

APPENDIX C
THREE MINOR INVESTIGATIONS .

a). The "Dirty Backside" Syndrome.

A nephritis/cystitis condition frequently encountered by sanctuary staff is variously described as "dirty tail", "wet backside" or "dirty backside" syndrome. One sanctuary owner asked if some quantitative examination might be incorporated into this study to indicate how frequently the condition was found among free-roaming koalas, and whether the duration of the condition was substantial.

Accordingly, an effort was made to record, where possible, those animals showing external symptoms of the condition. Since the animals were individually identified, it was anticipated that the durations of the condition might be determined. The results are displayed in Table C- 1. (Three juveniles, AG187bj, AG188bj and Z155bj were not recorded in this data since they were commonly in the pouch when observed. Consequently the data for Table C- 1 only refers to 18 animals. Many records of the animals contained no mention of the condition because the koalas were seated in a location where reliable examination of the cloacal area was impossible.)

TABLE C- 1
 "DIRTY BACKSIDE" SYNDROME RECORDS

ANIMAL	NOT "DBS"	"DBS"	NO EXAMINATION POSSIBLE
A33	1	11	15
B34a	1	4	9
B34b	1	1	17
B34c	1	0	4
C19j	3	4	12
C23	1	14	13
C36a	1	2	9
C36b	0	2	11
C38	0	5	11
C39	0	6	14
C40	0	5	12
D28	0	0	17
D35	0	0	8
E44j	4	1	13
E45j	1	5	16
E53a	0	0	12
E53b	0	1	3
O102	2	7	11

Of 18 koalas checked during the final year of the study, 14 had the condition at some stage. Of 84 instances when the animals could be checked, only 16 did not have the condition. On a majority of occasions the condition could not be checked. Of those animals which were checked, one animal was observed with the condition on 14 occasions, and another koala on 11 occasions. It was not possible to determine the mean duration of the condition since individual koalas were so frequently located where checking was not possible.

In review, the condition was very common in koalas which free-roamed. Some animals appeared to suffer from it far more than others. The incidence of the condition appeared to be higher than that recorded by Jackson (1978) at Armidale, where 20% of the koalas brought from the wild to the Vet. Lab. had this condition.

APPENDIX C (Continued)

b). A Koala Translocation Exercise.

The aim of this exercise was to pilot a translocation procedure which differed from that presently employed by wildlife authorities. The difference studied was that of the selection of suitable **Eucalyptus** trees in the new area to which the koala was to be introduced. Authorities such as the Victorian Fisheries and Wildlife Division have usually selected suitable areas from those where the **Eucalyptus** trees growing corresponded to a list of trees which local koalas were known to eat. The necessity for such food species matching had not been quantitatively evaluated by the wildlife authorities. (Warneke 1978)

A two-year old male, which had been born in a Sydney zoo, was made available for release by the author into the Nowendoc study area. This animal was part of a group whose food consisted of the following species:

E. tereticornis

E. punctata

E. viminalis

E. microcorys

E. camaldulensis

E. pilularis

E. saligna

E. robusta

E. sideroxylon

E. globulus

E. haemastoma

E. botryoides

E. parramattensis

The species at Nowendoc were:

E. acaciiformis

E. stellulata

E. pauciflora

None of the Nowendoc trees were known to be used as koala food by any of the Australian sanctuaries (though the author had, of course, seen Nowendoc koalas in those trees.)

It was hypothesised that, provided sufficient consideration was taken in minimising stress upon the koala during translocation, the suitability of **Eucalyptus** species made available need not be limited to only those species on which the translocated animal had previously been feeding.

A selection of the three Nowendoc species was air-freighted to the Sydney zoo and offered to the selected koala prior to its translocation. Of the three species (all of which were investigated by sniffing) only **Eucalyptus stellulata** was eaten. This selection was not similar to the Nowendoc koalas which, at that time of the year, (April and mid-Autumn) demonstrated a marked preference for **Eucalyptus acaciiformis**.

To minimise stress, it was arranged that the koala would be collected early in the morning and moved in a large cage to the site in a single day for release by sunset. The cage was constructed as large as would be accommodated within a suitable vehicle. The cage constructed was a one metre cube of galvanised mesh, having a central tree fork fixed as well as hessian shade on three sides and the top. The animal was provided with **Eucalyptus punctata** during the trip. This food had been that most frequently selected at the zoo when the translocation was planned.

The koala released was a male, surplus to the zoo's requirements. Its release was approved by the National Parks and Wildlife Service in N.S.W.. When captured at the zoo, the animal was weighed (6.4 kg.) so that weight-loss could be used as a parameter of ill-health, should the animal have to be re-captured from the wild if its translocation proved unsuccessful. A radio-tracking collar with antenna was designed (see Figure C- 1) and fitted to the animal just before its release. To familiarise the koala with such attachments, a similar collar had been

fitted to the koala in the previous week, while it was still at the zoo. The radio-tracking collar allowed the author to follow the koala's movements and to determine whether the introduction of this extra animal made a significant difference to the utilization of **Eucalyptus** strategies used by those koalas already on the site. It also afforded an opportunity to examine the movement patterns of a zoo-born animal when liberated. (A number of zoos liberate excess koalas into **Eucalyptus** forests on occasions. No study of their behaviour had previously been published.)

Translocation Success

The trip, which lasted seven hours, appeared to have little effect upon the koala, which remained in the tree fork for almost the entire seven hours of the 450 km. journey, only changing positions once. The animal concealed itself from view among the food leaves supplied, and demonstrated no tendency to examine the surroundings via the unscreened fourth side of the cage. It did not make any attempt to escape from confinement, nor did it vocalise or move in any manner which might be construed as stress-induced. No leaf was eaten by the animal during the entire trip. Possibly this failure to eat might be considered stress-induced behaviour, though it was not uncommon for the zoo animals to rest for seven consecutive daylight hours in Sydney. Prior to release, the cage was cleared of leaf and the tree fork. The collar was fitted to the koala which was carried, still in its cage, into the Creekside area. The koala remained prostrate on the cage floor during this five-minute drive. The behaviour of the koala at this point was its clearest demonstration of being temporarily stressed by the human handling.

Behaviour on Release

On release from the cage, the koala (code No. 0102 for this study) climbed the nearest tree rapidly after scrambling across the intervening 20 metres. The release occurred at 1710 hours in fading light. A selection of **Eucalyptus punctata**, transported from the Sydney zoo, was attached to this tree at a height of two metres. 0102 climbed to the top of this tree. The author left the area promptly.

The author returned subsequently to the site daily to relocate the koala and to record behaviour. During the first week, 0102 moved only 150 m. from the first tree which it entered. It did not eat any of the **Eucalyptus punctata** which had been brought from Sydney. Neither did any of the Nowendoc koalas. The behaviour of the zoo-born animal differed from the other adult males as follows:

- * 0102 demonstrated less mobility. It did not leave the site in six months.

- * 0102 reacted less to human observers. Unlike the Nowendoc koalas, it continued feeding when the author overtly approached.

- * 0102 made more use of the lower branches of the **Eucalyptus** trees than did the other koalas.

- * 0102 intruded into the proximity of the other koalas in a manner similar to the Nowendoc juveniles. 0102 was an exception to the customary adult spacing which was at least 50 m. between adults.

In summary, 0102 behaved like the free-roaming juveniles, in spite of its two year age. This might be interpreted as one of the results of the zoo situation where the koalas are enclosed in close proximity to each other. (the Sydney zoo had seven koalas in an enclosure less than one hectare, at eye-level for the general public.) The exposure to human observers at the zoo appeared to have resulted in 0102 ignoring human presence, rather than demonstrating the cryptic response which the Nowendoc animals displayed.

Eucalyptus Tree Utilization

0102 was never recaptured. The animal appeared to be in good health throughout the study. Even when the koala eventually removed the tracking collar, no attempt was made to replace it since 0102 was so easily located and identified. There was no evidence that the animal had difficulty feeding, since it entered all three species, including one **Eucalyptus acaciiformis** which it used five times. It was seen in **Eucalyptus acaciiformis** on 8 occasions, in **Eucalyptus stellulata** on 8 occasions and in **Eucalyptus pauciflora** on 4 occasions. Two trees were re-used, but the other 11 trees were only entered once each during the six-month observation.

Effect upon the Nowendoc Koalas

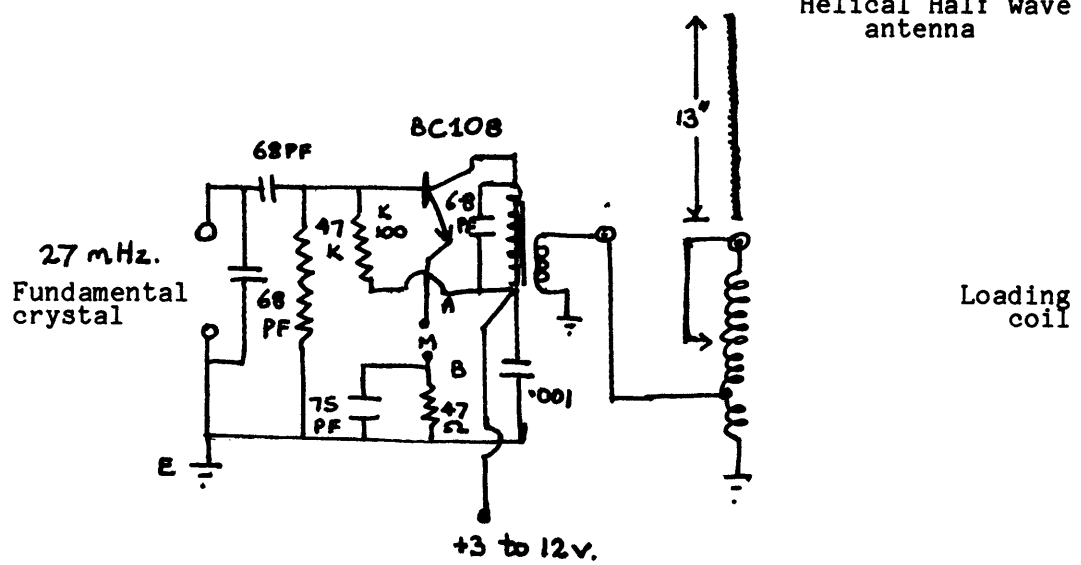
The introduction of 0102 appeared to make almost no difference to the other koalas which had been using the site. On the last routine check of the site made in the week prior to the introduction of 0102, there were 9 koalas on the site. On the day following the release of 0102, there were 7 animals. For the remainder of that week, numbers varied between 9 and 12. These counts were unremarkable for the site. It would appear that the other koalas simply continued to use the site with no interaction with 0102. If attempts were made by any of the Nowendoc koalas to drive 0102 away, they were completely unsuccessful. Given the very low population density at the site, it would appear that the introduction of this additional koala was accomplished without significant resistance from the Nowendoc animals. Considering the small amount of social interaction which the animals demonstrated throughout the study, this result is scarcely surprising..

Conclusions

From this pilot experiment, one might conclude that it seemed unlikely that feed matching was a necessary part of any koala translocation procedure. The need for the introduced koala to have prior experience of the eucalypts in a new locality appeared to be less important than for the translocation procedure to minimise stress induced by human handling. Considering that in chapter one of this thesis evidence was presented that koalas have been reliably observed using 69 **Eucalyptus** species, it would appear that the translocation of koalas might be attempted into many more locations than those where the **Eucalyptus** species growing match the trees being eaten by the koalas to be moved.

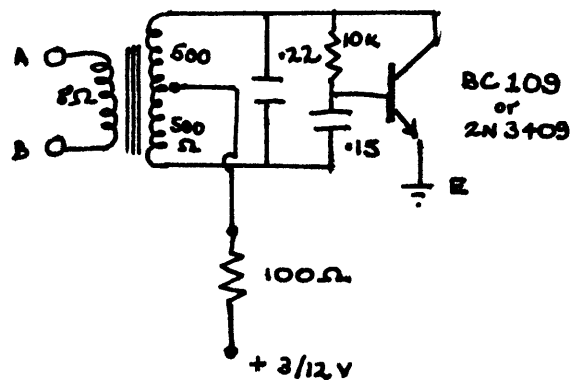
FIGURE C- 1

RADIO TRANSMITTER AS FITTED TO KOALA 0102



Designed by F.B.Hanson
Senior Tech. Officer
U.N.E., Armidale

Tone Modulator
600 Hz.



APPENDIX C (Continued)

c). A Mathematical Model for Koalas' Eating Behaviour

A Consideration of Stomach Volume

Published dimensions of three koala stomachs occur in Harrop and Degabriele (1976). Figure C- 2 shows that the major volume of the koala stomach may be approximated by an ellipse, with diameters 'a' and 'b', rotated about its smaller diameter and consequently having a volume equivalent to $\pi ab^2/3$. The volumes of the stomachs would approximate as follows:

LINEAR LENGTH	"a"	FLAT WIDTH	"b"	VOLUME	WEIGHT	SEX
cms.	cms.	OF CORPUS	cms.	c.c.	gms.	
		cms.				
13.5	8.6	7.5	4.8	197	353	M
12.0	7.6	5.5	3.6	98	414	F
19.0	12.2	9.0	5.8	410	570	M

Note: $a=2L/\pi$ $b=2W/\pi$

These stomach volumes appear to have a limiting effect on eating duration. If one takes from a **Eucalyptus** tree those leaves near the end of a branch, from a position identical to that where a koala had been observed feeding, then the dimensions of an average leaf were:

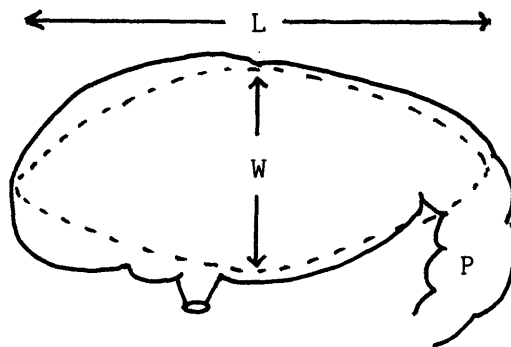
Length= 10 cm. Mean Width= 3.0 cm.
 Thickness= 0.2 cm. Mass= 0.4 gm.
 Volume= 0.6 c.c.

These calculations were obtained using the most commonly consumed eucalypt at Nowendoc, **Eucalyptus acaciiformis**.

Considering the smallest and largest stomach volumes in Harrop and Degabriele's examples, the koalas had the potential for eating between 98 and 410 cc. of leaf before the stomachs would be filled (assuming no distending of these organs). This corresponds to an intake of between 165 and 683 leaves of average size. These leaves would weigh between 116 and 478 gms.

FIGURE C- 2
MEASUREMENTS OF THE KOALA STOMACH
(After Harrop and Degabriele 1976)

L= Linear Length
W= Flat Width
of Corpus
P= Pyloric Region
---= Ellipse



Daily Leaf Intake

Eberhard and others (1975) measured the leaf intake of four captive koalas fed only **Eucalyptus punctata** for a 29 day winter period. The animals consumed between 386 and 496 gms. per day each. Harrop and Degabriele (1976) duplicated Eberhard's feed trial in summer and winter. Their leaf had a higher water content than in the previous experiment, however their largest koala (an eight kilogramme animal) ate only 509 gms. on the day of its largest intake. Congreve and others (1978) found a mean daily intake of 431 gms. for females and 540 gms. for males. It would appear that koalas require up to 550 gms. of leaf daily, with individual differences related mainly to body weight and sex.

If one considers those koalas whose stomach dimensions Harrop and Degabriele published, they were apparently unable to contain a whole day's leaf requirements within the stomach at any one time. The smallest koala, which may have required something like 350 gms of leaf daily, would have had to refill the stomach approximately three times, while the largest animal needed only to fill its stomach slightly more than once.

Time Spent Eating

Smith (1976a) and (1979b) described the eating activities of captive koalas in Queensland. When new leaf was presented, the animals usually fed continuously for one hour. They then fed irregularly for periods of mean duration 20 to 30 minutes with one hour intervals between these meals. The meals were of very widely different durations (from 4 to 72 minutes, though most were between 20 and 30 minutes). The periods between them also varied remarkably (from less than 30 minutes to in excess of three hours). Smith described how the mean time spent resting was some 19 hours daily, leaving 5 hours principally used in the feeding activities indicated. In the five hours eating the average-sized koalas must each consume some 450 gms. of leaf, which is equivalent to eating 1.5 gms. per minute, or about one average size leaf every 30 seconds. Smith timed an animal as eating one leaf in 40 seconds, but a tougher one in three minutes.

A study of four adult males enclosed in trees in an 0.2 hectare sanctuary with public access between the trees, was described by Robbins and Russell (1978). These animals, in a more natural environment than Smith's koalas, had no regular time at which fresh leaf was presented. Their eating was less frequent in daylight (only 34% of the feeding). The lowest frequency of eating was between 7 a.m. and 3 p.m., with the period around sunset and through the night most commonly used. However there was never more than 45% of the time in which all four animals were simultaneously feeding. Low frequency unco-ordinated eating occurred spread through most of the evening and some of the day. The design of Robbins and Russell's recording procedure unfortunately prevents comparison with Smith's enclosed koalas' eating durations.

The Nowendoc koalas most commonly ceased eating when the author approached. On those few occasions when opportunity was afforded for observation of leaf consumption at Nowendoc, the following procedures were observed:

- * Having commenced eating leaves from a branch, the koala continued eating all leaves present, regardless of their size.

- * Though leaves were sometimes dropped, rejection of leaves was never observed.

- * The speed with which leaves were eaten was more rapid than with Smith's enclosed koalas. One Nowendoc koala was timed eating average-sized leaves at the rate of one every 15 seconds. Considering that the leaves were quite large, and that very little movement was required in gathering more, it would appear that 450 gms. of leaves could be consumed in less than one hour provided few interruptions to feeding occurred. (This would not be true of the smaller koalas where the limitations arising from stomach dimensions would become important.

Differences Between Eating by Free-Roaming Koalas and by Koalas in Enclosures

A number of differences were clear:

- * The enclosed animals fed rapidly and for an extended period competing for fresh food when it was presented. There did not appear to be such a concentrated intake with the free-roaming koalas. This period of concentrated feeding may be limited in

duration by the amount of stomach volume forward of the pyloric region.

* The bulk of the eating by wild koalas occurred spread through the evening hours. Though the large koalas probably could consume their daily requirements in one hour of continuous feeding, this was not commonly observed. Rather, eating was of short durations, with extended rest periods.

Implications Arising from this Mathematical Model

1. It is probably unsatisfactory to enclose juvenile and adult koalas in the same pen, since when their food is presented (and feeding is most concentrated) it would appear that the largest animals are able to continue consuming the most suitable leaves. The smaller animals cease feeding, probably limited by their smaller stomach volume. They may recommence after some digestion has occurred. Cork and others (1979) demonstrated that the passage of digesta in koalas was remarkably slow.

2. Though an adult koala could probably consume its daily leaf requirements in one hour's continuous eating, such concentrated feeding was not common among free-roaming koalas. The implications of extended rest behaviour interspersed by short feeding periods for an animal with a very slow passage of digesta are not yet clear.

APPENDIX D
THE "PRUDENT FOLIVORE" MODEL.

A greater understanding of the koala's feeding behaviour is possible if one considers the animal as likely to share some of the attributes of other animals whose ecological niches are similar. Attempts to examine its "fastidious diet" have sometimes failed to consider this, and have attempted to discover a single substance which might be present in preferred leaf, or in trees used frequently. The koala is an arboreal, folivorous marsupial of considerable size. It grazes upon leaf present year-round in abundance, but containing a number of substances which are moderately toxic. These toxic substances are commonly termed "secondary substances", an undefined term, though Kingsbury (1964) advocated "allelochemics". Allelochemics are non-nutritional chemicals produced by organisms of one species which affect the growth, health and behaviour or population biology of another. Their purposes are varied and incompletely understood.

These purposes include repelling or killing predators, inhibiting fungal growth, or simply as a repository of a convenient kind for unwanted metabolites. McNab (1976) noted that insects are the principal predators upon leaves: it is unlikely that the secondary compounds in **Eucalyptus** leaves are a defence against koala browsing. The impact of koalas upon **Eucalyptus** forests appears to be minimal in most instances. McNab also noted that to graze upon leaf containing high secondary compounds concentrations, some animals have a strategy of low basal energy, since de-toxifying secondary compounds in an energy and metabolite-consuming activity. Morrison (1962) regarded the koala as an animal evidencing low basal metabolism rate. Janzen (1976) drew attention to the difficulty of describing toxicity in terms relevant to herbivorous animals since so many of them possess numerous de-toxification pathways for substances which might kill carnivores if eaten by them in lower concentrations. The extent to which one might

consider Eucalyptus secondary compounds toxic to koalas is unclear.

Glander's (1976) study of Howler monkeys and Janzen's (1978) review of sloth behaviour both demonstrate many of the strategies evident in koalas. Sloths are arboreal folivores while Howler monkeys eat substantial leaf in a mixed diet. Sloths have minimal body fat, a sedentary life style with a low basal metabolism and fluctuating body weight. The monkeys utilised only 300 of 1311 trees in the study area with minimal re-use of the entered trees. They showed some preference for particular species of those available. Both Glander and Janzen interpreted the animals' behaviour in terms of adapting to food in which the food intake has to be balanced against the de-toxification cost to the animal in nullifying the effects of the secondary compounds.

The author submits the following six-point speculative model as an attempt to explain the fastidious nature of koalas' feeding:

(i) There is no single feature, chemical or physical, which determines whether a koala will eat any leaf offered. In lieu of this, there may be a number of factors related to the leaf and the individual animal.

(ii) Koalas are not searching for some favoured substances (as Eberhard (1972) thought), but rather are avoiding substances which previously they have associated with undesirable digestive experiences. Smith (1971), when examining purposive behaviour, described one of its elements as being the accomplishment of the same result by a variety of strategies. When a koala moves from one tree to another, or refuses to eat, or selects leaf at a different stage from that previously eaten, they demonstrate this. When Lewis (1954) claimed that koalas "detect" undesirable substances in their diet, he had in mind only a single substance. The situation may be far more complex, as it may not only involve more than one substance, but the requirements of individual koalas may vary over time.

(iii) Koalas may be able to induce suitable enzymes to detoxify essential oils and similar materials, however the quantities of any particular enzyme may not be adequate for unlimited changes of leaf diet. Consequently time may be required for diet change. The toxicity of particular leaf consequently depends upon a number of factors, such as the genetic nature of the koala's enzyme population, its recent experience and the availability of metabolites (possibly glucose),

either from food constituents or from the animal's liver, for use in de-toxification. Parra (1978) emphasised the previous gut experience as being the most critical of these factors. Harrop and Degabriele (1978) may have been only partly correct when they claimed that koalas can only eat oil-rich leaves because they have the necessary de-toxification pathways. Such pathways may only be potentials, without the necessary metabolites or energy to use them. A koala could be in a state where it could not afford to use them. The magnitude of the energy requirements for de-toxification are presently unknown.

(iv) A consequence of koala behaviour in avoiding unnecessary de-toxification while leaf-grazing, is found in the solitary life style of the adults for most of the year. The koala has available a large range of leaf from which to select, and the least pressure to be other than extremely fastidious in that selection. Only in confinement is that fastidiousness minimised.

(v) A specialist feeder, such as the koala, may be able to feed while retaining a minimum number of enzymes for a small number of de-toxification pathways. This minimum number may still be quite substantial. Freeland and Janzen (1974) found 40 secondary compounds in a single species of pine leaf. Because of the need to increase the enzyme population, a nitrogen deficiency, such as Harrop and Degabriele (1976) investigated in koala browse, might seriously hamper an animal's ability to cope with a change in food, however there is presently no evidence of koalas being unable to maintain their nitrogen balance. (S.Cork, University of N.S.W., personal comm.)

Most folivores select small quantities of novel browse frequently, later consuming substantially if no ill-effects were experienced in the interim. This may explain why koalas investigate non-**Eucalyptus** material and unfamiliar leaf, but are unlikely to switch to novel leaf in large quantities. There is no doubt that **Eucalyptus** leaves may vary in many factors, including fibre, water content, oil constituents, cyanogenic glucosides, non-structural carbohydrates, or individual mineral content. Some of these differences require increases, not in the enzymes, but in the hindgut bacteria populations, however the principles outlined about enzymes may still apply.

(vi) Koalas may have limited time in which to accomodate to changes in food. The time required for the necessary alterations in enzyme or bacteria populations may be constrained by the absence of significant food reserves in the form of fat. This limited time would increase the desirability of careful discrimination of intake.

Long retention time for digesta serves as a reserve similar to fat, though it has some disadvantages. The intake of less desirable food into the gut adds to the koala's body weight while the amount of available energy from the gut contents may begin to fall. The effect would be the same whether the food was less desirable because of the proportion of any toxic secondary compounds, or the departure from the optimum fibre or protein content. The less desirable material occupies space in the gut, reducing that available for superior food for long periods of time. Should the animal stop feeding, the hindgut begins to empty, causing available daily energy to fall. A position may be reached, from which recovery is impossible because sufficient energy is not available for browsing and de-toxification. Given the approximately ten days digesta passage (Cork et al 1977) one might speculate that a koala may have a period of about one week in which to locate browse similar to its normal food, or to adapt to a variation. A constant novelty of diet, which is recorded as being one strategy in zoos attempting to revive flagging koalas, clearly hinders gut populations attaining suitable numbers. Though the koala's large size enhances the quantity of digesta capable of being fermented, this is balanced against the energetic desirability of light weight in arboreal animals.

In summary, the koala, by extreme care in ~~its~~ selection of food may be able to minimise energy and metabolite consumption in de-toxification. By consuming only small quantities of novel food, and avoiding those where the experience is less than optimal, the animal's critical energy budget may be sustained.

APPENDIX E
BASIC IDENTIFICATION FLOW-CHART.

a). Field Study Flow-chart

(i) SIZE	very small	medium	adult
	(juvenile on	(juvenile or	(independent)
	parent)	yearling,	
		possibly with	
		parent)	
	Z155bj	C19j, C34cj	
	AG187bj	C36bj, E45j	
	AG188bj	E44j, E53bj	
(ii) SEX		MALE	FEMALE
		O102	A33 E53a
		B34b	C39 D28
		C40	C23 D35
			B34a C38
			C36a
(iii) LARGE ADULT		B34b	A33 C23
		C40	B34a C36a
		E53a	
(iv) Individual comparisons necessary from here on.			

b). Typical File Card for a Field Koala

ANIMAL NO. 0102

PHOTOS 9:4

SEX Female

SIZE Two year old

EARS White inner fur at front, grey outer.

Dark forehead, pale eye surrounds.

NOSE Pink inside nostrils.

Prominent ridge.

MOUTH Obvious undershot jaw.

NECK AND COLLAR Substantial, white.

BACK Steel grey. No shoulder tawniness.

ABDOMEN Regular white.

FORELIMBS Red mark on right forelimb.

Grey outer, white inner.

FLANKS White rump flecks on grey outer.

OTHER Behaviour- continues eating if observed.

ANIMAL

SIZE

SEX

with JUVENILE?

with YEARLING?

HEAD DETAIL:

EAR

FACE MARKINGS

NOSE

MOUTH

TRUNK DETAILS

COLLAR

BACK

ABDOMEN

RUMP

LIMB DETAILS

FORELIMB

Lots of white.

FLANK

Lots of white.

DOMINANT FEATURES
MARKINGS.

REGULAR GREY ADULT WITH SUBSTANTIAL WHITE

FREQUENTED AREAS

Middle Rise.

ANIMAL	B34a
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SIZE	Large adult.
SEX	Female.
with JUVENILE?	No
with YEARLING?	Yes
HEAD DETAIL	
EAR	Short hairs. Dark grey inner.
FACE MARKINGS	White markings coming back from nose.
NOSE	Prominent ridge. Large nostrils.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny shoulders. Short pale fur.
ABDOMEN	Tawny edge to white abdomen.
RUMP	Grey with white flecks.
LIMB DETAILS	
FORELIMB	Tawny, even the underside.
FLANK	Tawny.
DOMINANT FEATURES	TAWNY LARGE FEMALE WITH DARK EARS.
FREQUENTED AREAS	Creekside.

ANIMAL B34b

SIZE Large adult.

SEX Male

with JUVENILE? No.

with YEARLING? No.

HEAD DETAIL

EAR Regular grey. A few especially long hairs.

FACE MARKINGS Dark face.

NOSE Prominent ridge.

MOUTH Regular.

TRUNK DETAILS

COLLAR Regular white.

BACK Very tawny shoulders. Mostly pale grey back.

ABDOMEN Regular white.

RUMP Mostly white.

LIMB DETAILS

FORELIMB Tawny grey.

FLANK Lots of irregular white markings.

DOMINANT FEATURES LARGE TAWNY MALE.

FREQUENTED AREAS Middle Rise.

ANIMAL	B34cj
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SIZE	Medium
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Pale at front.
FACE MARKINGS	Dark face.
NOSE	Prominent ridge.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny shoulders, regular grey back.
ABDOMEN	Regular white.
RUMP	Regular.
LIMB DETAILS	
FORELIMB	Regular grey.
FLANK	Pale uniform grey.
DOMINANT FEATURES	TAWNY, DEPENDENT YEARLING.
FREQUENTED AREAS	Mobile.

ANIMAL	C19j
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SIZE	Medium
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Large, with long hairs.
FACE MARKINGS	White markings coming back from the nose. Dark face.
NOSE	Regular.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny shoulders. Ruffled pale grey back fur.
ABDOMEN	Regular white.
RUMP	Grey with brown.
LIMB DETAILS	.
FORELIMB	Regular grey.
FLANK	Mostly grey, with minor white.
DOMINANT FEATURES	SMALL, INDEPENDENT YEARLING WITH RUFFLED BACK FUR.
FREQUENTED AREAS	Creekside.

ANIMAL

C23

SIZE	Large adult.
SEX	Female.
with JUVENILE?	Yes.
with YEARLING?	No.
HEAD DETAIL	
EAR	White fringe and inner white.
FACE MARKINGS	Very dark face with prominent eye rings.
NOSE	Large nostrils.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Dark back of head. Tawny shoulders. dark back.
ABDOMEN	Very white chest.
RUMP	Grey and white.
LIMB DETAILS	
FORELIMB	Dark grey.
FLANK	Dark grey.
DOMINANT FEATURES	LARGE DARK FEMALE.
FREQUENTED AREAS	Far East.

ANIMAL	C36a
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SIZE	Large adult.
SEX	Female.
with JUVENILE?	No.
with YEARLING?	Yes.
HEAD DETAIL	
EAR	Pale grey with white inner hairs.
FACE MARKINGS	Pale grey face.
NOSE	Prominent eye rings.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Dark head, pale grey back with lower white bar
	mark.
ABDOMEN	Very white with tawny edge.
RUMP	Grey with white flecks.
LIMB DETAILS	
FORELIMB	Dark grey.
FLANK	Regular grey.
DOMINANT FEATURES	LARGE ADULT FEMALE. (VERY SIMILAR TO E53a
	& C38)
FREQUENTED AREAS	Back Rise.

ANIMAL	C36bj
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SIZE	Medium
SEX	Male.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Small, with white outer.
FACE MARKINGS	Prominent eye rings.Under-mouth "beard" mark.
NOSE	Bulbous.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny back of head & shoulders. Short, regular grey fur.
ABDOMEN	White extends under arms to edge of back.
RUMP	White.
LIMB DETAILS	
FORELIMB	Grey and tawny.
FLANK	Obvious white bar mark.
DOMINANT FEATURES	LARGE, TAWNY DEPENDENT YEARLING.
FREQUENTED AREAS	Back Rise.

ANIMAL	C38
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SIZE	Large adult.
SEX	Female.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Pale inner hairs.
FACE MARKINGS	Prominent white "beard" mark.
NOSE	Large nostrils. Prominent ridge.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Minor upper tawiness at back of head.
	Regular grey back.
I5; ABDOMEN	White well around the edges, under forelimbs to back.
RUMP	White bar. Lots of white.
LIMB DETAILS	
FORELIMB	Dark grey.
FLANK	Mostly grey with white flecks.
DOMINANT FEATURES	LARGE PALE FEMALE. EXTENSIVE UNDER-ARM WHITE TO BACK.
	(VERY SIMILAR TO E53a & C36a)
FREQUENTED AREAS	Mobile.

ANIMAL

C39

SIZE	Adult.
SEX	Female.
with JUVENILE?	Yes.
with YEARLING?	No.
HEAD DETAIL	
EAR	Few inner hairs at front.
FACE MARKINGS	Dark face.
NOSE	Prominent ridge.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Very dark, tawny back.
ABDOMEN	Grey, with only thorax white.
RUMP	White.
LIMB DETAILS	
FORELIMB	Dark grey.
FLANK	Pale grey with white flecks.
DOMINANT FEATURES	DARK, SMALL ADULT FEMALE.
FREQUENTED AREAS	Very mobile.

ANIMAL	C40
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SIZE	Large adult.
SEX	Male.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Tear in right ear.
FACE MARKINGS	Regular uniform grey.
NOSE	Prominent ridge.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny back of head. Dark back.
ABDOMEN	Regular white.
RUMP	White bar across grey.
LIMB DETAILS	
FORELIMB	Regular grey.
FLANK	Regular grey.
DOMINANT FEATURES	TORN EAR.
FREQUENTED AREAS	Far East.

ANIMAL	D28

SIZE	Adult
SEX	Female
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	White base joining ears.
FACE MARKINGS	Pale grey.White markings back from nose.
NOSE	Regular.
MOUTH	Regular.
TRUNK DETAILS	Tawny shoulders.
COLLAR	Regular white.
BACK	Dark grey.
ABDOMEN	Regular white.
RUMP	Brown with grey.
LIMB DETAILS	
FORELIMB	Pale grey.
FLANK	Regular grey.
DOMINANT FEATURES	WHITE EAR BASE.
FREQUENTED AREAS	Mobile.

ANIMAL D35

SIZE Adult.

SEX Female.

with JUVENILE? No.

with YEARLING? No.

HEAD DETAIL

EAR White inner hairs.

FACE MARKINGS Tawny face.

NOSE Prominent ridge.

MOUTH Regular.

TRUNK DETAILS

COLLAR Regular white.

BACK Very tawny: almost red.

ABDOMEN Regular white.

RUMP Grey and white.

LIMB DETAILS

FORELIMB Dark grey.

FLANK Mostly grey.

DOMINANT FEATURES VERY RED ANIMAL WITH PALE EARS.

FREQUENTED AREAS Mobile.

ANIMAL	E44j
SIZE	Medium.
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Very short fur, white edge.
FACE MARKINGS	Regular grey.
NOSE	Prominent ridge.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Very prominent collar, around to ears.
BACK	Pale with lower half almost white.
ABDOMEN	Very white.
RUMP	All white.
LIMB DETAILS	
FORELIMB	Pale grey.
FLANK	Pale grey.
DOMINANT FEATURES	PALE YEARLING.
FREQUENTED AREAS	Lower Flat.

ANIMAL	E45j

SIZE	Medium
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Short fur, white inner & grey outer.
FACE MARKINGS	Prominent white eye rings.
NOSE	Prominent ridge.
MOUTH	Regular
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny shoulders, uniform regular grey back.
ABDOMEN	Regular white.
RUMP	Mostly grey, minor white.
LIMB DETAILS	
FORELIMB	Regular grey.
FLANK	Regular uniform grey.
DOMINANT FEATURES	UNIFORM GREY INDEPENDENT YEARLING.
FREQUENTED AREAS	Middle Rise.

ANIMAL	E53a
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SIZE	Large adult.
SEX	Female.
with JUVENILE?	No.
with YEARLING?	Yes.
HEAD DETAIL	
EAR	White inner. Few hairs.
FACE MARKINGS	Unmarked regular grey face except for prominent "beard".
NOSE	Large nostrils.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Regular white.
BACK	Tawny upper, pale smooth lower.
ABDOMEN	Regular white.
RUMP	Grey and white.
LIMB DETAILS	
FORELIMB	Regular grey.
FLANK	Dark grey.
DOMINANT FEATURES	LARGE PALE FEMALE WITH DARKER FACE. (very similar to C36a and C38)
FREQUENTED AREAS	Far East.

ANIMAL	E53bj

SIZE	Medium.
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Regular uniform grey
FACE MARKINGS	Regular uniform grey
NOSE	Regular.
MOUTH	Regular.
TRUNK DETAILS	
COLLAR	Pale grey.
BACK	Uniform grey.
ABDOMEN	Pale grey.
RUMP	Regular grey.
LIMB DETAILS	
FORELIMB	Regular grey.
FLANK	Uniform grey.
DOMINANT FEATURES	SMALL, UNMARKED DEPENDENT GREY YEARLING.
FREQUENTED AREAS	Back Rise.

ANIMAL 0102

SIZE Medium.

SEX Male.

with JUVENILE? No.

with YEARLING? No.

HEAD DETAIL

EAR White inner.

FACE MARKINGS Regular grey.

NOSE Regular.

MOUTH Undershot jaw.

TRUNK DETAILS

COLLAR Regular white.

BACK Steel grey. No tawniness. Short fur.

ABDOMEN Regular white.

RUMP Minor white flecks on grey.

LIMB DETAILS

FORELIMB Red mark on right.

FLANK Minor white flecks on grey.

DOMINANT FEATURES JUVENILE ZOO BEHAVIOUR.

FREQUENTED AREAS Creekside.

ANIMAL	Z155bj

SIZE	Small.
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Can only be distinguished from AG187bj and
FACE MARKINGS	AG188bj by the accompanying adult (A33).
NOSE	
MOUTH	
TRUNK DETAILS	
COLLAR	
BACK	
ABDOMEN	
RUMP	
LIMB DETAILS	
FORELIMB	
FLANK	
DOMINANT FEATURES	DEPENDENT JUVENILE.
FREQUENTED AREAS	Middle Rise.

ANIMAL	AG187bj

SIZE	Small.
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Can only be distinguished from AG188bj and
FACE MARKINGS	Z155bj by the accompanying adult (C23).
NOSE	
MOUTH	
TRUNK DETAILS	
COLLAR	
BACK	
ABDOMEN	
RUMP	
LIMB DETAILS	
FORELIMB	
FLANK	
DOMINANT FEATURES	DEPENDENT JUVENILE.
FREQUENTED AREAS	Far East.

ANIMAL	AG188bj
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SIZE	Small
SEX	Immature.
with JUVENILE?	No.
with YEARLING?	No.
HEAD DETAIL	
EAR	Can only be distinguished from Z155bj and
FACE MARKINGS	AG187bj by the accompanying adult (C39).
NOSE	
MOUTH	
TRUNK DETAILS	
COLLAR	
BACK	
ABDOMEN	
RUMP	
LIMB DETAILS	
FORELIMB	
FLANK	
DOMINANT FEATURES	DEPENDENT JUVENILE.
FREQUENTED AREAS	Very mobile.

APPENDIX F
DESCRIPTION OF THE MUKKI CREEK STUDY SITE.

The Mukki Creek study site (31°25' S, 151°40' E) was elevated some 900 m. above sea level. Six ecologically distinct areas were distinguished within this site, as follows:

Creekside

This area, 0.35 hectares, was adjacent to the permanent watercourse where the trees grew on both sides. It contained 92 trees, of which 58 were **E. stellulata** and 23 were **E. acaciiformis**. Only 11 were **E. pauciflora**. The tree species were in the proportions similar to the Lower Flat area, i.e. they were 0.25 **E. acaciiformis**: 0.63 **E. stellulata**: 0.12 **E. pauciflora**. The area was dominated by tall **E. stellulata**, with heights ranging from 5 to 36 m. Koalas were unlikely to leave this area on its southern boundary since that adjoined a paddock bare of trees for almost 500 m. Unlike the Lower Flat area, the Creekside area had no *melaleuca* sp. along its watercourse periphery. It was the dampest section of the site.

Back Rise

This area, 3.46 hectares, was the largest on the site. Its 504 trees grew on a steep hill. They were a mix mainly of **E. stellulata** and **E. acaciiformis**. here most evenly distributed. Few small trees were present in this area, and tree heights ranged from 14 to 32 m. There were 243 **E. acaciiformis**, 225 **E. stellulata** and 36 **E. pauciflora**, giving a ratio of 0.48: 0.45: 0.07. No other area had a similar ratio. Animals could easily leave this area to cross a small open area and enter a similar wooded site, further down the watercourse, which had the same three **Eucalyptus** species. Koalas were often found in this adjoining site.

Back Fence

The area of the Back fence was only 0.85 hectares, containing 65 trees. It adjoined an open paddock leading to a steeply-sided plateau on which grew Stringy-bark Messmate, **Eucalyptus obliqua** in which koalas were not observed. It is doubtful if the koalas ever actually left or entered by this avenue. More commonly, they moved through the Far East area or the Back Rise. The proportions of **Eucalyptus** species on the Back fence area was similar to the Middle Rise. There were 0.88 **E. acaciiformis**: 0.09 **E. stellulata**: 0.03 **E. pauciflora**. There were no small trees here at all, as heights ranged from 14 to 27 m.

Middle Rise

The 245 trees here occupied 2.42 hectares. They were from 10 to 27 m in height, consisting of 228 **E. acaciiformis**, a solitary **E. stellulata** and 16 **E. pauciflora**. This ratio (0.94: 0.00: 0.03) is very similar to that in the Back Fence area. Animals could enter or leave this area very easily since it adjoined four of the other five areas on the study site. It was predominantly an area of mature **E. acaciiformis**.

Lower Flat

Only 92 trees grew in the 0.86 hectares of Lower Flat. Unlike most of the site, this area was not steep, and the soil was much deeper. Less rock was exposed, and here grew the tallest trees (from 5 to 41 m.) Low **Melaleuca** sp. fringed the creek, making it difficult to traverse. Koalas were not seen in this non-**Eucalyptus** growth. There were 55 **E. stellulata**, 29 **E. acaciiformis** and 10 **E. pauciflora**. Unlike the **E. stellulata** of the Back Rise, few here exceeded 5 m., however the **E. acaciiformis** were remarkably large. A solitary acacia sp. was also present, but never occupied. Animals were unlikely to leave this area except on its northern and eastern boundaries because of the proximity of open paddocks.

Far East

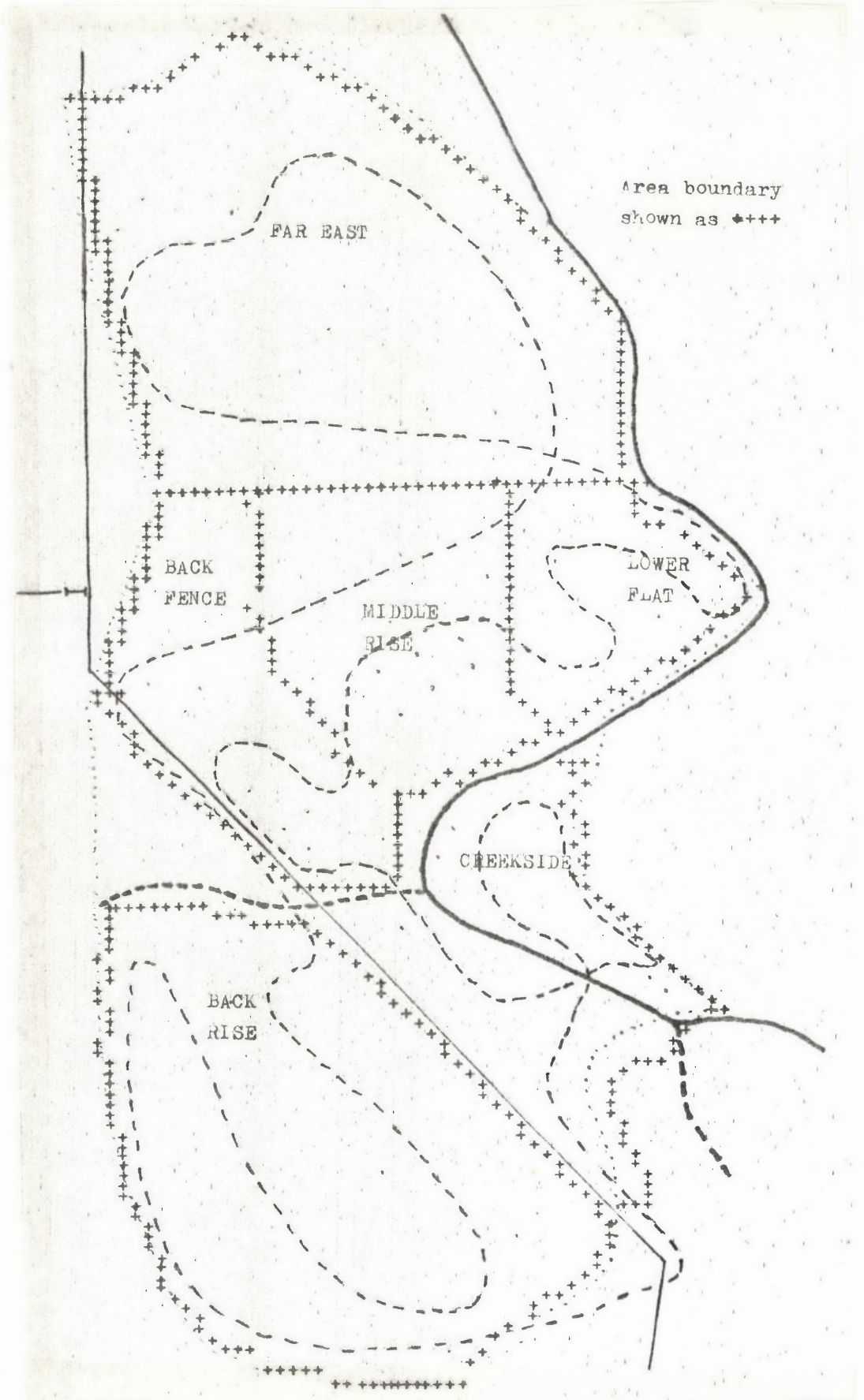
A large area, of 3.29 hectares, this area contained the largest number of trees. There were 327 **Eucalyptus** trees and a solitary **Acacia** sp. which was not utilized by the koalas. Numerous wombats dug in this area. It contained 300 **E. acaciiformis**, 62 **E. stellulata** and 10 **E. pauciflora**. (0.81:0.17:0.03) Only large trees grew here, from 15 to 29

m. Animals could easily leave from this area to vacate the study site by crossing a short space to a similar site, further east along the watercourse, which had the same three **Eucalyptus** species. Koalas were frequently seen in this adjoining site. The Far East area was not as steep as the Middle Rise and differed by having a greater proportion of **E. stellulata**. Its western boundary was a ridge, along which a fence had been erected. Koalas easily cross wire fences. (Robinson 1978).

The site total area was 11.18 hectares, containing 1370 trees, of which 880 were **E. acaciiformis**, 405 were **E. stellulata** and 85 were **E. pauciflora**. (0.64: 0.30: 0.06)

The tree ranged in height from 5 to 41 metres, with the means being 19.9 m. for **E. acaciiformis** (range 5 to 41 m.), 21.1 m. for **E. stellulata** (range 7 to 32 m.) and 18.3 m. for **E. pauciflora** (range 7 to 24 m.).

FIGURE F- 1
MAP OF THE MUKKI CREEK STUDY SITE SHOWING ECOLOGICAL AREAS.



APPENDIX G
A BIBLIOGRAPHY ON KOALA UTILIZATION OF **EUCALYPTUS** TREES.

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APPENDIX H
TABLES OF DATA.

TABLE H- 1
TREE ENTRY-LOWER FLAT

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
11	St																	
31	Ac											+						
44	Ac			+				+	+									
63	Ac								+									
88	Ac												+					
93	Ac													+				
94	Ac													+				
100	Ac														+			
122	Ac																	+
125	Ac																	
139	Ac																	
153	St																	
163	Pa																	
164	Ac																	
191	Pa																	
194	Pa																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
11																	Not Used
31																	A33 (10/3)
44																	E44j (2/1; 30/1; 11/2)
63									+								B34b (11/2)
88																	E44j (18/8)
93				+								+					C40 (24/3)
94																	A33 (25/3)
100																	E44j (7/7; 25/9)
122																	C39 (25/3)
125	+																E44j (14/4)
139				+													C39 (25/4)
153						+											E44j (18/5)
163							+										E44j (23/6)
164									+								E44j (8/7)
191																+	O102 (18/8; 14/10)
194																+	C39 (18/8)
																+	O102 (13/10)
																+	O102 (13/10)

TABLE H- 2
TREE ENTRY-MIDDLE RISE

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
2	Ac																	
5	Ac							+										
6	Ac																	
9	Ac												+					
10	Ac																	
18	Ac																	
19	Pa											+				+		
26	Ac	+																
33	Pa																	
38	Pa		+															
41	Ac			+					+									
45	Ac					+	+	+	+			+		+			+	+

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
2																	Not Used
5								+									A33 (30/1)
6																	C19j (5/8)
9	+	+		+													E44j (5/8)
10																	Not Used
18		+				+											C38 (10/3)
19																	C23 (16/5)
26																	A33 (28/5)
33																	E45j (23/6)
38																	A33 (8/7)
41																	C38 (10/3)
																	B34a (21/4)
																	E44j (28/5)
																	C19j (15/11)
																	Not Used
																	C23 (25/3)
																	C38 (26/11)
																	B34a (12/12)
																	B34cj (12/12)
																	E45j (11/2)
																	C38 (24/3)
																	A33 (14/4;
																	25/4; 7/7)
																	B34a (23/4)
45								+	+	+				+			E45j (2/1;
																	30/1; 10/3;
																	5/8; 18/8;
																	24/9; 2/10)
																	E44j (16/1;
																	17/1)

TABLE H- 2 (Continued)

TREE ENTRY-MIDDLE RISE

TREE NO.	DATE SPECIES	15 TT	26 TT	12 T2	2 T	16 T	17 T	30 T	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
48	Ac				+													
58	Ac					+												
67	Ac								+		+						+	
74	Ac									+	+							
87	Ac											+						
118	Pa																	+
119	Ac																	+
123	Ac																	+
129	Ac																	
137	Ac																	
149	Ac																	
154	Ac																	
155	Ac																	
156	Ac																	
162	Ac																	
165	Ac																	
166	Ac																	
168	Pa																	
172	Ac																	
179	Ac																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
48																	C38 (2/1)
58																	C40 (16/1)
67		+			+												C38 (11/2)
																	E53bj (10/3)
																	C23 (23/4)
																	E45j (28/5;
																	7/7)
74				+													C36a (21/2;
																	10/3)
																	A33 (23/6)
87																	A33 (24/3)
118																	E53a (25/4)
119																	B34b (25/4)
123																	C23 (25/4)
129	+																E45j (16/5)
137			+														E45j (9/6)
149							+										E45j (24/7)
154								+									E45j (5/8)
155								+									A33 (5/8)
									+								Z155bj (5/8)
156									+								B34b (5/8)
162										+							A33 (18/8)
											+						Z155bj (18/8)
165											+						C23 (1/9)
166												+					A33 (1/9)
													+				Z155bj (1/9)
168												+					E45j (24/9)
172													+				C23 (25/9)
179														+			E45j (1/10)

TABLE H- 3
TREE ENTRY-BACK FENCE

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
7	Ac																	
13	Pa																	
17	Ac																	
20	St																	
21	Ac																	
49	Ac					+												
56	Ac						+											
62	Ac							+										
76	Pa											+						
82	Ac											+						
85	Ac														+			
89	Ac												+					
92	Ac													+				
103	Ac															+		
121	Ac																	+
126	Ac																	
138	Ac																	
140	Ac																	
159	Ac																	
177	Ac																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
7																	Not Used
13																	Not Used
17																	Not Used
20																	Not Used
21																	Not Used
49																	C39 (2/1)
56																	A33 (16/1)
62																	C38 (30/1)
76																	C36bj (10/3)
82																	B34b (10/3)
85		+															B34b (14/4)
																	C23 (28/5)
89																	B34b (24/3)
92																	C40 (25/3)
103																	B34b (21/4)
121																	D35 (25/4)
126	+																A33 (18/5)
138			+								+						B34b (9/6)
																	E44j (24/9)
140				+													B34b (23/6)
159							+										B34a (24/7)
177											+	+					O102 (24/9; 25/9)

TABLE H- 4
TREE ENTRY-CREEKSID

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
1	Ac																	
15	Pa																	
16	Ac											+						
22	Ac																	
28	Ac																	
35	Ac																	
64	St																	
68	St																	
69	Ac																	
79	Ac																	
86	St																	
102	Ac																	
112	St																	
120	Ac																	
127	Pa																	
128	Ac																	
167	Ac																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
1																	Not Used
15																	B34a (10/3)
16																	Not Used
22																	Not Used
28																	D28 (12/12)
35																	B34a (9/6)
64																	A33 (26/11)
68																	D35 (12/12)
69																	B34a (30/1)
79																	B34a (11/2)
86																	C19j (11/2)
102																	D35 (10/3)
112																	C19j (25/4)
120																	C23 (24/3)
127																	0102 intro- duced on 20/4
128																	0102 (22/4)
167																	0102 (25/4; 9/6; 7/7; 5/8 18/8)

TABLE H- 5
TREE ENTRY-BACK RISE

TREE NO.	DATE .	15	26	12	2	16	17	30	11	21	10	24	25	14	21	22	23	25
SPECIES.	TT	TT	TT	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T
23	Ac		+															
27	Ac																	
32	Ac																	
36	Ac		+	+														
37	Ac		+															
50	Ac				+													
51	Pa				+													
52	St				+													
57	Ac					+												
70	St								+									
71	Pa								+						+			
75	Ac									+								
77	St										+					+	+	
78	Ac										+					+		
83	Pa										+							
84	Ac										+							
90	Ac											+						
91	St											+						
99	Ac												+					
101	St													+				

TREE NO.	16	28	9	23	7	8	24	5	18	1	24	25	1	2	13	14	DATE AND ANIMAL
	5	5	6	6	7	7	7	8	8	9	9	9	10	10	10	10	
23																	C23 (26/11)
27																	Not Used
32																	Not Used
36																	C36a with C36bj (26/11; 12/12)
37											+						B34a, B34b and B34cj (26/11), 0102 (24/9)
50																	C36a with C36bj (2/1)
51																	C23 (2/1)
52																	D35 (2/1)
57																	D28 (16/1)
70																	D35 (11/2)
71																	D28 (11/2), C36a with C36bj (14/4)
75		+		+													C36bj (21/2; 28/5; 23/6)
77																	C39 (10/3), C36bj (22/4; 23/4)
78																	C19j (10/3), D35 (22/4)
83																	D28 (10/3)
84																	B34cj (10/3)
90																	C36bj (24/3)
91					+												D28 (24/3), C36bj (7/7)
99		+															D35 (28/5)
101																	D28 (14/4)

TABLE H- 5 (Continued)

TREE ENTRY-BACK RISE

TREE NO.	DATE SPECIES	15 TT	26 TT	12 T2	2 T	16 T	17 T	30 T	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
107	Ac														+			
108	St																+	
109	St															+		
113	St																+	
124	St																	+
130	Ac																	
131	St																	
132	St																	
141	Ac																	
142	St																	
143	Ac																	
146	St																	
148	St																	
157	St																	
158	Pa																	
169	St																	
170	St																	
173	St																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
107																	D28 (21/4)
108																	B34b (22/4)
109																	D28 (22/4)
113		+															O102 (23/4; 28/5)
124				+													D28 (25/4); O102 (23/6)
130	+																O102 (16/5)
131	+																C36a (16/5)
132	+																C36bj (16/5)
141				+			+										D28 (23/6; 24/7)
142				+													C38 (23/6)
143				+													C19j (23/6)
146					+		+										C36a (7/7; 24/7)
148					+												D28 (7/7)
157							+										C36bj (24/7)
158							+										D35 (24/7)
169										+							A33 with Z155bj (1/9)
170										+							E44j (1/9)
173											+	+					A33 with Z155bj(24/9; 25/9)

TABLE H- 5 (Continued)

TREE ENTRY-BACK RISE

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
174	St																	
180	St																	
181	St																	
182	Ac																	
184	St																	
185	St																	
189	Ac																	
190	St																	
195	St																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL	
174											+						C19j (24/9;)	
180												+					C19j (25/9)	
181													+				A33 with	
																	Z155bj(1/10)	
182													+				C19j (1/10)	
184														+			A33 with	
																	Z155bj(2/10)	
185														+			C19j (2/10)	
189															+		A33 (13/10)	
190															+		Z155bj(13/10)	
195																+	C19j (14/10)	

TABLE H- 6
TREE ENTRY-FAR EAST

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
8	Ac						+								+			
14	Ac																	
25	Ac																	
30	Ac															+		+
34	St	+																
39	Ac		+											+				
40	St		+															
42	St			+		+												
43	Ac			+														
46	Ac				+													
47	Ac				+			+		+								
53	Ac				+													
54	Ac				+													
55	St				+													
59	St					+	+											
60	Ac					+	+											
61	Ac						+											

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
8																	C38 (17/1), E44j (21/4)
14								+									C23 (5/8)
25										+							C40 (1/9)
30																	C38 (22/4; 24/5)
34		+							+								B34a, B34b & B34cj (15/11)
39	+																C39 (28/5), C40 (18/8)
40																	C39 (26/11; 14/4 & 16/5)
42			+	+			+										C40 (26/11) A33 (12/12), C38 (16/1; 23/6)
43																	C23 (8/6), O102 (24/7)
46																	C39 (12/12)
47																	B34b (2/1) B34a & B34cj (2/1)
53																	B34b (30/1; 21/2)
54																	E53a & E53bj (2/1)
55																	A33 (2/1)
59																	C40 (2/1)
60																	C23 (16/1; 17/1)
61																	E53a & E53bj (16/1), E53a (17/1) E53bj (17/1)

TABLE H- 6 (Continued)

TREE ENTRY-FAR EAST

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
65	St							+	+			+					+	
66	Ac							+										
72	St								+	+								
73	Ac								+		+							
80	St										+							
81	Ac										+							
95	St												+					
96	St												+				+	
97	Ac													+				
98	Ac													+				
104	St														+			
105	Ac														+	+		
106	Ac														+			
110	Ac															+		
111	Ac															+		
114	Ac																+	
115	St																	+
116	Ac																	+
117	Ac																	+
133	Pa																	+

TREE NO.	DATE SPECIES	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
65	+																	C39 (30/1; 11/2; 24/3 23/4), D28 (28/5), C23 (30/1)
66																		A33 (11/2; 21/2), C39 (23/6; 7/7), C39 & AG188bj (13/10)
72				+		+											+	C23 (11/2; 10/3; 7/7) C40 (10/3)
73				+														E44j (10/3) D28 (25/3)
80																		B34b (25/3), E44j (23/4), E45j (14/4; 23/4)
81																		C23 (14/4; 8/7), D28 (16/5)
95																		C23 (21/4)
96																		E53a (21/4; 22/4; 16/5; 14/10)
97																		C40 (21/4) C23 (22/4)
98	+							+										E45j (22/4) E45j (23/4) B34b (23/4) D28 (23/4)
104																		E53a (23/4)
105															+			C30 (16/5)
106																		
110																		
111																		
114																		
115																		
116																		
117																		
133	+																	

TABLE H- 6 (Continued)

TREE ENTRY-FAR EAST

TREE NO.	DATE SPECIES	15 11	26 11	12 12	2 1	16 1	17 1	30 1	11 2	21 2	10 3	24 3	25 3	14 4	21 4	22 4	23 4	25 4
134	Ac																	
135	Ac																	
136	Ac																	
144	Ac																	
145	Ac																	
147	St																	
150	Ac																	
151	Ac																	
152	St																	
160	St																	
161	Ac																	
171	Ac																	
175	Ac																	
176	Ac																	
178	St																	
183	St																	
186	Ac																	
187	St																	
188	Ac																	
192	Ac																	
193	Ac																	
196	Ac																	
197	Ac																	

TREE NO.	16 5	28 5	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	DATE AND ANIMAL
134	+																B34b (16/5)
135	+																C38 (16/5)
136		+															B34a & B34b (28/5)
144				+													E53a (23/6)
145				+													C23 (23/6)
147					+												C39 (7/7)
150						+											D28 (8/7)
151						+											C39 (8/7)
152						+											O102 (8/7)
160							+		+								C39 (24/7), E53a (18/8)
161							+										C40 (24/7)
171										+		+					C23 (1/9), E53a (25/9)
175											+						C39 (24/9)
176											+	+					C40 (24/9; 25/9)
178												+					C23 & C39 (25/9)
183													+				E45j (1/10)
186														+			O102 (2/10)
187															+		C23 & AG187bj (2/10)
188															+		C39 & AG188bj (2/10)
192																+	C23 & AG187bj (13/10)
193																+	C38 (13/10)
196																+	C39 & AG188bj (14/10)
197																+	C38 (14/10)

TABLE H- 7
ANIMAL SITE USAGE

KOALA (SEX)	NOVEMBER TO MAY DATES																			
	15.11.	26.11.	12.12.	2.1.	16.1.	17.1.	30.1.	11.2.	21.2.	10.3.	24.3.	25.3.	14.4.	21.4.	22.4.	23.4.	25.4.	16.5.	28.5.	
A33 Female		+	+	+	+			+	+	+	+	+	+					+	+	+
Z155bj Juvenile																				
B34a Male	+	+	+	+			+	+		+				+		+		+	+	
B34b Female	+	+		+			+	+	+	+	+	+	+	+	+	+	+	+	+	+
B34cj Juvenile	+	+	+	+						+										
C19j Juvenile		+		+				+		+								+	+	+
C23 Female		+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
AG187bj Juvenile																				
C36a Female		+	+	+						+	+			+		+	+		+	
C36bj Juvenile		+	+	+						+	+	+		+			+		+	+
C38 Female		+		+	+	+	+	+	+		+	+	+			+		+	+	
C39 Female		+	+	+			+	+		+	+	+	+			+	+	+		
AG188bj Juvenile																				
C40 Male		+		+	+					+	+	+		+		+		+	+	
D28 Female.			+		+			+		+	+	+	+	+	+	+	+	+	+	+
D35 Female			+	+				+		+					+		+		+	
E44j Juvenile				+	+	+	+	+		+			+			+		+	+	
E45j Juvenile				+			+	+		+			+	+	+	+		+	+	
E53a Female				+	+	+								+	+	+	+	+		
.E53bj Juvenile				+	+	+				+										
O102 Male															+	+	+	+	+	
ANIMALS	3	11	8	16	8	5	8	11	4	16	8	7	9	7	9	12	10	15	12	

LEGEND += animal observed on that date

TABLE H- 7 (Continued)

ANIMAL SITE USAGE

KOALA (SEX)	JUNE TO OCTOBER DATES														TOTAL /33
	9 6	23 6	7 7	8 7	24 7	5 8	18 8	1 9	24 9	25 9	1 10	2 10	13 10	14 10	
A33 Female	+	+	+	+	+	+	+	+	+	+	+	+	+		26
Z155bj Juvenile					+	+	+	+	+	+	+	+	+	+	9
B34a Male	+	+			+										14
B34b Female	+	+			+										19
B34cj Juvenile															5
C19j Juvenile		+	+		+	+	+	+	+	+	+	+	+	+	19
C23 Female	+	+	+	+	+	+	+	+	+	+		+	+		28
AG187bj C36a		+	+		+							+	+		2
C36bj Juvenile		+	+		+										12
C38 Female	+	+											+	+	13
C39 Female			+	+	+		+		+	+		+	+	+	16
AG188bj Juvenile												+	+	+	21
C40 Male		+	+		+		+	+	+	+					3
D28 Female		+	+	+	+										17
D35 Female					+										8
E44j Juvenile		+	+		+	+	+	+	+	+		+	+		18
E45j Juvenile	+	+	+	+	+	+	+	+	+	+	+	+			22
E53a Female		+				+				+				+	12
E53bj Juvenile															4
O102 Male	+	+	+	+	+	+	+	+	+	+	+	+	+	+	19
ANIMALS	6	14	11	6	15	7	10	8	9	10	5	9	9	6	305

LEGEND += animal observed on that date

TABLE H- 8
ANIMAL SITE USAGE (EQUIVALENT TIME INTERVALS BETWEEN OBSERVATIONS)

DATE	15	26	12	2	16	30	11	21	10	24	14	25
KOALA	11	11	12	1	1	1	2	2	3	3	4	4
A33	a	x	x	x	x	x	x	x	x	x	x	x
Z155bj	DEPENDENT JUVENILE											
B34a	x	x	x	x	a	x	x	a	x	a	a	a
B34b	x	x	a	x	a	x	x	x	x	x	x	x
B34cj	x	x	x	x	a	a	a	a	x	a	a	a
C19j	a	x	a	x	a	a	x	a	x	a	a	x
C23	a	x	a	x	x	x	x	a	x	x	x	x
AG187bj	DEPENDENT JUVENILE											
C36a	a	x	x	x	a	a	a	x	x	a	x	a
C36bj	a	x	x	x	a	a	a	x	x	x	x	a
C38	a	x	a	x	x	x	x	a	x	x	a	x
C39	a	x	x	x	a	x	x	a	x	x	x	x
AG188bj	DEPENDENT JUVENILE											
C40	a	x	a	x	x	a	a	a	x	x	a	a
D28	a	a	x	a	x	a	x	a	x	x	x	x
D35	a	a	x	x	a	a	x	a	x	a	a	x
E44j	a	a	a	x	x	x	x	a	x	a	x	a
E45j	a	a	a	x	a	x	a	a	x	a	x	a
E53a	a	a	a	x	x	a	a	a	a	a	a	x
E53b	a	a	a	x	x	a	a	a	x	a	a	a
O102	INTRODUCED ANIMAL											x

LEGEND a= absent from the site on that date
 x=observed on the site on that date

TABLE H- 8 (Continued)
ANIMAL SITE USAGE (EQUIVALENT TIME INTERVALS BETWEEN OBSERVATIONS)

DATE	<u>16</u>	<u>28</u>	<u>9</u>	<u>23</u>	<u>7</u>	<u>24</u>	<u>5</u>	<u>18</u>	<u>1</u>	<u>24</u>	<u>1</u>	<u>13</u>	TOTAL	COMMENT
KOALA	5	5	6	6	7	7	8	8	9	9	10	10	/24 VISITS	
A33	a	x	x	x	x	x	x	x	x	x	x	x	22	
Z155bj						x	x	x	x	x	x	x	7	NOT USED
B34a	x	x	x	x	a	x	a	a	a	a	a	a	12	
B34b	x	x	x	x	a	x	a	a	a	a	a	a	15	
B34cj	LEFT AREA OR DEAD												5	NOT USED
C19j	x	x	a	x	x	x	x	x	x	x	x	x	16	
C23	x	x	x	x	x	x	x	x	x	x	a	x	20	
AG187bj	DEPENDENT JUVENILE												1	NOT USED
C36a	x	a	a	x	x	x	a	a	a	a	a	a	10	
C36bj	x	x	x	x	a	x	a	a	a	a	a	a	12	
C38	a	a	x	x	a	a	a	a	a	a	a	x	11	
C39	x	a	a	a	x	x	a	x	a	x	a	x	15	
AG188bj	DEPENDENT JUVENILE												1	NOT USED
C40	x	x	a	x	x	x	a	x	x	x	a	a	13	
D28	x	x	a	x	x	x	a	a	a	a	a	a	12	
D35	a	x	a	a	a	x	a	a	a	a	a	a	7	
E44j	x	x	a	x	x	x	x	x	x	x	a	a	15	
E45j	x	x	x	x	x	x	x	x	x	x	x	a	15	
E53a	x	a	a	x	a	a	a	x	a	a	a	a	6	
E53bJ	LEFT AREA OR DEAD												3	NOT USED
O102	x	x	x	x	x	x	x	x	x	x	x	x	13	NOT USED

LEGEND a= absent from the site on that date
 x=observed on the site on that date

TABLE H- 9

TREE SPECIES UTILIZED BY INDIVIDUAL KOALAS-DATA

DATE KOALA	SIGHTINGS TOTAL /33	15 TT	16 TT	12 T2	2 T	16 T	17 T	30 T	11 2	21 2	10 3	24 3
A33	33			35 Ac CK	42 St FE	54 Ac FE	56 Ac BF	5 Ac MR	72 St FE	72 St FE	31 Ac LF	87 Ac MR
Z155bj	9			DEPENDENT JUVENILE								
B34a	14	34 St FE		37 Ac BR	41 Ac MR	47 Ac FE		64 St CK	68 St CK		15 Pa CK	
B34b	19	34 St FE		37 Ac BR		46 Ac FE		47 Ac FE	63 Ac LF	47 Ac FE	82 Ac BF	89 Ac BF
B34cj	5			JUVENILE WHICH LEFT AREA								
C19j	19			19 Pa MR		48 Ac MR			69 Ac CK		78 Ac BR	
C23	28			23 Ac BR		51 Pa BR	59 St FE	59 St FE	66 Ac FE	73 Ac FE	73 Ac FE	86 St CK
AG187bj				DEPENDENT JUVENILE								
C36a	12			36 Ac BR	36 Ac BR	50 Ac BR				74 Ac MR	74 Ac MR	
C36bj	13			36 Ac BR	36 Ac BR	50 Ac BR				75 Ac BR	76 Pa BF	90 Ac BR
C38	16			38 Pa MR		48 Ac MR	42 St FE	8 Ac FE	62 Ac BF	67 Ac MR	18 Ac MR	41 Ac MR
C39	21			39 Ac FE	43 Ac FE	49 Ac BF			65 St FE	65 St FE	77 St BR	65 St FE
AG188bj	3			DEPENDENT JUVENILE								
C40	17			40 St FE		55 St FE	58 Ac MR				80 St FE	88 Ac LF
D28	17			28 Ac CK			57 Ac BR			71 Pa BR	83 Pa BR	91 St BR
D35	8			35 Ac CK		52 St BR				70 St BR	79 Ac CK	
E44j	18					44 Ac LF	45 Ac MR	45 Ac MR	44 Ac LF	44 Ac LF	81 Ac FE	
E45j	22					45 Ac MR			45 Ac MR	41 Ac MR	45 Ac MR	
E53a	12					53 Ac FE	60 Ac FE	60 Ac FE				
E53bj	11			JUVENILE WHICH LEFT AREA								
O102	19			INTRODUCED ANIMAL								

TABLE H- 9 (Continued)

ANIMAL SITE USAGE

DATE KOALA	<u>25</u> <u>3</u>	<u>14</u> <u>4</u>	<u>21</u> <u>4</u>	<u>22</u> <u>4</u>	<u>23</u> <u>4</u>	<u>25</u> <u>4</u>	<u>16</u> <u>5</u>	<u>28</u> <u>5</u>	<u>9</u> <u>6</u>	<u>23</u> <u>6</u>	<u>7</u> <u>7</u>
A33	93 Ac LF	41 Ac MR				41 Ac MR	126 Ac BF	9 Ac MR		74 Ac MR	41 Ac MR
Z155bj			DEPENDENT JUVENILE								
B34a			18 Ac MR		41 Ac MR		127 Pa CK	136 Ac FE	28 Ac CK	127 Pa CK	
B34b	96 St FE	85 Ac BF	103 Ac BF	108 St BR	115 St FE	119 Ac MR	134 Ac FE	136 Ac FE	138 Ac BF	140 Ac BF	
B34cj			JUVENILE WHICH LEFT AREA								
C19j					79 Ac CK	128 Ac CK	128 Ac CK			143 Ac BR	128 Ac CK
C23	33 Pa MR	98 Ac FE	104 St FE	110 Ac FE	67 Ac MR	123 Ac MR	9 Ac MR	85 Ac BF	42 St FE	145 Ac FE	73 Ac FE
AG187bj			DEPENDENT JUVENILE								
C36a			71 Pa BR	77 St BR	77 St BR		131 St BR			142 St BR	146 St BR
C36bj			71 Pa BR		77 St BR		132 St BR	75 Ac BR		75 Ac BR	91 St BR
C38	9 Ac MR			30 Ac FE		30 Ac FE	135 Ac FE		111 Ac FE	42 St FE	
C39	94 Ac LF	39 Ac FE			65 St FE	122 Ac LF	39 Ac FE				147 St FE
AG188bj			DEPENDENT JUVENILE								
C40	92 Ac BF		106 Ac FE		114 St FE		133 Pa FE	34 St FE		72 St FE	72 St FE
D28	95 St FE	101 St BR	107 Ac BR	109 St BR	116 Ac FE	124 St BR	98 Ac FE	65 St FE		141 Ac BR	148 St BR
D35				78 Ac BR		121 Ac BF		99 Ac BR			
E44j		100 Ac LF			96 St FE		125 Ac LF	18 Ac MR		139 Ac LF	93 Ac LF
E45j		97 Ac FE	8 Ac FE	111 Ac FE	97 Ac FE		129 Ac MR	67 Ac MR	137 Ac MR	9 Ac MR	67 Ac MR
E53a			105 Ac FE	105 Ac FE	117 Ac FE	118 Pa MR	105 Ac FE			144 Ac FE	
E53bj			JUVENILE WHICH LEFT AREA								
O102				112 St CK	113 St BR	120 Ac CK	130 Ac BR	113 St BR	120 Ac CK	124 St BR	120 Ac CK

TABLE H- 9 (Continued)

ANIMAL SITE USAGE

DATE KOALA	8 7	24 7	5 8	18 8	1 9	24 9	25 10	1 10	2 10	13 10	14 10
A33	10 Ac MR	155 Ac MR	162 Ac MR	166 Ac MR	169 St BR	173 St BR	173 St BR	181 St BR	184 St BR	189 Ac BR	
Z155bj		DEPENDENT JUVENILE									
B34a		127 Pa CK	136 Ac FE	28 Ac CK	127 Pa CK			159 Ac BF			
B34b	119 Ac MR	134 Ac FE	136 Ac FE	138 Ac BF	140 Ac BF			156 Ac MR			
B34cj		JUVENILE WHICH LEFT AREA									
C19j		128 Ac CK	5 Ac MR	167 Ac CK	128 Ac CK	174 St BR	180 Ac BR	182 Ac BR	185 St BR	167 Ac CK	195 St BR
C23	98 Ac FE	144 Ac FE	14 Ac FE	165 Ac MR	171 Ac FE	172 Ac MR	178 St FE		187 St FE	192 Ac FE	
AG187bj		DEPENDENT JUVENILE									
C36a		146 St BR									
C36bj		157 St BR									
C38	30 Ac FE	135 Ac FE		111 Ac FE	42 St FE					193 Ac FE	197 Ac FE
C39	151 Ac FE	160 St FE		164 Ac LF		175 Ac FE	178 St FE		188 Ac FE	72 St FE	196 Ac FE
AG188bj		DEPENDENT JUVENILE									
C40		161 Ac FE		34 St FE	25 Ac FE	176 Ac FE					
D28	150 Ac FE	141 Ac BR									
D35		158 Pa BR									
E44j		153 St LF	5 Ac MR	63 Ac LF	170 St BR	138 Ac BF	93 Ac LF				
E45j	149 Ac MR	154 Ac MR	45 Ac MR	45 Ac MR	168 Pa MR	45 Ac MR	179 Ac MR	183 St FE	45 Ac MR		
E53a				160 St FE			171 Ac FE				105 Ac FE
E53bj		JUVENILE WHICH LEFT AREA									
O102	152 St FE	42 St FE	120 Ac CK	163 Pa LF	120 Ac CK	37 Ac BR	177 St BF	177 St BF	186 Ac FE and	191 Pa LF	163 Pa LF

TABLE H-10
EUCALYPTUS UTILIZATION BY INDIVIDUAL KOALAS--ANALYSIS

ANIMAL	% OUT OF STUDY SITE	SPECIES USED	AREAS USED (raw score %)						
		(raw score%)	LF MR BF BR CK FE TOTAL						
		A S P							
A33	26	18 8 0	2	11	2	6	1	4	26
		69 31 00	7	42	7	23	4	15	
Z155bj	Dependent juvenile								
B34a	60	8 3 3	0	3	1	1	6	3	14
		57 21 21	0	21	7	7	42	21	
B34b	46	15 4 0	1	2	6	2	0	8	19
		79 21 0	5	11	34	11	0	46	
B34cj	Juvenile which left the area								
Juvenile									
C19j	46	14 4 1	0	3	0	7	9	0	19
		74 21 5	0	16	0	37	47	0	
C23	20	19 7 2	0	6	1	2	1	18	28
		68 25 7	0	21	4	7	4	65	
AG187bj	Dependent juvenile								
C36a	76	5 6 1	0	2	0	10	0	0	12
		42 50 8	0	17	0	83	0	0	
C36bj	63	7 4 2	0	0	1	12	0	0	13
		54 31 15	0	0	8	92	0	0	
C38	54	13 2 1	0	6	1	0	0	9	16
		81 13 6	0	37	6	0	0	56	
C39	40	12 9 0	3	0	1	1	0	16	21
		57 43 0	14	0	5	5	0	76	
AG188bj	Dependent juvenile								

LEGEND

SPECIES USED A=*Eucalyptus acaciiformis*

S=*Eucalyptus stellulata*

P=*Eucalyptus pauciflora*

AREAS USED LF=Lower Flat MR=Middle Rise BF=Back Fence

BR=Back Rise CK=Creekside FE=Far East

TABLE H-10 (Continued)
EUCALYPTUS UTILISATION BY INDIVIDUAL KOALAS--ANALYSIS

ANIMAL	% OUT OF STUDY SITE	SPECIES USED (raw score%) A S P	AREAS USED (raw score %) LF MR BF BR CK FE TOTAL							
C40	51	8 8 1 47 47 6	1	1	1	0	0	14	17	
D28	51	8 7 2 47 42 12	0	0	0	11	1	5	17	
D35	77	5 2 1 63 25 13	0	0	1	5	2	0	8	
E44j	49	15 3 0 83 17 0	10	4	1	1	0	2	18	
E45j	37	20 1 1 91 5 5	0	17	0	0	0	5	22	
E53a	66	10 1 1 83 8 8	0	0	1	0	0	11	12	
E53bj	Juvenile which left the area									
O102	5	8 8 4 40 40 20	4	0	2	5	6	3	19	

LEGEND		
SPECIES USED A= <i>Eucalyptus acaciiformis</i>		
S= <i>Eucalyptus stellulata</i>		
P= <i>Eucalyptus pauciflora</i>		
AREAS USED LF=Lower Flat MR=Middle Rise BF=Back Fence		
BR=Back Rise CK=Creekside FE=Far East		

TABLE H-11
QUADRATS CORRESPONDING TO TREE NUMBERS

TREE	1	2	3	4	5	5	7	8	9	10	11	12	13
QUADRAT	E8	C5	N/A	N/A	D5	D4	B7	A2	D5	D5	F4	N/A	B6
TREE	14	15	16	17	18	19	20	21	22	23	24	25	26
QUADRAT	A2	D7	C7	B6	C6	C5	C7	A5	C7	B8	N/A	A1	D5
TREE	27	28	29	30	31	32	33	34	35	36	37	38	39
QUADRAT	D10	D7	C6	B2	F4	B7	D5	D4	E8	E9	B7	E5	C4
TREE	40	41	42	43	44	45	46	47	48	49	50	51	52
QUADRAT	D3	D5	D3	B4	E5	C4	D3	C3	C5	C6	C7	C8	C9
TREE	53	54	55	56	57	58	59	60	61	62	63	64	65
QUADRAT	A2	C3	B3	C6	B7	B5	C1	A3	A2	B6	E5	F8	B4
TREE	66	67	68	69	70	71	72	73	74	75	76	77	78
QUADRAT	B4	D6	F8	E8	C7	B7	D2	B2	D5	B9	B6	B8	E8
TREE	79	80	81	82	83	84	85	86	87	88	89	90	91
QUADRAT	E7	D3	D3	A5	D9	C8	A5	D7	D4	F5	B6	E9	C8
TREE	92	93	94	95	96	97	98	99	100	101	102	103	104
QUADRAT	B5	E5	F5	D3	D3	A2	B3	B7	F5	D10	D7	A5	D3
TREE	105	106	107	108	109	110	111	112	113	114	115	116	117
QUADRAT	A1	E3	A7	C9	D9	B2	A2	D7	B8	D3	B2	A3	A4
TREE	118	119	120	121	122	123	124	125	126	127	128	129	130
QUADRAT	E4	B5	D7	B5	F5	C6	B9	E5	C6	D7	E7	B4	D8
TREE	131	132	133	134	135	136	137	138	139	140	141	142	143
QUADRAT	D9	D9	E3	B3	B1	B3	D5	B5	E4	C5	D9	B9	D9
TREE	144	145	146	147	148	149	150	151	152	153	154	155	156
QUADRAT	B2	A2	D9	D3	A9	D6	B3	C3	E3	F5	C4	C5	B6
TREE	157	158	159	160	161	162	163	164	165	166	167	168	169
QUADRAT	A8	B9	B6	A3	C2	C5	F4	F5	C5	C4	F8	D5	A9
TREE	170	171	172	173	174	175	176	177	178	179	180	181	182
QUADRAT	B9	C3	B5	D10	D10	C3	A2	B5	D3	D5	D10	C10	B8
TREE	183	184	185	186	187	188	189	190	191	192	193	194	195
QUADRAT	D4	C10	A10	A3	D2	D2	E9	D9	F4	C3	C2	F4	D10
TREE	196	197											
QUADRAT	C2	B2											

TABLE H-12
TREES PRESENT IN QUADRATS

QUADRAT TREES	A1 25 105	B1 135	C1 59	D1	E1	F1
QUADRAT TREES	A2 8 87 14 111 53 145 61 176	B2 30 115 73 144 110 197	C2 161 193 196	D2 72 187 188	E2	F2
QUADRAT TREES	A3 60 160 116 186	B3 55 136 98 150 134	C3 47 171 54 175 151 192	D3 40 95 42 96 46 104 80 114 81 147 178	E3 106 133 152	F3
QUADRAT TREES	A4 117	B4 43 66 65 129	C4 39 154 45 166	D4 6 87 34 183	E4 118 139	F4 11 191 31 194 163
QUADRAT TREES	A5 21 85 82 103	B5 58 138 92 172 119 177 121	C5 2 155 19 162 48 165 140	D5 5 74 9 137 33 168 41 179	E5 38 93 44 125 63	F5 88 122 94 153 164

TABLE H-12 (Continued)
TREES PRESENT IN QUADRATS

QUADRAT TREES	A6	B6 13 89 17 156 62 159 76	C6 18 56 29 123 49 126	D6 67 149	E6	F6
QUADRAT TREES	A7 107	B7 7 57 32 71 37 99	C7 16 50 20 70 22	D7 15 112 28 120 86 127 102	E7 79 128	F7
QUADRAT TREES	A8 157	B8 23 113 77 182	C8 51 91 84	D8 130	E8 1 69 35 78	F8 64 167 68
QUADRAT TREES	A9 148 169	B9 75 142 124 158 170	C9 52 108	D9 83 143 109 146 131 141 132 190	E9 36 189 90	F9
QUADRAT TREES	A10 185	B10	C10 181 184	D10 27 173 101 174 180 195	E10	F10

TABLE H-13

QUADRAT LOCATION OF 16 ANIMALS IN 1980

KOALA (SEX)	NOVEMBER TO MAY DATES											
	15. 11	26. 11	12. 12	2. 1	16. 1	30. 1	11. 2	21. 2	10. 3	24. 3	14. 4	25. 4
A33		35	42	54	56	5	72	72	31	93	41	41
Female		E8	D3	C3	C6	D5	D2	D2	F4	E5	D5	D5
B34a	34	37	41	47		64	68		15			
Male	D4	B7	D5	C3		F8	F8		D7			
B34b	34	37		46		47	63	47	82	89	85	119
Female	D4	B7		D3		C3	E5	C3	A5	B6	A5	B5
C19j		19		48			69		78			79
Juvenile		C5		C5			E8		E8			E7
C23		23		51	59	66	73		73	86	98	123
Female		B8		C8	C1	B4	B2		B2	D7	B3	C6
C36a		36	36	50				74	74		71	
Female		E9	E9	C7				D5	D5		B7	
C36bj		36	36	50				75	76	90	71	
Juvenile		E9	E9	C7				B9	B6	E9	B7	
C38		38		48	42	62	67		18	41		30
Female		E5		C5	D3	B6	D6		C6	D5		B2
C39		39	43	49		65	65		77	65	39	122
Female		C4	B4	C6		B4	B4		B8	B4	C4	F5
C40		40		55	58				80	88		
Male		D3		B3	B5				D3	F5		
D28			28		57		71		83	91	101	124
Female			D7		B7		B7		D9	C8	D10	B9
D35			35	52			70		79			121
Female			E8	C9			C7		E7			B5
E44j				44	45	44	44		81		100	
Juvenile				E5	C4	E5	E5		D3		F5	
E45j				45		45	41		45		97	
Juvenile				C4		C4	D5		C4		A2	
E53a				53	60						118	105
Female				A2	A3						E4	A1
O102				INTRODUCED ANIMAL								120
Male												D7

LEGEND: Table indicates the tree occupied by each koala on any day, and the quadrat in which that tree was located.

TABLE H-13 (Continued)
QUADRAT LOCATION OF 16 ANIMALS IN 1980

KOALA (SEX)	JUNE TO OCTOBER DATES												TOTAL /24
	16. 5	28. 5	9. 6	23. 6	7. 7	24. 7	5. 8	18. 8	1. 9	24. 9	1. 10	13. 10	
A33 Female	126 C6	9 D5		74 D5	41 D5	155 C5	162 C5	166 C4	169 A9	173 D10	181 C10	189 E9	22
B34a Male	127 D7	136 B3	28 D7	127 D7		159 B6							12
B34b Female	134 B3	136 B3	138 B5	140 C5		156 B6							15
C19j Juvenile	128 E7	128 E7		143 D9	128 E7	128 E7	5 D5	167 F8	128 E7	174 D10	182 B8	167 F8	15
C23 Female	9 D5	85 A5	42 D3	145 A2	73 B2	144 B2	14 A2	165 C5	171 C3	172 B5		192 C3	20
C36a Female	131 D9			142 B9	146 D9	146 D9							10
C36bj Juvenile	132 D9	75 B9		75 B9	91 C8	157 A8							12
C38 Female	135 B1		111 A2	42 D3								193 C2	12
C39 Female	39 C4				147 D3	160 A3		164 F5		175 C3		72 D2	15
C40 Male	133 E3	34 D4		72 D2	72 D2	161 C2		34 D4	25 A1	176 A2			13
D28 Female	98 B3	65 B4		141 D9	148 A9	141 D9							12
D35 Female		99 B7				158 B9							7
E44j Juvenile	125 E5	18 C6		139 E4	93 E5	153 F5	5 D5	63 E5	170 B9	138 B5			15
E45j Juvenile	129 B4	67 D6	137 D5	9 D5	67 D6	154 C4	45 C4	45 C4	168 D5	45 C4	183 D4		16
E53a Female	105 A1			144 B2				160 A3					6
O102 Male	130 D8	113 B8	120 D7	124 B9	120 D7	42 D3	120 D7	163 F4	120 D7	37 B7	177 B5	191 F4	13

LEGEND: Table indicates the tree occupied by each koala on any day, and the quadrat in which that tree was located.

TABLE H-14
QUADRAT USE BY 16 ANIMALS IN 1980

QUADRAT	A 1	A 2	A 3	A 5	A 8	A 9	A10	B 1	B 2	B 3	B 4	B 5	B 6	B 7	B 8	B 9
KOALA																
A33	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Z155bj	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
B34a	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0
B34b	0	0	0	2	0	0	0	0	0	2	0	2	2	1	0	0
B34cj	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
C19j	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
C23	0	2	0	1	0	0	0	0	4	1	1	1	0	0	1	0
AG187bj	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C36a	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
C36bj	0	0	0	0	1	0	0	0	0	0	0	0	1	1	1	3
C38	0	1	0	0	0	0	0	1	1	0	0	0	1	0	0	0
C39	0	0	1	0	0	0	0	0	0	0	4	0	0	0	1	0
AG188bj	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C40	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0
D28	0	0	0	0	0	1	0	0	0	1	1	0	0	2	0	1
D35	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1
E44j	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
E45j	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
E53a	1	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0
E53bj	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
O102	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
No.of																
Visits	2	6	3	3	1	1	1	1	6	8	7	5	8	7	5	9
No.of Different																
Koalas	2	5	2	2	1	1	1	1	3	5	4	4	7	6	4	6

TABLE H-14 (Continued)
QUADRAT USE BY 16 ANIMALS IN 1980

KOALA															
QUADRAT	C 1	C 2	C 3	C 4	C 5	C 6	C 7	C 8	C 9	C10	D 2	D 3	D 4	D 5	
A33	0	0	1	1	2	2	0	0	0	1	2	1	0	6	
Z155bj	0	0	0	1	2	0	0	0	0	1	0	0	1	0	
B34a	0	0	1	0	0	0	0	0	0	0	0	0	1	1	
B34b	0	0	2	0	1	0	0	0	0	0	0	1	1	0	
B34cj	0	0	1	0	0	0	0	1	0	0	0	0	1	1	
C19j	0	0	0	0	2	0	0	0	0	0	0	0	0	1	
C23	1	0	2	0	1	1	0	1	0	0	0	1	0	1	
AG187bj	0	0	1	0	0	0	0	0	0	0	0	0	0	0	
C36a	0	0	0	0	0	0	1	0	0	0	0	0	0	2	
C36bj	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
C38	0	1	0	0	1	1	0	0	0	0	0	2	0	1	
C39	0	0	1	3	0	1	0	0	0	0	1	1	0	0	
AG188bj	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
C40	0	1	0	0	0	0	0	0	0	0	2	2	2	0	
D28	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
D35	0	0	0	0	0	0	1	0	1	0	0	0	0	0	
E44j	1	0	0	1	0	1	0	0	0	0	0	1	0	1	
E45j	0	0	0	7	0	0	0	0	0	0	0	0	1	4	
E53a	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
E53bj	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
O102	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
No.of															
Visits	1	1	7	13	7	6	3	3	1	1	3	13	5	15	
No.of Different															
Koalas	1	1	5	4	5	5	3	3	1	1	2	7	4	7	

TABLE H-14 (Continued)
QUADRAT USE BY 16 ANIMALS IN 1980

QUADRAT	D 6	D 7	D 8	D 9	D10	E 3	E 4	E 5	E 7	E 8	E 9	F 4	F 5	F 8
KOALA														
A33	0	0	0	0	1	0	0	1	0	1	1	1	0	0
Z155bj	0	0	0	0	1	0	0	0	0	0	0	0	0	0
B34a	0	4	0	0	0	0	0	0	0	0	0	0	0	2
B34b	0	0	0	0	0	0	0	1	0	0	0	0	0	0
B34cj	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C19j	0	0	0	1	1	0	0	0	5	2	0	0	0	2
C23	0	1	0	0	0	0	0	0	0	0	0	0	0	0
AG187bj	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C36a	0	0	0	3	0	0	0	0	0	0	2	0	0	0
C36bj	0	0	0	1	0	0	0	0	0	0	3	0	0	0
C38	1	0	0	0	0	0	0	1	0	0	0	0	0	0
C39	0	0	0	0	0	0	0	0	0	0	0	0	2	0
AG188bj	0	0	0	0	0	0	0	0	0	0	0	0	0	0
C40	0	0	0	0	0	1	0	0	0	0	0	0	1	0
D35	0	0	0	0	0	0	0	0	1	1	0	0	0	0
E44j	0	0	0	0	0	0	1	6	0	0	0	0	2	0
E45j	0	0	0	0	0	0	0	0	0	0	0	0	0	0
E53a	0	0	0	0	0	0	1	0	0	0	0	0	0	0
E53bj	1	0	0	0	0	0	0	0	0	0	0	0	0	0
O102	0	5	1	0	0	0	0	0	0	0	0	2	0	0
No.of														
Visits	3	11	1	8	3	1	2	9	6	4	7	9	5	4
No.of Different														
Koalas	2	4	1	4	3	1	2	3	2	3	3	2	3	2

TABLE H-15
SOLO QUADRAT ANALYSIS

KOALA.SHARED QUADRATS .	SHARERS (frequency in parenthesis)	SOLO QUADRATS
A33 .C3, C4, C5, C6 .D2, D3, D5, .E5, E8, E9, .F4 .TOTAL: 12	B34a (2); B34b (4); C38 (6); C23 (5); E44j (5); E45j (2); C39 (4); C19j (4); C40 (1); O102 (2); D28 (1); D35 (1); C36a (1); C36b (1); TOTAL: 14	A10, C10 TOTAL: 2
B34a .B3, B6, B7, .C3, .D4, D5, D7, .F8 .TOTAL: 8	B34b (5); C23 (4); C40 (3); D28 (3); C38 (3); C36a (2); C36b (2); O102 (2); D35 (1); A33 (2); E45j (2); C19j (2); E44j (1); TOTAL: 13	NIL TOTAL: 0
B34b .A5, .B3, B5, B6, B7, .C3, C5, .D3, D4, .E5 .TOTAL: 10	C23 (6); B34a (5); C40 (4); D28 (2); D35 (2); E44j (3); C38 (4); C36a (2); C36bj(2); O102 (2); A33 (4); C19j (1); C39 (1); E45j (1) TOTAL: 14	NIL TOTAL: 0
C19j .B8, .C5, .D9, D10, .E7, E8, .F8 .TOTAL: 8	C23 (3); C39 (1); O102 (1); A33 (3); B34b (1); C38 (2); B34a (2); E44j (1); E45j (1); C36a (1); C36bj(1); D28 (2); D35 (2) TOTAL: 13	NIL TOTAL: 0

TABLE H-15 (continued)

SOLO QUADRAT ANALYSIS

KOALA	SHARED QUADRATS	SHARERS (frequency in parenthesis)	SOLO QUADRATS
C23	A2, B2,B3,B4,B5,B8 C3, C5, C6, C8 D3, D4, D5, TOTAL: 14	C38 (5); C40 (3); E45j (3); E53a (2); B34b (6); B34a (4); D28 (4); C39 (4); D35 (1);" E44j (4); C19j (3); O102 (3); A33 (5); C36bj(1); TOTAL: 14	C1 TOTAL: 1
C36a	B6, B7, B9, C7, D9, E9 TOTAL: 6	B34a (2); B34b (2); C38 (1); C36bj(5); C40 (1); O102 (2); D35 (3); D28 (3); E44j (1); C19j (1); A33 (1) TOTAL: 11	NIL TOTAL: 0
C36bj	B6, B7, B9, C7, C8, E9 TOTAL: 6	B34a (2); B34b (2); C38 (1); C36a (6); C40 (1); O102 (2); D35 (3); D28 (4); E44j (1); C23 (1); C19j (1); A33 (1); TOTAL: 12	A8 TOTAL: 1
C38	A2, B2, B6 C3, C5 D3, D5, D6 E5 TOTAL: 9	C23 (7); C40 (3); E45j (3); E53a (2); B34a (3); B34b (5); C36a (1); C36bj(1); O102 (2); A33 (5); C19j (1); E44j (4); C39 (2) TOTAL: 13	B1 TOTAL: 1

TABLE H-15 (continued)

SOLO QUADRAT ANALYSIS

KOALA	SHARED QUADRATS	SHARERS (frequency in parenthesis)	SOLO QUADRATS
C39	A3, B4, B8, C4, C6, D2, D3, F5 TOTAL: 8	E53a (1); C23 (4); D28 (1); E45j (2); C19j (1); O102 (2); A33 (4); E44j (4); C38 (1); B34b (1); C38 (1); C40 (2); TOTAL: 12	NIL TOTAL: 0
C40	A1, A2, B3, B6, D3, D4, F5 TOTAL: 7	E53a (2); C38 (3); C23 (3); E45j (2); B34a (3); B34b (4); D28 (1); C36a (1); C36bj(1); O102 (2); A33 (1); E44j (2); C39 (2) TOTAL: 13	C2, E3, TOTAL: 2
D28	B3, B4, B7, B9 C8, D7, D9, D10 TOTAL: 8	B34a (3); B34b (2); C23 (4); C40 (1); C36a (3); E45j (1); C39 (1); C36bj(4); D35 (2); E44j (1); O102 (2); C19j (2); A33 (1) TOTAL: 13	A9 TOTAL: 1
D35	B5, B7, B9, C7, E7, E8, TOTAL: 6	B34b (2); C23 (1); E44j (2); B34a (1); C36a (3); C36b (3); D28 (2); O102 (1); C19j (2); A33 (1) TOTAL: 10	C9 TOTAL: 1
E44j	B5, B9, C4, C6, D3, D5, E4, E5, F5 TOTAL: 9	B34b (3); C23 (4); D35 (2); C36a (1); C36bj(1); D28 (1); O102 (2); A33 (4); E45j (2); C39 (4); C38 (4); C40 (2); B34a (1); C19j (1); E53a (1); TOTAL: 15	NIL TOTAL: 0

TABLE H-15 (continued)

SOLO QUADRAT ANALYSIS

KOALA	SHARED QUADRATS	SHARERS (frequency in parenthesis)	SOLO QUADRATS
E45j	A2, B4, C4, D4, D5, D6, TOTAL: 6	C38 (3); C23 (3); C40 (2); E53a (1); D28 (1); C39 (2); A33 (2); E44j (2); B34a (2); B34b (1); C19j (1); TOTAL: 11	NIL TOTAL: 0
E53a	A1, A2, A3, B2, E4 TOTAL: 5	C40 (2); E45j (1); C23 (2); C38 (2); C39 (1); E44j (1); TOTAL: 6	NIL TOTAL: 0
O102	B6, B8, B9, D3, D7, F4	B34a (2); B34b (2); C38 (2); C36a (2); C36b (2); C40 (2); C39 (2); C19j (1); C23 (3); D35 (1); D28 (2); E44j (2); A33 (2)	D8
	TOTAL: 6	TOTAL: 13	TOTAL: 1

TABLE H-16
DAILY SPACING

ANIMAL	SOLO QUADRATS	SHARED	SHARERS' DETAILS
A33	E8, D3, C6, D5, D2, D2 F4, E5, D5, D5, C6, D5 D5, C5, C5, C10, E9, 17	C3, D5, C4, D10 3	B34a, E44j, E45j, C19j (4) 4
B34a	D5, F8, F8, D7, D7, D7 D7 7	D4, B7, C3, B3, B6 5	B34b, B34b, A33, B34b, (2) 5
B34b	D3, C3, C3, A5, B6, A5, B5, C5 8	D4, B7, E5, B5, B3, B3, B6 7	B34a, B34a, E44j, D35, D28, B34a, B34a (4) 7
C19j	C5, C5, E8, E8, E7, E7 E7, E7, F8, E7, B8, F8 12	D9, D5, D10 3	D28, E44j, A33 (3) 3
C23	D8, C8, C1, B2, B2, D7 B3, C6, D5, A5, D3, A2 B2, B2, A2, C5, C3, C3 18	B4, B5 2	C39, E44j (2) 2
C36a	D5, D5, D9 3	E9, C9, C7, B7, D9, B9, D28 D9 7	C36bj, C36bj, C36bj, C36bj, C36bj, C36bj, D28 (2) 7

TABLE H-16 (Continued)

DAILY SPACING

ANIMAL	SOLO QUADRATS	SHARED	SHARERS' DETAILS
C36bj	B9, B6, E9, B9, C8, A8 6	E9, E9, C7, B7, D9, B9 6	C36a, C36a, C36a, C36a, C36a, C36a (1) 6
C38	E5, D3, B6, D6, C6, D5 B2, B1, A2, D3, C2 10	C5 1	C19j (1) 1
C39	C4, B4, C6, B4, B8, B4 C4, F5, C4, D3, A3, F5 C3, D2 14	B4 1	C23 (1) 1
C40	D3, B3, B5, F5, E3, D4 D2, D2, C2, D4, D1, A2 13	D3 1	E44j (1) 1

TABLE H-16 (Continued)

DAILY SPACING

ANIMAL	SOLO QUADRATS	SHARED	SHARERS' DETAILS
D28	D7, B7, B7, D9, C8, D10, B9, B4, A9 9	B3, D9, D9 3	B34b, C19j, C36a (3) 3
D35	E8, C9, C7, E7, B7, B9 6	B5 1	B34b (1) 1
E44j	E5, C4, E5, F5, E5, C6 E4, E5, F5, E5, B9 11	E5, D3, D5, B5 4	B34b, C40, C19j, C23 (4) 4
E45j	C4, C4, D5, C4, C4, B4 D6, D5, D6, C4, C4, D5 C4, D4 14	D5, C4 2	A33, A33 (1) 2
E53a	A2, A3, E4, A1, B2, A3 6	0	(0) 0
O102 (Zoo Koala)	D7, D8, B8, D7, D3, D7 F4, D7, B7, B5, F4 11	D7, B9 2	B34a, C36a (2) 2
	TOTAL 165	48	