagus aethiopicus</i> , cv. <i>sprengeri</i> , (Syn. <i>Asparagus densiflorus</i> , cv. <i>Sprenger</i> ) ASPARAGACEAE	Asparagus Fern A B C D E F G	X Z 1 7
* <i>Protasparagus plumosus</i> , (Syn. <i>Protasparagus setaceus</i> , <i>Asparagus setaceus</i> ) ASPARAGACEAE	Climbing Asparagus F G	X Z
* <i>Prunus avium</i> AMYGDALACEAE	Sweet Cherry F	Z 2 3
* <i>Prunus cerasus</i> AMYGDALACEAE	Sour Cherry F	Z 2
* <i>Pseudognaphalium luteo-album</i> , (Syn. <i>Gnaphalium luteo-album</i> ) ASTERACEAE	Jersey Cudweed A	
* <i>Quercus robur</i> FAGACEAE	English Oak B F	Z
* <i>Ranunculus repens</i> RANUNCULACEAE	Creeping Buttercup D E G	X Z
* <i>Rhaphiolepis indica</i> ROSACEAE	Hawthorn E F	Z 1 2
* <i>Rhododendron thomsonii</i> ERICACEAE	Dr Thomson's Rhododendron E	Z
* <i>Rhus succedanea</i> SAPINDACEAE	Wax Tree; Poison Tree A C D F G	X Z 1 3 7
* <i>Richardia stellaris</i> RUBIACEAE	Field Madder F	X Z
* <i>Rubus fruticosus</i> ROSACEAE	Blackberry; Brambles B C D F	X Z
* <i>Rumex crispus</i> POLYGONACEAE	Curled Dock D	X Z
* <i>Salix babylonica</i> SALICACEAE	Weeping Willow; Poets' Willow E	
* <i>Salvia splendens</i> LAMIACEAE	Bonfire Sage F	
* <i>Sapium sebiferum</i> EUPHORBIACEAE	Chinese Tallow Tree F	

* <i>Senecio madagascariensis</i> ASTERACEAE	Fireweed	E F G J X Z
* <i>Senecio petasitis</i> ASTERACEAE	Large-leaved Senecio	X Z
* <i>Senna floribunda</i> , (Syn. <i>Cassia bicapsularis</i> , <i>Cassia laevigata</i> ) CAESALPINACEAE	Smooth Cassia; Arsenic Bush; B D F	X Z
* <i>Senna pendula</i> , (Syn. <i>Cassia coluteoides</i> ) CAESALPINACEAE	Colladon; Cassia; Winter Senna A C D F	X Z
* <i>Setaria palmifolia</i> POACEAE	Palm Grass	D F G X Z
* <i>Sida rhombifolia</i> MALVACEAE	Paddy's Lucerne	J X Z
* <i>Sisyrhynchium</i> sp. A IRIDACEAE	Scour Weed	E
* <i>Solanum americanum</i> SOLANACEAE		B C Z
* <i>Solanum mauritianum</i> SOLANACEAE	Wild Tobacco Tree	B C D E F G J X Z 3
* <i>Solanum nigrum</i> SOLANACEAE	Blackberry Nightshade	A B C E F J Z
* <i>Solanum pseudocapsicum</i> SOLANACEAE	Madeira Winter Cherry	F X
* <i>Soleirolia soleirolii</i> , (Syn. <i>Helxine soleirolii</i> ) URTICACEAE	Corsican Carpet; Baby's Tears	X Z
* <i>Soliva pterosperma</i> ASTERACEAE	Bindii; Jo-jo	A E G X Z
* <i>Sonchus oleraceus</i> ASTERACEAE	Common Sow Thistle; Milk Thistle; Milky Dickle	E F G X Z
* <i>Sporobolus africanus</i> , (Syn. <i>Sporobolus indicus</i> , <i>Sporobolus capensis</i> ) POACEAE	Parramatta Grass; Rats' Tail Grass	E F X Z
* <i>Stachys arvensis</i> LAMIACEAE	Stagger Weed	E



* <i>Stellaria media</i> CARYOPHYLLACEAE	Chickweed B F Z
* <i>Stenocarpus sinuatus</i> PROTEACEAE	Firewheel Tree; Wheel of Fire Tree; White Beefwood; Tulip Flower; White Oak; White Silky Oak E Z
* <i>Stenolobium stans</i> BIGNONIACEAE	Tecoma; Yellow Elder; Yellow Bells; Yellow Trumpet Flower A C F
* <i>Strelitzia reginae</i> STRELITZIACEAE	Bird of Paradise Flower Crane Flower F
* <i>Strelitzia augusta</i> STRELITZIACEAE	Giant Strelitzia; Bird of Paradise Flower Z 3
* <i>Syagrus romanzoffianum</i> , (Syn. <i>Arecastrum romanzoffianum</i> , "Cocos plumosa" - hort.) ARECACEAE	Queen Palm; Cocos Palm B C E F J X Z 1
* <i>Symphytum officinale</i> BORAGINACEAE	Comfrey F G
* <i>Talinum paniculatum</i> PORTULACACEAE	Purslane F
* <i>Tetrapanax papyrifer</i> ARALIACEAE	Rice Paper Plant H
* <i>Trachycarpa fortunii</i> ARECACEAE	Windmill Palm A B C D E F G H J X Z
* <i>Tradescantia albiflora</i> COMMELINACEAE	Wandering Jew A B C D E F G J X Z 1
* <i>Trifolium dubium</i> FABACEAE (FABOIDEAE)	Yellow Suckling Clover F
* <i>Trifolium fragiferum</i> FABACEAE (FABOIDEAE)	Strawberry Clover C E F X Z
* <i>Trifolium repens</i> FABACEAE (FABOIDEAE)	White Clover D E F G J X Z
* <i>Triticum aestivum</i> POACEAE	Wheat E J
* <i>Tropaeolum majus</i> TROPAEOLACEAE	Nasturtium; Indian Cress E F Z

* <i>Verbena bonariensis</i> VERBENACEAE	Purple Top; Square Weed; Cluster Flower; Vervain F
* <i>Veronica hederifolia</i> SCROPHULARIACEAE	Ivy-leaved Speedwell A C E
* <i>Veronica persica</i> SCROPHULARIACEAE	Large Field Speedwell, Creeping Speedwell, Buxbaum's Speedwell F G J X Z
* <i>Vicia tetrasperma</i> FABACEAE (FABOIDEAE)	Slender Vetch E
* <i>Viola arvensis</i> , (Syn. <i>Viola tricolor</i> auct. non L.) VIOLACEAE	Field Pansy; Heartsease F
* <i>Viola odorata</i> VIOLACEAE	Violet; Sweet Violet E Z
* <i>Vitis vinifera</i> VITACEAE	Grape F
* <i>Vulpia bromoides</i> POACEAE ä	Silvery Grass; Rat's Tail Fescue A E Z
* <i>Watsonia bulbifera</i> IRIDACEAE	Bulbil Watsonia; Wild Watsonia; Bugle Lily D G
* <i>Wistaria sinensis</i> FABACEAE (FABOIDEAE)	Wisteria; Wistaria F Z
* <i>Zebrina pendula</i> COMMELINACEAE	Giant Wandering Jew; Giant Trad. F Z



Indigenous Regeneration Co

Fauna species

recorded or predicted

at

KU-RING-GAI FLYING FOX RESERVE

GORDON

to November 1993

List compiled by  
Gordon E. Limburg BOCA  
for

**Ku-ring-gai Bat Colony Committee Inc.**  
from the following sources:

Ku-ring-gai Bat Colony Committee Inc. volunteer team of Bush  
Regenerators,  
Indigenous Regeneration Co contract team of Bush Regenerators,  
Bird Lists compiled by  
E. S. Hoskin  
Judy Wiles  
Historical field notes and personal recollections of:  
Gordon Limburg;  
Warrawee Primary School Young Naturalists' Club - 1943/1945;  
Martyn Robinson, Australian Museum  
Michael Mahony, Department of Applied Science and Technology,  
University of Newcastle;

With help in identifications from:

Murray Fletcher, NSW Agriculture & Fisheries Biological and  
Chemical Research Institute;  
Ray Williams, Ecotone Ecological Consultants;  
Steve Shattuck, CSIRO Entomology, Canberra;  
Gosford Reptile Park;  
Max Moulds, Entomology, Australian Museum;

Kuring-gai Bat Colony

Fauna species Lists

**Headings and abbreviations:**

Fauna in the Reserve are indicated under the headings:

**Confirmed**, with the year of the latest confirmed sighting, and

**Predicted**, further indicated as Probable (Pr) or Unlikely (Un).

NSW National Parks and Wildlife Service Atlas of New South Wales Wildlife Code  
Number  
Predicted

Confirmed

<u>Common Name</u>	<u>Genus and species</u>			
<b>CRUSTACEANS</b>				
Yabby	<i>Cherax destructor</i>	1993		
Sydney Spiny Cray	<i>Euastacus spinifer</i>	1980		
<b>EEL</b>				
Longfinned Eel	<i>Anguilla reinhardtii</i>	1992		
<b>MOLLUSCS</b>				
Red Triangle Slug	<i>Triboniophorus graessei</i>	1993		
	<i>Helicarion</i> sp.	1975		
<b>AMPHIBIANS</b>				
<b>TREE FROGS</b>				
Green and Golden Bell Frog	<i>Litoria aurea</i>		Un	3166
Leseur's Frog	<i>Litoria leseuri</i>		Pr	3192
Peron's Tree Frog	<i>Litoria peronii</i>		Pr	3204
Leaf Green Tree Frog, Callicoma Frog	<i>Litoria phyllochroa</i>	1972		3206
Verreaux's Tree Frog	<i>Litoria verreauxi</i>		Pr	3215
<b>SOUTHERN FROGS</b>				
Giant Burrowing Frog	<i>Heleioporus australiacus</i>		Un	3042
Eastern Banjo Frog	<i>Limnodynastes dumerilli</i>		Pr	3058
Brown-striped Marsh Frog	<i>Limnodynastes peroni</i>	22.6.93		3061
Giant Barred Frog	<i>Mixophes iteratus</i>	1972		3075
Red-crowned Toadlet	<i>Pseudophryne australis</i>	1972		3116
Common Eastern Toadlet	<i>Crinia (Syn. Radinella) signifera</i>	1972		3134

Frogs collected by Martyn Robinson. Voucher Specimens filed with Aust. Museum.



SKINKS

Leuckart's Skink	<i>Anomalopus leuckartii</i>		Pr
Copper-tailed Skink	<i>Ctenotus taeniolatus</i>	1992	2386
Eastern Water Skink	<i>Sphenomorphus quoyii</i>	1993	2557
Eastern Blue-tongued Lizard	<i>Tiliqua scincoides</i>	1993	2580

DRAGONS

Eastern Water Dragon	<i>Physignathus leseurii</i>	1993	2252
Bearded Dragon	<i>Pogona barbata</i>	1993	2177

GOANNA

Lace Monitor	<i>Varanus varius</i>	1989	2283
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LEGLSS LIZARDS

	<i>Delma australis</i>		Pr 2154
	<i>Delma inornata</i>		Pr 2160
Burton's Legless Lizard	<i>Lialis burtonis</i>		Pr 2170
Common Scaly-foot	<i>Pygopus lepidopodus</i>		Pr 2174
Hooded Scaly-foot	<i>Pygopus nigriceps</i>		Pr 2175

TURTLES

Eastern Snake-necked Turtle	<i>Chelodina longicollis</i>		Pr 2017
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BLIND SNAKES

	<i>Ramphotyphlops nigrescens</i>		Pr 2599
	<i>Ramphotyphlops wiedii</i>		Pr 2606

PYTHONS

Carpet or Diamond Python	<i>Morelia spilota</i>		Pr 2625
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COLUBRID SNAKES

Brown Tree Snake	<i>Boiga irregularis</i>		Pr 2630
Common (Green) Tree Snake	<i>Dendrelaphis punctulata</i>		Pr 2633

ELAPID SNAKES

Common Death Adder	<i>Acanthophis antarcticus</i>		Pr 2640
Golden Crowned Snake	<i>Cacophis squamulosus</i>		Pr 2647
Eastern Small-eyed Snake	<i>Cryptophis nigrescens</i>	1989	2650
Yellow-faced Whip Snake	<i>Demansia psammophis</i>		Pr 2655
Rose-bellied Whip Snake	<i>Drysdalia rhodogaster</i>		Pr 2805
Red-naped Snake	<i>Furina diadema</i>		Pr 2669
Black-bellied Swamp Snake	<i>Hemiaspis signata</i>		Pr 2674
Broad-headed Snake	<i>Hoplocephalus bungaroides</i>		Pr 2676
Eastern or Mainland (Common) Tiger Snake	<i>Notechis scutatus</i>		Pr 2681
Red-bellied Black Snake	<i>Pseudechis porphyriacus</i>		Pr 2674
Eastern Brown Snake	<i>Pseudonaja textilis</i>		Pr 2699
Bandy Bandy	<i>Vermicella annulata</i>		Pr 2734

BIRDS

<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Predicted</u>	<u>Code</u>	<u>Number</u>
NSW National Parks and Wildlife Service Atlas of New South Wales Wildlife					
<u>Abbreviations:</u>					
All	/	fl - seen flying over			
Confirmed	/	cr - uses site as corridor between other sites			
(by date),	/	rb - resident breeder			
Probable,	/	sbm - summer breeding migrant			
or	/	pm - passage migrant			
Unlikely	/	m - migrant			
	/	wm - winter migrant			
	/	c - common			
	/	r - rare			
	/	wv - winter visitor			
	/	sv - summer visitor			
Australian Pelican	Pelecanus conspicillatus	fl 1992			0106
Darter	Anhinga melanogaster	cr	Un		0101
Pied Cormorant	Phalacrocorax varius	fl 1992			0099
Little Black Cormorant	Phalacrocorax sulcirostris	fl 1992			0097
White-faced Heron	Ardea novaehollandiae	cr 1993			0188
Striated Heron	Butorides striatus	cr	Pr		0193
Rufous Night-heron	Nycticorax caledonicus	cr	Pr		0192
Little Bittern	Ixobrychus minutus	cr	Pr		0195
Black Bittern	Dupetor flavicollis	cr	Pr		0196
Australasian Bittern,					
Bunyip	Botaurus poiciloptilus	cr	Un		0197
Pacific Black Duck	Anas superciliosa	cr 1992			0208
Chestnut Teal	Anas castanea	cr 1992			0201
Black-shouldered Kite	Elanus notatus	1991			0232
Whistling Kite	Haliastur sphenurus		Pr		0228
Brown Goshawk	Accipiter fasciatus	1991			0221
Collared Sparrowhawk	Accipiter cirrhocephalus		Pr		0222
Grey Goshawk	Accipiter novaehollandiae		Un		0220
White-bellied Sea Eagle	Haliaeetus leucogaster	fl 1991			0226
Peregrine Falcon	Falco peregrinus		Pr		0237
Australian Hobby	Falco longipennis		Pr		0235
Australian Kestrel	Falco cenchroides		Pr		0240
Australian Brush-turkey	Alectura lathami		Un		0008
Buff-banded Rail	Rallus philippensis	cr	Un		0046
Dusky Moorhen	Gallinula tenebrosa	cr	Un		0056
Purple Swamphen	Porphyrio porphyrio	cr	Pr		0058
Eurasian Coot	Fulica atra	cr	Pr		0059
Painted Button-quail	Turnix varia		Pr		0014
Masked Lapwing	Vanellus miles	cr 1992			0133
Red-kneed Dotterel	Erythrogonyx cinctus	cr	Un		0132
Black-winged Stilt	Himantopus himantopus	cr	Un		0146
White-headed Pigeon	Columba leucomela	27.7.93			0028
* Feral Pigeon	Columba livia	1993			0957
* Spotted Turtle-dove	Streptopelia chinensis	26. 9.93			0989
Brown Cuckoo-dove	Macropygia amboinensis		Pr		0029
Peaceful Dove	Geopelia placida		Pr		0030
Common Bronzewing	Phaps chalcoptera		Pr		0034



<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Predicted</u> <u>NPWS</u>
Brush Bronzewing	Phaps elegans	cr	Pr 0035
Crested Pigeon	Ocyphaps lophotes	1993	0043
Glossy Black-cockatoo	Calyptorhynchus lathami		Un 0265
Yellow-tailed Black Cockatoo	Calyptorhynchus funereus	1992	0267
Gang-gang Cockatoo	Callocephalon fimbriatum	cr 1992	0268
Galah	Cacatua roseicapilla	1992	0273
Sulphur-crested Cockatoo	Cacatua galerita	rb 1993	0269
Rainbow Lorikeet	Trichoglossus haematodus	rb 1993	0254
Scaly-breasted Lorikeet	Trichoglossus chlorolepidotus		Pr 0256
Musk Lorikeet	Glossopsitta concinna		Un 0258
Little Lorikeet	Glossopsitta pusilla		Pr 0260
Australian King-parrot	Alisterus scapularis	rb 1993	0281
Swift Parrot	Lathamus discolor	wm	Pr 0309
Crimson Rosella	Platycercus elegans	rb 1993	0282
Eastern Rosella	Platycercus flaveolus	rb 1993	0288
Pallid Cuckoo	Cuculus pallidus	sbm 1992	0337
Brush Cuckoo	Cuculus variolus		Pr 0339
Fan-tailed Cuckoo	Cuculus pyrrhophanus	sbm 1993	0338
Horsfield's Bronze-cuckoo	Chrysococcyx basalis		Pr 0342
Shining Bronze-cuckoo	Chrysococcyx lucidus		Pr 0344
Common Koël	Eudynamys scolopacea	sbm 1993	0347
Channel-billed Cuckoo	Scythrops novaehollandiae	sbm 1993	0348
Pheasant Coucal	Centropus phasianus	cr	Pr 0349
Powerful Owl	Ninox strenua	rb 1993	0248
Southern Boobook	Ninox novaeseelandiae	1992	0242
Tawny Frogmouth	Podargus strigoides	rb 1993	0313
Australian Owlet-nightjar	Aegotheles cristatus		Pr 0317
White-throated Needletail	Hirundapus caudacutus		Pr 0334
Azure Kingfisher	Ceyx azurea		Pr 0319
Laughing Kookaburra	Dacelo novaeguinae	rb 1993	0322
Forest Kingfisher	Halcyon macleayii	sbm	Un 0324
Sacred Kingfisher	Halcyon sancta	sbm 1992	0326
Rainbow Bee-eater	Merops ornatus	rb	Pr 0329
Dollarbird	Eurystomus orientalis	sbm 1993	0318
Superb Lyrebird	Menura novaehollandiae	cr 26.10.93	0350
Welcome Swallow	Hirundo neoxena	fl 1992	0357
Tree Martin	Cecropis nigricans	pm	Pr 0359
Fairy Martin	Cecropis ariel	sbm 1993	0360
Black-faced Cuckoo-shrike	Coracina novaehollandiae	c 1993	0424
Cicadabird	Coracina tenuirostris	r m	Pr 0429
White-winged Triller	Lalage sueurii	sbm	Pr 0430
* Red-whiskered Bulbul	Pycnonotus jocosus	1993	0990
White's Thrush	Zoothera dauma		Pr 0447
Common Blackbird	Turdus merula		Pr 0991
Rose Robin	Petroica rosea	wv	Pr 0384
Scarlet Robin	Petroica multicolor	r wv	Pr 0380
Eastern Yellow Robin	Eopsaltria australis	rb 1993	0392
Jacky Winter	Microeca leucophaea		Un 0377
Crested Shrike-tit	Falcunculus frontatus		Pr 0416
Golden Whistler	Pachycephala pectoralis	1993	0398
Rufous Whistler	Pachycephala rufiventris	m 7. 9.93	0401
Grey Shrike-thrush	Colluricincla harmonica	1992	0408



<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Predicted</u> <u>NPWS</u>
Black-faced Monarch	Monarcha melanopsis	pm	Un 0373
Leaden Flycatcher	Myiagra rubecula	m	Pr 0356
Restless Flycatcher	Myiagra inquieta		Pr 0369
Rufous Fantail	Rhipidura rufifrons	pm 1992	0362
Grey Fantail	Rhipidura fuliginosa	1992	0361
Willie Wagtail	Rhipidura leucophrys	1992	0364
Eastern Whipbird	Psophodes olivaceus	rb 1993	0421
Superb Fairy-wren	Malurus cyaneus	rb 1993	0529
Variegated Fairy-wren	Malurus lamberti	rb 1993	0536
Origma (Syn. Rock Warbler)	Origma solitaria	r	Pr 0505
White-browed Scrubwren	Sericornis frontalis	1993	0488
Brown Gerygone (Br. Warbler)	Gerygone mouki		Pr 0454
White-throated Gerygone	Gerygone olivaceae	r	Pr 0453
Brown Thornbill	Acanthiza pusilla		Pr 0475
Yellow-rumped Thornbill	Acanthiza chrysorrhoa	r	Pr 0486
Yellow Thornbill	Acanthiza nana		Pr 0471
Striated Thornbill	Acanthiza lineata		Pr 0470
Varied Sittella	Daphoenositta chrysoptera	r	Pr 0549
White-throated Treecreeper	Climacteris leucophaea		Pr 0558
Red-browed Treecreeper	Climacteris erythroptis		Un 0560
Brown Treecreeper	Climacteris picumnus		Pr 0555
Red Wattlebird	Anthochaera carunculata	1992	0638
Little Wattlebird	Anthochaera chrysoptera	1993	0637
Noisy Friarbird	Philemon corniculatus	1993	0645
Noisy Miner	Manorina melanocephala	rb 1993	0634
Lewin's Honeyeater	Meliphaga lewinii		Pr 0605
Yellow-faced Honeyeater	Lichenostomus chrysops	1993	0614
White-eared Honeyeater	Lichenostomus leucotis		Pr 0617
Yellow-tufted Honeyeater	Lichenostomus melanops		Pr 0619
White-plumed Honeyeater	Lichenostomus penicillatus	1992	0625
Brown-headed Honeyeater	Melithreptus brevirostris	r	Pr 0583
White-naped Honeyeater	Melithreptus lunatus		Pr 0578
New Holland Honeyeater	Phylidonyris novaehollandiae	1993	0631
White-cheeked Honeyeater	Phylidonyris nigra	1993	0632
Eastern Spinebill	Acanthorhynchus tenuirostris	1993	0591
Scarlet Honeyeater	Myzomela sanguinolenta	m	Pr 0586
Mistletoebird	Dicaeum hirundinaceum		Pr 0564
Spotted Pardalote	Pardalotus punctatus	rb 1993	0565
Eastern Striated Pardalote	Pardalotus striatus	r	Pr 0976
Silvereye	Zosterops lateralis	1993	0574
* House Sparrow	Passer domesticus	1993	0995
Red-browed Firetail	Emblema temporalis	1993	0662
* Common Starling	Sturnus vulgaris	1993	0999
* Common Mynah	Acridotheres tristis	1993	0998
Olive-backed Oriole	Oriolus sagittatus	rb 1993	0671
Figbird	Sphecotheres viridis		Pr 0432
Spangled Drongo	Dicrurus hottentottus	m 1992	0673
Satin Bowerbird	Ptilonorhynchus violaceus	1993	0679
Regent Bowerbird	Sericulus chrysocephalus	cr	Un 0684
Green Catbird	Ailuroedus crassirostris		Pr 0676
Dusky Woodswallow	Artamus cyanopterus	r	Pr 0547



<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Predicted</u> <u>NPWS</u>
Magpie Lark	<i>Grallina cyanoleuca</i>	1993	0415
Pied Currawong	<i>Strepera graculina</i>	rb 1993	0694
Grey Butcherbird	<i>Cracticus torquatus</i>	rb 1993	0702
Australian Magpie	<i>Gymnorhina tibicen</i>	rb 1993	0705
Australian Raven	<i>Corvus coronoides</i>	1993	0930
MONOTREMES			
Platypus	<i>Ornithorhynchus anatinus</i>	1956	Un 1001
Short-beaked Echidna	<i>Tachyglossus aculeatus</i>	1992	1003
DASYURIDS			
Tiger (Spotted-tailed) Quoll	<i>Dasyurus maculatus maculatus</i>		Pr 1008
Eastern Quoll	<i>Dasyurus viverrinus</i>		Un 1009
Brush-tailed Phascogale	<i>Phascogale tapoatafa</i>		Un 1017
Yellow-footed Antechinus	<i>Antechinus flavipes</i>		Pr 1027
Brown Antechinus	<i>Antechinus stuartii stuartii</i>	1992	1028
Dusky Antechinus	<i>Antechinus swainsonii</i>		Pr 1033
Common Dunnart	<i>Sminthopsis murina</i>		Pr 1061
BANDICOOTS			
Southern Brown (Short-nosed) Bandicoot	<i>Isodon obesulus obesulus</i>		Un 1092
Long-nosed Bandicoot	<i>Perameles nasuta nasuta</i>		Pr 1097
POSSUMS AND GLIDERS			
Common Ringtail Possum	<i>Pseudocheirus peregrinus peregrinus</i>	1993	1129
Greater Glider	<i>Petauroides volans volans</i>		Pr 1133
Yellow-bellied Glider	<i>Petaurus australis australis</i>		Un 1136
Sugar Glider	<i>Petaurus breviceps breviceps</i>		Pr 1138
BRUSHTAIL POSSUM			
Common Brushtail Possum	<i>Trichosurus vulpecula vulpecula</i>	1993	1113
PYGMY-POSSUM AND FEATHERTAIL GLIDER			
Eastern Pygmy-possum	<i>Cercartetus nanus</i>		Pr 1150
Feathertail Glider	<i>Acrobates pygmaeus</i>		Pr 1147

WALLABIES

Red-necked Wallaby	<i>Macropus rufogriseus banksianus</i>	Pr	1261
Swamp Wallaby	<i>Wallabia bicolor</i>	Pr	1242

FLYING-FOXES

Grey-headed Flying Fox	<i>Pteropus poliocephalus</i>	1993	1280
Little Red Flying-fox	<i>Pteropus scapulatus</i>	1993	1281

HORSESHOE-BAT

Eastern Horseshoe-bat	<i>Rhinolopus megaphyllus</i>	Pr	1303
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SHEATH-TAILED BAT

Yellow-bellied Sheath-tailed Bat	<i>Saccolaimus flaviventris</i> (Syn <i>Taphozous flaviventris</i> )	Pr	1321
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MASTIFF-BATS

White-striped Mastiff-bat	<i>Tadarida australis</i>	Pr	1324
Eastern Little Mastiff-bat	<i>Mormopterus norfolkensis</i>	Pr	1329
Little Northern Mastiff-bat	<i>Mormopterus loriae</i>	?	
Mastiff-bat (no common name)	<i>Mormopterus</i> sp. 1	Pr	

VESPERTILIONID BATS

Gould's Long-eared Bat	<i>Nyctophilus gouldi</i>	Pr	1334
Lesser Long-eared Bat	<i>Nyctophilus geoffroyi</i>	Pr	1335
Large Bent-wing Bat (Syn Common Bent-wing Bat)	<i>Miniopterus schreibersii</i>	Pr	1341
Gould's Wattled Bat	<i>Chalinolobus gouldii</i>	Pr	1349
Chocolate Wattled Bat	<i>Chalinolobus morio</i>	Pr	1351
Large Pied Bat	<i>Chalinolobus dwyeri</i>	Pr	1353
Large-footed Mouse-eared Bat	<i>Myotis adversus</i>	Un	1357
Eastern Broad-nosed Bat	<i>Scotorepens orion</i>	Pr	1365
Greater Broad-nosed Bat	<i>Scoteanax rueppellii</i> , (Syn <i>Nycticeius rueppellii</i> )	Un	1361
Broad-nosed Bat	<i>Scotorepens</i> sp.	Un	
Golden-tipped Bat	<i>Kerivoula papuensis</i>	Un	1369
Great Pipistrelle	<i>Falsistrellus tasmaniensis</i> , (Syn <i>Pipistrellus tasmaniensis</i> )	Pr	1372
Large Forest Eptesicus	<i>Eptesicus darlingtoni</i>	Pr	1381
The Pumilus, (Syn Little Cave Eptesicus)	<i>Eptesicus pumilus pumilus</i>	Pr	1377
The Regal Eptesicus	<i>Eptesicus regulus</i>	Pr	
Pale Eptesicus (Syn Little Forest Eptesicus)	<i>Eptesicus vulturnus</i>	Pr	1379
Troughtons Eptesicus	<i>Eptesicus troughtoni</i>	Un	



RODENTS

Water-rat	Hydromys chrysogaster	Pr	1415
White-footed Rabbit-rat	Conilurus albipes	Un	1426
Hastings River Mouse	Pseudomys oralis	Un	1464
New Holland Mouse	Pseudomys novaehollandiae	Un	1455
Bush Rat	Rattus fuscipes	Pr	1395
Swamp Rat	Rattus lutreolus	Pr	1408
* Black Rat	Rattus rattus	Pr	1408
* Brown Rat	Rattus norvegicus norvegicus	Pr	1409
* House Mouse	Mus musculus domesticus	Pr	1412

INTRODUCED HERBIVORE

* Rabbit	Oryctolagus cuniculus	Pr	1510
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INTRODUCED CARNIVORES

* Dog	Canis familiaris (non-feral)	1993	1531
* Fox	Vulpes vulpes vulpes	1993	1532
* Feral Cat	Felis catus	1993	1536

ARTHROPODS

SPIDERS

Eastern Mouse Spider	Missulena bradleyi	1991
St Andrews Cross Spider	Arigiope aetheria	1993
Golden Orbweaving Spider	Nephila spp.	1993
Leafcurling Spider	Phonognatha graeffei	1993
Common Netcasting Spider	Deinopis subrufa	1992
Large Huntsman Spider	Isopoda sp.	1993
Sydney Funnelweb Spider	Atrax robustus	1991
Sydney Brown Trapdoor Spider	Misgolas rapax	1991
Daddy-longlegs Spider	Pholcus phalangioides	1993
Ogre-faced Spider		1993

TICK

Paralysis Tick	Ixodes holocyclus	1993
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CENTIPEDE

Common Centipede	Scolopendra morsitans	1993
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INSECTS

DRAGONFLIES, DAMSELFLIES

Dragonfly	Aeshna brevistyla	1991
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PRAYING MANTIDS

Green Mantid	Orthodera ministralis	1993
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CRICKETS, KATYDIDS

Field Cricket	Gryllulus servillei Sauss.		Pr
Mole Cricket	Gryllotalpa australis	1993	
Katydid	Caedicia major	1993	

BUGS, CICADAS, APHIDS

Maidenhair Fern Aphid	Idiopterus nephrolepidis	1991
Greengrocer, Yellow Monday	Cyclochila australasiae	1992
Cherrynose Cicada	Macrotristria angularis	1991
Redeye Cicada	Psaltoda moerens	1992
Black Prince Cicada	Psaltoda plaga	1992
Double Drummer Cicada	Thopha saccata	1992
Shield Bug	Lestonia haustorifera	
Shield Bug	Lestonia grossi	
Bluegum Psyllid	Ctenarytaina thysanura	1992
Assassin Bug, Bee-killer	Pristhesancus papuensis	1993
Assassin Bug	Havinthus rufovarius	1992
Floury Baker Cicada	Abrieta curvicosta	1992

LACEWING

Ant Lion, Lacewing	Glenoleon pulchellus Ramb.	Pr
Common Antlion	Myrmeleon acer	

BEETLES

Christmas Beetle	Anoplognathus viriditarsis	1993
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MOSQUITOES

House Mosquito	Culex fatigans Wied.	Pr
Common Australian Malaria Mosquito	Anopheles annulipes Walk.	Pr
Dengue Mosquito	Aedes aegypti Linn.	Pr

FLIES

Stratiomyid Fly	Boreoides subulatus	1993
Soldier Fly	Metaponia rubriceps Macq.	Pr
March Fly	Tabanus frogatti Ric.	Pr
Bee-fly	Comptosia fascipennis Macq.	Pr
Hover Fly	Syrphus viridiceps Macq.	1991
Metallic-green Tomato Fly	Lampronchaea brouniana	1991
Queensland Fruit Fly	Dacus (Bactrocera, Strumeta) tryoni	1991
	Dirioxa pornia	1991
* Crofton Gall "Wasp"	Procecidochaes utilis	1993
Pittosporum leafminer	Phytobia pittosporphylli	1991



BUTTERFLIES AND MOTHS

Regent Skipper	<i>Euschemon rafflesia</i>	1991
Black Slug Cup Moth	<i>Doratifera casta</i>	1993
Mottled Cup Moth	<i>Doratifera vulnerans</i>	1993
White Cedar Moth	<i>Leptocneria reducta</i>	1992
Blue Fanny Butterfly	<i>Graphium sarpedon choredon</i>	1993
Orchard Butterfly	<i>Papilio aegus</i>	1993
Caper White Butterfly	<i>Anaphaeis java teutonia</i>	1993
Cabbage White Butterfly	<i>Pieris rapae</i>	Sept. 93
Wanderer butterfly	<i>Danaus plexippus</i>	1993
Common Crow	<i>Euploea core</i>	1993
Common Brown Butterfly	<i>Heteronympha merope</i>	1992
Sword-grass Brown Butterfly	<i>Tisiphone abeona</i>	1993
Common Aeroplane Butterfly	<i>Phaedyra shepherdii</i>	1993
Painted Lady	<i>Vanessa kershawi</i>	1993
Splendid Ghost Moth	<i>Aenetus ligniveren</i>	
Australian Privet Hawk Moth	<i>Psilogramma menephron</i>	1992
Geebung Hawk Moth	<i>Coequosa triangularis</i>	1992

WASPS, BEES, ANTS,  
SAWFLIES

Honey Bee	<i>Apis mellifera</i>	1993
Native Bee	<i>Trigona carbonifera</i>	1992

ANTS

Sugar Ant	<i>Camponotus consobrinus</i>	1993
	<i>Anonychomyrma nitidiceps</i> ,	1992
	(Syn <i>Iridomyrmex "nitidiceps"</i> )	
Jumping Ant	<i>Myrmecia nigrocincta</i>	1993
Bull Ant	<i>Myrmecia forficata</i>	1993
Greenhead Ant	<i>Rhytidoponera "metallica"</i>	1993
Spider Ant	<i>Leptomymex erythrocephalus</i>	1993

Voucher specimens of ants filed with NSW Agriculture & Fisheries Biological and Chemical Research Institute.

Orange Caterpillar Parasite	<i>Netelia producta</i>	1991	
Ichneumon	<i>Lissopimpla semipunctata</i>	Kirby	Pr
Cream Spotted Ichneumon	<i>Echthromorpha intricatoria</i>	1991	
Steelblue Sawfly	<i>Perga affinis affinis</i>	1992	
Spider-killing Wasp	<i>Cryptocheilus</i> sp.	1992	
Paper Wasp	<i>Polistes variabilis</i>	Fabr.	Pr
Cicada Killer Wasp	<i>Exeirus lateritius</i>	1991	
Cicada-killer Wasp	<i>Sphecius pectoralis</i>	1991	
Metallic Blue Wasp, Blue Ant	<i>Diamma bicolor</i>	1991	
* European Wasp	<i>Vespula germanica</i>	1993	

Footnote

**Threatened, Rare and Vulnerable species:**

Classified under National Parks and Wildlife Act 1974, gazetted 18-12-92

The following Schedule 12 Classified species are included in the preceding Lists because the possibility of their local presence, however remote, should not be overlooked.

They range from the Eastern Quoll that probably once existed on the site, and is now probably extinct, to the Powerful Owl, confirmed to be breeding in the area this year.

It will be seen that local sightings of only three of these species are confirmed.

SECTION 12 PART 1 - THREATENED

NSW National Parks and Wildlife Service Atlas of New South Wales Wildlife		<u>Code</u>	
		<u>Number</u>	
		<u>Predicted</u>	<u>Confirmed</u>
Green and Golden Bell Frog	Litoria aurea	Un	3166
Eastern Quoll	Dasyurus viverrinus	Un	1009
Hastings River Mouse	Pseudomys oralis	Un	1464
Southern Brown (Short-nosed) Bandicoot	Isodon obesulus obesulus	Un	1092

SECTION 12 PART 2 - VULNERABLE AND RARE SPECIES

Giant Burrowing Frog	Heleioporus australiacus	Un	3042
Giant Barred Frog	Mixophes iteratus	1972	3075
Red-crowned Toadlet	Pseudophryne australis	1972	3116
Black Bittern	Dupetor flavicollis	cr	Pr 0196
Glossy Black-cockatoo	Calyptorhynchus lathami	cr	Un 0265
Swift Parrot	Lathamus discolor	cr wm	Pr 0309
Powerful Owl	Ninox strenua	rb 1993	0248
Tiger (Spotted-tailed) Quoll	Dasyurus maculatus maculatus	Pr	1008
Brush-tailed Phascogale	Phascogale tapoatafa	Un	1017
Yellow-bellied Sheath-tail Bat	Saccolaimus flaviventris (Syn Taphozous flaviventris)	Pr	1321
Eastern Little Mastiff-bat	Mormopterus norfolkensis	Pr	1329
Large Pied Bat	Chalinolobus dwyeri	Pr	1353
Troughtons Eptesicus	Eptesicus troughtoni	Un	
Golden-tipped Bat	Kerivoula papuensis	Un	1369
Great Pipistrelle	Falsistrellus tasmaniensis, (Syn Pipistrellus tasmaniensis)	Pr	1372
Large-footed Mouse-eared Bat	Myotis adversus	Un	1357
Greater Broad-nosed Bat	Scoteanax rueppellii, (Syn Nycticeius rueppellii)	Un	1361



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